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NOTE: This is a concise catalogue and Eaton Fluid Power has many other Aeroquip products in the worldwide range. Contact **EATON FLUID POWER** or your nearest distributor for further information.



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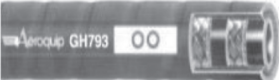
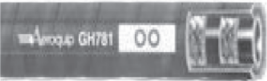
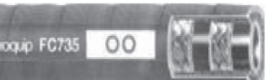
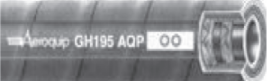





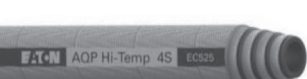



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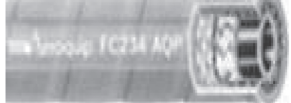
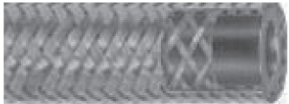

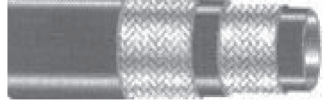
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| GH493 MatchMate Global Yellow layline |  | 1/4" to 2" | EN856 Type R12 EN856 4SP (-8 to -16) SAE 100 R12 1/2 SAE Bend Radius | A8 |
| EC910 WATERBLAST "SAFESHIELD" |  | 1/2" to 1" | ISO 7751 AS/NZ4233.2 EN1829-2 (IMPULSE) | A9 |
| GH506 Four spiral wire |  | 3/4" to 2" | EN856 4SH 2 Million FLEX cycles with 1W fittings | A9 |
| EC525 AQP™ PLUS Hi-temp 4-spiral |  | 3/4" to 2" | | A10 |
| GH466 SIX spiral wire |  | 1 1/4" to 2" | 2 Million FLEX cycles with 1W fittings | A10 |
| FC500 |  | 3/4" to 2" | Exceeds SAE 100R13 1/2 SAE Bend Radius | A11 |
| FC606 |  | 1" & 1 1/4" | SAE 100R15 | A11 |





Powering Business Worldwide

Hose Pictorial Index











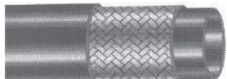


| P/No Series | Image | Sizes | Specifications | Page No. |
|---|---|-------------------|--|----------|
| EC600 |  | 3/4", 1" & 1 1/4" | Exceeds EN 856 Type R15, 1/2 SAE Bend Radius | A12 |
| FC300 AQP Single wire braid |  | 3/16" to 2 7/8" | Exceeds SAE 100R5 | A12 |
| FC350 AQP Single wire braid |  | 3/16" to 2 1 3/8" | Engine & Airbrake | A13 |
| 2807 PTFE |  | 1/8" to 1 1/8" | SAE 100R14A | A13 |
| 1503 Single wire braid |  | 3/16" to 1 7/8" | SAE 100R5 | A14 |
| 2556 Socketless |  | 1/4" to 3/4" | SAE 30R2 Type 1 | A14 |
| FC332 AQP Socketless |  | 1/4" to 3/4" | | A15 |
| FC558 Aircon |  | 1/2" to 1 3/8" | | A15 |
| FC619 Wire inserted suction |  | 3/4" to 3" | Exceeds SAE 100R4 1/2 SAE Bend Radius | A16 |
| FC802 Aircon |  | 3/16" to 5/8" | SAE J51 Type D | A16 |
| FC234 High temperature fuel & oil |  | 1/4" to 7/8" | USCG, ABS & DNV | A17 |
| FBA AQP Racing hose |  | 3/16" to 1 3/4" | | A17 |
| GH134/FC505 Aircon |  | 3/16" to 5/8" | SAE J2064 Type E Class 1 | A18 |
| 2555 Power steering |  | 3/8" | | A18 |



EATON

Powering Business Worldwide

Hose Pictorial Index

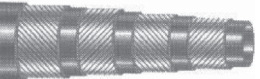
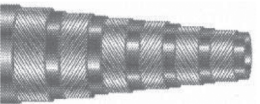
| | | | | |
|---|---|---------------|---|-----|
| SC-GTW |  | 5/16" & 1/2" | LPG Hose. Conforms to AS1869 Class G. AGA Approval number 7576 | A19 |
| 3130 Medium pressure thermoplastic |  | 1/8" to 1" | SAE 100R7 Perforated cover | A19 |
| 3800 High pressure thermoplastic |  | 1/8" to 1/2" | SAE 100R8 Perforated cover | A20 |
| 37AL Medium pressure hose, non-conductive |  | 3/16" to 1/2" | SAE 100R7 | A20 |
| 30CT Constant pressure |  | 3/16" to 5/8" | SAE 100R18 | A21 |
| 3V10 Very high pressure |  | 3/16" to 3/8" | | A21 |
| 3VE0 Very high pressure, non-conductive |  | 3/16" to 3/8" | | A22 |
| 3740 Medium pressure hose, non-conductive |  | 3/4" to 1" | SAE 100R7 | A22 |
| 3R80 High pressure |  | 3/16" to 1" | SAE 100R8 | A23 |
| 3E80 High pressure, non-conductive |  | 3/16" to 1" | SAE 100R8 | A23 |
| D2800W |  | 1/4" to 2" | EN853 Type 1SN Exceeds SAE 100R1AT ISO1436-1, Type 1SN | A24 |
| D2900W |  | 1/4" to 2" | EN853 Type 2SN Exceeds SAE 100R2AT ISO1436-1, Type 2SN | A24 |
| D1600 |  | 1/4" to 1" | EN857 Type 2SC Exceeds SAE 100R16 ISO11237, Type 2SC 1/2 SAE Bend Radius | A25 |





Powering Business Worldwide

Hose Pictorial Index

| | | | | |
|---------------------|---|------------|--|-----|
| D8200W |  | 3/8" to 2" | Meets & exceeds EN 856 Type R12 | A25 |
| D8300W/GH466 |  | 3/4" to 2" | Meets & exceeds EN 856 Type R13 / R15 | A26 |
| | | | | |
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| HOSE - PICTORIAL INDEX |





Powering Business Worldwide

Hose

HOSE

HYDRAULIC

A5

GH663 MATCHMATE PLUS™

Single wire braid meets EN853 Type 1SN
ISO 1436-1, Type 1SN
Exceeds SAE 100R1AT performance



HI-IMPULSE at 1/2 SAE bend radius

| Part Number | GH663 | | | | | | | | |
|----------------------------------|-----------------|----------------|----------------|-------|----------------|----------------|-------|-------|-------|
| | -4 | -6 | -8 | -10 | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.62 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.53 | 0.69 | 0.81 | 0.93 | 1.09 | 1.41 | 1.71 | 1.99 | 2.52 |
| Maximum operating pressure (bar) | 255,0 192,0 | 235,0 157,0 | 200,0 140,0 | 140,0 | 138,0 87,0 | 103,0 70,0 | 69,0 | 52,0 | 41,0 |
| Maximum operating pressure (psi) | 3700† 2750 | 3400† 2250 | 2900† 2000 | 2030 | 2000† 1250 | 1500† 1000 | 1000 | 750 | 600 |
| Minimum burst pressure (bar) | 1020,0 770,0 | 940,0 630,0 | 800,0 560,0 | 560,0 | 552,0 350,0 | 412,0 280,0 | 276,0 | 208,0 | 164,0 |
| Minimum burst pressure (psi) | 14800† 11000 | 13600† 9000 | 11600† 8000 | 8120 | 8000† 5000 | 6000† 4000 | 4000 | 3000 | 2400 |
| Minimum bend radius (mm) | 51,0 | 62,5 | 90,0 | 103,0 | 120,0 | 150,0 | 210,0 | 250,0 | 315,0 |
| Minimum bend radius (inches) | 2.00 | 2.50 | 3.50 | 3.75 | 4.75 | 6.00 | 8.25 | 10.00 | 12.50 |
| Weight (kg/m) | 0.24 | 0.37 | 0.45 | 0.50 | 0.67 | 1.01 | 1.31 | 1.57 | 1.95 |

† Improved performance when used with Global Crimp fittings.

Construction

- Synthetic rubber tube, single wire braid reinforcement and DURA TUFF rubber cover
- White layline

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 127°C

GH793 MATCHMATE PLUS™

Two wire braid meets EN853 Type 2SN
ISO 1436-1, Type 2SN
Exceeds SAE 100R2AT performance



HI-IMPULSE at 1/2 SAE bend radius

| Part Number | GH793 | | | | | | | | |
|----------------------------------|------------------|------------------|-----------------|-----------------|----------------|----------------|-------|-------|-------|
| | -4 | -6 | -8 | -10 | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.60 | 0.75 | 0.87 | 0.98 | 1.16 | 1.50 | 1.92 | 2.15 | 2.51 |
| Maximum operating pressure (bar) | 448,0 350,0 | 400,0 280,0 | 345,0 245,0 | 276,0 192,0 | 241,0 157,0 | 207,0 140,0 | 172,0 | 138,0 | 110,0 |
| Maximum operating pressure (psi) | 6500† 5000 | 5800† 4000 | 5000† 3500 | 4000† 2750 | 3500† 2250 | 3000† 2000 | 2500 | 2000 | 1600 |
| Minimum burst pressure (bar) | 1792,0 1400,0 | 1600,0 1120,0 | 1380,0 980,0 | 1104,0 770,0 | 964,0 630,0 | 828,0 560,0 | 688,0 | 552,0 | 440,0 |
| Minimum burst pressure (psi) | 26000† 20000 | 23200† 16000 | 20000† 14000 | 16000† 11000 | 14000† 9000 | 12000† 8000 | 10000 | 8000 | 6400 |
| Minimum bend radius (mm) | 101,6 | 127,0 | 177,8 | 203,2 | 241,3 | 304,8 | 419,1 | 508,0 | 635,0 |
| Minimum bend radius (inches) | 4.00 | 5.00 | 7.00 | 8.00 | 9.50 | 12.00 | 16.50 | 20.00 | 25.00 |
| Weight (kg/m) | 0.39 | 0.57 | 0.69 | 0.81 | 0.98 | 1.51 | 2.30 | 2.50 | 3.31 |

† Improved performance when used with Global Crimp fittings.

Construction

- Synthetic rubber tube, double wire braid reinforcement and DURA TUFF rubber cover
- Red layline

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

R2AT/2SN

TTC crimp fittings
Reusable fittings-R2AT Socket



Triple crown advantage

- Pressure
- Temperature
- Abrasion resistance

Operating temperature range

- 40°C to 127°C

GH781 MATCHMATE PLUS™

OO

Two wire braid meets or exceeds
EN857 Type 2SC. ISO 11237-1, Type 2SC
Exceeds SAE 100R16



R16/2SC

TTC crimp fittings
Reusable fittings-R16AT Socket

Triple crown advantage

- Pressure
- Temperature
- Abrasion resistance

HI-IMPULSE at 1/2 SAE bend radius

| Part Number | GH781 | | | | | | | | | |
|----------------------------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| | Dash Size | -4 | -6 | -8 | -10 | -12 | -16 | -20 | -24 | -32 |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 | 2.53 |
| Hose O.D (inches) | 0.53 | 0.69 | 0.81 | 0.93 | 1.10 | 1.42 | 1.65 | 2.03 | 2.53 | |
| Maximum operating pressure (bar) | 448,0 | 366,0 | 310,0 | 276,0 | 241,0 | 207,0 | 172,0 | 138,0 | 110,0 | |
| Maximum operating pressure (psi) | 6500 | 5300 | 4500 | 4000 | 3500 | 3000 | 2500 | 2000 | 1600 | |
| Minimum burst pressure (bar) | 1792,0 | 1464,0 | 1240,0 | 1104,0 | 964,0 | 828,0 | 688,0 | 552,0 | 440,0 | |
| Minimum burst pressure (psi) | 26000 | 21200 | 18000 | 16000 | 14000 | 12000 | 10000 | 8000 | 6400 | |
| Minimum bend radius (mm) | 50,8 | 63,5 | 88,9 | 101,6 | 120,7 | 152,4 | 209,6 | 254,0 | 317,5 | |
| Minimum bend radius (inches) | 50.80 | 63.50 | 88.90 | 101.60 | 120.70 | 152.40 | 209.60 | 254.00 | 317.50 | |
| Weight (kg/m) | 0.33 | 0.43 | 0.58 | 0.66 | 0.79 | 1.07 | 1.63 | 2.09 | 2.83 | |

Construction

- Synthetic rubber tube, double wire braid reinforcement and DURA TUFF rubber cover
- Green layline

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 127°C

FC735 BRUISER™

O

Double wire braid exceeds EN857, Type 2SC
ISO 11237-1, Type 2SC
Exceeds SAE 100R16 performance



R2/2SN

TTC crimp fittings

HI-IMPULSE at 1/2 SAE bend radius

| Part Number | FC735 | | | | | | | |
|----------------------------------|-----------|--------|--------|--------|-------|-------|-------|-----|
| | Dash Size | -04 | -06 | -08 | -10 | -12 | -16 | -20 |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 | 1.00 | 1.25 | |
| Hose O.D (inches) | 0.53 | 0.69 | 0.81 | 0.93 | 1.10 | 1.42 | 1.70 | |
| Maximum operating pressure (bar) | 345,0 | 345,0 | 295,0 | 250,0 | 215,0 | 175,0 | 155,0 | |
| Maximum operating pressure (psi) | 5000* | 5000 | 4275 | 3650 | 3125 | 2550 | 2250 | |
| Minimum burst pressure (bar) | 1380,0 | 1380,0 | 1180,0 | 1000,0 | 860,0 | 700,0 | 620,0 | |
| Minimum burst pressure (psi) | 20000* | 20000 | 17100 | 14600 | 12500 | 10200 | 9000 | |
| Minimum bend radius (mm) | 50,8 | 63,5 | 88,9 | 101,6 | 120,7 | 152,4 | 209,6 | |
| Minimum bend radius (inches) | 2.00 | 2.50 | 3.50 | 4.00 | 4.75 | 6.00 | 8.25 | |
| Weight (kg/m) | 0.33 | 0.43 | 0.58 | 0.66 | 0.79 | 1.07 | 1.63 | |

*Meets SAE100R2 pressures.

Construction

- Synthetic rubber tube, double wire braid reinforcement and synthetic rubber intermediate cover and BRUISER outer cover

Application

- High abrasion applications
- Hydraulic system service with petroleum and water base fluids, general industrial service

Operating temperature range

- -40°C to +100°C



Powering Business Worldwide

Hose

HOSE

HYDRAULIC

A7

GH195 MATCHMATE BLUE™ OO

Double wire braid meets EN853 , Type 2SN

ISO 1436-1, Type 2SN

Exceeds SAE 100R2AT Type S

AQP Elastomer



HI-IMPULSE / AQP

| Part Number | GH195 | | | | | | | | |
|----------------------------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| | -04 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.60 | 0.75 | 0.87 | 0.99 | 1.16 | 1.49 | 1.92 | 2.15 | 2.67 |
| Maximum operating pressure (bar) | 400,0 | 350,0 | 297,0 | 227,0 | 210,0 | 175,0 | 157,0 | 122,0 | 105,0 |
| Maximum operating pressure (psi) | 5800 | 5000 | 4250 | 3250 | 3000 | 2500 | 2250 | 1750 | 1500 |
| Minimum burst pressure (bar) | 1600,0 | 1400,0 | 1190,0 | 897,0 | 840,0 | 700,0 | 630,0 | 490,0 | 420,0 |
| Minimum burst pressure (psi) | 23200 | 20000 | 17000 | 13000 | 12000 | 10000 | 9000 | 7000 | 6000 |
| Minimum bend radius (mm) | 101,6 | 127,0 | 177,8 | 203,2 | 241,3 | 304,8 | 419,1 | 508,0 | 635,0 |
| Minimum bend radius (inches) | 4.00 | 5.00 | 7.00 | 8.00 | 90.50 | 1.00 | 16.50 | 20.00 | 25.00 |
| Weight (kg/m) | 0.40 | 0.58 | 0.69 | 0.81 | 1.00 | 1.45 | 2.39 | 2.59 | 3.38 |

Construction

- AQP elastomer tube, double wire braid reinforcement and blue AQP elastomer cover

Application

- Hydraulic system service with petroleum, fire resistant and water base fluids, fuel and lubricating systems

Operating temperature range

- 40°C to 150°C
- Except air +121°C

EC230

Meets or exceeds SAT 100R2AT Type S

Refer Eaton for fittings



| Part Number | EC230 | | | |
|----------------------------------|-------|--|--|--|
| Dash Size | -40 | | | |
| Hose I.D. (inches) | 2.50 | | | |
| Hose O.D (inches) | 3.16 | | | |
| Maximum operating pressure (bar) | 79 | | | |
| Maximum operating pressure (psi) | 1150 | | | |
| Minimum burst pressure (bar) | 316 | | | |
| Minimum burst pressure (psi) | 4600 | | | |
| Minimum bend radius (mm) | 660 | | | |
| Minimum bend radius (inches) | 26.00 | | | |
| Weight (kg/m) | 3.88 | | | |

Construction

- Synthetic rubber tube, 2 wire reinforcement and DURA TUFF rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- -40°C to +100°C

EC215

Double wire braid meets EN857 Type 2SC



2SC

TTC crimp fittings
Reusable fittings

1/2 SAE bend radius

| Part Number | EC215 | | | | | | | | |
|----------------------------------|-------|-------|--------|--------|--------|--|--|--|--|
| Dash Size | -4 | -6 | -8 | -12 | -16 | | | | |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.75 | 1.00 | | | | |
| Hose O.D (inches) | 0.56 | 0.72 | 0.85 | 1.13 | 1.44 | | | | |
| Maximum operating pressure (bar) | 400 | 330 | 275 | 215 | 165 | | | | |
| Maximum operating pressure (psi) | 5800 | 4800 | 4000 | 3215 | 2400 | | | | |
| Minimum burst pressure (bar) | 1600 | 1320 | 1100 | 860 | 660 | | | | |
| Minimum burst pressure (psi) | 22400 | 1920 | 16000 | 12500 | 9600 | | | | |
| Minimum bend radius (mm) | 75.00 | 90.00 | 130.00 | 200.00 | 250.00 | | | | |
| Minimum bend radius (inches) | 2.95 | 3.54 | 5.12 | 7.87 | 9.84 | | | | |
| Weight (kg/m) | 0.38 | 0.54 | 0.64 | 0.93 | 1.17 | | | | |

Construction

- Synthetic rubber cover, double wire braid reinforcement and

Application

- Hydraulic system service with petroleum and water-glycol base fluids,

Operating temperature range

- 40°C to 100°C

GH493 MATCHMATE PLUS™ 0000

Four Spiral Wire

EN 856 Type R12 SAE 100R12



EN 856 R12

4S crimp fittings

Triple crown advantage

- Pressure
- Temperature
- Abrasion resistance

HI-IMPULSE at 1/2 SAE bend radius

| Part Number | GH493 | | | | | | | |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Dash Size | -06* | -08 | -10 | -12 | -16 | -20 | -24 | -32 |
| Hose I.D. (inches) | 0.38 | 0.50 | 0.63 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.79 | 0.92 | 1.11 | 1.20 | 1.48 | 1.83 | 2.12 | 2.64 |
| Maximum operating pressure (bar) | 448,0 | 415,0 | 415,0 | 380,0 | 350,0 | 310,0 | 275,0 | 275,0 |
| Maximum operating pressure (psi) | 6500 | 6000 | 6000 | 5500 | 5100 | 4500 | 4000 | 4000 |
| Minimum burst pressure (bar) | 1792,0 | 1660,0 | 1660,0 | 1520,0 | 1400,0 | 1240,0 | 1100,0 | 1100,0 |
| Minimum burst pressure (psi) | 26000 | 24000 | 24000 | 22000 | 20400 | 18000 | 16000 | 16000 |
| Minimum bend radius (mm) | 62.00 | 90.00 | 100.00 | 120.00 | 150.00 | 210.00 | 250.00 | 315.00 |
| Minimum bend radius (inches) | 2.50 | 3.50 | 4.00 | 4.75 | 6.00 | 8.25 | 10.00 | 12.50 |
| Vacuum service (in./Hg) | | | | | | | | |
| Weight (kg/m) | 0.70 | 0.88 | 1.03 | 1.37 | 1.82 | 2.45 | 3.13 | 4.19 |

Construction

- Synthetic rubber tube, 4 spiral wire reinforcement and DURA TUFF rubber cover
- Yellow layline

Application

- Hydraulic system service with petroleum and water base fluids, for general industrial service

Operating temperature range

- 40°C to 127°C



Powering Business Worldwide

Hose

EC910 WATERBLAST

ISO 7751. AS/NZ4233.2.

EN1829-2 (Impulse)

Internal skive only



| Part Number | EC910 | | |
|----------------------------------|--------|--------|--------|
| | -08 | -12 | -16 |
| Dash Size | | | |
| Hose I.D. (inches) | 0.50 | 0.75 | 1.00 |
| Hose O.D (inches) | 0.97 | 1.29 | 1.59 |
| Maximum operating pressure (bar) | 1100,0 | 1000,0 | 690,0 |
| Maximum operating pressure (psi) | 16000 | 14500 | 10000 |
| Minimum burst pressure (bar) | 2750,0 | 2500,0 | 1725,0 |
| Minimum burst pressure (psi) | 40000 | 36250 | 25000 |
| Minimum bend radius (mm) | 228,6 | 279,4 | 304,0 |
| Minimum bend radius (inches) | 9.00 | 11.00 | 12.00 |
| Vacuum service (in./Hg) | | | |
| Weight (kg/m) | 1.12 | 1.75 | 2.25 |

Construction

- Synthetic rubber tube, 4 spiral wire reinforcement and synthetic rubber cover

Application

- High pressure waterblast

Operating temperature range

- -40°C to +93°C

GH506

EN 856 4SH

EN 856 4SH

4S crimp fittings



| Part Number | GH506 | | | | |
|----------------------------------|--------|--------|--------|--------|--------|
| | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | |
| Hose I.D. (inches) | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 1.27 | 1.51 | 1.79 | 2.11 | 2.68 |
| Maximum operating pressure (bar) | 420,0 | 420,0 | 350,0 | 300,0 | 250,0 |
| Maximum operating pressure (psi) | 6100 | 6100 | 5100 | 4350 | 3650 |
| Minimum burst pressure (bar) | 1680,0 | 1680,0 | 1400,0 | 1200,0 | 1000,0 |
| Minimum burst pressure (psi) | 24400 | 24400 | 20400 | 17400 | 14600 |
| Minimum bend radius (mm) | 280,0 | 340,0 | 460,0 | 560,0 | 700,0 |
| Minimum bend radius (inches) | 11.00 | 13.38 | 18.11 | 9.50 | 27.56 |
| Vacuum service (in./Hg) | | | | | |
| Weight (kg/m) | 0.65 | 2.25 | 2.50 | 3.90 | 4.80 |

Construction

- Synthetic rubber tube, 4 spiral wire reinforcement and synthetic rubber cover

Application

- High pressure hydraulic system service with petroleum, water glycol base fluids and general industrial service

Operating temperature range

- -40°C to +100°C

HOSE

HYDRAULIC

A9



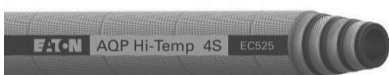
Powering Business Worldwide

Hose

EC525 AQP™ PLUS

Hi-Temp 4-spiral

4S crimp fittings



| Part Number | EC525 | | | | |
|----------------------------------|--------|--------|-------|-------|-------|
| | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | |
| Hose I.D. (inches) | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 1.24 | 1.52 | 1.87 | 2.16 | 2.70 |
| Maximum operating pressure (bar) | 345,0 | 345,0 | 240,0 | 240,0 | 225,0 |
| Maximum operating pressure (psi) | 5000 | 5000 | 3500 | 3500 | 3250 |
| Minimum burst pressure (bar) | 1380,0 | 1380,0 | 960,0 | 960,0 | 900,0 |
| Minimum burst pressure (psi) | 20000 | 20000 | 14000 | 14000 | 13000 |
| Minimum bend radius (mm) | 241,3 | 304,8 | 419,1 | 508,0 | 635,0 |
| Minimum bend radius (inches) | 9.50 | 12.00 | 16.50 | 20.00 | 25.00 |
| Vacuum service (in./Hg) | | | | | |
| Weight (kg/m) | 0.86 | 1.16 | 1.55 | 1.99 | 2.97 |

Construction

- AQP elastomer tube and cover
- 4-spiral wire hose construction

Application

- Hydraulic system service with petroleum, fire-resistant and water based fluids
- Fuel and lubricating systems
- For additional approved hydraulics fluids reference the fluid compatibility charts shown in Eaton catalogs

Operating temperature range

- -40°C to +150°C (-40°F to +302°F)

GH466

Six heavy spiral wire

6SP

6S spiral -20 & -24

1W skive fittings

*2 million FLEX impulse cycles
with 1W fitting



| Part Number | GH466 | | |
|----------------------------------|--------|--------|--------|
| | -20 | -24 | -32 |
| Dash Size | | | |
| Hose I.D. (inches) | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 1.94 | 2.26 | 2.82 |
| Maximum operating pressure (bar) | 420,0 | 420,0 | 420,0 |
| Maximum operating pressure (psi) | 6100 | 6100 | 6100 |
| Minimum burst pressure (bar) | 1680,0 | 1680,0 | 1680,0 |
| Minimum burst pressure (psi) | 24400 | 24400 | 24400 |
| Minimum bend radius (mm) | 420,0 | 510,0 | 630,0 |
| Minimum bend radius (inches) | 16.50 | 20.08 | 24.80 |
| Vacuum service (in./Hg) | | | |
| Weight (kg/m) | 3.48 | 4.63 | 4.50 |

Construction

- Synthetic rubber tube, 6 spiral wire reinforcement, synthetic rubber cover

Application

- High pressure hydraulics, hydrostatic transmissions

Operating temperature range

- -40°C to +121°C

HYDRAULIC

HOSE

A10



Powering Business Worldwide

Hose

FC500

Exceeds SAE100R13



1/2 SAE bend radius

SAE100R13

4S (-12 to -24)

6S (-32)

| Part Number | GH506 | | | | |
|----------------------------------|-------|-------|-------|-------|-------|
| | -12 | -16 | -20 | -24 | -32 |
| Dash Size | | | | | |
| Hose I.D. (inches) | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 1.25 | 1.54 | 1.85 | 2.17 | 2.86 |
| Maximum operating pressure (bar) | 350 | 350 | 350 | 350 | 350 |
| Maximum operating pressure (psi) | 5100 | 5100 | 5100 | 5100 | 5100 |
| Minimum burst pressure (bar) | 1500 | 1500 | 1500 | 1500 | 1500 |
| Minimum burst pressure (psi) | 20400 | 20400 | 20400 | 20400 | 20400 |
| Minimum bend radius (mm) | 121 | 152 | 210 | 254 | 476 |
| Minimum bend radius (inches) | 4.75 | 6.00 | 8.25 | 10.00 | 18.75 |
| Weight (kg/m) | 1.24 | 1.85 | 2.52 | 3.35 | 6.05 |

Construction

- Synthetic rubber tube, 4 spiral wire (-12 to -24), 6 spiral wire (-32) and DURA TUFF rubber cover

Application

- High pressure hydraulic system service with petroleum, water glycol base fluids and general industrial service

Operating temperature range

- -40°C to +127°C

FC606

Meets SAE 100R15



R15

6S crimp fittings

| Part Number | | | | | | |
|----------------------------------|--------|--------|--|--|--|--|
| | -16 | -20 | | | | |
| Dash Size | | | | | | |
| Hose I.D. (inches) | 1.00 | 1.25 | | | | |
| Hose O.D (inches) | 1.69 | 2.03 | | | | |
| Maximum operating pressure (bar) | 420 | 420 | | | | |
| Maximum operating pressure (psi) | 6090 | 6090 | | | | |
| Minimum burst pressure (bar) | 1680 | 1680 | | | | |
| Minimum burst pressure (psi) | 24360 | 24360 | | | | |
| Minimum bend radius (mm) | 305.00 | 410.00 | | | | |
| Minimum bend radius (inches) | 12.00 | 16.50 | | | | |
| Weight (kg/m) | 2.60 | 3.60 | | | | |

Construction

- Synthetic rubber tube, six spiral reinforcement and synthetic rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids,

Operating temperature range

- 40°C to 121°C

HOSE

HYDRAULIC

EC600
Exceeds SAE 100R15
1/2 SAE Bend Radius

R15
4S crimp fittings



| Part Number | | | | | | | | | |
|----------------------------------|------------|--|--|--|--|--|--|--|--|
| Dash Size | -12 | | | | | | | | |
| Hose I.D. (inches) | 0.75 | | | | | | | | |
| Hose O.D (inches) | 1.31 | | | | | | | | |
| Maximum operating pressure (bar) | 420 | | | | | | | | |
| Maximum operating pressure (psi) | 6100 | | | | | | | | |
| Minimum burst pressure (bar) | 1680 | | | | | | | | |
| Minimum burst pressure (psi) | 24400 | | | | | | | | |
| Minimum bend radius (mm) | 135 | | | | | | | | |
| Minimum bend radius (inches) | 5.31 | | | | | | | | |
| Weight (kg/m) | 1.52 | | | | | | | | |

Construction
• Synthetic rubber tube, six spiral reinforcement and DURA TUFF

Application
• Hydraulic system service with petroleum and water-glycol base fluids,

Operating temperature range
• 40°C to 127°C

FC300 AQP
Single wire braid
Exceeds SAE100R5
AQP Elastomer

SAE100R5 fittings



| Part Number | FC300 | | | | | | | | | | | |
|----------------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Dash Size | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32** | -40 |
| Hose I.D. (inches) | | 0.19 | 0.25 | 0.31 | 0.41 | 0.50 | 0.63 | 0.88 | 1.12 | 1.38 | 1.81 | 2.38 |
| Hose O.D (inches) | | 0.52 | 0.58 | 0.67 | 0.76 | 0.93 | 1.08 | 1.27 | 1.50 | 1.75 | 2.22 | 2.88 |
| Maximum operating pressure (bar) | | 210,0 | 210,0 | 157,0 | 140,0 | 122,0 | 105,0 | 56,0 | 43,0 | 35,0 | 21,0 | 21,0 |
| Maximum operating pressure (psi) | | 3000 | 3000 | 2250 | 2000 | 1750 | 1500 | 800 | 625 | 500 | 300 | 300 |
| Minimum burst pressure (bar) | | 840,0 | 840,0 | 630,0 | 560,0 | 490,0 | 420,0 | 224,0 | 175,0 | 140,0 | 84,0 | 84,0 |
| Minimum burst pressure (psi) | | 12000 | 12000 | 9000 | 8000 | 7000 | 6000 | 3200 | 2500 | 2000 | 1200 | 1200 |
| Minimum bend radius (mm) | | 76,2 | 85,9 | 101,6 | 117,3 | 139,7 | 165,1 | 187,5 | 228,6 | 266,7 | 336,6 | 609,6 |
| Minimum bend radius (inches) | | 3.00 | 3.38 | 4.00 | 4.62 | 5.50 | 6.50 | 7.38 | 9.00 | 10.50 | 13.25 | 24.00 |
| Vacuum service (in./Hg) | | 28 | 28 | 28 | 28 | 28 | 28 | 20† | 20† | 15† | 11† | 8† |
| Weight (kg/m) | | 0.19 | 0.24 | 0.34 | 0.39 | 0.55 | 0.69 | 0.66 | 0.78 | 1.00 | 1.40 | 2.24 |

†Maximum negative pressure shown for -16 and larger are suitable for those which has suffered no external damage or kinking. If greater negative pressures are required for -16 and larger hoses, the use of an internal support coil is recommended.

Construction
• AQP elastomer tube, polyester inner braid, single wire braid reinforcement and blue polyester braid cover

Application
• Hydraulics handling petroleum base fluids and air, 91 octane fuel, diesel and lubricating oils, fire resistant hydraulic fluids and other industrial fluids

Operating temperature range
• -49°C to +150°C
• Air not to exceed +121°C

FC350 AQP
FMVSS106

Engine & Airbrake
SAE100R5 fittings



| Part Number | FC350 | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.19 | 0.25 | 0.31 | 0.41 | 0.50 | 0.63 | 0.88 | 1.12 | 1.38 |
| Hose O.D (inches) | 0.52 | 0.58 | 0.68 | 0.77 | 0.94 | 1.08 | 1.23 | 1.50 | 1.75 |
| Maximum operating pressure (bar) | 140,0 | 105,0 | 105,0 | 87,0 | 87,0 | 52,0 | 28,0 | 21,0 | 17,0 |
| Maximum operating pressure (psi) | 2000 | 1500 | 1500 | 1250 | 1250 | 750 | 400 | 300 | 250 |
| Minimum burst pressure (bar) | 560,0 | 420,0 | 420,0 | 350,0 | 350,0 | 210,0 | 112,0 | 84,0 | 70,0 |
| Minimum burst pressure (psi) | 8000 | 6000 | 6000 | 5000 | 5000 | 3000 | 1600 | 1200 | 1000 |
| Minimum bend radius (mm) | 19,1 | 25,4 | 31,8 | 44,5 | 57,2 | 69,9 | 88,9 | 114,3 | 139,7 |
| Minimum bend radius (inches) | 0.75 | 1.00 | 1.25 | 1.75 | 2.25 | 2.75 | 3.50 | 4.50 | 5.50 |
| Vacuum service (in./Hg) | 28 | 28 | 28 | 28 | 28 | 20 | 15 | 15 | 11 |

Construction

- AQP elastomer tube, polyester inner braid, single wire braid reinforcement and black polyester braid cover

Application

- Hydraulics, fuel and lubricating oils, air and water

Operating temperature range

- -49°C to +150°C
- Except air +121°C

2807 Teflon
Teflon/Stainless steel
SAE100R14A

SAE 100R14A
Reusable fittings
Crimp fittings



| Part Number | 2807 | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.14 | 0.19 | 0.26 | 0.32 | 0.42 | 0.51 | 0.64 | 0.88 | 1.12 |
| Hose O.D (inches) | 0.25 | 0.30 | 0.37 | 0.43 | 0.54 | 0.63 | 0.76 | 1.03 | 1.29 |
| Maximum operating pressure (bar) | 210,0 | 210,0 | 210,0 | 175,0 | 140,0 | 105,0 | 84,0 | 70,0 | 43,0 |
| Maximum operating pressure (psi) | 3000 | 3000 | 3000 | 2500 | 2000 | 1500 | 1200 | 1000 | 625 |
| Minimum burst pressure (bar) | 840,0 | 840,0 | 840,0 | 700,0 | 560,0 | 420,0 | 335,0 | 280,0 | 175,0 |
| Minimum burst pressure (psi) | 12000 | 12000 | 12000 | 10000 | 8000 | 6000 | 4800 | 4000 | 2500 |
| Minimum bend radius (mm) | 38,1 | 50,8 | 76,2 | 101,6 | 133,4 | 165,1 | 196,9 | 228,6 | 406,4 |
| Minimum bend radius (inches) | 1.50 | 2.00 | 3.00 | 4.00 | 5.25 | 6.50 | 7.75 | 9.00 | 16.00 |
| Vacuum service (in./Hg) | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 12 | 12 |
| Weight (kg/m) | 0.06 | 0.09 | 0.12 | 0.15 | 0.18 | 0.24 | 0.27 | 0.39 | 0.51 |

Maximum negative pressure for -06 and larger are suitable for hose which has suffered no external damage or kinking. If greater negative pressures are required for -06 and larger hoses, the use of an internal support coil is recommended. Use of an internal support coil in -06 and larger PTFE hose is recommended for tube support where extended or continuous service at high temperature together with low or negative pressure is expected.

Construction

- Extruded Teflon tube with stainless steel single wire braid reinforcement

Application

- Hot air, compressor discharge and most chemical applications
- Not recommended for steam-cold water cycling

Operating temperature range

- -73°C to +260°C



Powering Business Worldwide

Hose

1503

Single wire braid

SAE100R5 fittings

Exceeds SAE100R5



| Part Number | 1503 | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Dash Size | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 |
| Hose I.D. (inches) | 0.19 | 0.25 | 0.31 | 0.41 | 0.50 | 0.63 | 0.88 | 1.12 | 1.38 |
| Hose O.D (inches) | 0.52 | 0.58 | 0.68 | 0.77 | 0.92 | 1.08 | 1.23 | 1.50 | 1.75 |
| Maximum operating pressure (bar) | 210,0 | 210,0 | 157,0 | 140,0 | 122,0 | 105,0 | 56,0 | 43,0 | 35,0 |
| Maximum operating pressure (psi) | 3000 | 3000 | 2250 | 2000 | 1750 | 1500 | 800 | 625 | 500 |
| Minimum burst pressure (bar) | 840,0 | 840,0 | 630,0 | 560,0 | 490,0 | 420,0 | 224,0 | 175,0 | 140,0 |
| Minimum burst pressure (psi) | 12000 | 12000 | 9000 | 8000 | 7000 | 6000 | 3200 | 2500 | 2000 |
| Minimum bend radius (mm) | 76,2 | 85,9 | 101,6 | 117,3 | 139,7 | 165,1 | 187,5 | 228,6 | 266,7 |
| Minimum bend radius (inches) | 3.00 | 3.38 | 4.00 | 4.62 | 5.50 | 6.50 | 7.38 | 9.00 | 10.50 |
| Vacuum service (in./Hg) | 28 | 28 | 28 | 28 | 28 | 28 | 20† | 20† | 15† |
| Weight (kg/m) | 0.19 | 0.24 | 0.34 | 0.39 | 0.55 | 0.69 | 0.66 | 0.78 | 1.00 |

†Maximum negative pressures shown for -16 and larger are suitable only for those which has suffered no external damage or kinking. If greater negative pressures are required for -16 and larger hoses, the use of an internal support coil is recommended.

Construction

- Elastomer tube, polyester inner braid, single wire braid reinforcement and black polyester braid cover

Application

- Hydraulics handling petroleum base fluids, air, diesel and lubricating oils

Operating temperature range

- -49°C to +100°C

2556 Socketless

SAE 30R2 Type 1

Textile

Socketless fittings



| Part Number | 2556 | | | | |
|----------------------------------|------|------|-------|-------|-------|
| Dash Size | -04 | -06 | -08 | -10 | -12 |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 |
| Hose O.D (inches) | 0.49 | 0.62 | 0.75 | 0.91 | 1.03 |
| Maximum operating pressure (bar) | 25,0 | 21,0 | 21,0 | 17,0 | 17,0 |
| Maximum operating pressure (psi) | 360 | 300 | 300 | 250 | 250 |
| Minimum burst pressure (bar) | 99,0 | 84,0 | 84,0 | 70,0 | 70,0 |
| Minimum burst pressure (psi) | 1440 | 1200 | 1200 | 1000 | 1000 |
| Minimum bend radius (mm) | 76,2 | 76,2 | 127,0 | 152,4 | 177,8 |
| Minimum bend radius (inches) | 3.00 | 3.00 | 5.00 | 6.00 | 7.00 |
| Vacuum service (in./Hg) | 28 | 28 | 28 | 18 | 18 |
| Weight (kg/m) | 0.12 | 0.18 | 0.22 | 0.30 | 0.42 |

Construction

- Elastomer tube, textile braid reinforcement, black elastomer cover

Application

- For diesel , lubricating oils, air and water

Operating temperature range

- -40°C to +100°C

HYDRAULIC

HOSE



Powering Business Worldwide

Hose

FC332 Socketless AQP

Textile

Socketless fittings



| Part Number | FC332 | | | | | |
|----------------------------------|-----------|------|------|-------|-------|-------|
| | Dash Size | -04 | -06 | -08 | -10 | -12 |
| Hose I.D. (inches) | | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 |
| Hose O.D (inches) | | 0.49 | 0.63 | 0.75 | 0.91 | 1.04 |
| Maximum operating pressure (bar) | | 20,0 | 20,0 | 20,0 | 20,0 | 20,0 |
| Maximum operating pressure (psi) | | 300 | 300 | 300 | 300 | 300 |
| Minimum burst pressure (bar) | | 82,0 | 82,0 | 82,0 | 82,0 | 82,0 |
| Minimum burst pressure (psi) | | 1200 | 1200 | 1200 | 1200 | 1200 |
| Minimum bend radius (mm) | | 76,2 | 76,2 | 127,0 | 152,4 | 177,8 |
| Minimum bend radius (inches) | | 3.00 | 3.00 | 5.00 | 6.00 | 7.00 |
| Vacuum service (in./Hg) | | 28 | 28 | 28 | 18 | 18 |
| Weight (kg/m) | | 0.12 | 0.18 | 0.22 | 0.30 | 0.42 |

Construction

- AQP elastomer tube, textile braid reinforcement, AQP elastomer cover

Application

For 91 octane fuel, diesel and lubricating oils, air and water
Not recommended for impulsing applications

Operating temperature range

- -40°C to +150°C
- Except air +121°C, water +82°C

FC558 R134a Refrigerant

SAE J2064 Type B Class 1

SAE J2064 Type B Class 1

SAE100R5 fittings



| Part Number | FC558 | | | | | |
|----------------------------------|-----------|-------|-------|-------|-------|-------|
| | Dash Size | -10 | -12 | -16 | -20 | -24 |
| Hose I.D. (inches) | | 0.50 | 0.63 | 0.88 | 1.12 | 1.38 |
| Hose O.D (inches) | | 0.92 | 1.06 | 1.24 | 1.51 | 1.75 |
| Maximum operating pressure (bar) | | | | | | |
| Maximum operating pressure (psi) | | 500 | 500 | 500 | 500 | 500 |
| Minimum burst pressure (bar) | | | | | | |
| Minimum burst pressure (psi) | | 2500 | 2500 | 2500 | 2500 | 2500 |
| Minimum bend radius (mm) | | 139,0 | 165,0 | 187,0 | 229,0 | 267,0 |
| Minimum bend radius (inches) | | 5.50 | 6.50 | 7.38 | 9.00 | 10.50 |
| Vacuum service (in./Hg) | | 28 | 28 | 28 | 28 | 28 |
| Weight (kg/m) | | 0.49 | 0.61 | 0.70 | 0.85 | 1.03 |

Construction

- Butyl rubber tube, single wire braid reinforcement and textile braid cover

Application

- Designed for applications using refrigerant R134a only

Operating temperature range

- -40°C to +121°C

HOSE

HYDRAULIC



Powering Business Worldwide

Hose

FC619 Suction/Transfer

Wire inserted suction

SAE100R4

1/2 SAE Bend Radius



SAE100R4

TTC crimp fittings

| Part Number | FC619 | | | | | |
|----------------------------------|-----------|------|------|-------|-------|-------|
| | Dash Size | -12 | -16 | -20 | -24 | -32 |
| Hose I.D. (inches) | | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | | 1.21 | 1.48 | 1.75 | 2.04 | 2.55 |
| Maximum operating pressure (bar) | | 21,0 | 17,0 | 14,0 | 10,5 | 7,0 |
| Maximum operating pressure (psi) | | 300† | 250† | 200† | 150† | 100† |
| Minimum burst pressure (bar) | | 84,0 | 70,0 | 56,0 | 42,0 | 28,0 |
| Minimum burst pressure (psi) | | 1200 | 1000 | 800 | 600 | 400 |
| Minimum bend radius (mm) | | 63,5 | 76,2 | 102,0 | 127,0 | 152,4 |
| Minimum bend radius (inches) | | 2.50 | 3.00 | 4.00 | 5.00 | 6.00 |
| Vacuum service (in./Hg) | | 25 | 25 | 25 | 25 | 25 |
| Weight (kg/m) | | 0.69 | 0.83 | 1.16 | 1.49 | 1.83 |

† Maximum working pressure for band clamp type fittings is 3,4 bar [50 psi].

Construction

• Synthetic rubber tube, reinforcement consisting of a helical wire between two textile braids and a synthetic rubber cover

Application

• Suction and transfer applications for hydraulic fluids, fuel, lubricating oils, gasoline and water

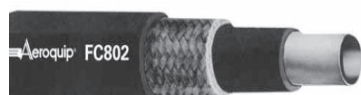
Operating temperature range

• -40°C to +135°C

FC802 Multi refrigerant

SAE J51 type D

SAE100R5 fittings



| Part Number | FC802 | | | | | |
|----------------------------------|-----------|------|------|------|------|-------|
| | Dash Size | -04 | -06 | -08 | -10 | -12 |
| Hose I.D. (inches) | | 0.20 | 0.33 | 0.42 | 0.52 | 0.65 |
| Hose O.D (inches) | | 0.52 | 0.68 | 0.77 | 0.92 | 1.08 |
| Maximum operating pressure (bar) | | | | | | |
| Maximum operating pressure (psi) | | 500 | 500 | 500 | 500 | 500 |
| Minimum burst pressure (bar) | | | | | | |
| Minimum burst pressure (psi) | | 2500 | 2500 | 2500 | 2500 | 2500 |
| Minimum bend radius (mm) | | 50,8 | 63,5 | 76,2 | 88,9 | 114,3 |
| Minimum bend radius (inches) | | 2.00 | 2.50 | 3.00 | 3.50 | 4.50 |
| Vacuum service (in./Hg) | | 25 | 25 | 25 | 25 | 25 |
| Weight (kg/m) | | 0.16 | 0.24 | 0.27 | 0.43 | 0.52 |

Construction

• Polyamide-vaneer tube, synthetic braid reinforcement, synthetic rubber backing layer & bromobutyl cover

Application

• Designed for applications using refrigerant R12, R22, R134a & R502

Operating temperature range

• -40°C to +121°C

HYDRAULIC

HOSE

FC234 Fuel/Oil

Fire resistant USCG/MMT. NMMA/BIA

SAE100R5 fittings



| Part Number | FC234 | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|
| | -05 | -06 | -08 | -10 | -12 | -16 |
| Dash Size | | | | | | |
| Hose I.D. (inches) | 0.25 | 0.31 | 0.41 | 0.50 | 0.63 | 0.88 |
| Hose O.D (inches) | 0.58 | 0.68 | 0.76 | 0.94 | 1.08 | 1.24 |
| Maximum operating pressure (bar) | 105,0 | 105,0 | 87,0 | 87,0 | 52,0 | 52,0 |
| Maximum operating pressure (psi) | 1500 | 1500 | 1250 | 1250 | 750 | 400 |
| Minimum burst pressure (bar) | 420,0 | 420,0 | 350,0 | 350,0 | 210,0 | 112,0 |
| Minimum burst pressure (psi) | 6000 | 6000 | 5000 | 5000 | 3000 | 1600 |
| Minimum bend radius (mm) | 25,4 | 31,8 | 44,5 | 57,2 | 69,9 | 88,9 |
| Minimum bend radius (inches) | 1.00 | 1.25 | 1.75 | 2.25 | 2.75 | 3.50 |
| Vacuum service (in./Hg) | 28 | 28 | 28 | 28 | 20 | 16 |
| Weight (kg/m) | 0.33 | 0.37 | 0.45 | 0.67 | 0.72 | 0.76 |

Construction

• AQP elastomer tube, brass plated steel wire braid reinforcement, braided refractory insulation and blue AQP elastomer cover

Application

• Diesel fuel, gasoline, hot lube oil and water

Operating temperature range

• -40°C to +150°C

FBA AQP Racing hose

Reusable & Crimp fittings



| Part Number | FBA | | | | | | | | |
|----------------------------------|------|------|------|------|------|------|------|------|-------|
| | 0400 | 0600 | 0800 | 1000 | 1200 | 1600 | 2000 | 2400 | 3200 |
| Dash Size | | | | | | | | | |
| Hose I.D. (inches) | 0.22 | 0.34 | 0.44 | 0.56 | 0.69 | 0.88 | 1.13 | 1.34 | 1.75 |
| Hose O.D (inches) | 0.44 | 0.55 | 0.65 | 0.80 | 0.94 | 1.15 | 1.41 | 1.70 | 2.09 |
| Maximum operating pressure (bar) | | | | | | | | | |
| Maximum operating pressure (psi) | 1000 | 1000 | 1000 | 1000 | 1000 | 750 | 500 | 50 | 50 |
| Minimum burst pressure (bar) | | | | | | | | | |
| Minimum burst pressure (psi) | | | | | | | | | |
| Minimum bend radius (mm) | | | | | | | | | |
| Minimum bend radius (inches) | 2.00 | 2.50 | 3.50 | 4.00 | 4.50 | 5.50 | 8.00 | 9.00 | 12.50 |
| Vacuum service (in./Hg) | 21 | 21 | 21 | 28 | 28 | 28 | 21 | 21 | 15 |
| Weight (kg/m) | 0.16 | 0.24 | 0.25 | 0.31 | 0.43 | 0.57 | 0.57 | 0.57 | 1.46 |

Construction

• AQP elastomer tube with stainless steel braid for high performance

Application

• Fuels, lube, coolant & air

Operating temperature range

• -49°C to +150°C

GH134/EC505

SAE J2064 Type E Class 1
E-Z clip fittingsE



| Part Number | EC505 | | GH134 | | |
|----------------------------------|-------|------|-------|-------|-------|
| | -04 | -06 | -08 | -10 | -12 |
| Dash Size | | | | | |
| Hose I.D. (inches) | 0.20 | 0.31 | 0.41 | 0.50 | 0.63 |
| Hose O.D (inches) | 0.44 | 0.58 | 0.70 | 0.78 | 0.98 |
| Maximum operating pressure (bar) | | | | | |
| Maximum operating pressure (psi) | 500 | 500 | 500 | 500 | 500 |
| Minimum burst pressure (bar) | | | | | |
| Minimum burst pressure (psi) | 2500 | 2500 | 2500 | 2500 | 2500 |
| Minimum bend radius (mm) | 50,0 | 63,5 | 76,2 | 101,6 | 127,0 |
| Minimum bend radius (inches) | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
| Vacuum service (in./Hg) | | | | | |
| Weight (kg/m) | 0.07 | 0.13 | 0.18 | 0.22 | 0.27 |

Construction

- Nylon veneer tube, stabilized synthetic braided reinforcement and chlorobutyl rubber cover

Application

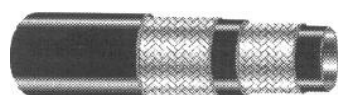
- Transportation refrigeration and air conditioning systems using R-134a, R12, R22, R404 and R407

Operating temperature range

- -40°C to +135°C

2555 Power steering

Reusable fittings



| Part Number | 2555 |
|----------------------------------|------|
| Dash Size | -06 |
| Hose I.D. (inches) | 0.38 |
| Hose O.D (inches) | 0.76 |
| Maximum operating pressure (bar) | |
| Maximum operating pressure (psi) | 1125 |
| Minimum burst pressure (bar) | |
| Minimum burst pressure (psi) | 4500 |
| Minimum bend radius (mm) | |
| Minimum bend radius (inches) | 4.00 |
| Vacuum service (in./Hg) | |
| Weight (kg/m) | 0.30 |

Construction

- Synthetic rubber tube, double textile braid reinforcement & synthetic rubber cover

Application

- Power steering

Operating temperature range

- -49°C to +100°C

SC-GTW

LPG Hose - Conforms to AS1869 Class G

Refer Eaton for fittings



| Part Number | SC-GTW | | | | | |
|----------------------------------|--------|-------|--|--|--|--|
| | -6 | -10 | | | | |
| Dash Size | | | | | | |
| Hose I.D. (inches) | 0.31 | 0.50 | | | | |
| Hose O.D (inches) | 0.54 | 0.75 | | | | |
| Maximum operating pressure (bar) | 26.00 | 26.00 | | | | |
| Maximum operating pressure (psi) | 377 | 377 | | | | |
| Minimum burst pressure (bar) | 104 | 104 | | | | |
| Minimum burst pressure (psi) | 1508 | 1508 | | | | |
| Minimum bend radius (mm) | 102.5 | 165 | | | | |
| Minimum bend radius (inches) | 4.00 | 6.50 | | | | |
| Weight (kg/m) | 0.18 | 0.27 | | | | |

Construction

• Conductive teflon tube, single stainless steel wire braid, with fire retardent black and blue polyester cover

Application

• Designed for butane, propane, natural & town gas applications

Operating temperature range

• -25°C to +125°C

3130 Synflex medium pressure

Crimp fittings



| Part Number | 3130 | | | | | | | |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | -02 | -03 | -04 | -05 | -06 | -08 | -12 | -16 |
| Dash Size | | | | | | | | |
| Hose I.D. (inches) | 0.13 | 0.19 | 0.25 | 0.31 | 0.38 | 0.50 | 0.75 | 1.00 |
| Hose O.D (inches) | 0.34 | 0.43 | 0.51 | 0.59 | 0.67 | 0.82 | 1.07 | 1.34 |
| Maximum operating pressure (bar) | 172 | 207 | 207 | 172 | 155 | 138 | 86 | 69 |
| Maximum operating pressure (psi) | 2500 | 3000 | 3000 | 2500 | 2250 | 2000 | 1250 | 1000 |
| Minimum burst pressure (bar) | 689 | 827 | 759 | 689 | 620 | 620 | 345 | 276 |
| Minimum burst pressure (psi) | 10000 | 12000 | 12000 | 10000 | 9000 | 8000 | 5000 | 4000 |
| Minimum bend radius (mm) | 13,0 | 19,0 | 32,0 | 44,0 | 51,0 | 76,0 | 127,0 | 203,0 |
| Minimum bend radius (inches) | 0.50 | 0.75 | 1.25 | 1.75 | 2.00 | 3.00 | 5.00 | 8.00 |
| Vacuum service (in./Hg) | | | | | | | | |
| Weight (kg/100m) | 3.70 | 6.80 | 8.50 | 10.30 | 14.10 | 21.00 | 28.70 | 39.30 |

Construction

• Black perforated polyurethane cover, spiral or braided synthetic fiber reinforcement and nylon lined core tube

Application

• General Hydraulics, material handling, high pressure gas & chemical transfer

Operating temperature range

• -49°C to +100°C or 66°C with water - based fire-resistant fluids

3800 Synflex high pressure

SAE 100R8

Crimp fittings



| Part Number | 3800 | | | | |
|----------------------------------|-------|-------|-------|-------|-------|
| Dash Size | -02 | -03 | -04 | -06 | -08 |
| Hose I.D. (inches) | 0.13 | 0.19 | 0.25 | 0.38 | 0.50 |
| Hose O.D (inches) | 0.34 | 0.43 | 0.53 | 0.67 | 0.84 |
| Maximum operating pressure (bar) | 413 | 345 | 345 | 276 | 240 |
| Maximum operating pressure (psi) | 6000 | 5000 | 5000 | 4000 | 3500 |
| Minimum burst pressure (bar) | 1655 | 1379 | 1379 | 1103 | 965 |
| Minimum burst pressure (psi) | 24000 | 20000 | 20000 | 16000 | 14000 |
| Minimum bend radius (mm) | 20,0 | 20,0 | 51,0 | 64,0 | 102,0 |
| Minimum bend radius (inches) | 0.81 | 1.50 | 2.00 | 2.50 | 4.00 |
| Vacuum service (in./Hg) | | | | | |
| Weight (kg/100m) | 4.80 | 8.30 | 11.80 | 15.80 | 21.70 |

Construction

- Black perforated polyurethane cover, braided high tensile aramid fiber reinforcement and nylon lined core tube

Application

- Fuels, lube, coolant & air

Operating temperature range

- -40°C to +100°C or 66°C with water-based fire-resistant fluids

37AL

Medium pressure hose, non-conductive

Crimp fittings

Meets or exceeds SAE 100R7

Meets ANSI 92.2



| Part Number | 37AL | | | | |
|---|-------|-------|--------|-------|-------|
| Dash Size | -03 | -04 | -05 | -06 | -08 |
| Hose I.D. (inches) | 0.19 | 0.25 | 0.31 | 0.38 | 0.50 |
| Hose O.D (inches) | 0.43 | 0.49 | 0.58 | 0.64 | 0.82 |
| Maximum operating pressure (bar) - ANSI A92.2 | 207 | 207 | 207 | 207 | 207 |
| Maximum operating pressure (psi) - ANSI A92.2 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Maximum operating pressure (bar) - SAE 100R7 | 207 | 207 | 172 | 155 | 155 |
| Maximum operating pressure (psi) - SAE 100R7 | 3,000 | 2,750 | 2,500 | 2,250 | 2,250 |
| Minimum burst pressure (bar) | 827 | 759 | 689 | 620 | 620 |
| Minimum burst pressure (psi) | 12000 | 2,750 | 10,000 | 9,000 | 9,000 |
| Minimum bend radius (mm) | 19,0 | 32,0 | 44,0 | 51,0 | 76,0 |
| Minimum bend radius (inches) | 0.40 | 1.30 | 1.80 | 2.00 | 3.00 |
| Vacuum service (in./Hg) | | | | | |
| Weight (kg/100m) | 0.05 | 0.06 | 0.08 | 0.10 | 0.14 |

Construction

- Tube: Polyester
- Reinforcement: Braided synthetic fiber
- Cover: Orange, non perforated, non-slick polyurethane

Application

- Electric utility truck, Hydraulic systems, Mobile equipment (pickers, utility vehicles)

Operating temperature range

- -54°C to +100°C (-65°F to +212°F) or -40°C to +60°C (-40°F to +140°F) with water-based or fire-resistant fluids
- Change in working length at working PSI ±2%

Features

- SAE J517 non-conductive hose construction
- Complies with ANSI A92.2 for vehicle-mounted, aerial devices (i.e., AL)
- Less than 50 microamperes leakage when subjected to 75,000 volts/ft for five minutes



Powering Business Worldwide

Hose

30CT

Constant pressure

Meets or exceeds SAE 100R18

Crimp fittings



| Part Number | 30CT | | | | | | |
|----------------------------------|-----------|-------|-------|-------|--------|--------|--------|
| | Dash Size | -03 | -04 | -05 | -06 | -08 | -10 |
| Hose I.D. (inches) | | 0.19 | 0.25 | 0.31 | 0.38 | 0.50 | 0.63 |
| Hose O.D (inches) | | 0.42 | 0.48 | 0.61 | 0.66 | 0.85 | 1.06 |
| Maximum operating pressure (bar) | | 210 | 210 | 210 | 210 | 210 | 210 |
| Maximum operating pressure (psi) | | 3,050 | 3,050 | 3,050 | 3,050 | 3,050 | 3,050 |
| Minimum burst pressure (bar) | | 840 | 840 | 840 | 840 | 840 | 840 |
| Minimum burst pressure (psi) | | 12200 | 12200 | 12200 | 12,200 | 12,200 | 12,200 |
| Minimum bend radius (mm) | | 25,4 | 31,8 | 38,1 | 50,8 | 88,9 | 101,6 |
| Minimum bend radius (inches) | | 1.00 | 1.25 | 1.50 | 2.00 | 3.50 | 4.00 |
| Vacuum service (in./Hg) | | | | | | | |
| Weight (kg/100m) | | 0.05 | 0.06 | 0.10 | 0.12 | 0.17 | 0.28 |

Construction

- Tube: Polyester
- Reinforcement: Braided synthetic fiber
- Cover: Black perforated, non-stick polyester

Features

- Highly flexible, even in cold temperatures
- Small outside diameter
- Lightweight, yet rugged construction

Application

- Forklifts, Construction, General hydraulics, Chemical and gas transfer, Agricultural equipment, Material handling, Freezer applications, Machines tools and robotics, Lubrication equipment, Portable hydraulic tools

Operating temperature range

- -54°C to +100°C (-65°F to +200°F) or -54°C to +66°C (-65°F to +150°F) with water-based or fire-resistant fluids
- Change in working length at working PSI \pm 2%

3V10

Very high pressure

Crimp fittings



| Part Number | 3V10 | | | |
|----------------------------------|-----------|--------|--------|--------|
| | Dash Size | -03 | -04 | -06 |
| Hose I.D (inches) | | 0.19 | 0.25 | 0.38 |
| Hose O.D (inches) | | 0.52 | 0.60 | 0.78 |
| Maximum operating pressure (bar) | | 689 | 689 | 552 |
| Maximum operating pressure (psi) | | 10000 | 10,000 | 8,000 |
| Minimum burst pressure (bar) | | 2,758 | 2,758 | 2,205 |
| Minimum burst pressure (psi) | | 40,000 | 40,000 | 32,000 |
| Minimum bend radius (mm) | | 38,0 | 64,0 | 76,0 |
| Minimum bend radius (inches) | | 1.50 | 2.50 | 3.00 |
| Vacuum service (in./Hg) | | | | |
| Weight (kg/100m) | | 0.08 | 0.11 | 0.16 |

Construction

- Tube: Nylon-lined
- Reinforcement: Spiral, hightensile aramid fiber
- Cover: Black, perforated polyurethane

Features

- Compact size
- Lightweight
- Low elongation

Application

- High-pressure hydraulic tools, Rescue equipment and tools, High-pressure test equipment

Operating temperature range

- -40°C to +66°C (-40°F to +150° F)
- Change in working length at working PSI \pm 2%



Powering Business Worldwide

Hose

3VE0

Very high pressure, non-conductive

Crimp fittings



| Part Number | 3VE0 | | | |
|----------------------------------|-----------|--------|--------|--------|
| | Dash Size | -03 | -04 | -06 |
| Hose I.D. (inches) | | 0.19 | 0.25 | 0.38 |
| Hose O.D (inches) | | 0.52 | 0.60 | 0.78 |
| Maximum operating pressure (bar) | | 689 | 689 | 551 |
| Maximum operating pressure (psi) | | 10000 | 10000 | 8,000 |
| Minimum burst pressure (bar) | | 2,758 | 2,758 | 2,206 |
| Minimum burst pressure (psi) | | 40,000 | 40,000 | 32,000 |
| Minimum bend radius (mm) | | 38,0 | 64,0 | 76,0 |
| Minimum bend radius (inches) | | 1.50 | 2.50 | 3.00 |
| Vacuum service (in./Hg) | | | | |
| Weight (kg/100m) | | 0.08 | 0.11 | 0.16 |

Construction

- Tube: Nylon-lined
- Spiral high-tensile aramid fiber
- Cover: Orange, non-perforated polyurethane

Application

- General hydraulic systems that may contact high voltage sources, Rescue equipment and tools, Mobile machinery, Aerial equipment

Operating temperature range

- -40°C to +66°C (-40°F to +150° F)
- Change in working length at working PSI ±2%

Features

- SAE J517 non-conductive hose construction. Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for five minutes

3740

Medium pressure hose, non-conductive

Crimp fittings

Meets or exceeds SAE 100R7



| Part Number | 3740 | | |
|----------------------------------|-----------|-------|-------|
| | Dash Size | -12 | -16 |
| Hose I.D. (inches) | | 0.75 | 1.00 |
| Hose O.D (inches) | | 1.07 | 1.34 |
| Maximum operating pressure (bar) | | 86 | 86 |
| Maximum operating pressure (psi) | | 1,250 | 1,000 |
| Minimum burst pressure (bar) | | 345 | 345 |
| Minimum burst pressure (psi) | | 5,000 | 4,000 |
| Minimum bend radius (mm) | | 5,0 | 5,0 |
| Minimum bend radius (inches) | | 127.0 | 203.0 |
| Vacuum service (in./Hg) | | | |
| Weight (kg/100m) | | 0.19 | 0.26 |

- ### Construction
- Tube: Nylon-lined
 - Reinforcement: Braided synthetic fiber
 - Cover: Orange non-perforated polyurethane

Application

- General hydraulic systems that may contact high voltage sources, Aerial equipment, Mobile hydraulics, Rescue apparatus and tools

Operating temperature range

- -40°C to +100°C (-40°F to +212°F) or -40°C to +60°C (-40°F to +140°F) with water-based or fire-resistant fluids
- Change in working length at working PSI ±2%

Features

- SAE J517 non-conductive hose construction
- Less than 50 microamperes leakage when subjected to 75,000 volts/ft for five minutes

HYDRAULIC

HOSE



Powering Business Worldwide

Hose

HOSE

3R80

High pressure

Meets or exceeds SAE 100R8

Crimp fittings



| Part Number | 3R80 | | | | | |
|----------------------------------|-----------|--------|--------|--------|-------|-------|
| | Dash Size | -03 | -04 | -06 | -08 | -12 |
| Hose I.D. (inches) | 0.19 | 0.25 | 0.38 | 0.50 | 0.75 | 1.00 |
| Hose O.D (inches) | 0.52 | 0.63 | 0.77 | 0.90 | 1.14 | 1.47 |
| Maximum operating pressure (bar) | 350 | 350 | 350 | 350 | 350 | 350 |
| Maximum operating pressure (psi) | 5,100 | 5,100 | 4,050 | 3,550 | 2,300 | 2,050 |
| Minimum burst pressure (bar) | 1,400 | 1,400 | 1,120 | 980 | 628 | 560 |
| Minimum burst pressure (psi) | 20400 | 20,400 | 16,200 | 14,200 | 9,200 | 8,200 |
| Minimum bend radius (mm) | 38,0 | 51,0 | 64,0 | 102,0 | 165,0 | 254,0 |
| Minimum bend radius (inches) | 1.50 | 2.00 | 2.50 | 4.00 | 6.50 | 10.00 |
| Vacuum service (in./Hg) | | | | | | |
| Weight (kg/100m) | 0.08 | 0.12 | 0.15 | 0.19 | 0.26 | 0.39 |

Construction

- Tube: Nylon
- Reinforcement: Braided synthetic fiber
- Cover: Black perforated polyurethane

Application

- General hydraulic systems, Hydraulic tools, Mobile equipment, High-pressure chemical transfer

Operating temperature range

- -40°C to +100°C (-40°F to +212°F) or -40°C to +66°C (-40°F to +150°F) with water-based or fire-resistant fluids
- Change in working length at working PSI ±2%

3E80

High pressure, non-conductive

Meets or exceeds SAE 100R8

Crimp fittings



| Part Number | 3E80 | | | | | |
|----------------------------------|-----------|--------|--------|--------|-------|-------|
| | Dash Size | -03 | -04 | -06 | -08 | -12‡ |
| Hose I.D. (inches) | 0.19 | 0.25 | 0.38 | 0.50 | 0.75 | 1.00 |
| Hose O.D (inches) | 0.52 | 0.63 | 0.77 | 0.90 | 1.14 | 1.47 |
| Maximum operating pressure (bar) | 350 | 350 | 280 | 245 | 157 | 140 |
| Maximum operating pressure (psi) | 5,100 | 5,100 | 4,050 | 3,550 | 2,300 | 2,050 |
| Minimum burst pressure (bar) | 1,400 | 1,400 | 1,120 | 980 | 628 | 560 |
| Minimum burst pressure (psi) | 20,400 | 20,400 | 16,200 | 14,200 | 9,200 | 8,200 |
| Minimum bend radius (mm) | 38,0 | 51,0 | 51,0 | 102,0 | 165,0 | 254,0 |
| Minimum bend radius (inches) | 1.50 | 2.00 | 2.50 | 4.00 | 6.50 | 10.00 |
| Vacuum service (in./Hg) | | | | | | |
| Weight (kg/100m) | 0.08 | 0.12 | 0.15 | 0.19 | 0.26 | 0.39 |

‡Run to order (RTO) hose. Contact your Eaton customer service representative for details.

Construction

- Tube: Nylon
- Reinforcement: Braided synthetic fiber
- Cover: Orange, non-perforated polyurethane

Application

- General hydraulic systems that may contact high voltage sources, Aerial equipment, Mobile machinery, Rescue tools

Operating temperature range

- -40°C to +100°C (-40°F to +212°F) or -40°C to +66°C (-40°F to +150°F) with water-based or fire-resistant fluids
- Change in working length at working PSI ±2%

Features

- SAE J517 non-conductive hose construction
- Less than 50 micro-amperes leakage when subjected to 75,000 volts/ft for five minutes

HYDRAULIC



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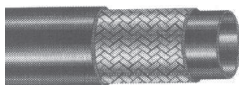
Hose

D2800W

Single wire braid meets EN853 Type 1SN

ISO 1436-1, Type 1SN

Exceeds SAE 100R1AT performance



R1AT/1SN

TTC crimp fittings

Reusable fittings-R1AT Socket

| Part Number | D2800W | | | | | | | | |
|----------------------------------|-----------|-------|------|------|-------|-------|-------|-------|-------|
| | Dash Size | -4 | -6 | -8 | -10 | -12 | -16 | -20 | -24 |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.62 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.53 | 0.69 | 0.81 | 0.93 | 1.09 | 1.41 | 1.71 | 1.99 | 2.52 |
| Maximum operating pressure (bar) | 234 | 179 | 160 | 131 | 110 | 90 | 69,0 | 48 | 41 |
| Maximum operating pressure (psi) | 3440 | 2600 | 2320 | 1900 | 1600 | 1300 | 1000 | 700 | 600 |
| Minimum burst pressure (bar) | 938 | 717 | 640 | 524 | 440 | 359 | 276 | 193 | 165 |
| Minimum burst pressure (psi) | 13600 | 10400 | 9280 | 7600 | 6400 | 5200 | 4000 | 2800 | 2390 |
| Minimum bend radius (mm) | 100 | 125 | 175 | 200 | 120,0 | 240 | 410 | 500 | 630 |
| Minimum bend radius (inches) | 4.00 | 5.00 | 7.00 | 7.50 | 9.50 | 12.00 | 16.50 | 20.00 | 25.00 |
| Weight (kg/m) | 0.24 | 0.37 | 0.45 | 0.50 | 0.67 | 1.01 | 1.31 | 1.57 | 1.95 |

Construction

- Synthetic rubber tube, single wire braid reinforcement and synthetic rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 100°C

D2900W

Double wire braid meets EN853 Type 2SN

ISO 1436-1, Type 2SN

Exceeds SAE 100R2AT performance



R2AT/2SN

TTC crimp fittings

Reusable fittings-R2AT Socket

| Part Number | D2900W | | | | | | | | |
|----------------------------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Dash Size | -4 | -6 | -8 | -10 | -12 | -16 | -20 | -24 |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.62 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.60 | 0.75 | 0.87 | 0.98 | 1.16 | 1.50 | 1.92 | 2.15 | 2.51 |
| Maximum operating pressure (bar) | 421 | 366 | 352 | 250 | 214 | 172 | 131 | 90 | 80 |
| Maximum operating pressure (psi) | 6100 | 5300 | 5100 | 3625 | 3100 | 2500 | 1900 | 1300 | 1160 |
| Minimum burst pressure (bar) | 1684 | 1464 | 1408 | 1000 | 855 | 690 | 524 | 359 | 320 |
| Minimum burst pressure (psi) | 24400 | 21200 | 20400 | 14500 | 12400 | 10000 | 7600 | 5200 | 4640 |
| Minimum bend radius (mm) | 100.00 | 125.00 | 175.00 | 200.00 | 240.00 | 300.00 | 410.00 | 500.00 | 625.00 |
| Minimum bend radius (inches) | 4.00 | 5.00 | 7.00 | 8.00 | 9.50 | 12.00 | 16.50 | 20.00 | 25.00 |
| Weight (kg/m) | 0.39 | 0.57 | 0.69 | 0.81 | 0.98 | 1.51 | 2.30 | 2.50 | 3.31 |

Construction

- Synthetic rubber tube, two wire braid reinforcement and synthetic rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 100°C

HYDRAULIC

HOSE



Powering Business Worldwide

Hose

HOSE

D1600

Doublewire braid meets EN857 Type 2SC
ISO 11237-1, Type 2SC
Exceeds SAE 100R16 performance



R16/2SC

TTC crimp fittings
Reusable fittings-R16AT Socket

HI-IMPULSE at 1/2 SAE bend radius

| Dash Size | Part Number | | | GH663 | | |
|----------------------------------|-------------|-------|-------|--------|--------|--|
| | -4 | -6 | -8 | -12 | -16 | |
| Hose I.D. (inches) | 0.25 | 0.38 | 0.50 | 0.75 | 1.00 | |
| Hose O.D (inches) | 0.53 | 0.69 | 0.81 | 1.00 | 1.42 | |
| Maximum operating pressure (bar) | 421 | 366 | 305 | 214 | 172 | |
| Maximum operating pressure (psi) | 6100 | 5300 | 4420 | 3100 | 2500 | |
| Minimum burst pressure (bar) | 1684 | 1462 | 1220 | 855 | 690 | |
| Minimum burst pressure (psi) | 24400 | 21200 | 17680 | 12400 | 10000 | |
| Minimum bend radius (mm) | 50.00 | 75.00 | 88.00 | 118.00 | 150.00 | |
| Minimum bend radius (inches) | 2.00 | 2.50 | 3.50 | 4.75 | 6.00 | |
| Weight (kg/m) | 0.33 | 0.43 | 0.58 | 0.79 | 1.07 | |

Improved performance when used with Global Crimp fittings.

Construction

- Synthetic rubber tube, two wire braid reinforcement and synthetic rubber cover.

Application

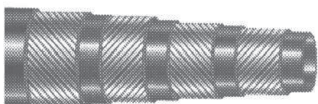
- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 100°C

D8200W

Meets & exceeds EN 856 Type R12



R12

4S crimp fittings

| Dash Size | Part Number | | | | | | |
|----------------------------------|-------------|--------|--------|--------|--------|--------|--------|
| | -6 | -8 | -12 | -16 | -20 | -24 | -32 |
| Hose I.D. (inches) | 0.38 | 0.50 | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 |
| Hose O.D (inches) | 0.79 | 0.92 | 1.20 | 1.48 | 1.83 | 2.12 | 2.64 |
| Maximum operating pressure (bar) | 400 | 350 | 350 | 362 | 300 | 250 | 200 |
| Maximum operating pressure (psi) | 5800 | 5075 | 5075 | 5250 | 4350 | 3625 | 2900 |
| Minimum burst pressure (bar) | 1600 | 1400 | 1400 | 1448 | 1200 | 1000 | 800 |
| Minimum burst pressure (psi) | 23200 | 20300 | 20300 | 21000 | 17400 | 14500 | 11600 |
| Minimum bend radius (mm) | 125.00 | 175.00 | 235.00 | 300.00 | 410.00 | 500.00 | 600.00 |
| Minimum bend radius (inches) | 5.00 | 7.00 | 9.50 | 12.00 | 16.50 | 20.00 | 25.00 |
| Weight (kg/m) | 0.70 | 0.88 | 1.37 | 1.82 | 2.45 | 3.13 | 4.19 |

Construction

- Synthetic rubber tube, four spiral reinforcement and synthetic rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 121°C

HYDRAULIC



Powering Business Worldwide

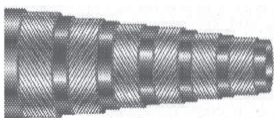
Hose

D8300W / GH466

Meets & exceeds EN 856 Type R13/R15

R13/R15

4S & 6S crimp fittings



| Part Number | D8300W | | | GH466 | | |
|----------------------------------|-----------|--------|--------|--------|--------|-----|
| | Dash Size | -12 | -16 | -20 | -24 | -32 |
| Hose I.D. (inches) | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 | |
| Hose O.D (inches) | 1.27 | 1.51 | 1.94 | 2.25 | 2.82 | |
| Maximum operating pressure (bar) | 490 | 420 | 420 | 420 | 420 | |
| Maximum operating pressure (psi) | 7100 | 6090 | 6090 | 6090 | 6090 | |
| Minimum burst pressure (bar) | 1950 | 1680 | 1680 | 1680 | 1680 | |
| Minimum burst pressure (psi) | 28400 | 24360 | 24360 | 24360 | 24360 | |
| Minimum bend radius (mm) | 275.00 | 335.00 | 410.00 | 500.00 | 620.00 | |
| Minimum bend radius (inches) | 11.00 | 13.38 | 16.50 | 20.00 | 24.80 | |
| Weight (kg/m) | 2.12 | 2.25 | 3.48 | 4.63 | 6.70 | |

Construction

- Synthetic rubber tube, four (-12 & -16) & 6 Spiral (-20 to -32) spiral reinforcement and synthetic rubber cover

Application

- Hydraulic system service with petroleum and water-glycol base fluids, for general industrial service

Operating temperature range

- 40°C to 121°C

HYDRAULIC

HOSE

Socket Data

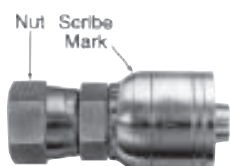
Crimp Socket data—
Socket to hose correct
combinations

Use of the correct Eaton
socket with a given
Aeroquip hose is essential
for proper assembly and
performance. Virtually all
Eaton hose sockets are
marked with the socket
part number and dash
size. Using this number,
from the following table,
the correct hose or hoses
may be found and dash
sizes matched,
to assure the correct
combination.

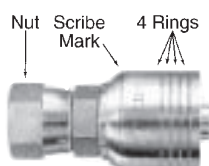
Global Non-Skive Socket
Identification (TTC, TTC-
20, and TTC12 Sockets)

Through-the-Cover fitting
sockets for one wire and
two wire braid hose in all
sizes except -20 have one
and two rings plus a scribe
mark and TTC-(size)
stamped on the socket. In
the -20 size there are two
sockets, one for one wire
braid hose with one ring
on the socket and one for
two wire braid hose with
two rings on the socket
plus a scribe mark. Both
-20 sockets have TTC-20
stamped on the sockets.
Through-the-Cover fitting
sockets for four spiral
hose have four rings plus a
scribe mark and
TTC12-(size) stamped on
the socket.

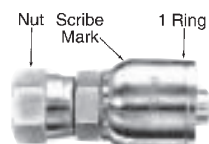
SCRIBE MARK For TTC and TTC12 Fittings,
the scribe mark identifies crimp length
indicator for assembly;
See Document A-EQCR-TM001-E for details.



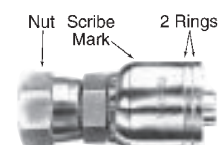
TTC-



TTC12-



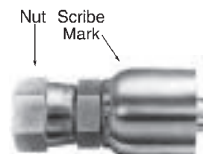
TTC-20



TTC-20

Global Over the Cover
Identification (OTC
Sockets)

Over the cover global fitting
sockets have 1G(size) and a
scribe mark stamped on
the socket.



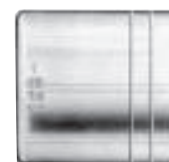
1G

Global Skive Socket
Identification

1SA sockets are stamped
1SA(size) for one wire braid
hose and 1SB sockets are
stamped 1SB(size) for two
wire braid hose. 1SA sock-
ets have one ring and 1SB
sockets have two rings
grooved around the circum-
ference of each socket.



1SA












1SB

Global Identification
Marking

Global hose fittings are
identified with the Eaton
trademark and the hose
size. In addition, global
sockets are identified with
the following:

| Identification Marking | Fitting Style | Hose/Socket Description |
|--|--------------------------------|---|
| 1 ring 1SA(size) | skive | One wire braid hose and skive type socket |
| 2 rings 1SB(size) | skive | Two wire braid hose and skive type socket |
| 2 rings 1 ring 1 scribe mark TTC-(size) | Thru-the-cover | One wire and two wire braid hose and TTC socket |
| 4 rings 1 scribe mark TTC12-(size) | Spiral thru-the-cover | Four spiral wire hose and TTC12 socket |
| 1 ring 1 scribe mark TTC-20 | Thru-the-cover (-20 size only) | One wire braid -20 size hose and TTC socket |
| 2 rings 1 scribe mark TTC-20 | Thru-the-cover (-20 size only) | Two wire braid -20 size hose and TTC socket |
| 1 scribe mark 1G (size) | Over the cover | Textile braid and suction hoses and OTC socket (SAE 100R3, R4 and R6 hose styles) |

Socket Data

| Crimp sockets | Socket base part number | Aeroquip hose base part no. | Dash sizes | Crimp sockets | Socket base part number | Aeroquip hose base part no. | Dash sizes | |
|---|-------------------------|--|------------|--|---|---|---------------|---|
|  | 1SA | 2681 | -03 to -32 |  | FC3471 | FC136 | -06 to -10 | |
| | | FC194 | -04 to -20 | | | GH493 | | |
| | | FC211 | -04 to -16 | | | | | |
| | | FC310 | -04 to -20 |  | C1347 | FC736 | | |
| | | FC510 | -04 to -20 | | | FC363 | -08 to -32 | |
| | | FC639/FC839B | -04 to -08 | | | FC364 | -08 to -32 | |
| | | GH194 | -04 to -20 | | | C1601 | FC606 | -16, -20 |
| | | GH663 | -04 to -32 | | | | FC136 | -16 to -32 |
| | | GH681 | -04 to -08 | | | | FC736 | -16 to -20 |
| | |  | 1SB | | | 2781 | -4 to -32 |  |
| FC195 | -04 to -32 | | | FC273 | -16 | | | |
| FC212 | -04 to -32 | | | FC323 | -16 to -32 | | | |
| FC466 | -04 to -12 | | | FC324 | -16 | | | |
| FC498/FC598 | -04 to -12 | | | FC325 | -16 | | | |
| FC579 | -04, -06 | | | FC254 | -12 | | | |
| FC639/FC839B | -10 to -16 | | | FC273 | -12, -20 to -32 | | | |
| FC735 | -04 to -20 | | | FC323 | -12 | | | |
| FC849/FC849B | -06 to -12 | | | FC324 | -12 | | | |
| GH120 | -04 to -20 | | | FC325 | -12 | | | |
| GH195 | -04 to -32 | | |  | 2661 | -40*, -48* | | |
| GH781 | -04 to -20 | | | | FC619 | -40*, -48* | | |
| GH793 | -04 to -32 | | | | * Contact Eaton for crimp assembly information. | | | |
|  | FC1410 | | | FC136 | -12, -16 |  | FC3443 | |
| | | FC736 | -12, -16 | FC807 | -05, -06, -10 | | | |
| | | FC323 | -12, -16 | FC465 | | | | |
| | | GH493 | -12, -16 | 2807 | | | | |
|  | FW1097 | FC699 | -4 to -20 | FC3596 | FC3596 | FC807 | -03, -04, -08 | |
| | | | | | | FC465 | -12, -16 | |

CRIMP

FITTINGS



Powering Business Worldwide

Fittings

FITTINGS I

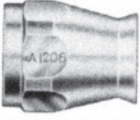



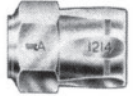



REUSABLE



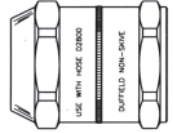

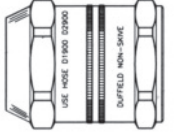

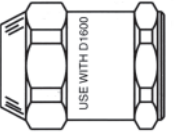
B3

Reusable Socket Data—Socket to hose correction combinations

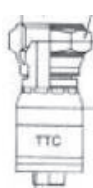
Use of the correct Aeroquip socket with a given Aeroquip hose is essential for proper assembly and performance. Virtually all Aeroquip hose sockets are marked with the

socket part number and dash size. Using this number, from the table below, the correct hose or hoses may be found and dash sizes matched, to assure the correct combination.

| Reusable sockets | Socket base part number | Aeroquip hose base part number | Dash sizes |
|---|-------------------------|--|-------------------------|
|  | 1206 | 2807, FC186, FC465 | all |
|  | 1208 | 2808 | all |
|  | 1210 | 303, 1503, 1540, 2580, 2651, FC234, FC300, FC321, FC350, FC355, FC558, FC802 | -4 to -12 |
|  | 1212 | 302A, 1503, 1540, 2580, 2651, FC234, FC300, FC321, FC350, FC355, FC558 | -16 to -48 |
|  | 1214 | 2550, 2554, 2555, 2570 | all |
|  | 1219 | 1531, 1531A | all |
|  | 4007 | FC136, GH493 | -6, -12 |
|  | 4010 | 1529 | -4 to -12 -20 to -32 |
| | | 2766 | -4 to -12 -20 to -32 |
| | | 2781 | -4 to -12 -20 to -32 |
| | | FC195 | -4 to -12 -20 to -32 |

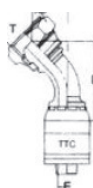
| Reusable sockets | Socket base part number | Aeroquip hose base part number | Dash sizes |
|--|-------------------------|--------------------------------|------------|
|  | 4013 | 1529 | -16 |
| | | 2766 | -16 |
| | | 2781 | -16 |
| | | FC136 | -08, -16 |
| | | FC195 | -16 |
| | | FC324 | -08 |
| GH493 | -8, -16 | | |
|  | FC2383 | FC136, GH493 | -20, -24 |
|  | RS1AT | GH663 | all |
|  | FC2642 | FC310 | all |
| | | FC510 | -04 to -16 |
|  | RS2AT | GH195, GH793 | all |
|  | FC1941 | FC372, FC373 | all |
|  | RS16AT | GH781 | -04 to -16 |

BSP fittings



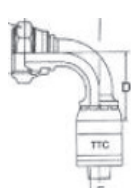
BSP Fem STR

Pages B7 & B8



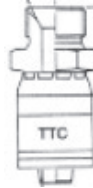
BSP Fem 45

Pages B9 & B10



BSP Fem 90

Pages B11 & B12



BSPP Male

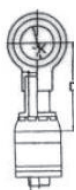
Page B14



BSPT Male

Pages B15 & B16

Banjo fittings Metric light fittings



Banjo STR

Page B13



Metric Male

Pages B21 & B22



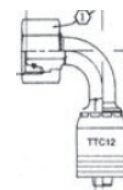
Metric Fem

Pages B23 & B24



Metric Fem 45

Pages B25 & B26



Metric Fem 90

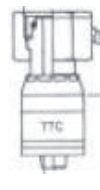
Pages B27 & B28

Metric heavy fittings



Metric Male

Pages B29 & B30



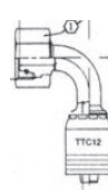
Metric Fem

Pages B31 & B32



Metric Fem 45

Pages B33 & B34



Metric Fem 90

Pages B35 & B36

JIC fittings



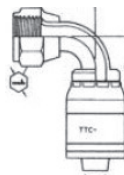
JIC Fem

Pages B37 & B38



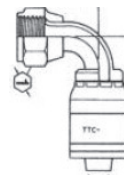
JIC Fem 45

Pages B39 & B40



JIC Fem 90

Pages B41 & B42



JIC Fem Long

Pages B43 & B44



JIC Male

Pages B69 & B70



Powering Business Worldwide

Fitting pictorial index

HOSE - PICTORIAL INDEX

NPT fittings



NPT Male

Pages B71 & B72

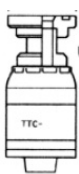
Lifesaver fittings



Lifesaver

Pages B67 & B68

Code 61 flange fittings



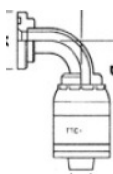
Code 61 STR

Pages B51 & B52



Code 61 45 Deg

Pages B53 & B54



Code 61 90 Deg

Pages B55 & B56



Code 61 22.5 Deg

Page B57



Code 61 30 Deg

Page B58



Code 61 67.5 Deg

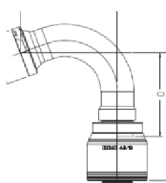
Page B60

Code 61 flange fittings



Code 61 60 Deg

Page B59



Code 61 110 Deg

Page B59



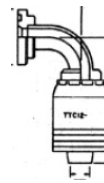
Code 62 STR

Page B45



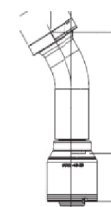
Code 62 45 Deg

Page B46



Code 62 90 Deg

Page B47



Code 62 22.5 Deg

Page B48

Code 62 flange fittings



Code 62 60 Deg

Page B49



Code 62 30 Deg

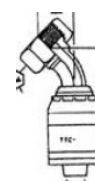
Page B50

ORSF fittings



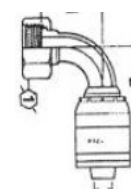
ORSF Fem

Pages B61 & B62



ORSF Fem 45

Pages B63 & B64



ORSF Fem 90

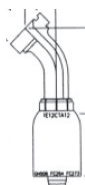
Pages B65 & B66

CAT flange fittings



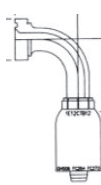
CAT Flange STR

Page B17



CAT Flange 45

Page B17



CAT Flange 90

Page B18



CAT Flange 22.5

Page B19



CAT Flange 30

Page B18

CAT flange fittings



CAT Flange 60

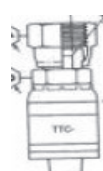
Page B19



CAT Flange 67.5

Page B20

JIS fittings



JIS Fem STR

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Komatsu fittings



Komatsu Fem

Page B74

Komatsu flange fittings



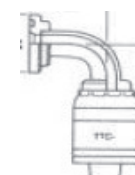
Komatsu Flange

Page B75



Komatsu FL 45

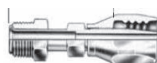
Page B75



Komatsu FL 90

Page B76

Male inverted flare



Male Straight

Page B77



Male 15 Deg

Page B77



Male 45 Deg

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Male 90 Deg

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Powering Business Worldwide

Fittings

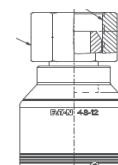
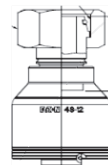
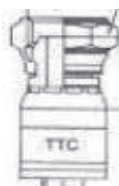
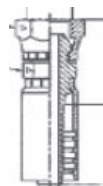
FITTINGS

CRIMP

B7

BF
BSP
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|-----------|------------------------------------|------------------------------------|--------------------|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |



| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|----------|------|--------------|-----|-------------|-------|----------|------|----------|------|
| 1/4-19 | -04 | 90304-04B000 | | 1A4BF4+ | 18.90 | | | | |
| 3/8-19 | -04 | 90304-06B000 | | 1A6BF4 | 19.60 | | | | |
| 1/4-19 | -05 | | | | | | | | |
| 3/8-19 | -06 | 90306-06B000 | | 1A6BF6+ | 21.10 | 4S6BF6 | 21.1 | | |
| 1/2-14 | -06 | 90306-08B000 | | 1A8BF6 | 22.60 | 4S8BF6 | 22.6 | | |
| 1/2-14 | -08 | 90308-08B000 | | 1A8BF8+ | 23.80 | 4S8BF8 | 23.8 | | |
| 1/2-14 | -10 | | | 1A8BF10 | 24.00 | | | | |
| 5/8-14 | -8 | | | 1A10BF8 | 24.50 | 4S10BF8 | 24.5 | | |
| 5/8-14 | -10 | | | 1A10BF10+ | 24.70 | 4S10BF10 | 24.7 | | |
| 3/4-14 | -10 | | | 1A12BF10 | 24.90 | 4S12BF10 | 24.9 | | |
| 3/4-14 | -12 | 90312-12B001 | | 1A12BF12+ | 25.30 | 4S12BF12 | 30.0 | | |
| 1-11 | -12 | | | | | 4S16BF12 | 32.3 | | |
| 1-11 | -16 | 90316-16B000 | | 1A16BF16+ | 27.60 | 4S16BF16 | 32.3 | | |
| 1 1/4-11 | -16 | | | | | 4S20BF16 | 32.8 | | |
| 1 1/4-11 | -20 | | | 1AP20BF20* | 29.60 | 4S20BF20 | 32.8 | | |
| 1 1/4-11 | -20 | | | 1AT20BF20** | 29.60 | | | | |
| 1 1/2-11 | -24 | | | 1A24BF24 | 33.70 | 4S24BF24 | 39.8 | 6S24BF24 | 39.8 |
| 2-11 | -32 | | | 1A32BF32 | 35.20 | 4S32BF32 | 43.0 | 6S32BF32 | 43.0 |
| 2 1/2 | -40 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose


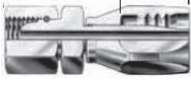


+ Available in stainless



Powering Business Worldwide

Fittings

BF BSP Fem swivel

| | | Reusable | | | | | | | |
|----------|------|---|-----|---|------|--|------|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4-19 | -04 | DSR01-0404 | | 07.421-4-4 | 29.0 | 07.390-4-4 | 10.4 | 07.022-4-4 | 26.0 |
| 3/8-19 | -04 | | | | | | | | |
| 1/4-19 | -05 | | | 07.421-4-5 | | | | 07.022-4-5 | 26.0 |
| 3/8-19 | -06 | DSR01-0606 | | 07.421-6-6 | 31.0 | 07.390-6-6 | 10.4 | 07.022-6-6 | 26.0 |
| 1/2-14 | -06 | DSR01-0806 | | 07.421-8-6 | 33.0 | | | | |
| 1/2-14 | -08 | DSR01-0808 | | 07.421-8-8 | 35.0 | 07.390-8-8 | 11.4 | 07.022-8-8 | 33.0 |
| 1/2-14 | -10 | | | 07.421-8-10 | 35.0 | | | | |
| 5/8-14 | -10 | | | 07.421-10-10 | 35.0 | 07.390-10-10 | | | |
| 3/4-14 | -10 | | | | | | 12.5 | 07.022-10-10 | 37.0 |
| 3/4-14 | -12 | | | | | | | | |
| 3/4-14 | -12 | DSR01-1212 | | 07.421-12-12 | 38.0 | 07.390-12-12 | 13.0 | 07.022-12-12 | 42.0 |
| 1-11 | -12 | | | | | | | | |
| 1-11 | -16 | DSR01-1616 | | 07.421-16-16 | 36.0 | | | 07.022-16-16 | 48.5 |
| 1 1/4-11 | -16 | | | | | | | | |
| 1 1/4-11 | -20 | | | 07.421-20-20 | 37.0 | | | | |
| 1 1/4-11 | -20 | | | | | | | | |
| 1 1/2-11 | -24 | | | 07.421-24-24 | 42.0 | | | | |
| 2-11 | -32 | | | 07.421-32-32 | 43.0 | | | | |
| 2 1/2 | -40 | | | 07.421-40-40 | | | | | |

REUSABLE

FITTINGS

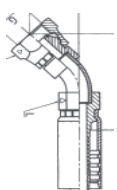
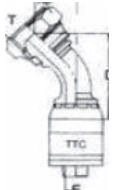
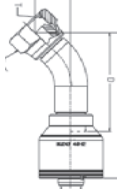
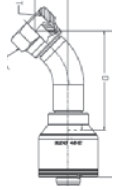


Powering Business Worldwide

Fittings

FITTINGS I

BFA
BSP
45° Swept
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|---|---|---|---|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |
| |  |  |  |  |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|----------|------|--------------|-----|--------------|-------|-----------|-------|-----------|-------|
| 1/4-19 | -04 | 90304-04B040 | | 1A4BFA4 | 39.0 | | | | |
| 3/8-19 | -04 | | | | | | | | |
| 1/4-19 | -05 | | | | | | | | |
| 3/8-19 | -06 | 90306-06B040 | | 1A6BFA6 | 44.0 | 4S6BFA6 | 44.5 | | |
| 1/2-14 | -06 | | | 1A8BFA6 | 53.8 | | | | |
| 1/2-14 | -08 | 90308-08B040 | | 1A8BFA8 | 46.9 | 4S8BFA8 | 46.9 | | |
| 1/2-14 | -10 | | | | | | | | |
| 5/8-14 | -10 | | | 1A10BFA10 | 59.0 | 4S10BFA10 | 59.0 | | |
| 3/4-14 | -12 | 90312-12B040 | | 1A12BFA12 | 56.0 | 4S12BFA12 | 76.0 | | |
| 1-11 | -12 | | | | | 4S16BFA12 | 79.5 | | |
| 1-11 | -16 | 90316-16B040 | | 1A16BFA16 | 62.3 | 4S16BFA16 | 90.7 | | |
| 1 1/4-11 | -16 | | | | | 4S20BFA16 | 9.4 | | |
| 1 1/4-11 | -20 | | | 1AP20BFA20* | 76.5 | | | | |
| 1 1/4-11 | -20 | | | 1AT20BFA20** | 76.5 | 4S20BFA20 | 99.0 | | |
| 1 1/2-11 | -24 | | | 1A24BFA24 | 83.5 | 4S24BFA24 | 130.3 | 6S24BFA24 | 130.3 |
| 2-11 | -32 | | | 1A32BFA32 | 118.0 | 4S32BFA32 | 170.4 | 6S32BFA32 | 170.4 |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

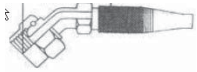
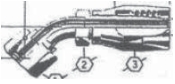
CRIMP



Powering Business Worldwide

Fittings

BFA
BSP
45° Swept
Fem swivel

| | | Reusable | | | | | | | |
|----------|------|---|-----|---|------|------------|-----|----------|-----|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4-19 | -04 | DSR51-0404 | | 07.045-4-4 | 37.0 | | | | |
| 3/8-19 | -04 | | | | | | | | |
| 1/4-19 | -05 | | | | | | | | |
| 3/8-19 | -06 | DSR51-0606 | | 07.045-6-6 | 44.0 | | | | |
| 1/2-14 | -06 | | | | | | | | |
| 1/2-14 | -08 | DSR51-0808 | | 07.045-8-8 | 46.0 | | | | |
| 1/2-14 | -10 | | | | | | | | |
| 5/8-14 | -10 | | | | | | | | |
| 3/4-14 | -12 | DSR51-1212 | | 07.045-12-12 | 65.0 | | | | |
| 1-11 | -12 | | | | | | | | |
| 1-11 | -16 | DSR51-1616 | | 07.045-16-16 | 85.0 | | | | |
| | | | | | | | | | |
| 1 1/4-11 | -20 | | | 07.045-20-20 | 67.0 | | | | |
| 1 1/2-11 | -24 | | | 07.045-24-24 | 75.0 | | | | |
| 2-11 | -32 | | | 07.045-32-32 | 84.0 | | | | |

REUSABLE

FITTINGS



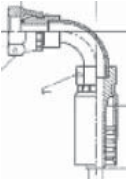
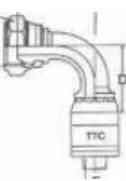
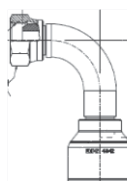
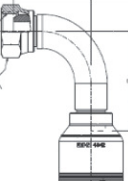
Powering Business Worldwide

Fittings

FITTINGS

CRIMP

BFB
 BSP Fem
 90° Swept
 Fem swivel

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|----------|------|---|---|--------------|--|-----------|---|-----------|-------|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W | | FC636 D8200W | | D8300W (-20 & -24) | | |
| | | | D2900W D1600 | | D8300W (-12 & -16) | | | | |
| | |  |  | |  | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4-19 | -04 | 90304-04B090 | | 1A4BFB4 | 25.1 | | | | |
| 1/4-19 | -05 | | | | | | | | |
| 3/8-19 | -06 | 90306-06B090 | | 1A6BFB6 | 34.5 | 4S6BFB6 | 34.5 | | |
| 1/2-14 | -06 | | | 1A8BFB6 | 34.0 | | | | |
| 1/2-14 | -08 | 90308-08B090 | | 1A8BFB8 | 39.0 | 4S8BFB8 | 39 | | |
| 1/2-14 | -10 | | | 1A10BFB8 | 53.5 | | | | |
| 5/8-14 | -10 | | | 1A10BFB10 | | 4S10BFB10 | 53.5 | | |
| 3/4-14 | -12 | 90312-12B090 | | 1A12BFB12 | 56.0 | 4S12BFB12 | 56.9 | | |
| 1-11 | -12 | | | | | 4S16BFB12 | 68.1 | | |
| 1-11 | -16 | 90316-16B090 | | 1A16BFB16 | 58.6 | 4S16BFB16 | 68.1 | | |
| 1 1/4-11 | -16 | | | | | 4S20BFB16 | 79.0 | | |
| 1 1/4-11 | -20 | | | 1AP20BFB20* | 73.0 | | | | |
| 1 1/4-11 | -20 | | | 1AT20BFB20** | 73.0 | 4S20BFB20 | 79.0 | | |
| 1 1/2-11 | -24 | | | 1A24BFB24 | 80.2 | 4S24BFB24 | 127.0 | 6S24BFB24 | 127.0 |
| 2-11 | -32 | | | 1A32BFB32 | 128.0 | 4S32BFB32 | 167.6 | 6S32BFB32 | 167.6 |

Use with FF91064 sleeve

* Use with one wire hose

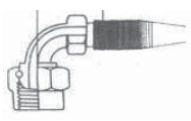
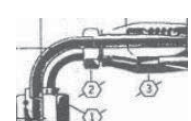

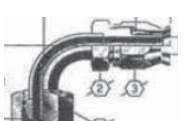
** Use with two wire hose



Powering Business Worldwide

Fittings

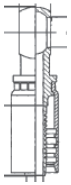

BFB BSP Fem 90° Swept Fem swivel

| | | Reusable | | | | | | | |
|----------|------|---|-----|---|-------|--|------|---|------|
| | | 1 & 2 wire | | Socketless | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4-19 | -04 | DSR50-0404 | | 07.011-4-4 | 30.0 | 07.140-4-4 | 18.0 | 07.339-4-4 | 28.0 |
| 1/4-19 | -05 | | | | | | | | |
| 3/8-19 | -06 | DSR50-0606 | | 07.011-6-6 | 39.0 | 07.140-6-6 | 27.0 | 07.339-6-6 | 32.5 |
| 1/2-14 | -06 | | | | | | | | |
| 1/2-14 | -08 | DSR50-0808 | | 070.011-8-8 | 43.0 | 07.140-8-8 | 30.0 | 07.339-8-8 | 35.5 |
| 1/2-14 | -10 | | | | | | | | |
| 5/8-14 | -10 | | | 07.011-10-10 | 47.0 | 07.140-10-10 | 33.0 | 07.339-10-10 | 41.5 |
| 3/4-14 | -12 | DSR50-1212 | | 07.011-12-12 | 66.0 | 07.140-12-12 | 48.0 | 07.339-12-12 | 59.5 |
| | | | | | | | | | |
| 1-11 | -16 | DSR50-1616 | | 07.011-16-16 | 76.0 | | | 07.339-16-16 | 65.6 |
| | | | | | | | | | |
| | | | | | | | | | |
| 1 1/4-11 | -20 | | | 07.011-20-20 | 70.0 | | | 07.339-20-20 | 75.0 |
| 1 1/2-11 | -24 | | | 07.011-24-24 | 77.0 | | | | |
| 2-11 | -32 | | | 07.011-32-32 | 106.0 | | | | |

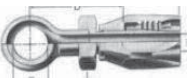
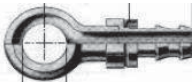
REUSABLE

FITTINGS

BJ
Banjo

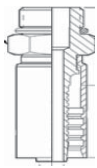
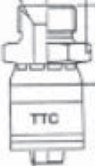


| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|----------|------|---|-----|---|------|-----------------------------|-----|--------------------|-----|
| | | One piece | | TTC | | 4S | | 6S | |
| | | 3130 | | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | |
| | | 37AL | | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | |
| | | 3800 | | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | |
| | | 3840 | | 3E80# 3R80# D2800W | | FC636 D8200W | | D8300W (-20 & -24) | |
| | | | | D2900W D1600 | | D8300W (-12 & -16) | | | |
| | |  | |  | | | | | |
| Diameter | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 10 | -04 | 90304-10BM00 | | | | | | | |
| 12 | -04 | 90304-12BM00 | | 1A6BJ4 | 45.4 | | | | |
| 14 | -06 | 90306-14BM00 | | 1A8FJ6 | 50.9 | | | | |
| 16 | -06 | 90306-16BM00 | | 1A10BJ6 | 51.6 | | | | |
| 18 | -8 | | | 1A12BJ8 | 55.2 | | | | |
| 26 | -12 | | | 1A20BJ12 | 64.8 | | | | |
| 30 | -16 | | | 1A25BJ16 | 69.4 | | | | |

BJ
Banjo

| | | Reusable | | | | | |
|--------|------|--|-----|---|------|--|------|
| | | 1 & 2 wire | | Socketless | | Socketless | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | |
| | | | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 10 | -04 | | | 11.027-4-4 | 29.0 | 11.057-4-4 | 21.0 |
| 12 | -04 | | | | | 11.057-6-4 | 22.0 |
| 14 | -06 | | | 11.027-8-6 | 36.0 | 11.057-8-6 | 23.0 |
| 16 | -06 | | | | | 11.057-10-6 | 26.0 |
| 18 | -8 | | | | | 11.057-13-8 | 28.0 |
| 22 | -10 | | | | | 11.057-16-10 | 31.0 |
| 26 | -12 | | | | | 11.057-20-12 | 36.0 |

BP

**BSP Male
Parallel**

| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|----------|------|---|-----|---|------|---|------|---|-----|
| | | One piece | | TTC | | 4S | | 6S | |
| | | 3130 | | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | |
| | | 37AL | | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | |
| | | 3800 | | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | |
| | | 3840 | | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | | Part No. | "D" |
| 1/8-27 | -04 | | | | | | | | |
| 1/4-19 | -04 | 90304-04R100 | | 1A4BP4 | 27.2 | | | | |
| 3/8-19 | -06 | 90306-06R100 | | 1A6BP6 | 29.6 | 4S6BP6 | | | |
| 1/2-14 | -06 | | | | | | | | |
| 1/2-14 | -08 | 90308-08R100 | | 1A8BP8 | 36.5 | 4S8BP8 | | | |
| 3/4-14 | -12 | 90312-12R100 | | 1A12BP12 | 40.9 | 4S12BP12 | 43.5 | | |
| 1-11 | -16 | 90316-16R100 | | 1A16BP16 | 46.8 | 4S16BP16 | 50.0 | | |
| 1 1/4-11 | -20 | | | 1AP20BP20* | 52.2 | 4S20BP20 | 54.6 | | |
| 1 1/4-11 | -20 | | | 1AT20BP20** | 52.2 | | | | |
| 1 1/2-11 | -24 | | | 1A24BP24 | 54.5 | | | | |
| 2-11 | -32 | | | 1A32BP32 | 60.4 | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

CRIMP

FITTINGS






Powering Business Worldwide

Fittings

FITTINGS

CRIMP

| BT | | | | | | | | | |
|-----------|------|----------|-----|---|------|--|------|---|-----|
| BSPT Male | | | | | | | | | |
| Synflex | | | | Global spiral TTC | | | | | |
| One piece | | | | TTC | | 4S | | 6S | |
| 3130 | | | | GH663 GH781 GH793 | | GH493 FC736 | | GH466 (-20 & -24) | |
| 37AL | | | | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | |
| 3800 | | | | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | |
| 3840 | | | | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | |
| | | | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/8-27 | -04 | | | 1A2BT4 | 23.0 | | | | |
| 1/4-19 | -04 | | | 1A4BT4 | 27.2 | | | | |
| 1/4-19 | -06 | | | | | | | | |
| 3/8-19 | -06 | | | 1A6BT6 | 29.6 | 4S6BT6 | 37.3 | | |
| 1/2-14 | -06 | | | 1A8BT6 | 37.3 | | | | |
| 3/8-19 | -08 | | | 1A6BT8 | 30.9 | | | | |
| 1/2-14 | -08 | | | 1A8BT8 | 36.5 | 4S8BT8 | 36.5 | | |
| 1/2-14 | -10 | | | 1A8BT10 | 38.2 | | | | |
| 3/4-14 | -10 | | | 1A12BT10 | 40.8 | | | | |
| 3/4-14 | -12 | | | 1A12BT12 | 40.9 | 4S12BT12 | 47.8 | | |
| 1-11 | -12 | | | 1A16BT12 | 46.8 | | | | |
| 3/4-14 | -16 | | | 1A12BT16 | 42.0 | | | | |
| 1-11 | -16 | | | 1A16BT16 | 46.8 | 4S16BT16 | 55.0 | | |
| 1 1/4-11 | -20 | | | 1AP20BT20* | 52.2 | 4S20BT20 | 63.0 | | |
| 1 1/4-11 | -20 | | | 1AT20BT20** | 52.2 | | | | |
| 1 1/2-11 | -24 | | | 1A24BT24 | 54.5 | | | | |
| 2-11 | -32 | | | 1A32BT32 | 60.2 | | | | |

Use with FF91064 sleeve

* Use with one wire hose



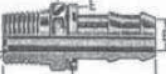
** Use with two wire hose



Powering Business Worldwide

Fittings

BT BSPT Male

| | | | | Reusable | | | | | |
|--|--|--|--|---|--|---|--|--|--|
| | | | | 1 & 2 wire | | SAE100R5 | | Teflon | |
| | | | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 FC234 1503 FC558 | | FC332 2556 | |
| | | | |  | |  | |  | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|----------|------|------------|-----|--------------|------|----------|------|
| 1/8-27 | -04 | DSR02-0204 | | 07.545-2-4 | 26.5 | 351-2-4 | |
| 1/4-19 | -04 | DSR02-0404 | | 07.545-4-4 | 31.0 | 351-4 | 27.0 |
| 1/4-19 | -06 | DSR02-0406 | | | | 351-4-6 | 29.5 |
| 3/8-19 | -06 | DSR02-0606 | | 07.545-6-6 | 32.5 | 351-6 | 29.0 |
| 1/2-14 | -06 | DSR02-0806 | | | | | |
| 1/2-14 | -08 | DSR02-0808 | | 07.545-8-8 | 40.0 | 351-8 | 33.5 |
| 3/4-14 | -12 | DSR02-1212 | | 07.545-12-12 | 42.0 | 351-12 | 37.0 |
| 1-11 | -16 | DSR02-1616 | | 07.545-16-16 | 44.5 | | |
| 1 1/4-11 | -20 | | | 07.545-20-20 | 46.5 | | |
| 1 1/2-11 | -24 | | | 07.545-24-24 | 46.5 | | |
| 2-11 | -32 | | | 07.545-32-32 | 52.6 | | |

REUSABLE

FITTINGS



Powering Business Worldwide

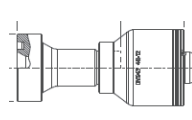
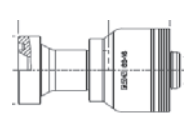
Fittings

FITTINGS

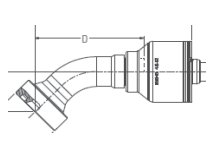
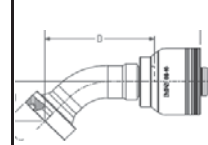
CRIMP

B17

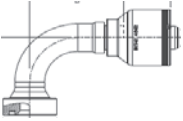
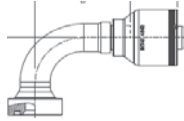
CT CAT Flange

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CT12 | 60.0 | | |
| -16 | -12 | | | 4S16CT12 | 58.7 | | |
| -16 | -16 | | | 4S16CT16 | 58.2 | 6S16CT16 | 58.2 |
| -20 | -16 | | | 4S20CT16 | 65.0 | 6S20CT16 | 65.0 |
| -20 | -20 | | | 4S20CT20 | 66.0 | 6S20CT20 | 66.0 |
| -24 | -20 | | | 4S24CT20 | 70.6 | 6S24CT20 | 70.6 |
| -24 | -24 | | | 4S24CT24 | 117.0 | 6S24CT24 | 117.0 |
| -32 | -24 | | | 4S32CT24 | 128.0 | 6S32CT24 | 128.0 |
| -32 | -32 | | | 4S32CT32 | 130.9 | 6S32CT32 | 130.9 |

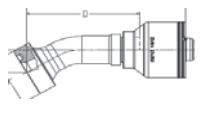
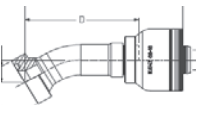
CTA CAT Flange 45 deg

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CTA12 | 81.5 | | |
| -16 | -12 | | | 4S16CTA12 | 95.0 | | |
| -16 | -16 | | | 4S16CTA16 | 94.5 | 6S16CTA16 | 94.5 |
| -20 | -16 | | | 4S20CTA16 | 113.3 | 6S20CTA16 | 113.3 |
| -20 | -20 | | | 4Z20CTA20 | 114.3 | 6S20CTA20 | 114.3 |
| -24 | -20 | | | 4S24CTA20 | 129.0 | 6S24CTA20 | 129.0 |
| -24 | -24 | | | 4S24CTA24 | 137.2 | 6S24CTA24 | 137.2 |
| -32 | -24 | | | | | 6S32CTA24 | 174.2 |
| -32 | -32 | | | 4S32CTA32 | 177.0 | 6S32CTA32 | 177.0 |

CTB
CAT Flange
90 deg

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CTB12 | 72.4 | | |
| -16 | -12 | | | 4S16CTB12 | 86.6 | | |
| -16 | -16 | | | 4S16CTB16 | 86.1 | 6S16CTB16 | 86.1 |
| -20 | -16 | | | 4S20CTB16 | 105.4 | 6S20CTB16 | 105.4 |
| -20 | -20 | | | 4Z20CTB20 | 106.4 | 6S20CTB20 | 106.4 |
| -24 | -20 | | | 4S24CTB20 | 123.0 | 6S24CTB20 | 123.0 |
| -24 | -24 | | | 4S24CTB24 | 130.9 | 6S24CTB24 | 130.9 |
| | | | | | | 6S32CTB24 | 169.4 |
| -32 | -32 | | | 4S32CTB32 | 172.2 | 6S32CTB32 | 172.2 |

CTF
CAT Flange
30 deg

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CTF12 | 87.9 | | |
| -16 | -12 | | | | | | |
| -16 | -16 | | | 4S16CTF16 | 106.7 | 6S16CTF16 | 106.7 |
| -20 | -16 | | | 4S20CTF16 | 121.9 | 6S20CTF16 | 121.9 |
| -20 | -20 | | | 4S20CTF20 | 123.2 | 6S20CTF20 | 123.2 |
| -24 | -20 | | | 4S24CTF20 | 139.0 | 6S24CTF20 | 139.0 |
| -24 | -24 | | | 4S24CTF24 | 146.8 | 6S24CTF24 | 146.8 |
| -32 | -24 | | | | | 6S32CTF24 | 186.3 |
| -32 | -32 | | | 4S32CTF32 | 189.2 | 6S32CTF32 | 189.2 |



Powering Business Worldwide

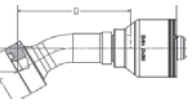
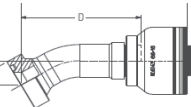
Fittings

FITTINGS

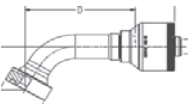
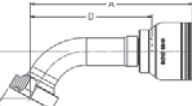
CRIMP

B19

CTD
CAT Flange
22.5 deg

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CTD12 | 90.2 | | |
| -16 | -12 | | | | | | |
| -16 | -16 | | | 4S16CTD16 | 104.4 | 6S16CTD16 | 104.4 |
| -20 | -16 | | | 4S20CTD16 | 124.7 | 6S20CTD16 | 124.7 |
| -20 | -20 | | | 4S20CTD20 | 126.0 | 6S20CTD20 | 126.0 |
| -24 | -20 | | | 4S24CTD20 | 142.0 | 6S24CTD20 | 142.0 |
| -24 | -24 | | | 4S24CTD24 | 149.9 | 6S24CTD24 | 149.9 |
| -32 | -24 | | | | | | |
| -32 | -32 | | | 4S32CTD32 | 193.0 | 6S32CTD32 | 193.0 |

CTG
CAT Flange
60 deg

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|---|-----|--|-------|--|-------|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | | | |  | |  | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | 4S12CTG12 | 100.6 | | |
| -16 | -12 | | | | | | |
| -16 | -16 | | | 4S16CTG16 | 119.1 | 6S16CTG16 | 119.1 |
| -20 | -16 | | | 4S20CTG16 | 145.5 | 6S20CTG16 | 145.5 |
| -20 | -20 | | | 4S20CTG20 | 146.6 | 6S20CTG20 | 146.6 |
| -24 | -20 | | | 4S24CTG20 | 168.4 | 6S20CTG20 | 168.4 |
| -24 | -24 | | | 4S24CTG24 | 176.2 | 6S24CTG24 | 176.2 |
| -32 | -24 | | | | | 6S32CTG24 | 229.0 |
| -32 | -32 | | | 4S32CTG32 | 231.9 | 6S32CTG32 | 231.9 |

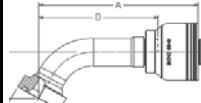
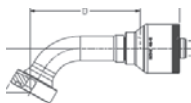


Powering Business Worldwide

Fittings

CTE CAT Flange 67.5 deg

| Global crimp fittings | | | 4S / 6S Global TTC fittings | | |
|---|--|--|---|--|--|
| TTC | | | 4S | 6S | |
| GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |



| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|----------|-----|-----------|-------|-----------|-------|
| -12 | -12 | | | 4S12CTE12 | 94.5 | | |
| -16 | -16 | | | | | | |
| -16 | -16 | | | 4S16CTE16 | 112.3 | 6S16CTE16 | 112.3 |
| -20 | -16 | | | 4S20CTE16 | 137.2 | 6S20CTE16 | 137.2 |
| -20 | -20 | | | 4S20CTE20 | 138.2 | 6S20CTE20 | 138.2 |
| -24 | -20 | | | 4S24CTE20 | 159.0 | 6S24CTE20 | 159.0 |
| -24 | -24 | | | 4S24CTE24 | 166.8 | 6S24CTE24 | 166.8 |
| -32 | -24 | | | | | 6S32CTE24 | 216.7 |
| -32 | -32 | | | 4S32CTE32 | 219.6 | 6S32CTE32 | 219.6 |

CRIMP

FITTINGS



Powering Business Worldwide




Fittings

FITTINGS I

CRIMP

DK

24° Metric
Male light

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|-----------|------|---|---|------------|--|----------|--------------------|----------|-----|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W | | FC636 D8200W | | D8300W (-20 & -24) | | |
| | | | D2900W D1600 | | D8300W (-12 & -16) | | | | |
| | |  |  | |  | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M12 X 1.5 | -4 | | | 1A5DK4 | 21.3 | | | | |
| M14 X 1.5 | -4 | 90304-14SL00 | | 1A6DK4 | 21.1 | | | | |
| M16 X 1.5 | -6 | 90306-16SL00 | | 1A8DK6 | 26.7 | 4S8DK6 | | | |
| M18 X 1.5 | -6 | 90306-18SL00 | | 1A10DK6 | 23.7 | 4S10DK6 | | | |
| M18 X 1.5 | -8 | | | 1A10DK8 | 24.8 | 4S10DK8 | | | |
| M22 X 1.5 | -8 | 90308-22SL00 | | 1A12DK8 | 26.3 | 4S12DK8 | | | |
| M22 X 1.5 | -10 | | | | | | | | |
| M26 X 1.5 | -10 | | | 1A16DK10 | 26.6 | | | | |
| M26 X 1.5 | -12 | | | | | | | | |
| M30 X 2.0 | -12 | 90312-30SL00 | | 1A20DK12 | 31.8 | 4S20DK12 | 39.6 | | |
| M30 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -16 | 90316-36SL00 | | 1A25DK16 | 31.6 | 4S25DK16 | 40.4 | | |
| M36 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | 1A32DK20** | 35.4 | 4S32DK20 | 45.5 | | |
| M45 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -32 | | | 1A40DK24 | 38.7 | | | | |

Use with FF91064 sleeve

* Use with one wire hose



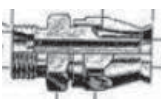
** Use with two wire hose



Powering Business Worldwide

Fittings

DK 24° Metric Male light

| | | Reusable | | | | | | | |
|-----------|------|--|-----|---|------|--|------|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M12 X 1.5 | -4 | | | 11.003-6-4 | 27.0 | 11.021-6-4 | 0.75 | 07.056-6-4 | 25.0 |
| M14 X 1.5 | -4 | | | | | 11.021-8-4 | | | |
| M16 X 1.5 | -6 | | | 11.003-10-6 | 31.0 | 11.021-10-6 | 0.75 | 07.056-10-6 | 25.5 |
| M18 X 1.5 | -6 | | | | | 11.021-12-6 | 0.75 | | |
| M18 X 1.5 | -8 | | | 11.003-12-8 | 33.0 | | | 07.056-12-8 | 26.5 |
| M22 X 1.5 | -8 | | | | | 11.021-15-8 | 0.75 | | |
| M22 X 1.5 | -10 | | | 11.003-15-10 | 33.0 | | | 07.056-15-10 | 28.5 |
| M26 X 1.5 | -10 | | | | | 11.021-16-10 | 0.75 | | |
| M26 X 1.5 | -12 | | | 11.003-18-12 | 34.0 | | | 07.056-18-12 | 33.0 |
| M30 X 2.0 | -12 | | | | | 11.021-22-12 | 0.85 | | |
| M30 X 2.0 | -16 | | | 11.003-22-16 | 34.0 | | | 07.056-22-16 | 36.5 |
| M36 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -20 | | | 11.003-28-20 | 34.0 | | | 07.056-28-20 | 40.0 |
| M45 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -24 | | | 11.003-35-24 | 36.0 | | | | |
| M52 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -32 | | | 11.003-42-32 | 38.5 | | | | |

REUSABLE

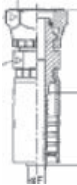

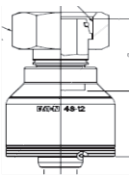
FITTINGS



Powering Business Worldwide

Fittings

DL DKO-light Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|---|---|--|--------------------|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |
| |  |  |  | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|--------------|-----|-------------|------|----------|------|----------|-----|
| M12 X 1.5 | -4 | | | 1A5DL4+ | 24.6 | | | | |
| M14 X 1.5 | -4 | 90304-14JL00 | | 1A6DL4+ | 22.6 | | | | |
| M16 X 1.5 | -4 | 90304-16JL00 | | 1A8DL4 | 24.8 | | | | |
| M16 X 1.5 | -6 | | | 1A8DL6 | 31.6 | 4S8DL6 | | | |
| M18 X 1.5 | -6 | 90306-16JL00 | | 1A10DL6+ | 25.9 | 4S10DL6 | | | |
| M18 X 1.5 | -8 | 90306-18JL00 | | | | | | | |
| M22 X 1.5 | -8 | 90308-22JL00 | | 1A12DL8+ | 28.6 | 4S12DL8 | | | |
| M26 X 1.5 | -8 | | | 1A16DL8 | 29.9 | 4S16DL8 | | | |
| M22 X 1.5 | -10 | | | | | | | | |
| M26 X 1.5 | -10 | | | 1A16DL10+ | 29.8 | 4S16DL10 | | | |
| M26 X 1.5 | -12 | | | | | | | | |
| M30 X 2.0 | -12 | 90312-30JL00 | | 1A20DL12 | 32.3 | 4S20DL12 | 39.6 | | |
| M30 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -16 | | | 1A25DL16 | 33.8 | 4S25DL16 | 39.6 | | |
| M36 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | 1AP32DL20* | 39.7 | 4S32FL20 | 45.5 | | |
| M45 X 2.0 | -20 | | | 1AT32DL20** | 39.7 | | | | |
| M45 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -24 | | | 1A40DL24 | 40.9 | | | | |
| M52 X 2.0 | -32 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

+ Available in stainless



Powering Business Worldwide

Fittings

DL DKO-light Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|--|-----|--|------|------------|------|--------------|------|
| | | 1 & 2 wire | | SAE100R5 | | SOCKETLESS | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | | | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M12 X 1.5 | -4 | | | GA15772-4 | 32.0 | GA15705-4 | 19.0 | 07.046-4-4 | 28.0 |
| M14 X 1.5 | -4 | | | | | GA5523-4 | 19.0 | | |
| M16 X 1.5 | -4 | | | | | | | | |
| M16 X 1.5 | -6 | | | GA15772-6 | 34.0 | GA15705-6 | 19.0 | 07.046-8-6 | 29.0 |
| M18 X 1.5 | -6 | | | | | GA15523-6 | 19.0 | | |
| M18 X 1.5 | -8 | | | GA15772-8 | 38.0 | | | 07.046-10-8 | 30.0 |
| M22 X 1.5 | -8 | | | | | GA15523-8 | | | |
| M26 X 1.5 | -8 | | | | | | | | |
| M22 X 1.5 | -10 | | | GA15772-10 | 38.0 | | 19.0 | 07.046-13-10 | 31.0 |
| M26 X 1.5 | -10 | | | | | GA15523-10 | 20.0 | | |
| M26 X 1.5 | -12 | | | GA15772-12 | 41.0 | | | 07.046-16-12 | 37.5 |
| M30 X 2.0 | -12 | | | | | GA15523-12 | 22.0 | | |
| M30 X 2.0 | -16 | | | GA15772-16 | 39.0 | | | 07.046-22-16 | 41.0 |
| M36 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -20 | | | GA15772-20 | 39.0 | | | 07.046-28-20 | 44.0 |
| M45 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -24 | | | GA15772-24 | 35.0 | | | | |
| M52 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -32 | | | GA15772-32 | 42.0 | | | | |

REUSABLE

FITTINGS



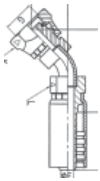
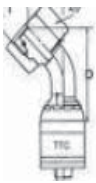
Powering Business Worldwide

Fittings

FITTINGS I

CRIMP

DLA
DKO-light
45° Swept
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|---|---|------------------------------------|--------------------|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |
| |  |  | | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|--------------|-----|--------------|------|----------|-----|----------|-----|
| M12 X 1.5 | -4 | | | 1A5DLA4 | 35.0 | | | | |
| M14 X 1.5 | -4 | 90304-14JL40 | POA | 1A6DLA4 | 39.0 | | | | |
| M16 X 1.5 | -6 | | | 1A8DLA6 | 41.5 | | | | |
| M18 X 1.5 | -6 | 90306-18JL40 | POA | 1A10DLA6 | 44.5 | | | | |
| M18 X 1.5 | -8 | | | | | | | | |
| M22 X 1.5 | -8 | 90308-22JL40 | POA | 1A12DLA8 | 47.0 | | | | |
| M22 X 1.5 | -10 | | | | | | | | |
| M26 X 1.5 | -10 | | | 1A16DLA10 | 59.0 | | | | |
| M26 X 1.5 | -12 | 90312-26JL40 | POA | | | | | | |
| M30 X 2.0 | -12 | 90312-30JL40 | POA | 1A20DLA12 | 56.0 | | | | |
| M30 X 2.0 | -16 | | | 1A25DLA16 | 77.0 | | | | |
| M36 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | 1AP32DLA20* | 73.0 | | | | |
| M45 X 2.0 | -20 | | | 1AT32DLA20** | 73.0 | | | | |
| M45 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -24 | | | 1A40DLA234 | 88.0 | | | | |
| M52 X 2.0 | -32 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

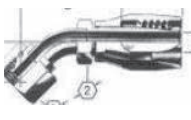

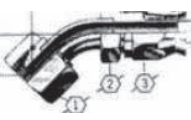
** Use with two wire hose



Powering Business Worldwide

Fittings

DLA
DKO-light
45° Swept
Fem swivel

| | | SAE100R5 | Socketless | Teflon | | | |
|-----------|------|---|---|--|-----|--------------|------|
| | | FC350 FC300 FC802 1503 | FC332 2556 | 2807 | | | |
| | |  |  |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M12 X 1.5 | -4 | GA15067-4 | 35.0 | | | 07.048-4-4 | 28.0 |
| M14 X 1.5 | -4 | | | GA15069-4 | 21 | | |
| M16 X 1.5 | -6 | | | | | | |
| M16 X 1.5 | -6 | GA15067-6 | 37.0 | GA15708-6 | 27 | 07.048-6-6 | 32.0 |
| M18 X 1.5 | -6 | | | GA15069-6 | 30 | | |
| M18 X 1.5 | -8 | GA15067-8 | 43.0 | | | 07.048-10-8 | 35.5 |
| M22 X 1.5 | -8 | | | GA15069-8 | 34 | | |
| M22 X 1.5 | -10 | GA15067-10 | 47.0 | | | 07.048-13-10 | 41.5 |
| M26 X 1.5 | -10 | | | GA15069-10 | 47 | | |
| M26 X 1.5 | -12 | GA15067-12 | 61.0 | | | 07.048-16-12 | 52.0 |
| M30 X 2.0 | -12 | | | GA15069-12 | 50 | | |
| M30 X 2.0 | -16 | GA15067-16 | 60.0 | | | 07.048-22-16 | 53.5 |
| M36 X 2.0 | -20 | | | | | | |
| M36 X 2.0 | -20 | GA15067-20 | 64.0 | | | 07.048-28-20 | 73.0 |
| M45 X 2.0 | -20 | | | | | | |
| M45 X 2.0 | -24 | | | | | | |
| M45 X 2.0 | -24 | GA15067-24 | 72.0 | | | | |
| M52 X 2.0 | -32 | GA15067-32 | 96.0 | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

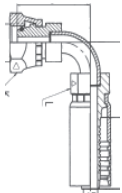
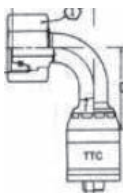
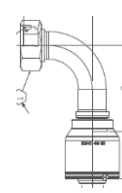
Fittings

FITTINGS I

CRIMP

DLB

DKO-light
90° Swept
Fem swivel

| One piece | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|---|---|--|-----------------------------|----|
| | | TTC | 4S | 6S |
| 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) | |
| 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 | |
| 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) | |
| 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) | |
|  |  |  | | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|--------------|-----|--------------|-------|-----------|------|----------|-----|
| M12 X 1.5 | -4 | | | 1A5DLB4 | 26.5 | | | | |
| M14 X 1.5 | -4 | 90304-14JL90 | | 1A6DLB4 | 28.5 | | | | |
| M16 X 1.5 | -6 | | | 1A8DLB6 | 32.0 | 4S8DLB6 | | | |
| M18 X 1.5 | -6 | 90306-18JL90 | | 1A10DLB6 | 35.0 | | | | |
| M18 X 1.5 | -8 | | | | | | | | |
| M22 X 1.5 | -8 | 90308-22JL90 | | 1A12DLB8 | 39.0 | 4S12DLB8 | | | |
| M22 X 1.5 | -10 | | | 1A16DLB8 | 58.5 | | | | |
| M26 X 1.5 | -10 | | | 1A16DLB10 | 53.5 | | | | |
| M26 X 1.5 | -12 | 90312-26JL90 | | | | | | | |
| M30 X 2.0 | -10 | | | | | | | | |
| M30 X 2.0 | -12 | 90312-30JL90 | | 1A20DLB12 | 64.8 | 4S20DLB12 | 50.8 | | |
| M36 X 2.0 | -16 | | | 1A25DLB16 | 66.0 | | | | |
| M36 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | 1AP32DLB20* | 76.0 | | | | |
| M45 X 2.0 | -20 | | | 1AT32DLB20** | 76.0 | 4S32DLB20 | 79.0 | | |
| M45 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -24 | | | 1A40DLB24 | 100.0 | | | | |
| M52 X 2.0 | -32 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

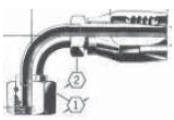

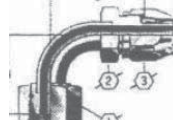
** Use with two wire hose



Powering Business Worldwide

Fittings

DLB
DKO-light
90° Swept
Fem swivel

| Reusable | | | | | | | | | |
|-----------|------|---|-----|--|------|---|------|--------------|------|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M12 X 1.5 | -4 | | | GA15067-4 | 35.0 | GA15711-4 | 21.0 | 07.049-4-4 | 28.0 |
| M14 X 1.5 | -4 | | | | | GA15071-4 | 23.0 | | |
| M16 X 1.5 | -6 | | | GA15067-6 | 37.0 | GA15071-6 | 27.0 | 07.049-8-6 | 32.0 |
| M18 X 1.5 | -6 | | | | | GA15071-6 | 30.0 | | |
| M18 X 1.5 | -8 | | | GA15067-8 | 43.0 | GA15071-8 | 34.0 | 07.049-10-8 | 35.5 |
| M22 X 1.5 | -8 | | | | | | | | |
| M22 X 1.5 | -10 | | | GA15067-10 | 47.0 | | | 07.049-13-10 | 41.5 |
| M26 X 1.5 | -10 | | | | | GA15071-10 | 47.0 | | |
| M26 X 1.5 | -12 | | | GA15067-12 | 61.0 | | | 07.049-16-12 | 52.0 |
| M30 X 2.0 | -10 | | | | | | | | |
| M30 X 2.0 | -12 | | | GA15067-16 | 60.0 | GA15071-12 | 50.0 | 07.049-22-16 | 53.5 |
| M36 X 2.0 | -16 | | | | | | | | |
| M36 X 2.0 | -20 | | | GA15067-20 | 64.0 | | | 07.049-28-20 | 73.0 |
| M45 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -20 | | | | | | | | |
| M45 X 2.0 | -24 | | | GA15067-24 | 72.0 | | | | |
| M52 X 2.0 | -24 | | | | | | | | |
| M52 X 2.0 | -32 | | | GA15067-32 | 96.0 | | | | |

REUSABLE

FITTINGS

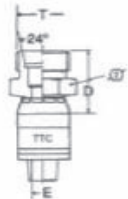



Powering Business Worldwide

Fittings

FITTINGS

CRIMP


| EK | | | | | | | | | | |
|--------------------------|------|------------------|-----|---|-------|--|--------|--------------|-------|--------------------|
| Metric Male Heavy | | | | | | | | | | |
| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | | | |  | |  | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| M16 X 1.5 | -04 | | | 1A5EK4 | 24.1 | | | | | |
| M18 X 1.5 | -04 | | | 1A6EK4 | 23.6 | | | | | |
| M20 X 1.5 | -06 | | | 1A8EK6 | 28.5 | 4S8EK6 | 25.0 | | | |
| M22 X 1.5 | -06 | | | 1A10EK6 | 27.3 | 4S10EK6 | 27.3 | | | |
| M22 X 1.5 | -08 | | | | | | | | | |
| M24 X 1.5 | -08 | | | 1A12EK8 | 28.3 | 4S12EK8 | 28.3 | | | |
| M24 X 1.5 | -10 | | | | | | | | | |
| M30 X 2.0 | -10 | | | 1A16EK10 | 32.6 | 4S16EK10 | 32.6 | | | |
| M30 X 2.0 | -12 | | | | | | | | | |
| M36 X 2.0 | -12 | | | | | 4S20EK12 | 42.3 | | | |
| M42 X 2.0 | -12 | | | | | | | | | |
| M36 X 2.0 | -16 | | | | | | | | | |
| M42 X 2.0 | -16 | | | 1A25EK16 | | 4S25EK16 | 44.0 | | | |
| M52 X 2.0 | -16 | | | | | | | | | |
| M42 X 2.0 | -20 | | | | | | | | | |
| M52 X 2.0 | -20 | | | 1AP32EK20* | | 4S32EK20 | 51.7 | | | |
| M52 X 2.0 | -20 | | | 1AT32EK20** | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

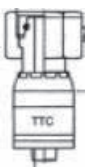
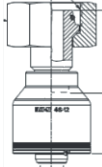
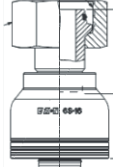
EK
Metric Male Heavy

| Reusable | | | | | | | | | |
|-----------|------|--|-----|---|-----|------------|-----|----------|-----|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | |  | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M16 X 1.5 | -04 | | | 07.026-8-4 | | | | | |
| M18 X 1.5 | -04 | | | | | | | | |
| M20 X 1.5 | -06 | | | 07.026-12-6 | | | | | |
| M22 X 1.5 | -06 | | | | | | | | |
| M22 X 1.5 | -08 | | | 07.026-14-8 | | | | | |
| M24 X 1.5 | -08 | | | | | | | | |
| M24 X 1.5 | -10 | | | 07.026-16.10 | | | | | |
| M30 X 2.0 | -10 | | | | | | | | |
| M30 X 2.0 | -12 | | | 07.026-20-12 | | | | | |
| M36 X 2.0 | -12 | | | | | | | | |
| M42 X 2.0 | -12 | | | | | | | | |
| M36 X 2.0 | -16 | | | 07.026-25-16 | | | | | |
| M42 X 2.0 | -16 | | | | | | | | |
| M52 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -20 | | | 07.026-30-20 | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |

REUSABLE

FITTINGS

DS
DKO-heavy
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|------------------------------|---|---|---|
| | One piece | TTC | 4S | 6S |
| | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) |
| | |  |  |  |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|----------|-----|-------------|------|----------|-------|----------|-------|
| M16 X 1.5 | -04 | | | 1A5DS4 | 26.2 | | | | |
| M18 X 1.5 | -04 | | | 1A6DA4 | 27.4 | | | | |
| M20 X 1.5 | -06 | | | 1A8DS6 | 28.5 | 4S8DS6 | | | |
| M22 X 1.5 | -06 | | | 1A10DS6 | 31.6 | 4S10DS6 | | | |
| M22 X 1.5 | -08 | | | 1A10DS8 | 35.8 | | | | |
| M24 X 1.5 | -08 | | | 1A12DS8 | 32.7 | 4S12DS8 | | | |
| M24 X 1.5 | -10 | | | 1A12DS10 | 26.7 | | | | |
| M30 X 2.0 | -10 | | | 1A16DS10 | 37.5 | 4S16DS10 | | | |
| M30 X 2.0 | -12 | | | 1A16DS12 | 30.1 | 4S16DS12 | 37.4 | | |
| M36 X 2.0 | -12 | | | 1A20DS12 | 41.8 | 4S20DS12 | 50.30 | | |
| M42 X 2.0 | -12 | | | | | 4S25DS12 | 51.90 | | |
| M36 X 2.0 | -16 | | | 1A20DS16 | 31.3 | | | | |
| M42 X 2.0 | -16 | | | 1A25DS16 | 44.1 | 4S25DS16 | 51.40 | 6S25DS16 | 51.40 |
| M52 X 2.0 | -16 | | | | | 4S32DS16 | 55.30 | 6S32DS16 | 55.30 |
| M42 X 2.0 | -20 | | | | | 4S25DS20 | 41.60 | | |
| M52 X 2.0 | -20 | | | 1AP32DS20* | 49.7 | 4S32DS20 | 56.50 | 6S32DS20 | 56.50 |
| M52 X 2.0 | -20 | | | 1AT32DS20** | 49.7 | | | | |
| M52 X 2.0 | -24 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

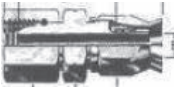
** Use with two wire hose



Powering Business Worldwide

Fittings

DS
DKO-heavy
Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|------------|-----|--|-----|------------|-----|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socetless | | Teflon | |
| | | | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | | | | | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M16 X 1.5 | -04 | | | | | | | 07.161.8-4 | 29.5 |
| M18 X 1.5 | -04 | | | | | | | | |
| M20 X 1.5 | -06 | | | | | | | 07.161-12-6 | 29.0 |
| M22 X 1.5 | -06 | | | | | | | | |
| M22 X 1.5 | -08 | | | | | | | 07.161-14-8 | 30.0 |
| M24 X 1.5 | -08 | | | | | | | | |
| M24 X 1.5 | -10 | | | | | | | 07.161-16-10 | 33.0 |
| M30 X 2.0 | -10 | | | | | | | | |
| M30 X 2.0 | -12 | | | | | | | 07.161-20-12 | 38.0 |
| M36 X 2.0 | -12 | | | | | | | | |
| M42 X 2.0 | -12 | | | | | | | | |
| M36 X 2.0 | -16 | | | | | | | 07.161-25-16 | 39.5 |
| M42 X 2.0 | -16 | | | | | | | | |
| M52 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -20 | | | | | | | 07.161-30-20 | 44.0 |
| M52 X 2.0 | -20 | | | | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |

REUSABLE

FITTINGS

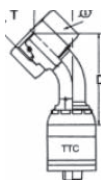
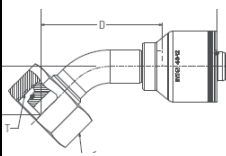
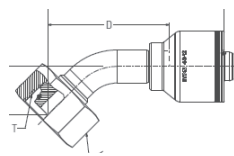


Powering Business Worldwide

Fittings

FITTINGS I

DSA
45° Swept
Fem swivel

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|-----------|------|-----------|---|--------------|--|--------------------|---|-----------|--------------------|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | FC693 | 3130# | 3740# | FC500 (-12 TO -24) | | | FC606 (-16 & -20) |
| | | 3840 | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | D2900W | D1600 | | D8300W (-12 & -16) | | | |
| | | |  | |  | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M18 X 1.5 | -4 | | | 1A6DSA4 | 38.0 | | | | |
| M20 X 1.5 | -6 | | | 1A8DSA6 | 43.0 | 4S8DSA6 | | | |
| M22 X 1.5 | -6 | | | 1A10DSA6 | 43.5 | 4S10DSA6 | | | |
| M22 X 1.5 | -8 | | | | | | | | |
| M24 X 1.5 | -8 | | | 1A12DSA8 | 50.0 | 4S12DSA8 | | | |
| M24 X 1.5 | -10 | | | 1A12DSA10 | | | | | |
| M30 X 2.0 | -10 | | | 1A16DSA10 | 55.5 | 4S16DSA10 | | | |
| M30 X 2.0 | -12 | | | 1A16DSA12 | 58.9 | | | | |
| M36 X 2.0 | -12 | | | 1A20DSA12 | 68.0 | 4S20DSA12 | 80.40 | | |
| M36 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -12 | | | | | 4S25DSA12 | 94.40 | | |
| M42 X 2.0 | -16 | | | 1B25DSA16 | 68.0 | 4S25DSA16 | 94.40 | 6S25DSA16 | 94.4 |
| M52 X 2.0 | -16 | | | | | 4S32DSA16 | 105.30 | 6S32DSA16 | 105.3 |
| M52 X 2.0 | -20 | | | 1AP32DSA20* | 94.7 | | | | |
| M52 X 2.0 | -20 | | | 1AT32DSA20** | 94.7 | 4S32DSA20 | 105.3 | 6S32DSA20 | 105.3 |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose



Powering Business Worldwide

Fittings

DSA
45° Swept
Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|------------|-----|--|-----|------------|-----|----------|-----|
| | | 1 & 2 wire | | SAE100R5 | | Socetless | | Teflon | |
| | | | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | | | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M18 X 1.5 | -4 | | | | | | | | |
| M20 X 1.5 | -6 | | | | | | | | |
| M22 X 1.5 | -6 | | | | | | | | |
| M22 X 1.5 | -8 | | | | | | | | |
| M24 X 1.5 | -8 | | | | | | | | |
| M24 X 1.5 | -10 | | | | | | | | |
| M30 X 2.0 | -10 | | | | | | | | |
| M36 X 2.0 | -12 | | | | | | | | |
| M36 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -12 | | | | | | | | |
| M42 X 2.0 | -16 | | | | | | | | |
| M52 X 2.0 | -16 | | | | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |

REUSABLE

FITTINGS

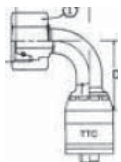
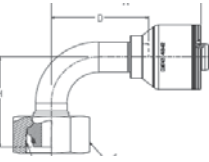
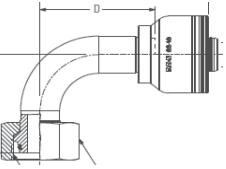


Powering Business Worldwide

Fittings

FITTINGS I

DSB
DKO-heavy
90° Swept
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|------------------------------|---|--|---|
| | One piece | TTC | 4S | 6S |
| | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) |
| | |  |  |  |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|----------|-----|-----------|------|-----------|------|-----------|------|
| M16 X 1.5 | -04 | | | 1A5DSB4 | 28.5 | | | | |
| M18 X 1.5 | -04 | | | 1A6DSB4 | 31.0 | | | | |
| M20 X 1.5 | -06 | | | 1A10DSB6 | 38.5 | | | | |
| M22 X 1.5 | -08 | | | 1A12DSB8 | 44.0 | | | | |
| M24 X 1.5 | -08 | | | | | | | | |
| M24 X 1.5 | -10 | | | | | | | | |
| M30 X 2.0 | -10 | | | 1A16DSB10 | 48.0 | | | | |
| M30 X 2.0 | -12 | | | 1A16DSB12 | 59.3 | | | | |
| M36 X 2.0 | -12 | | | 1A20DSB12 | 59.0 | 4S20DSB12 | 67.7 | | |
| M36 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -12 | | | | | 4S25DSB12 | 86.4 | | |
| M42 X 2.0 | -16 | | | 1A25DSB16 | 64.0 | 4S25DSB16 | 84.8 | 6S25DSB16 | 84.8 |
| M42 X 2.0 | -20 | | | | | | | | |
| M52 X 2.0 | -16 | | | | | 4S32DSB16 | 97.0 | 6S32DSB16 | 97.0 |
| M52 X 2.0 | -20 | | | | | 4S32DSB20 | 98.0 | 6S32DSB20 | 98.0 |
| M52 X 2.0 | -24 | | | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

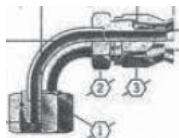
** Use with two wire hose



Powering Business Worldwide

Fittings

DSB
DKO-heavy
90° Swept
Fem swivel

| Reusable | | | | | | | | | |
|-----------|------|------------|-----|--|-----|------------|-----|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socetless | | Teflon | |
| | | | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | | | | | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M16 X 1.5 | -04 | | | | | | | 07.163-8-4 | 28.0 |
| M18 X 1.5 | -04 | | | | | | | | |
| M20 X 1.5 | -06 | | | | | | | 07.163-12-6 | |
| M22 X 1.5 | -08 | | | | | | | 07.163-14-8 | 35.5 |
| M24 X 1.5 | -08 | | | | | | | | |
| M24 X 1.5 | -10 | | | | | | | 07.163-16-10 | 41.5 |
| M30 X 2.0 | -10 | | | | | | | | |
| M30 X 2.0 | -12 | | | | | | | 07.163-20-12 | 52.5 |
| M36 X 2.0 | -12 | | | | | | | | |
| M36 X 2.0 | -16 | | | | | | | 07.163-25-16 | 53.5 |
| M42 X 2.0 | -12 | | | | | | | | |
| M42 X 2.0 | -16 | | | | | | | | |
| M42 X 2.0 | -20 | | | | | | | 07.163-30-20 | 75.0 |
| M52 X 2.0 | -16 | | | | | | | | |
| M52 X 2.0 | -20 | | | | | | | | |
| M52 X 2.0 | -24 | | | | | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

Fittings

FITTINGS

CRIMP

| FJ JIC Fem swivel | | | | | | | | | | |
|-------------------------|------|--------------|-----|-----------------------|-------|-----------------------------|--------|--------------|-------|--------------------|
| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | | | | | | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| 3/8-24 | -04 | | | 1AA3FJ4 | 26.0 | | | | | |
| 7/16-20 | -04 | 90304-045400 | | 1AA4FJ4+ | 27.0 | | | | | |
| 1/2-20 | -04 | 90304-055400 | | 1AA5FJ4 | 27.0 | | | | | |
| 9/16-18 | -04 | 90304-065500 | | 1AA6FJ4 | 28.0 | | | | | |
| 7/16-20 | -06 | 90306-045400 | | 1AA4FJ6 | 30.0 | | | | | |
| 1/2-20 | -06 | 90306-055400 | | 1AA5FJ6 | 31.5 | | | | | |
| 9/16-18 | -06 | 90306-065500 | | 1AA6FJ6+ | 32.5 | 4SA6FJ6 | | | | |
| 3/4-16 | -06 | 90306-085400 | | 1AA8FJ6 | 33.3 | 4SA8FJ6 | | | | |
| 3/4-16 | -08 | 90308-085400 | | 1AA8FJ8+ | 37.0 | 4SA8FJ8 | | | | |
| 7/8-14 | -08 | 90308-105400 | | 1AA10FJ8 | 37.3 | 4SA10FJ8 | | | | |
| 1 1/16-12 | -08 | 90308-125400 | | 1AA12FJ8 | 39.6 | | | | | |
| 1 5/16-12 | -08 | | | 1AA16FJ8 | 48.0 | | | | | |
| 7/8-14 | -10 | | | 1AA10FJ10+ | 41.0 | 4SA10FJ10 | | | | |
| 1 1/16-12 | -10 | | | 1AA12FJ10 | 39.9 | | | | | |
| 7/8-14 | -12 | 90312-105400 | | 1AA10FJ12 | 41.4 | 4SA10FJ12 | 39 | | | |
| 1 1/16-12 | -12 | 90312-125500 | | 1AA12FJ12+ | 41.9 | 4SA12FJ12 | 41 | | | |
| 1 1/16-12 | -16 | | | | | 4SA12FJ16 | 39 | | | |
| 1 3/16-12 | -12 | 90312-145500 | | 1AA14FJ12 | 41.9 | 4SA14FJ12 | 41 | | | |
| 1 5/16-12 | -12 | 90312-165500 | | 1AA16FJ12 | 43.7 | 4SA16FJ12 | 44 | | | |
| 1 1/16-12 | -16 | | | 1AA12FJ16 | 45.7 | | | | | |
| 1 5/16-12 | -16 | 90316-165500 | | 1AA16FJ16+ | 49.0 | 4SA16FJ16 | 43 | 6SA16FJ16 | 42.8 | |
| 1 5/16-12 | -20 | | | | | 4SA16FJ20 | 44 | | | |
| 1 5/8-12 | -16 | | | 1AA20FJ16 | 46.0 | 4SA20FJ16 | 46 | | | |
| 1 5/16-12 | -20 | | | 1AR16FJ20 | 44.0 | | | | | |
| 1 5/16-12 | -20 | | | 1AV16FJ20 | 44.0 | | | | | |
| 1 5/8-12 | -20 | | | | | 4SA20FJ20 | 46 | 6SA20FJ20 | 46.3 | |
| 1 5/8-12 | -20 | | | 1AR20FJ20* | 47.8 | | | | | |
| 1 5/8-12 | -20 | | | 1AV20FJ20** | 47.8 | | | | | |
| 1 7/8-12 | -20 | | | | | 4SA24FJ20 | 52 | 6SA24FJ20 | 51.5 | |
| 1 7/8-12 | -24 | | | 1AA24FJ24 | 52.6 | 4SA24FJ24 | 56.80 | 6SA24FJ24 | 56.80 | |
| 1 7/8-12 | -32 | | | | | | | | | |
| 2 1/2-12 | -32 | | | 1AA32FJ32 | 60.2 | 4SA32FJ32 | 68.00 | 6SA32FJ32 | 68.00 | |

Use with FF91064 sleeve

** Use with two wire hose

* Use with one wire hose

F35

+ Available in stainless



Powering Business Worldwide

Fittings

FJ JIC Fem swivel

| | | Reusable | | | | | | | |
|--|--|--|--|--|--|------------|--|--------|--|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | | | | | | | | | |

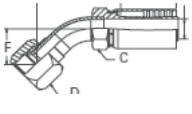
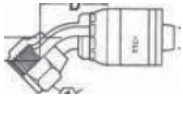
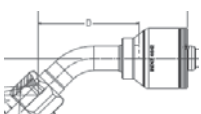
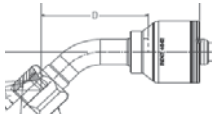
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|------------|-----|-------------|-------|-----------|------|---------------|------|
| 3/8-24 | -04 | | | | | 4741-3-4B | 17.5 | | |
| 7/16-20 | -04 | DSR05-0704 | | 4411-4S* | 25.40 | 4797-4B | 18.0 | 63-190600-4* | 28.7 |
| 1/2-20 | -04 | DSR05-0804 | | 4411-5-4S | 28.00 | | | | |
| 9/16-18 | -04 | DSR05-0904 | | | | | | | |
| 7/16-20 | -06 | | | | | | | | |
| 1/2-20 | -06 | | | | | 4741-5-6B | 20.3 | | |
| 9/16-18 | -06 | DSR05-0906 | | 4411-6S* | 29.20 | 4741-6B | 20.3 | 63-190600-6* | 31.0 |
| 3/4-16 | -06 | DSR05-1206 | | | | 4797-8-6S | | | |
| 3/4-16 | -08 | DSR05-1208 | | 4411-8S* | 35.00 | 4797-8B | 23.6 | 63-190600-8* | 34.3 |
| 7/8-14 | -08 | DSR05-1408 | | 4411-10-8S | 38.10 | | | | |
| 1 1/16-12 | -08 | | | | | | | | |
| 1 5/16-12 | -08 | | | | | | | | |
| 7/8-14 | -10 | DSR05-1410 | | 4411-10S* | 38.40 | 4797-10B | 26.7 | 63-190600-10* | 39.1 |
| 1 1/16-12 | -10 | DSR05-1710 | | 4411-12-10S | 39.60 | | | | |
| 7/8-14 | -12 | | | | | | | | |
| 1 1/16-12 | -12 | DSR05-1712 | | 4411-12S* | 40.10 | 4741-12B | 30.2 | 63-190600-12* | 42.4 |
| 1 1/16-12 | -16 | | | | | | | | |
| 1 3/16-12 | -12 | | | | | | | | |
| 1 5/16-12 | -12 | DSR05-2112 | | 4411-16-12S | 42.9 | | | | |
| 1 1/16-12 | -16 | | | | | | | | |
| 1 5/16-12 | -16 | DSR05-2116 | | 4411-16S* | 39.6 | | | 63-190600-16* | 48.5 |
| 1 5/16-12 | -20 | | | | | | | | |
| 1 5/8-12 | -16 | | | | | | | | |
| 1 5/16-12 | -20 | | | | | | | | |
| 1 5/16-12 | -20 | | | | | | | | |
| 1 5/8-12 | -20 | | | 4411-20S | 41.7 | | | 63-190600-20 | 57.5 |
| 1 5/8-12 | -20 | | | | | | | | |
| 1 5/8-12 | -20 | | | | | | | | |
| 1 7/8-12 | -20 | | | | | | | | |
| 1 7/8-12 | -24 | | | 4411-24S | 46.5 | | | | |
| 1 7/8-12 | -32 | | | | | | | | |
| 2 1/2-12 | -32 | | | 4411-32S | 51.6 | | | | |

* = Available in stainless steel delete '-63' add 'C'

REUSABLE

FITTINGS

FJA
JIC/SAE
45° Swept
Fem swivel

| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|-----------|------|---|-----|---|-------|--|--------|---|-------|--------------------|
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | |  | |  | |  | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| 7/16-20 | -04 | 90304-045540 | | 1AA4FJA4 | 26.4 | | | | | |
| 1/2-20 | -04 | 90304-055540 | | 1AA5FJA4 | 28.5 | | | | | |
| 9/16-18 | -04 | 90304-065540 | | 1AA6FJA4 | 29.7 | | | | | |
| 9/16-18 | -06 | 90306-065540 | | 1AA6FJA6 | 33.3 | 4SA6FJA6 | | | | |
| 3/4-16 | -06 | 90306-085540 | | 1AA8FJA6 | 40.9 | 4SA8FJA6 | | | | |
| 3/4-16 | -08 | 90308-085540 | | 1AA8FJA8 | 41.9 | 4SA8FJA8 | | | | |
| 7/8-14 | -08 | 90308-105540 | | 1AA10FJA8 | 47.2 | | | | | |
| 3/4-16 | -10 | | | | | | | | | |
| 7/8-14 | -10 | | | 1AA10FJA10 | 45.5 | 4SA10FJA10 | | | | |
| 1 1/16-12 | -10 | | | 1AA12FJA10 | 56.4 | | | | | |
| 7/8-14 | -12 | | | | | | | | | |
| 1 1/16-12 | -12 | 90312-125540 | | 1AA12FJA12 | 60.0 | 4SA12FJA12 | 71.0 | | | |
| 1 5/16-12 | -12 | | | | | 4SA16FJA12 | 97.5 | | | |
| 1 5/8-12 | -16 | | | 1AA20FJA16 | 66.7 | | | | | |
| 1 5/16-12 | -16 | 90316-165540 | | 1AA16FJA16 | 67.3 | 4SA16FJA16 | 89.3 | | | |
| 1 5/8-12 | -16 | | | | | 4SA20FJA16 | 80.4 | | | |
| 1 5/8-12 | -20 | | | 1AR20FJA20* | 68.8 | 4SA20FJA20 | 80.4 | 6SA20FJA20 | 80.4 | |
| 1 5/8-12 | -20 | | | 1AV20FJA20** | 68.8 | | | | | |
| 1 7/8-12 | -24 | | | | | 4SA24FJA24 | 134.0 | 6SA24FJA24 | 134.0 | |

Use with FF91064 sleeve

* Use with one wire hose

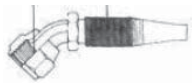
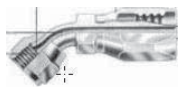

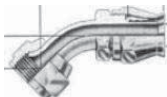
** Use with two wire hose



Powering Business Worldwide

Fittings

FJA JIC/SAE 45° Swept Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|---|-----|---|------|--|------|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 7/16-20 | -04 | DSR99-0704 | | 190297-4S | 28.0 | 191321-4S | 17.8 | 190773-4S | 24.1 |
| 1/2-20 | -04 | | | | | | | | |
| 9/16-18 | -04 | | | | | | | | |
| 9/16-18 | -06 | DSR99-0906 | | 190265-6S | 33.8 | 190516-6S | 21.1 | 190773-6S | 27.9 |
| 3/4-16 | -06 | DSR99-1206 | | 190297-8-6S | 44.2 | 191321-8-6S | 26.4 | | |
| 3/4-16 | -08 | DSR99-1208 | | 190298-8S | 46.7 | 191321-8S | 26.7 | 190773-8S | 35.8 |
| 7/8-14 | -08 | DSR99-1408 | | | | | | | |
| 3/4-16 | -10 | | | 190298-8-10S | 47.0 | | | | |
| 7/8-14 | -10 | DSR99-1410 | | 190297-10S | 47.0 | | | 190773-10S | 37.9 |
| 1 1/16-12 | -10 | | | | | | | | |
| 7/8-14 | -12 | | | 190297-10-12S | 49.5 | | | | |
| 1 1/16-12 | -12 | DSR99-1712 | | 190265-12S | 56.1 | | | 190773-12S | 55.1 |
| 1 5/16-12 | -12 | | | 190265-16-12S | 61.7 | | | | |
| 1 5/8-12 | -16 | | | 190265-16S | 61.7 | | | | |
| 1 5/16-12 | -16 | DSR99-2116 | | | | | | 190773-16S | 63.3 |
| 1 5/8-12 | -16 | | | | | | | | |
| 1 5/8-12 | -20 | | | 190265-20S | 72.4 | | | | |
| 1 5/8-12 | -20 | | | | | | | | |
| 1 7/8-12 | -24 | | | | | | | | |

REUSABLE

FITTINGS



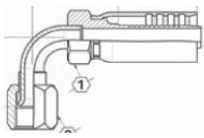
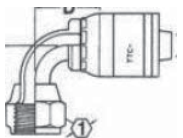
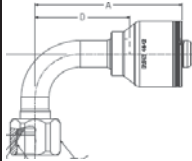
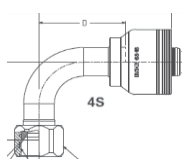
Powering Business Worldwide

Fittings

FITTINGS

CRIMP

FJB
JIC/SAE
90° Swept
Fem swivel

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|---|---|--|---|
| | One piece | TTC | 4S | 6S |
| | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) |
| |  |  |  |  |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|-----------|------|--------------|-----|------------|------|------------|-------|------------|-------|
| 7/16-20 | -04 | 90304-0455S0 | | 1AA4FJB4 | 23.4 | | | | |
| 1/2-20 | -04 | 90304-0555S0 | | 1AA5FJB4 | 25.0 | | | | |
| 9/16-18 | -04 | 90304-0655S0 | | 1AA6FJB4 | 27.4 | | | | |
| 9/16-18 | -06 | 90306-0655S0 | | 1AA6FJB6 | 31.0 | 4SA6FJB6 | | | |
| 3/4-16 | -06 | 90306-0855S0 | | 1AA8FJB6 | 36.1 | 4SA8FJB6 | | | |
| 9/16-18 | -08 | | | 1AA6FJB8 | 32.0 | | | | |
| 3/4-16 | -08 | 90308-0855S0 | | 1AA8FJB8 | 36.1 | 4SA8FJB8 | | | |
| 7/8-14 | -08 | 90308-1055S0 | | 1AA10FJB8 | 40.9 | | | | |
| 7/8-14 | -10 | | | 1AA10FJB10 | 39.4 | 4SA10FJB10 | | | |
| 1 1/16-12 | -10 | | | 1AA12FJB10 | 54.9 | | | | |
| 7/8-14 | -12 | | | | | | | | |
| 3/4-16 | -12 | | | | | | | | |
| 1 1/16-12 | -12 | 90312-1255S0 | | 1AA12FJB12 | 55.1 | 4SA12FJB12 | 65.3 | | |
| 1 5/16-12 | -12 | | | 1AA16FJB12 | 55.1 | 4SA16FJB12 | 73.8 | | |
| 1 1/16-14 | -16 | | | | | | | | |
| 1 5/16-12 | -16 | 90316-1655S0 | | 1AA16FJB16 | 55.9 | 4SA16FJB16 | 73.5 | 6SA16FJB16 | 73.5 |
| 1 5/8-12 | -16 | | | | | 4SA20FJB16 | 77.4 | | |
| 1 5/8-12 | -20 | | | 1AR20FJB20 | 64.0 | 4SA20FJB20 | 77.4 | 6SA20FJB20 | 77.4 |
| 1 5/8-12 | -20 | | | 1AV20FJB20 | 64.0 | | | | |
| 1 7/8-12 | -24 | | | 1AA24FJB24 | 71.4 | 4SA24FJB24 | 130.8 | 6SA24FJB24 | 130.8 |

Use with FF91064 sleeve

* Use with one wire hose

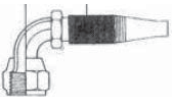
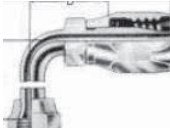

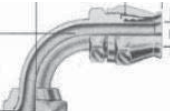
** Use with two wire hose



Powering Business Worldwide

Fittings

FJB
JIC/SAE
90° Swept
Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|---|-----|---|------|--|-------|---|------|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 7/16-20 | -04 | DSR97-0704 | | 190296-4S | 25.2 | | | 190772-4S | 24.1 |
| 1/2-20 | -04 | | | | | | | | |
| 5/16-18 | -06 | | | | | | | | |
| 9/16-18 | -06 | DSR97-0906 | | 190261-6S | 31.2 | 190516-6S | 21.10 | 190772-6S | 27.9 |
| 3/4-16 | -06 | DSR97-1206 | | | | | | | |
| 3/4-16 | -08 | DSR97-1208 | | 190296-8S | 40.9 | | | 190772-8S | 35.8 |
| 7/8-14 | -08 | DSR97-1408 | | | | | | | |
| 7/8-14 | -10 | DSR97-1410 | | 190296-10S | 41.9 | | | 190772-10S | 37.9 |
| 7/8-14 | -12 | | | | | | | | |
| 1 1/16-12 | -12 | DSR97-1712 | | 190261-12S | 55.1 | | | 190772-12S | 55.1 |
| 1 5/16-12 | -16 | DSR97-2116 | | 190261-16S | 57.9 | | | 190772-16S | 63.3 |
| 1 5/8-12 | -20 | | | 190261-20S | 67.3 | | | | |
| 1 5/8-12 | -20 | | | | | | | | |

REUSABLE

FITTINGS



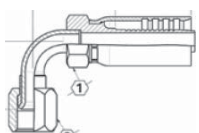
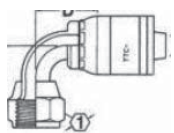
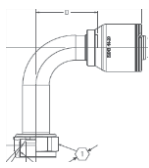
Powering Business Worldwide

Fittings

FITTINGS

CRIMP

FJC
JIC/SAE
90° Long drop swept
Fem swivel

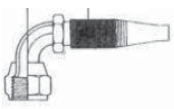
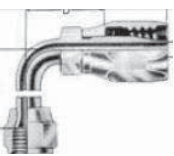
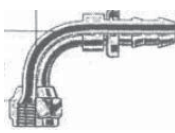
| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|-----------|------|---|---|--------------|--|------------|--|----------|-----|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | | |
| | |  |  | |  | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 7/16-20 | -04 | 90304-0455L0 | | 1AA4FJC4 | 23.4 | | | | |
| 1/2-20 | -04 | 90304-0555L0 | | 1AA5FJC4 | 25.4 | | | | |
| 5/16-18 | -06 | 90306-0655L0 | | | | | | | |
| 9/16-18 | -06 | 90306-0855L0 | | 1AA6FJC6 | 31.2 | 4SA6FJC6 | | | |
| 3/4-16 | -06 | 90308-0855L0 | | 1AA8FJC6 | 39.1 | 4SA8FJC6 | | | |
| 3/4-16 | -08 | 90308-1055L0 | | 1AA8FJC8 | 39.1 | 4SA8FJC8 | | | |
| 7/8-14 | -08 | | | 1AA10FJC8 | 40.9 | | | | |
| 7/8-14 | -10 | | | 1AA10FJC10 | 39.1 | 4SA10FJC10 | | | |
| 7/8-14 | -12 | 90312-1255L0 | | | | | | | |
| 1 1/16-12 | -12 | 90316-1655L0 | | 1AA12FJC12 | 55.1 | 4SA12FJC12 | 65.3 | | |
| 1 5/16-12 | -16 | | | 1AA16FJC16 | 55.9 | 4SA16FJC16 | 73.5 | | |
| 1 5/8-12 | -20 | | | 1AR20FJC20* | 64.0 | 4SA20FJC20 | 77.4 | | |
| 1 5/8-12 | -20 | | | 1AV20FJC20** | 64.0 | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

FJC
JIC/SAE
90° Long drop swept
Fem swivel

| | | Reusable | | | | | | | |
|-----------|------|---|-----|---|------|--|------|----------|-----|
| | | 1 & 2 wire | | Socketless | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 7/16-20 | -04 | DSR98-0704 | | 190265-4S | 25.2 | | | | |
| 1/2-20 | -04 | | | | | | | | |
| 5/16-18 | -06 | | | | | | | | |
| 9/16-18 | -06 | DSR98-0906 | | 190260-6S | 31.2 | 190465-6S | 21.1 | | |
| 3/4-16 | -06 | DSR98-1206 | | | | | | | |
| 3/4-16 | -08 | DSR98-1208 | | 190295-8S | 43.9 | | | | |
| 7/8-14 | -08 | | | | | | | | |
| 7/8-14 | -10 | DSR98-1410 | | 190295-10S | 48.3 | | | | |
| 7/8-14 | -12 | | | | | | | | |
| 1 1/16-12 | -12 | DSR98-1712 | | 190260-12S | 55.1 | | | | |
| 1 5/16-12 | -16 | DSR98-2116 | | 190260-16S | 57.9 | | | | |
| 1 5/8-12 | -20 | | | 190260-20S | 67.3 | | | | |
| 1 5/8-12 | -20 | | | | | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

Fittings

FITTINGS I

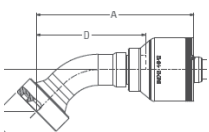
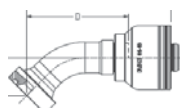
FH Code 62 flange

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|-----------|------------------------------------|------------------------------------|--------------------|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |
| | | | | |

| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|----------|-----|----------|-----|----------|--------|----------|-------|
| -12 | -12 | | | | | 4S12FH12 | 90.7 | | |
| -12 | -16 | | | | | 4S12FH16 | 93.7 | | |
| -16 | -12 | | | | | 4S16FH12 | 90.2 | | |
| -16 | -16 | | | | | 4S16FH16 | 93.3 | 6S16FH16 | 93.3 |
| -20 | -16 | | | | | 4S20FH16 | 100.8 | 6S20FH16 | 100.8 |
| -16 | -20 | | | | | | | | |
| -20 | -20 | | | | | 4S20FH20 | 117.4 | 6S20FH20 | 117.4 |
| -24 | -20 | | | | | 4S24FH20 | 125.7 | 6S24FH20 | 125.7 |
| -24 | -24 | | | | | 4S24FH24 | 189.60 | 6S24FH24 | 189.6 |
| -32 | -24 | | | | | 4S32FH24 | 204.4 | 6S32FH24 | 204.4 |
| -32 | -32 | | | | | 4S32FH32 | 202.7 | 6S32FH32 | 202.7 |

CRIMP

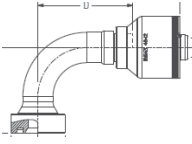
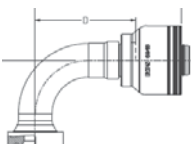
FHA
Code 62 flange
45 degree

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|-----------|------------------------------------|----------|--|-----------|---|-----------|-------|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | |
| | | | | |  | |  | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | | | 4S12FHA12 | 77.6 | | |
| -16 | -12 | | | | | 4S16FHA12 | 91.7 | | |
| -12 | -16 | | | | | 4S12FHA16 | 77.2 | | |
| -16 | -16 | | | | | 4S16FHA16 | 91.2 | 6S16FHA16 | 91.2 |
| -20 | -16 | | | | | 4S20FHA16 | 110.5 | 6S20FHA16 | 110.5 |
| -20 | -20 | | | | | 4S20FHA20 | 111.6 | 6S20FHA20 | 111.6 |
| -24 | -20 | | | | | 4S24FHA20 | 128.2 | 6S24FHA20 | 128.2 |
| -24 | -24 | | | | | 4S24FHA24 | 136.1 | 6S24FHA24 | 136.1 |
| -32 | -24 | | | | | 4S32FHA24 | 173.0 | 6S32FHA24 | 173.0 |
| -32 | -32 | | | | | 4S32FHA32 | 175.9 | 6S32FHA32 | 175.9 |

CRIMP

FITTINGS

FHB
Code 62 flange
90 degree

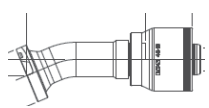
| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|------------------------------|---|--|---|
| | One piece | TTC | 4S | 6S |
| | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) |
| | | |  |  |

| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|----------|-----|----------|-----|-----------|--------|-----------|--------|
| -12 | -12 | | | | | 4S12FHB12 | 72.3 | | |
| -12 | -16 | | | | | | | | |
| -16 | -12 | | | | | 4S16FHB12 | 86.6 | | |
| -16 | -16 | | | | | 4S16FHB16 | 86.1 | 6S16FHB16 | 86.1 |
| -20 | -16 | | | | | 4S20FHB16 | 105.4 | 6S20FHB16 | 105.4 |
| -16 | -20 | | | | | 4S16FHB20 | 91.9 | 6S16FHB20 | 91.9 |
| -20 | -20 | | | | | 4S20FHB20 | 106.5 | 6S20FHB20 | 106.5 |
| -24 | -20 | | | | | 4S24FHB20 | 123.0 | 6S24FHB20 | 123.0 |
| -24 | -24 | | | | | 4S24FHB24 | 130.80 | 6S24FHB24 | 130.80 |
| -32 | -24 | | | | | 4S32FHB24 | 169.40 | 6S32FHB24 | 169.40 |
| -32 | -32 | | | | | 4S32FHB32 | 172.20 | 6S32FHB32 | 172.20 |
| -40 | -32 | | | | | | | | |
| -40 | -32 | | | | | | | | |



Fittings

FHD
Code 62 flange
22.5 degree

| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|--------|------|-----------|-----|-----------------------|-----|--|-------|--------------------|-----|
| | | One piece | | TTC | | 4S | | 6S | |
| | | 3130 | | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | |
| | | 37AL | | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | |
| | | 3800 | | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | |
| | | 3840 | | 3E80# 3R80# D2800W | | FC636 D8200W | | D8300W (-20 & -24) | |
| | | | | D2900W D1600 | | D8300W (-12 & -16) | | | |
| | | | | | |  | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | | | | | | |
| -16 | -12 | | | | | | | | |
| -12 | -16 | | | | | | | | |
| -16 | -16 | | | | | 4S16FHD16 | 100.1 | | |
| -20 | -16 | | | | | 4S20FHD16 | 121.2 | | |
| -20 | -20 | | | | | | | | |
| -24 | -20 | | | | | | | | |
| -24 | -24 | | | | | | | | |
| -32 | -24 | | | | | | | | |
| -32 | -32 | | | | | 4S32FHD32 | 191.5 | | |

CRIMP

FITTINGS



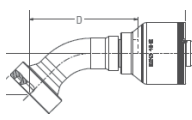
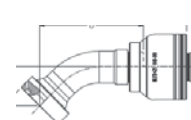
Powering Business Worldwide

Fittings

FITTINGS

FHG

Code 62 flange
60 degree

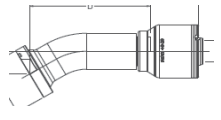
| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|-----------|------------------------------------|----------|--|-----------|---|-----------|-------|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | |
| | | | | |  | |  | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | | | 4S12FHG12 | 97.70 | | |
| -16 | -12 | | | | | | | | |
| -12 | -16 | | | | | | | | |
| -16 | -16 | | | | | 4S16FHG16 | 116.6 | 6S16FHG16 | 116.6 |
| -20 | -16 | | | | | | | | |
| -20 | -20 | | | | | | | 6S20FHG20 | 144.6 |
| -24 | -20 | | | | | | | | |
| -24 | -24 | | | | | | | | |
| -32 | -24 | | | | | | | | |
| -32 | -32 | | | | | 4S32FHG32 | 231.1 | | |

CRIMP



Fittings


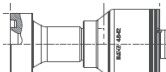
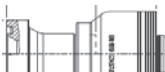
FHF Code 62 flange 30 degree

| | | Synflex | Global crimp fittings | | | | 4S / 6S Global TTC fittings | | | |
|--------|------|-----------|------------------------------------|----------|-----|-----------|--|----------|--------------------|--|
| | | One piece | TTC | | | | 4S | | 6S | |
| | | 3130 | GH663 GH781 GH793 | | | | GH493 FC736 EC600 | | GH466 (-20 & -24) | |
| | | 37AL | FC735 GH195 FC619 | | | | GH506 EC525 | | FC500-32 | |
| | | 3800 | FC693 3130# 3740# | | | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | |
| | | | | | | |  | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| -12 | -12 | | | | | | | | | |
| -16 | -12 | | | | | | | | | |
| -12 | -16 | | | | | | | | | |
| -16 | -16 | | | | | | | | | |
| -20 | -16 | | | | | | | | | |
| -20 | -20 | | | | | | | | | |
| -24 | -20 | | | | | 4S24FHF20 | 137.6 | | | |
| -24 | -24 | | | | | | | | | |
| -32 | -24 | | | | | | | | | |
| -32 | -32 | | | | | 4S32FHF32 | 187.8 | | | |

CRIMP

FITTINGS

FL
Code 61 flange

| | | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | | | | | | |
|--------|------|------------------------------|---|--|---|----------|------|----------|-------|--|
| | | One piece | TTC | 4S | | 6S | | | | |
| | | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | | | | | |
| | | |  |  |  | | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| -8 | -08 | | | 1A8FL8 | 52.3 | 4S8FL8 | | | | |
| -12 | -08 | | | 1A12FL8 | 53.3 | | | | | |
| -12 | -10 | | | 1A12FL10 | 53.3 | | | | | |
| -12 | -12 | | | 1A12FL12 | 53.9 | 4S12FL12 | 54.5 | | | |
| -16 | -12 | | | 1A16FL12 | 53.9 | 4S16FL12 | 54.0 | | | |
| -20 | -12 | | | 1A20FL12 | 61.5 | | | | | |
| -12 | -16 | | | 1A12FL16 | 54.5 | | | | | |
| -16 | -16 | | | 1A16FL16 | 54.5 | 4S16FL16 | 53.6 | 6S16FL16 | 53.6 | |
| -16 | -20 | | | | | 4S16FL20 | 54.7 | | | |
| -20 | -12 | | | | | 4S20FL12 | 61.5 | | | |
| -20 | -16 | | | 1A20FL16 | 62.0 | 4S20FL16 | 61.1 | | | |
| -24 | -16 | | | 1A24FL16 | 62.7 | | | | | |
| -16 | -20 | | | 1AP16FL20* | 56.1 | | | | | |
| -20 | -20 | | | 1AT20FL20** | 56.1 | 4S20FL20 | 62.2 | 6S20FL20 | 62.2 | |
| -24 | -16 | | | | | 4S24FL16 | 57.7 | | | |
| -24 | -20 | | | 1AP24FL20* | 64.5 | 4S24FL20 | 49.9 | | | |
| -32 | -20 | | | 1AT32FL20** | 64.5 | 4S32FL20 | 49.9 | | | |
| -20 | -24 | | | | | | | | | |
| -24 | -24 | | | 1A24FL24 | 65.5 | 4S24FL24 | 93.6 | 6S24FL24 | 93.60 | |
| -32 | -24 | | | 1A32FL24 | 65.5 | 4S32FL24 | 96.7 | 6S32FL24 | 96.7 | |
| -24 | -32 | | | | | | | | | |
| -32 | -32 | | | 1A32FL32 | 66.8 | 4S32FL32 | 99.5 | 6S32FL32 | 99.5 | |
| -40 | -32 | | | 1A40FL32 | 66.8 | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

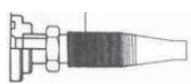
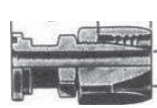
** Use with two wire hose



Powering Business Worldwide

Fittings

FL Code 61 flange

| | | Reusable | | | |
|--|--|---|---|------------|--------|
| | | 1 & 2 wire | SAE100R5 | Socketless | Teflon |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | FC350 FC300 FC802 1503 FC558 FC234 | FC332 2556 | 2807 |
| | |  |  | | |

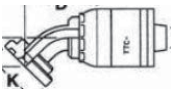
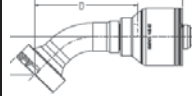
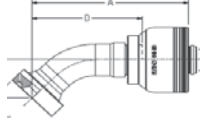
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|------------|-----|-------------|------|----------|-----|----------|-----|
| -8 | -08 | DSR12-0808 | | 4775-8S | 41.1 | | | | |
| -12 | -08 | DSR12-1208 | | | | | | | |
| -12 | -10 | | | | | | | | |
| -12 | -12 | DSR12-1212 | | 4775-12S | 40.4 | | | | |
| -16 | -12 | DSR12-1612 | | 4775-16-12S | 50.3 | | | | |
| -20 | -12 | | | 4775-20-12S | 50.3 | | | | |
| -12 | -16 | | | | | | | | |
| -16 | -16 | DSR12-1616 | | 4775-16S | 38.1 | | | | |
| -16 | -20 | | | | | | | | |
| -20 | -12 | | | | | | | | |
| -20 | -16 | DSR12-2016 | | 4775-20-16S | 41.0 | | | | |
| -24 | -16 | | | | | | | | |
| -16 | -20 | | | | | | | | |
| -20 | -20 | | | 4775-20S | 56.1 | | | | |
| -24 | -16 | | | | | | | | |
| -24 | -20 | | | | | | | | |
| -32 | -20 | | | | | | | | |
| -20 | -24 | | | 4775-20-24S | 56.4 | | | | |
| -24 | -24 | | | 4775-24S | 65.0 | | | | |
| -32 | -24 | | | 4775-32-24S | 65.0 | | | | |
| -24 | -32 | | | 4775-24-32S | 65.5 | | | | |
| -32 | -32 | | | 4775-32S | 84.6 | | | | |
| -40 | -32 | | | 4775-40-32S | 79.8 | | | | |

REUSABLE

FITTINGS

FLA

Code 61 flange
45 degree

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|------------------------------|---|--|---|
| | One piece | TTC | 4S | 6S |
| | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) |
| | |  |  |  |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|----------|-----|--------------|-------|-----------|-------|-----------|-------|
| -8 | -08 | | | 1A8FLA8 | 50.3 | 4S8FLA8 | | | |
| -12 | -08 | | | 1A12FLA8 | 64.0 | | | | |
| -12 | -10 | | | 1A12FLA10 | 63.3 | | | | |
| -12 | -12 | | | 1A12FLA12 | 64.5 | 4S12FLA12 | 77.6 | | |
| -16 | -12 | | | 1A16FLA12 | 75.4 | 4S16FLA12 | 91.7 | | |
| -20 | -12 | | | 1A20FLA12 | | | | | |
| -12 | -16 | | | | | 4S12FLA16 | 77.2 | | |
| -16 | -16 | | | 1A16FLA16 | 76.2 | 4S16FLA16 | 91.3 | 6S16FLA16 | 91.3 |
| -20 | -16 | | | 1A20FLA16 | 87.6 | 4S20FLA16 | 110.5 | 6S20FLA16 | 110.5 |
| -24 | -16 | | | | | | | | |
| -16 | -20 | | | 1AT16FLA20** | 77.7 | | | | |
| -20 | -20 | | | 1AT20FLA20** | 89.4 | 4S20FLA20 | 111.6 | 6S20FLA20 | 111.6 |
| -20 | -24 | | | | | | | | |
| -24 | -20 | | | | | 4S24FLA20 | 106.7 | | 106.7 |
| -32 | -20 | | | | | | | | |
| -24 | -24 | | | 1A24FLA24 | 108.0 | 4S24FLA24 | 136.3 | 6S34FLA24 | 136.3 |
| -32 | -24 | | | | | 4S32FLA24 | 173.0 | 6S32FLA24 | 173.0 |
| -24 | -32 | | | 1A24FLA32 | 109.0 | | | | |
| -32 | -32 | | | 1A32FLA32 | 140.0 | 4S32FLA32 | 175.9 | 6S32FLA32 | 175.9 |
| -40 | -32 | | | 1A40FLA32 | 83.6 | | | | |

Use with FF91064 sleeve

* Use with one wire hose

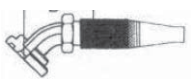

** Use with two wire hose



Powering Business Worldwide

Fittings

FLA Code 61 flange 45 degree

| Reusable | | | | | |
|----------|--|---|---|------------|--------|
| | | 1 & 2 wire | SAE100R5 | Socketless | Teflon |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | FC350 FC300 FC802 1503 FC558 FC234 | FC332 2556 | 2807 |
| | |  |  | | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|------------|-----|-------------|------|----------|-----|----------|-----|
| -8 | -08 | DSR14-0808 | | 4777-8S | 41.1 | | | | |
| -12 | -08 | DSR14-1208 | | | | | | | |
| -12 | -10 | | | | | | | | |
| -12 | -12 | DSR14-1212 | | 4777-12S | 40.4 | | | | |
| -16 | -12 | DSR14-1612 | | 4777-16-12 | 50.3 | | | | |
| -20 | -12 | | | 4777-20-12S | 50.3 | | | | |
| -12 | -16 | | | | | | | | |
| -16 | -16 | DSR14-1616 | | 4777-16S | 38.1 | | | | |
| -20 | -16 | DSR14-2016 | | 4777-20-16S | 41.0 | | | | |
| -24 | -16 | | | | | | | | |
| -16 | -20 | | | | | | | | |
| -20 | -20 | | | 4777-20S | 56.1 | | | | |
| -20 | -24 | | | 4777-20-24S | 56.4 | | | | |
| -24 | -20 | | | | | | | | |
| -32 | -20 | | | | | | | | |
| -24 | -24 | | | 4777-24S | 65.0 | | | | |
| -32 | -24 | | | 4777-32-24S | 65.0 | | | | |
| -24 | -32 | | | 4777-24-32S | 65.5 | | | | |
| -32 | -32 | | | 4777-32S | 78.2 | | | | |
| -40 | -32 | | | 4777-40-32S | 79.8 | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

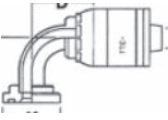
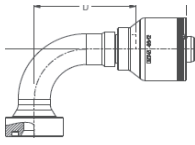
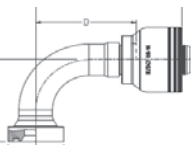
Fittings

FITTINGS I

CRIMP

FLB

Code 61 flange
90 degree

| | | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | | | | | | |
|--------|------|------------------------------|---|--|-------|---|--|-----------|--------|--|
| | | One piece | TTC | 4S | | 6S | | | | |
| | | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | | | |
| | | |  |  | |  | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| -8 | -08 | | | 1A8FLB8 | 42.4 | 4S8FLB8 | | | | |
| -12 | -08 | | | 1A12FLB8 | 57.9 | | | | | |
| -12 | -10 | | | 1A12FLB10 | 58.2 | | | | | |
| -12 | -12 | | | 1A12FLB12 | 58.4 | 4S12FLB12 | 72.3 | | | |
| -16 | -12 | | | 1A16FLB12 | 72.1 | 4S16FLB12 | 86.6 | | | |
| -20 | -12 | | | 1A20FLB12 | | | | | | |
| -12 | -16 | | | 1A12FLB16 | 72.4 | | | | | |
| -16 | -16 | | | 1A16FLB16 | 72.6 | 4S16FLB16 | 86.2 | 6S16FLB16 | 86.2 | |
| -20 | -12 | | | | | 4S20FLB12 | 105.9 | | | |
| -20 | -16 | | | 1A20FLB16 | 89.0 | 4S20FLB16 | 105.4 | 6S20FLB16 | 105.4 | |
| -24 | -16 | | | 1A24FLB16 | 107.7 | | | | | |
| -16 | -20 | | | 1AT16FLB20** | 74.7 | 4S16FLB20 | 91.9 | | | |
| -20 | -20 | | | 1AT20FLB20** | 90.7 | 4S20FLB20 | 106.5 | 6S20FLB20 | 106.5 | |
| -24 | -20 | | | 1AT24FLB20** | 109.5 | 4S24FLB20 | 97.9 | | | |
| -20 | -24 | | | | | | | | | |
| -32 | -20 | | | 1AT32FLB20 | | | | | | |
| -24 | -24 | | | 1A24FLB24 | 110.5 | 4S24FLB24 | 130.9 | 6S24FLB24 | 130.90 | |
| -32 | -24 | | | 1A32FLB24 | 138.4 | 4S32FLB24 | 169.4 | 6S32FLB24 | 169.4 | |
| -24 | -32 | | | | | | | | | |
| -32 | -32 | | | 1A32FLB32 | 139.5 | 4S32FLB32 | 172.2 | 6S32FLB32 | 172.20 | |
| -40 | -32 | | | 1A40FLB32 | 119.5 | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

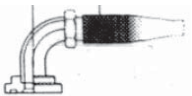
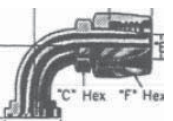
** Use with two wire hose



Powering Business Worldwide

Fittings

FLB Code 61 flange 90 degree

| Reusable | | | | | |
|----------|--|---|---|------------|--------|
| | | 1 & 2 wire | SAE100R5 | Socketless | Teflon |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | FC350 FC300 FC802 1503 FC558 FC234 | FC332 2556 | 2807 |
| | |  |  | | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------|------|------------|-----|-------------|------|----------|-----|----------|-----|
| -8 | -08 | DSR13-0808 | | 4779-8S | 44.0 | | | | |
| -12 | -08 | DSR13-1208 | | | | | | | |
| -12 | -10 | | | | | | | | |
| -12 | -12 | DSR13-1212 | | 4779-12S | 55.0 | | | | |
| -16 | -12 | DSR13-1612 | | 4779-16-12S | 55.0 | | | | |
| -20 | -12 | | | | | | | | |
| -12 | -16 | | | 4779-12-16S | 51.6 | | | | |
| -16 | -16 | DSR13-1616 | | 4779-16S | 58.0 | | | | |
| -20 | -12 | | | | | | | | |
| -20 | -16 | | | 4779-20-16S | 58.0 | | | | |
| -24 | -16 | | | | | | | | |
| -16 | -20 | | | 4779-16-20S | 61.0 | | | | |
| -20 | -20 | | | 4779-20S | 67.3 | | | | |
| -24 | -20 | | | 4779-24-20S | 67.3 | | | | |
| -20 | -24 | | | 4779-20-24S | 67.6 | | | | |
| -32 | -20 | | | | | | | | |
| -24 | -24 | | | 4779-24S | 75.4 | | | | |
| -32 | -24 | | | | | | | | |
| -24 | -32 | | | 4779-24-32S | 75.7 | | | | |
| -32 | -32 | | | 4779-32S | 90.2 | | | | |
| -40 | -32 | | | 4779-40-32S | 90.2 | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

Fittings

FITTINGS

FLD

Code 61 flange
22 1/2 degree

| | | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | | | | | |
|--------|------|-----------|------------------------------------|------------------------------------|-------------|--------------------|-------|----------|-----|
| | | One piece | TTC | 4S | | 6S | | | |
| | | 3130 | GH663 GH781 GH793 | GH493 | FC736 EC600 | GH466 (-20 & -24) | | | |
| | | 37AL | FC735 GH195 FC619 | GH506 EC525 | | FC500-32 | | | |
| | | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | | |
| | | | | | | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -12 | -12 | | | | | 4S12FLD12 | 85.1 | | |
| -16 | -12 | | | 1A16FLD16 | 82.30 | 4S16FLD12 | 100.5 | | |
| -16 | -16 | | | | | 4S16FLD16 | 100.1 | | |
| -20 | -16 | | | | | 4S20FLD16 | 121.2 | | |
| -20 | -20 | | | 1AT20FLD20 | 97.3 | 4S20FLD20 | 122.3 | | |
| -24 | -20 | | | 1AT24FLD20 | | 4S24FLD20 | 117.6 | | |
| -24 | -24 | | | 1A24FLD24 | | 4S24FLD24 | 148.4 | | |
| -32 | -24 | | | 1A32FLD24 | | 4S32FLD24 | 188.7 | | |
| -32 | -24 | | | 1A32FLD32 | | 4S32FLD32 | 191.5 | | |

Use with FF91064 sleeve

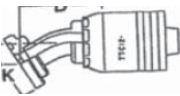
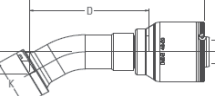
* Use with one wire hose

** Use with two wire hose

CRIMP

FLF

Code 61 flange
30 degree

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|------------------------------|---|--------------|--|-----------|--|----------|-----|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 37AL 3800 3840 | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC600 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | | |
| | | |  | |  | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -8 | -08 | | | | | | | | |
| -12 | -12 | | | | | 4S12FLF12 | 83.3 | | |
| -16 | -12 | | | | | 4S16FLF12 | 98.4 | | |
| -16 | -16 | | | | | 1B16FLF16 | 97.9 | | |
| -20 | -16 | | | | | 4S20FLF16 | 118.6 | | |
| -20 | -20 | | | | | 4S20FLF20 | 119.7 | | |
| -24 | -20 | | | 1AT24FLF20** | | 4S24FLF20 | 114.9 | | |
| -24 | -24 | | | 1A24FLF24 | | 4S24FLF24 | 145.4 | | |
| -32 | -32 | | | | | 4S32FLF32 | 187.8 | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose



Powering Business Worldwide

Fittings

FITTINGS

CRIMP

FLG

Code 61 flange
60 degree

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|-----------|------------------------------------|--------------|------------------------------------|-----------|--------------------|----------|-----|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | |
| | | | | | | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -8 | -08 | | | | | | | | |
| -12 | -12 | | | | | 4S12FLG12 | 97.7 | | |
| -16 | -12 | | | | | 4S16FLG12 | 117.1 | | |
| -16 | -16 | | | 1A16FLG16 | 98.8 | 4S16FLG16 | 116.6 | | |
| -20 | -16 | | | | | 4S20FLG16 | 143.5 | | |
| -20 | -20 | | | | | 4S20FLG20 | 144.7 | | |
| -24 | -20 | | | 1AT24FLG20** | | 4S24FLG20 | 133.0 | | |
| -24 | -24 | | | 1A24FLG24 | | 4S24FLG24 | 175.3 | | |
| -32 | -24 | | | 1A32FLG24 | | | | | |
| -32 | -32 | | | 1A32FLG32 | | 4S32FLG32 | 231.1 | | |

FLH

Code 61 flange
110 degree

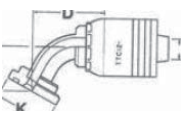
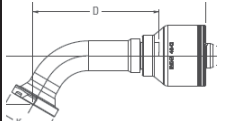
| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|-----------|------------------------------------|----------|------------------------------------|-----------|--------------------|----------|-----|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | |
| | | | | | | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -16 | -16 | | | | | 4S16FLH16 | 74.9 | | |
| | | | | | | | | | |

Use with FF91064 sleeve

** Use with two wire hose

F58

FLE
Code 61 flange
67 1/2 degree

| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|--------|------|-----------|-----|---|-------|--|--------|--------------|-------|--------------------|
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | | | |  | |  | | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| -12 | -12 | | | | | 4S12FLE12 | 92.4 | | | |
| -16 | -12 | | | | | 4S16FLE12 | 110.8 | | | |
| -16 | -16 | | | | | 4S16FLE16 | 110.3 | | | |
| -20 | -16 | | | | | 4S20FLE16 | 135.7 | | | |
| -20 | -20 | | | | | 4S20FLE20 | 136.8 | | | |
| -24 | -20 | | | 1AT24FLE20** | | 4S24FLE20 | 125.8 | | | |
| -24 | -24 | | | 1A24FLE24 | | 4S24FLE24 | 166.2 | | | |
| -32 | -24 | | | 1A32FLE24 | | 4S32FLE24 | 216.1 | | | |
| -32 | -32 | | | 1A32FLE32 | | 4S32FLE32 | 219 | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose



Powering Business Worldwide

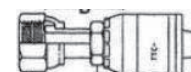
Fittings

FITTINGS

CRIMP

FR ORS Female

| | Synflex | Global crimp fittings | 4S / 6S Global TTC fittings | |
|--|-----------|------------------------------------|-------------------------------------|--------------------|
| | One piece | TTC | 4S | 6S |
| | 3130 | GH663 GH781 GH793 | GH493 FC736 EC600 | GH466 (-20 & -24) |
| | 37AL | FC735 GH195 FC619 | GH506 EC525 | FC500-32 |
| | 3800 | FC693 3130# 3740# | FC500 (-12 TO -24) | FC606 (-16 & -20) |
| | 3840 | 3E80# 3R80# D2800W D2900W D1600 | FC636 D8200W D8300W (-12 & -16) | D8300W (-20 & -24) |



| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|------------|------|--------------|-----|-------------|------|-----------|------|-----------|------|
| 9/16-18 | -04 | 90304-044000 | | 1AA4FR4 | 26.2 | | | | |
| 11/16-16 | -04 | 90304-064000 | | 1AA6FR4 | 28.5 | | | | |
| 9/16-18 | -06 | | | 1AA4FR6 | 28.5 | | | | |
| 11/16-16 | -06 | 90306-064000 | | 1AA6FR6 | 31.5 | 4SA6FR6 | | | |
| 13/16-16 | -06 | | | 1AA8FR6 | 33.5 | 4SA8FR6 | | | |
| 11/16-16 | -08 | | | 1AA6FR8 | 34.0 | | | | |
| 13/16-16 | -08 | 90308-084000 | | 1AA8FR8 | 38.0 | 4SA8FR8 | | | |
| 1-14 | -08 | 90308-104000 | | 1AA10FR8 | 37.3 | | | | |
| 1 3/16-12 | -08 | | | 1AA12FR8 | 41.4 | | | | |
| 13/16-16 | -10 | | | 1AA8FR10 | 38.4 | | | | |
| 1-14 | -10 | | | 1AA10FR10 | 40.9 | 4SA10FR10 | | | |
| 1 3/16-12 | -10 | | | 1AA12FR10 | 41.4 | | | | |
| 1-14 | -12 | | | 1AA10FR12 | 41.2 | 4SA10FR12 | 38.1 | | |
| 1 3/16-12 | -12 | 90312-124000 | | 1AA12FR12 | 43.7 | 4SA12FR12 | 41.2 | | |
| 1 7/16-12 | -12 | | | 1AA16FR12 | 45.5 | 4SA16FR12 | 43.1 | | |
| 1 3/16-12 | -16 | | | 1AA12FR16 | 47.2 | 4SA12FR16 | 40.8 | | |
| 1 7/16-12 | -16 | 90316-164000 | | 1AA16FR16 | 49.3 | 4SA16FR16 | 42.6 | 6SA16FR16 | 42.6 |
| 1 11/16-12 | -16 | | | 1AA20FR16 | 52.8 | 4SA20FR16 | 42.7 | 6SA20FR16 | 42.7 |
| 1 11/16-12 | -20 | | | 1AV20FR20** | 54.6 | 4SA20FR20 | 43.8 | 6SA20FR20 | 43.8 |
| 2-12 | -20 | | | 1AV24FR20** | 54.6 | | | | |
| 2-12 | -24 | | | 1AA24FR24 | 55.6 | 4SA24FR24 | 47.6 | 6SA24FR24 | 47.6 |

Use with FF91064 sleeve

* Use with one wire hose

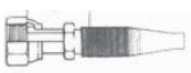

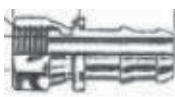
** Use with two wire hose



Powering Business Worldwide

Fittings

FR ORS Female

| | | Reusable | | | |
|--|--|---|---|--|--------|
| | | 1 & 2 wire | SAE100R5 | Socketless | Teflon |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | FC350 FC300 FC802 1503 FC558 FC234 | FC332 2556 | 2807 |
| | |  |  |  | |

| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|------------|------|------------|-----|--------------|------|--------------|------|----------|-----|
| 9/16-18 | -04 | DSR4J-0904 | | FJ9706-0404S | 34.0 | FJ7044-0404S | 17.3 | | |
| 11/16-16 | -04 | | | | | | | | |
| 9/16-18 | -06 | | | | | | | | |
| 11/16-16 | -06 | DSR4J-1106 | | FJ9706-0606S | 38.9 | FJ7044-0606S | 19.3 | | |
| 13/16-16 | -06 | | | | | | | | |
| 11/16-16 | -08 | | | | | | | | |
| 13/16-16 | -08 | DSR4J-1308 | | FJ9706-0808S | 50.3 | FJ7044-0808S | 23.4 | | |
| 1-14 | -08 | | | | | | | | |
| 1 3/16-12 | -08 | | | | | | | | |
| 13/16-16 | -10 | | | | | | | | |
| 1-14 | -10 | DSR4J-1610 | | FJ9706-1010S | 52.8 | FJ7044-1010S | 25.9 | | |
| 1 3/16-12 | -10 | | | | | | | | |
| 1-14 | -12 | | | | | | | | |
| 1 3/16-12 | -12 | DSR4J-1912 | | FJ9706-1212S | 53.6 | FJ7044-1212S | 28.5 | | |
| 1 7/16-12 | -12 | | | | | | | | |
| 1 3/16-12 | -16 | | | | | | | | |
| 1 7/16-12 | -16 | DSR4J-2316 | | FJ9706-1616S | 56.6 | | | | |
| 1 11/16-12 | -16 | | | | | | | | |
| 1 11/16-12 | -20 | | | FJ9706-2020S | 57.9 | | | | |
| 2-12 | -20 | | | | | | | | |
| 2-12 | -24 | | | FJ9706-2424S | 61.0 | | | | |

REUSABLE

FITTINGS



Powering Business Worldwide

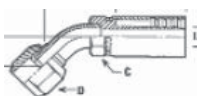
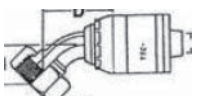
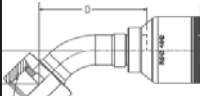

Fittings

FITTINGS I

CRIMP

FRA

ORS Female
45 degree


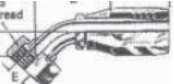

| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|------------|------|---|-----|---|--------------|--|--------------------|---|-------|
| | | One piece | | TTC | | 4S | | 6S | |
| | | 3130 | | GH663 | GH781 GH793 | GH493 | FC736 EC600 | GH466 (-20 & -24) | |
| | | 37AL | | FC735 | GH195 FC619 | | GH506 EC525 | FC500-32 | |
| | | 3800 | | FC693 | 3130# 3740# | | FC500 (-12 TO -24) | FC606 (-16 & -20) | |
| | | 3840 | | 3E80# | 3R80# D2800W | | FC636 D8200W | D8300W (-20 & -24) | |
| | | | | | D2900W D1600 | | D8300W (-12 & -16) | | |
| | |  | |  | |  | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 9/16-18 | -04 | 90304-044040 | | 1AA4FRA4 | 30.5 | | | | |
| 11/16-16 | -04 | | | 1AA6FRA4 | 34.3 | | | | |
| 9/16-18 | -06 | | | 1AA4FRA6 | 33.0 | | | | |
| 11/16-16 | -06 | 90306-064040 | | 1AA6FRA6 | 35.6 | 4SA6FRA6 | | | |
| 13/16-16 | -06 | | | 1AA8FRA6 | 41.4 | 4SA8FRA6 | | | |
| 11/16-16 | -08 | | | 1AA6FRA8 | 37.6 | | | | |
| 13/16-16 | -08 | 90308-084040 | | 1AA8FRA8 | 42.4 | 4SA8FRA8 | | | |
| 1-14 | -08 | | | 1AA10FRA8 | 51.0 | | | | |
| 1 3/16-12 | -08 | | | 1AA12FRA8 | 59.7 | | | | |
| 1-14 | -10 | | | 1AA10FRA10 | 47.5 | 4SA10FRA10 | | | |
| 1 3/16-12 | -10 | | | 1AA12FRA10 | 59.7 | | | | |
| 1-14 | -12 | | | | | | | | |
| 1 3/16-12 | -12 | 90312-124040 | | 1AA12FRA12 | 60.2 | 4SA12FRA12 | 72.5 | | |
| 1 7/16-12 | -12 | | | 1AA16FRA12 | 72.6 | 4SA16FRA12 | 83.7 | | |
| 1 3/16-12 | -16 | | | 1AA12FRA16 | | | | | |
| 1 7/16-12 | -16 | | | 1AA16FRA16 | 73.7 | 4SA16FRA16 | 73.0 | 6SA16FRA16 | 73.0 |
| 1 11/16-12 | -16 | | | | | 4SA20FRA16 | 97.0 | 6SA20FRA16 | 97.0 |
| 1 11/16-12 | -20 | | | 1AV20FRA20** | 85.6 | 4SA20FRA20 | 98.1 | 6SA20FRA20 | 98.1 |
| 2-12 | -20 | | | 1AV24FRA20** | 95.5 | | | | |
| 2-12 | -24 | | | 1AA24FRA24 | 68.8 | 4SA24FRA24 | 134.0 | 6SA24FRA24 | 134.0 |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

FRA
ORS Female
45 degree

| Reusable | | | | | | | | | |
|------------|------|---|-----|---|------|--|------|----------|-----|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 9/16-18 | -04 | DSR7J-0904 | | FJ9707-0404S | 30.7 | FJ7023-0404S | 22.6 | | |
| 11/16-16 | -04 | | | | | | | | |
| 9/16-18 | -06 | | | | | | | | |
| 11/16-16 | -06 | DSR7J-1106 | | FJ9707-0606S | 34.8 | FJ7023-0606S | 24.6 | | |
| 13/16-16 | -06 | | | | | | | | |
| 11/16-16 | -08 | | | | | | | | |
| 13/16-16 | -08 | DSR7J-1308 | | FJ9707-0808S | 47.8 | FJ7023-0808S | 33.5 | | |
| 1-14 | -08 | | | | | | | | |
| 1 3/16-12 | -08 | | | | | | | | |
| 1-14 | -10 | DSR7J-1610 | | FJ9707-1010S | 52.8 | | | | |
| 1 3/16-12 | -10 | | | | | | | | |
| 1-14 | -12 | | | | | | | | |
| 1 3/16-12 | -12 | DSR7J-1912 | | FJ9707-1212S | 53.6 | FJ7023-1212S | 48.3 | | |
| 1 7/16-12 | -12 | | | | | | | | |
| 1 3/16-12 | -16 | | | | | | | | |
| 1 7/16-12 | -16 | DSR7J-2316 | | FJ9707-1616S | 59.7 | | | | |
| 1 11/16-12 | -16 | | | | | | | | |
| 1 11/16-12 | -20 | | | FJ9707-2020S | 69.1 | | | | |
| 2-12 | -20 | | | | | | | | |
| 2-12 | -24 | | | FJ9707-2424S | 72.9 | | | | |

REUSABLE

FITTINGS

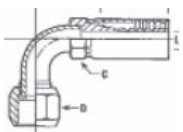
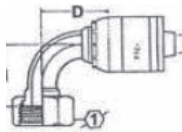
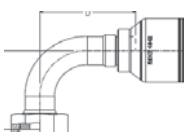
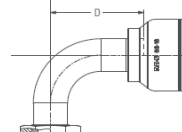


Powering Business Worldwide

Fittings

FRB

ORS Female
90 degree

| | | Synflex | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
|------------|------|---|---|--------------|--|------------|---|------------|-------|
| | | One piece | TTC | | 4S | | 6S | | |
| | | 3130 | GH663 GH781 GH793 | | GH493 FC736 EC600 | | GH466 (-20 & -24) | | |
| | | 37AL | FC735 GH195 FC619 | | GH506 EC525 | | FC500-32 | | |
| | | 3800 | FC693 3130# 3740# | | FC500 (-12 TO -24) | | FC606 (-16 & -20) | | |
| | | 3840 | 3E80# 3R80# D2800W D2900W D1600 | | FC636 D8200W D8300W (-12 & -16) | | D8300W (-20 & -24) | | |
| | |  |  | |  | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 9/16-18 | -04 | 90304-0440S0 | | 1AA4FRB4 | 29.7 | | | | |
| 11/16-16 | -04 | | | 1AA6FRB4 | 33.0 | | | | |
| 9/16-18 | -06 | | | 1AA4FRB6 | 30.7 | | | | |
| 11/16-16 | -06 | 90306-0640S0 | | 1AA6FRB6 | 34.0 | 4SA6FRB6 | | | |
| 13/16-16 | -06 | | | 1AA8FRB6 | 41.1 | 4SA8FRB6 | | | |
| 11/16-16 | -08 | | | | | | | | |
| 13/16-16 | -08 | 90308-0840S0 | | 1AA8FRB8 | 42.4 | 4SA8FRB8 | | | |
| 1-14 | -08 | | | 1AA10FRB8 | 48.5 | | | | |
| 1 3/16-12 | -08 | | | 1AA12FRB8 | 57.9 | | | | |
| 13/16-16 | -10 | | | | | | | | |
| 1-14 | -10 | | | 1AA10FRB10 | 48.5 | 4SA10FRB10 | | | |
| 1 3/16-12 | -10 | | | 1AA12FRB10 | 58.2 | | | | |
| 1-14 | -12 | | | | | 4S10FRB12 | 55.3 | | |
| 1 3/16-12 | -12 | 90312-1240S0 | | 1AA12FRB12 | 58.4 | 4SA12FRB12 | 68.1 | | |
| 1 7/16-12 | -12 | | | 1AA16FRB12 | 72.4 | 4SA16FRB12 | 80.9 | | |
| 1 3/16-12 | -16 | | | | | 4SA12FRB16 | 67.7 | | |
| 1 3/16-12 | -16 | | | | | | | | |
| 1 7/16-12 | -16 | | | 1AA16FRB16 | 72.9 | 4SA16FRB16 | 73.0 | 6SA16FRB16 | 73.0 |
| 1 11/16-12 | -16 | | | 1AA20FRB16 | 89.0 | 4SA20FRB16 | 96.8 | 6SA20FRB16 | 96.8 |
| 1 11/16-12 | -20 | | | 1AV20FRB20** | 90.7 | 4SA20FRB20 | 97.9 | 6SA20FRB20 | 97.9 |
| 2-12 | -20 | | | | | 4SA24FRB20 | 97.9 | | |
| 2-12 | -24 | | | 1AA24FRB24 | 71.4 | 4SA24FRB24 | 130.8 | 6SA24FRB24 | 130.8 |

Use with FF91064 sleeve

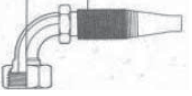
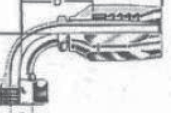
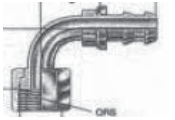
* Use with one wire hose

** Use with two wire hose

FITTINGS I

CRIMP

FRB
ORS Female
90 degree

| | | | | | | | | | | Reusable | | | |
|------------|------|---|-----|---|------|--|------|---------------|-----|-----------------|--|--|--|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | | | | | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | | | | | |
| | |  | |  | |  | | | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | | | | |
| 9/16-18 | -04 | DSR6J-0904 | | FJ9708-0404S | 26.7 | FJ7358-0404S | 19.6 | | | | | | |
| 11/16-16 | -04 | | | | | | | | | | | | |
| 9/16-18 | -06 | | | | | | | | | | | | |
| 11/16-16 | -06 | DSR6J-1106 | | FJ9708-0606S | 26.7 | FJ7358-0606S | 23.6 | | | | | | |
| 13/16-16 | -06 | | | | | | | | | | | | |
| 11/16-16 | -08 | | | | | | | | | | | | |
| 13/16-16 | -08 | DSR6J-1308 | | FJ9708-0808S | 26.7 | FJ7358-0808S | 26.7 | | | | | | |
| 1-14 | -08 | | | | | | | | | | | | |
| 1 3/16-12 | -08 | | | | | | | | | | | | |
| 13/16-16 | -10 | | | | | | | | | | | | |
| 1-14 | -10 | DSR6J-1610 | | FJ9708-1010S | 44.2 | | | | | | | | |
| 1 3/16-12 | -10 | | | | | | | | | | | | |
| 1-14 | -12 | | | | | | | | | | | | |
| 1 3/16-12 | -12 | DSR6J-1912 | | FJ9708-1212S | 55.1 | FJ7358-1212S | 48.3 | | | | | | |
| 1 7/16-12 | -12 | | | | | | | | | | | | |
| 1 3/16-12 | -16 | | | | | | | | | | | | |
| 1 3/16-12 | -16 | | | | | | | | | | | | |
| 1 7/16-12 | -16 | DSR6J-2316 | | FJ9708-1616S | 57.9 | | | | | | | | |
| 1 11/16-12 | -16 | | | | | | | | | | | | |
| 1 11/16-12 | -20 | | | FJ9708-2020S | 67.3 | | | | | | | | |
| 2-12 | -20 | | | | | | | | | | | | |
| 2-12 | -24 | | | FJ9708-2424S | 75.4 | | | | | | | | |

REUSABLE

FITTINGS


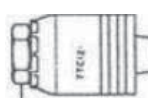


Powering Business Worldwide

Fittings

FITTINGS

CRIMP

| LS Life Saver | | | | | | | | | | |
|------------------|------|-----------|-----|---|-------|--|-------|----------|--------------------|--|
| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
| | | One piece | | TTC | | TTC12 | | 6 wire | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | GH466 (-20 & -24) | |
| | | 37AL | | FC735 | GH195 | FC619 | EC525 | FC636 | FC500-32 | |
| | | 3800 | | FC693 | 3130# | 3740# | | | FC606 (-16 & -20) | |
| | | 3840 | | 3E80# | 3R80# | D2800W | | | D8300W (-20 & -24) | |
| | | | | | | | | | | |
| | | | |  | |  | | | | |
| Bore | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| 1/4" | -04 | | | 1A4LS4 | | | | | | |
| 5/16" | -05 | | | | | | | | | |
| 3/8" | -06 | | | 1A6LS6 | | 1B6LS6 | | | | |
| 1/2" | -08 | | | 1A8LS8 | | 1B8LS8 | | | | |
| 5/8" | -10 | | | 1A10LS10 | | 1B10LS10 | | | | |
| 3/4" | -12 | | | 1A12LS12 | | 1B12LS12 | | | | |
| 1" | -16 | | | 1A16LS16 | | 1B16LS16 | | | | |
| 1 1/4" | -20 | | | 1AT20LS20** | | 1B20LS20 | | | | |
| 1 1/2" | -24 | | | 1A24LS24 | | | | | | |
| 2" | -32 | | | 1A32LS32 | | | | | | |

Use with FF91064 sleeve

* Use with one wire hose

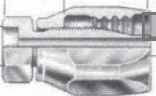
** Use with two wire hose



Powering Business Worldwide

Fittings

LS Life Saver

| Reusable | | | | | | | | | |
|----------|------|---|-----|--|------|------------|-----|----------|-----|
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | Teflon | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | | | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4" | -04 | | | 190000-4S | 16.5 | | | | |
| 5/16" | -05 | | | 190000-5S | 19.0 | | | | |
| 3/8" | -06 | | | 190000-6S | 18.5 | | | | |
| 1/2" | -08 | | | 190000-8S | 22.6 | | | | |
| 5/8" | -10 | | | 190000-10S | 22.9 | | | | |
| 3/4" | -12 | | | 190000-12S | 23.4 | | | | |
| 1" | -16 | | | 190000-16S | 19.8 | | | | |
| 1 1/4" | -20 | | | 190000-20S | 22.9 | | | | |
| 1 1/2" | -24 | | | 190000-24S | 38.1 | | | | |
| 2" | -32 | | | 190000-32S | 50.8 | | | | |

REUSABLE

FITTINGS

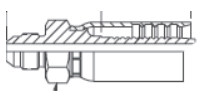
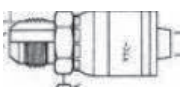
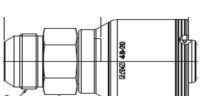


Powering Business Worldwide

Fittings

FITTINGS

CRIMP

| MJ Male JIC | | | | | | | | | | |
|----------------|------|---|-----|---|-------|--|--------|--------------|-------|--------------------|
| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | |  | |  | |  | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| 7/16-20 | -04 | 90304-045000 | | 1AA4MJ4 | 27.2 | | | | | |
| 1/2-20 | -04 | 90304-055000 | | 1AA5MJ4 | 28.2 | | | | | |
| 9/16-18 | -04 | 90304-065000 | | 1AA6MJ4 | 23.6 | | | | | |
| 9/16-18 | -06 | 90306-065000 | | 1AA6MJ6 | 29.7 | 4SA6MJ6 | | | | |
| 3/4-16 | -06 | 90306-085000 | | 1AA8MJ6 | 28.2 | 4SA8MJ6 | | | | |
| 3/4-16 | -08 | 90308-085000 | | 1AA8MJ8 | 35.8 | 4SA8MJ8 | | | | |
| 7/8-14 | -08 | 90308-105000 | | 1AA10MJ8 | 31.8 | | | | | |
| 1 1/16-12 | -08 | 90308-125000 | | 1AA12MJ8 | 36.1 | | | | | |
| 7/8-14 | -10 | | | 1AA10MJ10 | 39.9 | 4SA10MJ10 | | | | |
| 1 1/16-12 | -10 | | | 1AA12MJ10 | 36.3 | | | | | |
| 7/8-14 | -12 | | | 1AA10MJ12 | 40.4 | 4SA10MJ12 | 48.2 | | | |
| 1 1/16-12 | -12 | 90312-125000 | | 1AA12MJ12 | 44.5 | 4SA12MJ12 | 86.9 | | | |
| 1 3/16-12 | -12 | 90312-145000 | | 1AA14MJ12 | 39.1 | 4SA14MJ12 | 83.1 | | | |
| 1 5/16-12 | -12 | 90312-165000 | | 1AA16MJ12 | 39.6 | 4SA16MJ12 | 83.6 | | | |
| 1 5/16-12 | -16 | 90316-165000 | | 1AA16MJ16 | 48.3 | 4SA16MJ16 | 54.0 | | | |
| 1 5/8-12 | -16 | | | | | 4SA20MJ16 | 50.3 | | | |
| 1 5/8-12 | -20 | | | 1AR20MJ20* | 54.9 | 4SA20MJ20 | 60.5 | | | |
| 1 5/8-12 | -20 | | | 1AV20MJ20** | 54.9 | | | | | |
| 1 7/8-12 | -24 | | | 1AA24MJ24 | 63.2 | 4SA24MJ24 | 73.3 | | | |
| 2 1/2-12 | -32 | | | 1AA32MJ32 | 73.9 | 4SA32MJ32 | 85.8 | | | |

Use with FF91064 sleeve




* Use with one wire hose

** Use with two wire hose



Powering Business Worldwide

Fittings

| MJ | | | | | | | | | |
|-----------|------|---|-----|---|------|--|------|----------|-----|
| Male JIC | | | | | | | | | |
| Reusable | | | | | | | | | |
| | | 1 & 2 wire | | SAE100R5 | | Socketless | | | |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | | FC350 FC300 FC802 1503 FC558 FC234 | | FC332 2556 | | 2807 | |
| | |  | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 7/16-20 | -04 | DSR09-0704 | | 4414-4S | 28.0 | 190672-4B | 22.4 | | |
| 1/2-20 | -04 | DSR09-0804 | | | | | | | |
| 9/16-18 | -04 | DSR09-0904 | | | | | | | |
| 9/16-18 | -06 | DSR09-0906 | | 4414-6S | 31.0 | 190672-6S | 22.6 | | |
| 3/4-16 | -06 | DSR09-1206 | | | | | | | |
| 3/4-16 | -08 | DSR09-1208 | | 4414-8S | | | | | |
| 7/8-14 | -08 | DSR09-1408 | | | 36.1 | | | | |
| 1 1/16-12 | -08 | DSR09-1708 | | | | | | | |
| 7/8-14 | -10 | DSR09-1410 | | 4414-10S | 40.6 | | | | |
| 1 1/16-12 | -10 | DSR09-1710 | | 4414-12-10S | 44.7 | | | | |
| 7/8-14 | -12 | | | | | | | | |
| 1 1/16-12 | -12 | DSR09-1712 | | 4414-12S | 45.2 | | | | |
| 1 3/16-12 | -12 | DSR09-1712 | | | | | | | |
| 1 5/16-12 | -12 | DSR09-2112 | | 4414-16-12S | 46.5 | | | | |
| 1 5/16-12 | -16 | DSR09-2116 | | 4414-16S | 43.0 | | | | |
| 1 5/8-12 | -20 | | | 4414-20S | 47.2 | | | | |
| 1 5/8-12 | -20 | | | | | | | | |
| 1 7/8-12 | -24 | | | 4414-24S | 50.5 | | | | |
| 2 1/2-12 | -32 | | | 4414-32S | 60.5 | | | | |

REUSABLE

FITTINGS

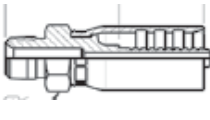
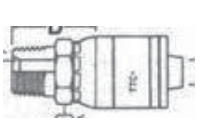
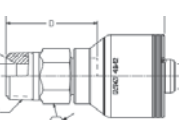
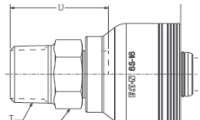


Powering Business Worldwide

Fittings

FITTINGS

CRIMP

| MP NPT Male | | | | | | | | | | |
|----------------|------|---|-----|---|-------|--|--------|---|-------|--------------------|
| | | Synflex | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | | |
| | | One piece | | TTC | | 4S | | 6S | | |
| | | 3130 | | GH663 | GH781 | GH793 | GH493 | FC736 | EC600 | GH466 (-20 & -24) |
| | | 37AL | | FC735 | GH195 | FC619 | GH506 | EC525 | | FC500-32 |
| | | 3800 | | FC693 | 3130# | 3740# | FC500 | (-12 TO -24) | | FC606 (-16 & -20) |
| | | 3840 | | 3E80# | 3R80# | D2800W | FC636 | D8200W | | D8300W (-20 & -24) |
| | | | | D2900W | D1600 | | D8300W | (-12 & -16) | | |
| | |  | |  | |  | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" | |
| 1/8-27 | -04 | 90304-021000 | | 1AA2MP4 | 22.9 | | | | | |
| 1/4-18 | -04 | 90304-041000 | | 1AA4MP4 | 28.5 | | | | | |
| 1/4-18 | -6 | 90306-041000 | | 1AA4MP6 | 29.7 | | | | | |
| 3/8-18 | -06 | 90306-061000 | | 1AA6MP6 | 32.0 | 4SA6MP6 | | | | |
| 1/2-14 | -06 | 90308-061000 | | 1AA8MP6 | 32.0 | 4SA8MP6 | | | | |
| 1/4-18 | -08 | | | 1AA4MP8 | 31.0 | | | | | |
| 3/8-18 | -08 | | | 1AA6MP8 | 33.3 | 4SA6MP8 | | | | |
| 1/2-14 | -08 | | | 1AA8MP8 | 39.6 | 4SA8MP8 | | | | |
| 3/4-14 | -08 | | | 1AA12MP8 | 35.0 | | | | | |
| 1/2-14 | -10 | | | 1AA8MP10 | 39.6 | | | | | |
| 3/4-14 | -10 | | | 1AA12MP10 | 35.3 | | | | | |
| 1/2-14 | -12 | | | 1AA8MP12 | 40.1 | 4SA8MP12 | 48.4 | | | |
| 3/4-14 | -12 | | | 1AA12MP12 | 45.4 | 4SA12MP12 | 85.9 | | | |
| 1-11 1/2 | -12 | | | 1AA16MP12 | 40.0 | 4SA16MP16 | 54.1 | | | |
| 3/4-14 | -16 | | | 1AA12MP16 | 42.2 | 4SA12MP16 | 49.2 | | | |
| 1 11 1/2 | -16 | | | 1AA16MP16 | 46.7 | 4SA16MP16 | 54.1 | 6SA16MP16 | 54.1 | |
| 1 1/4-11 1/2 | -16 | | | 1AA20MP16 | 43.4 | 4SA20MP16 | 50.5 | | | |
| 1 11 1/2 | -20 | | | 1AA16MP20 | 48.5 | | | | | |
| 1 1/4-11 1/2 | -20 | | | 1AV20MP20** | 45.0 | 4SA20MP20 | 64.4 | 6SA20MP20 | 64.4 | |
| 1 1/2-11 1/2 | -24 | | | 1AA24MP24 | 59.7 | 4SA24MP24 | 65.2 | 6SA24MP24 | 65.2 | |
| 2-11 1/2 | -32 | | | 1AA32MP32 | 66.0 | 4SA32MP32 | 72.1 | 6SA32MP32 | 72.1 | |

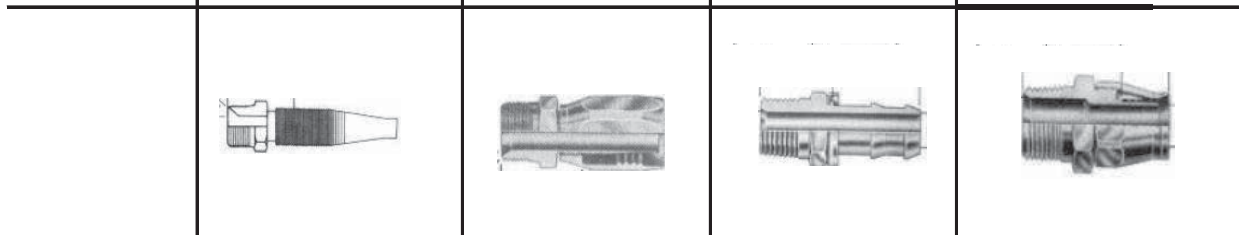
Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

MP
NPT Male

| Reusable | | | | | |
|----------|--|--|--|------------|--------|
| | | 1 & 2 wire | SAE100R5 | Socketless | Teflon |
| | | GH663 GH793 GH781 GH195 D2800W D2900W D1600 | FC350 FC300 FC802 1503 FC558 FC234 | FC332 2556 | 2807 |



| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" | Part No. | "D" |
|--------------|------|------------|-----|-------------|------|-------------|------|-----------------|------|
| 1/8-27 | -04 | DSR10-0204 | | 4412-2-4S | 23.6 | 4738-2-4B | 16.5 | 38-190627-2-4 | 22.6 |
| 1/4-18 | -04 | DSR10-0404 | | 4412-4-4S | 28.5 | 4738-4-4B | 21.1 | 38-190627-4-4 | 27.4 |
| 3/8-18 | -04 | | | | | | | | |
| 1/4-18 | -05 | | | 4412-4-5S | 30.0 | | | 38-190627-4-5 | 27.2 |
| 1/4-18 | -06 | DSR10-0406 | | 4412-4-6S | 31.2 | 4738-4-6B | 22.6 | 38-190627-4-6 | 28.7 |
| 3/8-18 | -06 | DSR10-0606 | | 4412-6-6S | 31.2 | 4738-6-6B | 22.6 | 38-190627-6-6 | 28.7 |
| 1/2-14 | -06 | | | | | | | | |
| 1/4-18 | -08 | | | | | | | | |
| 3/8-18 | -08 | DSR10-0608 | | 4412-6-8S | 33.8 | 4738-6-8B | 22.6 | 38-190627-6-8 | 29.5 |
| 1/2-14 | -08 | DSR10-0808 | | 4412-8-8S | 40.1 | 4738-8-8B | 29.0 | | |
| 3/4-14 | -08 | | | | | | | | |
| 1/2-14 | -10 | | | 4412-8-10S | 40.4 | 4738-8-10B | 29.0 | 38-190627-8-10 | 37.1 |
| 3/4-14 | -10 | DSR10-1210 | | 4412-12-10S | 42.0 | | | | |
| 1/2-14 | -12 | | | 4412-8-12S | 42.7 | | | | |
| 3/4-14 | -12 | DSR10-1212 | | 4412-12-12S | 42.4 | 4738-12-12B | 30.7 | 38-190627-12-12 | 41.0 |
| 1-11 1/2 | -12 | | | | | | | | |
| 3/4-14 | -16 | | | | | | | | |
| 1-11 1/2 | -16 | DSR10-1616 | | 412-16-16S | 43.7 | | | 38-190627-16-16 | 47.2 |
| 1 1/4-11 1/2 | -16 | | | | | | | | |
| 1-11 1/2 | -20 | | | | | | | | |
| 1 1/4-11 1/2 | -20 | | | 412-20-20S | 47.5 | | | 38-190627-20-20 | |
| 1 1/2-11 1/2 | -24 | | | 412-24-24S | 51.6 | | | | |
| 2-11 1/2 | -32 | | | 412-32-32S | 55.9 | | | | |

REUSABLE

FITTINGS



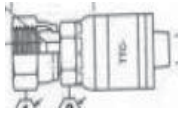
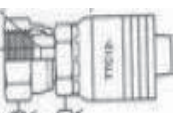
Powering Business Worldwide

Fittings

FITTINGS

CRIMP

JF JIS Flange

| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
|----------|------|---|------|---|-----|--|-----|
| | | TTC | | 4S | | 6S | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC525 FC636 | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| 1/4-19 | -04 | 1A4JF4 | 29.8 | | | | |
| 3/8-19 | -06 | 1A6JF6 | 33.9 | | | | |
| 1/2-14 | -08 | 1A8JF8 | 36.6 | | | | |
| 3/4-14 | -12 | 1A12JF12 | 43.1 | | | | |
| 1-11 | -16 | 1A16JF16 | 49.2 | | | | |
| 1 1/4-11 | -20 | 1AP20JF20* | 49.2 | | | | |
| 1 1/4-11 | -20 | 1AT20JF20** | 58.1 | | | | |
| 1 1/2-11 | -24 | 1A24JF24 | 63.4 | | | | |
| 2-11 | -32 | 1A32JF32 | 72.4 | | | | |

Use with FF91064 sleeve

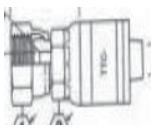

* Use with one wire hose

** Use with two wire hose



Powering Business Worldwide

Fittings

| KF Komatsu female | | | | | | | |
|----------------------|------|---|------|---|------|--|-----|
| | | Global crimp fittings | | 4S / 6S Global TTC fittings | | | |
| | | TTC | | 4 wire | | 6 wire | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 EC525 FC636 | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| M14 X 1.5 | -04 | 1A4KF4 | 32.7 | | | | |
| M18 X 1.5 | -06 | 1A6KF6 | 35.1 | | | | |
| M22 X 1.5 | -08 | 1A8KF8 | 39.8 | | | | |
| M24 X 1.5 | -10 | 1A10KF10 | 46.0 | | | | |
| M24 X 1.5 | -12 | 1A10KF12 | 46.4 | | | | |
| M30 X 1.5 | -12 | 1A12KF12 | 51.3 | 4S12KF12 | 26.2 | | |
| M33 X 1.5 | -16 | 1A16KF16 | 57.0 | 4S16KF16 | 26.8 | | |
| M36 X 1.5 | -20 | 1AP20KF20* | 69.4 | 4S20KF20 | 30.2 | | |
| M36 X 1.5 | -20 | 1AT20KF20** | 69.4 | | | | |
| M42 X 1.5 | -24 | 1A24KF24 | 74.2 | | | | |

Use with FF91064 sleeve

* Use with one wire hose

** Use with two wire hose

CRIMP

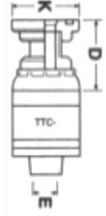
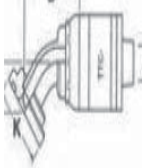
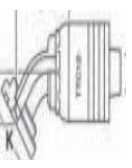
FITTINGS



Powering Business Worldwide

Fittings

FITTINGS I

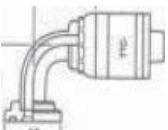
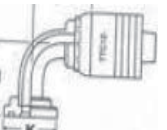
| | | | | | | | |
|---|-------------|---|------------|--|------------|--|------------|
| KS Komatsu Flange | | | | | | | |
| Global crimp fittings | | | | | | | |
| | | TTC | | TTC12 | | 6 wire | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | |  | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -10 | -10 | 1A10KS10 | | | | | |
| KSA Komatsu female 45 deg | | | | | | | |
| Global crimp fittings | | | | | | | |
| | | TTC | | TTC12 | | 6 wire | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | |  | |  | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -10 | -10 | 1A10KSA10 | | 1B10KSA10 | | | |

CRIMP



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Fittings

| | | | | | | | |
|--|-------------|---|------------|---|------------|--|------------|
| KSB Komatsu flange 90 deg | | | | | | | |
| | | Global crimp fittings | | | | | |
| | | TTC | | TTC12 | | 6 wire | |
| | | GH663 GH781 GH793 FC735 GH195 FC619 FC693 3130# 3740# 3E80# 3R80# D2800W D2900W D1600 | | GH493 FC736 GH506 EC525 FC500 (-12 TO -24) FC636 D8200W D8300W (-12 & -16) | | GH466 (-20 & -24) FC500-32 FC606 (-16 & -20) D8300W (-20 & -24) | |
| | |  | |  | | | |
| Flange | Hose | Part No. | "D" | Part No. | "D" | Part No. | "D" |
| -10 | -10 | 1A10KSB10 | | 1B10KSB10 | | | |

CRIMP

FITTINGS

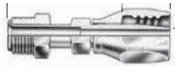



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Fittings

FITTINGS I

MF
Male
inverted
flare



| Reusable | | | | | |
|---|------|-------------|-------|---|------|
| SAE100R5 | | | | Socketless | |
| FC350 FC300 FC802 1503 FC558 FC234 | | | | FC332 2556 | |
|  | | | |  | |
| Thread | Hose | Part No. | "D" | Part No. | "D" |
| 7/16-24 | -04 | 190111-4S | 43.40 | 4740-4B | 19.0 |
| 1/2-20 | -04 | | | 4740-5-4B | 20.8 |
| 1/2-20 | -05 | 190111-5S | 46.70 | | |
| 1/2-20 | -06 | 190111-5-6S | 46.20 | 4740-6B | 21.8 |
| 5/8-18 | -06 | 190111-6S | 46.20 | | |
| 5/8-18 | -08 | 190111-6-8S | 50.30 | | |
| 3/4-18 | -08 | 190111-8S | 52.10 | 4740-8B | 23.9 |

MF
Male inverted flare
15 deg swept blend


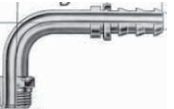
| Reusable | | | | | |
|---|------|-----------|------|------------|-----|
| SAE100R5 | | | | Socketless | |
| FC350 FC300 FC802 1503 FC558 FC234 | | | | FC332 2556 | |
|  | | | | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" |
| 5/8-18 | -08 | 190350-6S | 60.0 | | |
| | | | | | |

REUSABLE

MFA
Male inverted flare
45 deg swept blend

| Reusable | | | | | |
|---|------|------------|---|-----------|-------|
| SAE100R5 | | | Socketless | | |
| SAE100R5 | | | Socketless | | |
| FC350 FC300 FC802 1503 FC558 FC234 | | | FC332 2556 | | |
|  | | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" |
| 7/16-24 | -04 | 190371-4S | 50.6 | 190944-4S | 43.80 |
| 1/2-20 | -05 | 190371-5S | 53.8 | | |
| 5/8-18 | -06 | 190371-SS | 53.3 | 190944-6S | 43.80 |
| 3/4-18 | -08 | 190371-8S | 56.9 | | |
| 7/8-18 | -10 | 190371-10S | 36.6 | | |

MFA
Male inverted flare
90 deg swept blend

| Reusable | | | | | |
|---|------|------------|---|-----------|------|
| SAE100R5 | | | Socketless | | |
| SAE100R5 | | | Socketless | | |
| FC350 FC300 FC802 1503 FC558 FC234 | | | FC332 2556 | | |
|  | | |  | | |
| Thread | Hose | Part No. | "D" | Part No. | "D" |
| 7/16-24 | -04 | 190235-4S | 41.1 | 190327-4S | 33.8 |
| 1/2-20 | -05 | 190235-5S | 44.5 | | |
| 5/8-18 | -06 | 190235-6S | 44.0 | 190327-6S | 33.8 |
| 3/4-18 | -08 | 190235-8S | 48.0 | 190327-8S | 33.8 |
| 7/8-18 | -10 | 190235-10S | 54.6 | | |

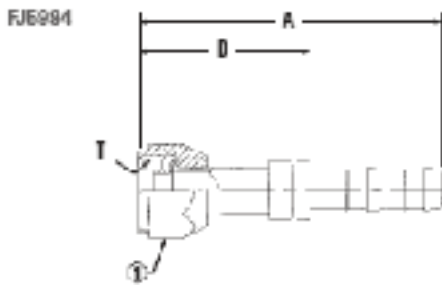
REUSABLE

FITTINGS



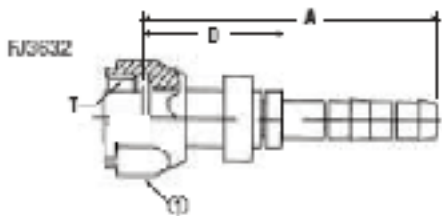
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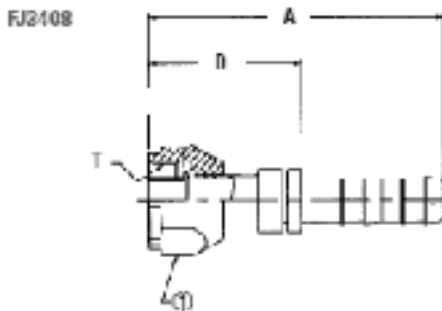
Straight - Female O-ring (short pilot)

| PART NUMBER | THD "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ5984-0606S | 5/8-10 | 6 | 3.14 | 1.62 | — | — | 0.75 |
| FJ5984-0808S | 5/8-18 | 8 | 3.16 | 1.62 | — | — | 0.75 |
| FJ5984-0808S | 3/4-16 | 8 | 3.58 | 2.02 | — | — | 0.98 |
| FJ5984-0810S | 3/4-16 | 10 | 3.57 | 2.02 | — | — | 0.98 |
| FJ5984-0808S | 7/8-14 | 8 | 3.82 | 2.08 | — | — | 0.98 |
| FJ5984-0810S | 7/8-14 | 10 | 3.83 | 2.08 | — | — | 1.06 |
| FJ5984-0812S | 7/8-14 | 12 | 3.86 | 2.08 | — | — | 1.06 |
| FJ5984-1212S | 1 1/16-11 | 10 | 4.26 | 2.62 | — | — | 1.26 |
| FJ5984-1212S | 1 1/16-11 | 12 | 4.26 | 2.67 | — | — | 1.26 |



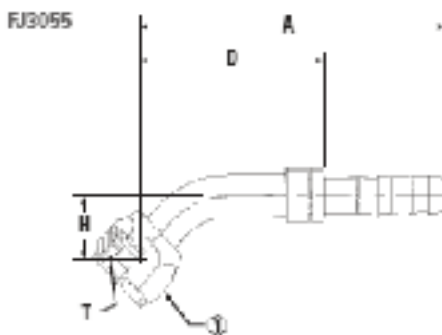
Straight - Female O-ring (long pilot)

| PART NUMBER | THD "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|---------|-----------|-------|-------|-------|-------|-------|
| FJ3632-0806S | 3/4-16 | 6 | 2.91 | 1.36 | — | — | 0.875 |



Straight - Female O-ring, Metric Thread (long pilot)

| PART NUMBER | THD "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3408-0808S | M20 x 1.5 | 8 | 3.20 | 1.66 | — | — | 0.94 |
| FJ3408-0810S | M20 x 1.5 | 10 | 3.21 | 1.66 | — | — | 0.94 |
| FJ3408-1212S | M27 x 2 | 12 | 4.25 | 2.67 | — | — | 1.25 |

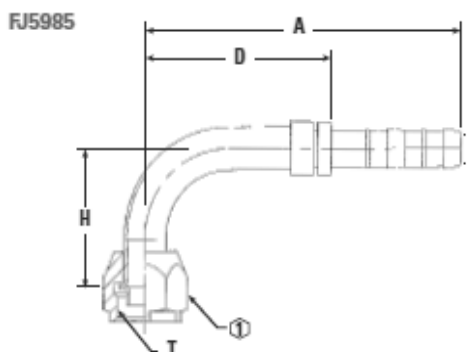


45° Elbow Female O-ring (short pilot)

| PART NUMBER | THD "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3055-01-0606S | 5/8-18 | 6 | 3.80 | 2.08 | — | 0.67 | 0.75 |
| FJ3055-02-0606S | 5/8-18 | 8 | 3.62 | 2.08 | — | 0.67 | 0.75 |
| FJ3055-03-0808S | 3/4-16 | 8 | 3.94 | 2.40 | — | 0.73 | 0.98 |
| FJ3055-04-0808S | 3/4-16 | 10 | 3.95 | 2.40 | — | 0.73 | 0.98 |
| FJ3055-05-1008S | 7/8-14 | 10 | 4.37 | 2.87 | — | 1.19 | 1.06 |
| FJ3055-06-1008S | 7/8-14 | 12 | 4.96 | 2.88 | — | 1.25 | 1.06 |
| FJ3055-07-1208S | 1 1/16-11 | 12 | 5.33 | 2.78 | — | 1.47 | 1.26 |

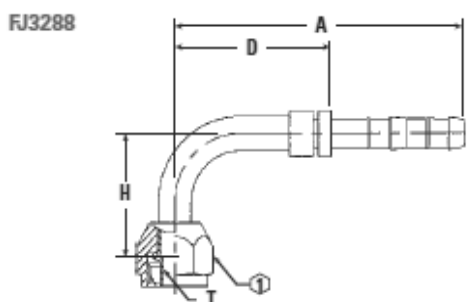


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90° Elbow – Female O-ring (short pilot)

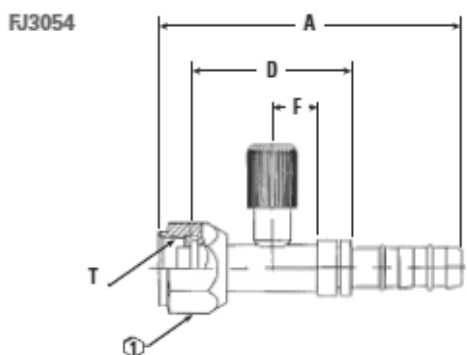
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ5985-0606S | 5/8-18 | 6 | 3.32 | 1.79 | — | 1.38 | 0.75 |
| FJ5985-0608S | 5/8-18 | 8 | 3.33 | 1.79 | — | 1.38 | 0.75 |
| FJ5985-0806S | 3/4-16 | 6 | 3.86 | 2.33 | — | 1.62 | 0.88 |
| FJ5985-0808S | 3/4-16 | 8 | 3.77 | 2.23 | — | 1.62 | 0.88 |
| FJ5985-0810S | 3/4-16 | 10 | 3.78 | 2.23 | — | 1.62 | 0.88 |
| FJ5985-1010S | 7/8-14 | 10 | 4.22 | 2.67 | — | 1.89 | 1.06 |
| FJ5985-1012S | 7/8-14 | 12 | 4.24 | 2.67 | — | 1.89 | 1.06 |
| FJ5985-1210S | 1-1/16-14 | 10 | 4.76 | 3.31 | — | 2.56 | 1.25 |
| FJ5985-1212S | 1-1/16-14 | 12 | 4.74 | 3.16 | — | 2.56 | 1.25 |



90° Female O-ring (long pilot)

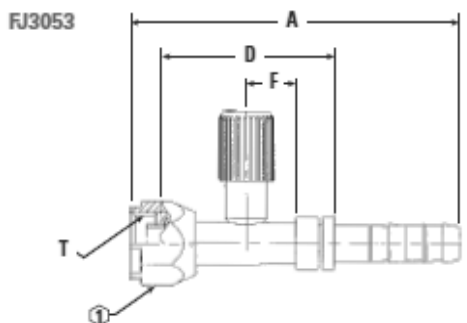
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|------------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3288-01-0606S | 5/8-18 | 6 | 3.32 | 1.79 | — | 1.38 | 0.75 |
| FJ3288-02-0808S | 3/4-16 | 8 | 3.77 | 2.23 | — | 1.62 | 0.88 |
| FJ3288-03-0806S | 3/4-16 | 6 | 3.75 | 2.33 | — | 1.62 | 0.88 |
| FJ3288-04-0810S* | 3/4-16 | 10 | 3.78 | 2.23 | — | 1.62 | 0.88 |

*May not be available.



Straight – Female O-ring (short pilot) with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3054-1010S | 7/8-14 | 10 | 4.24 | 2.25 | 0.63 | — | 1.06 |
| FJ3054-1012S | 7/8-14 | 12 | 4.27 | 2.25 | 0.63 | — | 1.06 |
| FJ3054-1212S | 1-1/16-14 | 12 | 4.58 | 2.43 | 0.54 | — | 1.25 |



Straight – Female O-ring (short pilot) with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|---------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3053-0606S | 5/8-18 | 6 | 3.91 | 2.10 | 0.63 | — | 0.75 |
| FJ3053-0806S* | 3/4-16 | 6 | 4.06 | 2.26 | 0.63 | — | 0.88 |
| FJ3053-0808S | 3/4-16 | 8 | 4.09 | 2.16 | 0.63 | — | 0.88 |
| FJ3053-0810S | 3/4-16 | 10 | 4.09 | 2.16 | 0.63 | — | 0.88 |

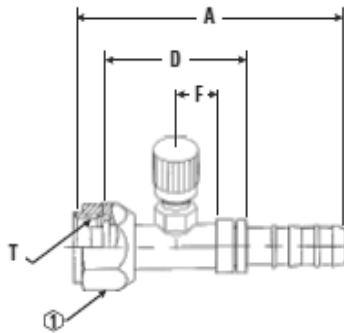
*May not be available.



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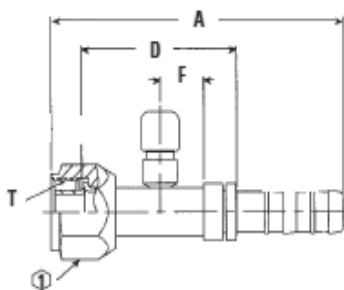
FJ3162



Straight – Female O-ring (long pilot) with Switch Port (7/16-20 thd)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3162-0808S | 3/4-16 | 8 | 4.09 | 2.16 | 0.79 | — | 0.88 |
| FJ3162-1010S | 7/8-14 | 10 | 4.25 | 2.25 | 0.79 | — | 1.06 |
| FJ3162-1012S | 7/8-14 | 12 | 4.27 | 2.25 | 0.79 | — | 1.06 |
| FJ3162-1212S | 1-1/16-14 | 12 | 4.86 | 2.71 | 0.79 | — | 1.25 |

FJ3416

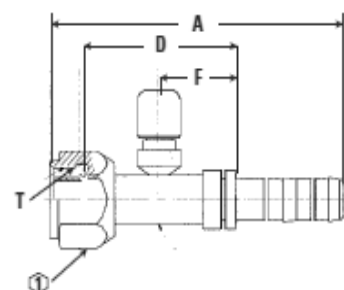


Straight – Female O-ring (long pilot) with Switch Port (M10 X 1.25)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|------------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3416-01-1010S | 7/8-14 | 10 | 4.25 | 2.25 | .63 | — | 1.06 |
| FJ3416-02-0808S* | 3/4-16 | 8 | 4.86 | 2.53 | .79 | — | 1.06 |

*May not be available

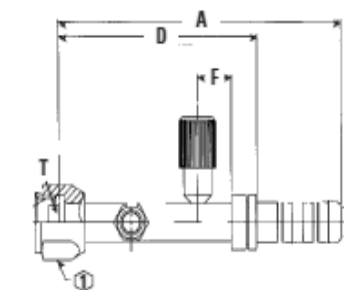
FJ3461



Straight – Female O-ring (long pilot) with Switch Port (M12 X 1.25)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3461-01-1010S | 7/8-14 | 10 | 4.25 | 2.25 | .63 | — | 1.06 |
| FJ3461-02-1012S | 7/8-14 | 12 | 4.27 | 2.25 | .63 | — | 1.06 |
| FJ3461-03-1212S | 1-1/16-14 | 12 | 4.86 | 2.71 | .54 | — | 1.25 |

FJ3363

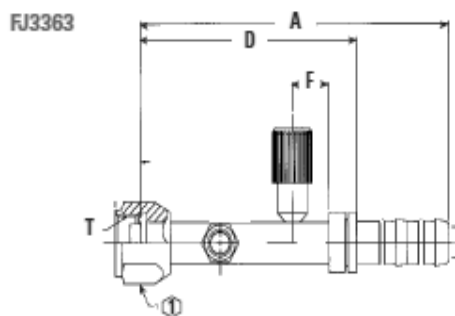


Straight – Female O-ring (short pilot), with R134a High side port and female switch connection, (1/8-27 thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3363-03-0808S | 3/4-16 | 8 | 5.16 | 3.62 | .63 | — | .88 |
| FJ3363-02-0810S | 3/4-16 | 10 | 5.54 | 3.62 | .63 | — | .88 |

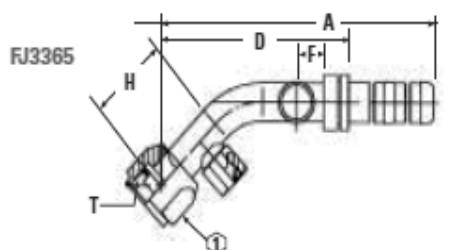


E-Z Clip System™ Fittings



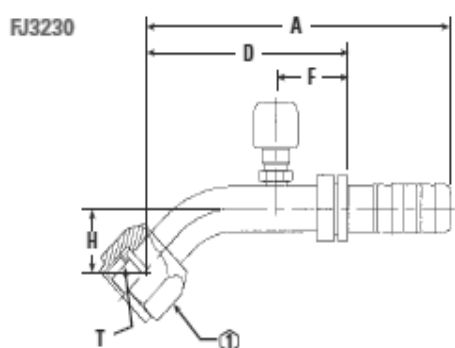
FJ3363 Straight – Female O-ring (short pilot), with R134a Low side port and female switch connection, (1/8-27 thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊙ REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3363-01-1012S | 7/8-14 | 12 | 5.30 | 3.72 | .63 | — | 1.06 |



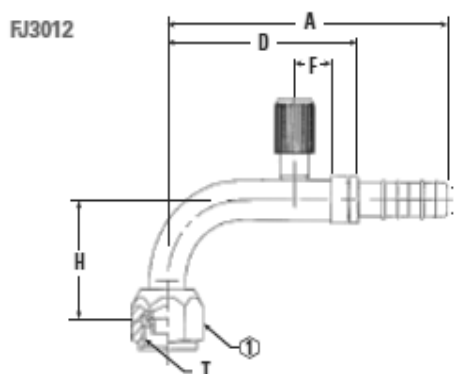
FJ3365 45° - Female O-ring (Short Pilot) with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊙ REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3365-01-1012S | 7/8-14 | 12 | 5.09 | 3.51 | .50 | 1.43 | 1.125 |



FJ3230 45° Female O-ring (long pilot) with Switch Port (7/16-20 thd)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊙ REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3230-01-0810S | 3/4-16 | 10 | 4.61 | 2.58 | 0.63 | 0.80 | 0.88 |
| FJ3230-02-1012S | 7/8-14 | 12 | 4.73 | 2.67 | 0.63 | 0.89 | 1.06 |
| FJ3230-03-0808S | 3/4-16 | 8 | 4.43 | 2.40 | 0.63 | 0.73 | 0.88 |
| FJ3230-04-1010S | 7/8-14 | 10 | 5.00 | 2.97 | 0.63 | 1.19 | 1.06 |



FJ3012 90° Female O-ring (short pilot) with R134a Low Side Port

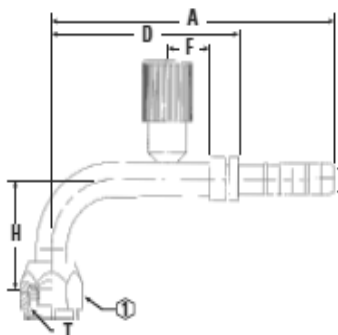
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊙ REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3012-02-1010S | 7/8-14 | 10 | 4.88 | 3.33 | 0.63 | 1.89 | 1.06 |
| FJ3012-01-1012S | 7/8-14 | 12 | 4.83 | 3.25 | 0.63 | 1.89 | 1.06 |
| FJ3012-03-1212S | 1-1/16-14 | 12 | 5.10 | 3.52 | 0.63 | 2.56 | 1.25 |



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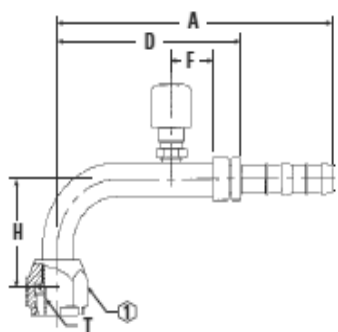
FJ3013



90° Female O-ring (short pilot) with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3013-02-0606S | 5/8-18 | 6 | 4.35 | 2.82 | 0.63 | 1.38 | 0.75 |
| FJ3013-03-0808S | 3/4-16 | 8 | 4.61 | 3.07 | 0.69 | 1.62 | 0.88 |
| FJ3013-01-0810S | 3/4-16 | 10 | 4.53 | 2.98 | 0.69 | 1.62 | 0.88 |

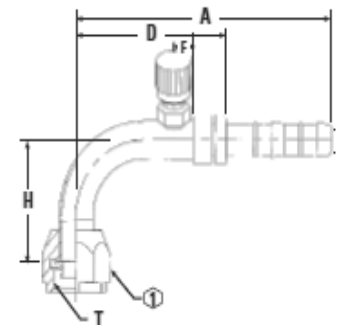
FJ3289



90° Female O-ring (long pilot) with Switch Port (7/16-20 thd)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3289-01-0808S | 3/4-16 | 8 | 4.61 | 2.59 | 0.69 | 1.62 | 0.88 |
| FJ3289-02-1010S | 7/8-14 | 10 | 4.80 | 2.77 | 0.63 | 1.93 | 1.06 |
| FJ3289-03-0606S | 5/8-18 | 6 | 4.35 | 2.82 | 0.69 | 1.35 | 0.75 |
| FJ3289-04-0810S | 3/4-16 | 10 | 4.62 | 2.59 | 0.69 | 1.62 | 0.88 |
| FJ3289-05-1012S | 7/8-14 | 12 | 4.82 | 2.77 | .63 | 1.93 | 1.06 |

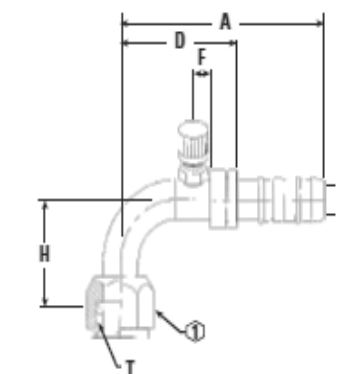
FJ3163



90° Elbow – Female O-ring (short pilot) with Switch Port (7/16-20 thd)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3163-01-1010S | 7/8-14 | 10 | 4.80 | 3.25 | 0.79 | 1.89 | 1.06 |
| FJ3163-02-1212S | 1-1/16-14 | 12 | 5.08 | 3.50 | 0.79 | 2.56 | 1.25 |

FJ3047

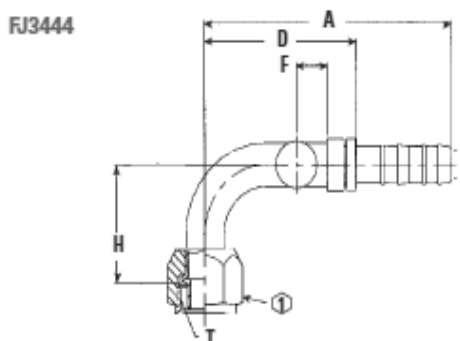


90° Female O-ring (long pilot) with Charge Port (7/16-20Thd) – 45° Port Rotation

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3047-1012S | 7/8-14 | 12 | 4.06 | 2.48 | 0.50 | 1.69 | 1.06 |

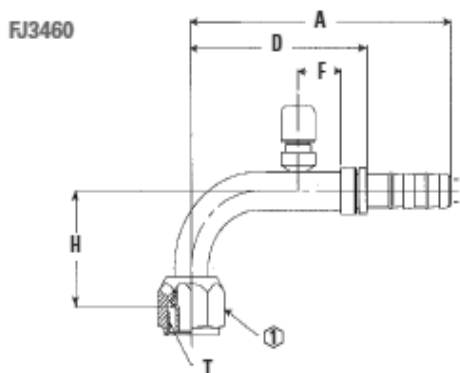


E-Z Clip System™ Fittings



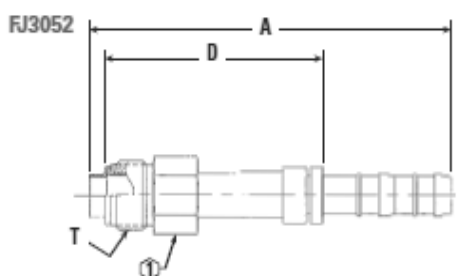
FJ3444 90° Female O-ring (long pilot) with Switch Port (7/16-20Thd) – 90° Port Rotation

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3444-1010S | 7/8-14 | 10 | 4.03 | 2.48 | .50 | 1.69 | 1.06 |



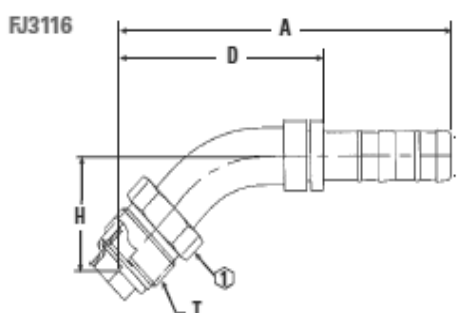
FJ3460 90° Female O-ring (long pilot) with Switchport (M12 X 1.25)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3460-01-1010S | 7/8-14 | 10 | 4.80 | 3.25 | 0.79 | 1.89 | 1.06 |
| FJ3460-01-1012S | 7/8-14 | 12 | 4.83 | 3.25 | 0.79 | 1.89 | 1.06 |
| FJ3460-03-1212S | 1-1/16-14 | 12 | 5.08 | 3.50 | .54 | 2.56 | 1.25 |



FJ3052 Straight Male O-ring (short pilot)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3052-0606S | 5/8-18 | 6 | 3.41 | 1.70 | — | — | 0.62 |
| FJ3052-0608S | 5/8-18 | 8 | 3.43 | 1.70 | — | — | 0.62 |
| FJ3052-0808S | 3/4-18 | 8 | 4.37 | 2.64 | — | — | 0.75 |
| FJ3052-1010S | 7/8-18 | 10 | 3.66 | 1.92 | — | — | 0.88 |
| FJ3052-1012S | 7/8-18 | 12 | 3.68 | 1.92 | — | — | 0.88 |
| FJ3052-1212S | 1-1/16-16 | 12 | 3.68 | 1.92 | — | — | 1.06 |



FJ3116 45° Male O-ring (short pilot)

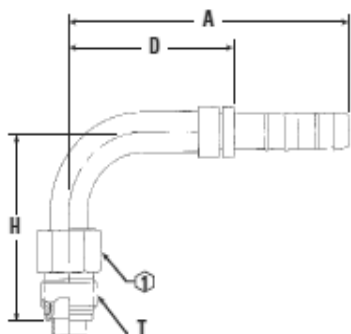
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3116-01-0606S | 5/8-18 | 6 | 3.99 | 2.47 | — | 0.94 | 0.62 |
| FJ3116-03-0808S | 3/4-18 | 8 | 4.59 | 2.83 | — | 1.20 | 0.75 |
| FJ3116-02-1010S | 7/8-18 | 10 | 4.65 | 3.10 | — | 1.46 | 0.88 |
| FJ3116-04-0608S | 5/8-18 | 8 | 4.01 | 2.47 | — | 0.94 | 0.62 |



Powering Business Worldwide

E-Z Clip System™ Fittings

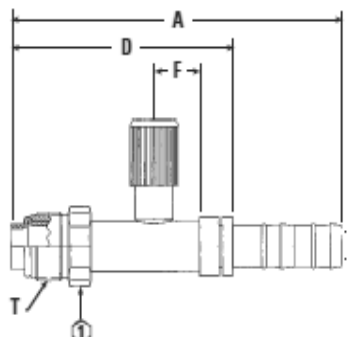
FJ3019



90° Male O-ring (short pilot)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3019-03-0606S | 5/8-18 | 6 | 3.33 | 1.80 | — | 1.77 | 0.62 |
| FJ3019-02-0608S | 5/8-18 | 8 | 3.34 | 1.80 | — | 1.77 | 0.62 |
| FJ3019-04-0808S | 3/4-18 | 8 | 3.77 | 2.23 | — | 2.31 | 0.75 |
| FJ3019-06-0810S | 3/4-18 | 10 | 3.78 | 2.23 | — | 2.31 | 0.75 |
| FJ3019-01-1012S | 7/8-18 | 12 | 4.24 | 2.67 | — | 2.45 | 0.88 |
| FJ3019-05-1212S | 1-1/16-16 | 12 | 4.22 | 2.64 | — | 2.79 | 1.06 |
| FJ3019-07-1010S | 7/8-18 | 10 | 4.22 | 2.67 | — | 2.453 | 0.88 |

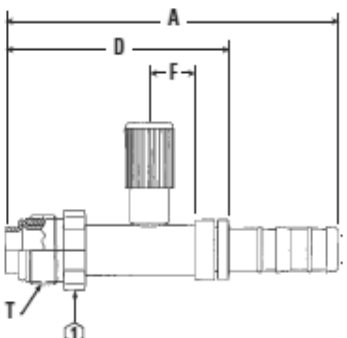
FJ3132



Straight Male O-ring (short pilot) with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3132-01-1010S | 7/8-18 | 10 | 4.43 | 2.70 | 0.63 | — | 0.88 |
| FJ3132-02-1012S | 7/8-18 | 12 | 4.46 | 2.70 | 0.63 | — | 0.88 |

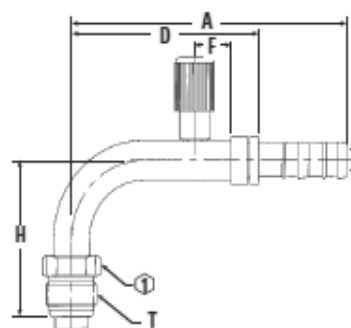
FJ3131



Straight Male O-ring (short pilot) with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3131-01-0606S | 5/8-18 | 6 | 4.18 | 2.47 | 0.63 | — | 0.62 |
| FJ3131-02-0808S | 3/4-18 | 8 | 4.58 | 2.85 | 0.63 | — | 0.75 |
| FJ3131-03-1010S | 7/8-18 | 10 | 4.34 | 2.61 | 0.63 | — | 0.88 |

FJ3134

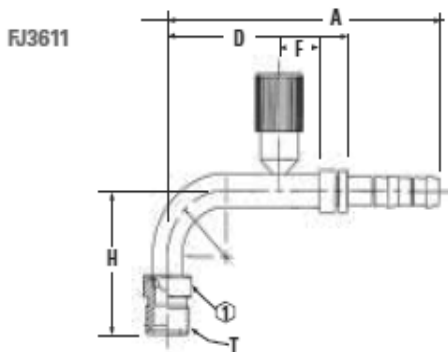


90° Elbow Male O-ring (short pilot) with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3134-01-0606S | 5/8-18 | 6 | 4.34 | 2.82 | 0.63 | 1.75 | 0.62 |
| FJ3134-02-0808S | 3/4-18 | 8 | 4.61 | 3.07 | 0.63 | 2.31 | 0.75 |
| FJ3134-03-1010S | 7/8-18 | 10 | 4.81 | 3.25 | 0.63 | 2.34 | 0.88 |

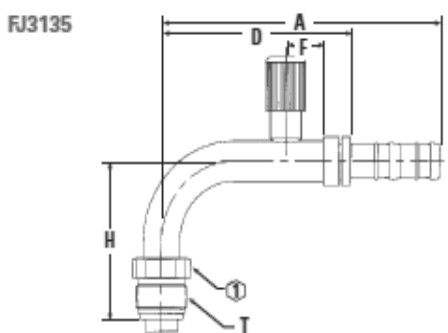


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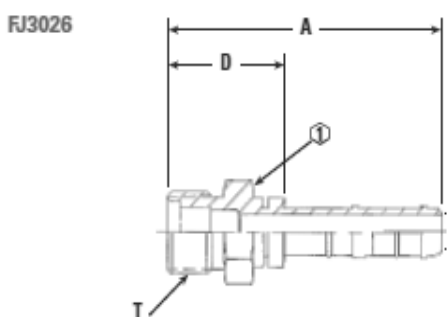
90° Male MIO with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3611-01-0808S | 3/4-16 | 8 | 4.61 | 3.07 | .69 | 2.17 | 0.813 |



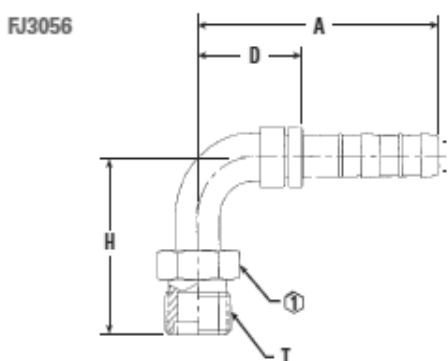
90° Elbow Male O-ring (short pilot) with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3135-01-1010S | 7/8-18 | 10 | 4.81 | 3.25 | 0.63 | 2.34 | 0.88 |
| FJ3135-02-1012S | 7/8-18 | 12 | 4.81 | 3.25 | 0.63 | 2.34 | 0.88 |



Male MIO (male insert O-ring) Straights

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3026-0606S | 5/8-18 | 6 | 3.36 | 1.83 | — | — | 0.690 |
| FJ3026-0808S | 3/4-16 | 8 | 2.69 | 1.15 | — | — | 0.810 |
| FJ3026-1010S | 7/8-14 | 10 | 2.90 | 1.35 | — | — | 0.940 |
| FJ3026-1012S | 7/8-14 | 12 | 4.11 | 2.50 | — | — | 0.940 |
| FJ3026-1212S | 1-1/16-14 | 12 | 4.29 | 2.71 | — | — | 1.125 |

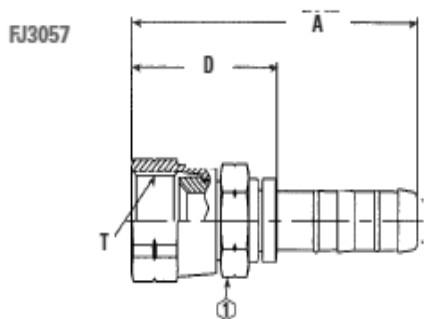


90° Male MIO – (male insert O-ring)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3056-01-0606S | 5/8-18 | 6 | 2.50 | 0.98 | — | 1.44 | 0.69 |
| FJ3056-02-0808S | 3/4-16 | 8 | 2.74 | 1.20 | — | 1.82 | 0.81 |
| FJ3056-03-1010S | 7/8-14 | 10 | 3.09 | 1.54 | — | 2.13 | 0.94 |
| FJ3056-04-0810S | 3/4-16 | 10 | 2.75 | 1.20 | — | 1.82 | 0.81 |

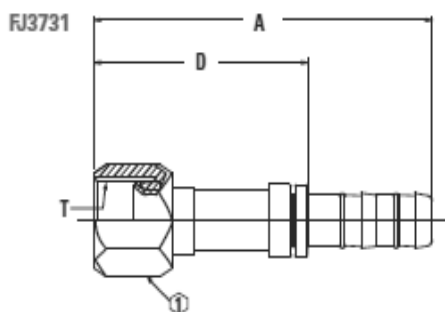


E-Z Clip System™ Fittings



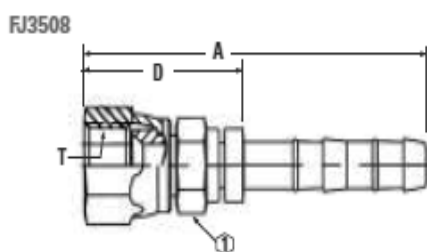
Female SAE 45° Flares

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3057-01-0606S | 5/8-18 | 6 | 2.88 | 1.35 | — | — | 0.56 |
| FJ3057-02-0608S | 5/8-18 | 8 | 3.14 | 1.62 | — | — | 0.75 |
| FJ3057-03-0808S | 3/4-16 | 8 | 2.96 | 1.42 | — | — | 0.69 |
| FJ3057-04-0810S | 3/4-16 | 10 | 3.56 | 2.02 | — | — | 0.88 |
| FJ3057-05-1010S | 7/8-14 | 10 | 3.63 | 2.08 | — | — | 1.00 |
| FJ3057-06-1012S | 7/8-14 | 12 | 3.66 | 2.08 | — | — | 1.00 |
| FJ3057-07-1212S | 1-1/16-14 | 12 | 3.20 | 1.62 | — | — | 1.25 |



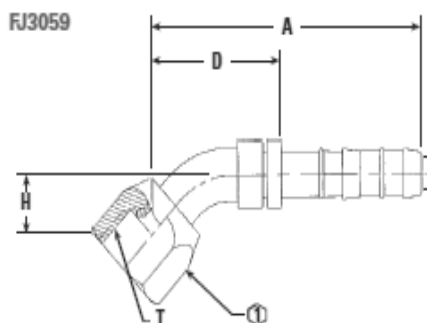
Straight - Female 37° Flare

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3731-1010S | 7/8-14 | 10 | 4.21 | 2.66 | — | — | 1 |



Straight - Female 37° Flare - Braze Design - Special Order Only

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3508-0606S | 9/16-18 | 6 | 2.85 | 1.32 | — | — | 0.563 |
| FJ3508-0808S | 3/4-16 | 8 | 2.96 | 1.42 | — | — | 0.688 |
| FJ3508-1010S | 7/8-14 | 10 | 3.15 | 1.59 | — | — | 0.875 |
| FJ3508-1212S | 1 1/16-12 | 12 | 3.2 | 1.62 | — | — | 1.25 |



45° Female SAE 45° and Universal Flares

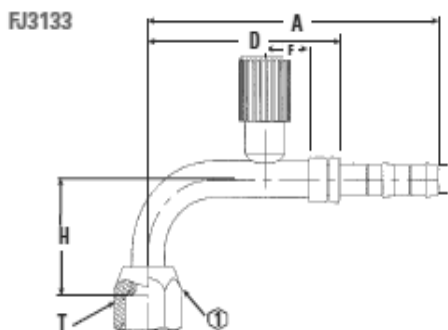
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|------------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3059-01-0606S† | 5/8-18 | 6 | 2.61 | 1.08 | — | 0.39 | 0.75 |
| FJ3059-02-0608S† | 5/8-18 | 8 | 2.62 | 1.08 | — | 0.39 | 0.75 |
| FJ3059-03-0808S* | 3/4-16 | 8 | 2.97 | 1.43 | — | 0.55 | 0.88 |
| FJ3059-04-0810S* | 3/4-16 | 10 | 2.98 | 1.43 | — | 0.55 | 0.88 |
| FJ3059-05-1010S* | 7/8-14 | 10 | 3.08 | 1.53 | — | 0.63 | 1.00 |
| FJ3059-06-1012S* | 7/8-14 | 12 | 3.11 | 1.53 | — | 0.63 | 1.00 |

†Double notch in nut for universal type identification

*Universal Flare

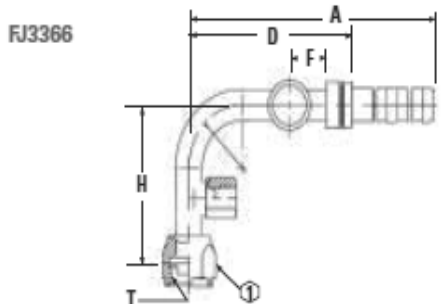


E-Z Clip System™ Fittings



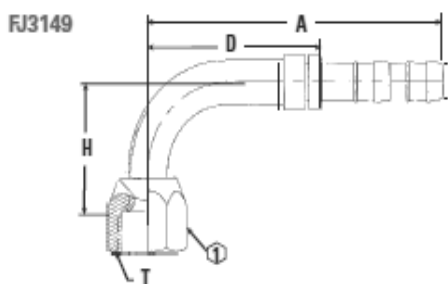
FJ3133 90° Female SAE 45° With High Side Charge Port (R134a)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3133-01-0606S | 5/8-18 | 6 | 4.35 | 2.82 | 0.63 | 1.28 | 0.75 |
| FJ3133-02-0808S | 3/4-16 | 8 | 4.61 | 3.07 | 0.63 | 1.53 | 0.88 |
| FJ3133-03-1010S | 7/8-14 | 10 | 4.80 | 3.25 | 0.63 | 1.84 | 0.88 |



FJ3366 SAE 90° with R134a C/Port and Switch Port

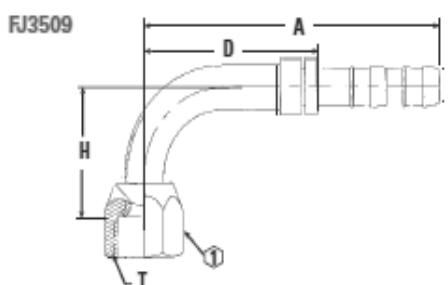
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3366-01-0810S | 3/4-16 | 10 | 4.62 | 3.07 | .69 | 2.53 | 0.875 |
| FJ3366-02-0808S | 3/4-16 | 8 | 4.61 | 3.07 | .69 | 2.53 | 0.875 |



FJ3149 90° Female SAE 45° and Universal Flares

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|------------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3149-01-0606S† | 5/8-18 | 6 | 2.51 | 0.98 | — | 0.85 | 0.75 |
| FJ3149-02-0608S† | 5/8-18 | 8 | 2.52 | 0.98 | — | 0.85 | 0.75 |
| FJ3149-03-0808S* | 3/4-16 | 8 | 2.74 | 1.20 | — | 1.09 | 0.88 |
| FJ3149-04-1010S* | 7/8-14 | 10 | 3.09 | 1.54 | — | 1.19 | 1.00 |
| FJ3149-05-1012S* | 7/8-14 | 12 | 3.09 | 1.54 | — | 1.19 | 1.00 |
| FJ3149-06-1212S† | 1-1/16-14 | 12 | 3.68 | 2.11 | — | 1.80 | 1.25 |

†Double notch in nut for universal type identification
*Universal Flare

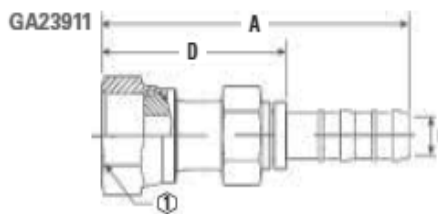


FJ3509 90° Female JIC

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3509-0606S | 9/16-18 | 6 | 2.50 | .98 | — | 2.18 | .69 |
| FJ3509-0608S | 9/16-18 | 8 | 2.52 | .98 | — | 2.18 | .69 |
| FJ3509-1212S | 1-1/16-12 | 12 | 3.36 | 1.78 | — | 3.73 | 1.25 |



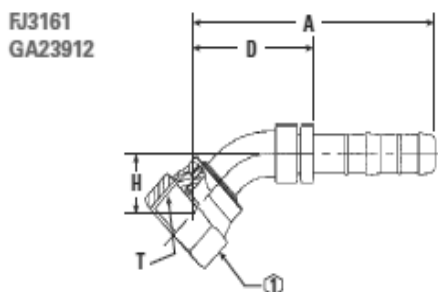
E-Z Clip System™ Fittings



Straight - ORS Female Swivel Metric Hex Nut^Δ

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|---------------|-----------|-----------|-------|-------|-------|-------|-------|
| GA23911-6-6 | 1-1/16-16 | 6 | 2.95 | 1.43 | - | - | 22mm |
| GA23911-8-8 | 1-3/16-16 | 8 | 3.17 | 1.62 | - | - | 24mm |
| GA23911-10-12 | 1-14 | 12 | 3.32 | 1.74 | - | - | 30mm |
| GA23911-10-10 | 1-14 | 10 | 3.33 | 1.78 | - | - | 30mm |
| GA23911-12-12 | 1-3/16-12 | 12 | 3.38 | 1.80 | - | - | 36mm |

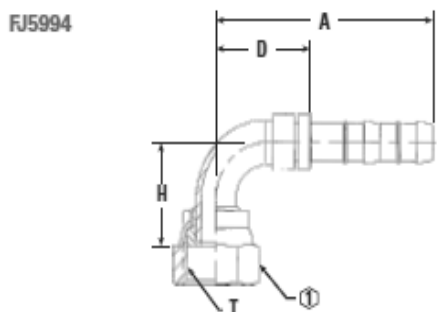
^ΔMetric Hex



45° ORS Female Swivel

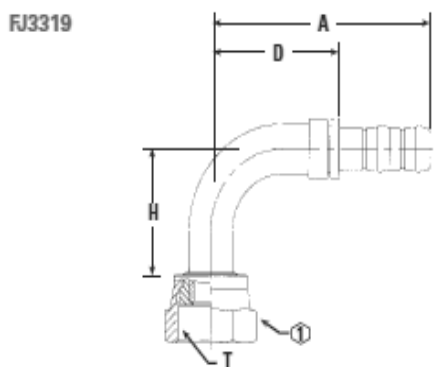
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3161-01-0606S | 11/16-16 | 6 | 2.65 | 1.12 | — | 0.44 | 0.81 |
| GA23912-8-8* | 13/16-16 | 8 | 3.02 | 1.47 | — | 0.59 | 29mm |
| GA23912-10-10* | 1-14 | 10 | 3.22 | 1.67 | — | 0.70 | 30mm |
| GA23912-10-8* | 1-14 | 8 | 3.50 | 1.96 | — | 0.68 | 30mm |
| GA23912-12-12* | 1-3/16-12 | 12 | 4.23 | 2.65 | — | 0.83 | 36mm |

^{Δ*}Metric Hex



90° ORS Female Swivel

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ5994-01-0606S | 1-1/16-16 | 6 | 2.50 | 0.98 | — | 0.91 | 0.81 |
| FJ5994-02-0808S | 13/16-16 | 8 | 2.74 | 1.20 | — | 1.15 | 0.94 |
| FJ5994-04-1010S | 1-14 | 10 | 3.09 | 1.53 | — | 1.27 | 1.12 |
| FJ5994-03-1212S | 1-3/16-12 | 12 | 3.36 | 1.78 | — | 1.90 | 1.38 |
| FJ5994-05-0406S | 9/16-18 | 6 | 2.44 | 0.92 | — | 0.82 | 0.69 |
| FJ5994-05-1012S | 1-14 | 12 | 3.11 | 1.53 | — | 1.78 | 1.13 |
| FJ5994-07-0806S | 13/16-16 | 6 | 2.66 | 1.10 | — | 1.15 | 0.94 |

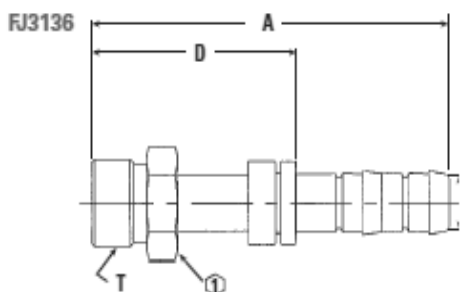


90° ORS Female Swivel (long drop)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3319-1212S | 1-3/16-12 | 12 | 3.82 | 2.24 | — | 2.38 | 1.13 |

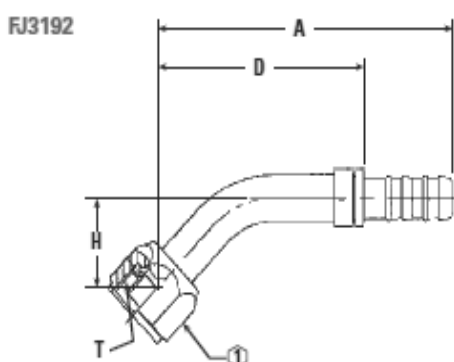


E-Z Clip System™ Fittings



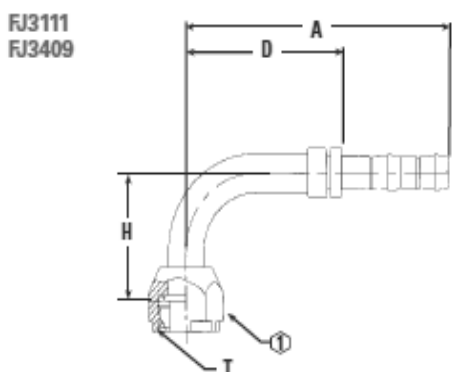
Straight Male O-ring (rigid) Metric Thread

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3136-0810S | M20 x 1.5 | 10 | 3.62 | 2.07 | 0.69 | — | 0.88 |



45° Female O-ring (long pilot, metric thread)

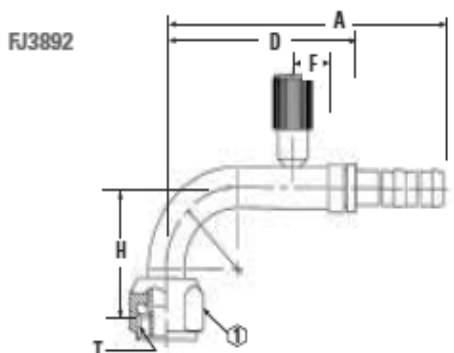
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3192-02-1212S | M27x2 | 12 | 4.74 | 3.17 | — | 1.47 | 1.25 |



90° Female O-ring (long pilot) Metric Thread

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|------------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3111-01-0808S | M20 x 1.5 | 8 | 3.77 | 2.23 | — | 1.62 | 0.94 |
| FJ3111-02-0810S | M20 x 1.5 | 10 | 3.78 | 2.23 | — | 1.62 | 0.94 |
| FJ3111-03-0806S* | M20 x 1.5 | 6 | 3.75 | 2.23 | — | 1.62 | 0.94 |
| FJ3409-1212S | M27 x 2 | 12 | 4.74 | 3.16 | — | 2.56 | 1.25 |

*Non-Stock item



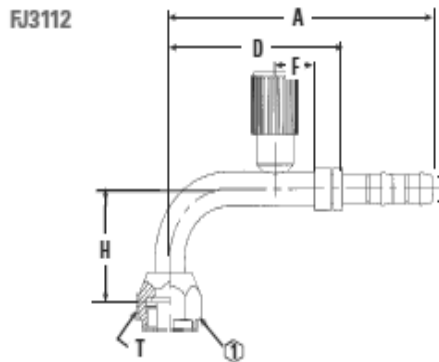
90° - Female O-ring (long pilot)
with R134a Low Side Port (Metric Thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3892-01-1010S | M24 X 1.5 | 10 | 4.88 | 3.33 | .63 | 1.89 | 1.125 |



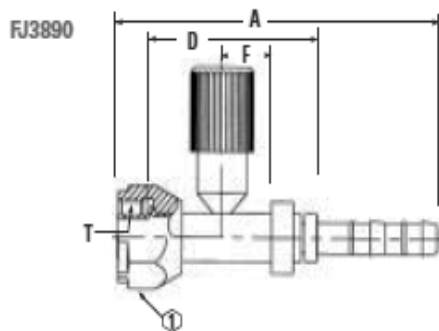
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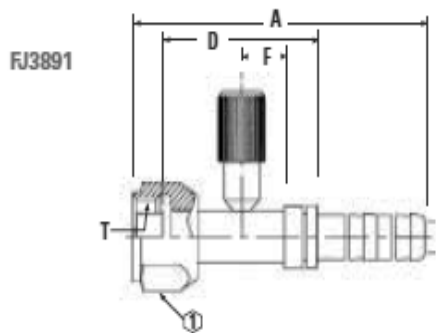
90° Female O-ring (long pilot) Metric Thread with High Side Charge Port (R134a)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3112-01-0808S | M20 x 1.5 | 8 | 4.52 | 2.98 | 0.69 | 1.62 | 0.94 |
| FJ3112-02-0810S | M20 x 1.5 | 10 | 4.53 | 2.98 | 0.69 | 1.62 | 0.94 |
| FJ3112-03-0806S | M20 x 1.5 | 8 | 4.50 | 2.98 | 0.69 | 1.62 | 0.94 |



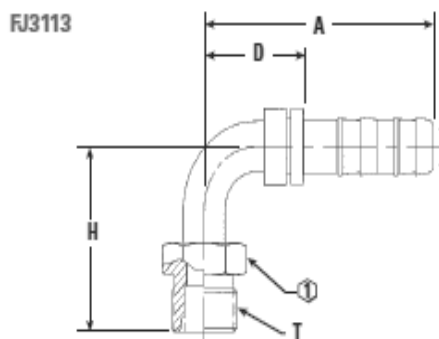
Straight - Female O-ring (long pilot) with R134a High Side Port (Metric Thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3890-01-0806S | M20 X 1.5 | 6 | 4.06 | 2.16 | .63 | | 0.94 |



Straight - Female O-ring (long pilot) with R134a Low Side Port (Metric Thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3891-01-1010S | M24 X 1.5 | 10 | 4.24 | 2.25 | .62 | | 1.125 |

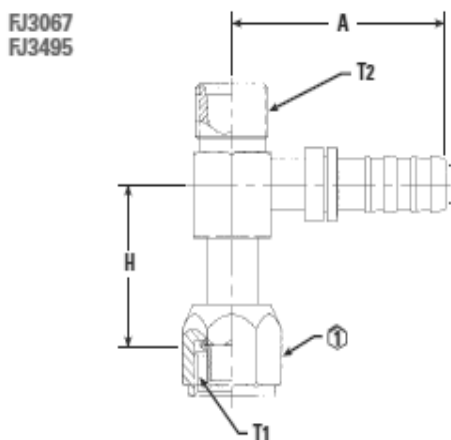


90° Male O-ring (rigid) Metric Thread

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3113-0810S | M20 x 1.5 | 8 | 2.75 | 1.20 | — | 1.82 | 0.88 |

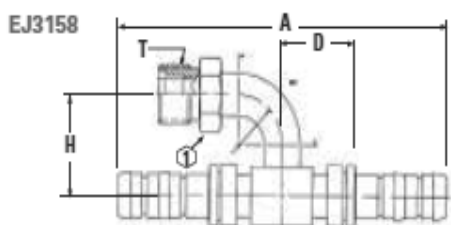


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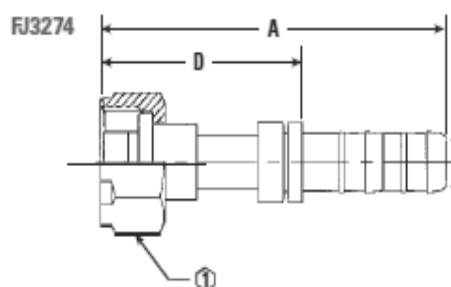
GM Tie In - Metric Tee

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3067-1212S | M27 x 2 | 12 | 3.12 | — | — | 2.02 | 1.25 |
| FJ3495-0808S | M20 x 1.5 | 8 | 2.71 | — | — | 1.68 | 0.94 |



Tee Style Fitting with Male O-ring Connection

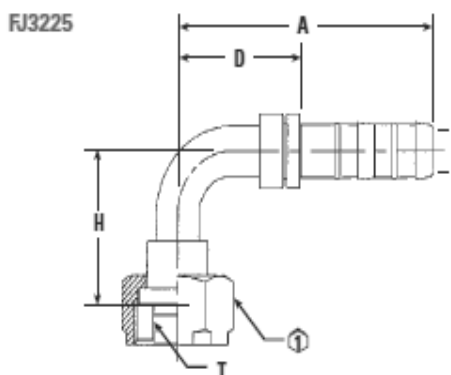
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|----------------|----------|-----------|-------|-------|-------|-------|-------|
| EJ3158-101212S | 7/8-14 | 12 | 5.67 | 1.26 | — | 1.49 | 0.94 |



Straight - Female RotaLok

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|---------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3274-1010S | 1-14 | 10 | 3.69 | 2.14 | — | — | 1.13 |
| FJ3274-1012S* | 1-14 | 12 | 3.75 | 2.14 | — | — | 1.13 |

*May not be available



90° Female RotaLok

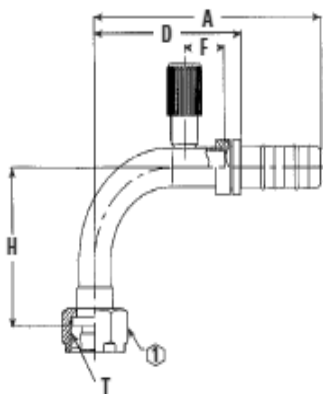
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3225-1010S | 1-14 | 10 | 2.98 | 1.43 | — | 1.52 | 1.13 |



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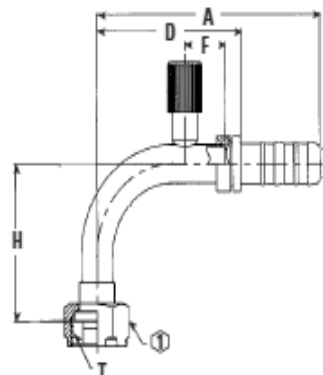
FJ3510



90° Female Rotalok with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3510-1012S | 1-14 | 12 | 4.48 | 2.88 | .79 | 2.58 | 1.13 |

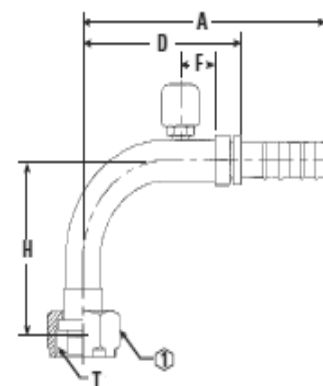
FJ3511



90° Female Rotalok with R134a High Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3511-1010S | 1-14 | 10 | 4.43 | 2.88 | .79 | 2.58 | 1.13 |

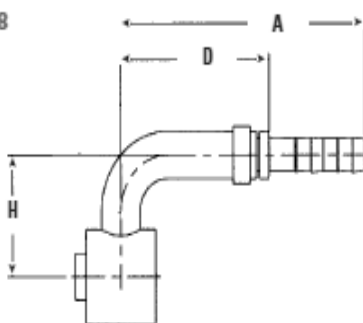
FJ3226



90° Female RotaLok with Switch Port (7/16-20 thread)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3226-1010S | 1-14 | 10 | 4.43 | 2.88 | 0.63 | 2.56 | 1.13 |

FJ3568

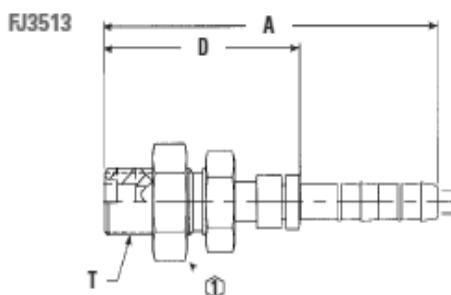


90° GM Block Style

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3568-1008S | — | 8 | 3.92 | 2.38 | — | 1.60 | — |
| FJ3568-1010S | — | 10 | 3.83 | 2.28 | — | 2.31 | — |
| FJ3568-1012S | — | 12 | 3.86 | 2.28 | — | 2.38 | — |

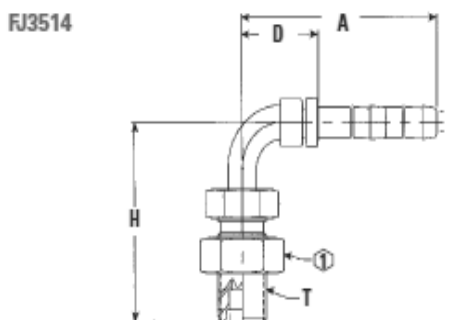


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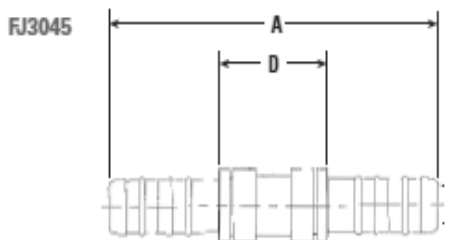
Straight Bulkhead

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3513-0606S | 5/8-18 | 6 | 3.69 | 2.16 | — | — | .94 |
| FJ3513-0808S | 3/4-16 | 8 | 3.93 | 2.39 | — | — | 1.0 |
| FJ3513-1010S | 7/8-14 | 10 | 4.49 | 2.94 | — | — | 1.13 |
| FJ3513-1212S | 1 1/16-14 | 12 | 4.45 | 2.87 | — | — | 1.375 |



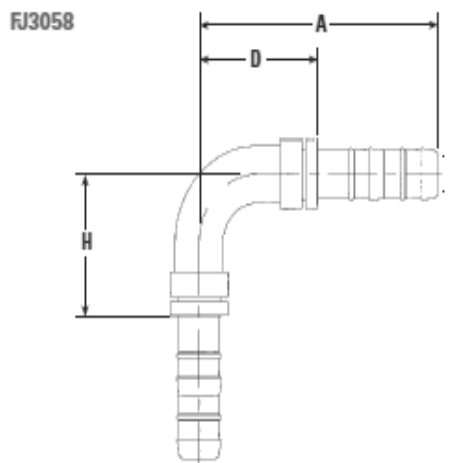
90° Male Bulkhead

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3514-0606S | 5/8-18 | 6 | 2.50 | .98 | — | 2.15 | .94 |
| FJ3514-0808S | 3/4-16 | 8 | 2.74 | 1.20 | — | 2.61 | 1.0 |
| FJ3514-1010S | 7/8-14 | 10 | 3.08 | 1.53 | — | 3.26 | 1.13 |
| FJ3514-1012S | 7/8-14 | 12 | 3.11 | 1.53 | — | 3.26 | 1.13 |
| FJ3514-1212S | 1-1/16-14 | 12 | 3.69 | 2.11 | — | 3.78 | 1.38 |



Straight Splicer

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3045-0606S | — | 6 | 4.63 | 1.58 | — | — | — |
| FJ3045-0808S | — | 8 | 4.76 | 1.68 | — | — | — |
| FJ3045-1010S | — | 10 | 5.68 | 2.58 | — | — | — |
| FJ3045-1212S | — | 12 | 4.72 | 1.57 | — | — | — |
| FJ3045-1008S | — | 10, 8 | 5.78 | 2.69 | — | — | — |

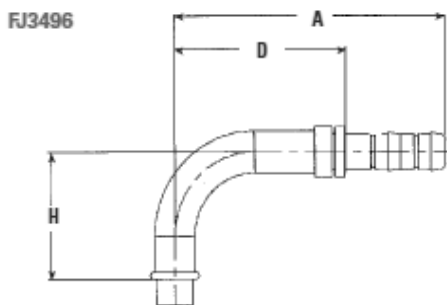


90° Splicer

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3058-01-0606S | — | 6 | 2.71 | 1.18 | — | 2.71 | — |
| FJ3058-02-0808S | — | 8 | 2.98 | 1.43 | — | 2.98 | — |
| FJ3058-03-1010S | — | 10 | 3.08 | 1.53 | — | 3.08 | — |
| FJ3058-04-1212S | — | 12 | 3.68 | 2.11 | — | 3.68 | — |



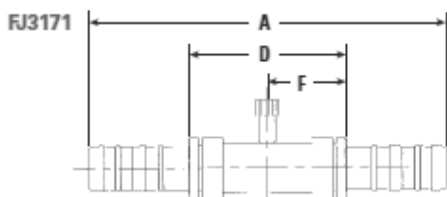
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90° Pilot Connection (long pilot)

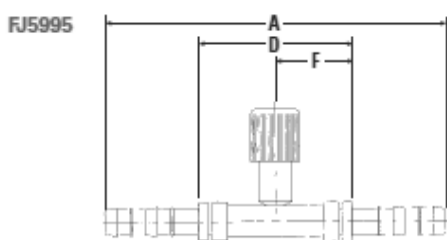
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3496-01-1010S | — | 10 | 4.22 | 2.67 | — | 1.89 | — |

* Consult applications engineer for additional sizes.



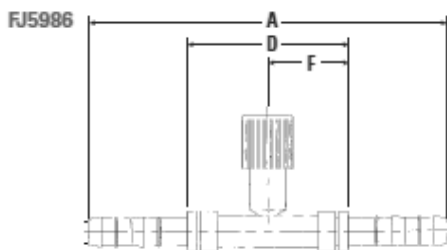
Splicer with SwitchPort 7/16-20Thd

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3171-0606S | — | 6 | 5.41 | 2.36 | 1.18 | — | — |
| FJ3171-0808S | — | 8 | 5.61 | 2.52 | 1.26 | — | — |
| FJ3171-1010S | — | 10 | 5.54 | 2.44 | 1.22 | — | — |
| FJ3171-1212S | — | 12 | 5.60 | 2.44 | 1.22 | — | — |



Splicer with High Side R134a Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ5995-0606S | — | 6 | 5.41 | 2.36 | 1.18 | — | — |
| FJ5995-0808S | — | 8 | 5.61 | 2.52 | 1.26 | — | — |
| FJ5995-1010S | — | 10 | 5.62 | 2.52 | 1.26 | — | — |
| FJ5995-1212S | — | 12 | 5.67 | 2.52 | 1.26 | — | — |



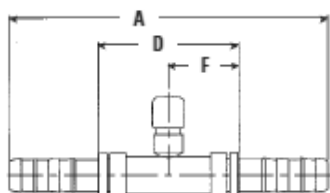
Splicer with R134a Low Side Port

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ5986-1010S | — | 10 | 5.54 | 2.44 | 1.22 | — | — |
| FJ5986-1212S | — | 12 | 5.60 | 2.44 | 1.22 | — | — |



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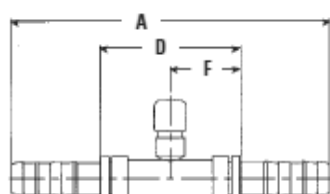
FJ3427



Splicer with High Side Switch Port (M10 X 1.25)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3427-0808S | — | 8 | 5.61 | 2.52 | 1.26 | — | — |
| FJ3427-1010S | — | 10 | 5.54 | 2.44 | 1.22 | — | — |

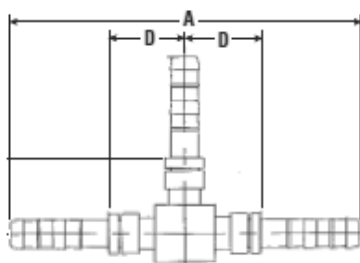
FJ3428



Splicer with Low Side Switch Port (M12 X 1.25)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3428-1212S | — | 12 | 5.59 | 2.44 | 1.22 | — | — |

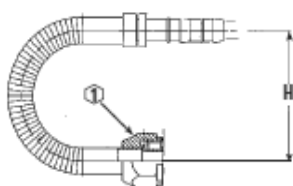
FJ3066



"T" Splicer - 3 Hose Connector

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3066-0808S | — | 8 | 5.48 | 2.40 | — | — | — |
| FJ3066-1010S | — | 10 | 5.62 | 2.52 | — | — | — |
| FJ3066-1212S | — | 12 | 5.67 | 2.52 | — | — | — |
| FJ3066-101212S | — | 10x12x12 | 5.67 | 2.52 | — | — | — |
| FJ3066-060808S | — | 6 x 8 x 8 | 5.48 | 2.40 | — | — | — |

FJ3623



180° Female O-ring Pilot

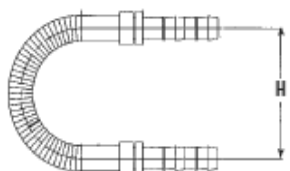
| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | ⊕ REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3623-0808S | M20 x 1.5 | 8 | — | — | — | 2.50 | .94 |



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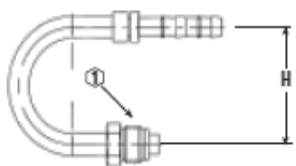
FJ3624



180° Splicer

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3624-0808S | — | 8 | — | — | — | 2.50 | — |

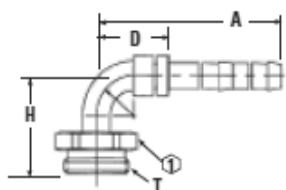
FJ3804



180° Male O-ring

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3804-0606S | 5/8-18 | 6 | — | — | — | 2.00 | .625 |

FJ3914

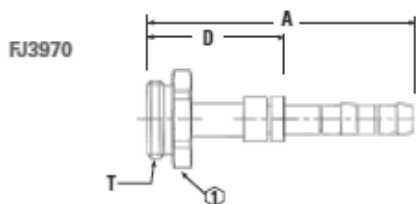


90° 5400 Coupling Thread

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3914-03-1210S | 1 1/4-18 | 10 | 3.08 | 1.53 | — | 1.73 | 1.375 |
| FJ3914-04-0806S | 7/8-20 | 6 | 2.5 | 0.98 | — | 1.23 | 1.000 |



E-Z Clip System™ Fittings



Straight 5400 Coupling Thread

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3970-0606S | 7/8-20 | 6 | 3.14 | 1.82 | — | — | 1.000 |

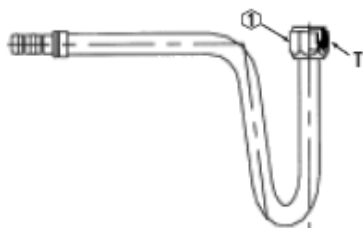
FJ3734



Female O-ring (Long Pilot) Compound Tube

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3734-1212S | 1 1/16-14 | 12 | — | — | — | — | 1.25 |

FJ3801



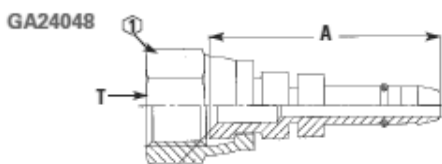
Female O-ring (Long Pilot) Compound Tube

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|-----------|-----------|-------|-------|-------|-------|-------|
| FJ3801-1212S | 1 1/16-14 | 12 | — | — | — | — | 1.25 |



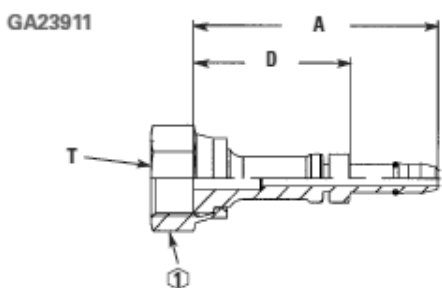
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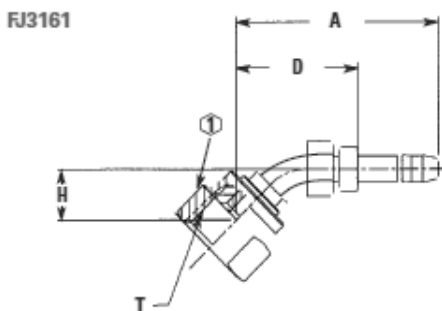
Straight Female SAE Flare

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-------------|----------|-----------|-------|-------|-------|-------|-------|
| GA24048-4-4 | 7/16 | 4 | 1.34 | — | — | — | 14mm |



Straight Female ORS

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-------------|----------|-----------|-------|-------|-------|-------|-------|
| GA23911-4-4 | 9/16-18 | 4 | 1.86 | 1.19 | — | — | 17mm |



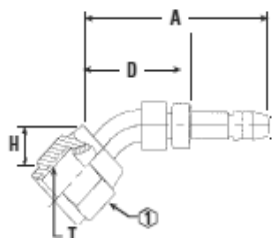
45° Female ORS

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|-----------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3161-05-0404S | 9/16-18 | 4 | 1.68 | 1.01 | — | .41 | .69 |



E-Z Clip System™ Fittings

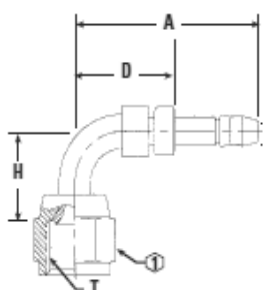
FJ3059



45° Universal Swivel (SAE 37° or 45°)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
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| FJ3059-0404S | 7/16-20 | 4 | 1.57 | 0.91 | — | 0.33 | 0.56 |

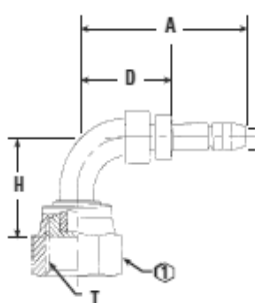
FJ3149



90° Universal Swivel (SAE 37° or 45°)

| PART NUMBER | TH'D "T" | HOSE SIZE | A REF | D REF | F REF | H REF | Ø REF |
|--------------|----------|-----------|-------|-------|-------|-------|-------|
| FJ3149-0404S | 7/16-20 | 4 | 2.47 | 0.8 | — | 0.68 | 0.56 |

GA23913



90° ORS Swivel

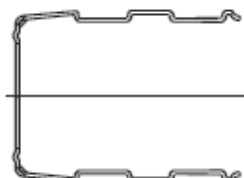
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|-------------|----------|-----------|-------|-------|-------|-------|-------|
| GA23913-4-4 | 9/16-18 | 4 | 1.79 | 1.12 | — | 0.82 | 17mm |



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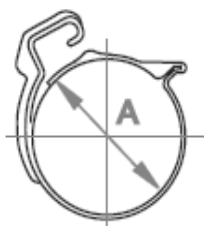
E-Z Clip System™ Fittings

Cages / Fitting to Hose Attachment



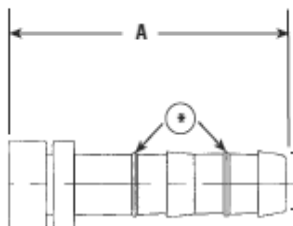
| PART NUMBER | CAGE SIZE | HOSE DESCRIPTION |
|-------------|-----------|-------------------------|
| 1F40105-04C | -04 | Cages for size -04 hose |
| 1F40105-06C | -06 | Cages for size -06 hose |
| 1F40105-08C | -08 | Cages for size -08 hose |
| 1F40105-10C | -10 | Cages for size -10 hose |
| 1F40105-12C | -12 | Cages for size -12 hose |

Clips Hose / Cage Connection



| PART NUMBER | A REF | DESCRIPTION |
|-------------|---------|-------------------------|
| 1F40104-04C | 14 mm | Clips for size -04 hose |
| 1F40104-06C | 18 mm | Clips for size -06 hose |
| 1F40104-08C | 20.5 mm | Clips for size -08 hose |
| 1F40104-10C | 23 mm | Clips for size -10 hose |
| 1F40104-12C | 27.5 mm | Clips for size -12 hose |

Lifesaver Braze Nipple



| PART NUMBER | TH'D "T" | HOSE SIZE | A REF |
|---------------|----------|-----------|-------|
| FF12262-0606S | — | 6 | 2.01 |
| FF12262-0608S | — | 8 | 2.02 |
| FF12262-0808S | — | 8 | 2.02 |
| FF12262-0810S | — | 10 | 2.03 |
| FF12262-1010S | — | 10 | 2.03 |
| FF12262-1012S | — | 12 | 2.06 |
| FF12262-1212S | — | 12 | 2.11 |

*O-rings packaged separately



E-Z Clip System™ Assembly Tools

Pliers / Crimping Tool



| PART NUMBER | DESCRIPTION |
|-------------|---------------|
| FT1567 | Crimping Tool |

Hex Cutter



| PART NUMBER | DESCRIPTION |
|-------------|-------------------|
| FT1569 | Hex Cutter |
| FT1569-2-1 | Replacement Blade |

Core Tool



| PART NUMBER | DESCRIPTION |
|-------------|----------------------------|
| 42-05-100 | Core Tool |
| FF00192-02 | High Side Core* |
| FF00192-01 | Low Side Core* |
| FF00198-02 | High Side Cap |
| FF00198-01 | Low Side Cap |
| FF0872-04 | Cap for 7/16-20 Thrd. port |

*For Aeroquip high flow charge ports only.



FF00192-02



FF00192-01



FF00193-02, FF00193-01

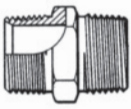
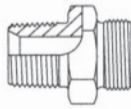
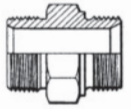

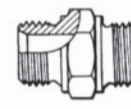
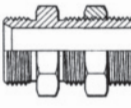
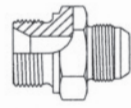
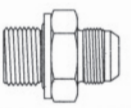
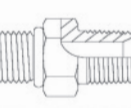
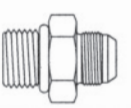
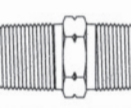
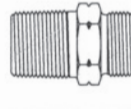
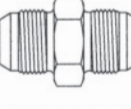
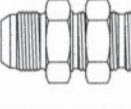
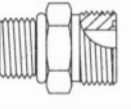
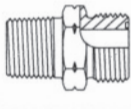
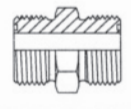
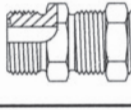
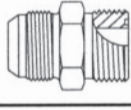
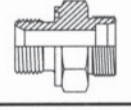
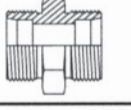
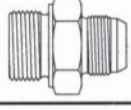
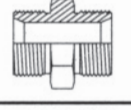
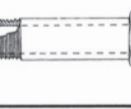
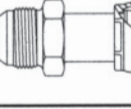
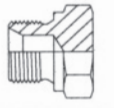
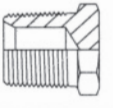
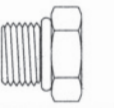
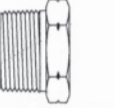
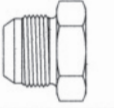


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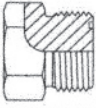
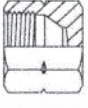
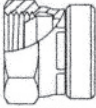
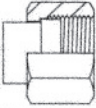
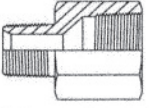
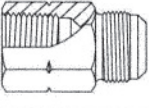
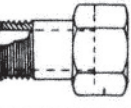
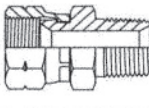
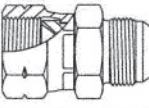
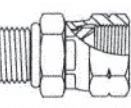
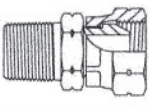
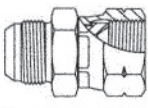
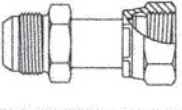
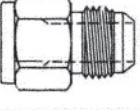
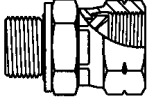
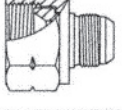
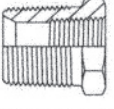
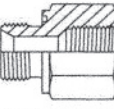

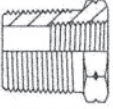
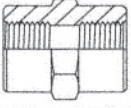
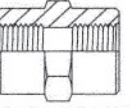
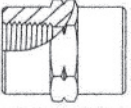


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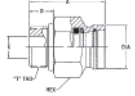
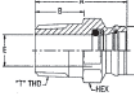
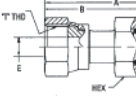
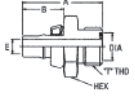
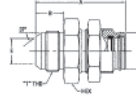
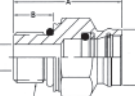
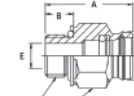
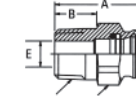
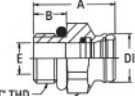
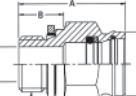
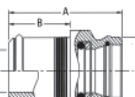
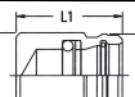
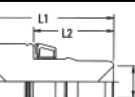
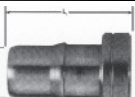
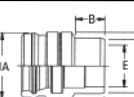
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

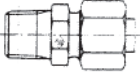

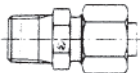
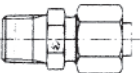


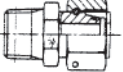
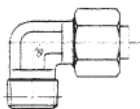
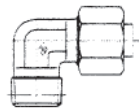
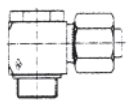
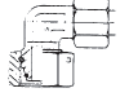
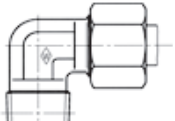
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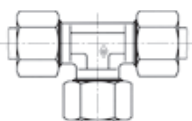
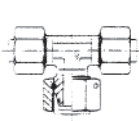
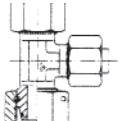
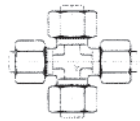
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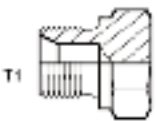
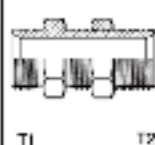
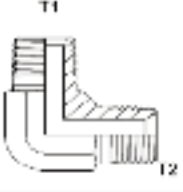
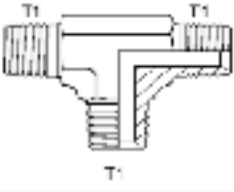
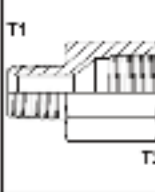
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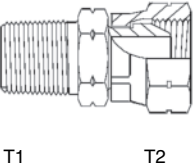
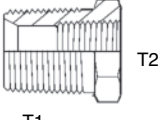
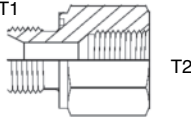
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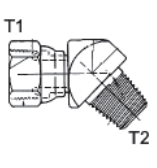
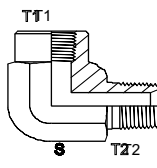
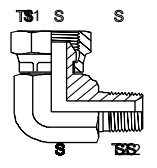
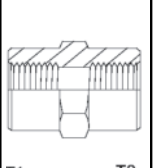
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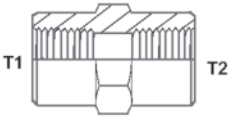

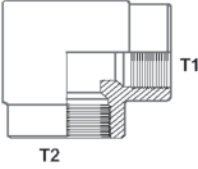
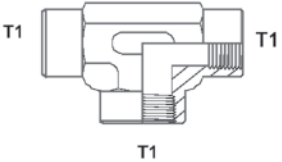


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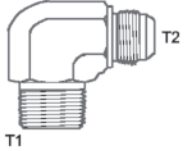
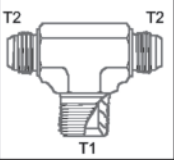
| BSP / BSP | |  |  | |  | |  |
|-----------|----------|---|---|----------------------|---|----------------------|---|
| THREAD 1 | THREAD 2 | RSPP X RSPP M X M | BSPT PLUG | | BSPP PLUG | | RSPP X RSPP BULKHEAD |
| BSP | BSP | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | DUFFIELD Part No. |
| 1/8-18 | 1/8-18 | | B2082-2 | D69-02 | | | |
| 1/4-19 | 1/4-19 | D232-0404 | B2082-4 | D69-04 | B2066-4 | D227-04 | D274-0404 |
| 3/8-19 | 1/4-19 | D232-0604 | | | | | |
| 3/8-19 | 3/8-19 | D232-0606 | B2082-6 | D69-06 | B2066-6 | D227-06 | D274-0606 |
| 1/2-14 | 3/8-19 | D232-0606 | | | | | |
| 1/2-14 | 1/2-14 | D232-0606 | B2082-8 | D69-08 | B2066-8 | D227-08 | D274-0608 |
| 3/4-14 | 1/2-14 | D232-1206 | | | | | |
| 3/4-14 | 3/4-14 | D232-1212 | E2082-12 | D69-12 | B2066-12 | D227-12 | D274-1212 |
| 1-11 | 3/4-14 | D232-1612 | | | | | |
| 1-11 | 1-11 | D232-1616 | E2082-16 | D69-16 | B2066-16 | D227-16 | |
| 1 1/4-11 | 1-11 | D232-2016 | | | | | |
| 1 1/4-11 | 1 1/4-11 | D232-2020 | E2082-20 | D69-20 | B2066-20 | D227-20 | |
| 1 1/2-11 | 1 1/4-11 | D232-2420 | | | | | |
| 1 1/2-11 | 1 1/2-11 | D232-2424 | E2082-24 | D69-24 | B2066-24 | D227-24 | |
| 1 1/2-11 | 2-11 | D232-2432 | | | | | |
| 2-11 | 2-11 | D232-3232 | E2082-32 | D69-32 | B2066-32 | D227-32 | |
| BSP / BSP | |  |  | |  | |  |
| THREAD 1 | THREAD 2 | BSPT X BSPT ELBOW 45 MXM | BSPT X BSPT 90 MXM | | BSPT MALE TEE | | BSPT M X F FIXED ADPT |
| BSP | BSP | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | DUFFIELD Part No. |
| 1/8-28 | 1/8-28 | | 4012-2 | | B2257-2 | | |
| 1/4-19 | 1/8-28 | | 4012-4-2 | D5-1402 | | | |
| 1/4-19 | 1/4-19 | | 4012-4 | D5-0404 | B2257-4 | D69-040404 | D34-0404 |
| 1/4-19 | 3/8-19 | | | | | | D34-0406 |
| 3/8-19 | 1/4-19 | | 4012-6-4 | | | | |
| 3/8-19 | 3/8-19 | | 4012-6 | D5-0606 | B2257-6 | D69-060606 | |
| 3/8-19 | 1/2-14 | | | | | | D34-0608 |
| 1/2-14 | 1/4-19 | | 4012-8-4 | D5-0804 | | | |
| 1/2-14 | 3/8-19 | | 4012-8-6 | D5-0806 | | | |
| 1/2-14 | 1/2-14 | D24-0808 | 4012-8 | D5-0808 | B2257-8 | D69-080808 | |
| 1/2-14 | 3/4-14 | | | | | | D34-0812 |
| 3/4-14 | 1/2-14 | D24-1208 | 4012-12-8 | D5-1208 | | | |
| 3/4-14 | 3/4-14 | D24-12-2 | 4012-12 | D5-1212 | B2257-12 | D69-121212 | |
| 1-11 | 1-11 | | 4012-16 | D5-1616 | B2257-16 | D69-161616 | |
| 1 1/4-11 | 1 1/4-11 | | 4012-20-20 | D5-2020 | | | |
| 1 1/2-11 | 1 1/2-11 | | 4012-24-24 | D5-2424 | | | |

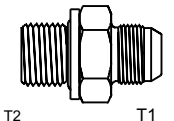
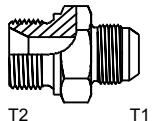
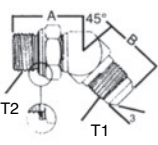
| BSP / BSP | |  | |  | |  | |
|------------------|----------|---|-----------|--|----------|---|--|
| THREAD 1 | THREAD 2 | BSPT X BSPP M X F | | BSPT REDUCING BUSH | | BSPP REDUCING BUSH | |
| BSP | BSP | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | DUFFIELD | |
| | | Part No. | Part No. | Part No. | Part No. | Part No. | |
| 1/8-28 | 1/8-28 | | | | | | |
| 1/4-19 | 1/8-28 | | | 4813-4-2 | D6-0402 | | |
| 1/4-19 | 1/4-19 | B2045-4 | DB44-0404 | | | | |
| 3/8-19 | 1/8-28 | | | 4813-6-2 | D6-0602 | | |
| 3/8-19 | 1/4-19 | | | 4813-6-4 | D6-0604 | D233-0604 | |
| 3/8-19 | 3/8-19 | B2045-6 | DB44-0606 | | | | |
| 1/2-19 | 1/8-28 | | | 4813-8-2 | | | |
| 1/2-14 | 1/4-19 | | | 4813-8-4 | D6-0804 | D233-0804 | |
| 1/2-14 | 3/8-19 | | | 4813-8-6 | D6-0806 | D233-0806 | |
| 1/2-14 | 1/2-14 | B2045-8 | DB44-0808 | | | | |
| 3/4-14 | 1/4-19 | | | 4813-12-4 | | | |
| 3/4-14 | 3/8-19 | | | 4813-12-6 | D6-1206 | D233-1206 | |
| 3/4-14 | 1/2-14 | | | 4813-12-8 | D6-1208 | D233-1208 | |
| 3/4-14 | 3/4-14 | B2045-12 | DB44-1212 | | | | |
| 1-11 | 3/8-19 | | | 4813-16-6 | | | |
| 1-11 | 1/2-14 | | | 4813-16-8 | D6-1608 | D233-1608 | |
| 1-11 | 3/4-14 | | | 4813-16-12 | D6-1612 | D233-1612 | |
| 1-11 | 1-11 | B2045-16 | DB44-1616 | | | | |
| 1 1/4-11 | 3/4-14 | | | 4813-20-12 | D6-2012 | D233-2012 | |
| 1 1/4-11 | 1-11 | | | 4813-20-16 | D6-2016 | D233-2016 | |
| 1 1/2-11 | 3/4-14 | | | 4813-24-12 | | | |
| 1 1/2-11 | 1-11 | | | 4813-24-16 | D6-2416 | | |
| 1 1/2-11 | 1 1/4-11 | | | 4813-24-20 | D6-2420 | | |
| 2-11 | 1-11 | | | 4813-32-16 | | | |
| 2-11 | 1 1/4-11 | | | 4813-32-20 | | | |
| 2 1/1 | 1 1/2-11 | | | 4813-32-24 | D6-3224 | | |

| BSP / BSP | |  |  |  |  | |
|-----------|----------|---|---|---|---|----------------------|
| THREAD 1 | THREAD 2 | BSPT X BSPT M X F 45 | BSPT X BSPT M X F 90 | | BSPT X BSPP M X F 90 | BSPP SOCKET |
| BSP | BSP | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. |
| 1/8-28 | 1/8-28 | | B2089-2-2S | D30-0202 | B2047-2 | DB45-0202 |
| 1/8-28 | 1/4-28 | | B2089-2-4S | | | |
| 1/4-19 | 1/8-28 | | B2089-4-2S | | | |
| 1/4-19 | 1/4-19 | | B2089-4-4S | D30-0404 | B2047-4 | DB45-0404 |
| 1/4-19 | 3/8-19 | | B2089-4-6S | | | |
| 3/8-19 | 1/4-19 | | B2089-6-4S | D30-0604 | | |
| 3/8-19 | 3/8-19 | D283-0606 | B2089-6-6S | D30-0606 | B2047-6 | DB45-0606 |
| 3/8-19 | 1/2-14 | | B2089-6-8S | D30-0608 | | |
| 1/2-14 | 3/8-19 | | B2089-8-6S | D30-0806 | | |
| 1/2-14 | 1/2-14 | D283-0808 | B2089-8-8S | D30-0808 | B2047-8 | DB45-0808 |
| 1/2-14 | 3/4-14 | | B2089-8-12S | D30-0812 | | |
| 3/4-14 | 1/2-14 | | B2089-12-8S | | | |
| 3/4-14 | 3/4-14 | D283-1212 | B2089-12-12S | D30-1212 | B2047-12 | DB45-1212 |
| 1-11 | 1-11 | D283-1616 | B2089-16-16S | D30-1616 | B2047-16 | DB45-1616 |
| 1 1/4-11 | 1 1/4-11 | | B2089-20-20S | | B2047-20 | DB45-2020 |
| 1 1/2-11 | 1 1/2-11 | | | | | D278-24 |
| 2-11 | 2-11 | | | | | D278-32 |

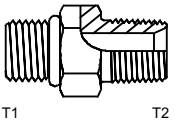
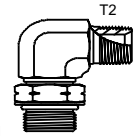
| BSP / BSP | |  | |  | |  | |
|-----------|----------|---|-------------------|--|-------------------|---|-------------------|
| THREAD 1 | THREAD 2 | BSPT SOCKET | | BSPP SWIVEL CAP | | BSPT X BSPT F X F 90 | |
| BSP | BSP | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. |
| 1/8-28 | 1/8-28 | B2096-2 | DB67-02 | | | B2087-2-2S | D31-0202 |
| 1/4-19 | 1/8-28 | | | | | B2087-4-2S | |
| 1/4-19 | 1/4-19 | B2096-4 | DB67-04 | B210292-4 | | B2087-4-4S | D31-0404 |
| 3/8-19 | 1/4-19 | | | | | B2087-6-4S | |
| 3/8-19 | 3/8-19 | B2096-6 | DB67-06 | B210292-6 | D280-06 | B2087-6-6S | D31-0606 |
| 1/2-14 | 3/8-19 | | | | | B2087-8-6S | |
| 1/2-14 | 1/2-14 | B2096-8 | DB67-08 | B210292-8 | D280-08 | B2087-8-8S | D31-0808 |
| 3/4-14 | 1/2-14 | | | | | B2087-12-8S | |
| 3/4-14 | 3/4-14 | B2096-12 | DB67-12 | B210292-12 | D280-12 | B2087-12-12S | D31-1212 |
| 1-11 | 3/4-14 | | | | | B2087-16-12S | |
| 1-11 | 1-11 | B2096-16 | DB67-16 | B210292-16 | D280-16 | B2087-16-16S | D31-1616 |
| 1 1/4-11 | 1 1/4-11 | B2096-20 | DB67-20 | B210292-20 | | B2087-20-20S | D31-2020 |
| 1 1/2-11 | 1 1/2-11 | B2096-24 | DB67-24 | B210292-24 | | B2087-24-24 | |
| 2-11 | 2-11 | B2096-32 | DB67-32 | B210292-32 | | | |
| BSP / BSP | |  | | | | | |
| THREAD 1 | THREAD 2 | BSPT FEMALE TEE | | | | | |
| BSP | BSP | AEROQUIP Part No. | DUFFIELD Part No. | | | | |
| 1/8-28 | 1/8-28 | B2090-2 | | | | | |
| 1/4-19 | 1/8-28 | | | | | | |
| 1/4-19 | 1/4-19 | B2090-4 | D68-040404 | | | | |
| 3/8-19 | 1/4-19 | | | | | | |
| 3/8-19 | 3/8-19 | B2090-6 | D68-060606 | | | | |
| 1/2-14 | 3/8-19 | | | | | | |
| 1/2-14 | 1/2-14 | B2090-8 | D68-080808 | | | | |
| 3/4-14 | 1/2-14 | | | | | | |
| 3/4-14 | 3/4-14 | B2090-12 | D68-121212 | | | | |
| 1-11 | 3/4-14 | | | | | | |
| 1-11 | 1-11 | B2090-16 | D68-161616 | | | | |
| 1 1/4-11 | 1 1/4-11 | B2090-20 | D68-202020 | | | | |
| 1 1/2-11 | 1 1/2-11 | | | | | | |
| 2-11 | 2-11 | | | | | | |

| BSPT / JIC | |  | |  |  |  | |
|------------|-----------|---|-----------|---|---|---|----------|
| THREAD 1 | THREAD 2 | BSPT x JIC M x M | | BSPP x JIC M X F | BSPT X JIC F X M | BSPT x JIC M X M 45 | |
| BSPT | JIC | AEROQUIP | DUFFIELD | DUFFIELD | DUFFIELD | AEROQUIP | DUFFIELD |
| | | Part No. | Part No. | Part No. | Part No. | Part No. | Part No. |
| 1/8-28 | 3/8-24 | 4009-2-3 | | | | | |
| 1/8-28 | 7/16-20 | 4009-2-4 | DB15-0207 | | | GG210-NP04-02 | |
| 1/8-28 | 1/2-20 | 4009-2-5 | DB15-0208 | | | | |
| 1/8-28 | 9/16-18 | 4009-2-6 | DB15-0209 | | | | |
| 1/4-19 | 7/16-20 | 4009-4-4 | DB15-0407 | DA226-0407 | | GG210-NP04-04 | D33-0407 |
| 1/4-19 | 1/2-20 | 4009-4-5 | DB15-0408 | | | GG210-NP05-04 | D33-0408 |
| 1/4-19 | 9/16-18 | 4009-4-6 | DB15-0409 | DA226-0409 | DB47-0409 | GG210-NP06-04 | D33-0409 |
| 1/4-19 | 3/4-16 | 4009-4-8 | DB15-0412 | | | | |
| 3/8-19 | 7/16-20 | 4009-6-4 | DB15-0607 | | | | |
| 3/8-19 | 1/2-20 | 4009-6-5 | | | | | |
| 3/8-19 | 9/16-18 | 4009-6-6 | DB15-0609 | DA226-0609 | | GG210-NP06-06 | D33-0609 |
| 3/8-19 | 3/4-16 | 4009-6-8 | DB15-0612 | DA226-0612 | DB47-0612 | GG210-NP08-06 | D33-0612 |
| 3/8-19 | 7/8-14 | 4009-6-10 | DB15-0614 | | | | D33-0614 |
| 3/8-19 | 1 1/16-12 | 4009-6-12 | | | | | |
| 1/2-14 | 7/16-20 | 4009-8-4 | | | | | |
| 1/2-14 | 9/16-18 | 4009-8-6 | DB15-0809 | | | | |
| 1/2-14 | 3/4-16 | 4009-8-8 | DB15-0812 | DA226-0812 | | GG210-NP08-08 | D33-0812 |
| 1/2-14 | 7/8-14 | 4009-8-10 | DB15-0814 | DA226-0814 | DB47-0814 | GG210-NP10-08 | D33-0814 |
| 1/2-14 | 1 1/16-12 | 4009-8-12 | DB15-0817 | | | GG210-NP12-08 | D33-0817 |
| 3/4-14 | 9/16-18 | 4009-12-6 | | | | | |
| 3/4-14 | 3/4-16 | 4009-12-8 | DB15-1212 | | | | |
| 3/4-14 | 7/8-14 | 4009-12-10 | DB15-1214 | | | | |
| 3/4-14 | 1 1/16-12 | 4009-12-12 | DB15-1217 | DA226-1217 | DB47-1217 | GG210-NP12-12 | D33-1217 |
| 3/4-14 | 1 3/16-12 | 4009-12-14 | DB15-1219 | | | | |
| 3/4-14 | 1 5/16-12 | 4009-12-16 | DB15-1221 | | | | |
| 1-11 | 3/4-16 | 4009-16-8 | DB15-1612 | | | | |
| 1-11 | 7/8-14 | 4009-16-10 | | | | | |
| 1-11 | 1 1/16-12 | 4009-16-12 | DB15-1617 | | | | |
| 1-11 | 1 3/16-12 | 4009-16-14 | DB15-1619 | | | | |
| 1-11 | 1 5/16-12 | 4009-16-16 | DB15-1621 | DA226-1621 | DB47-1621 | GG210-NP16-16 | D33-1621 |
| 1-11 | 1 5/8-12 | 4009-16-20 | DB15-1626 | | | | |
| 1 1/4-1 | 1 5/16-12 | 4009-20-16 | DB15-2021 | | | | |
| 1 1/4-1 | 1 5/8-12 | 4009-20-20 | DB15-2026 | DA226-2026 | | GG210-NP20-20 | D33-2026 |
| 1 1/4-1 | 1 7/8-12 | 4009-20-24 | DB15-2430 | | | | |
| 1 1/2-1 | 1 7/8-12 | 4009-24-24 | | | | | |
| 1 1/2-1 | 1 5/8-12 | 4009-24-20 | | | | | |
| 2-11 | 2 1/2-12 | 4009-32-32 | DB15-3240 | | | | |

| BSPT / JIC | |  | |  | | | |
|------------|-----------|---|----------------------|--|--|--|--|
| THREAD 1 | THREAD 2 | BSPT X JIC M X M 90 | | JIC X JIC X BSP MALE TEE | | | |
| BSPT | JIC | AEROQUIP Part No | DUFFIELD Part No. | DUFFIELD Part No | | | |
| 1/8-28 | 3/8-24 | | | | | | |
| 1/8-28 | 7/16-20 | 6720-2-4 | DB17-0207 | D77-070702 | | | |
| 1/8-28 | 1/2-20 | 6720-2-5 | DB17-0208 | | | | |
| 1/8-28 | 9/16-18 | 6720-2-6 | DB17-0209 | | | | |
| 1/4-19 | 7/16-20 | 6720-4-4 | DB17-0407 | D77-070704 | | | |
| 1/4-19 | 1/2-20 | 6720-4-5 | DB17-0408 | D77-080804 | | | |
| 1/4-19 | 9/16-18 | 6720-4-6 | DB17-0409 | D77-090904 | | | |
| 1/4-19 | 3/4-16 | 6720-4-8 | DB17-0412 | | | | |
| 3/8-19 | 1/2-20 | 6720-6-5 | DB17-0608 | | | | |
| 3/8-19 | 9/16-18 | 6720-6-6 | DB17-0609 | | | | |
| 3/8-19 | 3/4-16 | 6720-6-8 | DB17-0612 | D77-121206 | | | |
| 3/8-19 | 7/8-14 | 6720-6-10 | DB17-0614 | | | | |
| 1/2-14 | 9/16-18 | 6720-8-6 | DB17-0809 | | | | |
| 1/2-14 | 3/4-16 | 6720-8-8 | DB17-0812 | D77-121208 | | | |
| 1/2-14 | 7/8-14 | 6720-8-10 | DB17-0814 | D77-141408 | | | |
| 1/2-14 | 1 1/16-12 | 6720-8-12 | DB17-0817 | | | | |
| 3/4-14 | 3/4-16 | 6720-12-8 | | | | | |
| 3/4-14 | 7/8-14 | 6720-12-10 | DB17-1214 | | | | |
| 3/4-14 | 1 1/16-12 | 6720-12-12 | DB17-1217 | | | | |
| 3/4-14 | 1 5/16-12 | 6720-12-16 | DB17-1221 | | | | |
| 1-11 | 1 1/16-12 | 6720-16-12 | | | | | |
| 1-11 | 1 5/16-12 | 6720-16-16 | DB17-1621 | | | | |
| 1-11 | 1 5/8-12 | 6720-16-20 | DB17-1626 | | | | |
| 1 1/4-11 | 1 5/8-12 | 6720-20-20 | DB17-2026 | | | | |

| BSPP/JIC | |  | |  | |  | |  | |
|-----------|----------|---|---------------------|--|---------------------|---|---------------------|---|--|
| THREAD 1 | THREAD 2 | BSPP x JIC M X M | | BSPP X JIC M X M DOWTY SEAL | | BSPP X JIC M X M 45 | | BSPP X JIC M X M 90 | |
| JIC | BSPP | AEROQUIP Part No | DUFFIELD Part No | DUFFIELD Part No | AEROQUIP Part No | AEROQUIP Part No | DUFFIELD Part No | | |
| 7/16-20 | 1/8-28 | GG106-NP04-02 | D256-0207 | | GG206-NP04-02 | GG306-NP04-02 | D257-0207 | | |
| 1/2-20 | 1/8-28 | | | | GG206-NP05-02 | | | | |
| 7/16-20 | 1/4-19 | GG106-NP04-04 | D256-0407 | D226-0407 | | GG306-NP04-04 | D257-0407 | | |
| 1/2-20 | 1/4-19 | | | D226-0408 | | | | | |
| 9/16-18 | 1/4-19 | GG106NP06-04 | D256-0409 | D226-0409 | GG206-NP06-04 | GG306-NP06-04 | D257-0409 | | |
| 3/4-16 | 1/4-19 | GG106-NP08-04 | D256-0412 | | | GG306-NP08-04 | D257-0412 | | |
| 7-16-20 | 3/8-19 | GG106-NP04-06 | D256-0607 | D226-0607 | | GG306-NP04-06 | D257-0607 | | |
| 9/16-18 | 3/8-19 | GG106-NP06-06 | D256-0609 | D226-0609 | GG206-NP06-06 | GG306-NP06-06 | D257-0609 | | |
| 3/4-16 | 3/8-19 | GG106-NP08-06 | D256-0612 | D226-0612 | GG206-NP08-06 | GG306-NP08-06 | D257-0612 | | |
| 7/8-14 | 3/8-19 | GG106-NP10-06 | D256-0614 | D226-0614 | GG206-NP10-06 | GG306-NP10-06 | D257-0614 | | |
| 7/16-20 | 1/2-14 | GG106-NP04-08 | D256-0807 | | | GG306-NP04-08 | D257-0807 | | |
| 9/16-18 | 1/2-14 | GG106-NP06-08 | D256-0809 | D226-0809 | | GG306-NP06-08 | D257-0809 | | |
| 3/4-16 | 1/2-14 | GG106-NP08-08 | D256-0812 | D226-0812 | GG206-NP08-08 | GG306-NP08-08 | D257-0812 | | |
| 7/8-14 | 1/2-14 | GG106-NP10-08 | D256-0814 | D226-0814 | GG206-NP10-08 | GG306-NP10-08 | D257-0814 | | |
| 1 1/16-12 | 1/2-14 | GG106-NP12-08 | D256/0817 | D226-0817 | GG206-NP12-08 | GG306-NP12-08 | D257-0817 | | |
| 3/4-16 | 3/4-14 | GG106-NP08-12 | D256-1212 | D226-1212 | GG206-NP08-12 | | | | |
| 7/8-14 | 3/4-14 | GG106-NP10-12 | D256-1214 | D226-1214 | GG206-NP10-12 | GG306-NP10-12 | D257-1214 | | |
| 1 1/6-12 | 3/4-14 | GG106-NP12-12 | D256-1217 | D226-1217 | GG206-NP12-12 | GG306-NP12-12 | D257-1217 | | |
| 1 5/16-12 | 3/4-14 | GG106-NP16-12 | D256-1221 | D226-1221 | | GG306-NP16-12 | D257-1221 | | |
| 1 1/16-12 | 1-11 | GG106-NP12-16 | | D226-1617 | GG206-NP12-16 | GG306-NP12-16 | D257-1617 | | |
| 1 5/16-12 | 1-11 | GG106-NP16-16 | D256-1621 | D226-1621 | GG206-NP16-16 | GG306-NP16-16 | D257-1621 | | |
| 1 5/8-12 | 1-11 | GG106-NP20-16 | | | | GG306-NP20-16 | | | |
| 1 1/16-12 | 1 1/4-11 | GG106-NP12-20 | | | | | | | |
| 1 5/16-12 | 1 1/4-11 | GG106-NP16-20 | | | | | | | |
| 1 5/8-12 | 1 1/4-11 | GG106-NP20-20 | D256-2026 | D226-2026 | GG206-NP20-20 | GG306-NP20-20 | | | |
| 1 7/8-12 | 1 1/4-11 | GG106-NP24-20 | | | | | | | |
| 1 5/8-12 | 1 1/2-11 | GG106-NP20-24 | | | | | | | |
| 1 7/8-12 | 1 1/2-11 | GG106-NP24-24 | | | GG206-NP24-24 | | | | |
| 1 7/8-12 | 2-11 | GG106-NP24-32 | | | | | | | |
| 2 1/2-12 | 2-11 | GG106-NP32-32 | | | | | | | |

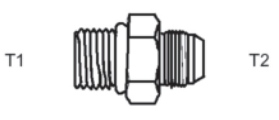
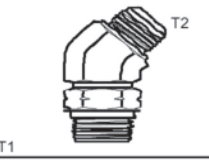
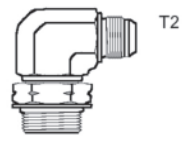
Adaptors

| BSPT/UNO | |  | |  | | | |
|-----------|----------|---|----------|---|---------|---------|---------|
| THREAD 1 | THREAD 2 | BSPT X UNO M x M | | BSPT X UNO M X M 90 | | | |
| UNO | BSPT | AEROQUIP | DUFFIELD | DUFFIELD | Part No | Part No | Part No |
| 7/16-20 | 1/4-19 | | | D96-0704 | | | |
| 9/16-18 | 3/8-19 | | | D96-0906 | | | |
| 3/4-16 | 3/8-19 | 6821-8-6 | D95-1206 | | | | |
| 3/4-16 | 1/2-14 | 6821-8 | D95-1208 | | | | |
| 7/8-14 | 3/8-19 | 6821-10-6 | D95-1406 | | | | |
| 7/8-14 | 1/2-14 | 6821-10-8 | D95-1408 | D96-1408 | | | |
| 7/8-14 | 3/4-14 | 6821-10-12 | D95-1412 | | | | |
| 1 1/16-12 | 1/2-14 | 6821-12-8 | D95-1708 | | | | |
| 1 1/16-12 | 3/4-14 | 6821-12 | D95-1712 | D96-1712 | | | |
| 1 5/16-12 | 1-11 | 6821-16 | D95-2116 | D96-2116 | | | |

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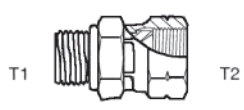

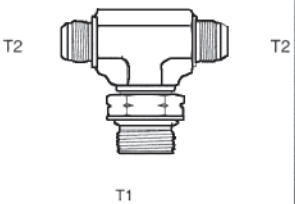
Adaptors

| UNO' / JIC | |  | |  | |  | |
|------------|-----------|---|---------------------|--|---------------------|---|---------------------|
| THREAD 1 | THREAD 2 | UNO' x JIC M x M | | UNO' x JIC M X M 45 | | UNO' X JIC M X M 90 | |
| UNO' | JIC | AEROQUIP Part No | DUFFIELD Part no | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | DUFFIELD Part No |
| 7/16-20 | 7/16-20 | 202702-4-4S | D52-0707 | 2061-4-4S | D54-0707 | 2062-4-4S | D53-0707 |
| 7/16-20 | 1/2-20 | 202702-4-5S | | | | | |
| 7/16-20 | 9/16-18 | 202702-4-6S | D52-0709 | | | 2062-4-6S | D53-0709 |
| 7/16-20 | 3/4-16 | 202702-4-8S | | | | | |
| 1/2-20 | 7/16-20 | 202702-5-4S | D52-0807 | | | 2062-5-4S | |
| 1/2-20 | 1/2-20 | 202702-5-5S | D52-0808 | 2061-5-5S | D54-0808 | 2062-5-5S | D53-0808 |
| 1/2-20 | 9/16-18 | 202702-5-6S | | | | | |
| 9/16-18 | 7/16-20 | 202702-6-4S | D52-0907 | | | 2062-6-4S | D53-0907 |
| 9/16-18 | 9/16-18 | 202702-6-6S | D52-0909 | 2061-6-6S | D54-0909 | 2062-6-6S | D53-0909 |
| 9/16-18 | 3/4-16 | 202702-6-8S | D52-0912 | | | 2062-6-8S | D53-0912 |
| 9/16-18 | 7/8-14 | 202702-6-10S | | | | | |
| 3/4-16 | 7/16-20 | 202702-8-4S | D52-1207 | | | | |
| 3/4-16' | 1/2-20 | 202702-8-5S | D52-1208 | | | | |
| 3/4-16 | 9/16-18 | 202702-8-6S | D52-1209 | | | 2062-8-6S | D53-1209 |
| 3/4-16 | 3/4-16 | 202702-8-8S | D52-1212 | 2061-8-8S | D54-1212 | 2062-8-8S | D53-1212 |
| 3/4-16 | 7/8-14 | 202702-8-10S | D52-1214 | 2061-8-10S | D54-1214 | 2062-8-10S | D53-1214 |
| 3/4-16 | 1 1/16-12 | 202702-8-12S | D52-1217 | | | 2062-8-12S | |
| 7/8-14 | 9/16-18 | 202702-10-6S | D52-1409 | | | 2062-10-6S | D53-1409 |
| 7/8-14 | 3/4-16 | 202702-10-8S | D52-1412 | 2061-10-8S | D54-1412 | 2062-10-8S | D53-1412 |
| 7/8-14 | 7/8-14 | 202702-10-10S | D52-1414 | 2061-10-10S | D54-1414 | 2062-10-10S | D53-1414 |
| 7/8-14 | 1 1/16-12 | 202702-10-12S | D52-1417 | | | 2062-10-12S | D53-1417 |
| 1 1/16-12 | 3/4-16 | 202702-12-8S | D52-1712 | | | 2062-12-8S | D53-1712 |
| 1 1/16-12 | 7/8-14 | 202702-12-10S | D52-1714 | | | 2062-12-10S | D53-1714 |
| 1 1/16-12 | 1 1/16-12 | 202702-12-12S | D52-1717 | 2061-12-12S | D54-1717 | 2062-12-12S | D53-1717 |
| 1 1/16-12 | 1 5/16-12 | 202702-12-16S | D52-1721 | 2061-12-16S | D54-1721 | 2062-12-16S | D53-1721 |
| 1 1/16-12 | 1 5/8-12 | 202702-12-20S | | | | | |
| 1 3/16-12 | 7/8-14 | 202702-14-10S | | | | | |
| 1 3/16-12 | 1 1/16-12 | 202702-14-12S | D52-1917 | | | | |
| 1 3/16-12 | 1 5/16-12 | 202702-14-16S | D52-1921 | | | 2062-14-16S | |
| 1 5/16-12 | 3/4-16 | 202702-16-8S | | | | 2062-16-8S | |
| 1 5/16-12 | 7/8-14 | 202702-16-10S | D52-2114 | | | | |
| 1 5/16-12 | 1 1/16-12 | 202702-16-12S | D52-2117 | 2061-16-12S | D54-2117 | 2062-16-12S | D53-2117 |
| 1 5/16-12 | 1 5/16-12 | 202702-16-16S | D52-2121 | 2061-16-16S | D54-2121 | 2062-16-16S | D53-2121 |
| 1 5/16-12 | 1 5/8-12 | 202702-16-20S | D52-2126 | | | 2062-16-20S | |
| 1 5/8-12 | 1 1/16-12 | 202702-20-12S | D52-2617 | 2061-20-12S | D54-2617 | | |
| 1 5/8-12 | 1 5/16-12 | 202702-20-16S | D52-2621 | 2061-20-16S | D54-2621 | 2062-20-16S | D53-2621 |
| 1 5/8-12 | 1 5/8-12 | 202702-20-20S | D52-2626 | 2061-20-20S | D54-2626 | 2062-20-20S | D53-2626 |
| 1 5/8-12 | 1 7/8-12 | 202702-20-24S | | | | | |
| 1 7/8-12 | 1 5/16-12 | 202702-24-16S | | | | | |



Adaptors

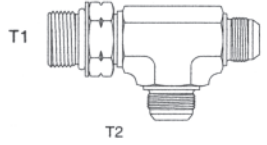
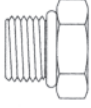
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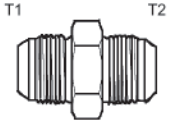

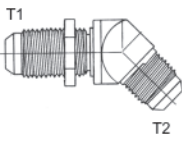
| UNO' / JIC | |  | |  | |  | |
|------------|-----------|---|-----------|--|----------|---|-------------|
| THREAD 1 | THREAD 2 | UNO' x JIC M X F | | UNO' REDUCER | | UNO' X JIC M X M X M TEE | |
| UNO'RING | JIC | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD |
| | | Part No | Part No | | | Part No | Part No |
| 7/16-20 | 7/16-20 | 2266-4-4S | DB66-0707 | | | 203003-4-4S | DA80-070707 |
| 7/16-20 | 3/4-16 | | | FF1010-0408S | | | |
| 1/2-20 | 7/16-20 | | | | | | |
| 1/2-20 | 1/2-20 | | | | | 203003-5-5S | DA80-080808 |
| 9/16-18 | 7/16-20 | | | | | 203003-6-4S | DA80-090907 |
| 9/16-18 | 9/16-18 | 2266-6-6S | DB66-0909 | | | 203003-6-6S | |
| 9/16-18 | 3/4-16 | 2266-6-8S | | | | 203003-6-8S | DA80-090912 |
| 3/4-16 | 9/16-18 | | | FF1010-0806S | | | |
| 3/4-16 | 3/4-16 | 2266-8-8S | DB66-1212 | | | 203003-8-8S | DA80-121212 |
| 3/4-16 | 7/8-14 | | | | | 203003-8-10S | DA80-121214 |
| 7/8-14 | 9/16-18 | | | FF1010-1006S | D12-1409 | | |
| 7/8-14 | 3/4-16 | | | FF1010-1008S | | | |
| 7/8-14 | 7/8-14 | 2266-10-10S | DB66-1414 | | | 203003-10-10S | DA80-141414 |
| 1 1/16-12 | 3/4-16 | | | FF1010-1208S | D12-1712 | | |
| 1 1/16-12 | 7/8-14 | | | FF1010-1210S | | | |
| 1 1/16-12 | 1 1/16-12 | 2266-12-12S | DB66-1717 | | | 203003-12-12S | DA80-171717 |
| 1 1/16-12 | 1 5/16-12 | | | FF1010-1216S | | | |
| 1 5/16-12 | 3/4-16 | | | FF1010-1608S | D12-2112 | | |
| 1 5/16-12 | 1 1/16-12 | | | FF1010-1612S | D12-2117 | | |
| 1 5/16-12 | 1 5/16-12 | 2266-16-16S | DB66-2121 | | | 203003-16-16S | |
| 1 5/8-12 | 1 1/16-12 | | | FF1010-2012S | | | |
| 1 5/8-12 | 1 5/16-12 | | | FF1010-2016S | D12-2621 | | |
| 1 5/8-12 | 1 5/8-12 | | | | | 203003-20-20S | |

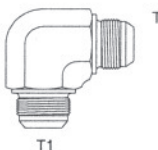
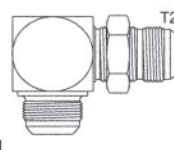
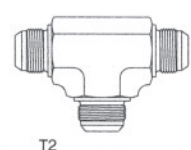


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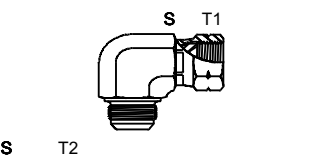
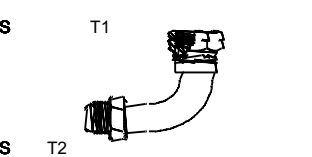
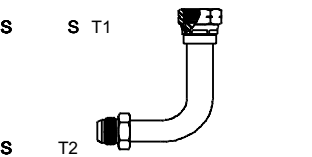
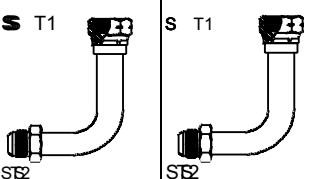

Adaptors

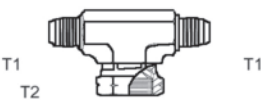
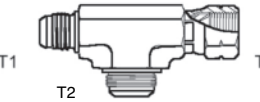
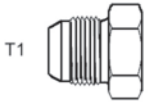
| UNO' / JIC | |  | |  | | | |
|------------|-----------|---|---------------------|---|----------|--|--|
| THREAD 1 | THREAD 2 | UNO' x JIC M X M X M TEE | | UNO' PLUG | | | |
| UNO' | JIC | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP | DUFFIELD | | |
| 7/16-20 | 7/16-20 | 203005-4-4S | D80-070707 | 900598-4S | D62-07 | | |
| 1/2-20 | 1/2-20 | 203005-5-5S | D80-080808 | 900598-5S | D62-08 | | |
| 9/16-18 | 7/16-20 | 203005-6-4-4S | | | | | |
| 9/16-18 | 9/16-18 | 203005-6-6S | D80-090909 | 900598-6S | D62-09 | | |
| 3/4-16 | 3/4-16 | 203005-8-8S | D80-121212 | 900598-8S | D62-12 | | |
| 7/8-14 | 3/4-16 | 203005-10-8S | D80-141412 | | | | |
| 7/8-14 | 7/8-14 | 203005-10-10S | D80-141414 | 900598-10S | D62-14 | | |
| 7/8-14 | 1 1/16-12 | | | | | | |
| 1 1/16-12 | 3/4-16 | | | | | | |
| 1 1/16-12 | 1 1/16-12 | 203005-12-12S | D80-171717 | 900598-12S | D62-17 | | |
| 1 3/16-12 | 1 3/16-12 | | | 900598-14S | D62-19 | | |
| 1 5/16-12 | 1 5/16-12 | 203005-16-16S | D80-212121 | 900598-16S | D62-21 | | |
| 1 5/8-12 | 1 5/8-12 | 203005-20-20S | | 900598-20S | D62-26 | | |
| 1 7/8-12 | 1 7/8-12 | | | 900598-24S | D62-30 | | |
| 2 1/2-12 | 2 1/2-12 | | | 900598-32S | | | |


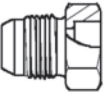

| JIC / JIC | |  | |  | |  |
|-----------|-----------|---|----------|--|----------|---|
| THREAD 1 | THREAD 2 | JIC x JIC M x M | | JIC x JIC BULKHEAD | | JIC x JIC BULKHEAD 45 |
| JIC | JIC | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP |
| | | Part No. | Part No. | Part No. | Part No. | Part No. |
| 3/8-24 | 3/8-24 | 2027-3-3S | | | | |
| 7/16-20 | 7/16-20 | 2027-4-4S | D16-0707 | 2041-4-4S | D93-0707 | |
| 1/2-20 | 7/16-20 | 2027-5-4S | | | | |
| 1/2-20 | 1/2-20 | 2027-5-5S | D16-0808 | 2041-5-5S | | |
| 9/16-18 | 7/16-20 | 2027-6-4S | | | | |
| 9/16-18 | 1/2-20 | 2027-6-5S | | | | |
| 9/16-18 | 9/16-18 | 2027-6-6S | D16-0909 | 2041-6-6S | D93-0909 | 2042-6-6S |
| 3/4-16 | 7/16-20 | 2027-8-4S | | | | |
| 3/4-16 | 9/16-18 | 2027-8-6S | D16-1209 | | | |
| 3/4-16 | 3/4-16 | 2027-8-8S | D16-1212 | 2041-8-8S | D93-1212 | 2042-8-8S |
| 7/8-14 | 9/16-18 | 2027-10-6S | | | | |
| 7/8-14 | 3/4-16 | 2027-10-8S | D16-1412 | | | |
| 7/8-14 | 7/8-14 | 2027-10-10S | D16-1414 | 2041-10-10S | D93-1414 | |
| 1 1/16-12 | 3/4-16 | 2027-12-8S | D16-1712 | | | |
| 1 1/16-12 | 7/8-14 | 2027-12-10S | D16-1714 | | | |
| 1 1/16-12 | 1 1/16-12 | 2027-12-12S | D16-1717 | 2041-12-12S | D93-1717 | |
| 1 3/16-12 | 1 3/16-12 | 2027-14-14S | D16-1919 | | | |
| 1 5/16-12 | 1 1/16-12 | 2027-16-12S | D16-2117 | | | |
| 1 5/16-12 | 1 5/16-12 | 2027-16-16S | D16-2121 | 2041-16-16S | D93-2121 | |
| 1 5/8-12 | 1 5/16-12 | 2027-20-16S | D16-2621 | | | |
| 1 5/8-12 | 1 5/8-12 | 2027-20-20S | D16-2626 | 2041-20-20S | | |
| 1 7/8-12 | 1 7/8-12 | 2027-24-24S | D16-3030 | 2041-24-24S | | |
| 2 1/2-12 | 2 1/2-12 | 2027-32-32S | D16-4040 | | | |

| JIC / JIC | |  | |  | |  | |
|-----------|-----------|---|----------------------|--|----------------------|---|----------------------|
| THREAD 1 | THREAD 2 | JIC x JIC M X M 90 | | JIC x JIC BULKHEAD 90 | | JIC TEE M X M X M | |
| JIC | JIC | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. |
| 7/16-20 | 7/16-20 | 2039-4-4S | D18-0707 | 2043-4-4S | | 2033-4-4S | D20-070707 |
| 1/2-20 | 1/2-20 | 2039-5-5S | D18-0808 | | | 2033-5-5S | D20-080808 |
| 9/16-18 | 9/16-18 | 2039-6-6S | D18-0909 | 2043-6-6S | D94-0909 | 2033-6-6S | D20-090909 |
| 3/4-16 | 9/16-18 | 2039-8-6S | | | | | |
| 3/4-16 | 3/4-16 | 2039-8-8S | D18-1212 | 2043-8-8S | D94-1212 | 2033-8-8S | D20-121212 |
| 7/8-14 | 3/4-16 | 2039-10-8S | D18-1412 | | | 2033-10-8S | D20-141412 |
| 7/8-14 | 7/8-14 | 2039-10-10S | D18-1414 | 2043-10-10S | D94-1414 | 2033-10-10S | D20-141414 |
| 1 1/16-12 | 1 1/16-12 | 2039-12-12S | D18-1717 | 2043-12-12S | D94-1717 | 2033-12-12S | D20-171717 |
| 1 5/16-12 | 1 5/16-12 | 2039-16-16S | D18-2121 | | | 2033-16-16S | D20-212121 |
| 1 5/8-12 | 1 5/8-12 | 2039-20-20S | D18-2626 | | | 2033-20-20S | D20-262626 |


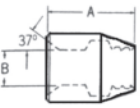
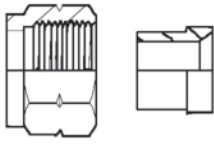
| JIC / JIC | |  | |  | |  | |  | |
|-----------|-----------|---|-----------|---|-------------------------|---|----------|---|--|
| THREAD 1 | THREAD 2 | JIC x JIC F X M RED'R | | JIC X JIC F X M BUSH | JIC X JIC F X M BUSH | JIC X JIC F X M 45 | | | |
| JIC | JIC | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | | |
| | | Part No. | Part No. | Part No. | Part No. | Part No. | Part No. | | |
| 7/16-20 | 7/16-20 | | | | | 2070-4-4S | D51-0707 | | |
| 1/2-20 | 1/2-20 | | | | | | | | |
| 9/16-18 | 7/16-20 | 221501-6-4S | DA13-0907 | | | | | | |
| 9/16-18 | 9/16-20 | | | | | 2070-6-6S | D51-0909 | | |
| 3/4-16 | 7/16-20 | 221501-8-4S | DA13-1207 | | | | | | |
| 3/4-16 | 9/16-20 | 221501-8-6S | DA13-1209 | | | | | | |
| 3/4-16 | 3/4-16 | | | | | 2070-8-8S | D51-1212 | | |
| 7/8-14 | 9/16-20 | 221501-10-6S | DA13-1409 | | | | | | |
| 7/8-14 | 3/4-16 | | | 2215-10-8S | DA44-1412 | | | | |
| 7/8-14 | 7/8-14 | | | | | 2070-10-10S | D51-1414 | | |
| 7/8-14 | 1 1/16-12 | | | 2215-10-12S | | | | | |
| 1 1/16-12 | 7/16-20 | 221501-12-4S | DA13-1707 | | | | | | |
| 1 1/16-12 | 9/16-18 | 221501-12-6S | DA13-1709 | | | | | | |
| 1 1/16-12 | 3/4-16 | 221501-12-8S | DA13-1712 | | | | | | |
| 1 1/16-12 | 7/8-14 | | | 2215-12-10S | DA44-1714 | | | | |
| 1 1/16-12 | 1 1/16-12 | | | | | 2070-12-12S | D51-1717 | | |
| 1 1/16-12 | 1 5/16-12 | | | 2215-12-16S | | | | | |
| 1 5/16-12 | 9/16-18 | 221501-16-6S | | | | | | | |
| 1 5/16-12 | 3/4-16 | 221501-16-8S | DA13-2112 | | | | | | |
| 1 5/16-12 | 1 1/16-12 | 221501-16-12S | DA13-2117 | | | | | | |
| 1 5/16-12 | 1 5/16-12 | | | | | 2070-16-16S | D51-2121 | | |
| 1 5/16-12 | 1 5/8-12 | | | 2215-16-20S | | | | | |
| 1 5/8-12 | 1 5/16-12 | 221501-20-16S | DA13-2621 | | | | | | |
| 1 5/8-12 | 1 5/8-12 | | | | | 2070-20-20S | | | |
| 1 7/8-12 | 1 5/8-12 | | | 2215-24-20S | | 2070-24-24S | | | |

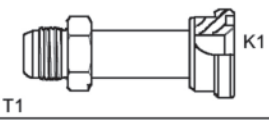
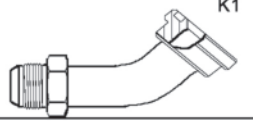
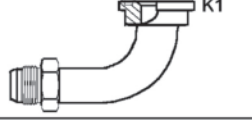
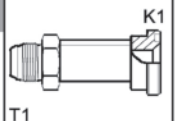
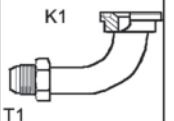
| JIC / JIC | |  | |  | |  | |
|-----------|-----------|---|----------------------|--|----------------------|---|----------------------|
| THREAD 1 | THREAD 2 | JIC X JIC F X M 90 | | JIC X JIC F X M BEND 90 R10 PRESSURE | | JIC X JIC F X M 90 LONG R10 PRESSURE | |
| JIC | JIC | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. | AEROQUIP Part No. | DUFFIELD Part No. |
| 7/16-20 | 7/16-20 | 2071-4-4S | D50-0707 | | | | |
| 1/2-20 | 1/2-20 | 2071-5-5S | D50-0808 | | | | |
| 9/16-18 | 9/16-18 | 2071-6-6S | D50-0909 | | | | |
| 3/4-16 | 3/4-16 | 2071-8-8S | D50-1212 | FF5163-0808S | D182-1212 | FF5164-0808S | D183-1212 |
| 7/8-14 | 7/8-14 | 2071-10-10S | D50-1414 | | | | |
| 7/8-14 | 1 1/16-12 | 2071-10-12S | D50-1417 | | | | |
| 1 1/16-12 | 1 1/16-12 | 2071-12-12S | D50-1717 | FF5163-1212S | D182-1717 | FF5164-1212S | D183-1717 |
| 1 5/16-12 | 1 1/16-12 | | | | | | |
| 1 5/16-12 | 1 5/16-12 | 2071-16-16S | D50-2121 | FF5163-1616S | D185-2121 | FF5164-1616S | D183-2121 |
| 1 5/8-12 | 1 5/8-12 | 2071-20-20S | D50-2626 | FF5163-2020S | D185-2626 | FF5164-2020S | D183-2626 |
| 1 7/8-12 | 1 7/8-12 | 2071-24-24S | D50-3030 | FF5163-2424S | | | |
| JIC / JIC | |  | |  | | | |
| THREAD 1 | THREAD 2 | JIC X JIC F X M 90 R9 PRESSURE | | JIC X JIC F X M LONG R9 PRESSURE | | | |
| JIC | JIC | AEROQUIP Part No. | DUFFIELD Part No. | | | | |
| 7/16-20 | 7/16-20 | 500454-4S | 504095-4S | | | | |
| 1/2-20 | 1/2-20 | 500454-5S | 504095-5S | | | | |
| 9/16-18 | 9/16-18 | 500454-6S | 504095-6S | | | | |
| 3/4-16 | 3/4-16 | 500454-8S | 504095-8S | | | | |
| 7/8-14 | 7/8-14 | 500454-10S | 504095-10S | | | | |
| 1 1/16-12 | 1 1/16-12 | 500454-12S | 504095-12S | | | | |
| 1 5/16-12 | 1 5/16-12 | 500454-16S | 504095-16S | | | | |
| 1 5/8-12 | 1 5/8-12 | 500454-20S | 504095-20S | | | | |

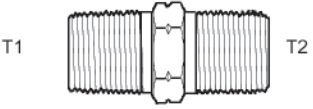
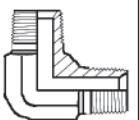
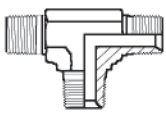
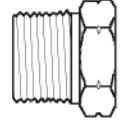
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|-----------|-----------|---|-------------|--|-------------|---|----------|
| THREAD 1 | THREAD 2 | JIC TEE M X M X F | | JIC TEE M X F X M | | JIC PLUG | |
| JIC | JIC | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD |
| 3/8-24 | 3/8-24 | | | | | 900599-3S | |
| 7/16-20 | 7/16-20 | 203101-4-4S | DA81-070707 | 203102-4-4S | DA82-070707 | 900599-4S | D61-07 |
| 1/2-20 | 1/2-20 | 203101-5-5S | DA81-080808 | 203102-5-5S | DA82-080808 | 900599-5S | D61-08 |
| 9/16-19 | 9/16-18 | 203101-6-6S | DA81-090909 | 203102-6-6S | DA82-090909 | 900599-6S | D61-09 |
| 3/4-16 | 3/4-16 | 203101-8-8S | DA81-121212 | 203102-8-8S | DA82-121212 | 900599-8S | D61-12 |
| 7/8-14 | 7/8-14 | 203101-10-10S | DA81-141414 | 203102-10-10S | DA82-141414 | 900599-10S | D61-14 |
| 1 1/16-12 | 1 1/16-12 | 203101-12-12S | DA81-171717 | 203102-12-12S | DA82-171717 | 900599-12S | D61-17 |
| 1 5/16-12 | 1 5/16-12 | 203101-16-16S | DA81-212121 | 203102-16-16S | DA82-212121 | 900599-16S | D61-21 |
| 1 5/8-12 | 1 5/8-12 | 203101-20-20S | DA81-262626 | 203102-20-20S | DA82-262626 | 900599-20S | D61-26 |
| 1 7/8-12 | 1 7/8-12 | | | 203102-24-24S | DA82-303030 | 900599-24S | D61-30 |
| 2 1/2-12 | 2 1/2-12 | | | | | 900599-32S | |

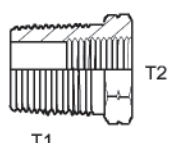
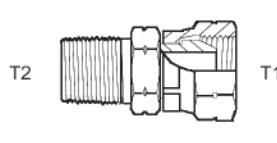
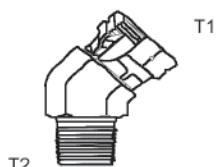
| JIC / JIC | |  | |  | |  | |
|-----------|---------|---|----------|--|----------|---|--|
| THREAD 1 | TUBE OD | JIC CAP | | JIC MALE TUBEWELD | | JIC FEMALE TUBEWELD | |
| JIC | | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | DUFFIELD | |
| | | Part No. | Part No. | Part No. | Part No. | Part No. | |
| 3/8-24 | 3/16 | 210292-3S | | | | | |
| 7/16-20 | 1/4 | 210292-4S | D8-07 | 73014-4S | TW1-0704 | | |
| 1/2-20 | 5/16 | 210292-5S | D8-08 | | | | |
| 9/16-18 | 3/8 | 210292-6S | D8-09 | 73014-6S | TW1-0906 | TW25-0906 | |
| 9/16-18 | 1/2 | | | | | TW25-0908 | |
| 3/4-16 | 3/8 | | | | | TW25-1206 | |
| 3/4-16 | 1/2 | 210292-8S | D8-12 | 73014-8S | TW1-1208 | TW25-1208 | |
| 3/4-16 | 5/8 | | | | | TW25-1210 | |
| 7/8-14 | 1/2 | | | | | TW25-1408 | |
| 7/8-14 | 5/8 | 210292-10S | D8-14 | 73014-10S | TW1-1410 | TW25-1410 | |
| 7/8-14 | 3/4 | | | | | TW25-1412 | |
| 7/8-14 | 7/8 | | | | | TW25-1414 | |
| 1 1/16-12 | 3/4 | 210292-12S | D8-17 | 73014-12S | TW1-1712 | TW25-1712 | |
| 1 1-16-12 | 7/8 | | | | | TW25-1714 | |
| 1 1/16-12 | 1 | | | | | TW25-1716 | |
| 1 5/16-12 | 1 | 210292-16S | D8-21 | 73014-16S | TW1-2116 | TW25-2116 | |
| 1 5/16-12 | 1 1/8 | | | | | TW25-2118 | |
| 1 5/16-12 | 1 1/4 | | | | | TW25-2120 | |
| 1 5/8-12 | 1 1/4 | 210292-20S | D8-26 | 73014-20S | TW1-2620 | TW25-2620 | |
| 1 5/8-12 | 1 1/4 | | | | | TW25-2620 | |
| 1 5/8-12 | 1 1/2 | | | | | TW25-2624 | |
| 1 7/8-12 | 1 1/2 | 210292-24S | D8-30 | 73014-24S | TW1-3024 | TW25-3024 | |
| 2 1/2-12 | 2 | 210292-32S | | 73014-32S | TW1-4032 | TW25-4032 | |

IMPERIAL TUBE FITTINGS

| | | FLARELESS | | FLARE TYPE | | | |
|---|---------|---|---|--|------------|--------------|--|
| | |  |  |  | | | |
| THREAD 1 | TUBE OD | NUT | FERRULE | NUT | SLEEVE | NUT & SLEEVE | |
| | | AEROQUIP | DUFFIELD | AEROQUIP | AEROQUIP | DUFFIELD | |
| | | Part No. | Part No. | Part No. | Part No. | Part No. | |
| 7/16-20 | 1/4" | FC2875-04S | FF9605-04S | 1290-4S | 900605-4S | D14-07 | |
| 9/16-18 | 3/8" | FC2875-06S | FF9605-06S | 1290-6S | 900605-6S | D14-09 | |
| 3/4-16 | 1/2" | FC2875-08S | FF9605-08S | 1290-8S | 900605-8S | D14-12 | |
| 7/8-14 | 5/8" | FC2875-10S | FF9605-10S | 1290-10S | 900605-10S | D14-14 | |
| 1 1/16-12 | 3/4" | FC2875-12S | FF9605-12S | 1290-12S | 900605-12S | D14-17 | |
| 1 3/16-12 | 7/8" | | | 1290-14S | 900605-14S | D14-19 | |
| 1 5/16-12 | 1" | FC2875-16S | FF9605-16S | 1290-16S | 900605-16S | D14-21 | |
| 1 5/8-12 | 1 1/4" | FC2875-20S | FF9605-20S | 1290-20S | 900605-20S | D14-26 | |
| 1 7/8" | 1 1/2" | FC2875-24S | FF9605-24S | 1290-24S | 900605-24S | D14-30 | |
| ASSEMBLY INSTRUCTIONS <ol style="list-style-type: none"> Cut the tube square (+/-1°). Deburr the tube internally and externally. Clean all grit and dirt from the I.D. and O.D. Slide the nut and then the ferrule onto the tube. Make sure the tapered end of the ferrule points toward the nut. Lubricate all mating surfaces of nut, ferrule and body with a heavy lubricant such as Aerolube. Place the end of the tube against the JIC flare body. Slide the ferrule and nut against the body and tighten the nut onto the body 'hand tight' Mark the nut in relation to the body for location. Hold the tube against the body and tighten the nut 1 and 1/4 turns for -3 to -10 and 1 and 1/2 turns for -12 to -32 After disassembly retighten one hex flat. | | | | ASSEMBLY INSTRUCTIONS <ol style="list-style-type: none"> Cut the tube square with a tube cutter or fine tooth hacksaw. Deburr the tube internally and externally. Clean all grit and dirt from the I.D. and O.D. Place the nut then the sleeve onto the tube. The threaded end of the nut and flared end of the sleeve must face the end of the tube. Flare the end of the tube with a flaring tool to provide a 37 degree flare. Check the flare for correct diameter, excessive thin out and burrs and cracks. Assemble the nut and sleeve to the body. Turn the nut hand tight then wrench tighten. Consult Aeroquip for torque values. | | | |

| JIC/FLANGE | | |  | |  | |  | |
|-------------|-------------|-------------------------|---|---------------------------------|---|------------------|---|------------------|
| THREAD 1 | FLANGE SIZE | FLANGE DIA K 1- CODE 61 | JIC MALE X FLANGE R9 PRESSURE | | JIC MALE X FLANGE 45 R9 PRESSURE | | JIC MALE X FLANGE 90 R9 PRESSURE | |
| JIC | | | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | DUFFIELD Part No |
| 3/4-16 | 1/2 | 1.19 | 500025-8S | | 500023-8S | | 500024-8S | D184-1208 |
| 1 1/16-12 | 3/4 | 1.5 | 500025-12S | D188-1712 | 500023-12S | D191-1712 | 500024-12S | D184-1712 |
| 3/4-16 | 3/4 | 1.5 | 500025-12-8S | D188-1208 | 500023-12-8S | | 500024-12-8S | |
| 7/8-14 | 3/4 | 1.5 | 500025-12-10S | D188-1412 | | | 500024-12-10S | D184-1412 |
| 7/8-14 | 1 | 1.75 | 500025-16-10S | | 500023-16-10S | | 500024-16-10S | D184-1416 |
| 7/8-14 | 1 1/4 | 2 | | | | | 500024-20-10S | D184-1420 |
| 1 1/16-12 | 1 | 1.75 | 500025-16-12S | D188-1716 | 500023-16-12S | | 500024-16-12S | D184-1716 |
| 1 5/16-12 | 1 | 1.75 | 500025-16S | D188-2116 | 500023-16S | D191-2116 | 500024-16S | D184-2116 |
| 1 1/16-12 | 1 1/4 | 2 | | | 500023-20-12S | | 500024-20-12S | |
| 1 5/16-12 | 1 1/4 | 2 | 500025-20-16S | D188-2120 | 500023-20-16S | D191-2120 | 500024-20-16S | D184-2120 |
| 1 7/8-12 | 1 1/4 | 2 | 500025-20-24S | | 500023-20-24S | D191-3020 | 500024-20-24S | D184-3020 |
| 1 5/8-12 | 1 1/4 | 2 | 500025-20S | D188-2620 | 500023-20S | D191-2620 | 500024-20S | D184-2620 |
| 1 7/8-12 | 1 1/2 | 2.38 | 500025-24S | D188-3024 | 500023-24S | D191-3024 | 500024-24S | D184-3024 |
| 1 5/16-12 | 1 1/2 | 2.38 | 500025-24-16S | | 500023-24-16S | | 500024-24-16S | D184-2124 |
| 1 5/8-12 | 1 1/2 | 2.38 | 500025-24-20S | D188-2624 | 500023-24-20S | D191-2624 | 500024-24-20S | D184-2624 |
| 2 1/2-12 | 1 1/2 | 2.38 | | | 500023-24-32S | D191-4024 | | |
| 1 5/16-12 | 2 | 2.81 | 500025-32-16S | | | | | |
| 1 5/8-12 | 2 | 2.81 | 500025-32-20S | | | | | |
| 1 7/8-12 | 2 | 2.81 | 500025-32-24S | | | | 500024-32-24S | |
| 2 1/2-12 | 2 | 2.81 | 500025-32S | | 500023-32S | | 500024-32S | |
| JIC /FLANGE | | |  | |  | | | |
| THREAD 1 | FLANGE SIZE | FLANGE DIA K1 CODE 62 | JIC MALE X FLANGE R11 PRESSURE | JIC MALE FLANGE 90 R11 PRESSURE | | | | |
| JIC | | | AEROQUIP Part No | AEROQUIP Part No | | | | |
| 1 1-16-12 | 3/4 | 1.63 | FF5541-1212S | | | | | |
| 1 5/16-12 | 1 | 1.87 | FF5541-1616S | FF5540-1616S | | | | |
| 1 5/16-12 | 1 1/4 | 2.13 | FF5541-2016S | FF5540-2016S | | | | |
| 1 5/8-12 | 1 1/4 | 2.13 | FF5541-2020S | FF5540-2020S | | | | |
| 1 5/16-12 | 1 1/2 | 2.5 | FF5541-2416S | FF5540-2416S | | | | |
| 1 5/8-12 | 1 1/4 | 2.5 | FF5541-2420S | FF5540-2420S | | | | |
| 1 7/8-12 | 1 1/2 | 2.5 | FF5541-2424S | FF5540-2424S | | | | |

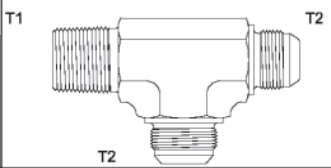
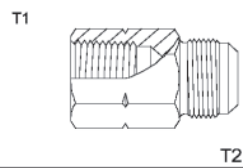
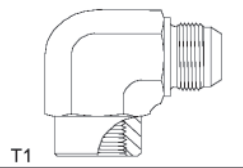
| NPT / NPT | |  | |  |  |  | |
|--------------|--------------|---|---------------------|---|---|---|---------------------|
| THREAD 1 | THREAD 2 | NPT x NPT M x M | | NPT x NPT M X M 90 | NPT TEE M X M X M | NPT PLUG | |
| NPT | NPT | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | AEROQUIP Part No | AEROQUIP Part No | DUFFIELD Part No |
| 1/8-27 | 1/8-27 | 2083-2-2S | | 2085-2-2S | 2257-2-2S | 2082-2S | D60-02 |
| 1/4-18 | 1/8-27 | 2083-4-2S | | | | | |
| 1/4-18 | 1/4-18 | 2083-4-4S | DA4-0404 | 2085-4-4S | 2257-4-4S | 2082-4S | D60-04 |
| 3/8-18 | 1/4-18 | 2083-6-4S | | 2085-6-4S | | | |
| 3/8-18 | 3/8-18 | 2083-6-6S | DA4-0606 | 2085-6-6S | 2257-6-6S | 2082-6S | D60-06 |
| 1/2-14 | 3/8-18 | 2083-8-6S | DA4-0806 | 2085-8-6S | | | |
| 1/2-14 | 1/2-14 | 2083-8-8S | DA4-0808 | 2085-8-8S | 2257-8-8S | 2082-8S | D60-08 |
| 3/4-14 | 1/2-14 | 2083-12-8S | | 2085-12-8S | | | |
| 3/4-14 | 3/4-14 | 2083-12-12S | DA4-1212 | 2085-12-12S | 2257-12-12S | 2082-12S | D60-12 |
| 1-11 1/2 | 3/4-14 | 2083-16-12S | DA4-1612 | 2085-16-12S | | | |
| 1-11 1/2 | 1-11 1/2 | 2083-16-16S | DA4-1616 | 2085-16-16S | 2257-16-16S | 2082-16S | D60-16 |
| 1 1/4-11 1/2 | 1-11 1/2 | 2083-20-16S | | | | | |
| 1 1/4-11 1/2 | 1 1/4-11 1/2 | 2083-20-20S | DA4-2020 | | | 2082-20S | D60-20 |
| 1 1/2-11 1/2 | 1 1/4-11 1/2 | 2083-24-20S | DA4-2420 | | | | |
| 1 1/2-11 1/2 | 1 1/2-11 1/2 | 2083-24-24S | DA4-2424 | | | 2082-24S | D60-24 |
| 2-11 1/2 | 2-11 1/2 | 2083-32-32S | | | | 2082-32S | D60-32 |

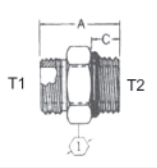
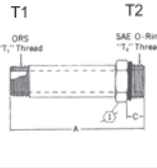
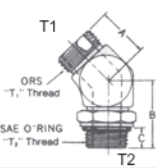
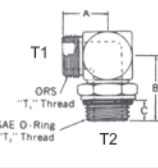
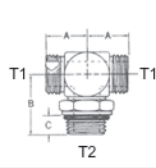
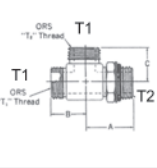
| NPT / NPT | |  | |  | |  | |
|--------------|--------------|---|----------|--|----------|---|----------|
| THREAD 1 | THREAD 2 | NPT X NPT F X M BUSH | | NPSM X NPT F X M | | NPSM X NPT F X M 45 | |
| NPT | NPT | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD |
| | | Part No | Part No | Part No | Part No | Part No | Part No |
| 1/8-27 | 1/8-27 | | | 2045-2-2S | D44-0202 | 2049-2-2S | |
| 1/4-18 | 1/8-27 | 2081-4-2S | D21-0402 | | | | |
| 1/4-18 | 1/4-18 | | | 2045-4-4S | D44-0404 | 2049-4-4S | D46-0404 |
| 3/8-18 | 1/8-27 | 2081-6-2S | D21-0602 | | | | |
| 3/8-18 | 1/4-18 | 2081-6-4S | D21-0604 | 2045-6-4S | | | |
| 3/8-18 | 3/8-18 | | | 2045-6-6S | D44-0606 | 2049-6-6S | D46-0606 |
| 3/8-18 | 1/2-14 | | | | | 2049-6-8S | |
| 1/2-14 | 1/8-27 | 2081-8-2S | D21-0802 | | | | |
| 1/2-14 | 1/4-18 | 2081-8-4S | D21-0804 | | | | |
| 1/2-14 | 3/8-18 | 2081-8-6S | D21-0806 | 2045-8-6S | | 2049-8-6S | |
| 1/2-14 | 1/2-14 | | | 2045-8-8S | D44-0808 | 2049-8-8S | D46-0808 |
| 3/4-14 | 1/4-18 | 2081-12-4S | D21-1204 | | | | |
| 3/4-14 | 3/8-18 | 2081-12-6S | D21-1206 | | | | |
| 3/4-14 | 1/2-14 | 2081-12-8S | D21-1208 | | | | |
| 3/4-14 | 3/4-14 | | | 2045-12-12S | D44-1212 | 2049-12-12S | D46-1212 |
| 1-11 1/2 | 1/4-18 | 2081-16-4S | D21-1604 | | | | |
| 1-11 1/2 | 3/8-18 | 2081-16-6S | D21-1606 | | | | |
| 1-11 1/2 | 1/2-14 | 2081-16-8S | D21-1608 | | | | |
| 1-11 1/2 | 3/4-14 | 2081-16-12S | D21-1612 | 2045-16-12S | | | |
| 1-11 1/2 | 1-11 1/2 | | | 2045-16-16S | D44-1616 | 2049-16-16S | D46-1616 |
| 1 1/4-11 1/2 | 3/4-14 | 2081-20-12S | D21-2012 | | | | |
| 1 1/4-11 1/2 | 1-11 1/2 | 2081-20-16S | D21-2016 | | | | |
| 1 1/4-11 1/2 | 1 1/4-11 1/2 | | | 2045-20-20S | D44-2020 | | |
| 1 1/2-11 1/2 | 3/4-14 | 2081-24-12S | D21-2412 | | | | |
| 1 1/2-11 1/2 | 1 1/4-11 1/2 | 2081-24-20S | D21-2420 | | | | |
| 1 1/2-11 1/2 | 1 1/2-11 1/2 | | | 2045-24-24S | | | |
| 2-11 1/2 | 3/4-14 | 2081-32-12S | D21-3212 | | | | |
| 2-11 1/2 | 2-11 1/2 | | | 2045-32-32S | | | |
| 2 1/2-8 | 2-11 1/2 | 2081-40-32S | D21-4032 | | | | |

| NPT / NPT | | NPSM X NPT F X M 90 | | NPT TEE F X F X M | NPT TEE M X F X F | | |
|-----------|-----------|------------------------|----------|----------------------|----------------------|------------|--|
| THREAD 1 | THREAD 2 | AEROQUIP | DUFFIELD | AEROQUIP | AEROQUIP | DUFFIELD | |
| NPT | NPT | Part No | Part No | Part No | Part No | Part No | |
| 1/8-27 | 1/8-27 | 2047-2-2S | D45-0202 | 2091-2-2S | 2092-2-2S | | |
| 1/4-18 | 1/4-18 | 2047-4-4S | D45-0404 | 2091-4-4S | 2092-4-4S | D72-040404 | |
| 1/4-18 | 3/8-18 | 2047-4-6S | | | | | |
| 3/8-18 | 3/8-18 | 2047-6-6S | D45-0606 | 2091-6-6S | 2092-6-6S | D72-060606 | |
| 3/8-18 | 1/2-14 | 2047-6-8S | | | | | |
| 1/2-14 | 3/8-18 | 2047-8-6S | | | | | |
| 1/2-14 | 1/2-14 | 2047-8-8S | D45-0808 | 2091-8-8S | 2092-8-8S | D72-080808 | |
| 3/4-14 | 1/2-14 | 2047-12-8S | | | | | |
| 3/4-14 | 3/4-14 | 2047-12-12S | D45-1212 | 2091-12-12S | 2092-12-12S | D72-121212 | |
| 3/4-14 | 1- 11/1/2 | 2047-12-16S | | | | | |
| 1-11 1/2 | 1-11 1/2 | 2047-16-16S | D45-1616 | 2091-16-16S | 2092-16-16S | | |

| NPT / NPT | | NPT X NPT SOCKET | | NPT X NPT F X F 90 | | NPT TEE F X F X F | |
|-----------|-----------|---------------------|----------|-----------------------|----------|----------------------|------------|
| THREAD 1 | THREAD 2 | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD |
| NPT | NPT | Part No | Part No | Part No | Part No | Part No | Part No |
| 1/8-27 | 1/8-27 | 2096-2S | D67-02 | 2087-2-2S | D38-0202 | 2090-2-2S | D71-020202 |
| 1/4-18 | 1/8-27 | | | 2087-4-2S | | | |
| 1/4-18 | 1/4-18 | 2096-4S | D67-04 | 2087-4-4S | D38-0404 | 2090-4-4S | D71-040404 |
| 3/8-18 | 1/4-18 | | | 2087-6-4S | | | |
| 3/8-18 | 3/8-18 | 2096-6S | D67-06 | 2087-6-6S | D38-0606 | 2090-6-6S | D71-060606 |
| 1/2-14 | 3/8-18 | | | 2087-8-6S | | | |
| 1/2-14 | 1/2-14 | 2096-8S | D67-08 | 2087-8-8S | D38-0808 | 2090-8-8S | D71-080808 |
| 3/4-14 | 1/2-14 | | | 2087-12-8S | | | |
| 3/4-14 | 3/4-14 | 2096-12S | D67-12 | 2087-12-12S | D38-1212 | 2090-12-12S | D71-121212 |
| 3/4-14 | 1- 11/1/2 | | | | | | |
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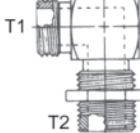
| NPT / JIC | |  | |  | |  | |
|--------------|-----------|---|----------|--|----------|---|----------|
| THREAD 1 | THREAD 2 | NPT x JIC M x M | | NPT x JIC M X M 45 | | NPT X JIC M X M 90 | |
| NPT | JIC | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD |
| | | Part No | Part No | Part No | Part No | Part No | Part No |
| 1/8-27 | 3/8-24 | 2021-2-3S | | | | 2024-2-3S | |
| 1/8-27 | 7/16-20 | 2021-2-4S | D15-0207 | 2023-2-4S | D41-0207 | 2024-2-4S | D17-0207 |
| 1/8-27 | 1/2-20 | 2021-2-5S | D15-0208 | 2023-2-5S | D41-0208 | 2024-2-5S | D17-0208 |
| 1/8-27 | 9/16-18 | 2021-2-6S | D15-0209 | | | 2024-2-6S | D17-0209 |
| 1/4-18 | 7/16-20 | 2021-4-4S | D15-0407 | 2023-4-4S | D41-0407 | 2024-4-4S | D17-0407 |
| 1/4-18 | 1/2-20 | 2021-4-5S | D15-0408 | 2023-4-5S | D41-0408 | 2024-4-5S | D17-0408 |
| 1/4-18 | 9/16-18 | 2021-4-6S | D15-0409 | 2023-4-6S | D41-0409 | 2024-4-6S | D17-0409 |
| 1/4-18 | 3/4-16 | 2021-4-8S | D15-0412 | 2023-4-8S | D41-0412 | 2024-4-8S | D17-0412 |
| 3/8-18 | 7/16-20 | 2021-6-4S | D15-0607 | | | 2024-6-4S | D17-0607 |
| 3/8-18 | 9/16-18 | 2021-6-6S | D15-0609 | 2023-6-6S | D41-0609 | 2024-6-6S | D17-0609 |
| 3/8-18 | 3/4-16 | 2021-6-8S | D15-0612 | 2023-6-8S | D41-0612 | 2024-6-8S | D17-0612 |
| 3/8-18 | 7/8-14 | 2021-6-10S | D15-0614 | 2023-6-10S | D41-0614 | 2024-6-10S | D17-0614 |
| 3/8-18 | 1 1/16-12 | 2021-6-12S | D15-0617 | | | | |
| 1/2-14 | 7/16-20 | 2021-8-4S | D15-0807 | | | | |
| 1/2-14 | 9/16-18 | 2021-8-6S | D15-0809 | 2023-8-6S | D41-0809 | 2024-8-6S | D17-0809 |
| 1/2-14 | 3/4-16 | 2021-8-8S | D15-0812 | 2023-8-8S | D41-0812 | 2024-8-8S | D17-0812 |
| 1/2-14 | 7/8-14 | 2021-8-10S | D15-0814 | 2023-8-10S | D41-0814 | 2024-8-10S | D17-0814 |
| 1/2-14 | 1 1/16-12 | 2021-8-12S | D15-0817 | 2023-8-12S | D41-0817 | 2024-8-12S | D17-0817 |
| 3/4-14 | 9/16-18 | 2021-12-6S | D15-1209 | | | 2024-12-6S | D17-1209 |
| 3/4-14 | 3/4-16 | 2021-12-8S | D15-1212 | 2023-12-8S | D41-1212 | 2024-12-8S | D17-1212 |
| 3/4-14 | 7/8-14 | 2021-12-10S | D15-1214 | 2023-12-10S | D41-1214 | 2024-12-10S | D17-1214 |
| 3/4-14 | 1 1/16-12 | 2021-12-12S | D15-1217 | 2023-12-12S | D41-1217 | 2024-12-12S | D17-1217 |
| 3/4-14 | 1 3/16-12 | | | | | | |
| 3/4-14 | 1 5/16-12 | 2021-12-16S | D15-1221 | 2023-12-16S | D41-1221 | 2024-12-16S | D17-1221 |
| 1-11 1/2 | 1 1/16-12 | 2021-16-12S | | | | 2024-16-12S | D17-1617 |
| 1-11 1/2 | 1 5/16-12 | 2021-16-16S | | 2023-16-16S | D41-1621 | 2024-16-16S | D17-1621 |
| 1-11 1/2 | 1 5/8-12 | 2021-16-20S | | | | 2024-16-20S | D17-1626 |
| 1 1/4-11 1/2 | 1 5/16-12 | 2021-20-16S | | | | | |
| 1 1/4-11 1/2 | 1 5/8-12 | 2021-20-20S | | 2023-20-20S | D41-2026 | 2024-20-20S | D17-2026 |
| 1 1/2-11 1/2 | 1 7/8-12 | 2021-24-24S | | | | 2024-24-24S | |
| 2-11 1/2 | 2 1/2-12 | 2021-32-32S | | | | 2024-32-32S | |

| NPT / JIC | |  | |  | |  | |
|--------------|-----------|---|---------------------|--|---------------------|---|---------------------|
| THREAD 1 | THREAD 2 | NPT X JIC TEE M X M X M | | NPT x JIC F X M | | NPT X JIC F X M 90 | |
| NPT | JIC | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | DUFFIELD Part No | AEROQUIP Part No | DUFFIELD Part No |
| 1/8-27 | 3/8-24 | 2028-2-3S | | | | | |
| 1/8-27 | 7/16-20 | 2028-2-4S | D74-020707 | 2022-2-4S | D64-0207 | 2025-2-4S | D43-0207 |
| 1/8-27 | 1/2-20 | 2028-2-5S | | | | 2025-2-5S | D43-0208 |
| 1/8-27 | 9/16-18 | | | | | 2025-2-6S | |
| 1/4-18 | 7/16-20 | 2028-4-4S | | 2022-4-4S | D64-0407 | 2025-4-4S | D43-0407 |
| 1/4-18 | 1/2-20 | 2028-4-5S | | 2022-4-5S | D64-0408 | 2025-4-5S | D43-0408 |
| 1/4-18 | 9/16-18 | 2028-4-6S | D74-040909 | 2022-4-6S | D64-0409 | 2025-4-6S | D43-0409 |
| 1/4-18 | 3/4-16 | | | | | 2025-4-8S | D43-0412 |
| 3/8-18 | 7/16-20 | | | | | 2025-6-4S | |
| 3/8-18 | 9/16-18 | 2028-6-6S | | 2022-6-6S | D64-0609 | 2025-6-6S | D43-0609 |
| 3/8-18 | 3/4-16 | 2028-6-8S | D74-061212 | 2022-6-8S | D64-0612 | 2025-6-8S | D43-0612 |
| 3/8-18 | 7/8-14 | 2028-6-10S | | | | | |
| 1/2-14 | 9/16-18 | 2028-8-6S | | | | 2025-8-6S | D43-0809 |
| 1/2-14 | 3/4-16 | 2028-8-8S | D7-081212 | 2022-8-8S | D64-0812 | 2025-8-8S | D43-0812 |
| 1/2-14 | 7/8-14 | 2028-8-10S | D74-081414 | 2022-8-10S | D64-0814 | 2025-8-10S | D43-0814 |
| 1/2-14 | 1 1/16-12 | | | 2022-8-12S | D64-0817 | 2025-8-12S | D43-0817 |
| 3/4-14 | 7/8-14 | | | 2022-12-10S | | | |
| 3/4-14 | 1 1/16-12 | 2028-12-12S | D74-121717 | 2022-12-12S | D64-1217 | 2025-12-12S | D43-1217 |
| 3/4-14 | 1 5/16-12 | 2028-12-16S | | | | | |
| 1-11 1/2 | 1 5/16-12 | 2028-16-16S | D74-162121 | 2022-16-16S | D64-1621 | 2025-16-16S | D43-1621 |
| 1 1/4-11 1/2 | 1 5/8-12 | 2028-20-20S | | | | 2025-20-20S | D43-2026 |
| 1 1/2-11 1/2 | 1 7/8-12 | | | | | 2025-24-24S | |
| 2-11 1/2 | 2 1/2-12 | | | | | 2025-32-32S | |

| UNO/ORS | |  |  |  |  |  |  |
|------------|-----------|---|---|--|---|---|---|
| THREAD 1 | THREAD 2 | ORS x UNO' M x M | ORS x UNO' M x M | ORS x UNO' M x M 45 | ORS x UNO' M x M 90 | ORS x UNO M x M x M TEE | ORS x UNO' M x M x M TEE |
| ORS | UNO' | AEROQUIP | AEROQUIP | AEROQUIP | AEROQUIP | AEROQUIP | AEROQUIP |
| | | Part No | Part No | Part No | Part No | Part No | Part No |
| 9/16-18 | 3/8-24 | FF1852T0403S | | | | | |
| 9/16-18 | 7/16-20 | FF1852T0404S | FF1854T0404S | FF2068T0404S | FF1868T0404S | FF1861T0404S | FF1865T0404S |
| 9/16-18 | 1/2-20 | FF1852T0405S | | | FF1868T0405S | | |
| 9/16-18 | 9/16-18 | FF1852T0406S | | FF2068T0406S | FF1868T0406S | | FF1865T0406S |
| 9/16-18 | 3/4-16 | FF1852T0408S | | FF2068T0408S | FF1868T0408S | | |
| 11/16-16 | 3/8-24 | FF1852T0603S | | | | | |
| 11/16-16 | 7/16-20 | FF1852T0604S | | FF2068T0604S | FF1868T0604S | | FF1865T0604S |
| 11/16-16 | 1/2-20 | FF1852T0605S | | | FF1868T0605S | | |
| 11/16-16 | 9/16-18 | FF1852T0606S | FF1854T0606S | FF2068T0606S | FF1868T0606S | FF1861T0606S | FF1865T0606S |
| 11/16-16 | 3/4-16 | FF1852T0608S | FF1854T0608S | FF2068T0608S | FF1868T0608S | FF1861T0608S | |
| 11/16-16 | 7/8-14 | FF1852T0610S | | | FF1868T0610S | | |
| 11/16-16 | 1 1/16-12 | FF1852T0612S | | | FF1868T0612S | | |
| 11/16-16 | 1 5/16-12 | FF1852T0616S | | | | | |
| 13/16-16 | 9/16-18 | FF1852T0806S | | FF2068T0806S | FF1868T0806S | | FF1865T0806S |
| 13/16-16 | 3/4-16 | FF1852T0808S | FF1854T0808S | FF2068T0808S | FF1868T0808S | FF1861T0808S | FF1865T0808S |
| 13/16-16 | 7/8-14 | FF1852T0810S | | FF2068T0810S | FF1868T0810S | | |
| 13/16-16 | 1 1/16-12 | FF1852T0812S | | | FF1868T0812S | | FF1865T0812S |
| 13/16-16 | 1 3/16-12 | FF1852T0814S | | | | | |
| 13/16-16 | 1 5/16-12 | FF1852T0816S | | | | | |
| 1-14 | 3/4-16 | FF1852T1008S | | FF2068T1008S | FF1868T1008S | | |
| 1-14 | 7/8-14 | FF1852T1010S | FF1854T1010S | FF2068T1010S | FF1868T1010S | FF1861T1010S | FF1865T1010S |
| 1-14 | 1 1/16-12 | FF1852T1012S | | FF2068T1012S | FF1868T1012S | | FF1865T1012S |
| 1 3/16-12 | 9/16-18 | FF1852T1206S | | | | | |
| 1 3/16-12 | 3/4-16 | FF1852T1208S | | | FF1868T1208S | | |
| 1 3/16-12 | 7/8-14 | FF1852T1210S | | FF2068T1210S | FF1868T1210S | FF1861T1210S | |
| 1 3/16-12 | 1 1/16-12 | FF1852T1212S | FF1854T1212S | FF2068T1212S | FF1868T1212S | FF1861T1212S | FF1865T1212S |
| 1 3/16-12 | 1 5/16-12 | FF1852T1216S | | FF2068T1216S | | | |
| 1 7/16-12 | 7/8-14 | FF1852T1610S | | | | | |
| 1 7/16-12 | 1 1/16-12 | FF1852T1612S | | FF2068T1612S | FF1868T1612S | | |
| 1 7/16-12 | 1 5/16-12 | FF1852T1616S | FF1854T1616S | FF2068T1616S | FF1868T1616S | FF1861T1616S | FF1865T1616S |
| 1 7/16-12 | 1 5/8-12 | FF1852T1620S | | | | | |
| 1 11/16-12 | 1 5/8-12 | FF1852T2020S | FF1854T2020S | FF2068T2020S | FF1868T2020S | FF1861T2020S | FF1865T2020S |
| 1 11/16-12 | 1 7/8-12 | FF1852T2024S | | | | | |
| 2-12 | 1 7/8-12 | FF1852T2424S | FF1854T2424S | FF2068T2424S | FF1868T2424S | FF1861T2424S | FF1868T2424S |

Adaptors

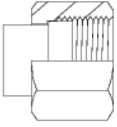
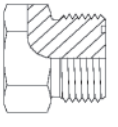
ADAPTORS & TUBE FITTINGS

| ORS / ORS | |  | |  | |  | |  | |
|------------|------------|---|--------------------|---|-----------------------|--|--------------------------|---|--|
| THREAD 1 | THREAD 2 | ORS x ORS M X M | | ORS x ORS BULKHEAD | ORS X ORS M X M 90 | | ORS X ORS BULKHEAD 90 | | |
| ORS | ORS | AEROQUIP | DUFFIELD | AEROQUIP | AEROQUIP | DUFFIELD | AEROQUIP | | |
| | | Part No | Part No | Part No | Part No | Part no | Part No | | |
| 9/16-18 | 9/16-18 | FF2000T0404S | D263-0909 | FF1994T0404S | FF2035T0404S | D262-0909 | FF2030T0404S | | |
| 11/16-16 | 9/16-18 | FF2000T0604S | | | FF2035T0604S | | | | |
| 11/16-16 | 11/16-16 | FF2000T0606S | D263-1111 | FF1994T0606S | FF2035T0606S | D262-1111 | FF2030T0606S | | |
| 13/16-16 | 11-16-16 | FF2000T0806S | | | | | FF2030T0806S | | |
| 13/16-16 | 13/16-16 | FF2000T0808S | D263-1313 | FF1994T0808S | FF2035T0808S | D262-1313 | FF2030T0808S | | |
| 13/16-16 | 1-14 | | | | | | | | |
| 1-14 | 1-14 | FF2000T1010S | | FF1994T1010S | FF2035T1010S | | FF2030T1010S | | |
| 1 3/16-12 | 13/16-12 | FF2000T1208S | | | FF2035T1208S | | | | |
| 1 3/16-12 | 1-14 | FF2000T1210S | | | | | | | |
| 1 3/16-12 | 1 3/16-12 | FF2000T1212S | D263-1919 | FF1994T1212S | FF2035T1212S | D262-1919 | FF2030T1212S | | |
| 1 7/16-12 | 1 3/16-12 | FF2000T1612S | | | | | | | |
| 1 7/16-12 | 1 7/16-12 | FF2000T1616S | D263-2323 | FF1994T1616S | FF2035T1616S | D262-2323 | FF2030T1616S | | |
| 1 11/16-12 | 1 11/16-12 | FF2000T2020S | | FF1994T2020S | FF2035T2020S | | FF2030T2020S | | |
| 2-12 | 2-12 | FF2000T2424S | | FF1994T2424S | FF2035T2424S | | FF2030T2424S | | |
| ORS / ORS | |  | |  | |  | |  | |
| THREAD 1 | THREAD 2 | ORS x ORS MALE TEE | ORS x ORS M X F | ORS X ORS F X M X M TEE | | ORS x ORS M X M X F TEE | | | |
| ORS | ORS | AEROQUIP | AEROQUIP | AEROQUIP | DUFFIELD | AEROQUIP | | | |
| | | Part No | Part No | Part No | Part No | Part No | | | |
| 9/16-18 | 9/16-18 | FF1898T0404S | | FF2114T0404S | D270-090909 | FF1857T0404S | | | |
| 9/16-18 | 11/16-16 | | FF2281T0406S | | | | | | |
| 9/16-18 | 13/16-16 | | FF2281T0408S | | | | | | |
| 9/16-18 | 1-14 | | FF2281T0410S | | | | | | |
| 9/16-18 | 1 3/16-12 | | FF2281T0412S | | | | | | |
| 11/16-16 | 11/16-16 | FF1898T0606S | | FF2114T0606S | D270-111111 | FF1857T0606S | | | |
| 11/16-16 | 13/16-16 | FF1898T0608S | FF2281T0608S | | | | | | |
| 11-16-16 | 1-14 | | FF2281T0610S | | | | | | |
| 11/16-16 | 1 3/16-12 | | FF2281T0612S | | | | | | |
| 13/16-16 | 13/16-16 | FF1898T0808S | | FF2114T0808S | D270-131313 | FF1857T0808S | | | |
| 13/16-16 | 1-14 | | FF2281T0810S | | | | | | |
| 13/16-16 | 1 3/16-12 | | FF2281T0812S | | | | | | |
| 13/16-16 | 1 7/16-12 | | FF2281T0816S | | | | | | |
| 1-14 | 1-14 | FF1898T1010S | | FF2114T1010S | | FF1857T1010S | | | |
| 1 3/16-12 | 1 3/16-12 | FF1898T1212S | | FF2114T1212S | D270-191919 | FF1857T1212S | | | |
| 1 3/16-12 | 1 7/16-12 | FF1898T1216S | | | | | | | |
| 1 7/16-12 | 1 7/16-12 | FF1898T1616S | FF2281T1616S | FF2114T1616S | D270-232323 | FF1857T1616S | | | |
| 1 7/16-12 | 1 11/16-12 | | FF2281T1620S | | | | | | |
| 1 11/16-12 | 1 7/16-12 | FF1898T2016S | | | | | | | |
| 1 11/16-12 | 1 11/16-12 | FF1898T2020S | | FF2114T2020S | | FF1857T2020S | | | |
| 2-12 | 2-12 | FF1898T2424S | | FF2114T2424S | | FF1857T2424S | | | |


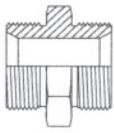


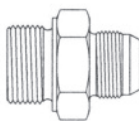

Adaptors

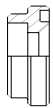
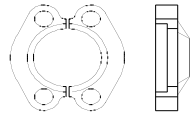
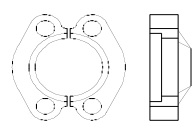
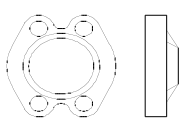
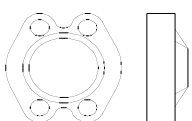
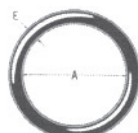
ADAPTORS & TUBE FITTINGS

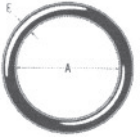
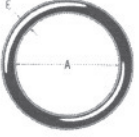
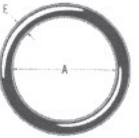



| ORS / ORS | |  T1 | |  T1 | | T2 | T2 |
|------------|------------|--|----------|---|----------|----|----|
| | | ORS CAP | | ORS PLUG | | T1 | T1 |
| THREAD 1 | THREAD 2 | | | | | | |
| ORS | ORS | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | | |
| | | AEROQUIP | DUFFIELD | AEROQUIP | DUFFIELD | | |
| 9/16-18 | 9/16-18 | FF9863-04S | D273-09 | FF9767-04S | D271-09 | | |
| 9/16-18 | 11/16-16 | | | | | | |
| 9/16-18 | 13/16-16 | | | | | | |
| 9/16-18 | 1-14 | | | | | | |
| 9/16-18 | 1 3/16-12 | | | | | | |
| 11/16-16 | 9/16-18 | | | | | | |
| 11/16-16 | 11/16-16 | FF9863-06S | D273-11 | FF9767-06S | D271-11 | | |
| 11/16-16 | 13/16-16 | | | | | | |
| 11/16-16 | 1-14 | | | | | | |
| 11/16-16 | 1 3/16-12 | | | | | | |
| 13/16-16 | 11-16-16 | | | | | | |
| 13/16-16 | 13/16-16 | FF9863-08S | D273-13 | FF9767-08S | D271-13 | | |
| 13/16-16 | 1-14 | | | | | | |
| 13/16-16 | 1 3/16-12 | | | | | | |
| 13/16-16 | 1 7/16-12 | | | | | | |
| 1-14 | 1-14 | FF9863-10S | D273-16 | FF9767-10S | D271-16 | | |
| 1 3/16-12 | 13/16-12 | | | | | | |
| 1 3/16-12 | 1-14 | | | | | | |
| 1 3/16-12 | 1 3/16-12 | FF9863-12S | D273-19 | FF9767-12S | D271-19 | | |
| 1 3/16-12 | 1 7/16-12 | | | | | | |
| 1 7/16-12 | 1 3/16-12 | | | | | | |
| 1 7/16-12 | 1 7/16-12 | FF9863-16S | D273-23 | FF9767-16S | D271-23 | | |
| 1 7/16-12 | 1 11-16-12 | | | | | | |
| 1 11/16-12 | 1 7/16-12 | | | | | | |
| 1 11/16-12 | 1 11/16-12 | FF9863-20S | D273-27 | FF9767-20S | D271-27 | | |
| 2-12 | 2-12 | FF9863-24S | D273-32 | FF9767-24S | D271-32 | | |

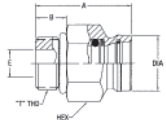
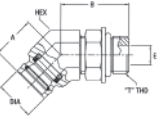
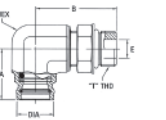
| ORS / NPT | |  | |  | |  | |  | |
|------------|--------------|---|------------|---|--------------|---|--------------|---|--|
| THREAD 1 | THREAD 2 | ORS x NPT M x M | | ORS x NPT M x M 45 | | ORS x NPT M x M 90 | | ORS x NPT M x M x M TEE | |
| | | Part No | Part No | Part No | Part No | Part No | Part No | Part No | |
| ORS | NPT | AEROQUIP | DUFFIELD | AEROQUIP | AEROQUIP | DUFFIELD | AEROQUIP | AEROQUIP | |
| 9/16-18 | 1/8-27 | FF2031T0402S | D264-0209 | FF2093T0402S | FF2032T0402S | D265-0209 | FF2001T0402S | | |
| 9/16-18 | 1/4-18 | FF2031T0404S | | FF2093T0404S | FF2032T0404S | | FF2001T0404S | | |
| 9/16-18 | 3/8-18 | FF2031T0406S | | FF2093T0406S | | | | | |
| 9/16-18 | 1/2-14 | FF2031T0408S | | | | | | | |
| 11/16-16 | 1/8-27 | FF2031T0602S | | | FF2032T0602S | | | | |
| 11/16-16 | 1/4-18 | FF2031T0604S | | FF2093T0604S | FF2032T0604S | | FF2001T0604S | | |
| 11/16-16 | 3/8-18 | FF2031T0606S | | FF2093T0606S | FF2032T0606S | | FF2001T0606S | | |
| 11/16-16 | 1/2-14 | FF2031T0608S | | FF2093T0608S | FF2032T0608S | D265-0811 | | | |
| 13/16-16 | 1/4-18 | FF2031T0804S | | FF2093T0804S | | | | | |
| 13/16-16 | 3/8-18 | FF2031T0806S | | FF2093T0806S | FF2032T0806S | | FF2001T0806S | | |
| 13/16-16 | 1/2-14 | FF2031T0808S | | FF2093T0808S | FF2032T0808S | | FF2001T0808S | | |
| 13/16-16 | 3/4-14 | FF2031T0812S | | | FF2032T0812S | | | | |
| 1-14 | 1/2-14 | FF2031T1008S | | FF2093T1008S | FF2032T1008S | D265-0816 | | | |
| 1-14 | 3/4-14 | FF2031T1012S | | | FF2032T1012S | D265-1216 | | | |
| 1-14 | 1-11 1/2 | FF2031T1016S | | | | | | | |
| 1 3/16-12 | 1/2-14 | FF2031T1208S | | | FF2032T1208S | | | | |
| 1 3/16-12 | 3/4-14 | FF2031T1212S | | FF2093T1212S | FF2032T1212S | D265-1219 | FF2001T1212S | | |
| 1 3/16-12 | 1-11 1/2 | FF2031T1216S | | | FF2032T1216S | | | | |
| 1 7/16-12 | 3/4-14 | FF2031T1612S | | | FF2032T1612S | | | | |
| 1 7/16-12 | 1-11 1/2 | FF2031T1616S | D264-1623 | FF2093T1616S | FF2032T1616S | D265-1623 | FF2001T1616S | | |
| 1 7/16-12 | 1 1/4-11 1/2 | FF2031T1620S | | | | | | | |
| 1 11/16-12 | 1 11 1/2 | FF2031T2016S | | | FF2032T2016S | | | | |
| 1 11-16-12 | 1 1/4-11 1/2 | FF2031T2020S | | FF2093T2020S | FF2032T2020S | | FF2001T2020S | | |
| 2-12 | 1 1/2-11 1/2 | FF2031T2424S | | FF2093T2424S | FF2032T2424S | | FF2001T2424S | | |
| ORS/JIC | |  | |  | | | | | |
| THREAD 1 | THREAD 2 | JIC X ORS M X M | | JIC X ORS M X F LONG | | | | | |
| | | Part No | Part No | | | | | | |
| JIC | ORS | DUFFIELD | DUFFIELD | | | | | | |
| 7/16-20 | 9/16-18 | DA264-0709 | DA272-0709 | | | | | | |
| 9/16-18 | 11/16-16 | DA264-0911 | DA272-0911 | | | | | | |
| 3/4-16 | 13/16-16 | DA264-1213 | DA272-1213 | | | | | | |
| 7/8-14 | 13/16-16 | DA264-1413 | | | | | | | |
| 7/8-14 | 1-14 | DA264-1416 | DA272-1416 | | | | | | |
| 1 1/16-12 | 1 3/16-12 | DA264-1719 | DA272-1719 | | | | | | |
| 1 5/16-12 | 1 7/16-12 | DA264-2123 | DA272-2123 | | | | | | |

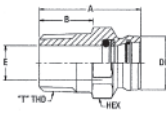
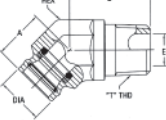
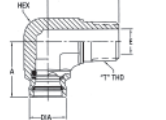
| METRIC MALE DIN 24 DEGREE | | | T1 T2  | METRIC MALE DIN 60 DEGREE | | | T1 T2  |
|------------------------------|-----------|---------|--|------------------------------|-----------|---------|--|
| THREAD 1 | THREAD 2 | TUBE OD | Part No | THREAD 1 | THREAD 2 | TUBE OD | Part No |
| | | | DUFFIELD | | | | DUFFIELD |
| M18 X 1.5 | M18 X 1.5 | 10MM | D160-1818 | M10 X 1.0 | M10 X 1.0 | | D159-1010 |
| M20 X 1.5 | M20 X 1.5 | 12MM | D160-2020 | M12 X 1.5 | M12 X 1.5 | | D159-1212 |
| M24 X 1.5 | M24 X 1.5 | 16MM | D160-2424 | M16 X 1.5 | M16 X 1.5 | | D159-1616 |
| M30 X 2.0 | M30 X 2.0 | 20MM | D160-3030 | M18 X 1.5 | M18 X 1.5 | | D159-1818 |
| M36 X 2.0 | M36 X 2.0 | 25MM | D160-3636 | M22 X 1.5 | M22 X 1.5 | | D159-2222 |
| | | | | M26 X 1.5 | M26 X 1.5 | | D159-2626 |
| | | | | M30 X 1.5 | M30 X 1.5 | | D159-3030 |

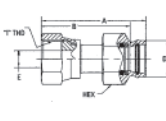
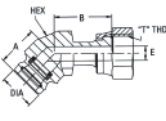
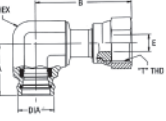
| JIC X METRIC MALE | | | T2 T1  | BSP X METRIC MALE | | | T2 T1  |
|----------------------|-----------|--|--|----------------------|-----------|--|--|
| THREAD 1 | THREAD 2 | | Part No | THREAD 1 | THREAD 2 | | Part No |
| JIC | METRIC | | DUFFIELD | BSP | METRIC | | DUFFIELD |
| 7/16-20 | M10 X 1.0 | | D147-0710 | 1/4-19 | M18 X 1.5 | | D248-0418 |
| 7/16-20 | M12 X 1.5 | | D147-0712 | 1/4-19 | M24 X 1.5 | | D248-0424 |
| 9/16-18 | M12 X 1.5 | | D147-0912 | 3/8-19 | M18 X 1.5 | | D248-0618 |
| 9/16-18 | M14 X 1.5 | | D147-0914 | 3/8-19 | M20 X 1.5 | | D248-0620 |
| 9/16-18 | M16 X 1.5 | | D147-0916 | 3/8-19 | M24 X 1.5 | | D248-0624 |
| 9/16-18 | M18 X 1.5 | | D147-0918 | 1/2-14 | M24 X 1.5 | | D248-0824 |
| 3/4-16 | M16 X 1.5 | | D147-1216 | 1/2-14 | M30 X 2.0 | | D248-0830 |
| 3/4-16 | M18 X 1.5 | | D147-1218 | 1/2-14 | M36 X 2.0 | | D248-0836 |
| 3/4-16 | M22 X 1.5 | | D147-1222 | 3/4-14 | M30 X 2.0 | | D248-1230 |
| 7/8-14 | M18 X 1.5 | | D147-1418 | 3/4-14 | M36 X 2.0 | | D248-1236 |
| 7/8-14 | M22 X 1.5 | | D147-1422 | 3/4-14 | M42 X 2.0 | | D248-1242 |
| 1 1/16-12 | M18 X 1.5 | | D147-1718 | 1-11 | M36 X 2.0 | | D248-1636 |
| 1 1/16-12 | M22 X 1.5 | | D147-1722 | 1-11 | M42 X 2.0 | | D248-1642 |
| 1 1/16-12 | M27 X 2.0 | | D147-1727 | 1-11 | M52 X 2.0 | | D248-1652 |
| 1 1/16-12 | M33 X 2.0 | | D147-1733 | 1 1/4-11 | M42 X 2.0 | | D248-2042 |
| 1 5/16-12 | M26 X 1.5 | | D147-2126 | 1 1/4-11 | M52 X 2.0 | | D248-2052 |
| 1 5/16-12 | M33 X 2.0 | | D147-2133 | 1 1/2-11 | M52 X 2.0 | | D248-2452 |
| 1 5/16-12 | M42 X 2.0 | | D147-2142 | 1 1/2-11 | M66 X 2.0 | | D24-2468 |
| 1 5/8-12 | M42 X 2.0 | | D147-2642 | 2/11 | M68 X 2.0 | | D248-3268 |
| 1 5/8-12 | M48 X 2.0 | | D147-2648 | | | | |


| BRAZE FLANGE CODE 61 | | |  | | FLANGE CLAMP CODE 61 TWO PIECE | | |  | |
|-----------------------------------|-------|-----------|---|----------|-----------------------------------|---------------------|--------------|---|--|
| FLANGE | TUBE | HEAD DIAØ | | | AEROQUIP Part No | DUFFIELD Part No | FLANGE | | |
| 1/2 | 3/8 | 1.19 | 4624-8-6S | | 1/2 | 1.50 | 449-74446-8 | D90-08 | |
| 1/2 | 1/2 | 1.19 | 4624-8S | TW5-0808 | 3/4 | 1.88 | 449-74446-12 | D90-12 | |
| 3/4 | 1/2 | 1.50 | 4624-12-8S | | 1 | 2.06 | 449-74446-16 | D90-16 | |
| 3/4 | 5/8 | 1.50 | 4624-12-10S | TW5-1210 | 1 1/4 | 2.31 | 449-74446-20 | D90-20 | |
| 3/4 | 3/4 | 1.50 | 4624-12S | TW5-1212 | 1 1/2 | 2.75 | 449-74446-24 | D90-24 | |
| 3/4 | 1 | 1.50 | 4624-12-16S | TW5-1216 | 2 | 3.06 | 449-74446-32 | D90-32 | |
| 1 | 3/4 | 1.75 | 4624-16-12S | TW5-1612 | 2 1/2 | 3.50 | 449-74446-40 | D90-40 | |
| 1 | 1 | 1.75 | 4624-16S | TW5-1616 | | | | | |
| 1 | 1 1/4 | 1.75 | 4624-16-20S | TW5-1620 | | | | | |
| 1 1/4 | 1 | 2.00 | 4624-20-16S | TW5-2016 | | | | | |
| 1 1/4 | 1 1/4 | 2.00 | 4624-20S | TW5-2020 | | | | | |
| 1 1/4 | 1 1/2 | 2.00 | 4624-20-24S | TW5-2024 | | | | | |
| 1 1/2 | 1 | 2.38 | 4624-24-16S | TW5-2416 | | | | | |
| 1 1/2 | 1 1/4 | 2.38 | 4624-24-20S | TW5-2420 | | | | | |
| 1 1/2 | 1 1/2 | 2.38 | 4624-24S | TW5-2424 | | | | | |
| 2 | 2 | 2.81 | 4624-32S | TW5-3232 | | | | | |
| 2 1/2 | 2 | 3.31 | 4624-40-32S | TW5-4032 | | | | | |
| FLANGE CLAMP CODE 62 TWO PIECE | | |  | | FLANGE CLAMP CODE 61 ONE PIECE | | |  | |
| FLANGE | | " A " | | | AEROQUIP Part No | DUFFIELD Part No | FLANGE | | |
| 1/2 | | 1.59 | FC3425-8-449 | | 1/2 | 1.50 | D238-08 | | |
| 3/4 | | 2.00 | FC3425-12-449 | D206-12 | 3/4 | 1.88 | D238-12 | | |
| 1 | | 2.25 | FC3425-16-449 | D206-16 | 1 | 2.06 | D238-16 | | |
| 1 1/4 | | 2.63 | FC3425-20-449 | D206-20 | 1 1/4 | 2.31 | D238-20 | | |
| 1 1/2 | | 3.13 | FC3425-24-449 | D206-24 | 1 1/2 | 2.75 | D238-24 | | |
| 2 | | 3.81 | FC3425-32-449 | D206-32 | 2 | 3.06 | D238-32 | | |
| FLANGE CLAMP CODE 62 ONE PIECE | | |  | | O'RING E-Z CLIP HOSE TAIL | | |  | |
| FLANGE | | " A " | | | DUFFIELD Part No | PORT SIZE | 'A' | | |
| 1/2 | | 1.59 | D239-08 | 3/8 | 0.217 | -6 | 1F40106-06 | | |
| 3/4 | | 2.00 | D239-12 | 1/2 | 0.315 | -8 | 1F40106-08 | | |
| 1 | | 2.25 | D239-16 | 5/8 | 0.374 | -10 | 1F40106-10 | | |
| 1 1/4 | | 2.63 | D239-20 | 3/4 | 0.472 | -12 | 1F40106-12 | | |
| 1 1/2 | | 3.13 | D239-24 | | | | | | |
| 2 | | 3.81 | D239-32 | | | | | | |

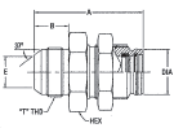
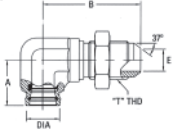
| O'RING SAE FLANGE | | |  | | O'RING ORS | | |  | |
|--|-------|-----------|---|---------------------|--|-------|-------|---|---------------------|
| 90° Durometer Buna-N Nitrile Rubber -40°C to +121°C | | | | | 90° Durometer Buna-N Nitrile Rubber -40°C to +121°C | | | | |
| FLANGE | 'A' | DASH SIZE | AEROQUIP Part No | DUFFIELD Part No | PORT SIZE | 'A' | 'E' | AEROQUIP Part No | DUFFIELD Part No |
| 1/2 | 0.734 | -8 | FF9446-210 | DR508 | -4 | 0.301 | 0.07 | FF9446-11 | DR809 |
| 3/4 | 0.984 | -12 | FF9446-214 | DR512 | -6 | 0.364 | 0.07 | FF9446-12 | DR811 |
| 1 | 1.296 | -16 | FF9446-219 | DR516 | -8 | 0.489 | 0.07 | FF9446-14 | DR813 |
| 1 1/4 | 1.484 | -20 | FF9446-222 | DR520 | -10 | 0.614 | 0.07 | FF9446-16 | DR816 |
| 1 1/2 | 1.859 | -24 | FF9446-225 | DR524 | -12 | 0.739 | 0.07 | FF9446-18 | DR819 |
| 2 | 2.234 | -32 | FF9446-228 | DG532 | -16 | 0.926 | 0.07 | FF9446-21 | DR823 |
| | | | | | -20 | 1.176 | 0.07 | FF9446-25 | DR827 |
| | | | | | -24 | 1.489 | 0.07 | FF9446-29 | DR832 |
| Diameter 'E' = 0.139 | | | | | | | | | |
| O'RING BUMP TUBE | | |  | | CAT FLANGE D - RING | | |  | |
| 70 Durometer HNBR | | | | | 70 Durometer Buna N Use with Cat Flanges | | | | |
| PORT SIZE | 'A' | 'E' | AEROQUIP Part No | | | 'A' | B' | AEROQUIP Part No | |
| -6 | 0.301 | 0.0625 | FF90178-11 | | -12 | 1.27 | 1 | FF90319-12 | |
| -8 | 0.426 | 0.0625 | FF90178-13 | | -16 | 1.52 | 1.25 | FF90319-16 | |
| -10 | 0.551 | 0.0625 | FF90178-15 | | -20 | 1.77 | 1.5 | FF90319-20 | |
| -12 | 0.676 | 0.06 | FF90178-17 | | -24 | 2.03 | 1.76 | FF90319-24 | |
| | | | | | -32 | 2.78 | 2.52 | FF90319-32 | |
| BSPB METAL BACK SEAL | | |  | | METRIC METAL BACK SEAL | | |  | |
| THREAD SIZE | OD | ID | AEROQUIP Part No | DUFFIELD Part No | THREAD SIZE | OD | ID | DUFFIELD Part No | |
| 1/4-19 | 20.6 | 13.7 | DS-4 | D215-04 | M6 | 11.0 | 6.7 | D216-06 | |
| 3/8-19 | 23.8 | 17.25 | DS-6 | D215-06 | M8 | 13.4 | 8.5 | D216-08 | |
| 1/2-14 | 28.6 | 21.5 | DS-8 | D215-08 | M10 | 16.0 | 10.3 | D216-10 | |
| 5/8-14 | 31.8 | 23.5 | DS-10 | D215-10 | M12 | 18.0 | 12.7 | D216-12 | |
| 3/4-14 | 34.95 | 27.00 | DS-12 | D215-12 | M14 | 22.0 | 14.70 | D216-14 | |
| 1-11 | 42.8 | 33.85 | DS-16 | D215-16 | M16 | 24.0 | 16.7 | D216-16 | |
| 1 1/4-11 | 52.4 | 42.9 | DS-20 | D215-20 | M18 | 26.0 | 18.7 | D216-18 | |
| 1 1/2-11 | 58.6 | 48.4 | DS-24 | D215-24 | M20 | 28.0 | 20.7 | D216-20 | |
| 2-11 | 73.05 | 60.5 | DS-32 | D215-32 | M22 | 30.0 | 22.7 | D216-22 | |
| | | | | | M26 | 35.0 | 26.7 | D216-26 | |
| | | | | | M27 | 35.0 | 27.3 | D216-27 | |
| | | | | | M33 | 42.0 | 33.7 | D216-33 | |
| | | | | | M42 | 53.0 | 42.7 | D216-42 | |
| | | | | | M48 | 59.0 | 48.7 | D216-48 | |

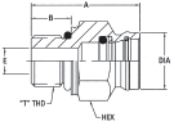
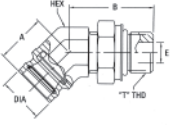
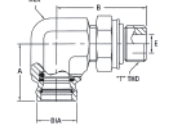
| STC FEMALE STC TO UNO MALE | |  |  |  | | |
|----------------------------|------------|---|---|--|--|--|
| STC SIZE | UNO THREAD | Straight | 45 Degree | 90 Degree | | |
| -6 | 7/16-20 | FF3042-0406S | FF3038-0406S | FF3046-0406S | | |
| -6 | 9/16-18 | FF3042-0606S | FF3038-0606S | FF3046-0606S | | |
| -8 | 9/16-18 | FF3042-0608S | | | | |
| -6 | 3/4-16 | FF3042-0806S | | FF3046-0806S | | |
| -8 | 3/4-16 | FF3042-0808S | FF3038-0808S | FF3046-0808S | | |
| -10 | 3/4-16 | FF3042-0810S | | | | |
| -8 | 7/8-14 | FF3042-1008S | | FF3046-1008S | | |
| -10 | 7/8-14 | FF3042-1010S | FF3038-1010S | FF3046-1010S | | |
| -12 | 7/8-14 | FF3042-1012S | | | | |
| -10 | 1 1/16-12 | FF3042-1210S | | | | |
| -12 | 1 1/16-12 | FF3042-1212S | | FF3046-1212S | | |
| -16 | 1 5/16-12 | FF3042-1616S | | FF3046-1616S | | |

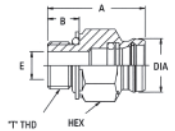
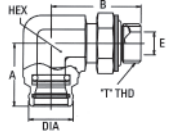
| STC FEMALE STC TO MALE NPTF | |  |  |  | | |
|-----------------------------|-------------|---|---|--|--|--|
| STC SIZE | NPTF THREAD | Straight | 45 Degree | 90 Degree | | |
| -6 | 1/4-18 | FF3089-0406S | FF3093-0406S | | | |
| -6 | 3/8-18 | FF3089-0606S | FF3093-0606S | FF3056-0606S | | |
| -8 | 3/8-18 | FF3089-0608S | | FF3056-0608S | | |
| -6 | 1/2-14 | FF3089-0806S | | | | |
| -8 | 1/2-14 | FF3089-0808S | FF3093-0808S | FF3056-0808S | | |
| -10 | 1/2-14 | FF3089-0810S | FF3093-0810S | | | |
| -10 | 3/4-14 | FF3089-1210S | | | | |
| -12 | 3/4-14 | FF3089-1212S | FF3093-1212S | FF3056-1212S | | |

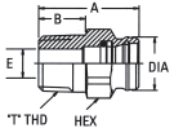
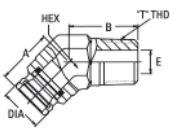
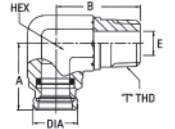
| STC FEMALE STC TO FEMALE ORSF | |  |  |  | | |
|-------------------------------|-------------|---|---|--|--|--|
| STC SIZE | ORSF THREAD | Straight | 45 Degree | 90 Degree | | |
| -6 | 11/16-16 | FF3236-0606S | FF3362-0606S | FF3246-0606S | | |
| -8 | 13/16-16 | FF3236-0808S | | FF3246-0808S | | |

| STC MALE STC TO MALE ORSF | |  | | | | |
|---------------------------|-------------|---|--|--|--|--|
| STC SIZE | ORSF THREAD | Straight | | | | |
| -6 | 11/16-16 | FF3318T-0606S | | | | |

| STC FEMALE STC TO JIC MALE BULKHEAD | |  |  | | | |
|-------------------------------------|------------|---|---|--|--|--|
| STC SIZE | JIC THREAD | Straight | 90 Degree | | | |
| -10 | 1 1/16-16 | | FF3044-1210S | | | |
| -12 | 1 5/16-12 | FF3412-1612S | | | | |
| -16 | 1 5/16-12 | | FF3044-1616S | | | |

| STC FEMALE STC TO METRIC MALE ISO 6149 | |  |  |  | | | |
|--|------------|---|---|--|--|--|--|
| STC SIZE | UNO THREAD | Straight | 45 Degree | 90 Degree | | | |
| -6 | M10X1 | FF3061-1006S | | | | | |
| -6 | M12X1.5 | FF3061-1206S | | | | | |
| -6 | M14X1.5 | FF3061-1406S | FF3065-1406S | FF3067-1406S | | | |
| -8 | M14X1.5 | FF3061-1408S | | | | | |
| -6 | M16X1.5 | FF3061-1606S | FF3065-1606S | FF3067-1606S | | | |
| -8 | M16X1.5 | FF3061-1608S | | | | | |
| -10 | M16X1.5 | FF3061-1610S | | | | | |
| -6 | M18X1.5 | FF3061-1806S | | | | | |
| -8 | M18X1.5 | FF3061-1808S | FF3065-1808S | FF3067-1808S | | | |
| -10 | M18X1.5 | FF3061-1810S | FF3065-1810S | FF3067-1810S | | | |
| -12 | M18X1.5 | FF3061-1812S | | | | | |
| -10 | M22X1.5 | FF3061-2210S | | FF3067-2210S | | | |
| -12 | M22X1.5 | FF3061-2212S | FF3065-2212S | FF3067-2212S | | | |
| -12 | M27X1.5 | | FF3065-2712S | FF3067-2712S | | | |

| STC FEMALE STC 'O' RING BOSS DIN 3852 | |  |  | | | |
|---------------------------------------|---------|---|---|--|--|--|
| STC SIZE | UNO | Straight | 90 Degree | | | |
| - 8 | M16X1.5 | FF3284-1608S | | | | |
| - 8 | M18X1.5 | FF3284-1808S | FF3286-1808S | | | |
| -12 | M26X1.5 | FF3284-2612S | | | | |

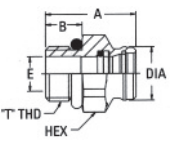
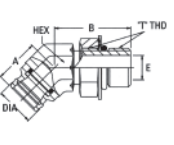
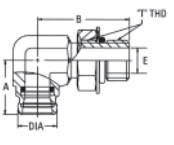
| STC FEMALE STC TO MALE BSPT | |  |  |  | | | |
|-----------------------------|-------------|---|---|--|--|--|--|
| STC SIZE | BSPT THREAD | Straight | 45 Degree | 90 Degree | | | |
| - 6 | 1/4 - 19 | FF3503-0406S | FF3505-0406S | FF3507-0406S | | | |
| - 6 | 3/8 - 19 | FF3503-0606S | FF3505-0606S | FF3507-0606S | | | |
| - 8 | 1/2 - 14 | FF3503-0808S | FF3505-0808S | FF3507-0808S | | | |
| -12 | 3/4 - 12 | FF3503-1212S | FF3505-1212S | FF3507-1212S | | | |

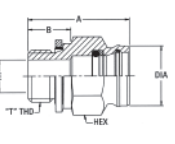


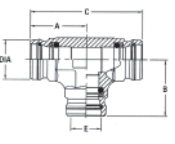
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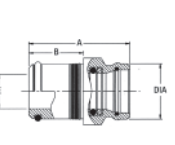
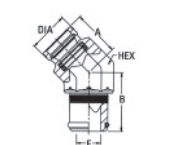
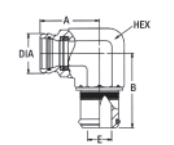
Adaptors

ADAPTORS & TUBE FITTINGS

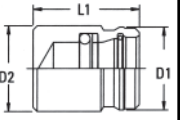
| STC FEMALE STC TO MALE BSPP (SPECIAL JIS) | |  |  |  | | |
|--|-------------|---|---|--|--|--|
| STC SIZE | BSPP THREAD | Straight | 45 Degree | 90 Degree | | |
| - 6 | 1/4 - 19 | FF3509-0406S | FF3511-0406S | FF3513-0406S | | |
| - 6 | 3/8 - 19 | FF3509-0606S | FF3511-0606S | FF3513-0606S | | |
| - 8 | 1/2 - 14 | FF3509-0808S | FF3511-0808S | FF3513-0808S | | |
| -12 | 3/4 - 12 | FF3509-1212S | FF3511-1212S | FF3513-1212S | | |

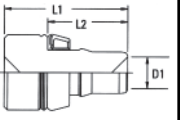
| STC FEMALE STC TO MALE BSPP DIN 3852 | |  | | | | |
|---|-------------|---|--|--|--|--|
| STC SIZE | BSPP THREAD | Straight | | | | |
| - 6 | 1/4 - 19 | FF3218-0406S | | | | |
| - 6 | 3/8 - 19 | FF3218-0606S | | | | |
| - 6 | 1/2 - 14 | FF3218-0806S | | | | |
| - 8 | 3/8 - 19 | FF3218-0608S | | | | |
| - 8 | 1/2 - 14 | FF3218-0808S | | | | |
| -10 | 1/2 - 14 | FF3218-0810S | | | | |
| -10 | 3/4 - 14 | FF3218-1210S | | | | |
| -12 | 3/4 - 14 | FF3218-1212S | | | | |

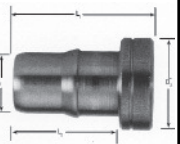
| STC FEMALE STC TEE | |  | | | | |
|--------------------------|--|---|--|--|--|--|
| STC SIZE | | Tee | | | | |
| - 8 | | FF3178-0808S | | | | |
| | | | | | | |
| | | | | | | |

| STC FEMALE STC TO PRESS FIT | |  |  |  | | |
|-----------------------------------|-----------|---|---|--|--|--|
| STC SIZE | PRESS FIT | Straight | 45 Degree | 90 Degree | | |
| - 8 | - 8 | FF3113-02-0808S | FF3162-0808S | FF3115-0808S | | |
| -10 | -10 | | | FF3115-1010S | | |
| | | | | | | |



| STC STC CAP | |  | | | | |
|----------------|--|---|--|--|--|--|
| STC SIZE | | Straight | | | | |
| - 6 | | FF90202-06S | | | | |
| - 8 | | FF90202-08S | | | | |
| -10 | | FF90202-10S | | | | |
| -12 | | FF90202-12S | | | | |
| -16 | | FF90202-16S | | | | |
| | | | | | | |
| | | | | | | |

| STC STC PLUG | |  | | | | |
|-----------------|--|--|--|--|--|--|
| STC SIZE | | Straight | | | | |
| - 6 | | FF90384-06S | | | | |
| - 8 | | FF90384-08S | | | | |
| -10 | | FF90384-10S | | | | |
| -12 | | FF90384-12S | | | | |
| -16 | | FF90384-16S | | | | |
| | | | | | | |
| | | | | | | |

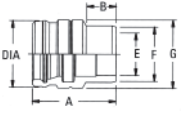
| STC BRAZE ON MALE | |  | | | | |
|-------------------------|-----------|---|--|--|--|--|
| STC SIZE | TUBE SIZE | Straight | | | | |
| - 6 | 3/8 | IF40107-0606AB | | | | |
| - 8 | 1/2 | IF40107-0808AB | | | | |
| - 8 | 5/8 | IF40107-1008AB | | | | |
| -10 | 5/8 | IF40107-1010AB | | | | |
| -12 | 3/4 | IF40107-1212AB | | | | |
| -12 | 1 | IF40107-1612AB | | | | |
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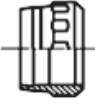
Adaptors

I ADAPTORS & TUBE FITTINGS I

| STC BRAZE-ON FEMALE SPUD | |  | | | | |
|--------------------------------|----------------|---|--|--|--|--|
| STC SIZE | BSPP THREAD | Straight | | | | |
| - 6 | 3/8 | FF3059-0606S | | | | |
| - 8 | 1/2 | FF3059-0808S | | | | |
| -10 | 5/8 | FF3059-1010S | | | | |
| -12 | 3/4 | FF3059-1212S | | | | |



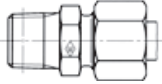
| Din Light / Heavy Series Metric Nut | |  |
|-------------------------------------|--------------|---|
| Part No | Reference No | Description |
| WAL039838 | M-4LL | 8x1mm - 4mm Extra Light Tube |
| WAL039840 | M-6LL | 10x1mm - 6mm Extra Light Tube |
| WAL039841 | M-8LL | 12x1mm - 8mm Extra Light Tube |
| WAL039842 | M-6L | 12x1.5mm - 6mm Light |
| WAL039843 | M-8L | 14x1.5mm - 8mm Light |
| WAL039844 | M-10L | 16x1.5mm - 10mm Light |
| WAL039845 | M-12L | 18x1.5mm - 12mm Light |
| WAL039846 | M-15L | 22x1.5mm - 15mm Light |
| WAL039847 | M-18L | 26x1.5mm - 18mm Light |
| WAL039848 | M-22L | 30x2mm - 22mm Light |
| WAL039849 | M-28L | 36x2mm - 28mm Light |
| WAL039850 | M-35L | 45x2mm - 35mm Light |
| WAL039851 | M-42L | 52x2mm - 42mm Light |
| WAL039852 | M-6S | 14x1.5mm - 6mm Heavy |
| WAL039853 | M-8S | 16x1.5mm - 8mm Heavy |
| WAL039854 | M-10S | 18x1.5mm - 10mm Heavy |
| WAL039855 | M-12S | 20x1.5mm - 12mm Heavy |
| WAL039856 | M-14S | 22x1.5mm - 14mm Heavy |
| WAL039857 | M-16S | 24x1.5mm - 16mm Heavy |
| WAL039858 | M-20S | 30x2mm - 20mm Heavy |
| WAL039859 | M-25S | 36x2mm - 25mm Heavy |
| WAL039860 | M-30S | 42x2mm - 30mm Heavy |
| WAL039861 | M-38S | 52x2mm - 38mm Heavy |

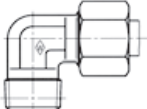
| Din Light / Heavy Series Metric Cutting Ring | |  |
|--|--------------|---|
| Part No | Reference No | Description |
| WAL039862 | S-R 4LL | CUTTING RING - 4 mm Extra Light Tube |
| WAL039864 | S-R 6LL | CUTTING RING - 6 mm Extra Light Tube |
| WAL039865 | S-R 8LL | CUTTING RING - 8mm Extra Light Tube |
| WAL372404 | P-R6LS | CUTTING RING - 6LS |
| WAL372405 | P-R8LS | CUTTING RING - 8LS |
| WAL372406 | P-R10LS | CUTTING RING - 10LS |
| WAL372407 | P-R12LS | CUTTING RING - 12LS |
| WAL372408 | P-R15L | CUTTING RING - 15L |
| WAL372409 | P-R18L | CUTTING RING - 18L |
| WAL372410 | P-R22L | CUTTING RING - 22L |
| WAL372411 | P-R28L | CUTTING RING - 28L |
| WAL372412 | P-R35L | CUTTING RING - 35L |
| WAL372413 | P-R42L | CUTTING RING - 42L |
| WAL372414 | P-R14S | CUTTING RING - 14S |
| WAL372415 | P-R16S | CUTTING RING - 16S |
| WAL372416 | P-R20S | CUTTING RING - 20S |
| WAL372417 | P-R25S | CUTTING RING - 25S |
| WAL372418 | P-R30S | CUTTING RING - 30S |
| WAL372419 | P-R38S | CUTTING RING - 38S |



Powering Business Worldwide

Adaptors

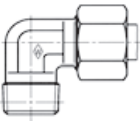
| Straight Male Stud Din Light / Heavy Metric x UN "O" Ring Male | |  |
|---|-------------------------|---|
| Part No | Reference No | Description |
| WAL373157 | P-GEV6 L/9/16-18 UNF | 6mm Tube - 9/16 UNO ring |
| WAL373158 | P-GEV8 L/7/16-20 UNF | 8mm Tube - 7/16 UNO ring |
| WAL373159 | P-GEV8 L/9/16-20 UNF | 8mm Tube - 9/16 UNO ring |
| WAL373160 | P-GEV10 L/7/16-20 UNF | 10mm Tube - 7/16 UNO ring |
| WAL373161 | P-GEV10 L/9/16-18 UNF | 10mm Tube - 9/16 UNO ring |
| WAL373162 | P-GEV10 L/ 3/4-16 UNF | 10mm Tube - 3/4 UNO ring |
| WAL373164 | P-GEV12 L/9/16-18 UNF | 12mm Tube - 9/16 UNO ring |
| WAL373165 | P-GEV12 L/ 3/4-16 UNF | 12mm Tube - 3/4 UNO ring |
| WAL373166 | P-GEV12 L/ 7/8-14 UNF | 12mm Tube - 7/8 UNO ring |
| WAL373168 | P-GEV15 L/ 3/4-16 UNF | 15mm Tube - 3/4 UNO ring |
| WAL373169 | P-GEV15 L/ 7/8-14 UNF | 15mm Tube - 7/8 UNO ring |
| WAL373170 | P-GEV18 L/ 3/4-16 UNF | 18mm Tube - 3/4 UNO ring |
| WAL373171 | P-GEV18 L/ 7/8-14 UNF | 18mm Tube - 7/8 UNO ring |
| WAL373172 | P-GEV22 L/ 7/8-14 UNF | 22mm Tube - 7/8 UNO ring |
| WAL373173 | P-GEV22 L/1 1/16-12 UNF | 22mm Tube - 1.1/16 UNO ring |
| WAL373174 | P-GEV28 L/ 7/8-14 UNF | 28mm Tube - 7/8 UNO ring |
| WAL373175 | P-GEV28 L/1 5/16-12 UNF | 28mm Tube - 1.5/16 UNO ring |
| WAL373177 | P-GEV35 L/1 5/8-12 UNF | 35mm Tube - 1.5/8 UNO ring |
| WAL374346 | P-GEV42 L/1 5/8-12 UNF | 42mm Tube - 1.5/8 UNO ring |
| WAL373180 | P-GEV12 S/ 3/4-16 UNF | 12mm Tube - 3/4 UNO ring |
| WAL373182 | P-GEV16 S/ 3/4-16 UNF | 16mm Tube - 3/4 UNO ring |
| WAL373183 | P-GEV16 S/ 7/8-14 UNF | 16mm Tube - 7/8 UNO ring |
| WAL373184 | P-GEV20 S/ 3/4-16 UNF | 20mm Tube - 3/4 UNO ring |
| WAL373185 | P-GEV20 S/ 7/8-14 UNF | 20mm Tube - 7/8 UNO ring |
| WAL373186 | P-GEV20 S/1 1/16-12 UNF | 20mm Tube - 1.1/16 UNO ring |
| WAL373189 | P-GEV25 S/1 5/16-12 UNF | 25mm Tube - 1.5/16 UNO ring |
| WAL373191 | P-GEV30 S/1 5/8-12 UNF | 30mm Tube - 1.5/8 UNO ring |

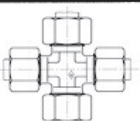
| 90deg Elbow Din Light / Heavy Metric x BSPT Male | |  |
|---|------------------|---|
| Part No | Reference No | Description |
| WAL038408 | S-WEV4 LLRK | 4mm Extra Light Tube - 1/8 BSPT |
| WAL038410 | S-WEV6 LLRK | 6mm Extra Light Tube - 1/8 BSPT |
| WAL038411 | S-WEV8 LLRK | 8mm Extra Light Tube - 1/8 BSPT |
| WAL373195 | P-WEV6 LRK | 6mm Tube - 1/8 BSPT |
| WAL373196 | P-WEV6 L/R 1/4K | 6mm Tube - 1/4 BSPT |
| WAL373197 | P-WEV8 LRK | 8mm Tube - 1/4 BSPT |
| WAL373198 | P-WEV10 LRK | 10mm Tube - 1/4 BSPT |
| WAL373199 | P-WEV10 L/R 3/8K | 10mm Tube - 3/8 BSPT |
| WAL373201 | P-WEV12 LRK | 12mm Tube - 3/8 BSPT |
| WAL373200 | P-WEV12 L/R 1/4K | 12mm Tube - 1/4 BSPT |
| WAL373202 | P-WEV15 LRK | 15mm Tube - 1/2 BSPT |
| WAL373203 | P-WEV18 LRK | 18mm Tube - 1/2 BSPT |
| WAL373204 | P-WEV6 SRK | 6mm Tube - 1/4 BSPT |
| WAL373205 | P-WEV8 SRK | 8mm Tube - 1/4 BSPT |
| WAL373206 | P-WEV10 SRK | 10mm Tube - 3/8 BSPT |
| WAL373207 | P-WEV12 SRK | 12mm Tube - 3/8 BSPT |
| WAL373208 | P-WEV14 SRK | 14mm Tube - 1/2 BSPT |
| WAL373209 | P-WEV16 SRK | 16mm Tube - 1/2 BSPT |



Powering Business Worldwide

Adaptors

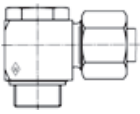
| 90deg Din Light / Heavy Metric Tube Union | |  |
|--|--------------|---|
| Part No | Reference No | Description |
| WAL038576 | S-WV4 LL | 4mm Extra Light Tube |
| WAL038578 | S-WV6 LL | 6mm Extra Light Tube |
| WAL038579 | S-WV8 LL | 8mm Extra Light Tube |
| WAL373385 | P-WV6 L | 6mm Tube Din Light |
| WAL373386 | P-WV8 L | 8mm Tube Din Light |
| WAL373387 | P-WV10 L | 10mm Tube Din Light |
| WAL373388 | P-WV12 L | 12mm Tube Din Light |
| WAL373389 | P-WV15 L | 15mm Tube Din Light |
| WAL373390 | P-WV18 L | 18mm Tube Din Light |
| WAL373391 | P-WV22 L | 22mm Tube Din Light |
| WAL373392 | P-WV28 L | 28mm Tube Din Light |
| WAL373393 | P-WV35 L | 35mm Tube Din Light |
| WAL373394 | P-WV42 L | 42mm Tube Din Light |
| WAL373395 | P-WV6 S | 6mm Tube Din Heavy |
| WAL373396 | P-WV8 S | 8mm Tube Din Heavy |
| WAL373397 | P-WV10 S | 10mm Tube Din Heavy |
| WAL373398 | P-WV12 S | 12mm Tube Din Heavy |
| WAL373399 | P-WV14 S | 14mm Tube Din Heavy |
| WAL373400 | P-WV16 S | 16mm Tube Din Heavy |
| WAL373401 | P-WV20 S | 20mm Tube Din Heavy |
| WAL373402 | P-WV25 S | 25mm Tube Din Heavy |
| WAL373403 | P-WV30 S | 30mm Tube Din Heavy |
| WAL373404 | P-WV38 S | 38mm Tube Din Heavy |

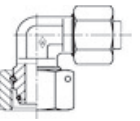
| Cross Din Light / Heavy Metric Tube Union | |  |
|--|--------------|---|
| Part No | Reference No | Description |
| WAL038624 | S-KV4 LL | 4mm Extra Light Tube |
| WAL038626 | S-KV6 LL | 6mm Extra Light Tube |
| WAL038627 | S-KV8 LL | 8mm Extra Light Tube |
| WAL373431 | P-KV6 L | 6mm Tube Din Light |
| WAL373432 | P-KV8 L | 8mm Tube Din Light |
| WAL373433 | P-KV10 L | 10mm Tube Din Light |
| WAL373434 | P-KV12 L | 12mm Tube Din Light |
| WAL373435 | P-KV15 L | 15mm Tube Din Light |
| WAL373436 | P-KV18 L | 18mm Tube Din Light |
| WAL373437 | P-KV22 L | 22mm Tube Din Light |
| WAL373438 | P-KV28 L | 28mm Tube Din Light |
| WAL373439 | P-KV35 L | 35mm Tube Din Light |
| WAL373440 | P-KV42 L | 42mm Tube Din Light |
| WAL373441 | P-KV6 S | 6mm Tube Din Heavy |
| WAL373442 | P-KV8 S | 8mm Tube Din Heavy |
| WAL373443 | P-KV10 S | 10mm Tube Din Heavy |
| WAL373444 | P-KV12 S | 12mm Tube Din Heavy |
| WAL373445 | P-KV14 S | 14mm Tube Din Heavy |
| WAL373446 | P-KV16 S | 16mm Tube Din Heavy |
| WAL373447 | P-KV20 S | 20mm Tube Din Heavy |
| WAL373448 | P-KV25 S | 25mm Tube Din Heavy |
| WAL373449 | P-KV30 S | 30mm Tube Din Heavy |
| WAL373450 | P-KV38 S | 38mm Tube Din Heavy |

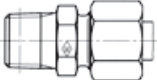


Powering Business Worldwide

Adaptors

| Banjo Din Light / Heavy Metric x BSPP Banjo Bolt | |  |
|---|---------------------|---|
| Part No | Reference No | Description |
| WAL607051 | P-RSWV6 LR-WD | 6mm Tube Din Light - 1/8 BSPP Bolt |
| WAL606501 | P-RSWV6 L/R 1/4-WD | 6mm Tube Din Light - 1/4 BSPP Bolt |
| WAL607052 | P-RSWV8 LR-WD | 8mm Tube Din Light - 1/4 BSPP Bolt |
| WAL607053 | P-RSWV10 LR-WD | 10mm Tube Din Light - 1/4 BSPP Bolt |
| WAL607054 | P-RSWV12 L/R 1/4-WD | 12mm Tube Din Light - 1/4 BSPP Bolt |
| WAL607055 | P-RSWV12 LR-WD | 12mm Tube Din Light - 3/8 BSPP Bolt |
| WAL607056 | P-RSWV15 LR-WD | 15mm Tube Din Light - 1/2 BSPP Bolt |
| WAL607057 | P-RSWV18 LR-WD | 18mm Tube Din Light - 1/2 BSPP Bolt |
| WAL607058 | P-RSWV22 LR-WD | 22mm Tube Din Light - 3/4 BSPP Bolt |
| WAL607059 | P-RSWV28 LR-WD | 28mm Tube Din Light - 1" BSPP Bolt |
| WAL607060 | P-RSWV35 LR-WD | 35mm Tube Din Light - 1.1/4 BSPP Bolt |
| WAL607061 | P-RSWV42 LR-WD | 42mm Tube Din Light - 1.1/2 BSPP Bolt |
| | | |
| WAL607062 | P-RSWV6 S | 6mm Tube Din Heavy - 1/4 BSPP Bolt |
| WAL607063 | P-RSWV8 S | 8mm Tube Din Heavy - 1/4 BSPP Bolt |
| WAL607064 | P-RSWV10 S | 10mm Tube Din Heavy - 3/8 BSPP Bolt |
| WAL607065 | P-RSWV12 S | 12mm Tube Din Heavy - 3/8 BSPP Bolt |
| WAL607066 | P-RSWV14 S | 14mm Tube Din Heavy - 1/2 BSPP Bolt |
| WAL607067 | P-RSWV16 S | 16mm Tube Din Heavy - 1/2 BSPP Bolt |
| WAL607068 | P-RSWV20 S | 20mm Tube Din Heavy - 3/4 BSPP Bolt |
| WAL607069 | P-RSWV25 S | 25mm Tube Din Heavy - 1" BSPP Bolt |
| WAL607070 | P-RSWV30 S | 30mm Tube Din Heavy - 1.1/4 BSPP Bolt |
| WAL607071 | P-RSWV38 S | 38mm Tube Din Heavy - 1.1/2 BSPP Bolt |

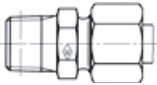
| 90deg Elbow Din Light / Heavy Metric Tube x Metric Female Swivel | |  |
|--|--------------|---|
| Part No | Reference No | Description |
| WAL374555 | P-EWVD6 L | 6mm Tube Light - 6mm Tube Light Female Swivel |
| WAL374556 | P-EWVD8 L | 8mm Tube Light - 8mm Tube Light Female Swivel |
| WAL374557 | P-EWVD10 L | 10mm Tube Light - 10mm Tube Light Female Swivel |
| WAL372992 | P-EWVD12 L | 12mm Tube Light - 12mm Tube Light Female Swivel |
| WAL374558 | P-EWVD15 L | 15mm Tube Light - 15mm Tube Light Female Swivel |
| WAL374559 | P-EWVD18 L | 18mm Tube Light - 18mm Tube Light Female Swivel |
| WAL374560 | P-EWVD22 L | 22mm Tube Light - 22mm Tube Light Female Swivel |
| WAL374561 | P-EWVD28 L | 28mm Tube Light - 28mm Tube Light Female Swivel |
| WAL374562 | P-EWVD35 L | 35mm Tube Light - 35mm Tube Light Female Swivel |
| WAL374563 | P-EWVD42 L | 42mm Tube Light - 42mm Tube Light Female Swivel |
| | | |
| WAL374564 | P-EWVD6 S | 6mm Tube Heavy - 6mm Tube Heavy Female Swivel |
| WAL374565 | P-EWVD8 S | 8mm Tube Heavy - 8mm Tube Heavy Female Swivel |
| WAL374566 | P-EWVD10 S | 10mm Tube Heavy - 10mm Tube Heavy Female Swivel |
| WAL374567 | P-EWVD12 S | 12mm Tube Heavy - 12mm Tube Heavy Female Swivel |
| WAL374568 | P-EWVD14 S | 14mm Tube Heavy - 14mm Tube Heavy Female Swivel |
| WAL374569 | P-EWVD16 S | 16mm Tube Heavy - 16mm Tube Heavy Female Swivel |
| WAL374570 | P-EWVD20 S | 20mm Tube Heavy - 20mm Tube Heavy Female Swivel |
| WAL374571 | P-EWVD25 S | 25mm Tube Heavy - 25mm Tube Heavy Female Swivel |
| WAL374572 | P-EWVD30 S | 30mm Tube Heavy - 30mm Tube Heavy Female Swivel |
| WAL374573 | P-EWVD38 S | 38mm Tube Heavy - 38mm Tube Heavy Female Swivel |

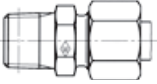
| Straight with Captive Seal Din Light / Heavy Metric x BSPP Male stud | |  |
|---|--------------------|---|
| Part No | Reference No | Description |
| WAL373115 | P-GEV6 LR-WD | 6mm Tube - 1/8 BSPP |
| WAL605925 | P-GEV6 L/R 1/4-WD | 6mm Tube - 1/4 BSPP |
| WAL373116 | P-GEV8 LR-WD | 8mm Tube - 1/4 BSPP |
| WAL605926 | P-GEV8 L/R 1/8-WD | 8mm Tube - 1/8 BSPP |
| WAL605927 | P-GEV8 L/R 3/8-WD | 8mm Tube - 3/8 BSPP |
| WAL373117 | P-GEV10 LR-WD | 10mm Tube - 1/4 BSPP |
| WAL602560 | P-GEV10 L/R 3/8-WD | 10mm Tube - 3/8 BSPP |
| WAL605928 | P-GEV10 L/R 1/2-WD | 10mm Tube - 3/8 BSPP |
| WAL373119 | P-GEV12 LR-WD | 12mm Tube - 3/8 BSPP |
| WAL373118 | P-GEV12 L/R 1/4-WD | 12mm Tube - 1/4 BSPP |
| WAL602513 | P-GEV12 L/R 1/2-WD | 12mm Tube - 1/2 BSPP |
| WAL373120 | P-GEV15 LR-WD | 15mm Tube - 1/2 BSPP |
| WAL605443 | P-GEV15 L/R 3/8-WD | 15mm Tube - 3/8 BSPP |
| WAL373121 | P-GEV18 LR-WD | 18mm Tube - 1/2 BSPP |
| WAL605215 | P-GEV18 L/R 3/4-WD | 18mm Tube - 3/4 BSPP |
| WAL373122 | P-GEV22 LR-WD | 22mm Tube - 3/4 BSPP |
| WAL373123 | P-GEV28 LR-WD | 28mm Tube - 1" BSPP |
| WAL373124 | P-GEV35 LR-WD | 35mm Tube - 1 1/4 BSPP |
| WAL373125 | P-GEV42 LR-WD | 42mm Tube - 1 1/2 BSPP |
| WAL373126 | P-GEV6 SR-WD | 6mm Tube - 1/4 BSPP |
| WAL373127 | P-GEV8 SR-WD | 8mm Tube - 1/4 BSPP |
| WAL604229 | P-GEV8 S/R 3/8-WD | 8mm Tube - 3/8 BSPP |
| WAL373128 | P-GEV10 SR-WD | 10mm Tube - 3/8 BSPP |
| WAL605114 | P-GEV10 S/R 1/4-WD | 10mm Tube - 1/4 BSPP |
| WAL605932 | P-GEV10 S/R 1/2-WD | 10mm Tube - 1/2 BSPP |
| WAL373129 | P-GEV12 SR-WD | 12mm Tube - 3/8 BSPP |
| WAL605933 | P-GEV12 S/R 1/4-WD | 12mm Tube - 1/4 BSPP |
| WAL604466 | P-GEV12 S/R 1/2-WD | 12mm Tube - 1/2 BSPP |
| WAL373130 | P-GEV14 SR-WD | 14mm Tube - 1/2 BSPP |
| WAL373131 | P-GEV16 SR-WD | 16mm Tube - 1/2 BSPP |
| WAL605222 | P-GEV16 S/R 3/8-WD | 16mm Tube - 3/8 BSPP |
| WAL604561 | P-GEV16 S/R 3/4-WD | 16mm Tube - 3/4 BSPP |
| WAL373132 | P-GEV20 SR-WD | 20mm Tube - 3/4 BSPP |
| WAL373133 | P-GEV25 SR-WD | 25mm Tube - 1" BSPP |
| WAL604562 | P-GEV25 S/R 3/4-WD | 25mm Tube - 3/4 BSPP |
| WAL373134 | P-GEV30 SR-WD | 30mm Tube - 1 1/4 BSPP |
| WAL373135 | P-GEV38 SR-WD | 38mm Tube - 1 1/2 BSPP |

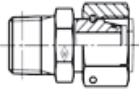


Powering Business Worldwide

Adaptors

| Straight Din Light / Heavy Metric x BSPT Male | |  |
|--|--------------------|---|
| Part No | Reference No | Description |
| WAL038218 | S-GEV-4LLRK | 4mm Extra Light Tube - 1/8 BSPT |
| WAL038220 | S-GEV-6LLRK | 6mm Extra Light Tube - 1/8 BSPT |
| WAL038221 | S-GEV-8LLRK | 8mm Extra Light Tube - 1/8 BSPT |
| WAL373003 | P-GEV-6 LR 1/4 K | 6mm Tube - 1/4 BSPT |
| WAL373004 | P-GEV-8 LRK | 8mm Tube - 1/4 BSPT |
| WAL373005 | P-GEV-8 L/R 3/8 K | 8mm Tube - 3/8 BSPT |
| WAL373006 | P-GEV-10 LRK | 10mm Tube - 1/4 BSPT |
| WAL373007 | P-GEV-10 L/R 3/8 K | 10mm Tube - 3/8 BSPT |
| WAL373008 | P-GEV-12 LRK | 12mm Tube - 3/8 BSPT |
| WAL373009 | P-GEV-12 LR 1/4 K | 12mm Tube - 1/4 BSPT |
| WAL373010 | P-GEV-12 LR 1/2 K | 12mm Tube - 1/2 BSPT |
| WAL373011 | P-GEV-15 LRK | 15mm Tube - 1/2 BSPT |

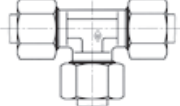
| Straight Din Light / Heavy Metric x NPT Male | |  |
|---|----------------------|---|
| Part No | Reference No | Description |
| WAL038241 | S-GEV-4 LL 1/8 NPT | 4mm Extra Light Tube - 1/8 NPT |
| WAL038243 | S-GEV-6 LL 1/8 NPT | 6mm Extra Light Tube - 1/8 NPT |
| WAL038244 | S-GEV-8 LL 1/8 NPT | 8mm Extra Light Tube - 1/8 NPT |
| WAL373026 | P-GEV-6 L/ 1/8 NPT | 6mm Tube - 1/8 NPT |
| WAL373027 | P-GEV-6 L/ 1/4 NPT | 6mm Tube - 1/4 NPT |
| WAL373028 | P-GEV-8 L/ 1/4 NPT | 8mm Tube - 1/4 NPT |
| WAL373029 | P-GEV-10 L/ 1/4 NPT | 10mm Tube - 1/4 NPT |
| WAL373030 | P-GEV-10 L/ 3/8 NPT | 10mm Tube - 3/8 NPT |
| WAL373031 | P-GEV-12 L/ 1/4 NPT | 12mm Tube - 1/4 NPT |
| WAL373032 | P-GEV12 L/ 3/8 NPT | 12mm Tube - 3/8 NPT |
| WAL373033 | P-GEV-12 L/ 1/2 NPT | 12mm Tube - 1/2 NPT |
| WAL373034 | P-GEV-15 L/ 1/2 NPT | 15mm Tube - 1/2 NPT |
| WAL373035 | P-GEV-18 L/ 1/2 NPT | 8mm Tube - 1/2 NPT |
| WAL373036 | P-GEV-22 L/ 3/4 NPT | 22mm Tube - 3/4 NPT |
| WAL373037 | P-GEV-28 L/1 NPT | 28mm Tube - 1" NPT |
| WAL373038 | P-GEV-35 L/1 1/4 NPT | 35mm Tube - 1.1/4 NPT |
| WAL373039 | P-GEV-42 L/1 1/2 NPT | 42mm Tube - 1.1/2 NPT |
| WAL373040 | P-GEV-6 S/ 1/4 NPT | 6mm Tube - 1/4 NPT |
| WAL373041 | P-GEV-8 S/ 1/4 NPT | 8mm Tube - 1/4 NPT |
| WAL373042 | P-GEV-10 S/ 1/4 NPT | 10mm Tube - 1/4 NPT |
| WAL373043 | P-GEV-10 S/ 3/8 NPT | 10mm Tube - 3/8 NPT |
| WAL373044 | P-GEV-12 S/ 1/4 NPT | 12mm Tube - 1/4 NPT |
| WAL373045 | P-GEV-12 S/ 3/8 NPT | 12mm Tube - 3/8 NPT |
| WAL373046 | P-GEV-12 S/ 1/2 NPT | 12mm Tube - 1/2 NPT |
| WAL373047 | P-GEV-14 S/ 1/2 NPT | 14mm Tube - 1/2 NPT |
| WAL373048 | P-GEV-16 S/ 1/2 NPT | 16mm Tube - 1/2 NPT |
| WAL373049 | P-GEV-20 S/ 3/4 NPT | 20mm Tube - 3/4 NPT |
| WAL373050 | P-GEV-25 S/1 NPT | 25mm Tube - 1" NPT |
| WAL373051 | P-GEV-30 S/1 1/4 NPT | 30mm Tube - 1.1/4 NPT |
| WAL373052 | P-GEV-38 S/1 1/2 NPT | 38mm Tube - 1.1/2 NPT |

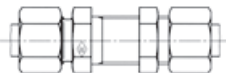
| Straight Din Light / Heavy Metric Tube Female Swivel -Male BSPP | |  |
|---|--------------------|---|
| Part No | Reference No | Description |
| WAL063661 | EGESD6 LR-WD | 6mm Tube Light Female Swivel - 1/8 BSPP Male |
| WAL063662 | EGESD8 LR-WD | 8mm Tube Light Female Swivel - 1/4 BSPP Male |
| WAL063663 | EGESD10 LR-WD | 10mm Tube Light Female Swivel - 1/4 BSPP Male |
| WAL063665 | EGESD12 LR-WD | 12mm Tube Light Female Swivel - 3/8 BSPP Male |
| WAL063664 | EGESD12 L/R 1/4-WD | 12mm Tube Light Female Swivel - 1/4 BSPP Male |
| WAL063666 | EGESD15 LR-WD | 15mm Tube Light Female Swivel - 1/2 BSPP Male |
| WAL063667 | EGESD18 LR-WD | 18mm Tube Light Female Swivel - 1/2 BSPP Male |
| WAL063668 | EGESD22 LR-WD | 22mm Tube Light Female Swivel - 3/4 BSPP Male |
| WAL063669 | EGESD28 LR-WD | 28mm Tube Light Female Swivel - 1" BSPP Male |
| WAL063670 | EGESD35 LR-WD | 35mm Tube Light Female Swivel - 1 1/4 BSPP Male |
| WAL063671 | EGESD42 LR-WD | 42mm Tube Light Female Swivel - 1 1/2 BSPP Male |
| WAL063672 | EGESD6 SR-WD | 6mm Tube Heavy Female Swivel - 1/4 BSPP Male |
| WAL063673 | EGESD8 SR-WD | 8mm Tube Heavy Female Swivel - 1/4 BSPP Male |
| WAL063674 | EGESD10 SR-WD | 10mm Tube Heavy Female Swivel - 3/8 BSPP Male |
| WAL063675 | EGESD12 SR-WD | 12mm Tube Heavy Female Swivel - 3/8 BSPP Male |
| WAL063676 | EGESD12 S/R 1/2-WD | 12mm Tube Heavy Female Swivel - 1/2 BSPP Male |
| WAL063677 | EGESD14 SR-WD | 14mm Tube Heavy Female Swivel - 1/2 BSPP Male |
| WAL063678 | EGESD16 SR-WD | 16mm Tube Heavy Female Swivel - 1/2 BSPP Male |
| WAL063679 | EGESD20 SR-WD | 20mm Tube Heavy Female Swivel - 3/4 BSPP Male |
| WAL063680 | EGESD25 SR-WD | 25mm Tube Heavy Female Swivel - 1" BSPP Male |
| WAL063681 | EGESD30 SR-WD | 30mm Tube Heavy Female Swivel - 1 1/4 BSPP Male |
| WAL063682 | EGESD38 SR-WD | 38mm Tube Heavy Female Swivel - 1 1/2 BSPP Male |

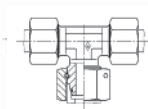


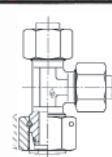
Powering Business Worldwide

Adaptors

| Equal Tee Din Light / Heavy Metric Tube Union | |  |
|--|--------------|---|
| Part No | Reference No | Description |
| WAL038600 | S-TV4 LL | 4mm Extra Light Tube |
| WAL038602 | S-TV6 LL | 6mm Extra Light Tube |
| WAL038603 | S-TV8 LL | 8mm Extra Light Tube |
| WAL373408 | P-TV6 L | 6mm Tube Din Light |
| WAL373409 | P-TV8 L | 8mm Tube Din Light |
| WAL373410 | P-TV10 L | 10mm Tube Din Light |
| WAL373411 | P-TV12 L | 12mm Tube Din Light |
| WAL373412 | P-TV15 L | 15mm Tube Din Light |
| WAL373413 | P-TV18 L | 18mm Tube Din Light |
| WAL373414 | P-TV22 L | 22mm Tube Din Light |
| WAL373415 | P-TV28 L | 28mm Tube Din Light |
| WAL373416 | P-TV35 L | 35mm Tube Din Light |
| WAL373417 | P-TV42 L | 42mm Tube Din Light |
| WAL373418 | P-TV6 S | 6mm Tube Din Heavy |
| WAL373419 | P-TV8 S | 8mm Tube Din Heavy |
| WAL373420 | P-TV10 S | 10mm Tube Din Heavy |
| WAL373421 | P-TV12 S | 12mm Tube Din Heavy |
| WAL373422 | P-TV14 S | 14mm Tube Din Heavy |
| WAL373423 | P-TV16 S | 16mm Tube Din Heavy |
| WAL373424 | P-TV20 S | 20mm Tube Din Heavy |
| WAL373425 | P-TV25 S | 25mm Tube Din Heavy |
| WAL373426 | P-TV30 S | 30mm Tube Din Heavy |
| WAL373427 | P-TV38 S | 38mm Tube Din Heavy |

| Straight Din Light / Heavy Metric Bulkhead Union | |  |
|---|--------------|---|
| Part No | Reference No | Description |
| WAL373451 | P-GSV6 L | 6mm Tube Din Light |
| WAL373452 | P-GSV8 L | 8mm Tube Din Light |
| WAL373453 | P-GSV10 L | 10mm Tube Din Light |
| WAL373454 | P-GSV12 L | 12mm Tube Din Light |
| WAL373455 | P-GSV15 L | 15mm Tube Din Light |
| WAL373456 | P-GSV18 L | 18mm Tube Din Light |
| WAL373457 | P-GSV22 L | 22mm Tube Din Light |
| WAL373458 | P-GSV28 L | 28mm Tube Din Light |
| WAL373459 | P-GSV35 L | 35mm Tube Din Light |
| WAL373460 | P-GSV42 L | 42mm Tube Din Light |
| WAL373461 | P-GSV6 S | 6mm Tube Din Heavy |
| WAL373462 | P-GSV8 S | 8mm Tube Din Heavy |
| WAL373463 | P-GSV10 S | 10mm Tube Din Heavy |
| WAL373464 | P-GSV12 S | 12mm Tube Din Heavy |
| WAL373465 | P-GSV14 S | 14mm Tube Din Heavy |
| WAL373466 | P-GSV16 S | 16mm Tube Din Heavy |
| WAL373467 | P-GSV20 S | 20mm Tube Din Heavy |
| WAL373468 | P-GSV25 S | 25mm Tube Din Heavy |
| WAL373469 | P-GSV30 S | 30mm Tube Din Heavy |
| WAL373470 | P-GSV38 S | 38mm Tube Din Heavy |

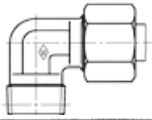
| Branch Tee | |  |
|--------------------------------------|--------------|---|
| M/Tube x M/ Tube x Metric Fem Swivel | | |
| Part No | Reference No | Description |
| WAL374574 | P-ETVD6 L | 6mm Tube Light - 6mm Tube Light Female Swivel |
| WAL374575 | P-ETVD8 L | 8mm Tube Light - 8mm Tube Light Female Swivel |
| WAL374576 | P-ETVD10 L | 10mm Tube Light - 10mm Tube Light Female Swivel |
| WAL374577 | P-ETVD12 L | 12mm Tube Light - 12mm Tube Light Female Swivel |
| WAL374578 | P-ETVD15 L | 15mm Tube Light - 15mm Tube Light Female Swivel |
| WAL374579 | P-ETVD18 L | 18mm Tube Light - 18mm Tube Light Female Swivel |
| WAL374580 | P-ETVD22 L | 22mm Tube Light - 22mm Tube Light Female Swivel |
| WAL374581 | P-ETVD28 L | 28mm Tube Light - 28mm Tube Light Female Swivel |
| WAL374582 | P-ETVD35 L | 35mm Tube Light - 35mm Tube Light Female Swivel |
| WAL374583 | P-ETVD42 L | 42mm Tube Light - 42mm Tube Light Female Swivel |
| WAL374584 | P-ETVD6 S | 6mm Tube Heavy - 6mm Tube Heavy Female Swivel |
| WAL374585 | P-ETVD8 S | 8mm Tube Heavy - 8mm Tube Heavy Female Swivel |
| WAL374586 | P-ETVD10 S | 10mm Tube Heavy - 10mm Tube Heavy Female Swivel |
| WAL374587 | P-ETVD12 S | 12mm Tube Heavy - 12mm Tube Heavy Female Swivel |
| WAL374588 | P-ETVD14 S | 14mm Tube Heavy - 14mm Tube Heavy Female Swivel |
| WAL374589 | P-ETVD16 S | 16mm Tube Heavy - 16mm Tube Heavy Female Swivel |
| WAL374590 | P-ETVD20 S | 20mm Tube Heavy - 20mm Tube Heavy Female Swivel |
| WAL374591 | P-ETVD25 S | 25mm Tube Heavy - 25mm Tube Heavy Female Swivel |
| WAL374592 | P-ETVD30 S | 30mm Tube Heavy - 30mm Tube Heavy Female Swivel |
| WAL374593 | P-ETVD38 S | 38mm Tube Heavy - 38mm Tube Heavy Female Swivel |

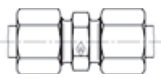
| Run Tee | |  |
|--------------------------------------|--------------|---|
| M/Tube x Metric Fem Swivel x M/ Tube | | |
| Part No | Reference No | Description |
| WAL374594 | P-ELVD6 L | 6mm Tube Light - 6mm Tube Light Female Swivel |
| WAL374595 | P-ELVD8 L | 8mm Tube Light - 8mm Tube Light Female Swivel |
| WAL374596 | P-ELVD10 L | 10mm Tube Light - 10mm Tube Light Female Swivel |
| WAL372991 | P-ELVD12 L | 12mm Tube Light - 12mm Tube Light Female Swivel |
| WAL374597 | P-ELVD15 L | 15mm Tube Light - 15mm Tube Light Female Swivel |
| WAL374598 | P-ELVD18 L | 18mm Tube Light - 18mm Tube Light Female Swivel |
| WAL374599 | P-ELVD22 L | 22mm Tube Light - 22mm Tube Light Female Swivel |
| WAL374600 | P-ELVD28 L | 28mm Tube Light - 28mm Tube Light Female Swivel |
| WAL374601 | P-ELVD35 L | 35mm Tube Light - 35mm Tube Light Female Swivel |
| WAL374602 | P-ELVD42 L | 42mm Tube Light - 42mm Tube Light Female Swivel |
| WAL374603 | P-ELVD6 S | 6mm Tube Heavy - 6mm Tube Heavy Female Swivel |
| WAL374604 | P-ELVD8 S | 8mm Tube Heavy - 8mm Tube Heavy Female Swivel |
| WAL374605 | P-ELVD10 S | 10mm Tube Heavy - 10mm Tube Heavy Female Swivel |
| WAL374606 | P-ELVD12 S | 12mm Tube Heavy - 12mm Tube Heavy Female Swivel |
| WAL374607 | P-ELVD14 S | 14mm Tube Heavy - 14mm Tube Heavy Female Swivel |
| WAL374608 | P-ELVD16 S | 16mm Tube Heavy - 16mm Tube Heavy Female Swivel |
| WAL374609 | P-ELVD20 S | 20mm Tube Heavy - 20mm Tube Heavy Female Swivel |
| WAL374610 | P-ELVD25 S | 25mm Tube Heavy - 25mm Tube Heavy Female Swivel |
| WAL374611 | P-ELVD30 S | 30mm Tube Heavy - 30mm Tube Heavy Female Swivel |
| WAL374612 | P-ELVD38 S | 38mm Tube Heavy - 38mm Tube Heavy Female Swivel |



Powering Business Worldwide

Adaptors

| 90deg Elbow Din Light / Heavy Metric x NPT Male | |  |
|--|-------------------|---|
| Part No | Reference No | Description |
| WAL038383 | S-WEV4 LL/ 1/8NPT | 4mm Extra Light Tube - 1/8 NPT |
| WAL038385 | S-WEV6 LL/ 1/8NPT | 6mm Extra Light Tube - 1/8 NPT |
| WAL038386 | S-WEV8 LL/ 1/8NPT | 8mm Extra Light Tube - 1/8 NPT |
| WAL373228 | P-WEV6 L/ 1/8NPT | 6mm Tube - 1/4 NPT |
| WAL373229 | P-WEV8 L/ 1/4NPT | 8mm Tube - 1/4 NPT |
| WAL373230 | P-WEV10 L/ 1/4NPT | 10mm Tube - 1/4 NPT |
| WAL373231 | P-WEV12 L/ 1/4NPT | 12mm Tube - 1/4 NPT |
| WAL373232 | P-WEV12 L/ 3/8NPT | 12mm Tube - 3/8 NPT |
| WAL373233 | P-WEV15 L/ 1/2NPT | 15mm Tube - 1/2 NPT |
| WAL373234 | P-WEV18 L/ 1/2NPT | 18mm Tube - 1/2 NPT |
| WAL373235 | P-WEV22 L/ 3/4NPT | 22mm Tube - 3/4 NPT |
| WAL373236 | P-WEV28 L/ 1NPT | 28mm Tube - 1" NPT |
| WAL373239 | P-WEV6 S/ 1/4NPT | 6mm Tube - 1/4 NPT |
| WAL373240 | P-WEV8 S/ 1/4NPT | 8mm Tube - 1/4 NPT |
| WAL373241 | P-WEV10 S/ 3/8NPT | 10mm Tube - 3/8 NPT |
| WAL373242 | P-WEV12 S/ 3/8NPT | 12mm Tube - 3/8 NPT |
| WAL373243 | P-WEV14 S/ 1/2NPT | 14mm Tube - 1/2 NPT |
| WAL373244 | P-WEV16 S/ 1/2NPT | 16mm Tube - 1/2 NPT |
| WAL373245 | P-WEV20 S/ 3/4NPT | 20mm Tube - 3/4 NPT |
| WAL373246 | P-WEV25 S/ 1NPT | 25mm Tube - 1" NPT |

| Straight Din Light / Heavy Metric Tube Union | |  |
|---|--------------|---|
| Part No | Reference No | Description |
| WAL038557 | S-GV4 LL | 4mm Extra Light Tube |
| WAL038559 | S-GV6 LL | 6mm Extra Light Tube |
| WAL038560 | S-GV8 LL | 8mm Extra Light Tube |
| WAL373362 | P-GV6 L | 6mm Tube Din Light |
| WAL373363 | P-GV8 L | 8mm Tube Din Light |
| WAL373364 | P-GV10 L | 10mm Tube Din Light |
| WAL373365 | P-GV12 L | 12mm Tube Din Light |
| WAL373366 | P-GV15 L | 15mm Tube Din Light |
| WAL373367 | P-GV18 L | 18mm Tube Din Light |
| WAL373368 | P-GV22 L | 22mm Tube Din Light |
| WAL373369 | P-GV28 L | 28mm Tube Din Light |
| WAL373370 | P-GV35 L | 35mm Tube Din Light |
| WAL373371 | P-GV42 L | 42mm Tube Din Light |
| WAL373372 | P-GV6 S | 6mm Tube Din Heavy |
| WAL373373 | P-GV8 S | 8mm Tube Din Heavy |
| WAL373374 | P-GV10 S | 10mm Tube Din Heavy |
| WAL373375 | P-GV12 S | 12mm Tube Din Heavy |
| WAL373376 | P-GV14 S | 14mm Tube Din Heavy |
| WAL373377 | P-GV16 S | 16mm Tube Din Heavy |
| WAL373378 | P-GV20 S | 20mm Tube Din Heavy |
| WAL373379 | P-GV25 S | 25mm Tube Din Heavy |
| WAL373380 | P-GV30 S | 30mm Tube Din Heavy |
| WAL373381 | P-GV38 S | 38mm Tube Din Heavy |

| O'RING UNO'RINGBORT | |
|---|-----------|
| ISO 3601 Nitrile Rubber -40°C to +121°C | |
| PORT SIZE | Part No. |
| 4 | Z2817-4 |
| 5 | Z2817-5 |
| 6 | Z2817-6 |
| 8 | Z2817-8 |
| 10 | Z2817-10 |
| 12 | Z2817-12 |
| 16 | Z2817-16 |
| 20 | Z2817-20 |
| 24 | Z2817-24 |
| 32 | Z2817-32 |
| SUPPORT CLAMP | |
| CLOSED DIM | Part No. |
| 0.250 | 800729-18 |
| 0.350 | 800729-19 |
| 0.500 | 800729-2 |
| 0.630 | 800729-21 |
| 0.690 | 800729-3 |
| 0.750 | 800729-4 |
| 0.940 | 800729-6 |
| 1.000 | 800729-23 |
| 1.130 | 800729-9 |
| 1.190 | 800729-27 |
| 1.250 | 800729-24 |
| 1.310 | 800729-25 |
| 1.500 | 800729-10 |
| 1.660 | 800729-11 |
| 1.750 | 800729-12 |
| 1.810 | 800729-28 |
| 2.000 | 800729-13 |
| 2.060 | 800729-29 |
| 2.250 | 800729-14 |
| 2.500 | 800729-30 |
| 2.630 | 800729-31 |
| 2.750 | 800729-15 |
| 2.880 | 800729-16 |
| 3.560 | 800729-17 |

| ARMOUR COILSPRING | |
|-------------------------------|-------------|
| IDF I | Part No. |
| 0.61 | 800564-1S |
| 0.67 | 800564-12S |
| 0.73 | 800564-2S |
| 0.81 | 800564-3S |
| 1.04 | 800564-4S |
| 1.18 | 800564-5S |
| 1.34 | 800564-6S |
| 1.66 | 800564-7S |
| 1.87 | 800564-8S |
| 2.35 | 800564-10S |
| 2.85 | 800564-15S |
| GUARDIAN PROTECTION SLEEVE | |
| IDF I | Part No. |
| 1.22" | FF80754-122 |
| 1.42" | FF80754-142 |
| 1.73" | FF80754-173 |
| 2.09" | FF80754-209 |
| 2.35" | FF80754-235 |
| 2.85" | FF80754-285 |
| 3.66" | FF80754-366 |
| 0.81" | FF80754-81 |
| 0.85" | FF80754-85 |
| PLASTIC COILSLEEVE | |
| ID" | Part No. |
| 0.25 | 800952-4 |
| 0.35 | 800952-5 |
| 0.50 | 800952-8 |
| 0.63 | 800952-10 |
| 0.75 | 800952-12 |
| 1.00 | 800952-15 |
| 2.16 | 800952-35 |
| 2.60 | 800952-42 |
| 3.11 | 800952-50 |

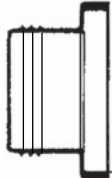
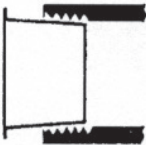
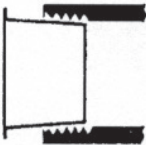


| NYLON ABRASION SLEEVE | |
|-----------------------------------|----------|
| NEMA APPROVED | |
| ID" | Part No. |
| 0.71 | FC425-12 |
| 1.00 | FC425-15 |
| 1.13 | FC425-18 |
| 1.25 | FC425-20 |
| 1.75 | FC425-28 |
| 2.07 | FC425-32 |
| 2.35 | FC425-38 |
| 2.54 | FC425-40 |
| 2.86 | FC425-45 |
| 3.34 | FC425-54 |
| 3.66 | FC425-59 |
| FIRESLEEVE | |
| AEROSOL 624-SIZE | |
| Meets SA E10724av1 NFPA 48-084 | |
| ID" | Part No. |
| 0.50 | 524-8 |
| 0.56 | 524-9 |
| 0.62 | 524-10 |
| 0.75 | 524-12 |
| 0.81 | 524-13 |
| 0.88 | 524-14 |
| 1.00 | 524-15 |
| 1.12 | 524-18 |
| 1.25 | 524-20 |
| 1.35 | 524-22 |
| 1.50 | 524-24 |
| 1.62 | 524-25 |
| 1.75 | 524-28 |
| 1.88 | 524-30 |
| 2.00 | 524-32 |
| 2.35 | 524-38 |
| 2.62 | 524-42 |
| 2.85 | 524-45 |
| 3.12 | 524-50 |
| 3.35 | 524-54 |
| 3.75 | 524-60 |



Powering Business Worldwide

Adaptors

PLASTIC THREAD PROTECTORS

| B.S.P. THREAD FEMALE PLUGS | | U.N.F. THREAD FEMALE PLUGS | |
|---|----------------------|---|-----------------------------|
|  Threaded Style | |  Non Threaded Style | |
|  Threaded Style | | | |
| Part No. | Suits Female Threads | Part No. | Suits Female Threads |
| SP28001 | 1/8" B.S.P. | SP33006 | 7/16" - 20 UNF |
| SP28002 | 1/4" B.S.P. | SP33008 | 1/2" - 20 UNF |
| SP28003 | 3/8" B.S.P. | SP33010 | 9/16" - 18 UNF |
| SP28004 | 1/2" B.S.P. | SP33011 | 5/8" - 18 UNF |
| SP28005 | 5/8" B.S.P. | SP33014 | 3/4" - 16 UNF |
| SP28006 | 3/4" B.S.P. | SP33018 | 7/8" - 14 UNF |
| SP28008 | 1" B.S.P. | SP33021 | 1 1/16" - 12:1 1/16" 14 UNF |
| SP28009 | 1 1/4" B.S.P. | SP33024 | 1 5/16" - 12:1 5/16" 14 UNF |
| SP280010 | 1 1/2" B.S.P. | * SP33015 | 1 5/8" - 12 UNF |
| SP280011 | 2" B.S.P. | * SP33017 | 1 7/8" - 12 UNF |
| | | * SP33019 | 2 1/2" - 12 UNF |
| B.S.P./N.P.T. THREAD MALE CAPS | | U.N.F. THREAD MALE CAPS | |
|  Non Threaded Style | |  Non Threaded Style | |
| Part No. | Suits Female Threads | Part No. | Suits Female Threads |
| SP33007 | 1/8" B.S.P./N.P.T. | SP33009 | 7/16" - 20 UNF |
| SP33011 | 1/4" B.S.P./N.P.T. | SP33010 | 1/2" - 20 UNF |
| SP33014 | 3/8" B.S.P./N.P.T. | SP33012 | 9/16" - 18 UNF |
| SP33019 | 1/2" B.S.P./N.P.T. | SP33014 | 5/8" - 18 UNF |
| SP33020 | 5/8" B.S.P./N.P.T. | SP33017 | 3/4" - 16 UNF |
| SP33022 | 3/4" B.S.P./N.P.T. | SP33020 | 7/8" - 14 UNF |
| SP33025 | 1" B.S.P./N.P.T. | * SP27013 | 1 1/16" - 12:1 1/16" 14 UNF |
| SP33029 | 1 1/4" B.S.P./N.P.T. | * SP27015 | 1 5/16" - 12:1 5/16" 14 UNF |
| SP33030 | 1 1/2" B.S.P./N.P.T. | * SP27017 | 1 5/8" - 12 UNF |
| SP33042 | 2" B.S.P./N.P.T. | * SP27018 | 1 7/8" - 12 UNF |
| | | * SP33019 | 2 1/2" - 12 UNF |

Flexmaster

FLEXMASTER JOINTS FOR RIGID PIPE



| PIPE SIZE | PIPE OD | A | B | C | STANDARD TYPE | SELF-RESTRAINT TYPE |
|-----------|---------|------|------|-------|-----------------|---------------------|
| .50 | .840 | 2.25 | 1.65 | 2.53 | NH1600C050B0225 | NH1650C050B0225 |
| .75 | 1.050 | 2.50 | 1.86 | 2.75 | NH1600C075B0250 | NH1650C075B0250 |
| 1.00 | 1.315 | 2.88 | 2.37 | 3.48 | NH1600C100B0288 | NH1650C100B0288 |
| 1.25 | 1.660 | 3.25 | 2.71 | 3.85 | NH1600C125B0325 | NH1650C125B0325 |
| 1.50 | 1.900 | 3.50 | 2.96 | 4.11 | NH1600C150B0350 | NH1650C150B0350 |
| 2.00 | 2.375 | 4.00 | 3.43 | 4.60 | NH1600C200B0400 | NH1650C200B0400 |
| 2.50 | 2.875 | 6.50 | 4.73 | 6.23 | NH1600C250B0650 | NH1650C250B0650 |
| 3.00 | 3.500 | 6.50 | 5.36 | 6.87 | NH1600C300B0650 | NH1650C300B0650 |
| 3.50 | 4.000 | 6.50 | 5.86 | 7.38 | NH1600C350B0650 | NH1650C350B0650 |
| 4.00 | 4.500 | 6.50 | 6.36 | 7.89 | NH1600C400B0650 | NH1650C400B0650 |
| 5.00 | 2.563 | 6.50 | 8.22 | 10.62 | NH1600C500B0650 | NH1650C500B0650 |
| 6.00 | 6.625 | 6.50 | 8.86 | 11.24 | NH1600C600B0650 | NH1650C600B0650 |

FLEXMASTER JOINTS FOR INCH SIZE TUBE



| TUBE SIZE | A | B | C | STANDARD TYPE | SELF-RESTRAINT TYPE |
|-----------|------|------|------|-----------------|---------------------|
| 1.00 | 2.50 | 1.86 | 2.75 | NH1625C100B0250 | NH1675C100B0250 |
| 1.25 | 2.88 | 2.37 | 3.48 | NH1625C125B0288 | NH1675C125B0288 |
| 1.38 | 3.00 | 2.55 | 3.68 | NH1625C138B0300 | NH1675C138B0300 |
| 1.50 | 3.00 | 2.55 | 3.68 | NH1625C150B0300 | NH1675C150B0300 |
| 1.75 | 3.50 | 2.96 | 4.11 | NH1625C175B0350 | NH1675C175B0350 |
| 2.00 | 3.50 | 3.06 | 4.20 | NH1625C200B0350 | NH1675C200B0350 |
| 2.25 | 4.00 | 3.43 | 4.80 | NH1625C225B0400 | |
| 2.38 | 4.00 | 3.43 | 4.60 | NH1600C200B0400 | NH1650C200B0400 |
| 2.5 | 4.00 | 3.55 | 4.72 | NH1625C250B0400 | NH1675C250B0400 |
| 2.75 | 4.00 | 4.73 | 6.23 | NH1625C275B0400 | |
| 2.88 | 6.50 | 4.73 | 6.23 | NH1600C250B0650 | NH1650C250B0650 |
| 3.00 | 5.00 | 4.86 | 6.34 | NH1625C300B0600 | NH1675C300B0600 |
| 3.25 | 6.50 | 5.11 | 6.60 | NH1625C325B0650 | |
| 3.50 | 6.50 | 5.36 | 6.87 | NH1600C300B0650 | NH1650C300B0650 |
| 4.50 | 6.50 | 6.36 | 7.89 | NH1600C400B0650 | NH1650C400B0650 |

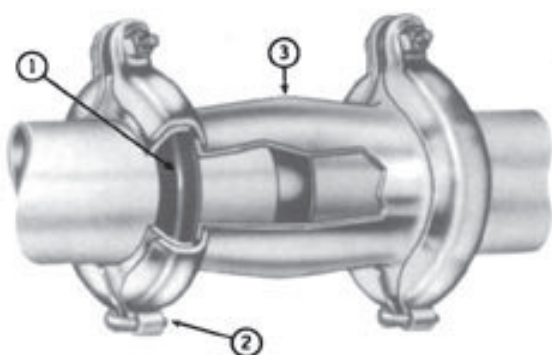
FLEXMASTER JOINTS



Powering Business Worldwide

Features

Fleximaster Joints in Standard and Self-restrained Configurations



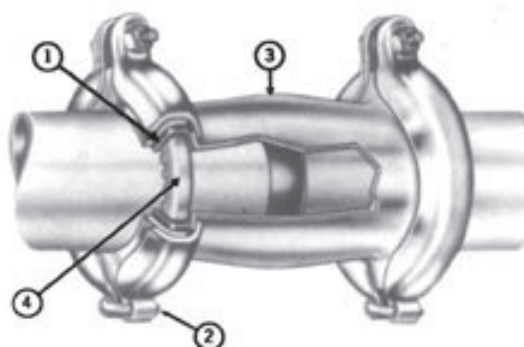
Standard Features

1. Gasket provides compression seal when tightened against tube or pipe.
2. Hinged coupling provides for quick, easy assembly.
3. Bulged sleeve allows for $\pm 4^\circ$ angular misalignment.

All gasket materials listed on page 4 are available in the standard style, increasing the number of suitable applications.

Flexmaster joints are available in both standard and self-restrained styles. The self-restrained style has a stainless steel gripping ring inside each gasket. This feature allows the joint to maintain a firm grip on the pipe or tube, preventing movement along the pipe or tube.

The bulged, straight-through Flexmaster joints accommodate angular misalignment up to $\pm 4^\circ$ per end. Tees, elbows, and crosses accommodate angular misalignment up to $\pm 2^\circ$ per end. See pages 10 thru 17 for the angular misalignment allowed on each specific part. Flexmaster joints are designed for up to 300 psi (2.07 MPa) service, depending on application and size. Refer to pressure ratings on page 4.



Self-Restrained Features

1. Gasket provides compression seal when tightened against tube or pipe.
2. Hinged coupling provides for quick, easy assembly.
3. Bulged sleeve allows for $\pm 4^\circ$ angular misalignment.

Plus

4. Notched channel ring which grips pipe firmly to restrict movement along pipe or tubing.

Gasket materials available include the C (Buna-N) and D (EPDM) compounds.

Flexmaster joints absorb vibration and are ideal for making quick connections and disconnections when repairing or disassembling a system. They can be furnished with several types of gasket compounds and sleeve materials, including stainless steel for marine and corrosive applications.

Flexmaster joints are currently in use in thousands of applications throughout the world. For typical Flexmaster joint applications see photos on page 2.



Features

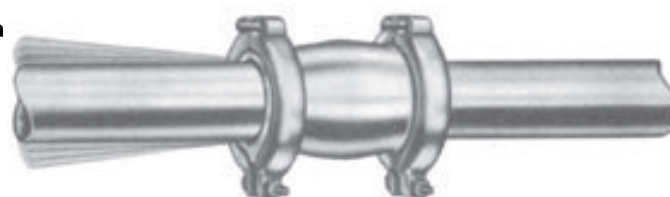
Save Time - Make Pipe And Tube Connection Easier

Used on Plain End Tube or Pipe



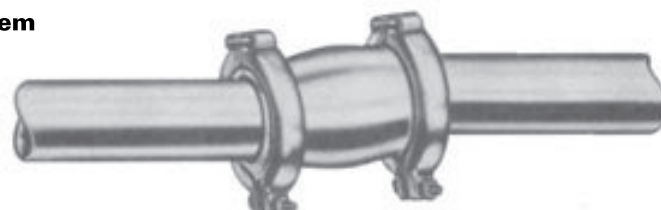
No threading, flanging, welding, grooving or other special end preparation of tube or pipe is required. Use pipe after it is cut to appropriate lengths. The Flexmaster joint will accommodate large tolerances in the length of the gap. See Table 1, page 9 for insertion depth tolerances.

Absorbs Vibration



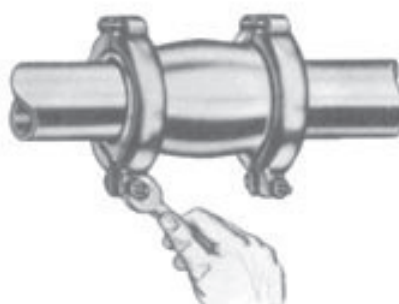
Pipe vibration and noise can be drastically reduced with Flexmaster joints. The resilient, thick rubber of the Flexmaster joint gasket absorbs vibration and noise. Use of the self-restrained style restricts movement along vibrating pipes and tubes.

Even Misaligned Piping is No Problem



The Flexmaster joint design eliminates flanged bolt holes and pipe threads that require careful alignment. The Flexmaster bulged joint permits up to a total of $\pm 4^\circ$ angular installation misalignment at each end while maintaining a leakproof seal.

Easy to Install



Installation time can be slashed by using Flexmaster joints. Basic assembly tools are all that's needed. After extensive use, the gaskets can be replaced easily and quickly. See page 8 for complete assembly instructions.



Powering Business Worldwide

Technical Data

GASKET TEMPERATURE RATINGS††

| | | |
|------------------------------------|--------------------------------------|--|
| C BUNA-N (Standard) | water | -25° F. to +180° F. (-32° C. to +82° C.) |
| | oils | -25° F. to +215° F. (-32° C. to +121° C.) |
| V Fluorocarbon | | -25° F. to +450° F. (-32° C. to +232° C.) |
| S Silicone | | -65° F. to +350° F. (-54° C. to +177° C.) |
| D EPDM | water and water/glycol mixture | +20° F. to +275° F. (+29° C. to +137° C.) |
| G Mineral Fiber Non-asbestos | | +70° F. to +1200° F. (+21° C. to +649° C.) |
| N BUNA-N (High temp.) | water and steam | -25° F. to +225° F. (-32° C. to +107° C.) |
| | oils | -25° F. to +250° F. (-32° C. to +121° C.) |

†† Maximum temperature ratings are meant as a guide only.
For extreme temperature conditions, consult factory.

PRESSURE RATINGS †

| Size Range Pipe | Tube | Standard Gasket | Self-Restrained Gasket |
|--------------------|------------------------------|------------------------------|------------------------------|
| 3/8 - 3/4 | 1/2 - 1 3/8 12.7 - 35.1 | 300 psi (2.07 MPa) | 300 psi (2.07 MPa) |
| 1-2 | 1 1/2 - 2 1/2 38.1 - 63.5 | 200 psi (1.38 MPa) | 200 psi (1.38 MPa) |
| 2 1/2 - 6 | 3 - 6 76.2 - 152.4 | 150 psi (1.03 MPa) | 150 psi (1.03 MPa) |

† Warning: The Flexmaster joint is designed to seal pipe and tube connections. The Flexmaster joint is not intended to hold piping systems together. Normal hangers, guides, anchors and other external piping restraints must be used to restrain the piping or tubing system from movement.

PIPE AND TUBE MATERIALS WHICH CAN BE CONNECTED BY FLEXMASTER JOINTS*

| Pipe or Tube Material | Standard Gasket | Self-Restrained Gasket** |
|--------------------------|--------------------|-----------------------------|
| Carbon Steel | X | X |
| Stainless Steel | X | X |
| Aluminum | X | Not Recommended |
| P.V.C. (Plastic) | X | Not Recommended |
| Copper | X | Not Recommended |

* All piping and tubing connected by Flexmaster joints must meet the nominal O.D. dimensions presented on pages 10 - 17.

** Piping and Tubing, which use self-restrained gaskets, must have a hardness between 45-85 on a Rockwell "B" scale (45 - 85 Rb).

VACUUM RATINGS †

| Size Range Pipe | Tube | Standard Gasket | Self-Restrained Gasket |
|--------------------|-----------|-------------------------------|-------------------------------|
| All sizes | All sizes | 25 in. Hg. 1.79 bar | 25 in. Hg. 1.79 bar |

NOTE:

° F, inches, in. Hg., psi in bold

° C., mm, bar, MPa in light

EATON GASKET IDENTIFIER CHART

| Gasket Designation | Gasket Compound | Gasket Color | Identifying Color Patch |
|-----------------------|--------------------|-----------------|----------------------------|
| C | Buna N (std) | Black | Yellow or White |
| N | Buna N (high temp) | Black | Rust Orange |
| D | EPDM | Black | Dark Blue |
| V | Fluorocarbon | Black | Light Green |
| S | Silicone | Rust Orange | None |
| B*** | Butyl | Off White | None |
| G*** | Mineral Fiber | Metallic Silver | None |

*** Obsolete



Technical Data

Gasket Material: C – BUNA-N (standard)
 D – EPDM
 N – BUNA-N
 (high temperature)
 V – Fluorocarbon
 S – Silicone

| FLUID | GASKET MATERIAL | | | |
|---|-----------------|-----|---|---|
| | D | C/N | V | S |
| Acetic Acid (concentrated) RT | F | F | G | F |
| Acetic Acid (dilute) RT (to 10%) | F | F | G | G |
| Acetic Acid Vapors | F | F | F | F |
| Acedit Anhydride | - | F | - | F |
| Acetone | G | - | - | F |
| Acetylene | G | G | G | F |
| Air | G | G | G | G |
| Air (Hot) 215° | G | F | G | G |
| Alcohols, Aliphatic | G | F | G | G |
| Alcohols, Aromatic | F | - | F | F |
| Alkaline Solutions (Hydroxides) | F | G | F | G |
| Aluminum Salt solutions | G | G | G | G |
| Ammonia Gas (Cold) | G | G | - | - |
| Ammonia, Liquid (Anhydrous) | G | G | - | F |
| Ammonia Aqueous | G | F | - | G |
| Ammonium Salt Solutions | G | G | F | F |
| Aniline Dyes | F | - | G | F |
| Aniline Oils | F | - | F | F |
| Asphalt | - | - | G | - |
| Benzine (Gasoline) | - | G | G | - |
| Bromine | - | - | G | - |
| Butylene | - | F | G | - |
| Calcium Hypochlorite (no free Chlorine) | G | - | G | F |
| Calcium Salt solutions | G | G | G | F |
| Carbolic Acid (Phenol) RT or Hot | F | - | G | - |
| Carbon Dioxide (Dry) | G | G | F | F |
| Carbonic Acid | G | F | G | G |
| Carbon Disulphide RT | - | - | G | - |
| Carbon Tetrachloride RT | - | - | G | - |
| Chlorinated Solvents | - | - | G | G |
| Chlorine (Dry) | - | - | G | - |
| Chlorine (wet or solutions) | F | - | G | - |
| Cottonseed Oil | G | G | G | G |
| Creosote (wood or coal tar) | - | G | G | - |
| Chromic Acid 50% | - | F | G | - |
| Citric Acid | G | G | G | G |
| Copper Salt Solutions | G | F | G | G |
| Diesel Fuel | - | G | G | - |
| Ethers RT | F | F | G | - |
| Ethylene Glycol | G | G | G | G |
| Ethylene Dichloride | - | - | G | G |
| Ferric Salt Solutions | G | G | G | G |
| Ferrous Salt Solutions | G | G | G | G |
| Formaldehyde RT | F | - | - | G |
| Fuel Oil | - | G | F | - |
| Furfural | G | - | - | - |
| Freon 12 (Refrigerant) | G | G | G | - |
| Freon 13 (Refrigerant) | F | G | G | - |
| Gasoline (Sour or refined) | - | G | G | - |
| Glycerin (Glycerol) | G | G | G | G |
| Heptane | - | G | G | - |
| Hexane | - | G | G | - |

Gasket Selector Chart

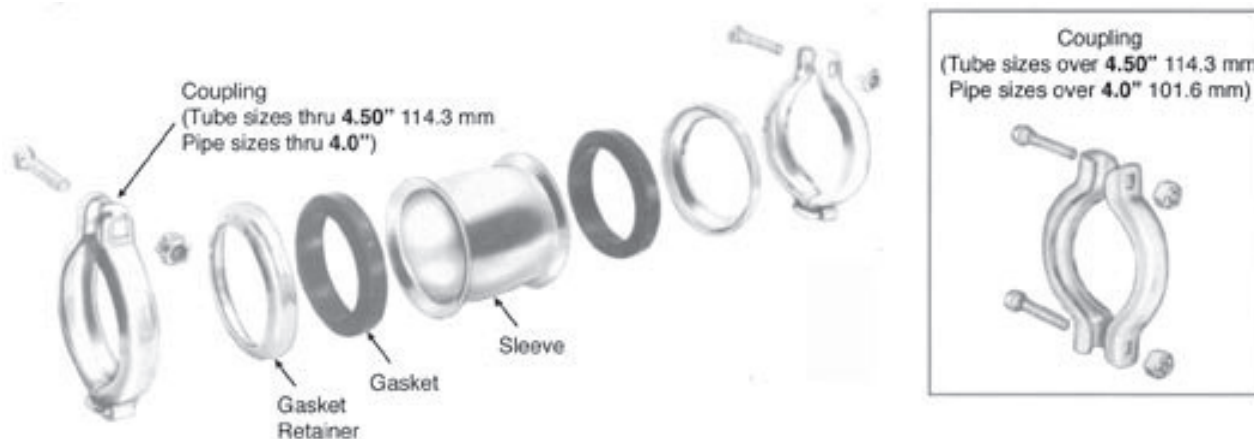
Key: G – GOOD
 F – FAIR
 - Not Recommended

An important consideration in the selection of a gasket material is to avoid undesirable chemical reaction between the agent carried and the gasket material. The gasket selector chart indicates the compound most serviceable in specific agents.

| FLUID | GASKET MATERIAL | | | |
|--|-----------------|-----|---|---|
| | D | C/N | V | S |
| Hydraulic Oils | - | G | G | - |
| Straight Petroleum Base | - | G | G | - |
| Water Petroleum Emulsion | - | G | G | F |
| Water Glycol | G | G | G | F |
| Straight Phosphate Ester | G | - | F | F |
| Phosphate Ester/Petroleum Blend | - | - | F | - |
| Ester Blend | G | G | F | F |
| Silicone Oils | G | G | G | - |
| Hydrochloric Acid RT | G | F | G | - |
| Hydrofluoric Acid (48% sol) RT | - | - | G | - |
| Hydrolube | G | G | G | F |
| Hydrogen Peroxide (dilute) | F | F | G | G |
| Hydrogen Peroxide (concentrated) | - | - | F | F |
| Hydrogen Sulfide (dry) RT | F | F | - | - |
| Hydrogen Sulfide (wet) RT | F | - | G | - |
| Hypochlorite Solutions (no free Chlorine) | G | F | G | F |
| Kerosene RT | - | G | G | - |
| Linseed Oil | - | G | G | - |
| Lube Oil (Mineral) | - | G | G | - |
| Lubricating Oils (Diester Base) | - | F | G | - |
| Magnesium Salt Solutions | G | G | G | G |
| Mercuric Chloride | G | G | G | - |
| Mercury | G | G | G | F |
| Mineral Oil | - | G | G | G |
| Naphtha | - | F | G | - |
| Napthalene | - | - | G | - |
| Nitric Acid (less than 20%) | F | - | G | - |
| Oleic Acid | - | G | F | - |
| Oxalic Acid | G | F | G | F |
| Oxygen, Gaseous | G | F | G | G |
| Paraffin | - | G | G | F |
| Petroleum Oils (Sour or Refined) | - | G | G | - |
| Phosphoric Acid (Commercial) | G | - | G | - |
| Potassium Salt Solutions | G | G | G | G |
| Pydraul C Series, F | F | - | G | F |
| Pydraul F Series | G | - | - | - |
| Sodium Salt solutions | G | G | G | F |
| Steam | F | - | - | - |
| Sulfur | G | - | - | - |
| Sulfur Dioxide (wet or dry) | G | - | - | F |
| Sulfuric Acid (10-75%) | F | - | G | - |
| Sulfuric Acid (75-95%) | - | - | G | - |
| Sulfuric Acid (95%) RT | - | - | G | - |
| Sulfurous Acid | - | F | G | - |
| Tannic Acid | F | G | F | F |
| Trichlorethylene | - | - | G | - |
| Turpentine | - | F | G | - |
| Vegetable Oils | G | G | G | G |
| Water (fresh or salt) cold | G | G | G | G |
| Water (fresh or salt) hot +215° F. max. | G | !! | G | - |
| Xylene | - | - | G | - |
| Zinc Salt Solutions | G | G | G | G |

!! C maximum +180° F, N maximum +225° F.

Technical Data



Standard (Un-Restrained) Style



Self-Restrained Style

NH16XX () 000 () 000

Basic Part Number (from pages 10 - 17)

Example: NH1600

Gasket Material:

- C = BUNA-N (standard)
 - D = EPDM
 - *N = BUNA-N (high temperature)
 - *S = Silicone
 - *V = Fluorocarbon
 - *G = Mineral Fiber
- (Exhaust Applications not subject to flexing)

* Available in Standard (Un-Restrained) Model Only.

Joint Length (in thousands of inch).

Example: 2.5" = 0250

Style is available in lengths shown. Other lengths are available in multiples of 1-inch on special requests. Contact Eaton for availability.

Sleeve Material:

- B = Plated Steel (Standard)
- S = Stainless Steel (Sleeve only-consult Eaton for availability)

Size of Pipe or Tube to be connected (in hundredths of inch) Example: .75" = 075

Example Part Number: NH1600C075B0250

Complete assemblies may be ordered by the procedure shown above. Standard components may be ordered as shown on page 7.



Technical Data

Gasket Material: C – BUNA-N (standard)
 D – EPDM
 N – BUNA-N
 (high temperature)
 V – Fluorocarbon
 S – Silicone
 (Other materials available. Consult Eaton.)

| COUPLING | | | STRAIGHT SLEEVES | GASKET RETAINER | GASKETS | | | | | | | Material Available from Stock | Self Restrained Gasket | Material Available from Stock | |
|---------------------------|--------------------|------------------------------|------------------|-----------------|---------------|-----------------|---|----|---|----|---|-------------------------------|------------------------|-------------------------------|---|
| Tube size (inches) | Tube O.D. (inches) | Includes Nut & Bolt Standard | Standard | Standard | Standard | Standard Gasket | C | D* | G | N* | S | V | C | D* | |
| 1.00 | 1.00 | NH100085-075YF | NK1237-075B0250 | NK1000023-075 | NK1000064X100 | X | X | X | - | X | X | | NK1000062X100 | X | - |
| 1.25 | 1.25 | NH100085-100YF | NK1237-100B0288 | NK1000023-100 | NK1000064X125 | X | X | - | X | X | X | | NK1000062X125 | X | X |
| 1.38 | 1.38 | NH100086-150YF | NK1237-138B0300 | NK1000056-138 | NK1000064X138 | X | - | - | - | X | | | NK1000062X138 | X | - |
| 1.50 | 1.50 | NH100086-150YF | NK1238-150B0300 | NK1000056-150 | NK1000064X150 | X | X | - | - | X | X | | NK1000062X150 | X | X |
| 1.75 | 1.75 | NH100085-150YF | NK1238-175B0350 | NK1000056-175 | NK1000064X175 | X | X | - | - | - | - | | NK1000062X175 | X | - |
| 2.00 | 2.00 | NH100086-200YF | NK1238-200B0350 | NK1000056-200 | NK1000064X200 | X | X | X | - | X | X | | NK1000062X200 | X | - |
| 2.25 | 2.25 | NH100085-200YF | NK1238-225B0400 | NK1000056-225 | NK1000064X225 | X | X | - | - | - | - | | | | |
| 2.50 | 2.50 | NH100086-250YF | NK1238-250B0400 | NK1000056-250 | NK1000064X250 | X | X | - | - | X | X | | NK1000062X250 | X | X |
| 2.88 | 2.88 | NH100085-250YF | NK1237-250B0650 | NK1000023-250 | NK1000063X250 | X | X | X | | X | X | | NK1000061X250 | X | - |
| 3.00 | 3.00 | NH100086-300YF | NK1238-300B0500 | NK1000056-300 | NK1000064X300 | X | X | - | X | X | X | | NK1000062X300 | X | - |
| 3.25 | 3.25 | NH100086-325YF | NK1238-325B0650 | NK1000056-325 | NK1000064X325 | X | - | - | - | - | - | | NK1000062X325 | X | - |
| 3.50 | 3.50 | NH100085-300YF | NK1237-300B0650 | NK1000023-300 | NK1000063X300 | X | X | X | X | X | X | | NK1000061X300 | X | X |
| 4.00 | 4.00 | NH100085-350YF | NK1237-350B0650 | NK1000023-350 | NK1000063X350 | X | X | X | X | X | X | | NK1000061X350 | X | X |
| 4.50 | 4.50 | NH100085-400YF | NK1237-400B0650 | NK1000023-400 | NK1000063X400 | X | X | - | X | X | X | | NK1000061X400 | X | X |
| 5.00 | 5.00 | NH100086-500YF | NK1238-500B0650 | NK1000056-500 | NK1000064X500 | X | X | - | - | - | - | | NK1000062X500 | X | X |
| Pipe Size (inches) | | Pipe O.D. (inches) | | | | | | | | | | | | | |
| .38 | .675 | NH100085-038YF | NK1237-038B0200 | NK1000023-038 | NK1000063X038 | X | - | - | - | - | X | | | | |
| .50 | .840 | NH100085-050YF | NK1237-050B0225 | NK1000023-050 | NK1000063X050 | X | X | - | X | X | X | | NK1000061X050 | X | - |
| .75 | 1.050 | NH100085-075YF | NK1237-075B0250 | NK1000023-075 | NK1000063X075 | X | - | X | X | X | X | | NK1000061X075 | X | - |
| 1.00 | 1.315 | NH100085-100YF | NK1237-100B0288 | NK1000023-100 | NK1000063X100 | X | X | - | X | X | X | | NK1000061X100 | X | X |
| 1.25 | 1.660 | NH100085-125YF | NK1237-125B0325 | NK1000023-125 | NK1000063X125 | X | X | - | X | X | X | | NK1000061X125 | X | X |
| 1.50 | 1.900 | NH100085-150YF | NK1237-150B0350 | NK1000023-150 | NK1000063X150 | X | X | - | X | X | X | | NK1000061X150 | X | X |
| 2.00 | 2.375 | NH100085-200YF | NK1237-200B0400 | NK1000023-200 | NK1000063X200 | X | X | - | X | X | X | | NK1000061X200 | X | X |
| 2.50 | 2.875 | NH100085-250YF | NK1237-250B0650 | NK1000023-250 | NK1000063X250 | X | X | X | X | X | X | | NK1000061X250 | X | X |
| 3.00 | 3.500 | NH100085-300YF | NK1237-300B0650 | NK1000023-300 | NK1000063X300 | X | X | X | X | X | X | | NK1000061X300 | X | X |
| 3.50 | 4.000 | NH100085-350YF | NK1237-B3500650 | NK1000023-350 | NK1000063X350 | X | X | X | X | X | X | | NK1000061X350 | X | X |
| 4.00 | 4.500 | NH100085-400YF | NK1237-400B0650 | NK1000023-400 | NK1000063X400 | X | X | - | X | X | X | | NK1000061X400 | X | X |
| 5.00 | 5.563 | NH100085-500YF | NK1237-500B0650 | NK1000023-500 | NK1000063X500 | X | X | - | X | - | X | | NK1000061X500 | X | - |
| 6.00 | 6.625 | NH100085-600YF | NK1237-600B0650 | NK1000023-600 | NK1000063X600 | X | X | - | X | - | X | | NK1000061X600 | X | X |

*These gasket materials can be ordered in sizes other than those listed. Contact Eaton for availability.

BOLT PART NUMBERS

| JOINT SIZE (inches) | | BOLT PART NUMBER | NUT PART NUMBER |
|---------------------|------------|------------------|-----------------|
| Tube | Pipe | Carbon Steel | Carbon Steel |
| .50 to 1.12 | .38 to .75 | 56519A4-7 | 56535A4C-C |
| 1.25 to 2.50 | 1 to 2 | 56519A5-8 | 56535A5C-C |
| 2.75 to 5 | 2.50 to 4 | 56519A6-12 | 56535A6C-C |
| 6 | 5 to 6 | 56519A8-16 | 56535A8C-C |

Stainless steel bolting is recommended for replacement where mineral fiber gaskets are used or when high temperatures exist.

Contact Eaton for replacement bolts and nuts on High Temperature Flexmaster joint for +1200° F. (+649° C.)

FLEXMASTER JOINTS



Powering Business Worldwide

Technical Data

Assembly Instructions

Pipe and Tubing Preparation and Flexmaster Joint Installation Instructions

1. Pipe (Tube) End Preparation

- Deburr and clean pipe (tube) ends.
- Surface should be free of deep scratches, gouges, dents, dirt, etc.

2. Joint Installation

- Install retainer (1), gasket* (2) and sleeve (3) on one side of pipe in sequence shown in Figure 1.

- Install remaining retainer (4) and gasket (5) on other pipe end.
- Position retainer (4) and gasket (5) to proper pipe insertion depth ("D") as shown in Table 1.
- Slide sleeve (3) to gasket (5) and move gasket (2) and retainer (1) into position as shown in Figure 2. Pipe must be inserted to proper depth ("D") into both gaskets as shown in Table 1.

*3. Special Notes

- Assembly of gaskets can be made easier by dipping gaskets in water or the fluid to be sealed. The use of other rubber lubricants can be detrimental to the life of the gaskets. Never lubricate the metal parts.
- Self-restrained gasket installation. To simplify installation of a self-restrained gasket, install lower gasket halfway onto the pipe first, leaving the split area in the steel retaining ring free at the top. See Figure 3. Then, stretch the gasket and split area of the retaining ring until they slip over the tube or pipe and into position. Refer to Figure 3.

4. Coupler Installation

Install both V-couplings, encompassing the retainer, gasket and sleeve as shown in Figure 4. Do not tighten either coupling until the entire joint is assembled (See Figure 2). Tighten nuts to the torque specified in Table 2. Do NOT lubricate the nut or bolt before assembly. The gap method outline in Table 3 may be used for standard gaskets only.

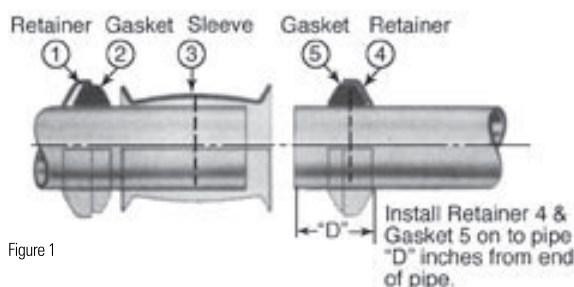


Figure 1

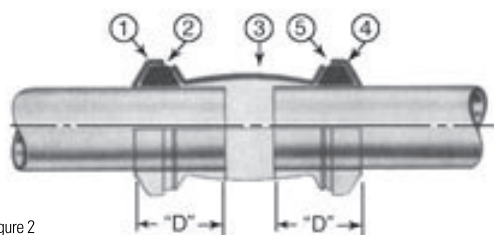
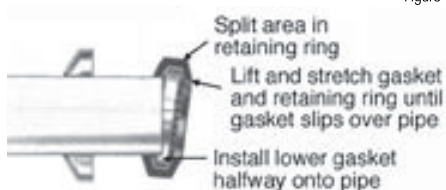


Figure 2



in notched retention ring (sket is shown cut-away for clarity)

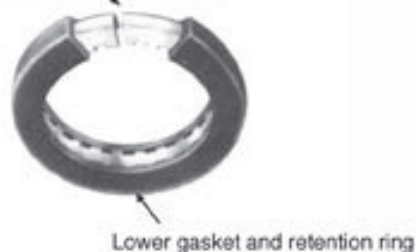


Figure 3

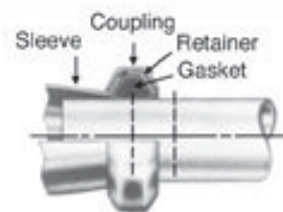


Figure 4



WARNING Maximum temperature ratings are meant as a guide only. For extreme temperature conditions, consult factory. Improper installation, use or selection of the Flexmaster joints can result in personal injury, property damage or death.



Powering Business Worldwide

Technical Data

TABLE 1. REQUIRED INSERTION DEPTH* OF PIPE AND TUBE

| Pipe Size | "D" | | Tube Size | "D" | |
|--------------|-------------|-------------|--------------|-------------|-------------|
| | min. | max. | | min. | max. |
| .38 | .71 | 1.00 | .75 | .74 | 1.10 |
| | 18 | 25.4 | | 19.1 | 18.8 |
| .50 | .71 | 1.09 | .88 | .65 | 1.00 |
| | 18 | 27.7 | | 22.3 | 16.5 |
| .75 | 1.00 | 1.21 | 1.00 | .72 | 1.21 |
| | 25.4 | 30.7 | | 25.4 | 18.3 |
| 1.00 | 1.14 | 1.39 | 1.12 | .93 | 1.21 |
| | 29 | 35.3 | | 28.4 | 23.6 |
| 1.25 | 1.15 | 1.56 | 1.25 | 1.16 | 1.40 |
| | 29.2 | 39.6 | | 31.8 | 29.5 |
| 1.50 | 1.16 | 1.62 | 1.38 | 1.20 | 1.46 |
| | 29.5 | 41.1 | | 35.1 | 30.5 |
| 2.00 | 1.18 | 1.84 | 1.50 | 1.18 | 1.45 |
| | 30 | 46.7 | | 38.1 | 30 |
| 2.50 | 1.68 | 2.38 | 1.75 | 1.22 | 1.69 |
| | 42.7 | 60.5 | | 44.5 | 31 |
| 3.0 | 1.70 | 2.40 | 2.00 | 1.15 | 1.68 |
| | 43.2 | 61 | | 50.8 | 29.2 |
| 3.50 | 1.72 | 2.42 | 2.25 | 1.24 | 1.84 |
| | 33.7 | 61.5 | | 57.2 | 31.5 |
| 4.00 | 1.74 | 2.44 | 2.38 | 1.18 | 1.84 |
| | 44.2 | 62 | | 60.3 | 30 |
| 5.00 | 2.08 | 2.24 | 2.50 | 1.17 | 1.83 |
| | 52.8 | 56.9 | | 63.5 | 29.7 |
| 6.00 | 1.86 | 2.33 | 2.75 | 1.74 | 1.90 |
| | 47.2 | 59.2 | | 69.9 | 44.2 |
| | | | 2.88 | 1.68 | 2.38 |
| | | | 73.0 | 42.7 | 60.5 |
| | | | 3.00 | 1.67 | 2.30 |
| | | | 76.2 | 42.4 | 58.4 |
| | | | 3.25 | 1.67 | 2.48 |
| | | | 82.6 | 42.4 | 63 |
| | | | 3.50 | 1.70 | 2.40 |
| | | | 88.9 | 43.2 | 61 |
| | | | 4.00 | 1.72 | 2.42 |
| | | | 101.6 | 33.7 | 61.5 |
| | | | 4.50 | 1.74 | 2.44 |
| | | | 114.3 | 44.2 | 62 |
| | | | 5.00 | 1.75 | 2.07 |
| | | | 127 | 44.5 | 52.6 |

*Dimensions shown are for standard, straight, bulged sleeves only. Elbow, tees and specials must meet the minimum insertion depths.

NOTE: **inches and inch-lbs in bold**, mm and N•m in light.

TABLE 2. FLEXMASTER JOINT ASSEMBLY TIGHTENING GUIDE. TORQUE METHOD OF INSTALLATION**

| Size | Standard | Self-Restrained |
|---|---|---|
| .75" to 1.12" Tube (19.1 to 28.4 mm) | 40-60 inch-lbs. (4.55-6.88 N•m) | 40-60 inch-lbs. (4.55-6.88 N•m) |
| .38" to .75" Pipe | | |
| 1.25" to 2.75" Tube (31.8 to 69.9 mm) | 90-100 inch-lbs. (10.14-12.39 N•m) | 140-160 inch-lbs. (15.78-18.13 N•m) |
| 1" to 2" Pipe | | |
| 2.88" to 3.50" Tube (73 to 88.9 mm) | 180-200 inch-lbs. (20.27-22.52 N•m) | 220-240 inch-lbs. (24.79-27.14 N•m) |
| 2.50" to 3" Pipe | | |
| 4" to 5" Tube (101.6 to 127 mm) | 240-260 inch-lbs. (27.14-29.28 N•m) | 280-300 inch-lbs. (31.53-33.8 N•m) |
| 3.50" to 4" Pipe | | |
| 6" Tube (152.4 mm) | 300-360 inch-lbs. (33.8-36.15 N•m) | 480-500 inch-lbs. (54.05-56.42 N•m) |
| 5" to 6" Pipe | | |

**Note: the torque values specified are for an un-lubricated (dry) nut and bolt.


TABLE 3. OPTIONAL CLEARANCE METHOD FOR INSTALLATION OF STANDARD GASKETS.

| (Self-restrained gaskets must be installed by Torque Method.) | | |
|---|----------------------------|----------------------|
| Tube Size | Pipe Size | Dimension X ± .06 |
| | | 1.5 |
| .50, .63, .75 12.7, 16.0, 19.1 | $\frac{3}{8}, \frac{1}{2}$ | .62 15.8 |
| 1.00, 1.13 25.4, 28.7 | $\frac{3}{4}$ | .69 17.5 |
| 1.25, 1.38 31.8, 35.1 | 1 | .94 23.9 |
| 1.50, 1.75 38.1, 44.5 | $1 \frac{1}{4}$ | .94 23.9 |
| | $1 \frac{1}{2}$ | .94 23.9 |
| 2.25 57.2 | 2 | .88 22.4 |
| 2.50, 2.75 63.5, 69.9 | $2 \frac{1}{2}$ | 1.50 38.1 |
| 3.00, 3.25 76.2, 82.6 | 3 | 1.56 39.6 |
| | $3 \frac{1}{2}$ | 1.56 39.6 |
| | 4 | 1.56 39.6 |
| 5.00, 6.00 127, 152.4 | 5, 6 | Use Torque Method |



Powering Business Worldwide

Quick Release Couplings

ISO 'A' couplings - Female half



| Part No. | | |
|-----------|----------------------------|--|
| HA1501100 | 1/4" CPLG FHALF ISO A BSPP | |
| HA1502100 | 3/8"CPLG FHALF ISO A BSPP | |
| HA1503100 | 1/2"CPLG FHALF ISO A BSPP | |
| HA1504100 | 3/4"CPLG FHALF ISO A BSPP | |
| HA1505100 | 1" CPLG FHALF ISO A BSPP | |
| HA1521100 | 1/4"CPLG FHALF ISO A NPT | |
| HA1522100 | 3/8"CPLG FHALF ISO A NPT | |
| HA1523100 | 1/2"CPLG FHALF ISO A NPT | |
| HA1524100 | 3/4"CPLG FHALF ISO A NPT | |
| HA1525100 | 1" CPLG FHALF ISO A NPT | |

ISO 'A' couplings - Male half



| Part No. | | |
|-----------|---------------------------|--|
| HA1501200 | 1/4"CPLG MHALF ISO A BSPP | |
| HA1502200 | 3/8"CPLG MHALF ISO A BSPP | |
| HA1503200 | 1/2"CPLG MHALF ISO A BSPP | |
| HA1504200 | 3/4"CPLG MHALF ISO A BSPP | |
| HA1505200 | 1"CPLG MHALF ISO A BSPP | |
| HA1521200 | 1/4"CPLG MHALF ISO A NPT | |
| HA1522200 | 3/8"CPLG MHALF ISO A NPT | |
| HA1523200 | 1/2"CPLG MHALF ISO A NPT | |
| HA1524200 | 3/4"CPLG MHALF ISO A NPT | |
| HA1525200 | 1"CPLG MHALF ISO A NPT | |



Powering Business Worldwide

Quick Release Couplings

ISO 16028 F/F couplings - Female half



| Part No. | | |
|------------|---|--|
| 6FFS25BS | 1/4" BSPP FF CPLG FEMALE HALF 1/4" BODY ISO 16028 | |
| 10FFS37BS | 3/8" BSPP FF CPLG FEMALE HALF 3/8" BODY ISO 16028 | |
| 10FFS50BS | 1/2" BSPP FF CPLG FEMALE HALF 3/8" BODY ISO 16028 | |
| 12FFS50BS | 1/2" BSPP FF CPLG FEMALE HALF 1/2" BODY ISO 16028 | |
| 12FFS75BS | 3/4" BSPP FF CPLG FEMALE HALF 1/2" BODY ISO 16028 | |
| 19FFS75BS | 3/4" BSPP FF CPLG FEMALE HALF 3/4" BODY ISO 16028 | |
| 19FFS100BS | 1" BSPP FF CPLG FEMALE HALF 3/4" BODY ISO 16028 | |
| 25FFS100BS | 1" BSPP FF CPLG FEMALE HALF 1" BODY ISO 16028 | |
| 25FFS125BS | 1 1/4" BSPP FF CPLG FEMALE HALF 1" BODY ISO 16028 | |
| 40FFS150BS | 1 1/2" BSPP FF CPLG FEMALE HALF 1 1/2" BODY ISO 16028 | |
| 50FFS200BS | 2" BSPP FF CPLG FEMALE HALF 2" BODY ISO 16028 | |

ISO 16028 F/F couplings - Male half



| Part No. | | |
|------------|---|--|
| 6FFP25BS | 1/4" BSPP FF CPLG MALE HALF 1/4" BODY ISO 16028 | |
| 10FFP37BS | 3/8" BSPP FF CPLG MALE HALF 3/8" BODY ISO 16028 | |
| 10FFP50BS | 1/2" BSPP FF CPLG MALE HALF 3/8" BODY ISO 16028 | |
| 12FFP50BS | 1/2" BSPP FF CPLG MALE HALF 1/2" BODY ISO 16028 | |
| 12FFP75BS | 3/4" BSPP FF CPLG MALE HALF 1/2" BODY ISO 16028 | |
| 19FFP75BS | 3/4" BSPP FF CPLG MALE HALF 3/4" BODY ISO 16028 | |
| 19FFP100BS | 1" BSPP FF CPLG MALE HALF 3/4" BODY ISO 16028 | |
| 25FFP100BS | 1" BSPP FF CPLG MALE HALF 1" BODY ISO 16028 | |
| 25FFP125BS | 1 1/4" BSPP FF CPLG MALE HALF 1" BODY ISO 16028 | |
| 40FFP150BS | 1 1/2" BSPP FF CPLG MALE HALF 1 1/2" BODY ISO 16028 | |
| 50FFP200BS | 2" BSPP FF CPLG MALE HALF 2" BODY ISO 16028 | |



Powering Business Worldwide

Quick Release Couplings

ISO 'A' couplings dust cap



Dust Cap

| Part No. | | |
|----------|-----------------|--|
| 5657-4 | CPLG DUST COVER | |
| 5657-6 | CPLG DUST COVER | |
| 5657-10 | CPLG DUST COVER | |
| 5657-12 | CPLG DUST COVER | |
| 5657-16 | CPLG DUST COVER | |

ISO 'A' couplings dust plug



Dust Plug

| Part No. | | |
|----------|----------------|--|
| 5659-4 | CPLG DUST PLUG | |
| 5659-6 | CPLG DUST PLUG | |
| 5659-10 | CPLG DUST PLUG | |
| 5659-12 | CPLG DUST PLUG | |
| 5659-16 | CPLG DUST PLUG | |

FD49 Flat face female coupling HTMA Interchange



| Part No. | | |
|-----------------|--------------------------|--|
| FD49-1001-06-06 | CPLG FHALF FLAT FACE NPT | |
| FD49-1001-08-06 | CPLG FHALF FLAT FACE NPT | |

FD49 Flat face female coupling HTMA Interchange



| Part No. | | |
|-----------------|--------------------------|--|
| FD49-1002-06-06 | CPLG MHALF FACE NPT F | |
| FD49-1002-08-06 | CPLG MHALF FLAT FACE NPT | |



Powering Business Worldwide

Quick Release Couplings

FD35 - 10,000 PSI Coupling - Female



| Part No. | | |
|-----------------|--------------------------|--|
| FD35-1001-06-06 | CPLG FHALF 10000 PSI NPT | |

FD35 - 10,000 PSI Coupling - Male



| Part No. | | |
|-----------------|--------------------------|--|
| FD35-1002-06-06 | CPLG MHALF 10000 PSI NPT | |

FD90 - Diagnostic coupling - Female



| Part No. | | |
|-----------------|-------------------|--|
| FD90-1021-02-04 | CPLG FHALF NPT F | |
| FD90-1021-04-04 | CPLG FHALF NPT F | |
| FD90-1041-04-04 | CPLG FHALF UNO' F | |

FD90 - Diagnostic coupling - Male



| Part No. | | |
|-----------------|------------------|--|
| FD90-1012-02-04 | CPLG MHALF NPT M | |
| FD90-1012-04-04 | CPLG MHALF NPT M | |
| FD90-1044-03-04 | CPLG MHALF UNO' | |
| FD90-1044-04-04 | CPLG MHALF UNO' | |
| FD90-1044-05-04 | CPLG MHALF UNO' | |
| FD90-1044-06-04 | CPLG MHALF UNO' | |

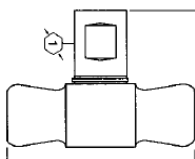
I QUICK RELEASE COUPLINGS I



Powering Business Worldwide

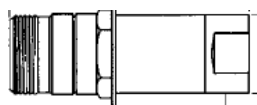
Quick Release Couplings

5100 Brass low spill coupling - Female



| Part No. | | |
|-------------|--------------------------|--|
| 5100-S5-4B | CPLG FHALF BRASS 1/18I N | |
| 5100-S5-6B | CPLG FHALF BRASS 1/4I NP | |
| 5100-S5-8B | CPLG FHALF BRASS 3/8I NP | |
| 5100-S5-10B | CPLG FHALF BRASS 1/2I NP | |
| 5100-S5-12B | CPLG FHALF BRASS 3/4I NP | |
| 5100-S5-16B | CPLG FHALF BRASS 1I NPT | |
| 5100-S5-20B | CPLG FHALF BRASS 1 1/4I | |
| 5100-S5-24B | CPLG FHALF BRASS 1 1/2I | |

5100 Brass low spill coupling - Male



| Part No. | | |
|-------------|---------------------------|--|
| 5100-S2-4B | MALE COUPLING HALF 1/8I | |
| 5100-S2-6B | CPLG MHALF BRASS 1/2I NP | |
| 5100-S2-8B | CPLG MHALF BRASS 3/8I NP | |
| 5100-S2-10B | CPLG MHALF BRASS 1/2I NP | |
| 5100-S2-12B | CPLG MHALF BRASS 3/4I NP | |
| 5100-S2-16B | CPLG MHALF BRASS 1I NPT | |
| 5100-S2-20B | CPLG MHALF BRASS 1 1/4I | |
| 5100-S2-24B | CPLG MHALF BRASS 1 1/2I Q | |

FD69 Water blast coupling - Female



| Part No. | | |
|-----------------|-------------------------|--|
| FD69-1001-08-08 | CPLG FHALF 700b W'BLAST | |

FD69 Water blast coupling - Male



| Part No. | | |
|-----------------|-------------------------|--|
| FD69-1002-08-08 | CPLG MHALF 700b W'BLAST | |



Powering Business Worldwide

Quick Release Couplings

HK Series (Steel)

ISO 7241-1 B Interchangeable



| Part No. | | |
|----------|----------------------------------|--|
| 2H16BS | 1/4" CPLG FHALF ISO B BSPP STEEL | |
| 3H21BS | 3/8" CPLG FHALF ISO B BSPP STEEL | |
| 4HP26BS | 1/2" CPLG FHALF ISO B BSPP STEEL | |
| 6HP31BS | 3/4" CPLG FHALF ISO B BSPP STEEL | |
| 8HP38BS | 1" CPLG FHALF ISO B BSPP STEEL | |
| 2K16BS | 1/4" CPLG MHALF ISO B BSPP STEEL | |
| 3K21BS | 3/8" CPLG MHALF ISO B BSPP STEEL | |
| 4KP26BS | 1/2" CPLG MHALF ISO B BSPP STEEL | |
| 6KP31BS | 3/4" CPLG MHALF ISO B BSPP STEEL | |
| 8KP38BS | 1" CPLG MHALF ISO B BSPP STEEL | |

HK Series (Brass)

ISO 7241-1 B Interchangeable



| Part No. | | |
|----------|----------------------------------|--|
| B2H16BS | 1/4" CPLG FHALF ISO B BSPP BRASS | |
| B3H21BS | 3/8" CPLG FHALF ISO B BSPP BRASS | |
| B4HP26BS | 1/2" CPLG FHALF ISO B BSPP BRASS | |
| B6HP31BS | 3/4" CPLG FHALF ISO B BSPP BRASS | |
| B8HP38BS | 1" CPLG FHALF ISO B BSPP BRASS | |
| B2K16BS | 1/4" CPLG MHALF ISO B BSPP BRASS | |
| B3K21BS | 3/8" CPLG MHALF ISO B BSPP BRASS | |
| B4KP26BS | 1/2" CPLG MHALF ISO B BSPP BRASS | |
| B6KP31BS | 3/4" CPLG MHALF ISO B BSPP BRASS | |
| B8KP38BS | 1" CPLG MHALF ISO B BSPP BRASS | |



Powering Business Worldwide

Quick Release Couplings

HK Series (Stainless steel)

ISO 7241-1 B Interchangeable



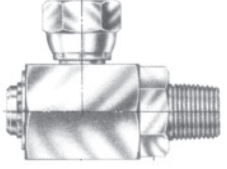
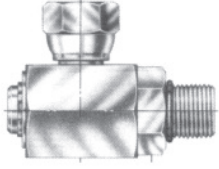
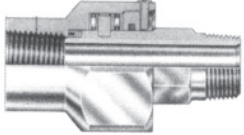

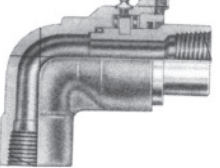
| Part No. | | |
|-----------|--------------------------------------|--|
| LL2H16BS | 1/4" CPLG FHALF ISO B BSPP STAINLESS | |
| LL3H21BS | 3/8" CPLG FHALF ISO B BSPP STAINLESS | |
| LL4HP26BS | 1/2" CPLG FHALF ISO B BSPP STAINLESS | |
| LL6HP31BS | 3/4" CPLG FHALF ISO B BSPP STAINLESS | |
| LL8HP38BS | 1" CPLG FHALF ISO B BSPP STAINLESS | |
| LL2K16BS | 1/4" CPLG MHALF ISO B BSPP STAINLESS | |
| LL3K21BS | 3/8" CPLG MHALF ISO B BSPP STAINLESS | |
| LL4KP26BS | 1/2" CPLG MHALF ISO B BSPP STAINLESS | |
| LL6KP31BS | 3/4" CPLG MHALF ISO B BSPP STAINLESS | |
| LL8KP38BS | 1" CPLG MHALF ISO B BSPP STAINLESS | |



Powering Business Worldwide

Swivel Joints

SWIVEL JOINTS

| NOMINAL SIZE | | THREAD | FEMALE x MALE NPSM x NPT | BODY THREAD | SHAFT THREAD | MALE x MALE JIC x UNO'RING | SEAL KIT |
|---|----------|--------|---|----------------|-----------------|---|-------------|
| | | NPT | Part No. | JIC | UNO'RING | Part No. | Part No. |
| FS65000 90 DEGREE 3000 PSI | | | | | | | |
| | | |  | | |  | |
| Pressure balanced. Buna-N seals. | | | | | | | |
| 1/4" | 1/4-18 | | FS65000-0404-01 | | | | 10-62017-01 |
| 3/8" | 3/8-18 | | FS65000-0606-01 | 3/4-16 | 3/4-16 | FS65009-0808-01 | 10-62018-01 |
| 1/2" | 1/2-14 | | FS65000-0808-01 | 7/8-14 | 7/8-14 | FS65009-1010-01 | 10-62019-01 |
| 3/4" | 3/4-14 | | FS65000-1212-01 | 1 1/16-12 | 1 1/16-12 | FS65009-1212-01 | 10-62020-01 |
| 1" | 1-11 1/2 | | FS65000-1616-01 | | | | 10-62021-01 |
| FS59000 STRAIGHT 5000PSI | | | | | | | |
| | | |  | | |  | |
| Full flow style with double roller bearings. | | | | | | | |
| 1/4" | 1/4-18 | | FS59004-0404-01 | | | FF975-04-01 | |
| 3/8" | 3/8-18 | | FS59004-0606-75 | | | FF975-06-75 | |
| 1/2" | 1/2-14 | | FS59004-0808-75 | | | FF975-08-75 | |
| 3/4" | 3/4-14 | | FS59004-1212-75 | | | FF975-12-75 | |
| 1" | 1-11 1/2 | | FS59004-1616-75 | | | FF975-16-75 | |
| FS59000 90 DEGREE 1000PSI | | | | | | | |
| | | |  | | | | |
| Low pressure style suitable for hose reels | | | | | | | |
| 1" | 1 11 1/2 | | FS59000-1616-01 | | | FF028-16-01 | |



EATON

Powering Business Worldwide

Crimp Assembly Equipment

ProCrimp® 1380



The ProCrimp 1380 crimp machine from Eaton crimps all your hose needs up to and including -20 SAE100R12 hose styles and the popular MatchMate Plus hose and fittings program (shown with optional die holder kit FT1380-2-4). The ProCrimp 1380 is electronically controlled to give fast, accurate crimps the first time and every time you need a hose assembly. The electronic keypad is easy to adjust, with up to 10 programmable crimp settings. For hose styles and sizes used less frequently simply enter the 3 digit code of that hose.

Ordering Instructions

- FT1380-115** 115V crimp machine 60 Hz
- FT1380-115-5** 2-Wire braid hose package FT1380-115 with the 5 die cages needed to crimp the 5 most popular GH793 or GH781 2-wire hose sizes: -4, -6, -8, -12 and -16
Die Cages
FT1380-200-M150
FT1380-200-M210
FT1380-200-M240
FT1380-200-M320
FT1380-275-M370
- FT1380-115-8** Braided and spiral hose package FT1380-115-5 with the 3 additional die cages — capable of crimping all MatchMate Plus hoses through -20
Die Cages
FT1380-200-M180
FT1380-200-M280
FT1380-275-M465
* Must also order FT1380-275-M420 to crimp GH194-20 and GH663-20
- FT1380-2-3** FT1330 to FT1380 Die Cage conversion kit — back plate, bolts and instructions necessary to convert an FT1330 die cage to an FT1380 die cage. Simply remove the FT1330 back plate and replace it with the new FT1380 back plate.
- FT1380-2-4** Optional die holder kit — Kit includes 4 die holder plates each of which will hold 2 die cages. Holes are pre-drilled on base of ProCrimp machine to accept these 4 plates.
- FT1380-4** Optional fitting backstop-kit includes backstop and $\frac{5}{32}$ " hex wrench. The backstop allows the 1380 to crimp PTFE hose and be utilized for a fitting locator to increase efficiency.

Electrical Requirements

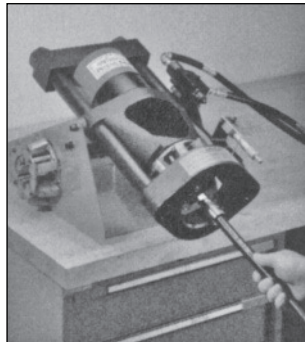
USA: FT1380-115 standard machine uses 115V, 60 Hz, 1.5 hp

Brazil: FT1380-1-2 standard machine uses 230V, 60 Hz, 1 hp

Australia: FT1380-230 standard machine uses 230V, 50 Hz, 1 hp

Canada: FT1380-115 standard machine. Requires CSA (Canadian Standards Association) approval. The FT1380-115 is CSA approved and is so noted on the nameplate.

ProCrimp® 1380P



Perfect for maintenance and repair of all your hose needs and designed to be used in remote or portable stations, the ProCrimp 1380P will handle through -20 SAE100R12 hose and fittings. All die cages, crimp diameters and approved hose and fitting combinations are identical to Eaton's popular FT1380 crimper. Crimp diameters are controlled using a micrometer and specially designed hydraulic circuit that allows

for precise and adjustable finished crimp diameters.

The ProCrimp 1380P may be ordered separately or with your choice of three power options, including a high volume hand pump, an Air/Hydraulic power unit or a 12-volt DC power unit.

Ordering Instructions

- FT1380P-1-1** Machine with hand pump
- FT1380P-1-1-5** Machine with hand pump and 5 die cages
- FT1380P-1-1-8** Machine with hand pump and 8 die cages
- FT1380P-1-2** Machine with Air/Hydraulic pump
- FT1380P-1-2-5** Machine with Air/Hydraulic pump and 5 die cages
- FT1380P-1-2-8** Machine with Air/Hydraulic pump and 8 die cages
- FT1380P-1-3** Machine only
- FT1380P-1-3-5** Machine with 5 die cages
- FT1380P-1-3-8** Machine with 8 die cages
- FT1380P-1-4** Machine with 12 volt DC pump
- FT1380P-1-4-5** Machine with 12 volt DC pump and 5 die cages
- FT1380P-1-4-8** Machine with 12 volt DC pump and 8 die cages
- FT1380-4** Optional fitting backstop-kit includes backstop and $\frac{5}{32}$ " hex wrench. The backstop allows the 1380P to crimp PTFE hose and be utilized for a fitting locator to increase efficiency.

5 die cages

FT1380-200-M150
FT1380-200-M210
FT1380-200-M240
FT1380-200-M320
FT1380-275-M370

8 die cages

Include the 5 die cages plus:
FT1380-200-M180
FT1380-200-M280
FT1380-275-M465





Powering Business Worldwide

ET1000 Portable, Light Duty, Positive Stop Crimp Machine

Eaton is proud to add the ET1000 crimp machine to its line of portable crimpers. While being our most economical crimp machine to-date, the new ET1000 machine boasts a broad crimp capability with an ease-of-use that is sure to please hose assemblers.

This new crimp machine has been approved to crimp:

- All 1-wire and 2-wire braided MatchMate Plus hoses in sizes $\frac{1}{4}$ " through $1\frac{1}{4}$ " using MatchMate Plus TTC fittings.
- All 4-wire spiral MatchMate Plus hoses in sizes $\frac{3}{8}$ " through 1" using MatchMate Plus TTC12 fittings.

The new ET1000 crimp machine builds on the success of the prior FT1370 portable crimp machine by using the same basic frame and construction design, but employs a 2-piece split half collet assembly in lieu of the traditional ProCrimp die cages. The correct hose assembly crimp diameter is obtained by the use of a spacer ring that controls the stroke length of the cylinder during the crimping operation.

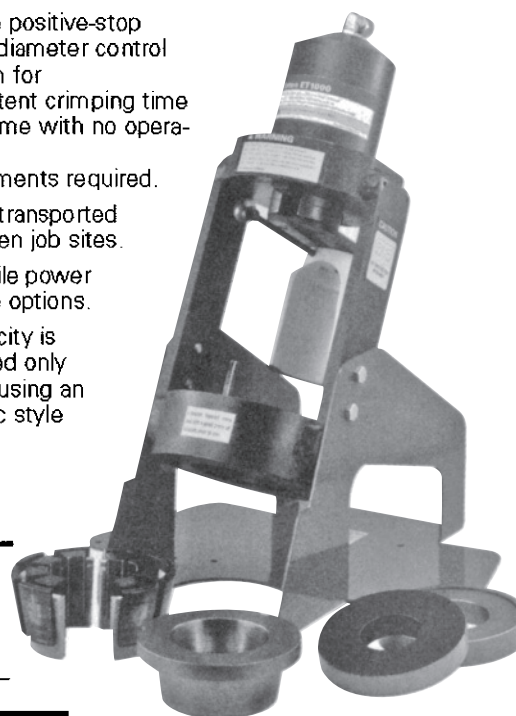
This new crimp machine may be ordered separately or with one of four power supplies: hand-pump, air/hydraulic pump, 12-volt DC power unit, or a 110-volt AC power unit.

Features

- Pusher slides out of position.
- Compatible with the Aeroquip MatchMate Plus hose and fittings.
- Can be mounted on service vehicles due to its portable design.
- Can be powered with virtually any 10,000 psi hydraulic power source (min. 36 cubic inch pump reservoir capacity).
- Utilizes 2-piece collet assemblies.
- Spacer rings control the crimp diameter.

Benefits

- Sliding pusher allows for easier fitting insertion into the machine.
- Simple positive-stop crimp diameter-control system for consistent crimping time after time with no operator adjustments required.
- Easily transported between job sites.
- Versatile power source options.
- Electricity is required only when using an electric style pump.



Specifications

Dimensions-22 inches high, 16 inches wide, 14 inches in depth

Weight 70 lbs. (without pump)

ET1000 Crimp Machine Part Numbers

For tooling and crimping information, refer to the Collet/Spacer Ring Selector Chart, A-EQCR-MG001-E.

All part numbers include the basic crimp machine.

ET1000-001 = No pump, no tooling (basic machine only)

ET1000-002 = Hand-pump, no tooling

ET1000-003 = Air/hydraulic pump, no tooling

ET1000-004 = 110 volt 1/2HP electric pump, no tooling

ET1000-005 = 12 V DC pump, no tooling

ET1000 Crimp Machine Package Part Numbers

These machine packaged part numbers offer a variety of pumps with the same tooling package including all collets and spacer rings to crimp:

1-wire and 2-wire braided MatchMate Plus Hoses (sizes $\frac{1}{4}$ " through $1\frac{1}{4}$ ") using TTC fittings

GH493, 4-wire spiral MatchMate Plus Hose (sizes $\frac{3}{8}$ " through 1") using TTC12 fittings

ET1000-006 = No pump, but includes complete MatchMate Plus Collet and Spacer Ring Tooling package described above

ET1000-007 = Air/hydraulic pump, and complete MatchMate Plus Collet and Spacer Ring Tooling package described above

ET1000-008 = 110 Volt electric pump, and complete MatchMate Plus Collet and Spacer Ring Tooling package described above

ET1000-009 = 2-Stage hand pump, and complete MatchMate Plus Collet and Spacer Ring Tooling package described above

ET1000-010 = 12 Volt DC pump, and complete MatchMate Plus Collet and Spacer Ring Tooling package described above



Powering Business Worldwide

ProCrimp 1390



Crimped hose assembly machine

Hose Specifications

All styles from 3/16" through 2" I.D. including four and six spiral wire requiring internal skive crimp style fittings.

Features

- Front-end loading design
- Electronic key pad control of crimp diameter
- Power return-stroke, return limit control

- Drop-in tooling (crimp die cages)
- Backstop fitting locator
- Width 29", Depth 28", Height 49", Weight 825 lbs.
- Worklamp

Ordering Instructions

FT1390-115 Aeroquip crimp machine, 115V, single phase, 60 Hz, 1 hp motor

FT1390-115-12 Kit includes FT1390-115 machine plus the die cages to crimp -4 through -32 MatchMate Plus fittings.

FT1092 NEVER-SEEZ lubricant

Electrical Requirements

Standard

115V, single phase, 60 Hz, 1 hp.

Optional 230 Volt Machines

FT1390-23050 230V, single phase, 50 Hz crimp machine

FT1390-23050-12 FT1390-23050 with 12 die cages.

FT1390-23060 230V, single phase, 60 Hz crimp machine

FT1390-23060-12 FT1390-23060 with 12 die cages.

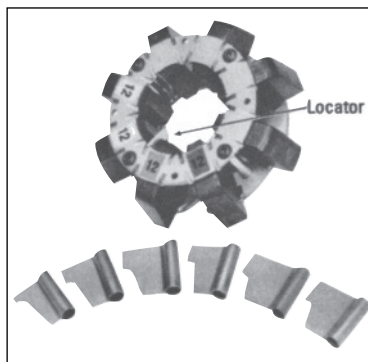
Crimp Die Cages

Eaton crimp die cages provide simple "drop-in" tooling for the FT1390 crimp machine. See Crimp Die Cage Applications chart or contact Eaton. Refer to website for current crimp specifications.

Crimp Die Cage Storage Cabinet

Eaton recommends crimp die cages be kept free of dust or dirt. As an option, a cabinet is offered which has the capability of storing nine crimp die cages. Order by part number FT1283.

MatchMate Plus fitting locators



For use with FT1380 and FT1330 "M" Series die cages

Consistent crimping of MatchMate Plus fittings is greatly simplified when using new fitting locators. The locators are designed for easy installation and use on the Eaton FT1380 or FT1330 "M" series die cages noted below.

Ordering Instructions

The locator kits can be ordered as part number FT1330-XL. Each kit contains locators to accommodate -4, -6, -8, -10, -12 and -16 MatchMate Plus fittings and installation instructions.

| Locator Suffix | Die Cage Suffix | MatchMate Plus Hoses | | | |
|----------------|-----------------|----------------------|--------------|-------|-------|
| | | GH663, GH194 | GH793, GH195 | GH781 | GH493 |
| -4, -4P | -M150 | -4 | -4 | -4 | |
| -6, -6P | -M180 | -6 | | | |
| | -M210 | | -6 | -6 | -6 |
| -8, -8P | -M240 | -8 | -8 | -8 | |
| -10, -10P | -M280 | | -10 | -10 | -8 |
| -12, -12P | -M320 | -12 | -12 | -12 | -12 |
| -16 | -M370 | -16 | -16 | -16 | -16 |
| None required | -M465 | | -20 | -20 | -20 |



Powering Business Worldwide

Crimp Cages for FT1380

M-Series Crimp Die Cage Applications

| Die Cage Part Number | Crimp Range | |
|----------------------|--------------|--------------|
| | mm | in |
| FT1380-275-M070 | 7,0 to 9,0 | 0.28 to 0.35 |
| FT1380-275-M090 | 9,0 to 12,0 | 0.35 to 0.47 |
| FT1380-275-M120 | 12,0 to 15,0 | 0.47 to 0.59 |
| FT1380-200-M150*† | 15,0 to 18,0 | 0.59 to 0.71 |
| FT1380-200-M180*† | 18,0 to 21,0 | 0.71 to 0.83 |
| FT1380-200-M210*† | 21,0 to 24,0 | 0.83 to 0.95 |
| FT1380-200-M240*† | 24,0 to 28,0 | 0.95 to 1.10 |
| FT1380-200-M280*† | 28,0 to 32,0 | 1.10 to 1.26 |
| FT1380-200-M320*† | 32,0 to 37,0 | 1.26 to 1.46 |
| FT1380-275-M370* | 37,0 to 42,0 | 1.46 to 1.66 |
| FT1380-275-M420 | 42,0 to 46,5 | 1.66 to 1.83 |
| FT1380-275-M465* | 46,5 to 52,0 | 1.83 to 2.05 |

† Can be ordered as FT1380-275-SIZE for tool steel dies vs. powdered metal dies.
 *FT1380-115-8 kit includes these 8 die cages.

NOTE: Additional dies and die cage assemblies also available.
 Refer to website or contact Eaton.

Barrel Crimp Die Cage Applications

| Die Cage Part Number | Hose Size | Hose Styles |
|----------------------|-----------|-------------|
| FT1380-275-R5-04 | -04 | SAE100R5 |
| FT1380-275-R5-05 | -05 | |
| FT1380-275-R5-06 | -06 | |
| FT1380-275-R5-08 | -08 | |
| FT1380-275-R5-10 | -10 | |
| FT1380-275-R5-12 | -12 | |
| FT1380-275-R5-16 | -16 | |
| FT1380-275-R5-20 | -20 | |

Hose Styles

- Smooth Bore PTFE
- SAE100R1AT
- SAE100R2AT
- HI-PAC
- SAE100R6
- SAE100R8
- SAE100R17
- Convuluted PTFE
- SAE100R1
- SAE100R2A
- SAE100R4
- SAE100R7
- SAE100R12
- Polyon

For crimp specifications on Global Skive type fittings and Global TTC & TTC12 refer to website or contact Eaton for specialty hoses.

Die Cage Repair Kit Complete kit, less dies.

| To Repair | Order |
|-----------------|-------------|
| FT1380-200-size | FT1380-2-9 |
| FT1380-275-size | FT1380-2-9 |
| FT1380-201-size | FT1380-2-9A |

Tooling Compatability Chart

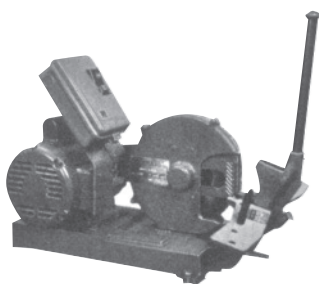
| Crimp Machines | Crimp Machines | | | | | | | | | | | | | | | | |
|-----------------|----------------|--------|--------|--------|----------------|--------|----------------|--------|--------|--------|----------------|----------------|--------|--------|---------|--------|----------------|
| | FT1008 | FT1049 | FT1204 | FT1208 | FT1209 | FT1244 | FT1307 | FT1310 | FT1320 | FT1330 | FT1340 | FT1360 | FT1370 | FT1380 | FT1380P | FT1390 | ET1000 |
| FT1008-100-Size | X | | | | | | | | | | | | | | | | |
| FT1049-100-Size | | X | | | | | | | | | | | | | | | |
| FT1204-100-Size | | | X | | X ¹ | X | X ¹ | | | | X ¹ | X ¹ | | | | | X ¹ |
| FT1208-100-Size | | | | X | | | | | | | | | | | | | |
| FT1209-200-Size | | | | | X | | X | | | | X | X | | | | | X |
| FT1307-200-Size | | | | | X | | X | | | | X | X | | | | | X |
| FT1310-200-Size | | | | | | | | X | | | | | | | | | |
| FT1330-200-Size | | | | | | | | | X | X | | | | | | | |
| FT1330-275-Size | | | | | | | | | X | X | | | | | | | |
| FT1380-200-Size | | | | | | | | | | | | | X | X | X | | |
| FT1380-201-Size | | | | | | | | | | | | | X | X | X | | |
| FT1380-275-Size | | | | | | | | | | | | | X | X | X | | |
| FT1390-200-Size | | | | | X | | X | | | | X | X | | | | | X |
| ET1000-Size | | | | | | | | | | | | | | | | | X |

¹ Individual dies. Requires the use of die cage kit FT1307-2-9 or removable die cage FT1307-2-13.



Powering Business Worldwide

S1104 Hose cut off machine



Hose Specifications

- Single and Double Wire Reinforced, 1/4" to 3" I.D.
- Four and Six Spiral Wire Reinforced, 1/4" to 1 1/2" I.D. with optional blades FT1101-1 and FT1101-2, spiral wire capacity is increased to 2"

Features

- Compact, 22" x 24"
- Light, 130 lbs.
- Dual V-belt drive
- 10" cutting blade
- U.L. listed

**A 3 hp, 230V AC, single phase machine is also available but not recommended because of reduced torque and less capability when cutting larger size hose. Order by part number S1104-230.*

Electrical Requirements

3 hp, 230/460V, 3 phase, 60 Hz.

Machine wired for 230V AC. Change connections as shown on motor plate for 460V. Also, replace 230V motor heater with 460V motor heater included with machine.

Ordering Instructions

Machine:

S1104 Basic machine, 230/460V, 3 phase, 60 Hz

S1026 Hose measuring gauge attachment

FT1215 Hose reel attachment

S1118 Coolant spray system (required when cutting spiral wire hose)

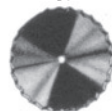
SC1709 10" Replacement cutting blade

SC1772 Welded steel table

Optional Cutting Blades

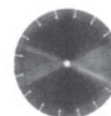
FT1101-1

10" Scalloped Blade

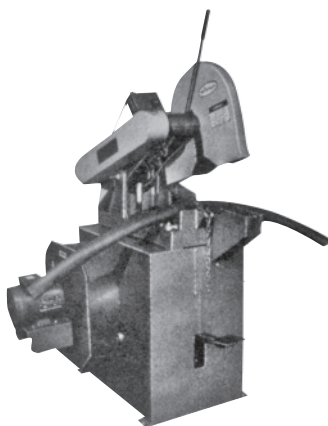


FT1101-2

10" Abrasive Blade



FT1260 Hose cut off machine



Hose Specifications

- All Hose Constructions -- 1/4" to 4" I.D.

Features

- Built in safety features
- Easy to operate
- 16" abrasive wheel
- Heavy duty design
- Low maintenance
- V shaped vise
- U.L. listed

Ordering Instructions

Machine:

FT1260-1-1 Base machine with stand. 230/460V, 3 phase, 60 Hz

FT1260-1-2 Base machine with stand and fume exhauster. 230/460V, 3 phase 60 Hz

FT1260-1-3 Base machine with stand. 230V, single phase, 60 Hz

FT1260-1-4 Base machine with stand and fume exhauster. 230V, single phase, 60 Hz

FT1260-2-5 Optional hood (can be used only with the -1-2 and the -1-4 models) Eaton recommends the use of FT1260-2-5, optional hood.

Replacement Components:

FT1260-3-1

Replacement 16" fiberglass reinforced abrasive wheel

Electrical Requirements

Electrical requirements will vary depending on options selected.

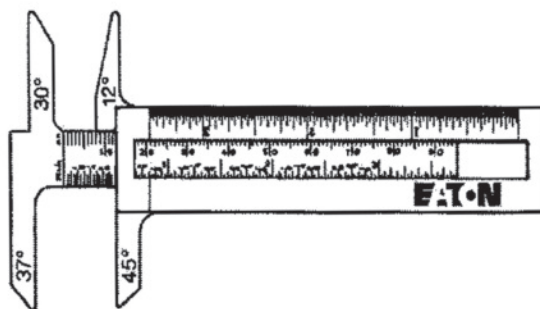
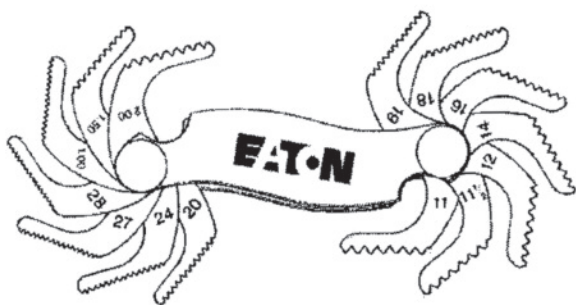
Contact Eaton for additional information.



Appendices Index

Alphabetical Index

| <u>DESCRIPTION</u> | <u>PAGES</u> | <u>DESCRIPTION</u> | <u>PAGES</u> | <u>DESCRIPTION</u> | <u>PAGES</u> | <u>DESCRIPTION</u> | <u>PAGES</u> |
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| Analyzing Hose Failures | 117 | Fluid Compatibility | 17 | Hydraulic Tubing Info | 134 | Service Life Routing Installation Instructions | 116 |
| Fitting Assembly Torque Values | 133 | Hose Size to Maximum Operating Pressure | 12 | | | Technical Data | 11 |





Hose Dash Size to Maximum Operating Pressure

See pages 349-355 for Fluid Compatibility

Hose tube identification chart

1. Synthetic rubber
2. PTFE
3. Thermoplastic
4. AQP
5. Special application hose
6. EPDM

Pressures expressed in psi/bar.

HOSE TO FITTING PAGE REFERENCE CHART

| Hose Part Number | Page | Tube | Hose -02 | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 | -40 | -48 |
|------------------|------|------|----------|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|--------|-------|
| FC252 | 0 | 5 | | | | | 50/3 | 50/3 | 40/3 | 40/3 | 35/2 | | | | | |
| FC352* | 0 | 5 | | | | | | 100/7 | 100/7 | 100/7 | 90/6 | 85/6 | 85/6 | 75/5 | 60/4 | 50/3 |
| 2550 | 0 | 5 | | | | | 225/16 | | | | | | | | | |
| 2554 | 0 | 5 | | | | | 225/16 | | | | | | | | | |
| 2570 | 0 | 5 | | | | | 225/16 | 225/16 | 225/16 | | | | | | | |
| FC829 | 0 | 6 | | | | | | 225/16 | | | | | | | | |
| FC629 | 0 | 1 | | | | | 225/16 | 225/16 | | | | | | | | |
| 2575 | 0 | 1 | | | 250/17 | | 250/17 | 250/17 | 200/14 | 200/12 | | | | | | |
| FC647 | 0 | 1 | | | 360/25 | | 300/21 | 300/21 | 250/17 | 250/17 | | | | | | |
| 2556 | 0 | 1 | | | 360/25 | | 300/21 | 300/21 | 250/17 | 250/17 | | | | | | |
| FC332 | 0 | 4 | | | 250/17 | | 250/17 | 250/17 | 250/17 | 250/17 | | | | | | |
| 2565 | 0 | 1 | | | 300/21 | | 250/17 | 200/14 | 175/12 | 125/9 | | | | | | |
| 1531 | 0 | 5 | | | | | | | 300/21 | 300/21 | 300/21 | 300/21 | | | | |
| 1531A | 0 | 5 | | | | | | | | | | | 300/21 | | | |
| 2661* | 0 | 4 | | | | | | | | 300/21†† | 250/17†† | 200/14†† | 150/10†† | 100/7†† | 62/4 | 56/4 |
| FC619 | 0 | 1 | | | | | | | | 300/21†† | 250/17†† | 200/14†† | 150/10†† | 100/7†† | 62/4 | 56/4 |
| CR170 | 0 | 5 | | | 350/24 | | 350/24 | 350/24 | | 350/24 | | | | | | |
| FC321 | 0 | 5 | | | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | | | | | |
| FC498 | 0 | 4 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC598 | 0 | 4 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC466 | 0 | 1 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC699 | 0 | 5 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | 250/17 | | | | | |
| 302A | 0 | 1 | | | | | | | | | 800/55 | 600/41 | 500/34 | 350/24 | | |
| 2580 | 0 | 1 | | | 1000/69 | 800/55 | 650/45 | 625/43 | 600/41 | 550/38 | 500/34 | 450/31 | 400/28 | 350/24 | | |
| 2583 | 0 | 1 | | | 1250/86 | | 1125/78 | 1000/69 | | 750/52 | 565/39 | 375/26 | | | | |
| FC650 | 0 | 4 | | | 1000/69 | | 1000/69 | 1000/69 | 1000/69 | 1000/69 | | | | | | |
| FC364 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | 100/7 | 100/7 |
| FC363 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | | |
| FC355 | 0 | 4 | | | 1500/103 | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | 300/21 | 250/17 | 200/14 | | |
| FC234 | 0 | 5 | | | | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | | | | | |
| FC350 | 0 | 4 | | | 2000/138 | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | 300/21 | 250/17 | | | |
| FC563 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | | |
| 2808 | 0 | 2 | | | | | | 2750/190 | 2500/172 | 1750/121 | 1500/103 | 1125/78 | 800/55 | | | |
| FC211 | 0 | 1 | | | 2750/190 | | 2250/155 | 2000/138 | | 1250/86 | 1000/69 | | | | | |
| FC465 | 0 | 2 | | | 3000/207 | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | 625/43 | | | |
| 2807 | 0 | 2 | | | 3000/207 | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | 625/43 | | | |
| FC807 | 0 | 2 | | | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | | | | | |
| FC300 | 0 | 4 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 300/21 | 300/21 | |
| FC611 | 0 | 6 | | | 3000/207 | | 2250/155 | 2000/138 | | 1250/86 | 1000/69 | 625/43 | 500/34 | 375/26 | | |
| 1503 | 0 | 1 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 350/24 | 350/24 | |
| 2651 | 0 | 1 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 350/24 | 350/24 | |
| 303 | 0 | 1 | | | 3000/207 | 3000/207 | 2000/138 | 2000/138 | 1750/121 | 1500/103 | | | | | | |
| FC639/ FC839B | 0 | 1 | | | 3000/207 | | 3000/207 | 3000/207 | 3000/207 | 3000/207 | 3000/207 | | | | | |

† Pressure rating with reusable style fittings.
 ‡ Pressure rating with Global crimp style fittings.
 § 10,000 psi for static jack hose applications. See hose page for details.
 ¶ 10,000 psi for water blast applications. See hose page for details.
 * See hose page for dash sizes not listed.
 †† 50 psi max with band clamp style fittings.



Hose Dash Size to Maximum Operating Pressure

Pressures expressed in psi/bar.

See pages 349-355 for Fluid Compatibility

Hose tube identification chart

1. Synthetic rubber
2. PTFE
3. Thermoplastic
4. AQP
5. Special application hose
6. EPDM

HOSE TO FITTING PAGE REFERENCE CHART

| Hose Part Number | Page | Tube | Hose -02 | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 | -40 | -48 |
|------------------|------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|--------|--------|-------|
| FC252 | 0 | 5 | | | | | 50/3 | 50/3 | 40/3 | 40/3 | 35/2 | | | | | |
| FC352* | 0 | 5 | | | | | | 100/7 | 100/7 | 100/7 | 90/6 | 85/6 | 85/6 | 75/5 | 60/4 | 50/3 |
| 2550 | 0 | 5 | | | | | 225/16 | | | | | | | | | |
| 2554 | 0 | 5 | | | | | 225/16 | | | | | | | | | |
| 2570 | 0 | 5 | | | | | 225/16 | 225/16 | 225/16 | | | | | | | |
| FC829 | 0 | 6 | | | | | | 225/16 | | | | | | | | |
| FC629 | 0 | 1 | | | | | 225/16 | 225/16 | | | | | | | | |
| 2575 | 0 | 1 | | | 250/17 | | 250/17 | 250/17 | 200/14 | 200/12 | | | | | | |
| FC647 | 0 | 1 | | | 360/25 | | 300/21 | 300/21 | 250/17 | 250/17 | | | | | | |
| 2556 | 0 | 1 | | | 360/25 | | 300/21 | 300/21 | 250/17 | 250/17 | | | | | | |
| FC332 | 0 | 4 | | | 250/17 | | 250/17 | 250/17 | 250/17 | 250/17 | | | | | | |
| 2565 | 0 | 1 | | | 300/21 | | 250/17 | 200/14 | 175/12 | 125/9 | | | | | | |
| 1531 | 0 | 5 | | | | | | 300/21 | 300/21 | 300/21 | 300/21 | | | | | |
| 1531A | 0 | 5 | | | | | | | | | | | 300/21 | | | |
| 2661* | 0 | 4 | | | | | | | 300/21†† | 250/17†† | 200/14†† | 150/10†† | 100/7†† | 62/4 | 56/4 | |
| FC619 | 0 | 1 | | | | | | | 300/21†† | 250/17†† | 200/14†† | 150/10†† | 100/7†† | 62/4 | 56/4 | |
| CR170 | 0 | 5 | | | 350/24 | | 350/24 | 350/24 | | 350/24 | | | | | | |
| FC321 | 0 | 5 | | | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | 350/24 | | | | | |
| FC498 | 0 | 4 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC598 | 0 | 4 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC466 | 0 | 1 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | | | | | | |
| FC699 | 0 | 5 | | | 400/28 | | 400/28 | 400/28 | 350/24 | 350/24 | 250/17 | | | | | |
| 302A | 0 | 1 | | | | | | | | | 800/55 | 600/41 | 500/34 | 350/24 | | |
| 2580 | 0 | 1 | | | 1000/69 | 800/55 | 650/45 | 625/43 | 600/41 | 550/38 | 500/34 | 450/31 | 400/28 | 350/24 | | |
| 2583 | 0 | 1 | | | 1250/86 | | 1125/78 | 1000/69 | | 750/52 | 565/39 | 375/26 | | | | |
| FC650 | 0 | 4 | | | 1000/69 | | 1000/69 | 1000/69 | 1000/69 | 1000/69 | | | | | | |
| FC364 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | 100/7 | 100/7 |
| FC363 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | | |
| FC355 | 0 | 4 | | | 1500/103 | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | 300/21 | 250/17 | 200/14 | | |
| FC234 | 0 | 5 | | | | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | | | | | |
| FC350 | 0 | 4 | | | 2000/138 | 1500/103 | 1500/103 | 1250/86 | 1250/86 | 750/52 | 400/28 | 300/21 | 250/17 | | | |
| FC563 | 0 | 2 | | | | | | 1250/86 | | 1100/76 | 1000/69 | 1000/69 | 750/52 | 500/34 | | |
| 2808 | 0 | 2 | | | | | | 2750/190 | 2500/172 | 1750/121 | 1500/103 | 1125/78 | 800/55 | | | |
| FC211 | 0 | 1 | | | 2750/190 | | 2250/155 | 2000/138 | | 1250/86 | 1000/69 | | | | | |
| FC465 | 0 | 2 | | 3000/207 | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | 625/43 | | | | |
| 2807 | 0 | 2 | | 3000/207 | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | 625/43 | | | | |
| FC807 | 0 | 2 | | 3000/207 | 3000/207 | 3000/207 | 2500/172 | 2000/138 | 1500/103 | 1200/83 | 1000/69 | | | | | |
| FC300 | 0 | 4 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 300/21 | 300/21 | |
| FC611 | 0 | 6 | | | 3000/207 | | 2250/155 | 2000/138 | | 1250/86 | 1000/69 | 625/43 | 500/34 | 375/26 | | |
| 1503 | 0 | 1 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 350/24 | 350/24 | |
| 2651 | 0 | 1 | | | 3000/207 | 3000/207 | 2250/155 | 2000/138 | 1750/121 | 1500/103 | 800/55 | 625/43 | 500/34 | 350/24 | 350/24 | |
| 303 | 0 | 1 | | | 3000/207 | 3000/207 | 2000/138 | 2000/138 | 1750/121 | 1500/103 | | | | | | |
| FC639/ FC839B | 0 | 1 | | | 3000/207 | | 3000/207 | 3000/207 | 3000/207 | 3000/207 | 3000/207 | | | | | |

† Pressure rating with reusable style fittings.
 ‡ Pressure rating with Global crimp style fittings.
 § 10,000 psi for static jack hose applications. See hose page for details.
 ¶ 10,000 psi for water blast applications. See hose page for details.
 * See hose page for dash sizes not listed.
 †† 50 psi max with band clamp style fittings.



Powering Business Worldwide

Hose Dash Size to Maximum Operating Pressure

Pressures expressed in psi/bar.

This table is intended as a guide in the selection of hose by maximum operating pressure. It is not a guarantee. Final selection is further dependent on fluid and ambient temperature, concentration of fluid, intermittent or continuous exposure, etc.

For further details on a specific hose see the respective catalog pages or contact Eaton Corporation at 14615 Lone Oak Road, Eden Prairie, MN 55344 USA 952/937-9800.

HOSE TO FITTING PAGE REFERENCE CHART

| Hose Part Number | Page | Tube | Hose -02 | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 | -40 | -48 |
|------------------|------|------|----------|----------|------------|----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|-----|
| GH681 | 0 | 1 | | | 3000/207 | | 3000/207 | 3000/207 | | | | | | | | |
| FC194 | 0 | 4 | | | 3250/224 | | 3000/207 | 2500/172 | 2000/138 | 1750/121 | 1250/86 | 900/62 | | | | |
| GH194 | 0 | 4 | | | 3250/224 | | 3000/207 | 2500/172 | 2000/138 | 1800/124 | 1300/90 | 900/62 | | | | |
| GH663 | 0 | 1 | | | 3250/224 | | 3000/207 | 2500/172 | | 1800/124 | 1300/90 | 950/66 | 725/50 | 580/40 | | |
| | | | | | 2750/190† | | 2250/155† | 2000/138† | | 1250/86† | 1000/69† | | | | | |
| 2681 | 0 | 1 | | 4000/276 | 3250/224 | 3250/224 | 3000/207 | 2500/172 | 2000/138 | 1800/124 | 1300/90 | 900/62 | 700/48 | 600 | | |
| GH493 | 0 | 1 | | | | | 4000/276 | 4000/276 | 4000/276 | 4000/276 | 4000/276 | 3000/207 | 2500/172 | 2500/172 | | |
| FC323 | 0 | 4 | | | | | | | | 3000/207 | 3000/207 | 3000/207 | 3000/207 | 3000/207 | | |
| FC324 | 0 | 4 | | | | | | 4000/276 | | 4000/276 | 4000/276 | | | | | |
| FC469 | 0 | 2 | | | | | | 4000/276 | 4000/276 | 3500/241 | | | | | | |
| FC849/ FC849B | 0 | 0 | | | 4000/276 | | 4000/276 | 4000/276 | 4000/276 | 4000/276 | | | | | | |
| FC212 | 0 | 1 | | | 5000/345 | | 4000/276 | 3500/241 | | 2250/155 | 2000/138 | 1625/112 | 1250/86 | 1125/78 | | |
| FC310 | 0 | 1 | | | 5000/345 | | 4000/276 | 3500/241 | 2750/190 | 2250/155 | 2000/138 | 1625/112 | | | | |
| FC693 | 0 | 6 | | | 5000/345 | | 4000/276 | 3500/241 | | | | | | | | |
| GH120 | 0 | 1 | | | 5000/345 | | 4000/276 | 3500/241 | 2750/190 | 2250/155 | 2000/138 | 1625/112 | 1250/86 | 1125/78 | | |
| FC510 | 0 | 4 | | | 5000/345 | | 4000/276 | 3500/241 | 2750/190 | 2250/155 | 2000/138 | 1625/112 | | | | |
| FC325 | 0 | 4 | | | | | | | | 5000/345 | 5000/345 | | | | | |
| FC273/ FC273B | 0 | 1 | | | | | | | | 5000/345 | 5000/345 | 5000/345 | 5000/345 | 5000/345 | | |
| FC659 | 0 | 1 | | | | | 4000/276 | 4000/276 | 4000/276 | 4000/276 | 4000/276 | 3000/207 | 2500/172 | 2500/172 | | |
| FC136 | 0 | 1 | | | | | 5500/379§ | 5000/345 | 5000/345 | 4000/276 | 4000/276 | 3000/207 | 2500/172 | 2500/172 | | |
| | | | | | | | 4000/276‡ | 4000/276‡ | 4000/276‡ | | | | | | | |
| FC636 | 0 | 6 | | | | | | | | 4000/276 | 4000/276 | 3000/207 | 2500/172 | | | |
| FC735 | 0 | 1 | | | 5000/345 | | 5000/345 | 4250/293 | 3625/250 | 3125/216 | 2500/172 | 2250/155 | | | | |
| FC736 | 0 | 1 | | | | | 5500/379 | 5000/345 | 5000/345 | 4000/276 | 4000/276 | 3000/207 | 2500/172 | 2500/172 | | |
| | | | | | | | 4000/276‡ | 4000/276‡ | 4000/276‡ | | | | | | | |
| 2766 | 0 | 1 | | | 5000/345 | | 4000/276 | 3500/241 | | 2250/155 | 2000/138 | 1625/112 | 1250/86 | 1000/69 | | |
| 2781 | 0 | 1 | | | 5000/345 | | 4000/276 | 3500/241 | 3250/224 | 3000/207 | 2000/138 | 1625/112 | 1750/121 | 1250/86 | | |
| | | | | | 5750/397‡ | | 5000/345‡ | 4250/293‡ | 3625/250‡ | 3125/216‡ | 2500/172‡ | 2250/155‡ | 1800/124‡ | 1500/103‡ | | |
| FC195 | 0 | 4 | | | 5000/345 | | 4000/276 | 3500/241 | 2750/190 | 3000/207 | 2000/138 | 1625/112 | 1750/121 | 1250/86 | | |
| | | | | | 5750/397‡ | | 5000/345‡ | 4250/293‡ | 3250/224‡ | 3125/216‡ | 2500/172‡ | 2250/155‡ | 1800/124‡ | 1500/103‡ | | |
| GH195 | 0 | 4 | | | 5750/397 | | 5000/345 | 4250/293 | 3250/224 | 3000/207 | 2500/172 | 2250/155 | 1750/121 | 1500/103 | | |
| GH781 | 0 | 1 | | | 5750/400 | | 5000/345 | 4250/293 | 3625/250 | 3125/216 | 2500/172 | 2250/155 | 1800/124 | 1300/90 | | |
| GH793 | 0 | 1 | | | 5750/397 | | 5000/345 | 4250/293 | 3625/250 | 3125/216 | 2500/172 | 2250/155 | 1800/124 | 1300/90 | | |
| | | | | | 5000/345‡ | | 4000/276‡ | 3500/241‡ | 2750/190‡ | 2250/155‡ | 2000/138‡ | | | | | |
| GH506 | 0 | 1 | | | | | | | | 6090/420 | 5510/380 | 5075/350 | 4250/293 | 3625/250 | | |
| FC254 | 0 | 1 | | | | | | 7500/517‡ | | 6250/431 | 5000/345 | 4000/276 | 3000/207 | 3000/207 | | |
| GH466 | 0 | 1 | | | | | | | | | | 5510/380 | | | | |
| FC606/ FC606B | 0 | 1 | | | | | | | | | 6000/414 | 6000/414 | 6000/414 | | | |
| FC579*** | 0 | 1 | | | 10000/690‡ | | 10000/690‡ | | | | | | | | | |

† Pressure rating with reusable style fittings.
 ‡ Pressure rating with Global crimp style fittings.
 § 10,000 psi for static jack hose applications. See hose page for details.
 ¶ 10,000 psi for water blast applications. See hose page for details.
 * See hose page for dash sizes not listed.
 †† 50 psi max with band clamp style fittings.



Agency Listings

| Hose Part Number Page | GOVERNMENT | | | | | | | INDUSTRY | | | | | | |
|-----------------------|--------------|-----|-----|------|---------|------|-----------|---------------|-----------------|----------|-----|-----|----------------------|------|
| | DOT/FMVSS | CGA | DNV | FDA* | MIL/DOD | MSHA | USCG/MMT* | ISO | EN | DIN | AAR | ABS | SAE | UL |
| FC254 0 | | | ★ | | | ★ | ★ | | | | | ★ | 100R11 | |
| FC273 0 | | | ★ | | | ★ | ★ | 3862 Type R13 | EN 856 Type R13 | | | ★ | 100R13 | |
| FC273B 0 | | | | | | | | 3862 Type R13 | EN 856 Type R13 | | | | 100R13 | |
| FC300 0 | 106 Type All | | ★ | | | | ★ | | | | | ★ | 100R5, J1019, J1402 | |
| FC310 0 | | | | | | ★ | ★ | | EN 857 Type 1SC | | | ★ | 100R16 | |
| FC321 0 | | | | | | | | | | | | | | UL21 |
| FC323 0 | | | | | | ★ | ★ | | | | | ★ | 100R11, 100R12 | |
| FC324 0 | | | | | | | ★ | ★ | EN 856 | Type R12 | | ★ | 100R12 | |
| FC325 0 | | | | | | ★ | ★ | | EN 856 Type R13 | | | | 100R13 | |
| FC332 0 | | | | | | | | | | | | ★+ | | |
| FC350 0 | 106 Type All | | ★+ | | | | ★ | ★ | | | | ★ | J1402 | |
| FC352 0 | | | | | | | | | | | | | 20R1 | |
| FC355 0 | 106 Type All | | | | | | | | | | | ★ | J1402 | |
| FC363 0 | | | | ★ | | | ★ | | | | | | | |
| FC364 0 | | | | ★ | | | | | | | | | | |
| FC465 0 | | | | | | | | | | | | | 100R14B | |
| FC466 0 | | | | | | | | | EN 854 Type R6 | | | | 100R6 | |
| FC469 0 | | | | | | | | | | | | | | |
| FC498 0 | | | | | | ★ | | | EN 854 Type R6 | | | | 100R6 | |
| FC510 0 | | | | | | ★ | ★ | | EN 857 Type 1SC | | | | 100R2AT | |
| FC555 0 | | | | | | | | | | | | | | |
| FC558 0 | | | | | | | | | | | | | J2064 Type B Class 1 | |
| FC563 0 | | | | | | | | | | | | | | |
| FC579 0 | | | | | | ★ | | | | | | | | |
| FC598 0 | | | | | | | | | | | | | 100R6 | |
| FC606 0 | | | | | | ★ | | | 3862 Type R15 | | | ★ | 100R15 | |
| FC606B 0 | | | | | | | | | 3862 Type R15 | | | | 100R15 | |
| FC611 0 | | | | | | | | | | | | | | |
| FC619 0 | | | | ★ | | ★ | | | | | | ★+ | 100R4 | |
| FC629 0 | 106 Type All | | | | | | | | | | | | J1402 | |
| FC636 0 | | | | | | | | | | | | | | |
| FC639 0 | | | | | | ★ | | | | | | ★ | 100R17 | |
| FC647 0 | | | | | | | | | | | | | | |
| FC650 0 | | | | | | | | | | | | | | |

★ = Approved details available from Eaton.

+ Firesleeve required. Contact Eaton for details.

†Applies only to hose that has suffered no damage, has been properly assembled with hose guards and tested to required proof test pressure.



Agency Listings

| Hose Part Number | Page | GOVERNMENT | | | | | | INDUSTRY | | | | | | | |
|------------------|------|--------------|-----|-----|------|---------|------|-----------|------------------|--------------------|--------------------|-----|-------|---------|----|
| | | DOT/FMVSS | CGA | DNV | FDA* | MIL/DOD | MSHA | USCG/MMT* | ISO | EN | DIN | AAR | ABS | SAE | UL |
| FC659 | 0 | | | ★ | | | ★ | ★ | | E3862 Type R12 | EN 856 Type R12 | | ★ | 100R12 | |
| FC693 | 0 | | | | | | | | | | | | | | |
| FC699 | 0 | | | | | | | | | | | | | | |
| FC735 | 0 | | | | | | | | | 1436 Type 2SN5 | 20 022 Type 2SN | ‡ | | 100R16 | |
| FC736 | 0 | | | | | | | | | 3862 Type R12 | EN856 Type R12 | | | 100R12 | |
| FC807 | 0 | | | | | | | | | | | | | 100R14A | |
| FC829 | 0 | 106 Type All | | | | | | | | | | | J1420 | | |
| FC839B | 0 | | | | | | | | | | | | | 100R17 | |
| FC849 | 0 | | | | | | ★ | ★ | | | | | ★ | | |
| FC849B | 0 | | | | | | | | | | | | | | |
| GH120 | 0 | | | | | | ★ | | | | | | | 100R16 | |
| GH194 | 0 | | | ★+ | | | ★ | | 1436 Type 1SN | EN 853 Type 1SN | 20 022 Type 1SN | | ★ | 100R1AT | |
| GH195 | 0 | | | | | | ★ | ★ | 1436 Type 2SN | EN 853 Type 2SN | 20 022 Type 2SN | | ★ | 100R2AT | |
| GH466 | 0 | | | | | | ★ | | | | | | | | |
| GH493 | 0 | | | ★ | | | ★ | ★ | 3862 Type R12 | EN 853 Type R12 | | | ★ | 100R12 | |
| GH506 | 0 | | | ★ | | | ★ | | 3862 Type 4SH | EN856 Type 4SH | 20 023 Type T2 | | | | |
| GH663 | 0 | | | ★ | | | ★ | ★†† | 1436 Type 1SN | EN 853 Type 1SN | 20 022 Type 1SN | | ★ | 100R1AT | |
| GH681 | 0 | | | | | | ★ | | | | DIN20022 Type 1 | | | | |
| GH781 | 0 | | | ★ | | | ★ | ★ | | EN 853 Type 2SC | | | ★ | 100R16 | |
| GH793 | 0 | | | ★ | | | ★ | ★ | 1436 Type 2SN | EN 853 Type 2SN | 20 022 Type 2SN | | ★ | 100R2AT | |

★ = Approved details available from Eaton.
 † Firesleeve required. Contact Eaton for details.
 †† = 4 thru -16 only



Fluid Compatibility

Fluid compatibility

This chart indicates the suitability of various elastomers and metals for use with fluids to be conveyed. It is intended as a guide only and is not a guarantee. Final selection of the proper hose style, seal, or material of metal components is further dependent on many factors including pressure, fluid and ambient temperature, concentration, duration of exposure, etc.

How to use the chart

- The chart has separate sections for rating elastomers for use as hose inner tubes and as seals. Ratings for a given elastomer may not always be the same in both sections.
- Both the elastomer and the metal must be considered when determining suitability of a combination for a hose assembly, adapter with o-ring, swivel joint or coupling.
- Locate the fluid to be conveyed and determine the suitability of the elastomeric and metal components according to the resistance ratings shown for each.
- Specific hose part numbers can be found under the inner tube material groupings in the Hose Tube Identification Chart below.
- Dimensional and operating specifications for each hose can be found on the catalog pages shown with each hose part number.
- Information on o-rings and seal options for swivel joints and couplings, and how to specify them, are shown in the respective sections of this catalog.

7. For further details on the products shown in this catalog, and their applications, contact:

Eaton
14615 Lone Oak Road
Eden Prairie, MN 55344
USA
952/937-9800;
Fax: 952/974-7722
www.hydraulics.eaton.com

Resistance key rating

- E = Excellent – Fluid has little or no effect.
G = Good – Fluid has minor to moderate effect.
C = Conditional – Service conditions should be described to Eaton Aeroquip for determination of suitability for application.
U = UNSATISFACTORY

The differences between ratings "E" and "G" are relative. Both indicate satisfactory service. Where there is a choice, the materials rated "E" may be expected to give better or longer service than those rated "G".

NOTE: Special precautions are necessary in gaseous applications due to the potential volume of gaseous fluid in the system. Unless the cover is perforated, hose styles with rubber or thermoplastic covers are not suitable for gases above 250 psi. Hose styles with perforated covers are so noted in their construction descriptions.

WARNING
Compatibility of hose fittings with conveyed fluid is an essential factor in avoiding chemical reactions that may result in release of fluids or failure of the connection with the potential of causing severe personal injury or property damage.

Hose tube identification chart

1. Nitrile

| | | | |
|-------------|---------------|---------------|--------------|
| 302A (p.26) | FC136 (p.52) | FC619 (p.34) | GH120 (p.45) |
| 303 (p.26) | FC211 (p.38) | FC639/ (p.42) | GH466 (p.55) |
| 1503 (p.26) | FC212 (p.44) | FC606 (p.56) | GH493 (p.51) |
| 2556 (p.34) | FC254 (p.53) | FC647 (p.33) | GH506 (p.55) |
| 2565 (p.34) | FC273/ (p.54) | FC659 (p.52) | GH663 (p.39) |
| 2580 (p.37) | FC273B (p.54) | FC735 (p.46) | GH681 (p.42) |
| 2583 (p.37) | FC310 (p.41) | FC736 (p.53) | GH781 (p.47) |
| 2651 (p.25) | FC466 (p.35) | FC849/ (p.43) | GH793 (p.48) |
| 2681 (p.38) | FC579 (p.57) | FC849B (p.44) | |
| 2781 (p.47) | | FC849B (p.43) | |

2. PTFE

| | | | |
|-------------|--------------|--------------|--------------|
| 2807 (p.28) | FC363 (p.31) | FC465 (p.29) | FC563 (p.32) |
| 2808 (p.30) | FC364 (p.31) | FC469 (p.30) | FC807 (p.29) |

3. Thermoplastic Elastomer

4. AQP

| | | | |
|--------------|--------------|--------------|--------------|
| 2661 (p.35) | FC323 (p.50) | FC350 (p.23) | FC598 (p.36) |
| FC194 (p.40) | FC324 (p.50) | FC355 (p.23) | FC650 (p.24) |
| FC195 (p.49) | FC325 (p.51) | FC498 (p.36) | FC699 (p.24) |
| FC234 (p.25) | FC332 (p.33) | FC510 (p.41) | GH194 (p.39) |
| FC300 (p.27) | | FC598 (p.36) | GH195 (p.48) |

5. Special Application Hose (Not Included in Fluid Chart)

| | | | | |
|-------|-------|--------------------|-------------|----------------------------|
| FC234 | FC650 | Fuel | (pp.25, 24) | |
| CR170 | FC321 | LPG | (pp.27, 28) | |
| 1531 | 1531A | Railroad Air Brake | (p.22) | |
| FC252 | FC352 | FC629 | FC829 | Silicone (p.20) |
| 2550 | 2554 | 2570 | FC350 | Truck Air Brake (pp.21-23) |

6. EPDM Rubber

| | | |
|--------------|--------------|--------------|
| FC611 (p.40) | FC636 (p.49) | FC693 (p.46) |
|--------------|--------------|--------------|

SEAL ELASTOMER DATA

| Seal Elastomer | Application Specification | Max. Operating Temperature Range |
|--------------------------------------|---------------------------|--------------------------------------|
| Buna-N† | none | -40°C to +121°C [-40°F to +250°F] |
| Neoprene | none | -54°C to +100°C [-65°F to +212°F] |
| EPR (Ethylene Propylene Rubber)/EPDM | none | -54°C to +149°C [-65°F to +300°F] |
| Viton* | MIL-R-25897 | -29°C to +204°C [-15°F to +400°F] |

†Buna-N temperature range -65°F to +225°F. Also per MIL-R-6855.

*Viton is a trademark of E.I. DuPont.



Fluid Compatibility

| FLUID | Thermoplastic Elastomer Hose | | | | | | SEALS | | | | METAL | | | | |
|------------------------------------|------------------------------|-----------|------------------------------|----------|-------------------------------|-----------|-------------------------------------|--------------------|--|--|--|--|--|--|---|
| | Nitrile 1 | PTFE 2 | Thermoplastic Elastomer 3 | ADP 4 | Special Application Hose 5 | EPDM 6 | Buna-N Neoprene EPR Viton* | Urethane Hydrel | Steel Brass Stainless Steel Aluminum Monel | Steel Brass Stainless Steel Aluminum Monel | Steel Brass Stainless Steel Aluminum Monel | Steel Brass Stainless Steel Aluminum Monel | Steel Brass Stainless Steel Aluminum Monel | Steel Brass Stainless Steel Aluminum Monel | |
| Heptane | E | E | E | C | U | E | G | U | E | G | U | E | G | E | G |
| Hexaldehyde | U | E | - | U | E | U | G | G | U | U | - | G | G | E | E |
| Hexane | E | E | E | E | U | E | G | U | E | G | U | E | G | E | E |
| Hydraulic Oils ² | | | | | | | | | | | | | | | |
| Ester Blend | C | E | C | G | E | E | U | U | E | U | E | U | E | E | E |
| Phos. Ester/Petroleum Blend | U | E | C | U | U | U | U | U | C | U | G | E | E | E | E |
| Silicone Oils | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| Straight Petroleum Base | E | E | E | E | U | E | G | U | E | E | E | E | E | E | E |
| Straight Phosphate Ester | U | E | C | U | E | U | U | G | C | U | G | E | E | E | E |
| Water Glycol | U | E | E | C | C | E | E | E | E | E | C | C | E | E | E |
| Water Petroleum Emulsion | E | E | C | G | U | E | G | U | E | C | C | C | E | E | E |
| Hydrobromic Acid | U | E | U | E | G | U | U | E | U | E | U | U | E | E | U |
| Hydrochloric Acid, Cold | U | E | U | U | G | U | U | G | E | U | U | U | U | U | U |
| Hydrocyanic Acid | C | E | - | U | E | C | C | E | E | - | - | E | E | G | E |
| Hydrofluoric Acid | U | E | U | U | U | U | C | U | U | U | U | U | U | C | C |
| Hydrofluorosilicic Acid | E | E | - | G | G | E | E | E | E | E | E | U | U | U | U |
| Hydrogen ¹ | G | C | C | G | G | E | E | E | E | E | E | E | E | E | E |
| Hydrogen Peroxide | C | E | F | G | G | G | G | G | E | G | G | U | U | G | E |
| Hydrogen Sulfide, Dry | U | E | C | U | E | U | G | E | U | - | G | E | G | G | G |
| Isocyanate | U | E | U | U | U | U | U | G | E | U | U | G | - | G | - |
| Iso Octane | G | E | E | G | U | E | G | U | E | G | E | E | E | E | E |
| Isopropyl Acetate | U | E | C | U | C | U | G | U | U | C | E | - | E | E | E |
| Isopropyl Alcohol | G | E | C | G | E | G | G | E | U | C | - | G | G | G | - |
| Isopropyl Ether | G | E | - | C | U | G | U | U | C | - | G | G | G | - | - |
| JP-4, JP-5 | E | E | F | G | E | U | U | E | U | G | E | E | E | E | E |
| Kerosene | G | E | G | E | U | E | U | E | U | G | E | E | E | E | E |
| Lacquer/Lacquer Solvents | U | E | U | U | U | U | U | U | U | U | G | U | E | E | E |
| Lime Sulfur | U | E | C | U | E | U | E | E | E | C | C | G | U | G | - |
| Linseed Oil | E | E | G | G | U | E | G | U | E | G | G | E | E | E | E |
| LPG ¹ | LPG Approved Hose Only | | | | | | E | G | U | E | - | E | E | E | E |
| Lubricating Oils ² | See Hydraulic Oils | | | | | | See Hydraulic Oils | | | | See Hydraulic Oils | | | | |
| Magnesium Chloride, 10% aq | E | E | C | E | E | E | E | E | C | C | E | C | C | G | G |
| Magnesium Hydroxide, 10% aq | G | E | C | G | E | G | E | E | C | C | E | E | G | E | G |
| Magnesium Sulfate, 10% aq | E | E | C | E | E | E | E | E | C | C | E | E | E | E | E |
| Maleic Acid | U | E | C | C | G | U | U | E | E | C | C | E | G | G | G |
| Maleic Anhydride | U | E | C | U | C | U | U | E | C | C | G | U | E | G | E |
| Malic Acid | G | E | - | G | U | G | U | G | - | - | U | - | E | G | E |
| Mercuric Chloride | G | E | E | G | G | E | E | E | E | E | U | U | U | U | U |
| Mercury | E | E | E | E | E | E | E | E | E | E | E | U | U | U | U |
| Methanol | E | E | C | E | E | G | E | U | C | C | G | G | E | C | E |
| Methyl Bromide | C | E | U | U | U | G | U | E | U | U | E | E | G | U | E |
| Methyl Chloride | U | E | U | U | U | U | U | E | U | U | E | E | E | U | G |
| Methyl Butyl Ketone | U | E | U | U | E | U | E | U | C | C | E | E | E | - | E |
| Methyl Ethyl Ketone | U | E | U | U | E | U | E | U | U | G | G | G | G | G | G |
| Methylene Chloride | U | E | U | U | U | U | U | G | U | U | G | G | G | G | G |
| Methyl Isobutyl Ketone | U | E | U | U | E | U | U | U | U | U | G | G | G | G | G |
| Methyl Isopropyl Ketone | U | E | U | C | E | U | U | U | U | U | G | G | G | G | G |
| Methyl Salicylate | U | E | - | U | C | U | U | C | U | - | - | E | G | E | G |
| MIL-L-2104 | E | E | E | E | U | E | G | U | E | E | E | E | E | - | E |
| MIL-H-5606 | E | E | E | E | U | E | G | U | E | E | E | E | E | E | E |
| MIL-H-6083 | E | E | E | F | U | E | U | E | E | E | E | E | E | - | E |
| MIL-L-7808 | G | E | G | G | U | G | U | E | G | G | G | G | E | - | - |
| MIL-L-23699 | E | E | - | G | U | G | U | E | - | - | E | E | E | E | E |
| MIL-H-46170 | G | E | - | G | C | E | G | U | E | - | E | E | E | - | E |
| MIL-H-83282 | G | E | - | G | U | E | U | E | - | - | E | E | E | - | E |
| Mineral Oils | E | E | G | E | U | E | G | U | E | G | G | E | E | E | E |
| Naphtha | C | E | G | E | U | C | U | U | E | C | G | - | - | - | - |
| Naphthalene | U | E | U | U | U | U | U | E | C | G | E | G | E | G | G |
| Naphthenic Acid | U | E | - | U | U | C | U | U | E | - | - | G | E | G | G |

This chart is intended for reference use only. The information in this chart pertains strictly to material compatibility and is not intended to be used as an application guide. For information on specific applications not included in this catalog, please contact Eaton Aeroquip.

*Viton is a E.I. DuPont trademark.
Note ¹ - Rubber covered hose must be perforated to allow gas to escape.
Note ² - Due to the widely different additives in these fluids, testing should be done on the actual fluid being considered.

TECHNICAL INFORMATION



Fluid Compatibility

E = EXCELLENT
G = GOOD
C = CONDITIONAL
U = UNSATISFACTORY

| FLUID | HOSE | | | | | | SEALS | | | | | | | METAL | | | | |
|---------------------------------------|---------|------|-------------------------|---|---|--------------------------|-------|--------|----------|-----|--------|----------|-------|-------|-------|-----------------|----------|-------|
| | Nitrile | PTFE | Thermoplastic Elastomer | | | Special Application Hose | EPDM | Buna-N | Neoprene | EPR | Viton* | Urethane | Hyrel | Steel | Brass | Stainless Steel | Aluminum | Monel |
| | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | |
| Sodium Hypochlorite, 10% aq | C | E | C | G | G | C | C | E | C | C | C | U | U | U | U | C | | |
| Sodium Metaphosphate, 10% aq | E | E | E | E | E | E | E | E | E | E | E | E | E | G | G | U | G | |
| Sodium Nitrate, 10% aq | G | E | E | G | E | E | G | G | E | - | E | E | C | E | C | E | E | |
| Sodium Perborate, 10% aq | G | E | - | G | E | G | G | E | E | - | - | U | U | C | U | C | U | |
| Sodium Peroxide, 10% aq | G | E | - | G | G | G | G | E | E | U | - | U | U | C | C | C | C | |
| Sodium Phosphates, 10% aq | E | E | E | C | E | E | E | E | E | E | E | U | E | G | U | E | E | |
| Sodium Silicate, 10% aq | E | E | E | G | E | E | E | E | E | E | E | E | E | E | E | E | E | |
| Sodium Sulfate, 10% aq | E | E | E | G | E | E | E | E | E | E | E | C | G | G | G | G | G | |
| Sodium Sulfide, 10% aq | E | E | E | G | E | E | E | E | E | E | E | C | U | C | U | G | G | |
| Sodium Thiosulfate, 10% aq | G | E | E | G | E | G | E | E | E | E | E | U | U | C | G | E | E | |
| Soy Bean Oil | E | E | G | C | U | E | G | U | E | G | G | E | E | E | E | E | E | |
| Stannic Chloride | G | E | C | G | E | E | G | E | E | C | C | U | U | U | U | U | U | |
| Steam ¹ (up to 388°F) | U | E | U | U | G | U | U | C | U | U | C | U | E | E | G | E | E | |
| Stearic Acid | G | E | G | G | G | G | G | G | E | G | G | C | C | E | C | E | E | |
| Stoddard Solvent | G | E | U | E | U | E | G | U | E | U | U | E | E | E | E | E | E | |
| Styrene | U | E | U | U | U | U | U | U | G | U | U | E | E | E | E | E | E | |
| Sulfur, Slurry | C | E | G | E | U | E | E | E | E | G | E | U | G | E | E | E | E | |
| Sulfur Chloride, Wet | U | E | - | U | U | U | U | U | E | - | - | G | - | G | U | E | E | |
| Sulfur Dioxide, Dry | U | E | U | U | E | U | U | G | E | U | E | G | E | G | E | G | E | |
| Sulfur Trioxide | U | E | U | U | C | U | U | G | E | U | U | G | C | G | G | G | G | |
| Sulfuric Acid, to 10% | U | E | U | U | E | U | G | U | E | C | C | U | G | C | - | E | E | |
| Sulfuric Acid, over 10% | U | E | U | U | U | U | U | G | U | U | C | C | C | U | C | U | C | |
| Sulfurous Acid | U | E | U | G | G | C | C | U | G | U | U | C | C | C | U | C | U | |
| Tannic Acid | G | E | G | G | E | G | E | E | E | G | E | E | E | C | E | C | E | |
| Tar (Bituminous) | G | E | G | G | U | G | U | U | E | G | G | E | G | E | E | E | E | |
| Tartaric Acid | E | E | G | E | G | E | G | G | E | G | G | U | C | C | E | E | E | |
| Tertiary Butyl Alcohol | G | E | G | E | G | G | G | E | G | G | G | G | G | G | G | G | G | |
| Titanium Tetrachloride | U | E | - | U | U | C | U | U | E | - | - | E | U | G | U | E | E | |
| Toluene (Toluol) | U | E | U | U | U | U | U | U | E | U | U | E | E | E | E | E | E | |
| Trichlorethylene | U | E | U | U | U | U | U | E | U | U | E | E | G | E | E | E | E | |
| Tricresyl Phosphate | U | E | U | U | U | U | U | E | G | U | U | E | - | C | - | G | G | |
| Triethanolamine | G | E | U | G | E | E | U | E | U | U | U | E | U | E | E | E | E | |
| Tung Oil | E | E | C | U | U | G | G | U | E | U | C | E | G | E | E | E | E | |
| Turpentine | E | E | G | G | U | G | U | E | E | G | G | G | G | G | G | G | G | |
| Varnish | C | E | G | G | U | G | U | U | E | G | G | E | G | E | E | E | E | |
| Vinyl Chloride | U | E | U | U | U | U | U | E | U | U | U | E | U | C | E | E | E | |
| Water (to +150°F) | E | E | E | C | E | E | E | E | E | E | E | C | G | E | G | E | E | |
| Water (+151°F to +200°F) | C | E | U | U | E | E | E | E | E | U | U | C | G | E | G | E | E | |
| Water (+201°F to +350°F) | U | E | U | U | E | U | G | G | U | U | C | G | E | G | E | G | E | |
| Water Glycol | E | E | C | E | E | E | E | E | C | C | E | E | E | G | E | E | E | |
| Water Petroleum Emulsion ² | E | E | C | C | U | E | G | U | E | C | C | C | E | E | G | E | E | |
| Xylene | U | E | C | U | U | U | U | E | U | C | E | E | E | E | E | E | E | |
| Zinc Chloride, 10% aq | E | E | E | E | E | E | E | E | E | E | E | E | U | U | C | G | G | |
| Zinc Sulfate, 10% aq | E | E | - | E | E | E | E | E | E | - | - | U | C | G | C | G | G | |

Hydraulic fluids & lubricating oils

The following is a representative list of fluids and manufacturers. The fluids are grouped under generic "family" heads and arranged alphabetically. For each generic "family" listing we have included maximum fluid temperature recommendations for the four hose classifications on page 349 (1 through 4). Two maximum fluid temperature ratings are listed under designations of "H" and "LP".

The "H" designation is for hydraulic service up to the maximum rated operating pressure of any particular hose in the classification. The "LP" designation is for low-pressure service such as lubricating oil systems or low-pressure hydraulic return lines.

The letter "U" in the box indicates unsatisfactory resistance to the fluid type.

Fluid temperature ratings are predicated on maximum allowable ambient temperatures as follows:

Classifications 1 and 3 (Synthetic Rubber and Thermoplastic Elastomer)

"H" fluid temp. ratings:

+140°F ambient

"LP" fluid temp. ratings:

+180°F ambient

Classification 2 (PTFE)

"H" fluid temp. ratings:

+400°F ambient

"LP" fluid temp ratings:

+400°F ambient

Classification 4 (AQP)

"H" fluid temp. ratings:
+160°F ambient

"LP" fluid temp. ratings:
+250°F ambient

(If "H" fluid temperature is +225°F or less, allowable ambient temperature may be increased to +200°F)

Ambient temperatures in excess of those recommended, in conjunction with maximum fluid temperatures, can materially shorten the service life of the hose.

CAUTION: The fluid manufacturer's recommended maximum operating temperature for any specific namebrand fluid should be scrupulously observed by the user. These recommended temperatures can vary widely between name brands of different fluid compositions, even though they fall into the same generic "family" of fluids.

Exceeding the manufacturer's recommended maximum temperature can result in fluid breakdown, producing by-products that are harmful to elastomeric products, as well as other materials in the system. If a manufacturer's recommended maximum temperature for his specific fluid is lower than that for the hose rating, it should take precedence over the hose rating for service usage.

This chart is intended for reference use only.

The information in this chart pertains strictly to material compatibility and is not intended to be used as an application guide. For information on specific applications not included in this catalog, please contact Eaton Aeroquip.

*Viton is a E.I. DuPont trademark.

Note 1 - Rubber-covered hose must be perforated to allow gas to escape.

Note 2 - Due to the widely different additives in these fluids, testing should be done on the actual fluid being considered.



Powering Business Worldwide

Fluid Compatibility

STRAIGHT PETROLEUM-BASE

Maximum fluid temperature recommendation **

HOSE CLASSIFICATIONS (SEE P. 349)

| | 1 | 2 | 3 | 4 |
|----|--------|--------|--------|--------|
| H | +200°F | +400°F | +200°F | +300°F |
| LP | +250°F | +450°F | +200°F | +300°F |

Fluid Name

Aircraft Hydraulic Oil AA
Ambrex Oils
Arco A.T.F. Dexron
Arco A.T.F. Type F
Arco Fleet Motor
Arco H.T.F. C-2 Fluid
Arco H.T.C. 100 Fluid
Arco 303 Fluid
ATF Special
Automatic Transmission Fluid (Dexron)

Carnea Oils
Citgo Amplex
Citgo ATF, Type F
Citgo ATF, Dexron
Citgo Extra Duty Circulating Oils Mineral Oil (Heavy Duty) (R & O)
Citgo Motor Oils
Citgo Pacemaker Series Mineral Oil (R & O)
Citgo Pacemaker T Series Mineral Oil (R & O)
Citgo Pacemaker XD Series Mineral Oil (Heavy Duty) (R & O)
Citgo Sentry
Citgo Tractor Hydraulic Fluid
Conoco 303 Fluid
Custom Motor Oil

Dectol R & O Oils
Delo 400 Motor Oils
Delvac Oils
Delvac SHC
Delvac Special 10W-30
Donax T Oils
DTE Oils
Duro
Duro AW

EP Hydraulic Oils
EP Industrial Oils
EP Machine Oils
Energol HL68
Energol HLP C68
Etna Oils
Exxon ATF

Factovis 52 – Conventional R & O Hydraulic Fluid

Gulf Harmony AW
Gulf Security AW
Glide

Hulburt 27 Series
Hydraulic Series
Hydraulic Oils
Hydroil Series

Industron 53 – Anti Wear Hydraulic Fluid

Lubrite Motor 20W-40

Mobil AFT 210
Mobil AFT 220
Mobilfluid 62
Mobilfluid 423
Mobil Hydraulic Oils
Mobiloil Special
Mobiloil Super 10W-40

NUTO Oils

OC Turbine Oils

Peaco Oils
Pennbell Oils
Power-Tran Fluid

Quadroil Series

Rando Oils
Rando Oils HD
Redind Oils
Regal Oils R & O
Rimula Oils
Rotella Oils
Rotella T Oils
RPM Delo 200 Motor Oils
RPM Delo 300 Motor Oils
RPM Delo Special Motor Oils
Rubilene

Shell Brand
Special Motor Oils
Sun R & O Oils
Suntac HP Oils
Suntac WR Oils
Sunvis 700 Oils
Sunvis 800 Oils
Sunvis 900 Oils
Super Hydraulic Oils
Supreme Motor Oils

Tellus Oils
Teresstic Oils
Torque Fluids
Torque Fluid 47
Torque Fluid 56
Tractor Hydraulic Fluid

Union ATF Dexron
Union ATF Type F
Union C-2 Fluid
Union C-P Oil
Union Custom Motor Oil
Union Gas Engine Oil
Union Guardol Motor Oil
Union Heavy Duty Motor Oil
Union Hydraulic Oil AW
Union Hydraulic Tractor Fluid
Union Premium Motor Oil
Union S-1 Motor Oil
Union Special Motor Oil
Union Super Motor Oil

Union Torque Correction Fluid
Union Turbine Oil
Union Turbine Oil XD
Union Unax
Union Unax AW
Union Unax R & O
Union Unax RX
Union Unitec Motor Oil
Univis J13
Univis J26
Univis P32

Vactra Oils
Vitrea Oils

Way Lubricants

XD-3 Motor Oils



Powering Business Worldwide

Fluid Compatibility

WATER AND PETROLEUM OIL EMULSION (FR)

Maximum fluid temperature recommendation**

HOSE CLASSIFICATIONS (SEE P. 349)

| | 1 | 2 | 3 | 4 |
|----|--------|--------|--------|--------|
| H | +200°F | +250°F | +150°F | +200°F |
| LP | +200°F | +250°F | +150°F | +200°F |

Fluid Name

Fluid Name
Aqualube
Astrol #587

Chevron FR Fluid D
Chrysler L-705
Citgo Pacemaker Invert FR Fluid
Conoco FR Hydraulic Fluid

Dasco IFR
Duro FR-HD

Fire Resistant Hydrafluid
Fire Resistant Hydraulic Fluid B
FR 3110 Hydraulic Fluid (invert)
Fyre-Safe W/O

Gulf R & D FR Fluid

Houghto-Safe 5046
Houghto-Safe 5046W
Hulsafe 500
Hy-Chock Oil
Hydrasol A

Ironsides #814-A
Irus Fluid 905

Kutwell 40

Masoi Fire Resistant Fluid
Meltran FR 900
Mine Guard
Mobilmet S122

Penn Drake Hydraqua Fluid
Permamul FR
Puro FR Fluid
Pyrogard C
Pyrogard D

Quintolubric 957 Series
Quintolubric 958 Series

Regent Hydrolube #670

SAFOIL Hydraulic Fluid Anti-Wear
Sinclair Duro FR-HD
Solvac 1535G
Staysol FR
Sunsafe F

Union FR Fluid
Union Soluble Oil HD

Veedol Auburn FRH
Veedol Auburn FRH Concentrate

**See CAUTION on page 349 for maximum fluid temperatures and limiting ambient temperatures.

WATER AND GLYCOL SOLUTION

Maximum fluid temperature recommendation**

HOSE CLASSIFICATIONS (SEE P. 349)

| | 1 | 2 | 3 | 4 |
|----|--------|--------|--------|---|
| H | +200°F | +250°F | +150°F | C |
| LP | +200°F | +250°F | +150°F | C |

Fluid Name

Chem-Trend HF-18
Chem-Trend HF-20
Chevron Glycol FR Fluids
Citgo Glycol FR Fluids
Citgo Glycol FR-20 XD
Citgo Pacemaker

Dasco FR 150
Dasco FR 200
Dasco FR 200 B
Dasco FR 310

Fyrguard 150
Fyrguard 200
Fyre-Safe 225

Gulf FR Fluid G-200
Gulf FR Fluid – G Series

Houghto-Safe 271
Houghto-Safe 416
Houghto-Safe 520
Houghto-Safe 525
Houghto-Safe 616
Houghto-Safe 620
Houghto-Safe 625
Houghto-Safe 640
Hydra Safe 620
Hydra Safe 625
Hydraulic Safety Fluid 200
Hydraulic Safety Fluid 300
Hyspin AF-1
Hyspin AF-2
Hyspin AF-3

Maxmul
Maxmul FR
Melsyn 200
Melsyn Glycol FR

Nyvac FR Fluid
Nyvac FR 200 Fluid
Nyvac 20 (WG)
Nyvac 30 (WG)

Park Water Glycol Hydraulic Fluid
Pennzoil Fluid FR 2X

Quintolubric 700 Series

Santosafe W/G 15
Santosafe W/G 20
Santosafe W/G 30
Standard Glycol FR #15
Standard Glycol FR #20
Standard Glycol FR #25

Ucon Hydrolube 150 CP
Ucon Hydrolube 200 CP
Ucon Hydrolube 275 CP
Ucon Hydrolube 300 CP
Ucon Hydrolube 550 CP
Ucon Hydrolube 900 CP
Ucon Hydrolube 150 DB
Ucon Hydrolube 275 DB
Ucon Hydrolube 150 LT
Ucon Hydrolube 200 LT

Ucon Hydrolube 275 LT
Ucon Hydrolube 300 LT
Ucon M-1
Ucon Hydrolube 200 NM
Ucon Hydrolube 300 NM



Fluid Compatibility

STRAIGHT PHOSPHATE-ESTER (FR)

Maximum fluid temperature recommendation**

| HOSE CLASSIFICATIONS (SEE P. 349) | | | | |
|-----------------------------------|---|--------|--------|---|
| | 1 | 2 | 3 | 4 |
| H | U | +400°F | +200°F | U |
| LP | U | +400°F | +200°F | U |

Fluid Name

FR Fluids
Fyrquel 90
Fyrquel 150
Fyrquel 220
Fyrquel 300
Fyrquel 550
Fyrquel 1000
Fyrquel 150 R & O
Fyrquel 220 R & O
Fyrquel 550 R & O

Gulf FR Fluid P-37
Gulf FR Fluid P-40
Gulf FR Fluid P-43
Gulf FR Fluid P-45
Gulf FR Fluid P-47

Houghto-Safe 1010
Houghto-Safe 1055
Houghto-Safe 1115
Houghto-Safe 1120
Houghto-Safe 1130

Pyrogard 51
Pyrogard 53
Pyrogard 55

Safetytex 215

Skydraul 500A
Skydraul 7000

Univis P12

ESTER BLEND TURBINE OILS

Maximum fluid temperature recommendation**

| HOSE CLASSIFICATIONS (SEE P. 349) | | | | |
|-----------------------------------|--------|--------|--------|--------|
| | 1 | 2 | 3 | 4 |
| H | - | - | - | - |
| LP | +250°F | +450°F | +200°F | +300°F |

Fluid Name

Stauffer Jet I
Stauffer Jet II

SILICONE OILS

Maximum fluid temperature recommendation**

| HOSE CLASSIFICATIONS (SEE P. 349) | | | | |
|-----------------------------------|--------|--------|--------|--------|
| | 1 | 2 | 3 | 4 |
| H | +200°F | +400°F | +200°F | +300°F |
| LP | +250°F | +450°F | +200°F | +300°F |

Fluid Name

Dow Corning 200 Fluid (100CS)
Dow Corning QF1-2023
Dow Corning 4-3600
Dow Corning 3-3672

POLYOL-ESTER

Maximum fluid temperature recommendation**

| HOSE CLASSIFICATIONS (SEE P. 349) | | | | |
|-----------------------------------|--------|--------|---|--------|
| | 1 | 2 | 3 | 4 |
| H | +200°F | +400°F | - | +225°F |
| LP | +200°F | +400°F | - | +250°F |

Fluid Name

Quintolubric 822 Series

***See NOTE on page 349 for maximum fluid temperatures and limiting ambient temperatures.*

LUBRICANT COMPATIBILITY CHART

| Lubricant | Hose Style | | | | | | |
|--------------|------------|-------|-------|-------|-------|-------|-------|
| | FC802 | FC505 | FC555 | FC558 | GH134 | FC665 | FC765 |
| Mineral Oil | Y | Y | Y | N | N | Y | Y |
| PAG | Y | Y | Y | Y | Y | Y | Y |
| Ester Oil | Y | Y | Y | Y | Y | Y | Y |
| Alkylbenzene | Y | Y | Y | N | N | Y | Y |

Y = Compatible
N = Non-compatible



Powering Business Worldwide

SAE Recommended Practices

Selection, installation and maintenance of hose and assemblies — SAE J1273 October 1996

The following recommendations on selection, installation and maintenance of hose assemblies was established by the S.A.E. in 1991. Please read these general instructions carefully. More detailed information on many of these subjects is covered in this catalog.

1. Scope—Hose (also includes hose assemblies) has a finite life and there are a number of factors which will reduce its life.

This recommended practice is intended as a guide to assist system designers and/or users in the selection, installation, and maintenance of hose. The designers and users must make a systematic review of each application and then select, install, and maintain the hose to fulfill the requirements of the application. The following are general guidelines and are not necessarily a complete list.

WARNING: IMPROPER SELECTION, INSTALLATION, OR MAINTENANCE MAY RESULT IN PREMATURE FAILURES, BODILY INJURY, OR PROPERTY DAMAGE.

2. References

2.1 Applicable Documents—The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

J516—Hydraulic Hose Fittings

J517—Hydraulic Hose

3. Selection—The following is a list of factors which must be considered before final hose selection can be made.

3.1 Pressure—After determining the system pressure, hose selection must be made so that the recommended maximum operating pressure is equal to or greater than the system pressure. Surge pressures higher than the maximum operating pressure will shorten hose life and must be taken into account by the hydraulic designer.

3.2 Suction—Hoses used for suction applications must be selected to insure the hose will withstand the negative pressure of the system.

3.3 Temperature—Care must be taken to insure that fluid and ambient temperatures, both static and transient, do not exceed the limitations of the hose. Special care must be taken when routing near hot manifolds.

3.4 Fluid Compatibility—Hose selection must assure compatibility of the hose tube, cover and fittings with the fluid used. Additional caution must be observed in hose selection for gaseous applications.

3.5 Size—Transmission of power by means of pressurized fluid varies with pressure and rate of flow. The size of the components must be adequate to keep pressure losses to a

minimum and avoid damage to the hose due to heat generation or excessive turbulence.

3.6 Routing—Attention must be given to optimum routing to minimize inherent problems.

3.7 Environment—Care must be taken to insure that the hose and fittings are either compatible with or protected from the environment to which they are exposed. Environmental conditions such as ultraviolet light, ozone, salt water, chemicals, and air pollutants can cause degradation and premature failure and, therefore, must be considered.

3.8 Mechanical Loads—External forces can significantly reduce hose life. Mechanical loads which must be considered include excessive flexing, twist, kinking, tensile or side loads, bend radius, and vibration. Use of swivel-type fittings or adapters may be required to insure no twist is put into the hose. Unusual applications may require special testing prior to hose selection.

3.9 Abrasion—While hose is designed with a reasonable level of abrasion resistance, care must be taken to protect the hose from excessive abrasion which can result in erosion, snagging and cutting of the hose cover. Exposure of the reinforcement will significantly accelerate hose failure.

3.10 Proper End Fitting—Care must be taken to insure proper compatibility exists between the hose and coupling selected based on the manufacturer's recommendations substantiated by testing to industry standards such as SAE J517. End fitting components from one manufacturer are usually not compatible with end fitting components supplied by another manufacturer (i.e., using a hose fitting nipple from one manufacturer with a hose socket from another manufacturer). It is the responsibility of the fabricator to consult the manufacturer's written instructions or the manufacturer directly for proper end fitting componentry.

3.11 Length—When establishing proper hose length, motion absorption, hose length changes due to pressure, as well as hose and machine tolerances must be considered.

3.12 Specifications and Standards—When selecting hose, government, industry and manufacturers' specifications and recommendations must be reviewed as applicable.

3.13 Hose Cleanliness—Hose components vary in cleanliness levels. Care must be taken to insure that the assemblies selected have an adequate level of cleanliness for the application.

3.14 Electrical Conductivity—Certain applications require that hose be non-conductive to prevent electrical current flow. Other applications require the hose to be sufficiently conductive to drain off static electricity. Hose and fittings must be chosen with these needs in mind.

4. Installation—After selection of proper hose, the following factors must be considered by the installer.

4.1 Pre-Installation Inspection—Prior to installation, a careful examination of the hose must be performed. All components must be checked for correct style, size and length. In addition, the hose must be examined for cleanliness, I.D. obstructions, blisters, loose cover, or any other visible defects.

4.2 Follow Manufacturers' Assembly Instructions—Hose assemblies may be fabricated by the manufacturer, an agent for or customer of the manufacturer, or by the user. Fabrication of permanently attached fittings to hydraulic hose requires specialized assembly equipment. Field-attachable fittings (screw style and segment clamp style) can usually be assembled without specialized equipment although many manufacturers provide equipment to assist in the operation.

SAE J517 hose from one manufacturer is usually not compatible with SAE J516 fittings supplied by another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written assembly instructions or the manufacturers directly before intermixing hose and fittings from two manufacturers. Similarly, assembly equipment from one manufacturer is usually not interchangeable with that of another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written instructions for proper assembly preparation and fabrication of hose assemblies.

4.3 Minimum Bend Radius—Installation at less than minimum bend radius may significantly reduce hose life. Particular attention must be given to preclude sharp bending at the hose/fitting juncture.

4.4 Twist Angle and Orientation—Hose installations must be such that relative motion of machine components produces bending of the hose rather than twisting.

4.5 Securement—In many applications, it may be necessary to restrain, protect, or guide the hose to protect it from damage by unnecessary flexing, pressure surges, and contact with other mechanical components. Care must be taken to insure such restraints do not introduce additional stress or wear points.

4.6 Proper Connection of Ports—Proper physical installation of the hose requires a correctly installed port connection while insuring that no twist or torque is put into the hose.

4.7 Avoid External Damage—Proper installation is not complete without insuring that tensile loads, side loads, kinking, flattening, potential abrasion, thread damage, or damage to sealing surfaces are corrected or eliminated.

4.8 System Check Out—After completing the installation, all air entrapment must be eliminated and the system pressurized to the maximum system pressure and checked for proper function and freedom from leaks.

NOTE: Avoid potential hazardous areas while testing.

5. Maintenance—Even with proper selection and installation, hose life may be significantly reduced without a continuing maintenance program. Frequency should be determined by the severity of the application and risk potential. A maintenance program should include the following as a minimum.

5.1 Hose Storage—Hose products in storage can be affected adversely by temperature, humidity, ozone, sunlight, oils, solvents, corrosive liquids and fumes, insects, rodents and radioactive materials. Storage areas should be relatively cool and dark and free of dust, dirt, dampness and mildew.

5.2 Visual Inspection—Any of the following conditions requires replacement of the hose:

- (a) Leaks at fitting or in hose (leaking fluid is a fire hazard)
- (b) Damaged, cut, or abraded cover (any reinforcement exposed)
- (c) Kinked, crushed, flattened, or twisted hose
- (d) Hard, stiff, heat cracked or charred hose
- (e) Blistered, soft, degraded, or loose cover
- (f) Cracked, damaged, or badly corroded fittings

(g) Fitting slippage on hose

5.3 Visual Inspection—The following items must be tightened, repaired, or replaced as required:

- (a) Leaking port conditions
- (b) Clamps, guards, shields
- (c) Remove excessive dirt buildup
- (d) System fluid level, fluid type, and any air entrapment

5.4 Functional Test—Operate the system at maximum operating pressure and check for possible malfunctions and freedom from leaks.

NOTE: Avoid potential hazardous areas while testing.

5.5 Replacement Intervals—Specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failures could result in unacceptable downtime, damage, or injury risk.



Flow Capacities

Flow capacities of hose assemblies at suggested flow velocities

The chart below is designed and provided as an aid in the determination of the correct hose size.

Example: At 13 U.S. gallons per minute, what is proper hose size within the suggested velocity range for pressure lines?

Solution: Locate 13 U.S. gallons per minute in the left hand column and 10 feet per second in the right hand column (the center of the suggested velocity range for pressure lines). Lay a straightedge across the two points. The inside diameter is shown in the center column nearest the straight edge.

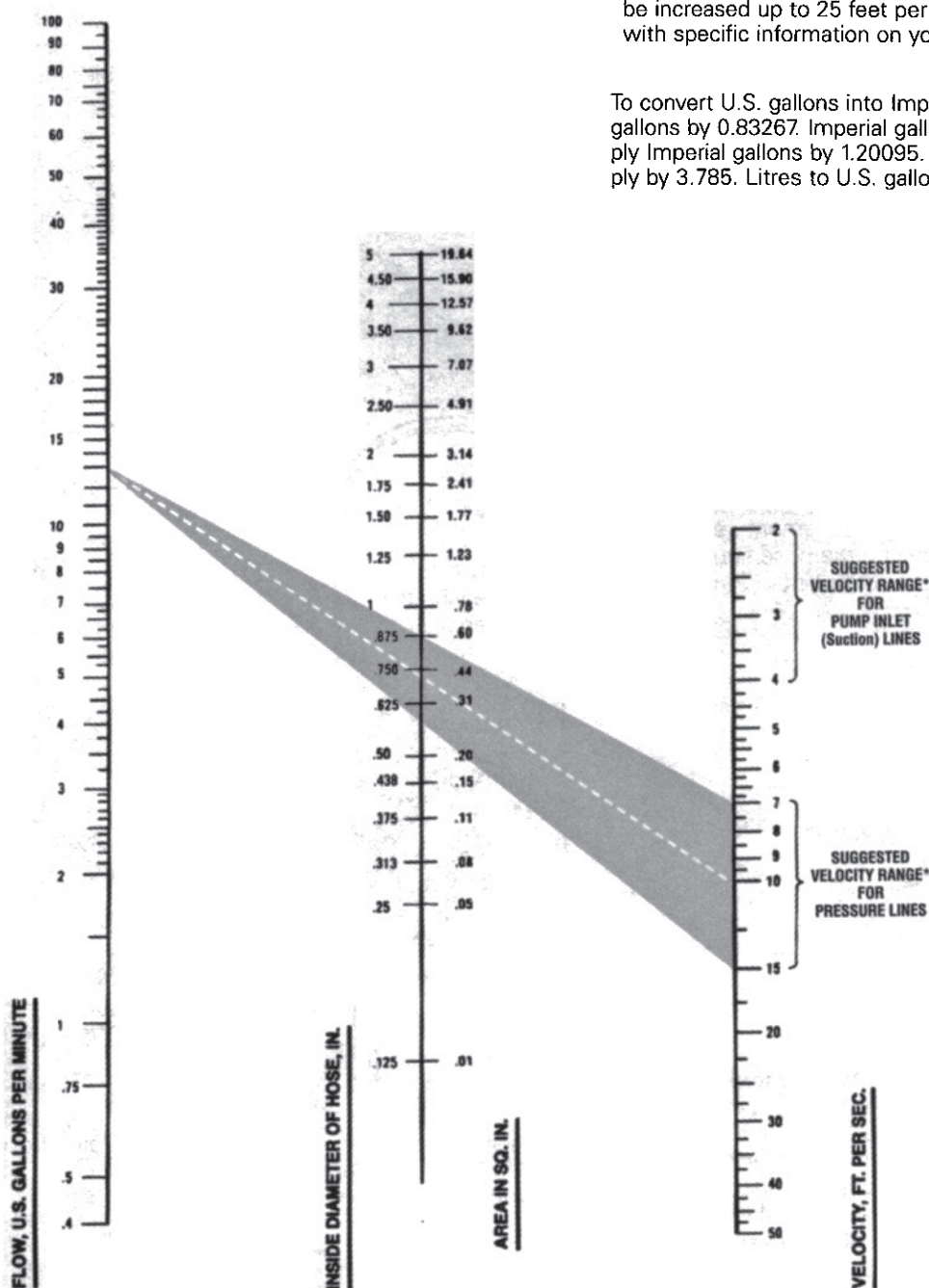
For suction hose, follow the same procedure except use suggested velocity range for pump inlet lines in the right hand column.

Based on Formula

$$\text{AREA (SQ. IN.)} = \frac{\text{G.P.M.} \times 0.3208}{\text{VELOCITY (FT./SEC.)}}$$

*Suggestions are for oils having a maximum viscosity of 315 S.S.U. at +100°F (+38°C) and operating at temperatures between +65°F and +155°F (+54°C to +69°C). Under certain conditions, velocities in pressure lines can be increased up to 25 feet per second. Contact Aeroquip with specific information on your application.

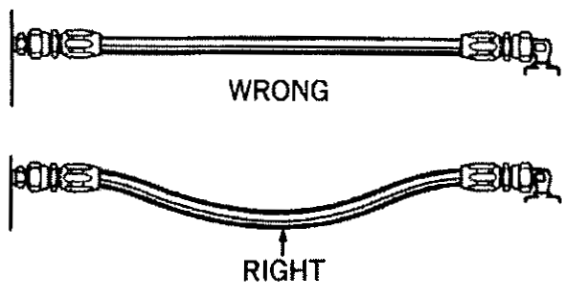
To convert U.S. gallons into Imperial gallons multiply U.S. gallons by 0.83267. Imperial gallons into U.S. gallons multiply Imperial gallons by 1.20095. U.S. gallons to litres multiply by 3.785. Litres to U.S. gallons, multiply by 0.2642.





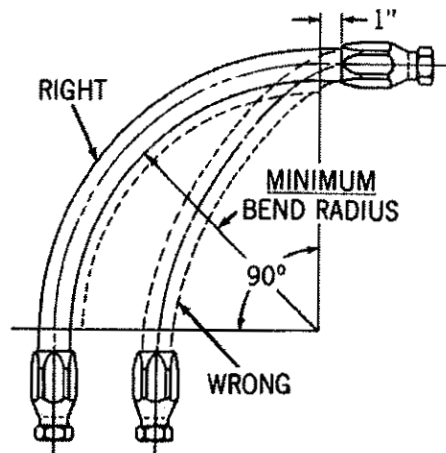
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Hose Routing and Installation



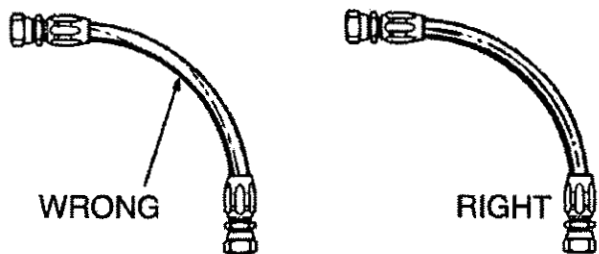
Under pressure, a hose may change in length. Always provide some slack in the hose to allow for this shortening or elongation.

(However, excessive slack in hose lines may cause poor appearance.)



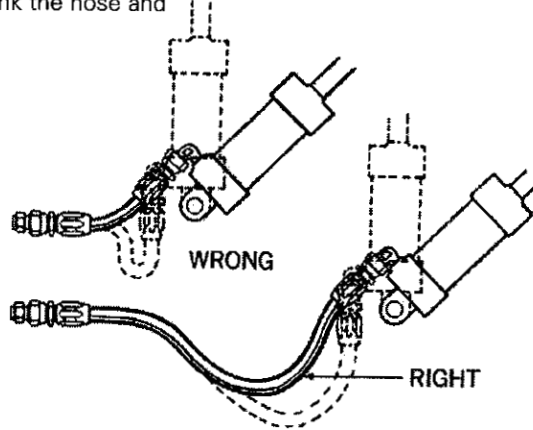
At bends, provide sufficient hose so that it does not have a bend radius less than its recommended minimum bend radius. Too tight a bend may kink the hose and

restrict or stop the fluid flow. In many cases the proper use of adapters and hose fittings can eliminate tight bends or kinks.



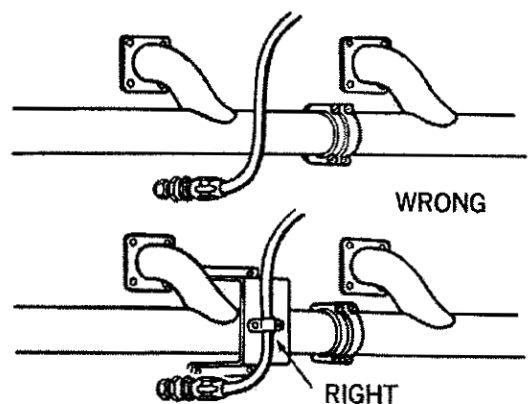
If a hose is installed with a twist in it, operating pressures tend to force it straight. This can loosen the

fitting nut. Twisting can cause reinforcement separation and the hose could burst at the point of strain.



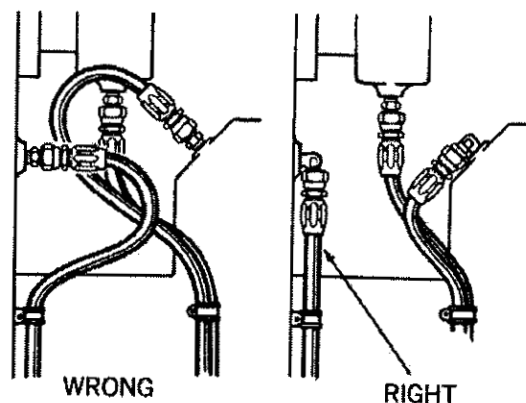
In applications where there is considerable vibration or flexing, allow additional hose length. The metal hose fittings, of course, are not flex-

ible, and proper installation protects metal parts from undue stress, and avoids kinks in the hose.



When hose lines pass near an exhaust manifold or other heat source, they should be insulated by a heat resistant boot, firesleeve or a metal baffle. In any application, brackets and clamps keep hoses in place and reduce abrasion.

For installations where abrasion to hose cover cannot be prevented with the use of clamps or brackets, a steel protective coil or abrasion resistant sleeve should be placed over the hose.



When 90° adapters were used, this assembly became neater-looking and easier to

inspect and maintain. It uses less hose, too!

Analyzing Failures

Everyone in maintenance encounters hose failures. Normally, there is no problem. The hose is replaced and the equipment goes back in operation.

Occasionally the failures come too frequently – the same equipment with the same problems keep popping up. At this point the task is to determine and correct the cause of these repeated failures.

Improper application

Beginning with the most obvious, the most common cause of hose failures – Improper Application – compare the hose specifications with the requirements of the application.

Pay particular attention to the following areas:

1. The maximum operating pressure of the hose.
2. The recommended temperature range of the hose.
3. Whether the hose is rated for vacuum service.
4. The fluid compatibility of the hose.

Check all of these areas against the requirements of the application. If they don't match up, you need to select another hose. It's a good idea at this point to call on your local hose distributor for assistance in selecting the proper hose. Eaton's distributors, for example, are well equipped to perform this service for you. Distributor personnel attend special training courses in hydraulics and hose application conducted by the company. Or, if your problem is particularly difficult, the distributor can call on the services of Eaton's

Field Engineering Staff. The company will send in a hose and hydraulic specialist to study the problem and come up with a solution.

Improper assembly and installation

The second major cause of premature hose failure is improper assembly and installation procedures. This can involve anything from using the wrong fitting on a hose, to poor routing of the hose.

Eaton provides excellent training material that you can use to combat this problem. A little time spent in training your maintenance people could pay big dividends in reduced downtime.

You can make use of the material available from Eaton to improve your hose assembly and installation techniques.

This material is available free from Eaton Corporation
14615 Lone Oak Road,
Eden Prairie, MN 55344
USA, 952/937-9800.

External damage

External damage can range from abrasion and corrosion, to hose that is crushed by a lift truck.

These are problems that can normally be solved simply once the cause is identified. The hose can be re-routed or clamped, or a fire sleeve or abrasion guard can be used.

In the case of corrosion, the answer may be as simple as changing to a hose with a more corrosion resistant cover or re-routing the hose to avoid the corrosive element.

Faulty equipment

Too frequent or premature hose failure can be the symptom of a malfunction in your equipment. This is a factor that should be considered since prompt corrective action can sometimes avoid serious and costly equipment breakdown. Reprints of an article on "Troubleshooting Hydraulic Systems," which tells you how to spot problems in a hydraulic system are available from Eaton.

Faulty hose

Occasionally a failure problem will lie in the hose itself. The most likely cause of a faulty rubber hose is old age. Check the lay line on the hose to determine the date of manufacture. (2Q99 means second quarter 1999.) The hose may have exceeded its recommended shelf life. If you suspect that the problem lies in the manufacture of the hose (and don't jump to this conclusion until you have exhausted the other possibilities) contact your distributor. Given effective quality control methods, the odds of a faulty batch of hose being released for sale are extremely small. So make sure that you haven't overlooked some other problem area.

Analyzing failures

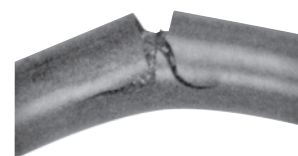
A physical examination of the failed hose can often offer a clue to the cause of the failure. Following are 22 symptoms to look for along with the conditions that could cause them:



1. Symptom: The hose tube is very hard and has cracked.

Cause: Heat has a tendency to leach the plasticizers out of the tube. This is a material that gives the hose its flexibility or plasticity.

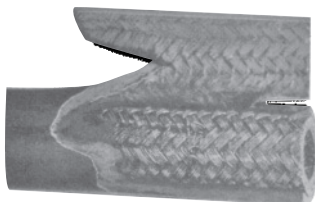
Aerated oil causes oxidation to occur in the tube. This reaction of oxygen on a rubber product will cause it to harden. Any combination of oxygen and heat will greatly accelerate the hardening of the hose tube. Cavitation occurring inside the tube would have the same effect.



2. Symptom: The hose is cracked both externally and internally but the elastomeric materials are soft and flexible at room temperature.

Cause: The probable reason is intense cold ambient conditions while the hose was flexed. Most standard hoses are rated to -40°F (-40°C). Some AQP hoses are rated at -55°F (-49°C). Military specified hoses are generally rated to -65°F (-54°C). PTFE hose is rated to -100°F (-73°C). Some Everflex Polyon thermoplastic hoses are rated at -65°F (-54°C).

3. Symptom: The hose has burst and examination of the wire reinforcement after stripping back the cover reveals random broken wires the entire length of the hose.



Cause: This would indicate a high frequency pressure impulse condition. SAE impulse test requirements for a double wire braid reinforcement are 200,000 cycles at 133% of recommended working pressure. The SAE impulse test requirements for a four spiral wrapped reinforcement (100R12) are 500,000 cycles at 133% maximum operating and at +250°F (121°C). If the extrapolated impulses in a system amount to over a million in a relatively short time a spiral reinforced hose would be the better choice.

4. Symptom: The hose has burst, but there is no indication of multiple broken wires the entire length of the hose. The hose may



have burst in more than one place.

Cause: This would indicate that the pressure has exceeded the minimum burst strength of the hose. Either a stronger hose is needed or the hydraulic circuit has a malfunction which is causing unusually high pressure conditions.

5. Symptom: Hose has burst. An examination indicates the the wire braid is rusted and the cover has been cut, abraded or deteriorated badly.



Cause: The primary function of the cover is to protect the reinforcement. Elements that may destroy or remove the hose covers are:

1. Abrasion
2. Cutting
3. Battery Acid
4. Steam Cleaners
5. Chemical Cleaning Solutions
6. Muriatic Acid (for cement clean-up)
7. Salt Water
8. Heat
9. Extreme Cold

Once the cover protection is gone the wire reinforcement is susceptible to attack from moisture or other corrosive matter.

6. Symptom: Hose has burst on the outside bend and appears to be elliptical in the bent section. In the case of a pump supply line, the pump is noisy and very hot. The exhaust line on the pump is hard and brittle.

Cause: Violation of the minimum bend radius is most likely the problem in both cases. Check the minimum bend radius and make sure that the application is within specifications. In the case of the pump supply line partial collapse of the hose is causing the pump to cavitate creating both noise and heat. This is a most serious situation and will result in catastrophic pump failure if not corrected.

7. Symptom: Hose appears to be flattened out in one or two areas and appears to be kinked. It has burst in this area and also appears to be twisted.



Cause: Torquing of a hydraulic control hose will tear loose the reinforcement layers and allow the hose to burst through the enlarged gaps between the braided plaits of wire strands. Use swivel fittings or joints to be sure there is no twisting force on a hydraulic hose.

8. Symptom: Hose type has broken loose from the reinforcement and piled up at the end of the hose. In some cases it may protrude from the end of the hose fitting.

Cause: The probable cause is high vacuum or the wrong hose for vacuum service. No vacuum is recommended for double wire braid, 4 and 6 spiral wire hose unless some sort of internal coil support is used. Even though a hose is rated for vacuum service, if it is kinked, flattened out or bent too sharply this type of failure may occur.

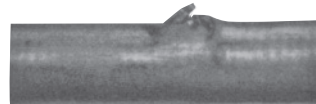
9. Symptom: Hose has burst about six to eight inches away from the end fitting. The wire braid is rusted. There are no cuts or abrasions of the outer cover.

Cause: Improper assembly of the hose end fitting allowing moisture to enter around the edge of the fitting socket. The moisture will wick through the reinforcement. The heat generated by the system will drive it out around the fitting area but six to eight inches away it will be entrapped between the inner line and outer cover causing corrosion of the wire reinforcement.

10. Symptom: There are blisters in the cover of the hose. If one pricks the blisters, oil will be found in them.

Cause: A minute pin hole in the hose tube is allowing the high pressure oil to seep between it and the cover. Eventually it will form a blister wherever the cover adhesion is weakest. In the case of a screw together reusable fitting insufficient lubrication of the hose and fitting can cause this condition because the dry tube will adhere to the rotating nipple and tear enough to allow seepage. Faulty hose can also cause this condition.

11. Symptom: Blistering of the hose cover where a gaseous fluid is being used.



Cause: The high pressure gas is effusing through the hose tube, gathering under the cover and eventually forming a blister wherever the adhesion is weakest. Specially constructed hoses are available for high pressure gaseous applications. Your supplier can advise you on the proper hose to use in these cases.

12. Symptom: Fitting blew off of the end of the hose.

Cause: It may be that the wrong fitting has been put on the hose. Recheck manufacturer's specifications and part numbers.

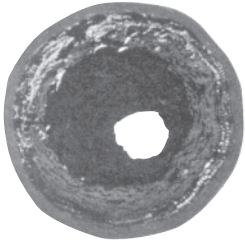
In the case of a crimped fitting the wrong machine setting may have been used resulting in over or undercrimping. The socket of a screw together fitting for multiple wire braided hose may be worn beyond its tolerance. The swaging dies in a swaged hose assembly may be worn beyond the manufacturer's tolerances.

The fitting may have been applied improperly to the hose. Check manufacturer's instructions. The hose may have been installed without leaving enough slack to compensate for the possible 4% shortening that may occur when the hose is pressurized. This will impose a great force on the fitting. The hose itself may be out of tolerance.



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13. Symptom: The tube of the hose is badly deteriorated with evidences of extreme swelling. In some cases the hose tube may be partially "washed out."



Cause: Indications are that the hose tube is not compatible with the agent being carried. Even though the agent is normally compatible, the addition of heat can be the catalyst that can cause inner liner deterioration. Consult your hose supplier for a compatibility list or present him with a sample of the fluid being conducted by the hose for analysis. Make sure that the operating temperatures both internal and external do not exceed recommendations.

14. Symptom: Hose has burst. The hose cover is badly deteriorated and the surface of the rubber is crazed.

Cause: This could be simply old age. The crazed appearance is the effect of weathering and ozone over a period of time. Try to determine the age of the hose. Some manufacturers print or emboss the cure date on the outside of the hose. As an example, Aeroquip hose would show "4Q01" which would mean that the hose was manufactured during the fourth quarter (October, November or December) of 2001.

15. Symptom: Hose is leaking at the fitting because of a crack in the metal tube adjacent to the braze on a split flange head.

Cause: Because the crack is adjacent to the braze and not in the braze this is a stress failure brought on by a hose that is trying to shorten under pressure and has insufficient slack in it to do so.

We have cured dozens of these problems by lengthening the hose assembly or changing the routing to relieve the forces on the fitting.

16. Symptom: A spiral reinforced hose has burst and literally split open with the wire exploded out and badly entangled.



Cause: The hose is too short to accommodate the change in length occurring while it is pressured.

17. Symptom: Hose is badly flattened out in the burst area. The tube is very hard down stream of the burst but appears normal up stream of the burst.



Cause: The hose has been kinked either by bending it too sharply or by squashing it in some way so that a major restriction was created. As the velocity of the fluid increases through the restriction the pressure decreases to the vaporization point of the fluid being conveyed. This is commonly called cavitation, and causes heat and rapid oxidation to take place which hardens the tube of the hose down stream of the restriction.

18. Symptom: Hose has not burst but it is leaking profusely. A bisection of the hose reveals that the tube has been gouged through to the wire braid for a distance of approximately two inches.

Cause: This failure would indicate that erosion of the hose tube has taken place. A high velocity needle like fluid stream being emitted from an orifice and impinging at a single point on the hose tube will hydraulically remove a section of it. Be sure that the hose is not bent close to a port that is orificed.

In some cases where high velocities are encountered particles in the fluid can cause considerable erosion in bent sections of the hose assembly.

19. Symptom: The hose fitting has been pulled out of the hose. The hose has been considerably stretched out in length. This may not be a high pressure application.

Cause: Insufficient support of the hose. It is very necessary to support very long lengths of hose, especially if they are vertical. The weight of the hose along with the weight of the fluid inside the hose in these cases is being imposed on the hose fitting. This force can be transmitted to a wire rope or chain by clamping the hose to it much like the utilities support bundles of wire from pole to pole. Be sure to leave sufficient slack in the hose between clamps to make up for the possible 4% shortening that could take place when the hose is pressurized.

20. Symptom: The hose has not burst but it is leaking profusely. An examination of the bisected hose reveals that the tube has burst inwardly.

Cause: This type of failure is commonly referred to as hose tube blow down. It is usually associated with very low viscosity fluids such as air, nitrogen, freon and other gases. What happens is that under high pressure conditions the gases will effuse into the pores of the hose tube charging them up like miniature accumulators. If the pressure is very suddenly reduced to zero the entrapped gases literally explode out of the tube often tearing holes in it. In some hose constructions a second

hose tube made from a plastic such as nylon, is inserted into the hose.

A small leak will allow the gaseous fluid to seep between the two inner liners and when the pressure is reduced to zero the innermost liner will collapse because of the entrapped pressure around its outer diameter.

21. Symptom: PTFE hose assembly has collapsed internally in one or more places.

Cause: One of the most common causes for this is improper handling of the PTFE assembly. PTFE is a thermoplastic material which is not rubberlike. When bent sharply it simply collapses. This type of collapse is localized in one area and is radial. When the PTFE tube is folded longitudinally in one or more places this could be the result of heat (which softens the hose tube) along with vacuum conditions inside of it. Because of the additional tension of the wire braid reinforcement inherent with this type of hose, there is always a radial tension on the tube trying to push it in. Rapid cycling from a very hot agent in the hose to a very cold agent in the hose can produce the same type of failure. Eaton offers an internal support coil that will eliminate this problem.

22. Symptom: A PTFE hose assembly has developed a pin hole leak or several pin hole leaks.

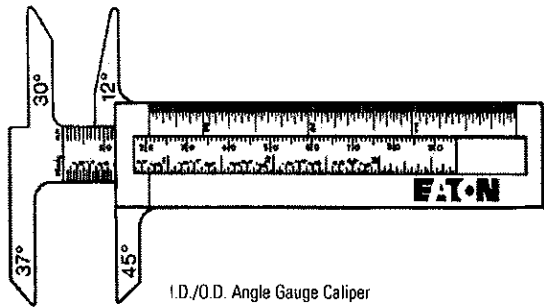
Cause: This situation occurs when a petroleum base fluid, with a low viscosity, is flowing at a high velocity. This condition can generate high voltage due to static electricity. The high voltage is seeking a ground connection and the only ground connection available is the braided stainless steel reinforcement. This causes an electric arc, which penetrates through the PTFE tube as it travels to the reinforcement. Specially constructed PTFE tubes are available that have enough carbon black in them so as to be conductive. They will "drain off" the static electricity and preclude this problem.



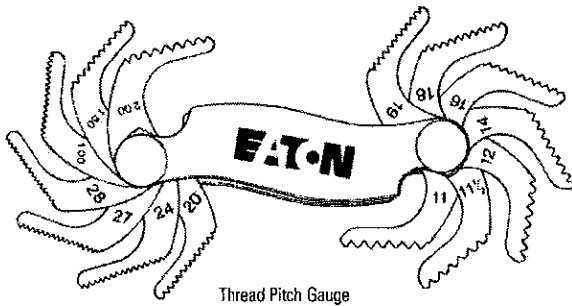
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How to Identify Fluid Connectors

Measuring Tools—Order part number FT1341 for The Identification Tool Kit. A seat angle gauge, thread pitch gauge and an I.D./O.D. caliper are necessary to make accurate measurements of commonly used connectors. Eaton offers a unique new caliper that offers the capabilities of both a caliper and a seat angle gauge in one unit.

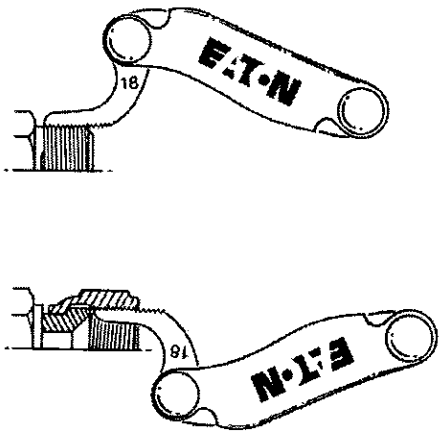


I.D./O.D. Angle Gauge Caliper

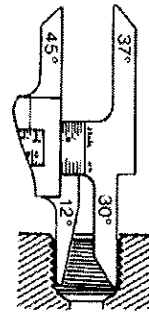


Thread Pitch Gauge

How to Measure Threads

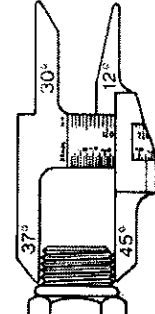


Use a thread pitch gauge to determine the number of threads per inch or the distance between threads in metric connections. Place the gauge on the threads until the fit is snug. Match the measurement to the charts.



I.D.

Measure the thread diameter with an I.D./O.D. caliper as shown.

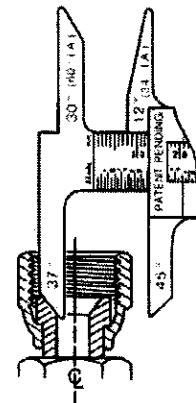


O.D.

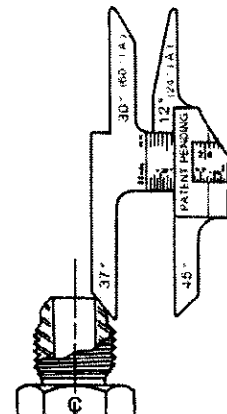
Match the measurements to the charts.

How to Measure Sealing Surface Angles

Female connections are usually measured by inserting the gauge into the connection and placing it on the sealing surface. If the centerlines of the connection and gauge are parallel, the correct angle has been determined.



Male flare type connectors are usually measured by placing the gauge on the sealing surface. If the centerlines of the connection and gauge are parallel, the correct angle has been determined.





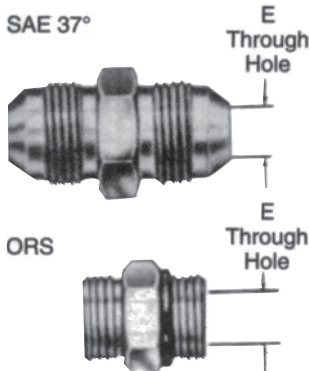
Thread Size Chart

The following chart is intended as a quick reference guide for thread size by dash size.

| Dash size | | | | | | | | |
|-----------|--------------|-----------------------|-----------------------|----------------------------|-----------------|-----------------------|-------------------|------------|
| | N.P.T.F. | N.P.S.M. Approx. Dia. | SAE 45° Auto. Refrig. | SAE 37° (J.I.C.) Hydraulic | SAE O-Ring Boss | P.T.T. 30° Automotive | SAE Invert. Flare | ORS |
| -02 | 1/8-27 | 1/8-27 | 5/16-24 | 5/16-24 | 5/16-24 | | 5/16-24 | |
| -03 | | | 3/8-24 | 3/8-24 | 3/8-24 | | 3/8-24 | |
| -04 | 1/4-18 | 1/4-18 | 7/16-20 | 7/16-20 | 7/16-20 | | 7/16-24 | 9/16-18 |
| -05 | | | 1/2-20 | 1/2-20 | 1/2-20 | | 1/2-20 | |
| -06 | 3/8-18 | 3/8-18 | 5/8-18 | 9/16-18 | 9/16-18 | | 5/8-18 | 11/16-16 |
| -07 | | | 11/16-24 | | | | 11/16-18 | |
| -08 | 1/2-14 | 1/2-14 | 3/4-16 | 3/4-16 | 3/4-16 | | 3/4-18 | 13/16-16 |
| -10 | | | 7/8-14 | 7/8-14 | 7/8-14 | | 7/8-18 | 1-14 |
| -12 | 3/4-14 | 3/4-14 | 1 1/16-14 | 1 1/16-12 | 1 1/16-12 | | 1 1/16-16 | 1 3/16-12 |
| -14 | | | | 1 3/16-12 | 1 3/16-12 | | | |
| -16 | 1-11 1/2 | 1-11 1/2 | | 1 5/16-12 | 1 5/16-12 | 1 5/16-14 | | 1 7/16-12 |
| -20 | 1 1/4-11 1/2 | 1 1/4-11 1/2 | | 1 5/8-12 | 1 5/8-12 | 1 5/8-14 | | 1 11/16-12 |
| -24 | 1 1/2-11 1/2 | 1 1/2-11 1/2 | | 1 7/8-12 | 1 7/8-12 | 1 7/8-14 | | 2-12 |
| -32 | 2-11 1/2 | 2-11 1/2 | | 2 1/2-12 | 2 1/2-12 | 2 1/2-12 | | |
| -40 | 2 1/2-8 | 2 1/2-8 | | 3-12 | 3-12 | | | |
| -48 | 3-8 | 3-8 | | 3 1/2-12 | 3 1/2-12 | | | |

Through hole dimensions

All dimensions are nominal. In jump size bodies, the minimum through hole dimensions will correspond to the smallest dash size.



| Dash Size | E through hole | | | |
|-----------|----------------|------|------|------|
| | SAE 37° | | ORS | |
| | mm | in | mm | in |
| -03 | 3,0 | 0.12 | | |
| -04 | 4,3 | 0.17 | 4,3 | 0.17 |
| -05 | 5,8 | 0.23 | | |
| -06 | 7,6 | 0.30 | 6,6 | 0.26 |
| -08 | 9,9 | 0.39 | 9,7 | 0.38 |
| -10 | 12,2 | 0.48 | 12,2 | 0.48 |
| -12 | 15,5 | 0.61 | 15,5 | 0.61 |
| -16 | 21,3 | 0.84 | 20,6 | 0.81 |
| -20 | 25,8 | 1.08 | 26,7 | 1.05 |
| -24 | 33,3 | 1.31 | 33,3 | 1.31 |
| -32 | 45,2 | 1.78 | | |



Powering Business Worldwide

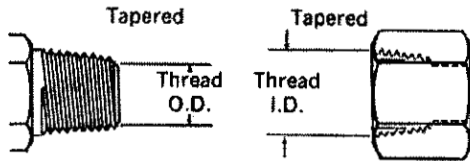
How to Measure Non-Threaded Connections

Four Bolt Flange—First measure the port hole diameter using the caliper. Next, measure the longest bolt hole spacing from center-to-center or measure the flange head diameter.

Staplok—Measure the male diameter with the O.D. portion of the caliper. Measure the female half by inserting the I.D. portion of the caliper into the through hole.

American Connections

NPTF (National Pipe Tapered Fuel)



This connection is still widely used in fluid power systems, even though it is not recommended by the National Fluid Power Association (NFPA) for use

in hydraulic applications. The thread is tapered and the seal takes place by deformation of the threads.

NPTF Threads

Measure thread diameter and subtract 1/4-inch to find the nominal pipe size.

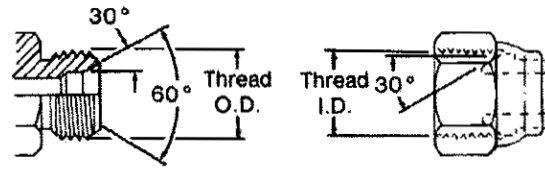
| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female thread I.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 1/8-27 | 13/32 | .41 | 3/8 | .38 |
| 1/4 | 04 | 1/4-18 | 17/32 | .54 | 1/2 | .49 |
| 3/8 | 06 | 3/8-18 | 11/16 | .68 | 5/8 | .63 |
| 1/2 | 08 | 1/2-14 | 27/32 | .84 | 25/32 | .77 |
| 3/4 | 12 | 3/4-14 | 11/16 | 1.05 | 1 | .98 |
| 1 | 16 | 1-11 1/2 | 15/16 | 1.32 | 1 1/4 | 1.24 |
| 1 1/4 | 20 | 1 1/4-11 1/2 | 1 21/32 | 1.66 | 1 19/32 | .58 |
| 1 1/2 | 24 | 1 1/2-11 1/2 | 1 29/32 | 1.90 | 1 13/16 | 1.82 |
| 2 | 32 | 2-11 1/2 | 2 3/8 | 2.38 | 2 5/16 | 2.30 |

Dash Numbers

Most fluid piping system sizes in the United States are measured by dash numbers. These are universally used abbreviations for the size of the component expressed as the numerator of the fraction with the

denominator always being 16. For example, a -04 port is 4/16 or 1/4-inch. Dash numbers are usually nominal (in name only) and are abbreviations that make ordering of components easier.

NPSM (National Pipe Straight Mechanical)



Male Half

Female Half

This connection is sometimes used in fluid power systems. The female half has a straight thread and an inverted 30° seat. The male half of the connection has a straight thread and a 30° internal chamfer. The seal

takes place by compression of the 30° seat on the chamfer. The threads hold the connection mechanically.

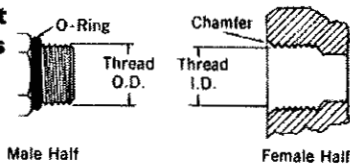
NOTE: A properly chamfered NPTF male will also seal with the NPSM female.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female thread I.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 1/8-27 | 13/32 | .41 | 3/8 | .38 |
| 1/4 | 04 | 1/4-18 | 17/32 | .54 | 1/2 | .49 |
| 3/8 | 06 | 3/8-18 | 11/16 | .68 | 5/8 | .63 |
| 1/2 | 08 | 1/2-14 | 27/32 | .84 | 25/32 | .77 |
| 3/4 | 12 | 3/4-14 | 11/16 | 1.05 | 1 | .98 |
| 1 | 16 | 1-11 1/2 | 15/16 | 1.32 | 1 1/4 | 1.24 |
| 1 1/4 | 20 | 1 1/4-11 1/2 | 1 21/32 | 1.66 | 1 19/32 | .58 |
| 1 1/2 | 24 | 1 1/2-11 1/2 | 1 29/32 | 1.90 | 1 13/16 | 1.82 |
| 2 | 32 | 2-11 1/2 | 2 3/8 | 2.38 | 2 5/16 | 2.30 |



American Connections

SAE J1926 Straight Thread O-Ring Boss (ORB)

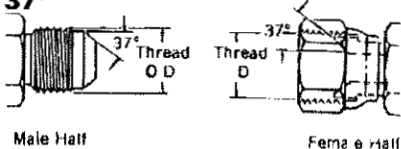


This port connection is recommended by the NFPA for optimum leakage control in medium and high pressure hydraulic systems. The male connector has a straight thread and an O-Ring. The female port has a straight

thread, a machined surface (minimum spotface) and a chamfer to accept the O-Ring. The seal takes place by compressing the O-Ring into the chamfer. The threads hold the connection mechanically.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 5/16-24 | 5/16 | .31 | 9/32 | .27 |
| 3/16 | 03 | 3/8-24 | 3/8 | .38 | 11/32 | .34 |
| 1/4 | 04 | 7/16-20 | 7/16 | .44 | 13/32 | .39 |
| 5/16 | 05 | 1/2-20 | 1/2 | .50 | 15/32 | .45 |
| 3/8 | 06 | 9/16-18 | 9/16 | .56 | 17/32 | .51 |
| 1/2 | 08 | 3/4-16 | 3/4 | .75 | 3/4 | .69 |
| 5/8 | 10 | 7/8-14 | 7/8 | .88 | 13/16 | .81 |
| 3/4 | 12 | 1 1/16-12 | 1 1/16 | 1.06 | 1 | .98 |
| 7/8 | 14 | 1 3/16-12 | 1 3/16 | 1.19 | 1 1/8 | 1.13 |
| 1 | 16 | 1 5/8-12 | 1 5/8 | 1.31 | 1 1/4 | 1.23 |
| 1 1/4 | 20 | 1 5/8-12 | 1 5/8 | 1.63 | 1 9/16 | 1.54 |
| 1 1/2 | 24 | 1 7/8-12 | 1 7/8 | 1.88 | 1 13/16 | 1.79 |
| 2 | 32 | 2 1/2-12 | 2 1/2 | 2.50 | 2 1/16 | 2.42 |

SAE J514 37° Hydraulic

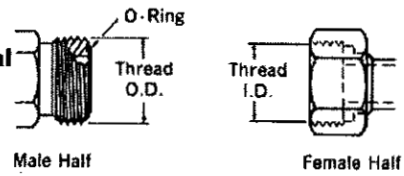


This connection is very common in fluid power systems. Both the male and female halves of the connections have 37° seats. The seal takes place by establishing a line contact between the male flare and the female cone seat.

The threads hold the connection mechanically. CAUTION: In the -02, -03, -04, -05, -08 and -10 sizes, the threads of the SAE 45° flare and the SAE 37° flare are the same. However, the sealing surface angles are not the same.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 5/16-24 | 5/16 | .31 | 9/32 | .27 |
| 3/16 | 03 | 3/8-24 | 3/8 | .38 | 11/32 | .34 |
| 1/4 | 04 | 7/16-20 | 7/16 | .44 | 13/32 | .39 |
| 5/16 | 05 | 1/2-20 | 1/2 | .50 | 15/32 | .45 |
| 3/8 | 06 | 9/16-18 | 9/16 | .56 | 17/32 | .51 |
| 1/2 | 08 | 3/4-16 | 3/4 | .75 | 3/4 | .69 |
| 5/8 | 10 | 7/8-14 | 7/8 | .88 | 13/16 | .81 |
| 3/4 | 12 | 1 1/16-12 | 1 1/16 | 1.06 | 1 | .98 |
| 7/8 | 14 | 1 3/16-12 | 1 3/16 | 1.19 | 1 1/8 | 1.13 |
| 1 | 16 | 1 5/8-12 | 1 5/8 | 1.31 | 1 1/4 | 1.23 |
| 1 1/4 | 20 | 1 5/8-12 | 1 5/8 | 1.63 | 1 9/16 | 1.54 |
| 1 1/2 | 24 | 1 7/8-12 | 1 7/8 | 1.88 | 1 13/16 | 1.79 |
| 2 | 32 | 2 1/2-12 | 2 1/2 | 2.50 | 2 1/16 | 2.42 |

ORS SAE J1453 O-Ring Face Seal

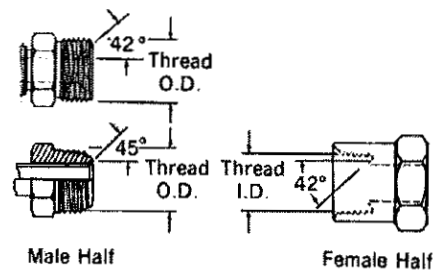


This connection offers the very best leakage control available today. The male connector has a straight thread and an O-Ring in the face. The female has a straight thread and a machined flat face. The seal

takes place by compressing the O-Ring onto the flat face of the female, similar to the split flange type fitting. The threads hold the connection mechanically.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/4 | 04 | 9/16-18 | 9/16 | .56 | 17/32 | .51 |
| 3/8 | 06 | 11/16-16 | 11/16 | .69 | 5/8 | .63 |
| 1/2 | 08 | 13/16-16 | 13/16 | .82 | 3/4 | .75 |
| 5/8 | 10 | 1-14 | 1 | 1.00 | 15/16 | .93 |
| 3/4 | 12 | 1 3/16-12 | 1 3/16 | 1.19 | 1 1/8 | 1.11 |
| 1 | 16 | 1 7/16-12 | 1 7/16 | 1.44 | 1 3/8 | 1.36 |
| 1 1/4 | 20 | 1 11/16-12 | 1 11/16 | 1.69 | 1 5/8 | 1.61 |
| 1 1/2 | 24 | 2-12 | 2 | 2.00 | 1 15/16 | 1.92 |

SAE J512 Inverted



This connection is frequently used in automotive systems. The male connector can either be a 45° flare in the tube fitting form or a 42° seat in the machined adapter form. The

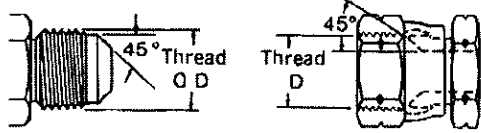
female has a straight thread with a 42° inverted flare. The seal takes place on the flared surfaces. The threads hold the connection mechanically.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 5/16-24 | 5/16 | .32 | 9/32 | .28 |
| 3/16 | 03 | 3/8-24 | 3/8 | .38 | 11/32 | .34 |
| 1/4 | 04 | 7/16-24 | 7/16 | .44 | 13/32 | .40 |
| 5/16 | 05 | 1/2-20 | 1/2 | .50 | 15/32 | .45 |
| 3/8 | 06 | 5/8-18 | 5/8 | .63 | 9/16 | .57 |
| 7/16 | 07 | 11/16-18 | 11/16 | .69 | 5/8 | .63 |
| 1/2 | 08 | 3/4-18 | 3/4 | .75 | 23/32 | .70 |
| 5/8 | 10 | 7/8-18 | 7/8 | .88 | 13/16 | .82 |
| 3/4 | 12 | 1 1/16-16 | 1 1/16 | 1.06 | 1 | 1.00 |



Powering Business Worldwide

SAE J512 45°



Male Half

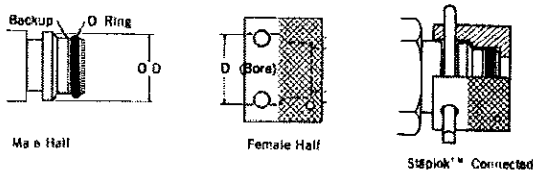
Female Half

This connection is commonly used in refrigeration, automotive and truck piping systems. The connector is frequently made of brass. Both the male and female connectors have 45° seats. The seal takes place between the male flare the female cone seat.

The threads hold the connection mechanically. CAUTION: In the -02, -03, -04, -05, -08 and -10 sizes, the threads of the SAE 45° flare and the SAE 37° flare are the same. However, the sealing surface angles are not the same.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 5/16-24 | 5/16 | 0.31 | 9/32 | 0.27 |
| 3/16 | 03 | 3/8-24 | 3/8 | 0.38 | 11/32 | 0.34 |
| 1/4 | 04 | 7/16-20 | 7/16 | 0.44 | 13/32 | 0.39 |
| 5/16 | 05 | 1/2-20 | 1/2 | 0.50 | 15/32 | 0.45 |
| 3/8 | 06 | 5/8-18 | 5/8 | 0.63 | 9/16 | 0.57 |
| 1/2 | 08 | 3/4-16 | 3/4 | 0.75 | 11/16 | 0.69 |
| 5/8 | 10 | 7/8-14 | 7/8 | 0.88 | 13/16 | 0.81 |
| 3/4 | 12 | 1 1/16-14 | 1 1/16 | 1.06 | 1 | 0.99 |
| 7/8 | 14 | 1 1/4-12 | 1 1/4 | 1.25 | 15/32 | 1.16 |
| 1 | 16 | 1 3/8-12 | 1 3/8 | 1.38 | 19/32 | 1.29 |

Staplok (SAE J1467)



Male Half

Female Half

Staplok™ Connected

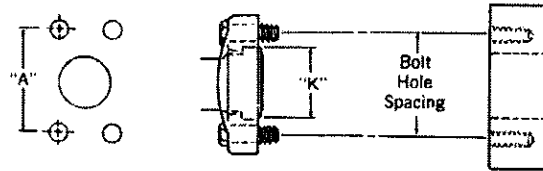
This is a radial O-Ring seal connection developed in Germany and commonly used for hydraulic application in underground mines. The male contains an exterior O-Ring and backup ring, plus a groove to accept the "staple". The female has a smooth bore with two holes

for the staple. A "U" shaped retaining clip or staple is inserted through the two holes, passing through the groove in the male to lock the connection together. The seal takes place by contact between the O-Ring in the male and the smooth bore of the female.

| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. inch | | Female Thread O.D. inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction† | decimal | fraction | decimal |
| 1/4 | 04 | | 9/32 | .586 | 19/32 | .597 |
| 3/8 | 06 | | 25/32 | .783 | 51/64 | .794 |
| 1/2 | 08 | | 15/16 | .940 | 61/64 | .951 |
| 3/4 | 12 | | 19/64 | 1.137 | 19/64 | 1.148 |
| 1 | 16 | | 1 17/32 | 1.529 | 1 39/64 | 1.540 |
| 1 1/4 | 20 | | 1 13/16 | 1.806 | 1 13/16 | 1.817 |
| 1 1/2 | 24 | | 2 5/32 | 2.163 | 2 11/64 | 2.174 |
| 2 | 32 | | 2 33/64 | 2.517 | 2 17/32 | 2.528 |

†Measure to the closest 1/64-inch.

SAE J518 4-Bolt Flange*



Male Half

Female Half

This connection is commonly used in fluid power systems. There are two pressure ratings. Code 61 is referred to as the "standard" series and Code 62 is the "6000 psi" series. The design concept for both series is the same, but the bolt hole spacing and flanged head diameters are larger for the higher pressure, Code 62 connection. The female (port) is an unthreaded hole with four bolt holes in a rectangular pattern around the port. The male con-

sists of a flanged head, and grooved for an O-Ring, and either a captive flange or split flange halves with bolt holes to match the port. The seal takes place on the O-Ring, which is compressed between the flanged head and the flat surface surrounding the port. The threaded bolts hold the connection together.

*SAE J518, JIS B 8363, ISO/DIS 6162 and DIN 20066 are interchangeable, except for bolt sizes.

| Inch Size (Dash size) | Port Hole I.D. inch fract. (dec.) | Bolt Dimension inch | | Bolt Hole Spacing "A" inch (decimal) | | Flanged Head Dia. "K" inch (dec) | |
|-----------------------|-----------------------------------|---------------------|---------------|--------------------------------------|----------------|----------------------------------|--------------|
| | | Cd. 61 | Cd. 62 | Cd. 61 | Cd. 62 | Cd. 61 | Cd. 62 |
| 1/2 (08) | 1/2 (.50) | 5/16-18x1 1/4 | 5/16-18x1 1/4 | 1 1/2 (1.50) | 1 19/32 (1.59) | 1 3/16 (1.19) | 1 1/4 (1.25) |
| 3/4 (12) | 3/4 (.75) | 3/8-16x1 1/4 | 3/8-16x1 1/2 | 1 7/8 (1.88) | 2 (2.00) | 1 1/2 (1.50) | 1 5/8 (1.63) |
| 1 (16) | 1 (1.00) | 3/8-16x1 1/4 | 7/16-14x1 3/4 | 2 1/16 (2.06) | 2 1/4 (2.25) | 1 3/4 (1.75) | 1 7/8 (1.88) |
| 1 1/4 (20) | 1 1/4 (1.25) | 7/16-14x1 1/2 | 1/2-13x1 3/4 | 2 5/16 (2.31) | 2 5/8 (2.63) | 2 (2.00) | 2 1/8 (2.13) |
| 1 1/2 (24) | 1 1/2 (1.50) | 1/2-13x1 1/2 | 5/8-11x2 1/4 | 2 3/4 (2.75) | 3 1/8 (3.12) | 2 3/8 (2.38) | 2 1/2 (2.50) |
| 2 (32) | 2 (2.00) | 1/2-13x1 1/2 | 3/4-10x2 3/4 | 3 1/16 (3.06) | 3 13/16 (3.81) | 2 13/16 (2.81) | 3 1/8 (3.12) |

How to Measure

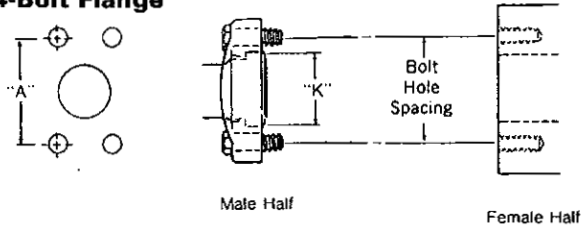
Four Bolt Flange—First measure the port hole diameter using the caliper. Next, measure the longest bolt hole spacing from center-to-center (Dimension "A") or measure the flanged head diameter.



Powering Business Worldwide

ISO connections

ISO/DIS 6162 4-Bolt Flange*



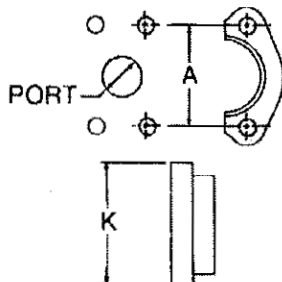
This connection is commonly used in fluid power systems. There are two pressure ratings. PN 35/350 bar (Code 61) is the "standard" series and PN 415 bar (Code 62) is the high pressure series. The design concept for both series is the same, but the bolt hole spacing and flanged head diameters are larger for the higher pressure, PN 415 bar connection. Both metric and inches bolts are used. The port will have an "M" stamped on it if metric bolts are required.

The female (port) is an unthreaded hole with four bolt holes in a rectangular pattern around the port. The male consists of a flanged head, grooved for an O-Ring, and either a captive flange or split flange halves with bolt holes to match the port. The seal takes place on the O-Ring, which is compressed between the flanged head and the flat surface surrounding the port. The threaded bolts hold the connection together.

*ISO/DIS 6162, DIN 20066, JIS B 8363 and SAE J518 are interchangeable, except for bolt sizes.

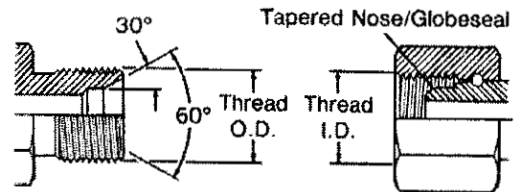
| Size | Port Hole | Bolt Dimensions Spacing | | Bolt Hole "A" | |
|-----------------------|----------------|--|--|------------------------|---------------------|
| | | PN 35/350 Bar (Cd.61) | PN 415 Bar (Cd. 62) | PN 35/350 Bar (Cd. 61) | PN 415 Bar (Cd. 62) |
| mm in [dash] | mm [in] | mm [in] | mm [in] | mm [in] | mm [in] |
| 13 (1/2) [08] | 12,7 [.50] | M8 x 1.25 x 30 (³ / ₁₆ -18 x 1 1/4) | M8 x 1.25 x 30 (³ / ₁₆ -18 x 1 1/4) | 38.10 [1.50] | 40.49 [1.57] |
| 19 (3/4) [12] | 19,1 [.75] | M10 x 1.5 x 35 (³ / ₈ -16 x 1 1/4) | M10 x 1.5 x 40 (³ / ₈ -16 x 1 1/2) | 47.63 [1.88] | 50.80 [2.00] |
| 25 (1) [16] | 25,4 [1.00] | M10 x 1.5 x 35 (³ / ₈ -16 x 1 1/4) | M12 x 1.75 x 45 (¹ / ₁₆ -14 x 1 3/4) | 52.37 [2.06] | 57.15 [2.25] |
| 32 (1 1/4) [20] | 31,8 [1.25] | M12 x 1.75 x 40 (¹ / ₁₆ -14 x 1 1/2) | M14 x 2 x 50 (¹ / ₂ -13 x 1 3/4) | 58.72 [2.31] | 66.68 [2.63] |
| 38 (1 1/2) | 38,1 [1.50] | M14 x 2 x 40 (¹ / ₂ -13 x 1 1/2) | M16 x 2 x 55 (³ / ₈ -11 x 2 1/4) | [2.75] | [3.13] |
| 51 (2) [32] | 50,8 [2.00] | M14 x 2 x 40 (¹ / ₂ -13 x 1 1/2) | M20 x 2.5 x 70 (³ / ₄ -10 x 2 3/4) | 77.77 [3.06] | 96.82 [3.81] |

| Inch Size | Flanged Head Dia. "K" | | | |
|-----------|-----------------------|------|---------------------|------|
| | PN 35/350 Bar (Cd.61) | | PN 415 Bar (Cd. 62) | |
| | mm | in | mm | in |
| 1/2 | 30.18 | 1.19 | 31.75 | 1.25 |
| 3/4 | 38.10 | 1.50 | 41.28 | 1.63 |
| 1 | 44.45 | 1.75 | 47.63 | 1.88 |
| 1 1/4 | 50.80 | 2.00 | 53.98 | 2.13 |
| 1 1/2 | 60.33 | 2.38 | 63.50 | 2.50 |
| 2 | 71.42 | 2.81 | 79.38 | 3.13 |



German Connections

DIN 7631 Series



Male half dimensionally equal to DIN 7631

Female half mates with DIN 7631

This connection is frequently used in hydraulic systems. The male has a straight metric thread and a 60° (included angle) recessed cone. The female has a straight thread and a tapered nose/Globeseal

seat. The seal takes place by contact between the cone of the male and the nose of the tapered nose/Globeseal flareless swivel. The threads hold the connection mechanically.

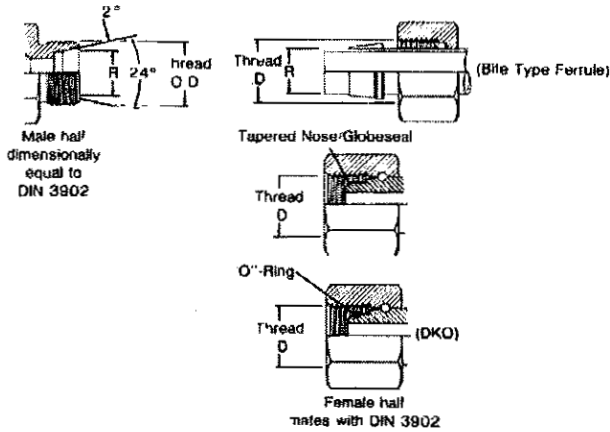
| Use With Pipe/Tube O.D. | | Metric Thread Size | Male Thread O.D. | | Female Thread I.D. | |
|-------------------------|------|--------------------|------------------|------|--------------------|------|
| mm | in | | mm | in | mm | in |
| 6 | 0.24 | M12 x 1.5 | 12 | 0.47 | 10,5 | 0.41 |
| 8 | 0.32 | M14 x 1.5 | 14 | 0.55 | 12,5 | 0.49 |
| 10 | 0.39 | M16 x 1.5 | 16 | 0.63 | 14,5 | 0.57 |
| 12 | 0.47 | M18 x 1.5 | 18 | 0.71 | 16,5 | 0.65 |
| 15 | 0.59 | M22 x 1.5 | 22 | 0.87 | 20,5 | 0.81 |
| 18 | 0.71 | M26 x 1.5 | 26 | 1.02 | 24,5 | 0.96 |
| 22 | 0.87 | M30 x 1.5 | 30 | 1.18 | 28,5 | 1.12 |
| 28 | 1.10 | M38 x 1.5 | 38 | 1.50 | 36,5 | 1.44 |
| 35 | 1.38 | M45 x 1.5 | 45 | 1.77 | 43,5 | 1.71 |
| 42 | 1.65 | M52 x 1.5 | 52 | 2.04 | 50,5 | 1.99 |



Powering Business Worldwide

TECHNICAL INFORMATION

DIN 3902 Series



This connection style consists of a common male and three different female halves.

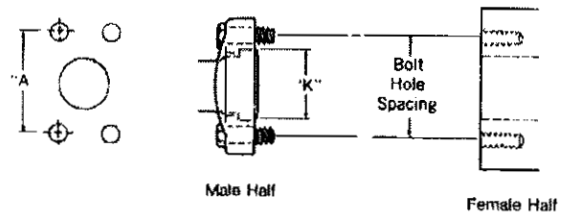
The male has a straight metric thread, a 24° included angle and a recessed counterbore that matches the tube O.D. used with it. The female may

be a tube, nut and ferrule, a tapered nose/Globeseal flareless swivel or a tapered nose/Globeseal flareless swivel with an O-Ring in the nose (DKO type).

| Tube O.D. "R" Dim. I.Rh.* | | Tube O.D. "R" Dim. s.Rh.† | | Metric Thread Size | Male Thread O.D. | | Female Thread I.D. | |
|---------------------------|------|---------------------------|------|--------------------|------------------|------|--------------------|------|
| mm | in. | mm | in. | | mm | in. | mm | in. |
| 6 | 0.24 | | | M12 x 1.5 | 12 | 0.47 | 10.5 | 0.41 |
| 8 | 0.32 | 6 | 0.24 | M14 x 1.5 | 14 | 0.55 | 12.5 | 0.49 |
| 10 | 0.39 | 8 | 0.32 | M16 x 1.5 | 16 | 0.63 | 14.5 | 0.57 |
| 12 | 0.47 | 10 | 0.39 | M18 x 1.5 | 18 | 0.71 | 16.5 | 0.65 |
| 12 | 0.47 | | | M20 x 1.5 | 20 | 0.78 | 18.5 | 0.73 |
| 15 | 0.59 | 14 | 0.55 | M22 x 1.5 | 22 | 0.87 | 20.5 | 0.81 |
| 16 | 0.63 | | | M24 x 1.5 | 24 | 0.94 | 22.5 | 0.89 |
| 18 | 0.71 | | | M26 x 1.5 | 26 | 1.02 | 24.5 | 0.96 |
| 22 | 0.87 | 20 | 0.78 | M30 x 2.0 | 30 | 1.18 | 28 | 1.11 |
| 28 | 1.10 | 25 | 0.98 | M36 x 2.0 | 36 | 1.41 | 34 | 1.34 |
| 30 | 1.18 | | | M42 x 2.0 | 42 | 1.65 | 40 | 1.57 |
| 35 | 1.38 | | | M45 x 2.0 | 45 | 1.77 | 43 | 1.70 |
| 42 | 1.65 | 38 | 1.50 | M52 x 2.0 | 52 | 2.04 | 50 | 1.97 |

*I.Rh. is a light duty system.
†s.Rh. is a heavy duty system.

DIN 20066 4-Bolt Flange*



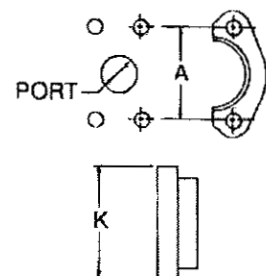
This connection is commonly used in fluid power systems. There are two pressure ratings. Form R (Code 61) is referred to as the "standard duty" series and Form S (Code 62) is the "heavy duty" series. The design concept for both series is the same, but the bolt hole spacing and flanged head diameters are larger for the higher pressure, Form S connection. Both metric and inch bolts are used.

The female (port) is an unthreaded hole with four bolt holes in a rectangular pattern around the port. The male consists of a flanged head, grooved for an O-Ring, and either a captive flange or split flange halves with bolt holes to match the port. The seal takes place on the O-Ring, which is compressed between the flanged head and the flat surface surrounding the port. The threaded bolts hold the connection together.

*DIN 20066, IS/DIS 6166, JIS B 8363 and SAE J518 are interchangeable, except for bolt sizes.

| Size mm (inch) (dash) | Port Hole | Bolt Dimensions | | Bolt Hole Spacing | |
|-----------------------|-------------|------------------------------------|------------------------------------|-------------------|-----------------|
| | | Form R (Cd. 61) | Form S (Cd. 62) | Form R (Cd. 61) | Form S (Cd. 62) |
| | | mm (in) | | mm (in) | |
| 12 (1/2) [08] | 12.7 (50) | M8 x 1.25 x 30 5/16-18 x 1 1/4 | M8 x 1.25 x 30 5/16-18 x 1 1/4 | 38.10 (1.50) | 40.49 (1.57) |
| 20 (3/4) [12] | 19.1 (75) | M10 x 1.5 x 30 3/8-16 x 1 1/4 | M10 x 1.5 x 40 3/8-16 x 1 1/2 | 47.63 (1.88) | 50.80 (2.00) |
| 25 (1) [16] | 25.4 (1.00) | M10 x 1.5 x 35 3/8-16 x 1 1/4 | M12 x 1.75 x 45 7/16-14 x 1 3/4 | 52.37 (2.06) | 57.15 (2.25) |
| 32 (1 1/4) [20] | 31.7 (1.25) | M10 x 1.75 x 40 7/16-14 x 1 1/2 | M14 x 2 x 45 1/2-13 x 1 3/4 | 58.72 (2.31) | 66.68 (2.63) |
| 40 (1 1/2) [24] | 38.0 (1.50) | M12 x 1.75 x 40 1/2-13 x 1 1/2 | M16 x 2 x 55 5/8-11 x 2 1/4 | 69.85 (2.75) | 79.38 (3.13) |
| 50 (2) [32] | 50.8 (2.00) | M12 x 1.75 x 40 1/2-13 x 1 1/2 | M20 x 2.5 x 70 3/4-10 x 2 3/4 | 77.77 (3.06) | 96.82 (3.81) |

| Inch Size | Flanged Head Dia. "K" | | | |
|-----------|-----------------------|------|-----------------|------|
| | FORM R (Cd. 61) | | FORM S (Cd. 62) | |
| | mm | in | mm | in |
| 1/2 | 30.18 | 1.19 | 31.75 | 1.25 |
| 3/4 | 38.10 | 1.50 | 41.28 | 1.63 |
| 1 | 44.45 | 1.75 | 47.63 | 1.88 |
| 1 1/4 | 50.80 | 2.00 | 53.98 | 2.13 |
| 1 1/2 | 60.33 | 2.38 | 63.50 | 2.50 |
| 2 | 71.42 | 2.81 | 79.38 | 3.13 |



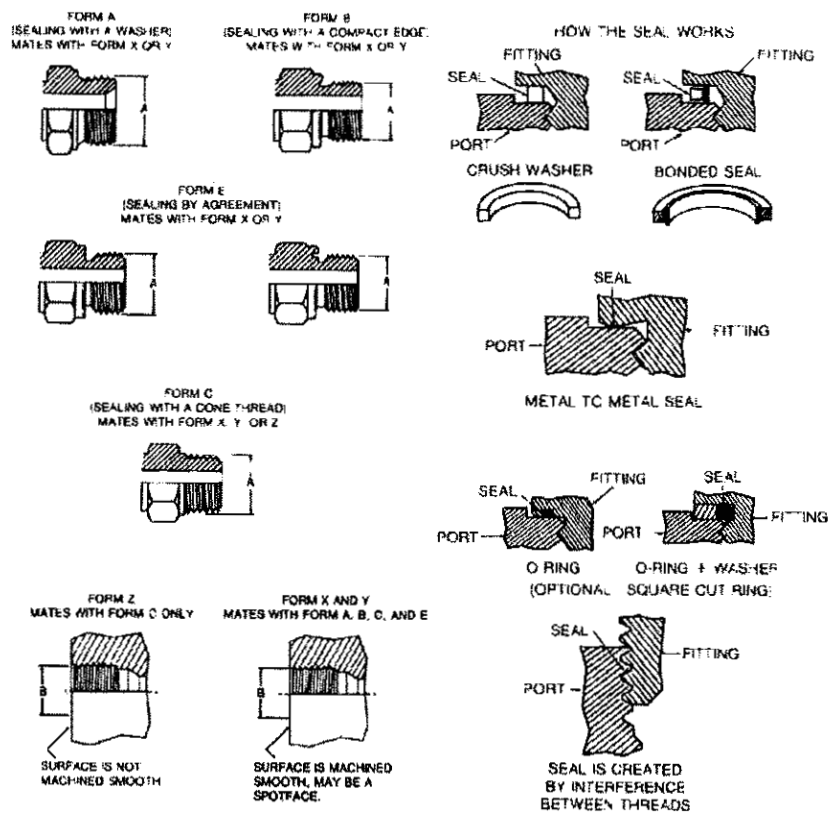


DIN 3852 Male Connectors and Female Ports

DIN 3852 Metric Threads

| Metric Thread | Male Thread O.D. "A" | | Female Thread I.D. "B" | |
|---------------|----------------------|------|------------------------|------|
| | mm | in. | mm | in. |
| M12 x 1.5 | 12 | 0.47 | 10,5 | 0.41 |
| M14 x 1.5 | 14 | 0.55 | 12,5 | 0.49 |
| M16 x 1.5 | 16 | 0.63 | 14,5 | 0.57 |
| M18 x 1.5 | 18 | 0.71 | 16,5 | 0.65 |
| M20 x 1.5 | 20 | 0.78 | 18,5 | 0.73 |
| M22 x 1.5 | 22 | 0.87 | 20,5 | 0.81 |
| M24 x 1.5 | 24 | 0.94 | 22,5 | 0.89 |
| M26 x 1.5 | 26 | 1.02 | 24,5 | 0.96 |
| M27 x 2 | 27 | 1.06 | 25 | 0.98 |
| M30 x 1.5 | 30 | 1.18 | 28,5 | 1.12 |
| M30 x 2 | 30 | 1.18 | 28 | 1.10 |
| M33 x 2 | 33 | 1.30 | 31 | 1.22 |
| M36 x 1.5 | 36 | 1.41 | 34,5 | 1.36 |
| M36 x 2 | 36 | 1.41 | 34 | 1.33 |
| M38 x 1.5 | 38 | 1.49 | 36,5 | 1.43 |
| M38 x 2 | 38 | 1.49 | 36 | 1.41 |
| M42 x 1.5 | 42 | 1.65 | 40,5 | 1.60 |
| M42 x 2 | 42 | 1.65 | 40 | 1.57 |
| M45 x 1.5 | 45 | 1.77 | 43,5 | 1.71 |
| M45 x 2 | 45 | 1.77 | 43 | 1.69 |
| M48 x 1.5 | 48 | 1.89 | 46,5 | 1.83 |
| M48 x 2 | 48 | 1.89 | 46 | 1.81 |
| M52 x 1.5 | 52 | 2.04 | 50,5 | 1.89 |
| M52 x 2 | 52 | 2.04 | 50 | 1.97 |

For DIN 3852 Whitworth pipe thread dimensions, see BSPT/BSPP dimensions. They are the same.

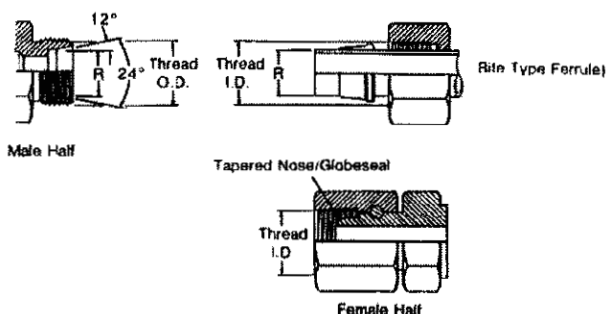




Powering Business Worldwide

French Connections

Millimetrique and GAZ Series



This connection consists of a common male and two different females. The Millimetrique Series is used with whole

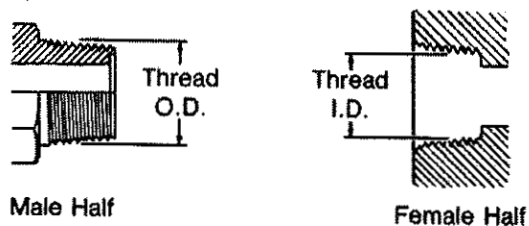
number metric O.D. tubing and the GAZ Series is used with fractional number metric O.D. pipe size tubing.

Millimetrique and GAZ Threads

| Tubing O.D. "R" dim. | | "Gaz" Pipe O.D. "R" dim. | | Metric Thread size | Male Thread O.D. | | Female Thread I.D. | |
|----------------------|------|--------------------------|------|--------------------|------------------|------|--------------------|------|
| mm | in | mm | in | | mm | in | mm | in |
| 6 | 0.24 | | | M12 x 1.5 | 12 | 0.47 | 11 | 0.43 |
| 8 | 0.32 | | | M14 x 1.5 | 14 | 0.55 | 12.5 | 0.49 |
| 10 | 0.39 | | | M16 x 1.5 | 16 | 0.63 | 14.5 | 0.57 |
| 12 | 0.47 | | | M18 x 1.5 | 18 | 0.71 | 16.5 | 0.65 |
| 14 | 0.55 | 13.25 | 0.52 | M20 x 1.5 | 20 | 0.78 | 18.5 | 0.73 |
| 15 | 0.59 | | | M22 x 1.5 | 22 | 0.87 | 20.5 | 0.81 |
| 16 | 0.63 | 16.75 | 0.66 | M24 x 1.5 | 24 | 0.94 | 22.5 | 0.89 |
| 18 | 0.71 | | | M27 x 1.5 | 27 | 1.06 | 25.5 | 1.00 |
| 22 | 0.87 | 21.25 | 0.83 | M30 x 1.5 | 30 | 1.18 | 28.5 | 1.12 |
| 25 | 0.98 | | | M33 x 1.5 | 33 | 1.30 | 31.5 | 1.24 |
| 28 | 1.10 | 26.75 | 1.05 | M36 x 1.5 | 36 | 1.41 | 34.5 | 1.36 |
| 30 | 1.18 | | | M39 x 1.5 | 39 | 1.54 | 37.5 | 1.48 |
| 32 | 1.25 | | | M42 x 1.5 | 42 | 1.65 | 40.5 | 1.60 |
| 35 | 1.38 | 33.50 | 1.32 | M45 x 1.5 | 45 | 1.77 | 43.5 | 1.71 |
| 38 | 1.50 | | | M48 x 1.5 | 48 | 1.89 | 46.5 | 1.83 |
| 40 | 1.57 | 42.25 | 1.66 | M52 x 1.5 | 52 | 2.04 | 50.5 | 1.99 |
| 45 | 1.77 | | | M54 x 2.0 | 54 | 2.12 | 52 | 2.05 |
| | | 48.25 | 1.90 | M58 x 2.0 | 58 | 2.28 | 55 | 2.16 |

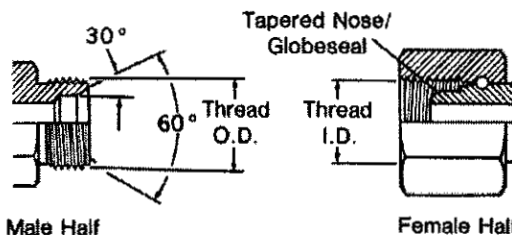
British Connections

British Standard Pipe (BSP)



This BSPT (tapered) connection is similar to the NPT, except that the thread pitches are different in most sizes, and the thread form and O.D.s are

close but not the same. Sealing is accomplished by thread distortion. A thread sealant is recommended.



The BSP (parallel) male is similar to the NPSM male except the thread pitches are different in most sizes.

The female swivel BSPP has a tapered nose/Globeseal flareless swivel which seals on the cone seat of the male.

BSPT/BSPP Threads

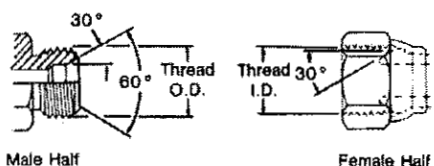
| Inch Size | Dash size | Nominal Thread size | Male Thread O.D. Inch | | Female Thread O.D. Inch | |
|-----------|-----------|---------------------|-----------------------|---------|-------------------------|---------|
| | | | fraction | decimal | fraction | decimal |
| 1/8 | 02 | 1/8-28 | 3/8 | 0.38 | 11/32 | 0.35 |
| 1/4 | 04 | 1/4-19 | 33/64 | 0.52 | 19/32 | 0.47 |
| 3/8 | 06 | 3/8-19 | 21/32 | 0.65 | 19/32 | 0.60 |
| 1/2 | 08 | 1/2-14 | 13/16 | 0.82 | 3/4 | 0.75 |
| 5/8 | 10 | 5/8-14 | 7/8 | 0.88 | 13/16 | 0.80 |
| 3/4 | 12 | 3/4-14 | 11/32 | 1.04 | 31/32 | 0.97 |
| 1 | 16 | 1-11 | 15/16 | 1.30 | 17/32 | 1.22 |
| 1 1/4 | 20 | 1 1/4-11 | 121/32 | 1.65 | 19/16 | 1.56 |
| 1 1/2 | 24 | 1 1/2-11 | 17/8 | 1.88 | 125/32 | 1.79 |
| 2 | 32 | 2-11 | 211/32 | 2.35 | 2 1/4 | 2.26 |

*Frequently, the thread size is expressed as a fractional dimension preceded by the letter "G" or the letter "R". The "G" represents a parallel thread and the "R" indicates a tapered thread. For example, BSPP 3/8-19 may be expressed as G 3/8, and BSPT 3/8-19 may be expressed as R 3/8.



Japanese Connections

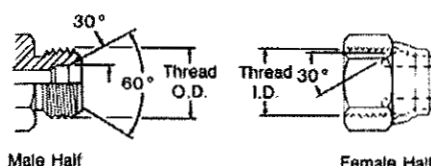
JIS 30° Male Inverted Seat, Parallel Pipe Threads (Threads per JIS B 0202)



The JIS parallel is similar to the BSPP connection. The JIS parallel thread and the BSPP connection are interchangeable.

| Size | Size (dash) | Nominal Thd. Size (similar to bspp) | Male Thread O.D. | | Female Thread I.D. | |
|-------|-------------|-------------------------------------|------------------|------|--------------------|------|
| | | | fraction | mm | fraction | mm |
| 1/4 | 6 (04) | 1/4-19 | 33/64 | 13.2 | 15/32 | 11.9 |
| 3/8 | 9 (06) | 3/8-19 | 21/32 | 16.7 | 19/32 | 15.3 |
| 1/2 | 12 (08) | 1/2-14 | 13/16 | 21.0 | 3/4 | 19.2 |
| 3/4 | 19 (12) | 3/4-14 | 11/32 | 26.4 | 31/32 | 24.6 |
| 1 | 25 (16) | 1-11 | 15/16 | 33.3 | 17/32 | 30.9 |
| 1 1/4 | 32 (20) | 1 1/4-11 | 121/32 | 41.9 | 19/16 | 39.6 |
| 1 1/2 | 38 (24) | 1 1/2-11 | 17/8 | 47.8 | 125/32 | 45.5 |
| 2 | 50 (32) | 2-11 | 211/32 | 59.7 | 2 1/4 | 57.4 |

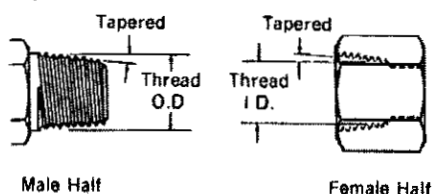
JIS 30° Male (Inverted) Seat, Metric Threads (Threads per JIS B 0207)



The JIS parallel (metric) is the same as the JIS parallel (PF), except for the thread difference.

| Inch Size | Dash Size Equivalent | Thread Size | Male Thread O.D. | | Female Thread I.D. | |
|-----------|----------------------|-------------|------------------|------|--------------------|------|
| | | | fraction | mm | fraction | mm |
| 6 | 04 | M14 x 1.5 | 14 | 0.55 | 12.5 | 0.49 |
| 9 | 06 | M18 x 1.5 | 18 | 0.71 | 16.5 | 0.65 |
| 12 | 08 | M22 x 1.5 | 22 | 0.87 | 20.5 | 0.81 |
| 19 | 12 | M30 x 1.5 | 30 | 1.18 | 28.5 | 1.12 |
| 25 | 16 | M33 x 1.5 | 33 | 1.30 | 31.5 | 1.24 |
| 32 | 20 | M42 x 1.5 | 42 | 1.65 | 40.5 | 1.60 |

JIS Tapered Pipe (PT) (Threads per JIS B 0203)

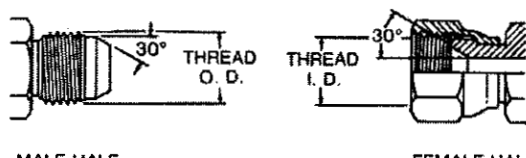


The JIS tapered thread is similar to the BSPT connection in design, appearance and

dimensions. The JIS tapered thread and the BSPT connection are interchangeable.

| Size | Size (dash) | Nominal Thd. Size (similar to bspt) | Male Thread O.D. | | Female Thread I.D. | |
|-------|-------------|-------------------------------------|------------------|------|--------------------|------|
| | | | fraction | mm | fraction | mm |
| 1/4 | 6 (04) | 1/4-19 | 33/64 | 13.2 | 15/32 | 11.9 |
| 3/8 | 9 (06) | 3/8-19 | 21/32 | 16.7 | 19/32 | 15.3 |
| 1/2 | 12 (08) | 1/2-14 | 13/16 | 21.0 | 3/4 | 19.2 |
| 3/4 | 19 (12) | 3/4-14 | 11/32 | 26.4 | 31/32 | 24.6 |
| 1 | 25 (16) | 1-11 | 15/16 | 33.3 | 17/32 | 30.9 |
| 1 1/4 | 32 (20) | 1 1/4-11 | 121/32 | 41.9 | 19/16 | 39.6 |
| 1 1/2 | 38 (24) | 1 1/2-11 | 17/8 | 47.8 | 125/32 | 45.5 |
| 2 | 50 (32) | 2-11 | 211/32 | 59.7 | 2 1/4 | 57.4 |

JIS 30° Female (Cone) Seat, Parallel Pipe Threads (Threads per JIS B 0202)



The Japanese JIS 30° flare is similar to the American SAE 37° flare connection in application as well as sealing principles.

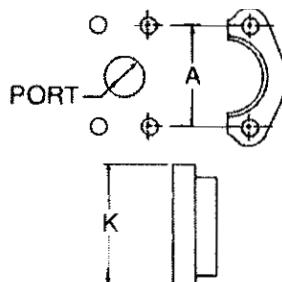
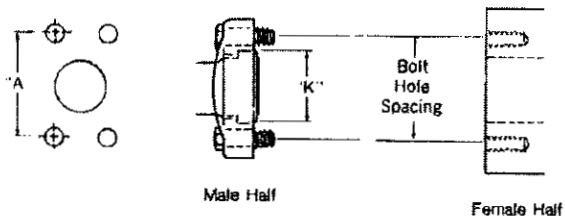
However, the flare angle and dimensions are different. The threads are similar to BSPP.

| Size | Size (dash) | Nominal Thd. Size (similar to bspp) | Male Thread O.D. | | Female Thread I.D. | |
|-------|-------------|-------------------------------------|------------------|------|--------------------|------|
| | | | fraction | mm | fraction | mm |
| 1/4 | 6 (04) | 1/4-19 | 33/64 | 13.2 | 15/32 | 11.9 |
| 3/8 | 9 (06) | 3/8-19 | 21/32 | 16.7 | 19/32 | 15.3 |
| 1/2 | 12 (08) | 1/2-14 | 13/16 | 21.0 | 3/4 | 19.2 |
| 3/4 | 19 (12) | 3/4-14 | 11/32 | 26.4 | 31/32 | 24.6 |
| 1 | 25 (16) | 1-11 | 15/16 | 33.3 | 17/32 | 30.9 |
| 1 1/4 | 32 (20) | 1 1/4-11 | 121/32 | 41.9 | 19/16 | 39.6 |
| 1 1/2 | 38 (24) | 1 1/2-11 | 17/8 | 47.8 | 125/32 | 45.5 |
| 2 | 50 (32) | 2-11 | 211/32 | 59.7 | 2 1/4 | 57.4 |



Powering Business Worldwide

JIS B 8363 4-Bolt Flange*



| Inch size | Flanged Head dia. "K" | | | |
|-----------|-----------------------|------|----------------------|------|
| | Type I Bar (Cd.61) | | Type II Bar (Cd. 62) | |
| | mm | in | mm | in |
| 1/2 | 30,18 | 1.19 | 31,75 | 1.25 |
| 3/4 | 38,10 | 1.50 | 41,28 | 1.63 |
| 1 | 44,45 | 1.75 | 47,63 | 1.88 |
| 1 1/4 | 50,80 | 2.00 | 53,98 | 2.13 |
| 1 1/2 | 60,33 | 2.38 | 63,50 | 2.50 |
| 2 | 71,42 | 2.81 | 79,38 | 3.13 |

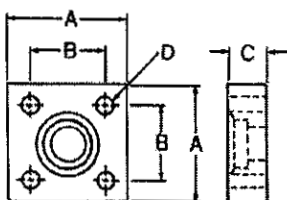
This connection is commonly used in fluid power systems. There are two pressure ratings. Type I (Code 61) is referred to as the "standard" series and Type II (Code 62) is the "6000 psi" series. The design concept for both series is the same, but the bolt hole spacing and flanged head diameters are larger for the higher pressure, Type II connection. Both metric and inch bolts are used.

The female (port) is an unthreaded hole with four bolt holes in a rectangular pattern around the port. The male consists of a flanged head, grooved for an O-Ring, and either a captive flange or split flange halves with bolt holes to match the port. The seal takes place on the O-Ring, which is compressed between the flanged head and the flat surface surrounding the port. The threaded bolts hold the connection together.

*JIS B 8363, ISO/DIS 6162, DIN 20066, and SAE J518 are interchangeable, except for bolt sizes.

| Size mm Inch [dash] | Port Hole mm (inch) | Bolt Dimensions mm & inch | | Bolt Hole Spacing "A" mm (inch) | |
|---------------------------|------------------------|-----------------------------------|------------------------------------|---------------------------------|------------------|
| | | TYPE I (Cd.61) | TYPE II (Cd. 62) | TYPE I (Cd. 61) | TYPE II (Cd. 62) |
| 12 (1/2) [08] | 12.7 (0.50) | M8 x 1.25 x 30 5/16-18 x 1 1/4 | M8 x 1.25 x 30 5/16-18 x 1 1/4 | 38.10 (1.50) | 40.49 (1.57) |
| 19 (3/4) [12] | 19.1 (0.75) | M10 x 1.5 x 30 3/8-16 x 1 1/4 | M10 x 1.5 x 40 3/8-16 x 1 1/2 | 47.63 (1.88) | 50.80 (2.00) |
| 25 (1) [16] | 25.4 (1.00) | M10 x 1.5 x 30 3/8-16 x 1 1/4 | M12 x 1.75 x 45 7/16-14 x 1 3/4 | 52.37 (2.06) | 57.15 (2.25) |
| 32 (1 1/4) [20] | 31.7 (1.25) | M12 x 1.5 x 40 7/16-14 x 1 1/2 | M14 x 2 x 45 1/2-13 x 1 3/4 | 58.72 (2.31) | 66.68 (2.63) |
| 38 (1 1/2) [24] | 38.0 (1.50) | M12 x 1.75 x 40 1/2-13 x 1 1/2 | M16 x 2 x 55 5/8-11 x 2 1/4 | 69.85 (2.75) | 79.38 (3.13) |
| 50 (2) [32] | 50.8 (2.00) | M12 x 1.75 x 40 1/2-13 x 1 1/2 | M20 x 2.5 x 70 3/4-10 x 2 3/4 | 77.77 (3.06) | 96.82 (3.81) |

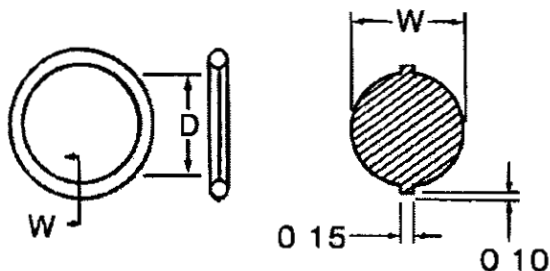
JIS 210 Kg/cm² 4-Bolt Square Flange



The JIS 4-Bolt square flange connection is similar in concept to the SAE 4-bolt flange connection, except that the JIS bolt pattern is square and the flange itself is different.

| Size mm | Approx. inch size | Bolt Size mm (Bolt length for long design) | Dim. "A" mm (inch) | Dim. "B" mm (inch) | Dim. "C" mm (inch) | Bolt Hole Dia "D" mm (inch) |
|---------|-------------------|--|--------------------|--------------------|--------------------|-----------------------------|
| 12 | 1/2 | M10 x 1.5 x 55 (80) | 63 (2.48) | 40 (1.57) | 22 (0.87) | 11 (0.43) |
| 19 | 3/4 | M10 x 1.5 x 55 (80) | 68 (2.67) | 45 (1.77) | 22 (0.87) | 11 (0.43) |
| 25 | 1 | M12 x 1.75 x 70 (100) | 80 (3.15) | 53 (2.09) | 28 (1.10) | 13 (0.51) |
| 32 | 1 1/4 | M12 x 1.75 x 70 (100) | 90 (3.54) | 63 (2.48) | 28 (1.10) | 13 (0.51) |
| 38 | 1 1/2 | M16 x 2.0 x 90 (130) | 100 (3.94) | 70 (2.76) | 36 (1.42) | 18 (0.71) |
| 50 | 2 | M16 x 2.0 x 90 (130) | 112 (4.41) | 80 (3.15) | 36 (1.42) | 18 (0.71) |

JIS 210 Kg/cm² O-Ring



| Nominal size mm | Dim. "D" mm | Dim. "W" mm |
|-----------------|-------------|-------------|
| 12 | 24.4 ± 0.15 | 3.1 ± 0.1 |
| 19 | 29.4 ± 0.15 | 3.1 ± 0.1 |
| 25 | 34.4 ± 0.15 | 3.1 ± 0.1 |
| 32 | 39.4 ± 0.15 | 3.1 ± 0.1 |
| 38 | 49.4 ± 0.15 | 3.1 ± 0.1 |
| 50 | 59.4 ± 0.15 | 3.1 ± 0.1 |

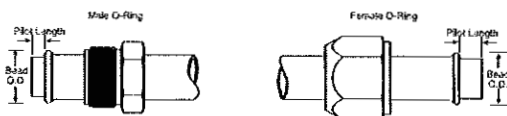


How to Identify O-Ring Pilot Thread Sizes

This connection is common to air conditioning systems, both in vehicle and commercial applications. Both the male and female halves of the connections have a pilot, either long or short. The seal takes place by compressing an O-ring adjacent to the bead of the tube. The threads hold the connection together mechanically.

| Inch Size | Dash Size | Male Thread | | | Female Thread | | |
|-----------|-----------|----------------------------|----------------------|---------------------|----------------------------|----------------------|---------------------|
| | | O.D. (inch) Nominal Thread | O.D. (inch) Fraction | O.D. (inch) Decimal | I.D. (inch) Nominal Thread | I.D. (inch) Fraction | I.D. (inch) Decimal |
| 3/8 | 06 | 5/8 - 18 | 5/8 | 0.62 | 5/8 - 18 | 9/16 | 0.57 |
| 1/2 | 08 | 3/4 - 18 | 3/4 | 0.75 | 3/4 - 16 | 11/16 | 0.69 |
| 5/8 | 10 | 7/8 - 18 | 7/8 | 0.87 | 7/8 - 14 | 13/16 | 0.81 |
| 3/4 | 12 | 1 1/16 - 16 | 1 1/16 | 1.06 | 1 1/16 - 14 | 1 | 0.99 |

| Inch Size | Nominal Tube Size | Long Pilot | | Short Pilot | |
|-----------|-------------------|------------------|--------------|------------------|--------------|
| | | Bead O.D. (inch) | Pilot Length | Bead O.D. (inch) | Pilot Length |
| 3/8 | 06 | 0.52 | 0.28 | 0.52 | 0.19 |
| 1/2 | 08 | 0.64 | 0.39 | 0.64 | 0.19 |
| 5/8 | 10 | 0.77 | 0.39 | 0.77 | 0.19 |
| 3/4 | 12 | 0.91 | 0.39 | 0.91 | 0.19 |

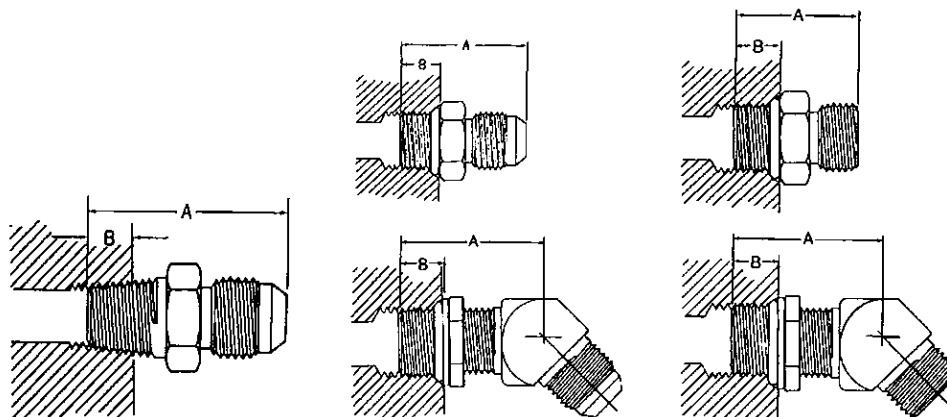




Powering Business Worldwide

Thread Engagement Nominal Dimensions

Dimensions may vary due to tolerance conditions. Listed below are the thread engagement dimensions (B) which must be taken into consideration when making connection with ports or appropriate female adapters. The "B" dimension must be subtracted from the overall length (A) to insure proper connection.



| Dash Size | Male Pipe | | SAE O-ring Boss SAE J1926 with 37° Flare J514 | | SAE O-ring Boss SAE J1926 with ORS J1453 | |
|-----------|-----------------------------------|------|---|------|--|------|
| | Straight and Angled Dimension "B" | | Straight and Adjustable Dimension "B" | | Straight and Adjustable Dimension "B" | |
| | mm | in | mm | in | mm | in |
| -02 | 6,4 | 0.25 | | | | |
| -04 | 9,7 | 0.38 | 9,1 | 0.36 | 10,9 | 0.43 |
| -05 | | | 9,1 | 0.36 | 10,9 | 0.43 |
| -06 | 9,7 | 0.38 | 9,1 | 0.39 | 11,9 | 0.47 |
| -08 | 12,7 | 0.50 | 10,9 | 0.43 | 14,0 | 0.55 |
| -10 | | | 12,7 | 0.50 | 16,0 | 0.63 |
| -12 | 15,7 | 0.62 | 15,0 | 0.59 | 18,5 | 0.73 |
| -14 | | | 15,0 | 0.59 | | |
| -16 | 17,5 | 0.69 | 15,0 | 0.59 | 18,5 | 0.73 |
| -20 | 17,5 | 0.69 | 15,0 | 0.59 | 18,5 | 0.73 |
| -24 | 17,5 | 0.69 | 15,0 | 0.59 | 18,5 | 0.73 |
| -32 | 19,1 | 0.75 | 15,0 | 0.59 | | |

Allowable bulkhead thickness for ORS:

| Dash Size | Hole Diameter | ORS Bulkhead Thickness | | | |
|-----------|--------------------|------------------------|------|------|------|
| | | MIN | | MAX | |
| | | mm | in | mm | in |
| | in | | | | |
| -04 | .575 +.015/-0.000 | 5,1 | 0.20 | 12,7 | 0.50 |
| -06 | .700 +.015/-0.000 | 5,1 | 0.20 | 15,0 | 0.59 |
| -08 | .825 +.015/-0.000 | 5,6 | 0.22 | 15,0 | 0.59 |
| -10 | 1.015 +.015/-0.000 | 5,8 | 0.23 | 15,0 | 0.59 |
| -12 | 1.200 +.015/-0.000 | 6,4 | 0.25 | 15,0 | 0.59 |
| -16 | 1.450 +.015/-0.000 | 6,4 | 0.25 | 15,2 | 0.60 |
| -20 | 1.715 +.015/-0.000 | 6,4 | 0.25 | 15,2 | 0.60 |
| -24 | 2.030 +.015/-0.000 | 6,4 | 0.25 | 15,2 | 0.60 |

For 37° Flare:

| Dash Size | Hole Diameter | 37° Bulkhead Thickness Straights | | | | 37° Bulkhead Thickness Shapes | | | |
|-----------|--------------------|----------------------------------|------|------|------|-------------------------------|------|-----|------|
| | | MIN | | MAX | | MIN | | MAX | |
| | | mm | in | mm | in | mm | in | mm | in |
| | in | | | | | | | | |
| -03 | .391 +.016/-0.000 | 1,3 | 0.05 | 10,4 | 0.41 | 3,3 | 0.13 | 6,4 | 0.25 |
| -04 | .453 +.016/-0.000 | 1,3 | 0.05 | 10,4 | 0.41 | 3,3 | 0.13 | 7,1 | 0.28 |
| -05 | .516 +.016/-0.000 | 1,3 | 0.05 | 10,4 | 0.41 | 3,3 | 0.13 | 7,1 | 0.28 |
| -06 | .578 +.016/-0.000 | 1,3 | 0.05 | 11,2 | 0.44 | 3,3 | 0.13 | 7,6 | 0.30 |
| -08 | .766 +.016/-0.000 | 1,3 | 0.05 | 11,2 | 0.44 | 4,1 | 0.16 | 8,6 | 0.34 |
| -10 | .891 +.016/-0.000 | 1,3 | 0.05 | 11,9 | 0.47 | 4,1 | 0.16 | 9,1 | 0.36 |
| -12 | 1.076 +.016/-0.000 | 1,3 | 0.05 | 11,9 | 0.47 | 4,1 | 0.16 | 9,7 | 0.38 |
| -16 | 1.328 +.016/-0.000 | 1,3 | 0.05 | 11,9 | 0.47 | 4,1 | 0.16 | 9,7 | 0.38 |
| -20 | 1.856 +.031/-0.000 | 1,3 | 0.05 | 11,9 | 0.47 | 4,1 | 0.16 | 9,7 | 0.38 |
| -24 | 1.906 +.031/-0.000 | 1,3 | 0.05 | 11,9 | 0.47 | 4,1 | 0.16 | 9,7 | 0.38 |

Dimensions may vary due to tolerance conditions.



Thread Style Pressure Performance/ Maximum Operating Pressure

The following table is a breakdown of hydraulic pressure performance by thread style and size for steel products. The table is based on limited laboratory test data and is intended only as an approximate guide to field performance of Eaton products. Figures shown are maximum oper-

ating pressures in BAR (psi), based upon a 4:1 safety factor relative to the connection minimum burst pressure. Testing was conducted at SAE recommended assembly torque in hardened test blocks. The pressure rating must be adjusted for any change in mating part material. The maximum

operating pressure for the adapter or tube fitting body must be the lower of the chosen mating end types.

| Dash Size | Inch Size | SAE100R2 Maximum Operating Pressure | | SAE 37° Flare Male (JIC) | | SAE 37° Flare Swivel (JIC) | | Male Pipe NPTF | | Female Pipe NPTF | | Female Pipe Swivel NPSM | | *Male O-ring Boss | | *Straight Thread O-ring Adjustable | | Female O-ring Boss | |
|-----------|-----------|-------------------------------------|------|--------------------------|------|----------------------------|------|----------------|-------|------------------|------|-------------------------|------|-------------------|------|------------------------------------|------|--------------------|------|
| | | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi |
| -2 | 1/8 | | | | | | | 700,0 | 10000 | 350,0 | 5000 | 420,0 | 6000 | | | | | | |
| -4 | 1/4 | 350,0 | 5000 | 595,0 | 8500 | 385,0 | 5500 | 655,0 | 9500 | 315,0 | 4500 | 350,0 | 5000 | 525,0 | 7500 | 315,0 | 4500 | 315,0 | 4500 |
| -5 | 5/16 | 297,0 | 4250 | 595,0 | 8500 | 350,0 | 5000 | | | | | | | 525,0 | 7500 | 245,0 | 3500 | 245,0 | 3500 |
| -6 | 3/8 | 280,0 | 4000 | 490,0 | 7000 | 280,0 | 4000 | 560,0 | 8000 | 245,0 | 3500 | 280,0 | 4000 | 525,0 | 7500 | 280,0 | 4000 | 245,0 | 3500 |
| -8 | 1/2 | 245,0 | 3500 | 20,0 | 6000 | 280,0 | 4000 | 420,0 | 6000 | 245,0 | 3500 | 245,0 | 3500 | 525,0 | 7500 | 280,0 | 4000 | 210,0 | 3000 |
| -10 | 5/8 | 192,0 | 2750 | 385,0 | 5500 | 210,0 | 3000 | | | | | | | 525,0 | 7500 | 280,0 | 4000 | 175,0 | 2500 |
| -12 | 3/4 | 157,0 | 2250 | 280,0 | 4000 | 210,0 | 3000 | 350,0 | 5000 | 210,0 | 3000 | 245,0 | 3500 | 350,0 | 5000 | 245,0 | 3500 | 124,1 | 1800 |
| -14 | 7/8 | 140,0 | 2000 | 280,0 | 4000 | 210,0 | 3000 | | | | | | | 350,0 | 5000 | 210,0 | 3000 | 117,2 | 1700 |
| -16 | 1 | 140,0 | 2000 | 245,0 | 3500 | 175,0 | 2500 | 280,0 | 4000 | 175,0 | 2500 | 210,0 | 3000 | 315,0 | 4500 | 175,0 | 2500 | 112,0 | 1600 |
| -20 | 1 1/4 | 113,0 | 1625 | 245,0 | 3500 | 140,0 | 2000 | 210,0 | 3000 | 140,0 | 2000 | 140,0 | 2000 | 315,0 | 4500 | 140,0 | 2000 | 105,0 | 1500 |
| -24 | 1 1/2 | 87,0 | 1250 | 140,0 | 2000 | 105,0 | 1500 | 140,0 | 2000 | 105,0 | 1500 | 105,0 | 1500 | 245,0 | 3500 | 140,0 | 2000 | 105,0 | 1500 |
| -32 | 2 | 78,0 | 1125 | 87,0 | 1250 | 87,0 | 1250 | 140,0 | 2000 | 98,0 | 1400 | 105,0 | 1500 | 140,0 | 2000 | | | | |

*For non "ORS" adapters

| Dash Size | Inch Size | SAE100r2 Maximum Operating Pressure | | ORS Male | | ORS Female Swivel | | For ORS Adapters ORB/STR | | For ORS Adapters ORB/ADJ | | Male SAE Flareless | | Flange Code 61 | | Flange Code 62 | |
|-----------|-----------|-------------------------------------|------|----------|------|-------------------|------|--------------------------|------|--------------------------|------|--------------------|------|----------------|------|----------------|------|
| | | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi |
| -2 | 1/8 | | | | | | | | | | | | | | | | |
| -4 | 1/4 | 350,0 | 5000 | 630,0 | 9000 | 630,0 | 9000 | 630,0 | 9000 | 420,0 | 6000 | 420,0 | 6000 | | | | |
| -5 | 5/16 | 297,0 | 4250 | | | | | | | | | | | | | | |
| -6 | 3/8 | 280,0 | 4000 | 630,0 | 9000 | 630,0 | 9000 | 630,0 | 9000 | 420,0 | 6000 | 420,0 | 6000 | | | | |
| -8 | 1/2 | 245,0 | 3500 | 630,0 | 9000 | 560,0 | 8000 | 630,0 | 9000 | 420,0 | 6000 | 420,0 | 6000 | 350,0 | 5000 | 420,0 | 6000 |
| -10 | 5/8 | 192,0 | 2750 | 630,0 | 9000 | 560,0 | 8000 | 630,0 | 9000 | 420,0 | 6000 | 350,0 | 5000 | | | | |
| -12 | 3/4 | 157,0 | 2250 | 420,0 | 6000 | 420,0 | 6000 | 420,0 | 6000 | 420,0 | 6000 | 315,0 | 4500 | 350,0 | 5000 | 420,0 | 6000 |
| -14 | 7/8 | 140,0 | 2000 | | | | | | | | | | | | | | |
| -16 | 1 | 140,0 | 2000 | 420,0 | 6000 | 420,0 | 6000 | 420,0 | 6000 | 350,0 | 5000 | 280,0 | 4000 | 350,0 | 5000 | 420,0 | 6000 |
| -20 | 1 1/4 | 113,0 | 1625 | 315,0 | 4500 | 315,0 | 4500 | 315,0 | 4500 | 315,0 | 4500 | | | 280,0 | 4000 | 420,0 | 6000 |
| -24 | 1 1/2 | 87,0 | 1250 | 280,0 | 4000 | 280,0 | 4000 | 280,0 | 4000 | 210,0 | 3000 | | | 210,0 | 3000 | 420,0 | 6000 |
| -32 | 2 | 78,0 | 1125 | | | | | | | | | | | 210,0 | 3000 | 420,0 | 6000 |



Maximum Operating Pressures Bar/PSI for Hydraulic Tubing (SAEJ356, J524, J525, J526, J527)

| Tube O.D. | Dash Size | Tubing Wall Thickness (in inches) | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------|-----------|-----------------------------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | | .028 | | .035 | | .049 | | .065 | | .083 | | .095 | | .109 | | .120 | | .134 | | .148 | | .156 | | .188 | | |
| | | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | bar | psi | |
| .19 | -03 | 297,0 | 4250 | 375,0 | 5450 | | | | | | | | | | | | | | | | | | | | | |
| .25 | -04 | 213,0 | 3100 | 272,0 | 3950 | 396,0 | 5750 | 420,0 | 6000 | | | | | | | | | | | | | | | | | |
| .31 | -05 | 169,0 | 2450 | 213,0 | 3100 | 315,0 | 4500 | 420,0 | 6000 | | | | | | | | | | | | | | | | | |
| .38 | -06 | 140,0 | 2000 | 175,0 | 2550 | 251,0 | 3650 | 350,0 | 5000 | 420,0 | 6000 | 420,0 | 6000 | | | | | | | | | | | | | |
| .50 | -08 | | | 127,0 | 1850 | 186,0 | 2700 | 251,0 | 3650 | 335,0 | 4800 | 388,0 | 5550 | 420,0 | 6000 | 420,0 | 6000 | | | | | | | | | |
| .62 | -10 | | | 105,0 | 1500 | 145,0 | 2100 | 196,0 | 2850 | 258,0 | 3750 | 299,0 | 4350 | 353,0 | 5050 | 392,0 | 5600 | | | | | | | | | |
| .75 | -12 | | | 84,0 | 1200 | 122,0 | 1750 | 162,0 | 2350 | 210,0 | 3050 | 248,0 | 3550 | 286,0 | 4150 | 322,0 | 4600 | | | | | | | | | |
| 1.00 | -16 | | | 62,0 | 900 | 89,0 | 1300 | 122,0 | 1750 | 157,0 | 2250 | 182,0 | 2600 | 210,0 | 3000 | 231,0 | 3350 | 262,0 | 3800 | 294,0 | 4200 | | | | | |
| 1.25 | -20 | | | | | 70,0 | 1000 | 93,0 | 1350 | 122,0 | 1750 | 143,0 | 2050 | 162,0 | 2350 | 182,0 | 2650 | 189,0 | 2700 | 203,0 | 2950 | 217,0 | 3100 | 259,0 | 3750 | |
| 1.50 | -24 | | | | | | | 79,0 | 1150 | 100,0 | 1450 | 119,0 | 1700 | 134,0 | 1950 | 148,0 | 2150 | 171,0 | 2450 | 171,0 | 2450 | 182,0 | 2600 | 220,0 | 3150 | |
| 2.00 | -32 | | | | | | | | 58,0 | 850 | 77,0 | 1100 | 87,0 | 1250 | 100,0 | 1450 | 112,0 | 1600 | 126,0 | 1800 | 140,0 | 2000 | 147,0 | 2100 | 178,0 | 2550 |

Maximum operating pressure ratings at specified wall thickness are based upon recommended tubing ratings per SAEJ1065 as well as limited laboratory test data. Operating pressures are based upon a

4:1 safety factor relative to tube burst data. Eaton recommends a maximum operating pressure of the joint which is the lesser of the tubing rating or the mating connector rating.

Recommended Wall Thickness (Inches) for Tube Fitting Applications

| Tube | Dash | Versil-Flare SAE 37° Flare | Versil-Flare SAE 37° Flareless | ORS-BR SAE O-Ring Face Seal | ORS-TF SAE O-ring Face Seal |
|------|------|----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| .19 | -03 | .028 - .035 | .028 - .035 | | |
| .25 | -04 | .028 - .065 | .028 - .065 | .028 - .065 | .028 - .065 |
| .31 | -05 | .028 - .065 | .028 - .065 | | |
| .38 | -06 | .028 - .065 | .028 - .095 | .035 - .083 | .028 - .065 |
| .50 | -08 | .035 - .083 | .035 - .120 | .035 - .109 | .035 - .120 |
| .62 | -10 | .035 - .095 | .035 - .120 | .035 - .120 | .035 - .095 |
| .75 | -12 | .035 - .109 | .035 - .120 | .035 - .120 | .049 - .120 |
| 1.00 | -16 | .035 - .120 | .035 - .134 | .049 - .148 | .049 - .134 |
| 1.25 | -20 | .049 - .120 | .049 - .188 | .049 - .188 | .049 - .156 |
| 1.50 | -24 | .065 - .120 | .065 - .188 | .065 - .188 | .065 - .188 |
| 2.00 | -32 | .065 - .134 | .065 - .188 | | |

Recommended Hydraulic Tubing Material Specifications

Hydraulic Tubing SAE Specifications

| Versil-Flare SAE 37° Flare | Versil-Flare SAE 37° Flareless | ORS-BR SAE O-ring Face Seal | ORS-TF SAE O-ring Face Seal |
|----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| SAEJ524 | SAEJ356 | SAEJ356 | SAEJ356 |
| SAEJ525 | SAEJ524 | SAEJ524 | SAEJ524 |
| | SAEJ525 | SAEJ525 | SAEJ525 |
| | SAEJ527 | SAEJ526 | SAEJ526 |

Hydraulic tubing material description: SAEJ356 electric resistance welded flash controlled low carbon steel, SAEJ524 seamless annealed low carbon steel, SAEJ525 electric resistance welded cold worked annealed, SAEJ526

single wall welded low carbon steel (automotive), SAEJ527 brazed double wall low carbon steel (automotive). The maximum hardness of the above tubing should not exceed Rockwell B65.

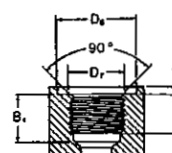
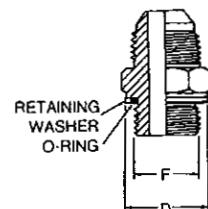
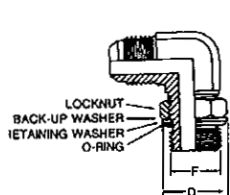


Metric Thread Dimensions Conversion Adapters

Sealing is achieved by means of an O-Ring, retaining washer and a properly machined port. The O-Ring is "captured" by the I.D. of

the retaining washer. The port may be of the spot faced or a flat machined surface as long as the D6 dimension is met.

Assembly instructions for adjustable type adapters are presented on page 309.



DIN 3852 LARGE SPOTFACE

EQUIVALENT DIN 3852 FORM X

Dimensions in mm

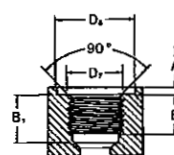
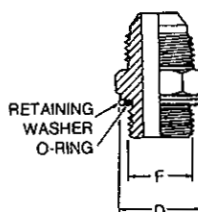
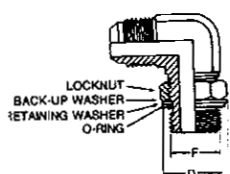
| Thread Size | M 10 x 1 | M 12 x 1.5 | M 14 x 1.5 | M 16 x 1.5 | M 18 x 1.5 | M 20 x 1.5 | M 22 x 1.5 | M 26 x 1.5 | M 27 x 2 | M 33 x 2 | M 42 x 2 | M 48 x 2 |
|----------------------------|----------|------------|------------|------------|------------|------------|------------|------------|----------|----------|----------|----------|
| F Thread Dia. | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 26.0 | 27.0 | 33.0 | 42.0 | 48.0 |
| A max | 1.0 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| B min (full thread) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 14.0 | 14.0 | 16.0 | 16.0 | 18.0 | 20.0 | 22.0 |
| B1 min | 13.5 | 18.5 | 18.5 | 18.5 | 18.5 | 20.5 | 20.5 | 22.5 | 24.0 | 26.0 | 28.0 | 30.0 |
| D max | 15.7 | 18.7 | 19.7 | 23.2 | 26.2 | 28.2 | 30.2 | 35.2 | 36.2 | 43.2 | 52.7 | 58.7 |
| D6 min | 16.2 | 19.2 | 20.2 | 23.7 | 26.9 | 28.9 | 30.7 | 35.7 | 36.7 | 44.4 | 53.4 | 59.9 |
| D7 max | 10.2 | 12.2 | 14.2 | 16.2 | 18.2 | 20.2 | 22.2 | 26.2 | 27.2 | 33.3 | 42.3 | 48.3 |

BSPP (Parallel) Threads

Sealing is achieved by means of an O-Ring, retaining washer and a properly machined port.

The O-Ring is "captured" by the I.D. of the retaining washer. The compression is controlled by the thickness of the retaining washer.

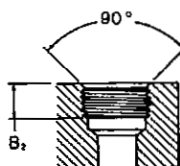
The port may be of the spot faced or a flat machined surface as long as the D6 dimension is met.



| Thread Size | G 1/8"-28 | | G 1/4"-19 | | G 3/8"-19 | | G 1/2"-14 | | G 3/4"-14 | | G 1"-11 | | G 1 1/4"-11 | | G 1 1/2"-11 | |
|-----------------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|---------|------|-------------|------|-------------|------|
| | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in |
| F Thread Dia. | 9,7 | 0.38 | 13,2 | 0.50 | 16,7 | 0.66 | 20,9 | 0.83 | 26,4 | 1.04 | 33,3 | 1.31 | 41,9 | 1.65 | 47,8 | 1.88 |
| A max | 1,0 | 0.04 | 2,0 | 0.08 | 2,05 | 0.10 | 2,5 | 0.10 | 2,5 | 0.10 | 2,5 | 0.10 | 2,5 | 0.10 | 2,5 | 0.10 |
| B min | 8,0 | 0.31 | 12,0 | 0.47 | 12,0 | 0.47 | 14,0 | 0.63 | 16,0 | 0.63 | 18,0 | 0.71 | 20,0 | 0.79 | 22,0 | 0.87 |
| B1 min (full thread) | 13,0 | 0.51 | 18,5 | 0.73 | 18,5 | 0.73 | 22,0 | 0.94 | 24,0 | 0.94 | 27,0 | 1.06 | 29,0 | 1.14 | 31,0 | 1.22 |
| D max | 15,7 | 0.62 | 19,7 | 0.78 | 24,0 | 0.94 | 28,7 | 1.38 | 35,2 | 1.38 | 43,2 | 1.70 | 52,7 | 2.07 | 58,7 | 2.31 |
| D6 min | 16,2 | 0.64 | 20,2 | 0.81 | 24,9 | 0.98 | 29,4 | 1.43 | 36,4 | 1.43 | 44,4 | 1.75 | 53,4 | 2.10 | 59,9 | 2.36 |
| D7 max | 10,0 | 0.39 | 13,4 | 0.53 | 16,9 | 0.67 | 21,2 | 1.05 | 26,7 | 1.05 | 33,6 | 1.32 | 42,3 | 1.67 | 48,2 | 1.90 |

BSPT (Tapered) Threads Port Sealing

Sealing is achieved by means of metal to metal deformation of the adapter and port threads.



| Thread Size | R 1/8"-28 | | R 1/4"-19 | | R 3/8"-19 | | R 1/2"-14 | | R 3/4"-14 | | R 1"-11 | | R 1 1/4"-11 | | R 1 1/2"-11 | |
|-----------------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|---------|------|-------------|------|-------------|------|
| | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in |
| B2 min (full thread) | 5,5 | 0.22 | 8,5 | 0.33 | 8,5 | 0.33 | 10,5 | 0.41 | 13,0 | 0.51 | 14,5 | 0.57 | 17,0 | 0.67 | 17,0 | 0.67 |



Powering Business Worldwide

Recommended Parallel Connection Assembly Torque

Eaton recommends that a torque wrench be used to assure proper fitting assembly of these connections.

The values listed are for steel connections. Contact Eaton for torque values for other materials.

Straight Thread O-Ring Boss Low Pressure with 37° (SAEJ514)

| Dash Size | Thread Size (inches) | Jam Nut or Straight Fitting Torque lb.-ft. | Jam Nut or Straight Fitting Torque Newton Meters |
|-----------|----------------------|--|--|
| -03 | 3/8-24 | 8-9 | 12-13 |
| -04 | 7/16-20 | 13-15 | 18-20 |
| -05 | 1/2-20 | 14-15 | 19-21 |
| -06 | 9/16-18 | 23-24 | 32-33 |
| -08 | 3/4-16 | 40-43 | 55-57 |
| -10 | 7/8-14 | 43-48 | 59-64 |
| -12 | 1 1/16-12 | 68-75 | 93-101 |
| -14 | 1 3/16-12 | 83-90 | 113-122 |
| -16 | 1 5/16-12 | 112-123 | 152-166 |
| -20 | 1 5/8-12 | 146-161 | 198-218 |
| -24 | 1 7/8-12 | 154-170 | 209-230 |
| -32 | 2 1/2-12 | 218-240 | 296-325 |

Straight Thread O-Ring Boss High Pressure with ORS (J1453)

| Dash Size | Thread Size (inches) | Jam Nut or Straight Fitting Torque lb.-ft. | Jam Nut or Straight Fitting Torque Newton Meters |
|-----------|----------------------|--|--|
| -03 | 3/8-24 | 8-10 | 11-13 |
| -04 | 7/16-20 | 14-16 | 20-22 |
| -05 | 1/2-20 | 18-20 | 24-27 |
| -06 | 9/16-18 | 24-26 | 33-35 |
| -08 | 3/4-16 | 50-60 | 68-78 |
| -10 | 7/8-14 | 72-80 | 98-110 |
| -12 | 1 1/16-12 | 125-135 | 170-183 |
| -14 | 1 3/16-12 | 160-180 | 215-245 |
| -16 | 1 5/16-12 | 200-220 | 270-300 |
| -20 | 1 5/8-12 | 210-280 | 285-380 |
| -24 | 1 7/8-12 | 270-360 | 370-490 |

ORS

| Dash Size | Thread Size (inches) | Swivel Nut Torque lb.-ft. | Swivel Nut Torque Newton Meters |
|-----------|----------------------|---------------------------|---------------------------------|
| -04 | 9/16-18 | 10-12 | 14-16 |
| -06 | 1 1/16-16 | 18-20 | 24-27 |
| -08 | 1 3/16-16 | 32-35 | 43-47 |
| -10 | 1-14 | 46-50 | 62-68 |
| -12 | 1 3/16-12 | 65-70 | 88-95 |
| -16 | 1 7/16-12 | 92-100 | 125-136 |
| -20 | 1 11/16-12 | 125-140 | 170-190 |
| -24 | 2-12 | 150-165 | 204-224 |

SAE 37° (JIC)

| Dash Size | Thread Size (inches) | Swivel Nut Torque lb.-ft. | Swivel Nut Torque Newton Meters |
|-----------|----------------------|---------------------------|---------------------------------|
| -04 | 7/16-20 | 11-12 | 15-16 |
| -05 | 1/2-20 | 15-16 | 20-22 |
| -06 | 9/16-18 | 18-20 | 24-28 |
| -08 | 3/4-16 | 38-42 | 52-58 |
| -10 | 7/8-14 | 57-62 | 77-85 |
| -12 | 1 1/16-12 | 79-87 | 108-119 |
| -16 | 1 5/16-12 | 108-113 | 148-154 |
| -20 | 1 5/8-12 | 127-133 | 173-182 |
| -24 | 1 7/8-12 | 158-167 | 216-227 |
| -32 | 2 1/2-12 | 245-258 | 334-352 |

Metric

| Thread Size | Straight Adapter or Locknut Torque | |
|-------------|------------------------------------|---------------|
| | lb.-ft. | Newton Meters |
| M10 x 1 | 13-15 | 18-20 |
| M12 x 1.5 | 15-19 | 20-25 |
| M14 x 1.5 | 19-23 | 25-30 |
| M16 x 1.5 | 33-40 | 45-55 |
| M18 x 1.5 | 37-44 | 50-60 |
| M20 x 1.5 | 52-66 | 70-90 |
| M22 x 1.5 | 55-70 | 75-95 |
| M26 x 1.5 | 81-96 | 110-130 |
| M27 x 2 | 96-111 | 130-150 |
| M33 x 2 | 162-184 | 220-250 |
| M42 x 2 | 170-192 | 230-260 |
| M48 x 2 | 258-347 | 350-470 |

BSPP

| Nominal Thread Size | Straight Adapter or Locknut Torque | |
|---------------------|------------------------------------|---------------|
| | lb.-ft. | Newton Meters |
| G 1/8-28 | 13-15 | 18-20 |
| G 1/4-19 | 19-23 | 25-30 |
| G 3/8-19 | 33-40 | 45-55 |
| G 1/2-14 | 55-70 | 75-95 |
| G 3/4-14 | 103-118 | 140-160 |
| G 1-11 | 162-184 | 220-250 |
| G 1 1/4-11 | 170-192 | 230-260 |
| G 1 1/2-11 | 258-347 | 350-470 |

***G" denotes parallel threads, other than ISO 6149. (Port connection only)

Proper Tube Installation

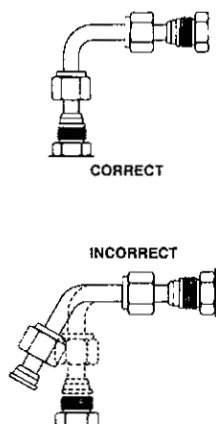


Figure 1

When compared to rigid pipe, hydraulic tubing offers the following advantages:

1. Size for size, tubing is lighter in weight, easier to handle and can be bent more easily than iron pipe.
2. Bent tubing reduces pressure drop and turbulence in the system because it eliminates sudden change in the direction of the fluid flow.
3. Hydraulic tubing reduces the number of connections required, thus reducing material and labor costs.
4. Fewer joints means lower costs and fewer points of potential leakage.
5. The use of tube fittings makes every joint a union which permits easier, faster maintenance and repair work.
6. The ORS-TF Tube Fitting eliminates the need for threading, brazing or welding.

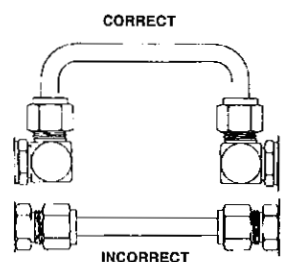


Figure 2

Tube bending

To reduce the number of fittings in a tube assembly, bend the tubing whenever possible.

Steel tubing can be bent in many sizes by using a hand bender designed for steel tubing. For production quantities, or for larger sizes, a power bending tool is generally used. Contact Eaton for additional tube bending information.

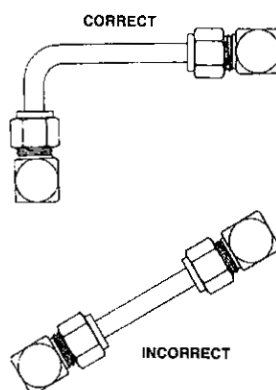


Figure 3

Tube routing and installation

Tubing manufacturers will advise the correct radii for various types and wall thicknesses of tubing. Kinks, flattened bends, wrinkles and tube breakage can be avoided by the use of proper tube bending equipment.

Avoid straight line connections whenever possible, especially in short runs.

Fluid conveying systems (see figures 2, 3 and 4) should be designed to follow the contour of the equipment. They are easier to install and present a neater appearance. Long runs should be supported by brackets or clamps. All heavy systems components should be bolted or clamped to eliminate tubing fatigue.

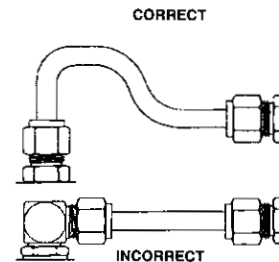


Figure 4

Inspect the tubing to see that it conforms to the required specifications before installation.

Tubes should align with the center line of the fittings, without distortion or tension. Tubing should not be sprung into position (see figure 1) to be assembled to the fitting. If this occurs the tubing has not been properly fabricated, and when installed and connected, places the tubing under stress.



Conversions

Inch/Millimeter Conversion Table

| Inches | Millimeters | |
|-----------|-------------|----------|
| fractions | decimals | decimals |
| 1/64 | .016 | .397 |
| 1/32 | .031 | .794 |
| 3/64 | .047 | 1.191 |
| 1/16 | .063 | 1.588 |
| 5/64 | .078 | 1.984 |
| 3/32 | .094 | 2.381 |
| 7/64 | .109 | 2.778 |
| 1/8 | .125 | 3.175 |
| 9/64 | .141 | 3.572 |
| 5/32 | .156 | 3.969 |
| 11/64 | .172 | 4.366 |
| 3/16 | .188 | 4.763 |
| 13/64 | .203 | 5.159 |
| 7/32 | .219 | 5.556 |
| 15/64 | .234 | 5.953 |
| 1/4 | .250 | 6.350 |

Multiply inches x 25.4 = Millimeters

| Inches | Millimeters | |
|-----------|-------------|----------|
| fractions | decimals | decimals |
| 17/64 | .266 | 6.747 |
| 9/32 | .281 | 7.144 |
| 19/64 | .297 | 7.541 |
| 5/16 | .313 | 7.938 |
| 21/64 | .328 | 8.334 |
| 11/32 | .344 | 8.731 |
| 23/64 | .359 | 9.128 |
| 3/8 | .375 | 9.525 |
| 25/64 | .391 | 9.922 |
| 13/32 | .406 | 10.319 |
| 27/64 | .422 | 10.716 |
| 7/16 | .438 | 11.113 |
| 29/64 | .453 | 11.509 |
| 15/32 | .469 | 11.906 |
| 31/64 | .484 | 12.303 |
| 1/2 | .500 | 12.700 |

| Inches | Millimeters | |
|-----------|-------------|----------|
| fractions | decimals | decimals |
| 33/64 | .516 | 13.097 |
| 17/32 | .531 | 13.494 |
| 35/64 | .547 | 13.891 |
| 9/16 | .563 | 14.288 |
| 37/64 | .578 | 14.684 |
| 19/32 | .594 | 15.081 |
| 39/64 | .609 | 15.478 |
| 5/8 | .625 | 15.875 |
| 41/64 | .641 | 16.272 |
| 21/32 | .656 | 16.669 |
| 43/64 | .672 | 17.066 |
| 11/16 | .688 | 17.463 |
| 45/64 | .703 | 17.859 |
| 23/32 | .719 | 18.256 |
| 47/64 | .734 | 18.653 |
| 3/4 | .750 | 19.050 |

| Inches | Millimeters | |
|-----------|-------------|----------|
| fractions | decimals | decimals |
| 49/64 | .766 | 19.447 |
| 25/32 | .781 | 19.844 |
| 51/64 | .797 | 20.241 |
| 13/16 | .813 | 20.638 |
| 53/64 | .828 | 21.034 |
| 27/32 | .844 | 21.431 |
| 55/64 | .859 | 21.828 |
| 7/8 | .875 | 22.225 |
| 57/64 | .891 | 22.622 |
| 29/32 | .906 | 23.019 |
| 59/64 | .922 | 23.416 |
| 15/16 | .938 | 23.813 |
| 61/64 | .953 | 24.209 |
| 31/32 | .969 | 24.606 |
| 63/64 | .984 | 25.003 |
| 1 | 1.000 | 25.400 |

Pressure Conversion Table

| Mpa | Bar | PSI |
|------|------|-----|
| 0.25 | 2.5 | 35 |
| 0.3 | 3 | 45 |
| 0.35 | 3.5 | 50 |
| 0.4 | 4 | 56 |
| 0.4 | 4 | 62 |
| 0.5 | 5 | 70 |
| 0.6 | 6 | 90 |
| 0.7 | 7 | 100 |
| 0.8 | 8 | 112 |
| 0.85 | 8.5 | 125 |
| 1 | 10 | 140 |
| 1.05 | 10.5 | 150 |
| 1.25 | 12.5 | 180 |
| 1.4 | 14 | 200 |
| 1.6 | 16 | 225 |
| 1.7 | 17 | 250 |
| 2.1 | 21 | 300 |
| 2.4 | 24 | 350 |
| 2.6 | 26 | 375 |
| 2.8 | 28 | 400 |
| 3.5 | 35 | 500 |
| 3.9 | 39 | 565 |

(Per SAE J517 Appendix A)

| Mpa | Bar | PSI |
|------|-----|------|
| 4.2 | 42 | 600 |
| 4.3 | 43 | 625 |
| 4.9 | 49 | 700 |
| 5 | 50 | 725 |
| 5.2 | 52 | 750 |
| 5.6 | 56 | 800 |
| 6.1 | 61 | 875 |
| 7 | 70 | 1000 |
| 7.8 | 78 | 1125 |
| 8.4 | 84 | 1200 |
| 8.7 | 87 | 1250 |
| 9.8 | 98 | 1400 |
| 10 | 100 | 1450 |
| 10.5 | 105 | 1500 |
| 11.2 | 112 | 1600 |
| 11.3 | 113 | 1625 |
| 12.2 | 122 | 1750 |
| 14 | 140 | 2000 |
| 15.7 | 157 | 2250 |
| 16.8 | 168 | 2400 |
| 17.5 | 175 | 2500 |
| 19.2 | 192 | 2750 |

| Mpa | Bar | PSI |
|------|-----|-------|
| 20 | 200 | 2900 |
| 21 | 210 | 3000 |
| 22.4 | 224 | 3200 |
| 22.7 | 227 | 3250 |
| 24.5 | 245 | 3500 |
| 28 | 280 | 4000 |
| 29.7 | 297 | 4250 |
| 31.5 | 315 | 4500 |
| 33.5 | 335 | 4800 |
| 35 | 350 | 5000 |
| 38.5 | 385 | 5500 |
| 40 | 400 | 5800 |
| 42 | 420 | 6000 |
| 43.5 | 435 | 6250 |
| 45.5 | 455 | 6500 |
| 49 | 490 | 7000 |
| 52.5 | 525 | 7500 |
| 56 | 560 | 8000 |
| 59.5 | 595 | 8500 |
| 61 | 610 | 8750 |
| 63 | 630 | 9000 |
| 70 | 700 | 10000 |

| Mpa | Bar | PSI |
|-----|------|-------|
| 77 | 770 | 11000 |
| 78 | 780 | 11250 |
| 80 | 800 | 11600 |
| 84 | 840 | 12000 |
| 87 | 870 | 12500 |
| 98 | 980 | 14000 |
| 112 | 1120 | 16000 |
| 119 | 1190 | 17000 |
| 122 | 1220 | 17500 |
| 140 | 1400 | 20000 |
| 157 | 1570 | 22500 |
| 160 | 1600 | 23200 |
| 168 | 1680 | 24000 |
| 175 | 1750 | 25000 |
| 210 | 2100 | 30000 |
| 245 | 2450 | 35000 |
| 280 | 2800 | 40000 |
| 315 | 3150 | 45000 |
| 350 | 3500 | 50000 |

A new method for calculating the equivalent metric conversion to Mpa from psi was utilized. This method provides an extremely easy and consistent method of conversion to arrive at a rounded metric units using

7 Mpa for each 1000 psi. The resulting Mpa pressure in never more than 1.7% higher than the mathematically correct Mpa unit when the pressure in higher than 250 psi. All operating pressures of SAE J517 hoses

are above 250 psi except for most of 100R4 and the 76mm (-48) and larger sizes of 100R5. Therefore all files of previous test results should not be compromised.



Technical Data

Flow Capacities

Pressure Drop

* Pressure drop in psi (pounds per square inch)/gpm (gallons per minute) **for 10 feet of hose** (smooth bore) without fittings. Fluid specification: Specific gravity = .85; Viscosity = $\nu = 20$ centistokes (C.S.), (20 C.S. = 97 S.S.U.).

Hose pressure drop

| Hose Dash Size Æ | -04 | | -05 | | -06 | | -08 | | -10 | | -12 | | -16 | | -20 | | -24 | | -32 | | -40 | | -48 | |
|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|-----|--|
| Hose I.D. (inches) " | .19 | .25 | .25 | .31 | .31 | .38 | .41 | .50 | .50 | .63 | .63 | .75 | .88 | 1.00 | 1.13 | 1.25 | 1.38 | 1.50 | 1.81 | 2.00 | 2.38 | 3.00 | | |
| .25 | 10 | 3.1 | 3.1 | | | | | | | | | | | | | | | | | | | | | |
| .50 | 19 | 6 | 6 | 2.7 | 2.7 | | | | | | | | | | | | | | | | | | | |
| 1 | 40 | 12 | 12 | 5.5 | 5.5 | 2.4 | | | | | | | | | | | | | | | | | | |
| 2 | 95 | 24 | 24 | 10 | 10 | 4.8 | 3.5 | | | | | | | | | | | | | | | | | |
| 3 | 185 | 46 | 46 | 17 | 17 | 7 | 5 | 2.2 | 2.2 | | | | | | | | | | | | | | | |
| 4 | | 78 | 78 | 29 | 29 | 12 | 8 | 3 | 3 | 1.2 | 1.2 | | | | | | | | | | | | | |
| 5 | | 120 | 120 | 44 | 44 | 18 | 12 | 4.5 | 4.5 | 1.6 | 1.6 | .72 | | | | | | | | | | | | |
| 8 | | | | 95 | 95 | 39 | 26 | 10 | 10 | 3.6 | 3.6 | 1.4 | .60 | | | | | | | | | | | |
| 10 | | | | | | 59 | 40 | 15 | 15 | 5.7 | 5.7 | 2 | 1 | .55 | | | | | | | | | | |
| 12 | | | | | | 80 | 52 | 20 | 20 | 7.2 | 7.2 | 2.6 | 1.5 | .75 | .43 | | | | | | | | | |
| 15 | | | | | | | 75 | 30 | 30 | 10 | 10 | 4.2 | 2.2 | 1.2 | .67 | .38 | | | | | | | | |
| 18 | | | | | | | 107 | 40 | 40 | 15 | 15 | 6.3 | 3 | 1.5 | .70 | .55 | .35 | | | | | | | |
| 20 | | | | | | | | 49 | 49 | 19 | 19 | 8 | 3.4 | 2 | 1.1 | .65 | .43 | .27 | | | | | | |
| 25 | | | | | | | | 72 | 72 | 26 | 26 | 11 | 5.5 | 3 | 1.6 | 1 | .64 | .40 | .17 | | | | | |
| 30 | | | | | | | | | | 34 | 34 | 14 | 7 | 3.6 | 2.2 | 1.3 | .80 | .52 | .22 | .14 | | | | |
| 35 | | | | | | | | | | 47 | 47 | 19 | 9.5 | 5 | 2.8 | 1.7 | 1.1 | .70 | .27 | .18 | | | | |
| 40 | | | | | | | | | | | | 25 | 12 | 6.5 | 3.4 | 2.2 | 1.4 | .90 | .38 | .24 | | | | |
| 50 | | | | | | | | | | | | 36 | 17 | 9 | 5.3 | 3.3 | 2 | 1.3 | .54 | .35 | .15 | | | |
| 60 | | | | | | | | | | | | 50 | 23 | 12 | 7.5 | 4.4 | 2.8 | 1.8 | .75 | .45 | .20 | | | |
| 70 | | | | | | | | | | | | | 31 | 17 | 9.3 | 6 | 3.8 | 2.4 | 1 | .65 | .30 | | | |
| 80 | | | | | | | | | | | | | 38 | 21 | 12 | 7.1 | 4.6 | 3 | 1.2 | .76 | .34 | .11 | | |
| 90 | | | | | | | | | | | | | 49 | 27 | 15 | 9 | 5.9 | 3.8 | 1.5 | 1 | .45 | .13 | | |
| 100 | | | | | | | | | | | | | | 33 | 19 | 12 | 7 | 4.7 | 1.9 | 1.3 | .55 | .18 | | |
| 150 | | | | | | | | | | | | | | 60 | 36 | 22 | 13 | 8.5 | 3.4 | 2.2 | 1 | .33 | | |
| 200 | | | | | | | | | | | | | | | | 36 | 23 | 15 | 6 | 3.9 | 1.7 | .55 | | |
| 250 | | | | | | | | | | | | | | | | 54 | 33 | 22 | 8.5 | 5.3 | 2.5 | .75 | | |
| 300 | | | | | | | | | | | | | | | | | 45 | 29 | 12 | 7.5 | 4 | 1.1 | | |
| 400 | | | | | | | | | | | | | | | | | | 51 | 21 | 14 | 6.5 | 2.2 | | |
| 500 | | | | | | | | | | | | | | | | | | | 32 | 20 | 10 | 3 | | |
| 800 | | | | | | | | | | | | | | | | | | | | | 18 | 5 | | |
| 1000 | | | | | | | | | | | | | | | | | | | | | | | 10 | |

U.S. Gallons per minute

*Pressure drop values listed are typical of many petroleum based hydraulic oils at approximately +100°F (+38°C). Differences in fluids, fluid temperature and viscosity can increase or decrease actual pressure drop compared to the values listed.

To convert

U.S. gallons into Imperial gallons multiply U.S. gallons by 0.83267. Imperial gallons into U.S. gallons multiply Imperial gallons by 1.20095. U.S. gallons to litres multiply by 3.785. Litres to U.S. gallons, multiply by 0.2642.



Powering Business Worldwide

Crimp Specifications

| HOSE STYLE | CRIMP STYLE | PAGE # | HOSE STYLE | CRIMP STYLE | PAGE # | HOSE STYLE | CRIMP STYLE | PAGE # | HOSE STYLE | CRIMP STYLE | PAGE # |
|--------------------------------------|--------------------------------------|------------|---------------------------------|--------------------------------------|--------------|---------------------|-------------------|---|---|------------------|--------|
| 1503 | 100R5 | J15 | FC325 | Internal Skive | J34 | FC659 | Global TTC12 | J25 | How to Measure Crimp Diameters J2 | | |
| 1529 | Global Skive | J17 | FC350 | 100R5 | J16 | FC690 | Flat | J31 | Hose Preparation Instructions | | |
| 2583 | Barrel Field | J28 | FC355 | 100R5 | J16 | FC693 | Global OTC | J25 | Global Skive J3 | | |
| 2661 | Global OTC | J26 | FC363 | Flat | J32 | FC699 | Global OTC | J27 | Global Nipple with Low Pressure Hose J4 | | |
| | Barrel Field | J28 | FC364 | Global OTC | J27 | FC727 | G. OTCw/FW1097 | J27 | Global Spiral TTC, TTC12 & OTC J5 | | |
| | Flat Field | J30 | | Flat | J19 | | FC735 | Flat | J31 | Barrel & Flat J6 | |
| | Global Nipple with Low Pressure Hose | J20 | Global OTC | J27 | Global Skive | J18 | | Flat (Polyon) J7, J8 | | | |
| | Global OTC | J26 | FC372 | Flat | J13, 31 | Global Spiral TTC | J23 | Flat (PTFE) J9 | | | |
| Global TTC & TTC12 | J25 | FC373 | Global Skive | J19 | FC736 | Global TTC12 | J25 | Skive Type - 1 & 2 Piece J10 | | | |
| 2681 | Global Skive | | J17 | Global Skive | J13, J31 | Spiral Single Skive | J35 | MatchMate Plus Crimp Machine Target Settings J36, J37 | | | |
| 2766 | Global Skive | J17 | FC374 | Flat | J14, J31 | FC805 | Global TTC12 | J25 | | | |
| 2781 | Global Skive | J17 | FC375 | Flat | J14, J31 | FC806 | Global Spiral TTC | J33 | | | |
| 2807 | Flat | J32 | FC376 | Flat | J31 | FC807 | Flat | J32 | | | |
| FC136 | Global TTC12 | J25 | FC377 | Flat (protective guard collars) | J31 | FC839B | Flat (Brass Only) | J32 | | | |
| | Internal Skive | J34 | | Flat | J31 | | Global Skive | J19 | | | |
| | Spiral Single Skive | J35 | Flat (protective guard collars) | J31 | Global TTC | J24 | | | | | |
| FC186 | Flat | J32 | FC390 | Flat | J31 | FC849 | Global Skive | J18 | | | |
| FC194 | Global Skive | J17 | FC465 | Flat | J32 | FC849B | Global TTC | J24 | | | |
| FC195 | Global Skive | J17 | FC466 | Global Nipple with Low Pressure Hose | J20 | | Global Skive | J18 | | | |
| FC211 | Barrel Field | J28 | FC498 | Global OTC | J26 | GH120 | Global TTC | J24 | | | |
| | Flat Field | J30 | | Global Nipple with Low Pressure Hose | J20 | | GH194 | Global Skive | J18 | | |
| | Global Skive | J17 | Global OTC | J27 | Global TTC | J11, J22 | | | | | |
| | Global TTC | J21 | FC510 | Barrel Field | J29 | GH195 | Global Skive | J17 | | | |
| FC212 | Barrel Field | J28 | FC563 | Global Skive | J18 | GH466 | Global TTC | J12, J21 | | | |
| Flat Field | J30 | Global TTC | | J23 | Global Skive | | J17 | | | | |
| Global Skive | J17 | FC579 | | Flat | J32 | GH493 | Global TTC12 | J12, J25 | | | |
| Global TTC | J22 | FC598 | Global Skive | J19 | GH506 | Spiral Single Skive | J35 | | | | |
| FC234 | 100R5 | | Global TTC | J24 | | Global Spiral TTC | J33 | | | | |
| FC254 | Internal Skive | J34 | FC606 | Global OTC | J27 | GH663 | Barrel Field | J28 | | | |
| | Spiral Single Skive | J35 | | Internal Skive | J34 | | GH681 | Flat Field | J30 | | |
| | Global Spiral TTC | J33 | Global Spiral TTC | J33 | Global TTC | J12, J23 | | | | | |
| FC273 | Internal Skive | J34 | FC611 | Global TTC | J22 | GH683 | Global Skive | J17 | | | |
| | Spiral Single Skive | J35 | FC613 | Global Skive | J17 | | Global TTC | J11, J23 | | | |
| | Global Spiral TTC | J33 | FC616 | Global Spiral TTC | J21 | GH781 | Global Skive | J18 | | | |
| FC273B | Global Spiral TTC | Global TTC | | J24 | Global TTC | | J11, J23 | | | | |
| FC300 | 100R5 | J15 | FC619 | Global OTC | J26 | GH793 | Barrel Field | J28 | | | |
| FC310 | Barrel Field | J29 | Global Spiral TTC | J25 | FC636 | | Flat Field | J30 | | | |
| | Flat Field | J30 | FC639 | Global TTC12 | | J25 | Global Skive | J17 | | | |
| | Global Skive | J18 | FC640 | Global TTC | J24 | FC639 | Global Skive | J17 | | | |
| | Global TTC | J23 | | Global Skive | J19 | | Global TTC | J11, J22 | | | |
| FC318 | Barrel Field | J28 | FC640 | Global Skive | J19 | | | | | | |
| | Flat Field | J30 | | Global TTC | J24 | | | | | | |
| | Global TTC & TTC12 | J25 | | | | | | | | | |
| Global OTC | J26 | | | | | | | | | | |
| Global Nipple with Low Pressure Hose | J20 | | | | | | | | | | |
| FC323 | Internal Skive | J34 | | | | | | | | | |
| FC324 | Spiral Single Skive | J35 | | | | | | | | | |
| | Internal Skive | J34 | | | | | | | | | |
| Spiral Single Skive | J35 | | | | | | | | | | |

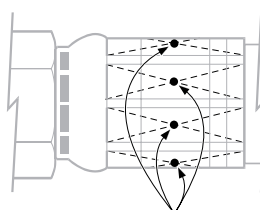
How to Measure Crimp Diameters

Crimp Diameter Measurement Locations

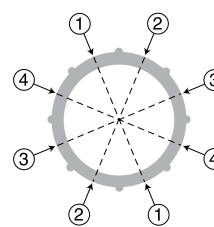
Diameter measurements are to be taken at the center (top to bottom, side to side) of the specified fitting section.

Use of the Aeroquip Calidapter (part no. FT1297) is recommended for measurement of barrel field crimp diameters. See accessories on page 37.

NOTE: The example and drawing on this page show an Aeroquip MatchMate Plus fitting. Refer to the figures within this document for the correct measurement locations for other types of fittings.



Measure Here



End View

Crimp Diameter Measurement Location
(MatchMate Plus fitting shown)

Crimp Diameter

The crimp diameter is the average of the four diameter measurements around the fitting. These measurements are to be taken at the same relative locations indicated in the illustration above.

NOTE: Aeroquip defines the crimp diameter as the average of four measurements, not just one measurement (see the "End View" illustration above).

$$\frac{\text{Measurement 1} + \text{Measurement 2} + \text{Measurement 3} + \text{Measurement 4}}{4} = \text{Crimp Diameter}$$

Crimp Ovality

Crimp ovality is the largest diameter measurement minus the smallest diameter measurement.

Example

GH781-12 hose with a 1AA12FJ12 fitting measures:

Measurement 1 = 31,57mm (1.243 in.)

Measurement 2 = 31,60mm (1.244 in.)

Measurement 3 = 31,65mm (1.246 in.)

Measurement 4 = 31,65mm (1.246 in.)

$$\text{Crimp Diameter} = \frac{31,51\text{mm (1.243in)} + 31,60\text{mm (1.244in)} + 31,65\text{mm (1.246in)} + 31,65\text{mm (1.246in)}}{4} = 31,62\text{mm (1.245in)}$$

$$\text{Crimp Ovality} = 31,65\text{mm (1.246in)} - 31,57\text{mm (1.243in)} = 0,08\text{mm (0.003in)}$$



Powering Business Worldwide

Hose Preparation Instructions

Global Skive Crimp Style

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104 or FT1500 for large bore and spiral hose, and the FT1258 for FC372 and FC373 hose. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Skive the Hose

Using a suitable skive tool remove the outer hose cover (Do not skive FC372 and FC373). It is crucial that the hose is skived to the proper length and depth and the reinforcement is visible and undamaged around the entire skived area. Improper skiving may lead to fitting/hose separation and lack of weather seal. Refer to the Hose Style Index for proper skive tool and skive length and to Bulletin JA253 for skive tool instructions.



Step 3: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and/or compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 4: Insert the Fitting into the Hose

Place the socket over the hose end until the socket retaining shoulder contacts the hose end. Insert the nipple into the socketed hose until the nipple shoulder bottoms against the hose tube. Slide the socket up against the nipple shoulder or hex and mark the hose cover next to the skirt of the socket.



Step 5: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt, reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 6: Plug or Cap Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed

Hose Preparation Instructions

Global Nipple with Low Pressure Hose

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104 or FT1500 for large bore hoses. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Buffing the Hose

Note: Some hoses require the cover to be buffed. Refer to the appropriate section of the crimp specifications bulletin prior to proceeding. Buff the hose to the proper length and diameter. Remove just enough of the cover to slide the socket on the hose. Do not expose the wire reinforcement. Refer to your hose in the Hose Style Index for more information.



Step 3: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and/or compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 4: Insert the Fitting into the Hose

Place socket over buffed hose end until the socket retaining shoulder contacts the hose end. Insert the nipple into the socketed hose until the nipple shoulder bottoms against the hose tube. Slide the socket up against the nipple shoulder or hex and mark the hose cover next to the skirt of the socket.



Step 5: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt, reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 6: Plug or Cap the Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



Powering Business Worldwide

Hose Preparation Instructions

Global Spiral TTC, TTC, TTC12 and OTC Crimp Style Fittings

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104 or FT1500 for large bore and spiral hose. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 3a: For TTC, TTC12, OTC: Insert the Fitting into the Hose

To determine the fitting insertion depth, use the appropriate FF90308 hose insertion gage or align the end of the hose with the scribe line (located on socket taper) and mark the hose where the gage or socket ends. Insert the fitting into the hose until the bottom of the socket is aligned with the mark on the hose or it bottoms out.



Step 3b: For Spiral TTC: Insert the Fitting into the Hose

To determine the fitting insertion depth, use the appropriate FF90308 hose insertion gage or align the end of the hose with the top of the stenciled part number (located on socket taper) and mark the hose where the gage or socket ends. Insert the fitting into the hose until the bottom of the socket is aligned with the mark on the hose or it bottoms out.



Step 4: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 5: Plug or Cap the Fittings Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



Hose Preparation Instructions

Barrel and Flat Field Crimp Style Fittings

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 3: Insert the Fitting into the Hose

Insert the fitting into hose until the nipple shoulder bottoms against the hose. Mark the hose where the socket ends with a grease pencil.



Step 4: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt reject the assembly.

Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions. Measure Barrell crimp with Aeroquip calidapter (FT1297) and dial calipers or use a thread micrometer. Flat Field measurement does not require calidapters.



Step 5: Plug or Cap the Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



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CRIMP INFORMATION

Hose Preparation Instructions

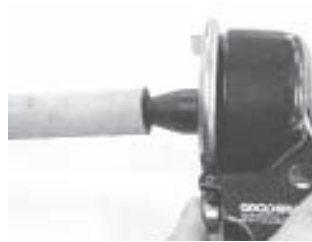
Swage or Flat Crimp Style Fittings (Polyon)

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using the FT1258 cut off tool. The angle of cut must not exceed 5°. Read your cut-off tool operator's manual for cutting instructions.



Step 2: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 3: Insert the Fitting into the Hose

Using the bottom edge of the fitting part number as a reference point, determine the length of the hose to be inserted into the socket. Mark the hose for insertion length with a grease pencil. Lightly lubricate the fitting nipple and push the fitting onto the hose leaving the socket edge even with the mark placed on the hose. Do not bottom the hose in the fitting.



Step 4: Swage the Fitting

Refer to the FT1242 or FT1282 Swage Machine owner's manual and the Hose Style Index for tooling specifications for your swage machine.



Step 5: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimensions (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt, reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurement and operating and crimp instructions.



Step 6: Plug or Cap the Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



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Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104 or FT1500 for large bore and spiral hose. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 3a: For TTC, TTC12, OTC: Insert the Fitting into the Hose

To determine the fitting insertion depth, use the appropriate FF90308 hose insertion gage or align the end of the hose with the scribe line (located on socket taper) and mark the hose where the gage or socket ends. Insert the fitting into the hose until the bottom of the socket is aligned with the mark on the hose or it bottoms out.



Step 3b: For Spiral TTC: Insert the Fitting into the Hose

To determine the fitting insertion depth, use the appropriate FF90308 hose insertion gage or align the end of the hose with the top of the stenciled part number (located on socket taper) and mark the hose where the gage or socket ends. Insert the fitting into the hose until the bottom of the socket is aligned with the mark on the hose or it bottoms out.



Step 4: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 5: Plug or Cap the Fittings Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



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Hose Preparation Instructions

Flat Crimp Style Fittings (PTFE)

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Place 1-1/2 wraps of filament tape around area to be cut. In the center of the taped area, cut the hose squarely and to the proper length using a suitable cut-off saw. Aeroquip recommends using a saw similar to the S1104. When complete, the angle of cut must not exceed 5° and a thin band of tape must be left on the hose to keep the wires in place. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Clean the Hose Bore

Using a hose compatible solvent, bottlebrush, or compressed air, flush contaminants from the hose bore. Follow shop safety rules.



Step 3a: Insert the Fitting into the Hose - Convoluted PTFE

Slide the socket over the hose until the socket bottoms out, or you can see the hose at the top of the socket. Insert the nipple into the hose, turning it inward, until the shoulder comes in contact with the hose. Slide the socket up over the shoulder and flush with the hex. To ensure the fitting does not move during crimping, mark the hose at the bottom of the socket. Swivel Type Fittings: Screw a plug or adapter into the swivel threads and secure the fitting in a vise. Thread the hose onto the nipple until it is snug against the nipple assembly shoulder. Male pipe and flange fittings may be secured in vise without an adapter.



Step 3b: Insert the Fitting into the Hose - Smooth Bore PTFE

Place socket over taped hose end until the socket retaining shoulder contacts the hose end. Insert the nipple into the socketed hose until the nipple bottoms against the hose tube. Slide the socket up against the nipple shoulder and hex and mark the hose cover next to the skirt of the socket.



Step 4: Crimp the Fitting

Crimp the fitting and check the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If hose mark is not within 3mm (1/8") of the socket skirt, reject the assembly. PTFE hose requires a crimp machine with a positive backstop. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 5: Plug or Cap the Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.





Hose Preparation Instructions

Skive Type - 1 and 2 Piece Crimp Style Fittings

Select a matching hose and fitting combination from the current Aeroquip catalog.



Step 1: Cut the Hose

Cut the hose squarely and to the proper length using a suitable cut off saw. The cut angle must not exceed 5°. Aeroquip recommends using saws similar to the S1104 or FT1500 for large bore and spiral hose. Read the saw operation manual for cutting instructions and blade applications.



Step 2: Skive the Hose

Using a suitable skive tool, remove the outer hose cover. It is crucial that the hose is skived to the proper length and depth and the reinforcement is visible all around the circumference of the hose and undamaged around the entire skived area. Improper skiving may lead to fitting/hose separation and lack of weather seal. Refer to your hose in the Hose Style Index for proper skive tool and skive length. Refer to Bulletin JA253 for skive tool instructions.



Step 3: Clean the Hose Bore

Using the FT1355-01 Jetcleaner or hose compatible solvent, bottle brush, and/or compressed air, flush contaminants from the hose bore. See operating instructions for the FT1355-01. Follow shop safety rules.



Step 4a: One Piece Fitting: Insert the Fitting into the Hose

To determine the fitting insertion depth, align the end of the hose with the top of the stenciled part number (located on socket taper) and mark the hose where the socket ends. Insert the fitting into the hose until the bottom of the socket is aligned with the mark on the hose or it bottoms out.



Step 4b: Two Piece Fitting: Insert the Fitting into the Hose

Place the socket over the skived hose end until the socket retaining shoulder contacts the hose end. Insert the nipple into the socketed hose until the nipple shoulder bottoms against the hose tube. Slide the socket up against the nipple shoulder or hex and mark the hose cover next to the skirt of the socket.



Step 5: Crimp the Fitting

Crimp the fitting then measure the crimp diameter, ovality dimension (see page 2) and inspect the nipple/socket position. Refer to the Crimp Specification bulletin for this information. If the hose mark is not within 3mm (1/8") of the socket skirt, reject the assembly. Refer to your hose in the Hose Style Index for die selection, finished crimp diameter, ovality measurements and operating and crimping instructions.



Step 6: Plug or Cap the Fitting Ends

Use 23055 dust plugs and caps to protect the fitting threads and seal out contamination until hose assembly is installed.



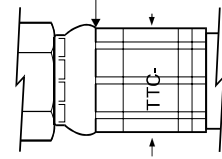
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ET1000 MatchMate™ Tooling

* Max. crimp ovality .20 mm/.008 in.

** Die ring adapter part number =
ET1000AR-001.

Figure 5

Finished crimp ends
at the scribe line
± .75 mm (± .030 In)

(measure crimp diameter here)

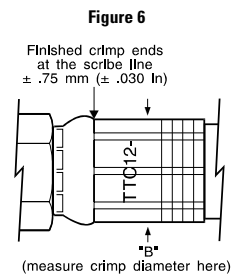
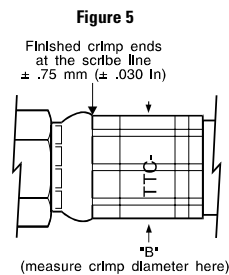
| HOSE STYLE | SOCKET PART # | COLLET PART # | SPACER RING | SPACER RING PART # | FLAT SIDE (UP/DOWN) | CRIMP DIA. B* | SEE FIG. # | DIE RING ADAPTER REQ'D** |
|---------------|------------------|----------------|----------------|--------------------------|------------------------|-------------------------|---------------|--------------------------------|
| | | | | | | ± .0.15 mm ± .006 in | | |
| GH781- | | | | | | | | |
| GH781-04 | TTC | ET400DC-M150S | Yellow | ET1000SR-M115D | Up | 16.89 mm 0.665 in | 5 | Yes |
| GH781-06 | TTC | ET400DC-M195S | Black | ET1000SR-M265D | Down | 20.70 mm 0.815 in | 5 | Yes |
| GH781-08 | TTC | ET400DC-M230S | Lt. Green | ET1000SR-M190D | Up | 24.77 mm 0.975 in | 5 | Yes |
| GH781-10 | TTC | ET1000DC-M250S | Black | ET1000SR-M265D | Up | 28.32 mm 1.115 in | 5 | No |
| GH781-12 | TTC | ET1000DC-M295S | Black | ET1000SR-M265D | Down | 31.62 mm 1.245 in | 5 | No |
| GH781-16 | TTC | ET1000DC-M390S | Orange | ET1000SR-M315A | Up | 39.75 mm 1.565 in | 5 | No |
| GH781-20 | TTC | ET1000DC-M475S | Orange | ET1000SR-M315A | Up | 48.26 mm 1.900 in | 5 | No |
| GH793- | | | | | | | | |
| GH793-04 | TTC | ET400DC-M150S | Lt. Green | ET1000SR-M190D | Up | 17.27 mm 0.680 in | 5 | Yes |
| GH793-06 | TTC | ET400DC-M195S | Yellow | ET1000SR-M115D | Up | 21.21 mm 0.835 in | 5 | Yes |
| GH793-08 | TTC | ET400DC-M230S | Black | ET1000SR-M265D | Up | 25.15 mm 0.990 in | 5 | Yes |
| GH793-10 | TTC | ET1000DC-M250S | Silver | ET1000SR-M395D | Up | 28.70 mm 1.130 in | 5 | No |
| GH793-12 | TTC | ET1000DC-M295S | Black | ET1000SR-M265D | Up | 32.51 mm 1.280 in | 5 | No |
| GH793-16 | TTC | ET1000DC-M390S | Lt. Green | ET1000SR-M190D | Up | 41.40 mm 1.630 in | 5 | No |
| GH793-20 | TTC | ET1000DC-M475S | Yellow | ET1000SR-M115D | Up | 49.78 mm 1.960 in | 5 | No |
| GH120- | | | | | | | | |
| GH120-04 | TTC | ET400DC-M150S | Black | ET1000SR-M265D | Down | 16.26 mm 0.640 in | 5 | Yes |
| GH120-06 | TTC | ET400DC-M195S | Tan | T-400-112 | Up | 20.32 mm 0.800 in | 5 | Yes |
| GH120-08 | TTC | ET400DC-M230S | Lt. Green | ET1000SR-M190D | Up | 24.77 mm 0.975 in | 5 | Yes |
| GH120-10 | TTC | ET1000DC-M250S | Black | ET1000SR-M265D | Up | 28.32 mm 1.115 in | 5 | No |
| GH120-12 | TTC | ET1000DC-M295S | Black | ET1000SR-M265D | Down | 31.62 mm 1.245 in | 5 | No |
| GH120-16 | TTC | ET1000DC-M390S | Orange | ET1000SR-M315A | Up | 39.75 mm 1.565 in | 5 | No |
| GH120-20 | TTC | ET1000DC-M475S | Orange | ET1000SR-M315A | Up | 48.26 mm 1.900 in | 5 | No |



ET1000 MatchMate™ Tooling

* Max. crimp ovality .20 mm/.008 in.

** Die ring adapter part number =
ET1000AR-001.



| HOSE STYLE | SOCKET PART # | COLLET PART # | SPACER RING | SPACER RING PART # | FLAT SIDE (UP/DOWN) | CRIMP DIA. B* | SEE FIG. # | DIE RING ADAPTER REQ'D** |
|---------------|---------------|----------------|-------------|--------------------|---------------------|------------------------|------------|--------------------------|
| | | | | | | ± .015 mm ± .006 in | | |
| GH663- | | | | | | | | |
| GH663-04 | TTC | ET400DC-M150S | Purple | ET1000SR-M100A | Up | 15.75 mm 0.620 in | 5 | Yes |
| GH663-06 | TTC | ET400DC-M195S | Purple | ET1000SR-M100A | Up | 19.94 mm 0.785 in | 5 | Yes |
| GH663-08 | TTC | ET400DC-M230S | Black | ET1000SR-M265D | Down | 23.88 mm 0.940 in | 5 | Yes |
| GH663-10 | TTC | ET1000DC-M250S | Purple | ET1000SR-M100A | Up | 26.80 mm 1.055 in | 5 | No |
| GH663-12 | TTC | ET1000DC-M295S | Yellow | ET1000SR-M115D | Up | 31.75 mm 1.250 in | 5 | No |
| GH663-16 | TTC | ET1000DC-M390S | Purple | ET1000SR-M100A | Up | 40.39 mm 1.590 in | 5 | No |
| GH663-20 | TTC | ET1000DC-M430S | Black | ET1000SR-M265D | Up | 46.00 mm 1.811 in | 5 | No |
| GH195- | | | | | | | | |
| GH195-04 | TTC | ET400DC-M150S | Yellow | ET1000SR-M115D | Up | 16.89 mm 0.665 in | 5 | Yes |
| GH195-06 | TTC | ET400DC-M195S | Yellow | ET1000SR-M115D | Up | 21.21 mm 0.835 in | 5 | Yes |
| GH195-08 | TTC | ET400DC-M230S | Black | ET1000SR-M265D | Up | 25.15 mm 0.990 in | 5 | Yes |
| GH195-10 | TTC | ET1000DC-M250S | Silver | ET1000SR-M395D | Up | 28.70 mm 1.130 in | 5 | No |
| GH195-12 | TTC | ET1000DC-M295S | Black | ET1000SR-M265D | Up | 32.51 mm 1.280 in | 5 | No |
| GH195-16 | TTC | ET1000DC-M390S | Black | ET1000SR-M265D | Up | 41.66 mm 1.640 in | 5 | No |
| GH195-20 | TTC | ET1000DC-M475S | Silver | ET1000SR-M395D | Up | 50.80 mm 2.000 in | 5 | No |
| GH194- | | | | | | | | |
| GH194-04 | TTC | ET400DC-M150S | Purple | ET1000SR-M100A | Up | 15.75 mm 0.620 in | 5 | Yes |
| GH194-06 | TTC | ET400DC-M195S | Green | T-400-37 | Up | 19.56 mm 0.770 in | 5 | Yes |
| GH194-08 | TTC | ET400DC-M230S | Black | ET1000SR-M265D | Down | 23.88 mm 0.940 in | 5 | Yes |
| GH194-10 | TTC | ET1000DC-M250S | Purple | ET1000SR-M100A | Up | 26.80 mm 1.055 in | 5 | No |
| GH194-12 | TTC | ET1000DC-M295S | Yellow | ET1000SR-M115D | Up | 31.75 mm 1.250 in | 5 | No |
| GH194-16 | TTC | ET1000DC-M390S | Purple | ET1000SR-M100A | Up | 40.39 mm 1.590 in | 5 | No |
| GH194-20 | TTC | ET1000DC-M430S | Black | ET1000SR-M265D | Up | 45.72 mm 1.800 in | 5 | No |
| GH493- | | | | | | | | |
| GH493-06 | TTC12 | ET400DC-M230S | Red | T-400-38 | Up | 22.76 mm 0.896 in | 6 | Yes |
| GH493-08 | TTC12 | ET1000DC-M250S | Lt. Green | ET1000SR-M190D | Up | 27.81 mm 1.095 in | 6 | No |
| GH493-10 | TTC12 | ET1000DC-M295S | Orange | ET1000SR-M315A | Up | 30.48 mm 1.200 in | 6 | No |
| GH493-12 | TTC12 | ET1000DC-M320S | Black | ET1000SR-M265D | Down | 34.42 mm 1.355 in | 6 | No |
| GH493-16 | TTC12 | ET1000DC-M430S | Orange | ET1000SR-M315A | Up | 43.82 mm 1.725 in | 6 | No |

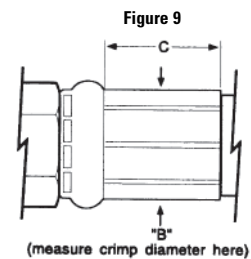


Powering Business Worldwide

ET1000 Polyon Tooling

* Max. crimp ovality .20 mm/.008 in.

** Die ring adapter part number = ET1000AR-001.



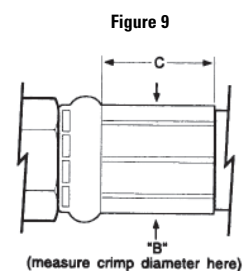
| HOSE STYLE | SOCKET PART # | COLLET PART # | SPACER RING | SPACER RING PART # | FLAT SIDE (UP/DOWN) | CRIMP DIA. B | CRIMP LENGTH C | SEE FIG. # | DIE RING ADAPTER REQ'D |
|---------------|---------------|----------------|-------------|--------------------|---------------------|-----------------------|-----------------------|------------|------------------------|
| | | | | | | ± .12 mm ± .005 in | ± .38 mm ± .015 in | | |
| FC372- | | | | | | | | | |
| FC372-02 | FC1006 | ET1000DC-M095S | Red | T-400-38 | Up | 9.52 mm 0.375 in | 11.94 mm .470 in | 9 | Yes |
| FC372-03 | FC1006 | T-400-2C | Red | T-400-38 | Up | 12.75 mm 0.502 in | 19.94 mm .785 in | 9 | Yes |
| FC372-04 | FC1006 | T-400-109C | Green | T-400-37 | Up | 14.47 mm 0.570 in | 22.48 mm .885 in | 9 | Yes |
| FC372-05 | FC1006 | T-400-109C | Black/Red | T-400-47R | Up | 16.26 mm 0.640 in | 27.94 mm 1.100 in | 9 | Yes |
| FC372-06 | FC1006 | T-400-122C | Tan | T-400-112 | Up | 17.90 mm 0.705 in | 32.39 mm 1.275 in | 9 | Yes |
| FC372-08 | FC1006 | ET1000DC-M215S | Magenta | ET1000SR-M215A | Up | 21.71 mm 0.855 in | 37.47 mm 1.475 in | 9 | Yes |
| FC372-12 | FC1006 | T-420-30C | Purple | ET1000SR-M100A | Up | 28.19 mm 1.110 in | 38.10 mm 1.500 in | 9 | No |
| FC372-16 | FC1006 | ET1000DC-M320S | Magenta | ET1000SR-M215A | Up | 33.78 mm 1.330 in | 51.44 mm 2.025 in | 9 | No |
| FC373- | | | | | | | | | |
| FC373-02 | FC1006 | ET1000DC-M095S | Red | T-400-38 | Up | 9.52 mm 0.375 in | 11.94 mm .470 in | 9 | Yes |
| FC373-03 | FC1006 | T-400-2C | Red | T-400-38 | Up | 12.75 mm 0.502 in | 19.94 mm .785 in | 9 | Yes |
| FC373-04 | FC1006 | T-400-109C | Green | T-400-37 | Up | 14.47 mm 0.570 in | 22.48 mm .885 in | 9 | Yes |
| FC373-05 | FC1006 | T-400-109C | Black/Red | T-400-47R | Up | 16.26 mm 0.640 in | 27.94 mm 1.100 in | 9 | Yes |
| FC373-06 | FC1006 | T-400-122C | Tan | T-400-112 | Up | 17.90 mm 0.705 in | 32.39 mm 1.275 in | 9 | Yes |
| FC373-08 | FC1006 | ET1000DC-M215S | Magenta | ET1000SR-M215A | Up | 21.71 mm 0.855 in | 37.47 mm 1.475 in | 9 | Yes |
| FC373-12 | FC1006 | T-420-30C | Purple | ET1000SR-M100A | Up | 28.19 mm 1.110 in | 38.10 mm 1.500 in | 9 | No |
| FC373-16 | FC1006 | ET1000DC-M320S | Magenta | ET1000SR-M215A | Up | 33.78 mm 1.330 in | 51.44 mm 2.025 in | 9 | No |



ET1000 Polyon Tooling

* Max. crimp ovality .20 mm/.008 in.

** Die ring adapter part number =
ET1000AR-001.



| HOSE STYLE | SOCKET PART # | COLLET PART # | SPACER RING | SPACER RING PART # | FLAT SIDE (UP/DOWN) | CRIMP DIA. B | CRIMP LENGTH C | SEE FIG. # | DIE RING ADAPTER REQ'D |
|---------------|------------------|----------------|----------------|--------------------------|------------------------|-----------------------|-----------------------|---------------|------------------------------|
| | | | | | | ± .12 mm ± .005 in | ± .38 mm ± .015 in | | |
| FC374- | | | | | | | | | |
| FC374-03 | FC1006 | T-400-2C | Red | T-400-38 | Up | 12.75 mm 0.502 in | 19.94 mm .785 in | 9 | Yes |
| FC374-04 | FC1006 | T-400-109C | Red | T-400-38 | Up | 14.22 mm 0.560 in | 22.48 mm .885 in | 9 | Yes |
| FC374-06 | FC1006 | T-400-122C | Purple | ET1000SR-M100A | Up | 17.65 mm 0.695 in | 32.39 mm 1.275 in | 9 | Yes |
| FC374-08 | FC1006 | ET1000DC-M215S | Red | T-400-38 | Up | 21.46 mm 0.845 in | 37.47 mm 1.475 in | 9 | Yes |
| FC374-12 | FC1006 | T-420-30C | Red | T-400-38 | Up | 27.68 mm 1.090 in | 38.10 mm 1.500 in | 9 | No |
| FC374-16 | FC1006 | ET1000DC-M320S | Magenta | ET1000SR-M215A | Up | 33.78 mm 1.330 in | 51.44 mm 2.025 in | 9 | No |
| FC375- | | | | | | | | | |
| FC375-03 | FC1006 | T-400-2C | Red | T-400-38 | Up | 12.75 mm 0.502 in | 19.94 mm .785 in | 9 | Yes |
| FC375-04 | FC1006 | T-400-109C | Red | T-400-38 | Up | 14.22 mm 0.560 in | 22.48 mm .885 in | 9 | Yes |
| FC375-06 | FC1006 | T-400-122C | Purple | ET1000SR-M100A | Up | 17.65 mm 0.695 in | 32.39 mm 1.275 in | 9 | Yes |
| FC375-08 | FC1006 | ET1000DC-M215S | Red | T-400-38 | Up | 21.46 mm 0.845 in | 37.47 mm 1.475 in | 9 | Yes |
| FC375-12 | FC1006 | T-420-30C | Red | T-400-38 | Up | 27.68 mm 1.090 in | 38.10 mm 1.500 in | 9 | No |
| FC375-16 | FC1006 | ET1000DC-M320S | Magenta | ET1000SR-M215A | Up | 33.78 mm 1.330 in | 51.44 mm 2.025 in | 9 | No |



Powering Business Worldwide

100R5

Crimp Die Part Numbers

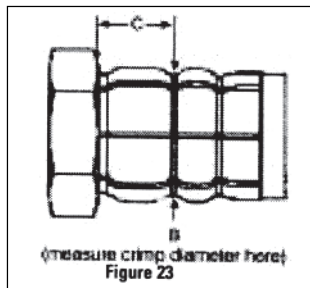
FT1307-200-R5-** (-04 through -32)

FT1330-275-R5-** (-04 through -20)

FT1380-275-R5-** (-04 through -20)

* Max. crimp ovality .20 mm/.008 in.

**Must be replaced by appropriate dash size when ordering.



| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------|---------------|-----------------------|-----------------------|--------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | ± .38 mm ± .015 in | | | |
| 1503 | | | | | | |
| -04 | FW1186 | 12.55 mm 0.494 in | 13.10 mm 0.516 in | -R5-04 | 23 | |
| -05 | FLH186 | 13.35 mm 0.525 in | 13.10 mm 0.516 in | -R5-05 | 23 | |
| -06 | FLH186 | 16.35 mm 0.644 in | 13.10 mm 0.516 in | -R5-06 | 23 | |
| -08 | FLH186 | 18.35 mm 0.722 in | 13.10 mm 0.516 in | -R5-08 | 23 | |
| -10 | FLH186 | 22.05 mm 0.868 in | 13.10 mm 0.516 in | -R5-10 | 23 | |
| -12 | FLH186 | 25.95 mm 1.022 in | 13.40 mm 0.528 in | -R5-12 | 23 | |
| -16 | FLH186 | 30.55 mm 1.203 in | 16.80 mm 0.661 in | -R5-16 | 23 | |
| -20 | FLH186 | 36.35 mm 1.431 in | 18.40 mm 0.724 in | -R5-20 | 23 | |
| -24 | FLH186 | 41.65 mm 1.640 in | 19.30 mm 0.760 in | -R5-24 | 23 | |
| -32 | FLH186 | 55.55 mm 2.187 in | 25.90 mm 1.020 in | -R5-32 | 23 | |
| FC234 | | | | | | |
| -05 | FLH186 | 14.05 mm 0.553 in | 13.10 mm 0.516 in | -R5-05 | 23 | |
| -06 | FLH186 | 17.05 mm 0.671 in | 13.10 mm 0.516 in | -R5-06 | 23 | |
| -08 | FLH186 | 19.05 mm 0.750 in | 13.10 mm 0.516 in | -R5-08 | 23 | |
| -10 | FLH186 | 23.35 mm 0.919 in | 13.10 mm 0.516 in | -R5-10 | 23 | |
| -12 | FLH186 | 26.25 mm 1.034 in | 13.40 mm 0.528 in | -R5-12 | 23 | |
| -16 | FLH186 | 30.55 mm 1.203 in | 16.80 mm 0.661 in | -R5-16 | 23 | |
| FC300 | | | | | | |
| -04 | FLH186 | 12.55 mm 0.494 in | 13.10 mm 0.516 in | -R5-04 | 23 | |
| -05 | FLH186 | 13.55 mm 0.533 in | 13.10 mm 0.516 in | -R5-05 | 23 | |
| -06 | FLH186 | 16.65 mm 0.656 in | 13.10 mm 0.516 in | -R5-06 | 23 | |
| -08 | FLH186 | 18.75 mm 0.738 in | 13.10 mm 0.516 in | -R5-08 | 23 | |
| -10 | FLH186 | 22.35 mm 0.880 in | 13.10 mm 0.516 in | -R5-10 | 23 | |
| -12 | FLH186 | 26.15 mm 1.030 in | 13.40 mm 0.528 in | -R5-12 | 23 | |
| -16 | FLH186 | 30.55 mm 1.203 in | 16.80 mm 0.661 in | -R5-16 | 23 | |
| -20 | FLH186 | 36.25 mm 1.427 in | 18.40 mm 0.724 in | -R5-20 | 23 | |
| -24 | FLH186 | 41.85 mm 1.648 in | 19.30 mm 0.760 in | -R5-24 | 23 | |
| -32 | FLH186 | 55.05 mm 2.167 in | 25.90 mm 1.020 in | -R5-32 | 23 | |



100R5

Crimp Die Part Numbers

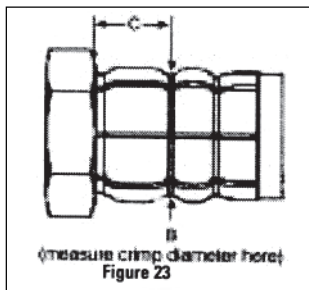
FT1307-200-R5-**-04 through -32)

FT1330-275-R5-**-04 through -20)

FT1380-275-R5-**-04 through -20)

* Max. crimp ovality .20 mm/.008 in.

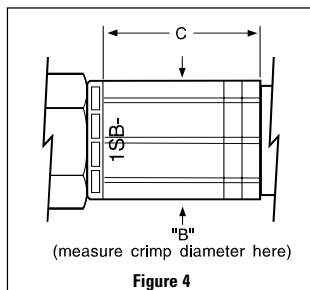
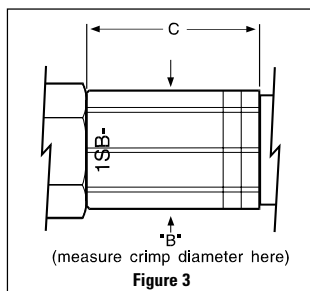
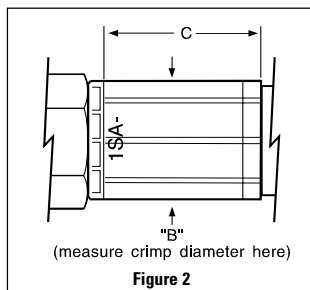
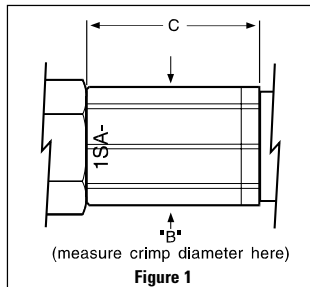
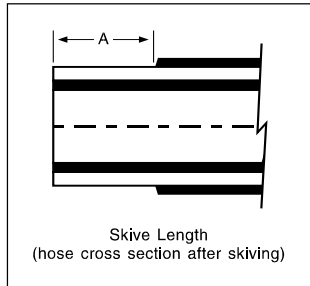
**Must be replaced by appropriate dash size when ordering.



| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------|---------------|-----------------------|-----------------------|--------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | ± .38 mm ± .015 in | | | |
| FC350 | | | | | | |
| -04 | FW1186 | 12.55 mm 0.494 in | 13.10 mm 0.516 in | -R5-04 | 23 | |
| -05 | FLH186 | 13.65 mm 0.537 in | 13.10 mm 0.516 in | -R5-05 | 23 | |
| -06 | FLH186 | 16.35 mm 0.644 in | 13.10 mm 0.516 in | -R5-06 | 23 | |
| -08 | FLH186 | 0.734 mm 18.65 in | 13.10 mm 0.516 in | -R5-08 | 23 | |
| -10 | FLH186 | 22.35 mm 0.880 in | 13.10 mm 0.516 in | -R5-10 | 23 | |
| -12 | FLH186 | 26.15 mm 1.030 in | 13.40 mm 0.528 in | -R5-12 | 23 | |
| -16 | FLH186 | 30.55 mm 1.203 in | 16.80 mm 0.661 in | -R5-16 | 23 | |
| -20 | FLH186 | 36.35 mm 1.431 in | 18.40 mm 0.724 in | -R5-20 | 23 | |
| -24 | FLH186 | 42.35 mm 1.667 in | 19.30 mm 0.760 in | -R5-24 | 23 | |
| FC355 | | | | | | |
| -04 | FLH186 | 12.55 mm 0.494 in | 13.10 mm 0.516 in | -R5-04 | 23 | |
| -05 | FLH186 | 13.55 mm 0.533 in | 13.10 mm 0.516 in | -R5-05 | 23 | |
| -06 | FLH186 | 16.55 mm 0.652 in | 13.10 mm 0.516 in | -R5-06 | 23 | |
| -08 | FLH186 | 18.65 mm 0.734 in | 13.10 mm 0.516 in | -R5-08 | 23 | |
| -10 | FLH186 | 22.35 mm 0.880 in | 13.10 mm 0.516 in | -R5-10 | 23 | |
| -12 | FLH186 | 26.15 mm 1.030 in | 13.40 mm 0.528 in | -R5-12 | 23 | |
| -16 | FLH186 | 30.55 mm 1.203 in | 16.80 mm 0.661 in | -R5-16 | 23 | |
| -20 | FLH186 | 36.75 mm 1.447 in | 18.40 mm 0.724 in | -R5-20 | 23 | |
| -24 | FLH186 | 42.25 mm 1.663 in | 19.30 mm 0.760 in | -R5-24 | 23 | |
| -32 | FLH186 | 55.55 mm 2.187 in | 25.90 mm 1.020 in | -R5-32 | 23 | |



Global Skive Crimp Style



* Max. crimp ovality .20 mm/.008 in.

** Crimp full length of socket.

1 -20 Global sockets must be pre-crimped to nipple to achieve complete crimp on FT1330 and FT1380 machines.

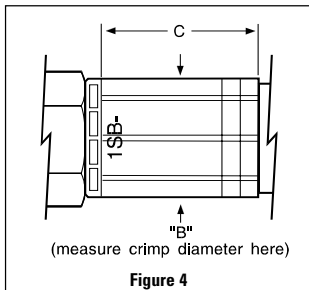
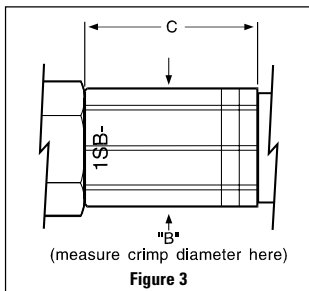
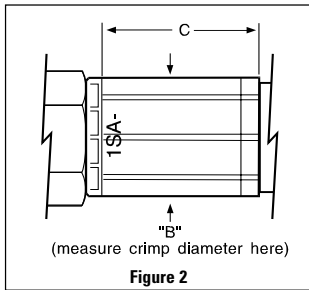
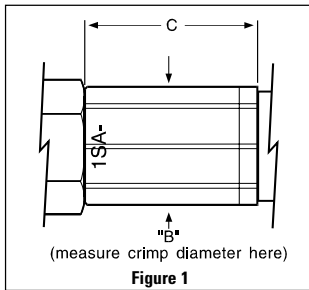
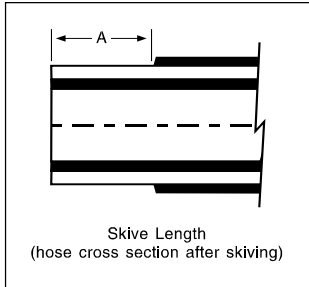
2 FT1209-200-23 not approved.

3 Crimp diameter for 2766-4 only

| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---|----------------------|-----------------------|--|-----------------------|----------------------------------|--------------|-----------------------|
| | | ± .50 mm ± .020 in | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| GH194, GH663, 2681, FC194, FC211, FC613 | | | | | | | |
| -03 | 1SA3 | 14.00 mm .550 in | 12.83 mm .505 in | ** | -M120 -90 | 1 | |
| -04 | 1SA4 | 16.30 mm .640 in | 15.75 mm .620 in | ** | -M150 -2 | 1 | |
| -05 | 1SA5 | 18.30 mm .720 in | 17.78 mm .700 in | ** | -M180 -93 | 1 | |
| -06 | 1SA6 | 16.50 mm .650 in | 20.83 mm .820 in | ** | -M210 -3 | 1 | |
| -08 | 1SA8 | 20.00 mm .790 in | 23.24 mm .915 in | ** | -M210 -4 | 1 | |
| -10 | 1SA10 | 21.00 mm .830 in | 26.80 mm 1.055 in | ** | -M240 -5 | 1 | |
| -12 | 1SA12 | 21.60 mm .850 in | 30.73 mm 1.210 in | ** | -M280 -6 | 1 | |
| -16 | 1SA16 | 25.90 mm 1.020 in | 38.10 mm 1.500 in | ** | -M370 -8 | 1 | |
| -20 | 1SA20 | 30.70 mm 1.210 in | 47.75 mm 1.880 in | ** | -M465 -9 | 1 | |
| -20 ¹ | 1SA20 Pre-Crimped | 30.70 mm 1.210 in | 47.75 mm 1.880 in | 38.10 mm 1.500 in | -M465 -9 | 2 | |
| -24 | 1SA24 | 32.80 mm 1.290 in | 55.37 mm 2.180 in | ** | -M550 -11 | 1 | |
| -32 | 1SA32 | 33.00 mm 1.300 in | 70.87 mm 2.790 in | ** | -M690 -17 -23 ² | 1 | |
| GH195, GH793, 1529, 2766³, 2781, FC195, FC212 | | | | | | | |
| -04 | 1SB4 | 16.30 mm .640 in | 15.88 mm .625 in 16.38 mm ³ .645 in ³ | ** | -M150 -2 | 3 | |
| -05 | 1SB5 | 19.30 mm .760 in | 17.78 mm .700 in | ** | -M180 -93 | 3 | |
| -06 | 1SB6 | 16.50 mm .650 in | 20.57 mm .810 in | ** | -M210 -3 | 3 | |
| -08 | 1SB8 | 20.00 mm .790 in | 23.24 mm .915 in | ** | -M210 -4 | 3 | |
| -10 | 1SB10 | 21.00 mm .830 in | 26.80 mm 1.055 in | ** | -M240 -5 | 3 | |
| -12 | 1SB12 | 21.60 mm .850 in | 30.73 mm 1.210 in | ** | -M280 -6 | 3 | |
| -16 | 1SB16 | 25.90 mm 1.020 in | 38.10 mm 1.500 in | ** | -M370 -8 | 3 | |
| -20 | 1SB20 | 30.70 mm 1.210 in | 47.75 mm 1.880 in | ** | -M465 -9 | 3 | |
| -20 ¹ | 1SB20 Pre-Crimped | 30.70 mm 1.210 in | 47.75 mm 1.880 in | 38.10 mm 1.500 in | -M465 -9 | 4 | |
| -24 | 1SB24 | 32.80 mm 1.290 in | 55.37 mm 2.180 in | ** | -M550 -11 | 3 | |
| -32 | 1SB32 | 33.00 mm 1.300 in | 70.87 mm 2.790 in | ** | -M690 -17 -23 ² | 3 | |
| GH681 | | | | | | | |
| -4 | 1SA4 | 16.30 mm .640 in | 15.37 mm .605 in | ** | -M150 -2 | 1 | |
| -6 | 1SA6 | 16.50 mm .650 in | 20.83 mm .820 in | ** | -M210 -3 | 1 | |
| -8 | 1SA8 | 20.10 mm .790 in | 23.24 mm .915 in | ** | -M210 -4 | 1 | |



Global Skive Crimp Style



| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--|----------------------|-----------------------|--|-----------------------|--------------|--------------|-----------------------|
| | | ± .50 mm ± .020 in | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| GH120², GH781, FC735 | | | | | | | |
| -04 | 1SB4 | 16.30 mm .640 in | 15.37 mm .605 in 15.10 mm ² .595 in ² | ** | -M150 -2 | 3 | |
| -06 | 1SB6 | 16.50 mm .650 in | 19.69 mm .775 in | ** | -M180 -3 | 3 | |
| -08 | 1SB8 | 20.00 mm .790 in | 22.99 mm .905 in | ** | -M210 -4 | 3 | |
| -10 | 1SB10 | 21.00 mm .830 in | 25.78 mm 1.015 in | ** | -M240 -4 | 3 | |
| -12 | 1SB12 | 21.60 mm .850 in | 30.10 mm 1.185 in | ** | -M280 -6 | 3 | |
| -16 | 1SB16 | 25.90 mm 1.020 in | 37.47 mm 1.475 in | ** | -M370 -8 | 3 | |
| -20 | 1SB20 | 30.70 mm 1.210 in | 45.34 mm 1.785 in | ** | -M420 | 3 | |
| -20 ¹ | 1SB20 Pre-Crimped | 30.70 mm 1.210 in | 45.34 mm 1.785 in | 38.10 mm 1.500 in | -M420 | 4 | |
| FC310, FC510 | | | | | | | |
| -03 | 1SA3 | 14.00 mm .550 in | 12.83 mm .505 in | ** | -M120 -90 | 1 | |
| -04 | 1SA4 | 16.30 mm .640 in | 15.75 mm .620 in | ** | -M150 -2 | 1 | |
| -05 | 1SA5 | 19.30 mm .760 in | 17.78 mm .700 in | ** | -M180 -93 | 1 | |
| -06 | 1SA6 | 16.50 mm .650 in | 20.96 mm .825 in | ** | -M210 -3 | 1 | |
| -08 | 1SA8 | 20.00 mm .790 in | 23.11 mm .910 in | ** | -M210 -4 | 1 | |
| -10 | 1SA10 | 21.00 mm .830 in | 26.80 mm 1.055 in | ** | -M240 -5 | 1 | |
| -12 | 1SA12 | 21.60 mm .850 in | 31.75 mm 1.250 in | ** | -M320 -6 | 1 | |
| -16 | 1SA16 | 25.90 mm 1.020 in | 37.59 mm 1.480 in | ** | -M370 -8 | 1 | |
| -20 | 1SA20 | 30.70 mm 1.210 in | 46.74 mm 1.840 in | ** | -M465 | 1 | |
| -20 ¹ | 1SA20 Pre-Crimped | 30.70 mm 1.210 in | 46.74 mm 1.840 in | 38.10 mm 1.500 in | -M465 | 2 | |
| FC849, FC849B | | | | | | | |
| -06 | 1SB6 | 16.50 mm .650 in | 20.55 mm .810 in | ** | M180 -3 | 3 | |
| -08 | 1SB8 | 20.10 mm .790 in | 23.25 mm .915 in | ** | M210 -4 | 3 | |
| -10 | 1SB10 | 21.10 mm .830 in | 26.65 mm 1.049 in | ** | M240 -5 | 3 | |
| -12 | 1SB12 | 21.60 mm .850 in | 30.75 mm 1.210 in | ** | M280 -6 | 3 | |

* Max. crimp ovality .20 mm/.008 in.

** Crimp full length of socket.

1 -20 Global sockets must be pre-crimped to nipple to achieve complete crimp on FT1330 and FT1380 machines.

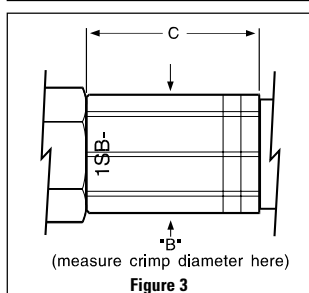
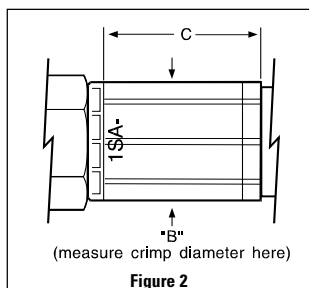
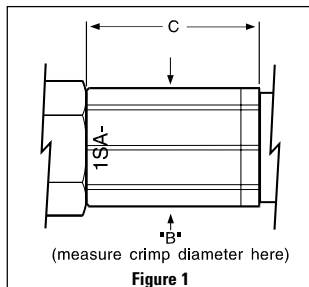
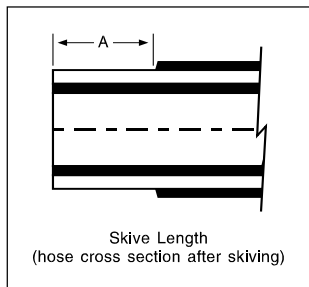
2 Crimp diameter for GH120-04 only.



Powering Business Worldwide

CRIMP INFORMATION

Global Skive Crimp Style



* Max. crimp ovality .20 mm/.008 in.

** Crimp full length of socket.

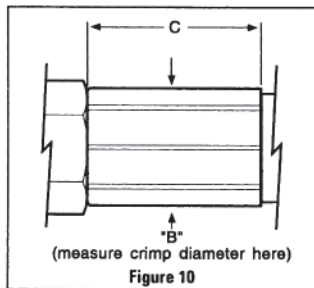
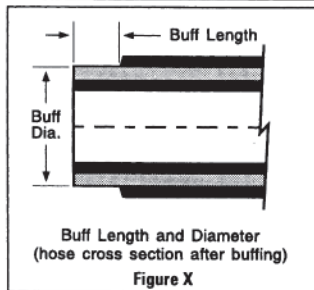
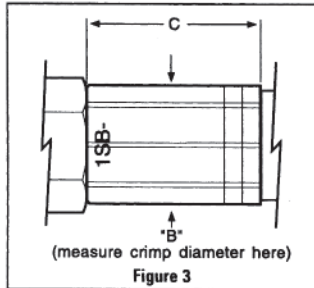
† Crimp diameter for FC839B-8 only.

1 FT1380-200-M320 not approved

| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------------------|---------------|-----------------------|--|-----------------------|--------------|--------------|-----------------------|
| | | ± .50 mm ± .020 in | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| FC639, FC839B | | | | | | | |
| -04 | 1SA4 | 16.30 mm .640 in | 15.45 mm .610 in | ** | M150 -2 | 1 | |
| -06 | 1SA6 | 16.50mm .650 in | 20.85 mm .820 in | ** | M210 -3 | 1 | |
| -08 | 1SA8 | 20.10 mm .790 in | 23.15 mm .910 in 23.24 mm† .915 in† | ** | M210 -4 | 1 | |
| -10 | 1SB10 | 21.10 mm .830 in | 25.75 mm 1.056 in | ** | M240 -5 | 3 | |
| -12 | 1SB12 | 21.60 mm .850 in | 30.10 mm 1.185 in | ** | M280 -6 | 3 | |
| -16 | 1SB16 | 25.90 mm 1.020 in | 37.25 mm 1.465 in | ** | M370 -8 | 3 | |
| FC579 | | | | | | | |
| -04 | 1SB4 | 16.30 mm .640 in | 15.37 mm .605 in | ** | M150 -2 | 3 | |
| -06 | 1SB6 | 16.50 mm .650 in | 20.55 mm .810 in | ** | M210 -3 | 3 | |
| FC640 | | | | | | | |
| -04 | 1SB4 | 16.30 mm .640 in | 15.85 mm .625 in | ** | M150 -2 | 3 | |
| -06 | 1SA6 | 16.50mm .650 in | 21.35 mm .840 in | ** | M210 | 1 | |
| -08 | 1SA8 | 20.00 mm .790 in | 23.25 mm .915 in | ** | M210 | 1 | |
| -10 | 1SA10 | 21.00 mm .830 in | 27.55 mm 1.085 in | ** | M280 | 1 | |
| -12 | 1SA12 | 21.60 mm .850 in | 31.75 mm 1.250 in | ** | M320 | 1 | |
| -16 | 1SA16 | 25.90 mm 1.020 in | 37.25 mm 1.465 in | ** | M370 | 1 | |
| GH683 | | | | | | | |
| -4 | 1SB4 | No skive required. | 15.85 mm .625 in | ** | M150 -2 | 3 | |
| -6 | 1SB6 | No skive required. | 20.55 mm .810 in | ** | M210 -3 | 3 | |
| FC372, FC373, FC727 | | | | | | | |
| -03 | 1SA3 | No skive required. | 13.25 mm .520 in | ** | M120 | 1 | |
| -04 | 1SB4 | No skive required. | 15.65 mm .618 in | ** | M150 | 3 | |
| -05 | 1SB5 | No skive required. | 17.25 mm .680 in | ** | M150 | 3 | |
| -06 | 1SB6 | No skive required. | 20.15 mm .795 in | ** | M180 | 3 | |
| -08 | 1SB8 | No skive required. | 23.75 mm .935 in | ** | M210 | 3 | |
| -12 | 1SB12 | No skive required. | 30.45 mm 1.200 in | ** | M280 | 3 | |
| -16 | 1SB16 | No skive required. | 36.05 mm 1.420 in | ** | M320† | 3 | |



Global Nipple with Low Pressure Hose



| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---------------------|---------------|-----------------------|----------------|--------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | minimum | | | |
| FC466 | | | | | | |
| -04 | 1SB4 | 15.62 mm .615 in | ** | -M150 -2 | 3 | |
| -06 | 1SB6 | 20.20 mm .795 in | ** | -M180 -3 | 3 | |
| -08 | 1SB8 | 23.12 mm .910 in | ** | -M210 -4 | 3 | |
| -10 | 1SB10 | 25.78 mm 1.015 in | ** | -M240 -4 | 3 | |
| -12 | 1SB12 | 30.36 mm 1.195 in | ** | -M280 -6 | 3 | |
| FC498, FC598 | | | | | | |
| -04 | 1SB4 | 15.62 mm .615 in | ** | -M150 -2 | 3 | |
| -06 | 1SB6 | 20.45 mm .805 in | ** | -M180 -3 | 3 | |
| -08 | 1SB8 | 23.12 mm .910 in | ** | -M210 -4 | 3 | |
| -10 | 1SB10 | 26.77 mm 1.054 in | ** | -M240 -4 | 3 | |
| -12 | 1SB12 | 30.36 mm 1.195 in | ** | -M280 -6 | 3 | |

| HOSE DASH SIZE | SOCKET PART # | MIN. BUFF DIA. ¹ | BUFF LENGTH | CRIMP DIA. B | CRIMP LENGTH C | DIE SUFFIX # | FIG. # | CRIMP MACHINE SETTING |
|--------------------|---------------|-----------------------------|-----------------------|-----------------------|-----------------------|------------------|--------|-----------------------|
| | | | ± .76 mm ± .030 in | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| 2661, FC318 | | | | | | | | |
| -40 | FC3023 | 78.2 mm | 64.8 mm | 78.26 mm | ** | -18 ² | 10 | |
| | | | 3.08 in | 2.55 in | 3.081 in | | | |

* Max. crimp ovality .20 mm / .008 in.

** Crimp full length of socket.

¹ Buffing may be required to obtain socket assembly. Do not exceed the minimum buff diameter.

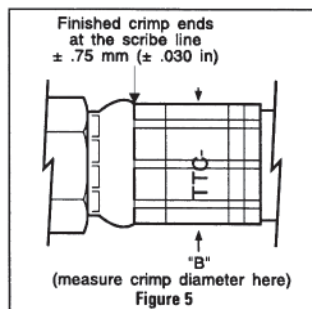
² For FT1049 machine only.



Powering Business Worldwide

CRIMP INFORMATION

Global TTC and TTC12 Crimp Style



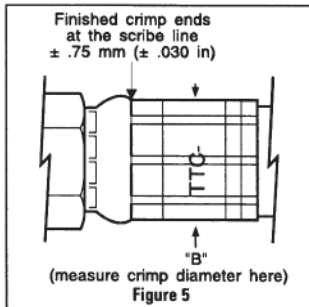
* Max. crimp ovality .20 mm/.008 in.

- 1 FT1209-200-23 not approved.
- 2 FT1330-200-9 not approved.
- 3 FT1049-100-M465 only.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------------------|---------------------|-----------------------|----------------------------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | | | |
| GH194 | | | | | |
| -04 | TTC-4 | 15.75 mm .620 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 19.56 mm .770 in | -M180 -3 | 5 | |
| -08 | TTC-8 | 23.88 mm .940 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 26.80 mm 1.055 in | -M240 -5 | 5 | |
| -12 | TTC-12 | 31.75 mm 1.250 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 40.39 mm 1.590 in | -M370 -8 | 5 | |
| -20 | TTC-20 (1-Ring) | 45.72 mm 1.800 in | -M420 | 5 | |
| GH195 | | | | | |
| -04 | TTC-4 | 16.89 mm .665 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 21.21 mm .835 in | -M210 -3 | 5 | |
| -08 | TTC-8 | 25.15 mm .990 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 28.70 mm 1.130 in | -M280 -5 | 5 | |
| -12 | TTC-12 | 32.51 mm 1.280 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 41.66 mm 1.640 in | -M370 -8 | 5 | |
| -20 | TTC-20 (2 Rings) | 50.80 mm 2.000 in | -M465 -9 ² | 5 | |
| -24 | TTC-24 | 57.66 mm 2.270 in | -M550 -11 | 5 | |
| -32 | TTC-32 | 70.36 mm 2.770 in | -M690 -23 ¹ -17 | 5 | |
| FC613, GH663, FC211 | | | | | |
| -04 | TTC-4 | 15.75 mm .620 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 19.94 mm .785 in | -M180 -3 | 5 | |
| -08 | TTC-8 | 23.88 mm .940 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 26.80 mm 1.055 in | -M240 -5 | 5 | |
| -12 | TTC-12 | 31.75 mm 1.250 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 40.39 mm 1.590 in | -M370 -8 | 5 | |
| -20 | TTC-20 (1 Ring) | 46.00 mm 1.811 in | -M420 -M465 ³ | 5 | |
| -24 | TTC-24 | 55.40 mm 2.181 in | -M550 | 5 | |
| -32 | TTC-32 | 68.61 mm 2.701 in | -M690 | 5 | |



Global TTC and TTC12 Crimp Style



* Max. crimp ovality .20 mm/.008 in.

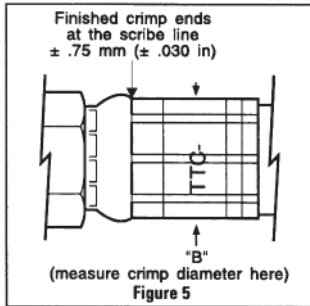
- 1 FT1209-200-23 not approved.
- 2 FT1330-200-9 not approved.
- 3 FT1049-100-M465 only.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---------------------|---------------------|-----------------------|----------------------------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | | | |
| FC611 | | | | | |
| -04 | TTC-4 | 16.00 mm .630 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 19.69 mm .775 in | -M180 -3 | 5 | |
| -08 | TTC-8 | 23.62 mm .930 in | -M240 -4 | 5 | |
| -12 | TTC-12 | 31.62 mm 1.245 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 40.26 mm 1.585 in | -M370 -8 | 5 | |
| -20 | TTC-20 (1 Ring) | 47.50 mm 1.870 in | -M465 -9 ² | 5 | |
| -24 | TTC-24 | 54.74 mm 2.155 in | -M550 | 5 | |
| -32 | TTC-32 | 68.58 mm 2.700 in | -M690 | 5 | |
| GH793, FC212 | | | | | |
| -04 | TTC-4 | 17.27 mm .680 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 21.21 mm .835 in | -M210 -3 | 5 | |
| -08 | TTC-8 | 25.15 mm .990 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 28.70 mm 1.130 in | -M280 -5 | 5 | |
| -12 | TTC-12 | 32.51 mm 1.280 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 41.40 mm 1.630 in | -M370 -8 | 5 | |
| -20 | TTC-20 (2 Rings) | 49.78 mm 1.960 in | -M465 -9 ² | 5 | |
| -24 | TTC-24 | 57.66 mm 2.270 in | -M550 -11 | 5 | |
| -32 | TTC-32 | 70.87 mm 2.790 in | -M690 -17 -23 ¹ | 5 | |
| GH120 | | | | | |
| -04 | TTC-4 | 16.26 mm .640 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 20.32 mm .800 in | -M210 -3 | 5 | |
| -08 | TTC-8 | 24.77 mm .975 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 28.32 mm 1.115 in | -M280 -5 | 5 | |
| -12 | TTC-12 | 31.62 mm 1.245 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 39.75 mm 1.565 in | -M370 -8 | 5 | |
| -20 | TTC-20 (2 Rings) | 48.26 mm 1.900 in | -M465 -9 ² | 5 | |
| -24 | TTC-24 | 54.75 mm 2.155 in | -M550 | 5 | |
| -32 | TTC-32 | 68.55 mm 2.700 in | -M690 | 5 | |



Powering Business Worldwide

Global TTC and TTC12 Crimp Style



* Max. crimp ovality .20 mm/.008 in.

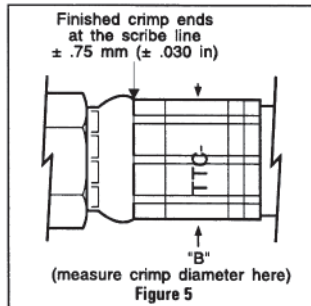
1 FT1330-200-9 not approved.

2 For FT1049 and FT1330 crimp machines only.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---------------------|---------------------|-----------------------|--------------------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | | | |
| GH683 | | | | | |
| -04 | TTC-4 | 15.37 mm .605 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 19.94 mm .785 in | -M180 -3 | 5 | |
| -08 | TTC-8 | 23.88 mm .940 in | -M240 -4 | 5 | |
| GH781, FC735 | | | | | |
| -04 | TTC-4 | 16.89 mm .665 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 20.70 mm .815 in | -M210 -3 | 5 | |
| -08 | TTC-8 | 24.77 mm .975 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 28.32 mm 1.115 in | -M280 -5 | 5 | |
| -12 | TTC-12 | 31.62 mm 1.245 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 39.75 mm 1.565 in | -M370 -8 | 5 | |
| -20 | TTC-20 (2 Rings) | 48.26 mm 1.900 in | -M465 -9 ¹ | 5 | |
| -24 | TTC-24 | 54.75 mm 2.155 in | -M550 | 5 | |
| -32 | TTC-32 | 68.55 mm 2.700 in | -M690 | 5 | |
| FC310 | | | | | |
| -04 | TTC-4 | 16.26 mm .640 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 20.19 mm .795 in | -M180 -3 | 5 | |
| -08 | TTC-8 | 23.62 mm .930 in | -M240 -4 | 5 | |
| -10 | TTC-10 | 26.80 mm 1.055 in | -M240 -5 | 5 | |
| -12 | TTC-12 | 31.75 mm 1.250 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 40.13 mm 1.580 in | -M370 -8 | 5 | |
| -20 | TTC-20 (1 Ring) | 45.21 mm 1.780 in | -M420 -8 ² | 5 | |
| FC510 | | | | | |
| -04 | TTC-4 | 16.51 mm .650 in | -M150 -2 | 5 | |
| -06 | TTC-6 | 20.70 mm .815 in | -M210 -3 | 5 | |
| -08 | TTC-8 | 23.24 mm .915 in | -M210 -4 | 5 | |
| -10 | TTC-10 | 26.80 mm 1.055 in | -M240 -5 | 5 | |
| -12 | TTC-12 | 31.75 mm 1.250 in | -M320 -6 | 5 | |
| -16 | TTC-16 | 40.13 mm 1.580 in | -M370 -8 | 5 | |
| -20 | TTC-20 (1 Ring) | 45.21 mm 1.780 in | -M420 -8 ² | 5 | |



Global TTC and TTC12 Crimp Style

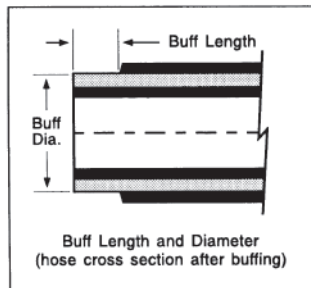
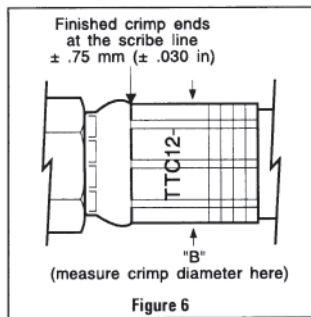
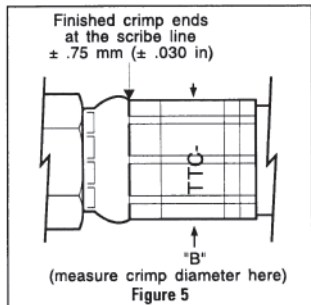


* Max. crimp ovality .20 mm/.008 in.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------------|---------------|-----------------------|--------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | | | |
| GH681 | | | | | |
| -06 | TTC-6 | 19.68 mm .775 in | -M180 -3 | 5 | |
| FC849, FC849B | | | | | |
| -04 | TTC-4 | 17.25 mm .680 in | M150 -2 | 5 | |
| -06 | TTC-6 | 21.25 mm .835 in | M210 -3 | 5 | |
| -08 | TTC-8 | 25.15 mm .990 in | M240 -4 | 5 | |
| -10 | TTC-10 | 28.65 mm 1.129 in | M280 -5 | 5 | |
| -12 | TTC-12 | 32.65 mm 1.286 in | M320 | 5 | |
| FC579 | | | | | |
| -04 | TTC-4 | 16.89 mm .665 in | M150 -2 | 5 | |
| -06 | TTC-6 | 21.25 mm .835 in | M210 -3 | 5 | |
| FC640 | | | | | |
| -04 | TTC-4 | 17.25 mm .680 in | M150 | 5 | |
| -06 | TTC-6 | 20.05 mm .790 in | M180 | 5 | |
| -08 | TTC-8 | 23.45 mm .925 in | M240 | 5 | |
| -10 | TTC-10 | 27.45 mm 1.080 in | M240 | 5 | |
| -12 | TTC-12 | 31.65 mm 1.245 in | M320 | 5 | |
| -16 | TTC-16 | 38.95 mm 1.535 in | M370 | 5 | |
| FC639, FC839B | | | | | |
| -04 | TTC-4 | 15.85 mm .625 in | M150 | 5 | |
| -06 | TTC-6 | 19.65 mm .775 in | M180 | 5 | |
| -08 | TTC-8 | 23.45 mm .925 in | M210 | 5 | |
| -10 | TTC-10 | 28.35 mm 1.115 in | M280 | 5 | |
| -12 | TTC-12 | 32.35 mm 1.275 in | M320 | 5 | |
| -16 | TTC-16 | 39.58 mm 1.575 in | M370 | 5 | |
| FC616 | | | | | |
| -06 | TTC-6 | 22.75 mm .896 in | M210 -4 | 5 | |



Global TTC and TTC12 Crimp Style



* Max. crimp ovality .20 mm/.008 in.

** Max. crimp ovality .30 mm/.012 in.

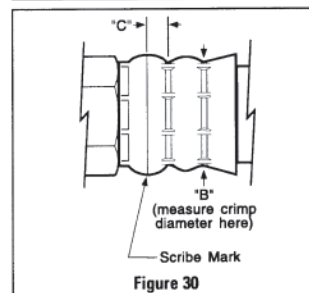
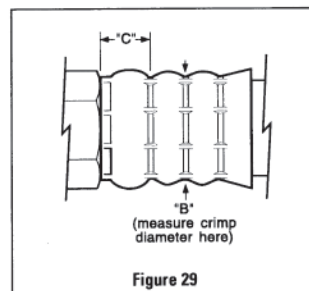
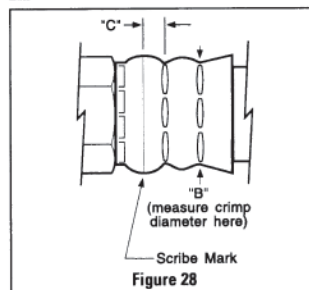
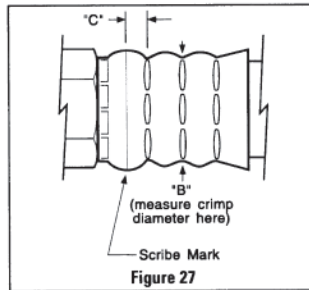
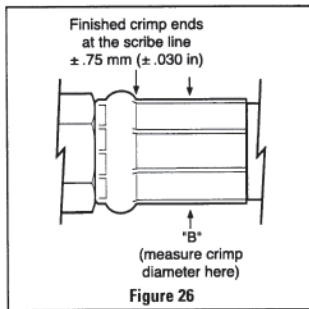
- 1 Approved at SAE 100R12 pressures only.
- 2 FT1330-275-M370, FT1330-200-8 and FT1049-100-8 also approved.
- 3 FT1380-200-M465, FT1330-275-M465 and FT1049-100-9 also approved.
- 4 FT1209-200-23 not approved.
- 5 Buffing may be required to obtain socket assembly only. Do not exceed the minimum buff diameter.
- 6 FT1380-200-M465, FT1330-275-M465 also approved.
- 7 FT1330-200-9 not approved.
- 8 Use FT1209-200-17 or FT1049-100-17.
- 9 FT1330-200-6, FT1049-100-8, and FT1307-200-8 also approved.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--|---------------|------------------------|---------------------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | | | |
| GH493, FC136¹, FC659, FC736, FC805 | | | | | |
| -06 | TTC12-6 | 22.76 mm .896 in | -M210 -4 | 6 | |
| -08 | TTC12-8 | 27.81 mm 1.095 in | -M280 -5 | 6 | |
| -10 | TTC12-10 | 30.48 mm 1.200 in | -M280 -6 | 6 | |
| -12 | TTC12-12 | 34.42 mm 1.355 in | -M320 -6 | 6 | |
| -16 | TTC12-16 | 43.82 mm** 1.725 in | -M420 ² | 6 | |
| -20 | TTC12-20 | 52.20 mm** 2.055 in | -M520 ³ | 6 | |
| -24 | TTC12-24 | 55.88 mm** 2.200 in | -M550 -11 | 6 | |
| -32 | TTC12-32 | 69.16 mm** 2.723 in | -M690 -23 ⁴ | 6 | |
| FC636 | | | | | |
| -12 | TTC12-12 | 34.29 mm 1.350 in | -M320 -6 | 6 | |
| -16 | TTC12-16 | 43.69 mm 1.720 in | -M420 ² | 6 | |
| -20 | TTC12-20 | 52.58 mm 2.070 in | -M520 ³ | 6 | |
| -24 | TTC12-24 | 56.13 mm 2.210 in | -M550 -11 | 6 | |
| FC693 | | | | | |
| -04 | TTC-04 | 17.40 mm .685 in | -M150 -2 | 5 | |
| -06 | TTC-06 | 21.21 mm .835 in | -M210 -3 | 5 | |
| -08 | TTC-08 | 25.40 mm 1.000 in | -M240 -4 | 5 | |

| HOSE DASH SIZE | SOCKET PART # | MIN. BUFF DIA. ⁵ | BUFF LENGTH | CRIMP DIA. B | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--------------------|---------------------|-----------------------------|-----------------------|-----------------------|---|--------------|-----------------------|
| | | | ± .76 mm ± .030 in | ± .15 mm ± .006 in | | | |
| 2661, FC318 | | | | | | | |
| -12 | TTC-12 | 30 mm 1.18 in | 19 mm .75 in | 35.59 mm 1.401 in | -M320 -6 | 5 | |
| -12 | TTC12-12 | N/A | N/A | 35.99 mm 1.417 in | -M320 -6 | 6 | |
| -16 | TTC-16 | N/A | N/A | 43.38 mm 1.708 in | -M420 -8 | 5 | |
| -20 | TTC-20 (2 Rings) | N/A | N/A | 51.79 mm 2.039 in | -M520 ⁶ -9 ⁷ | 5 | |
| -24 | TTC-24 | N/A | N/A | 58.19 mm 2.291 in | -M570 -11 | 5 | |
| -32 | TTC-32 | N/A | N/A | 70.31 mm 2.768 in | -M690 -17 ⁸ -23 ⁴ | 5 | |
| FC619 | | | | | | | |
| -12 | TTC-12 | 30mm 1.18 in | 19mm .75 in | 33.55 mm 1.320 in | -M320 -6 | 5 | |
| -16 | TTC-16 | N/A | N/A | 41.40 mm 1.630 in | -M370 ⁹ | 5 | |
| -20 | TTC-20 (2 Rings) | N/A | N/A | 49.95 mm 1.970 in | -M465 -9 ⁷ | 5 | |
| -24 | TTC-24 | N/A | N/A | 56.35 mm 2.220 in | -M550 -11 | 5 | |
| -32 | TTC-32 | N/A | N/A | 70.15 mm 2.760 in | -M690 -17 ⁸ -23 ⁴ | 5 | |



Global OTC Crimp Style



| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--------------------|---------------|----------------------------------|-----------------------|---|--------------|-----------------------|
| | | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| 2583 | | | | | | |
| -4 | 1G4 | 14.00 mm .551 in | ** | -M120 -1 | 26 | |
| -6 | 1G6 | 20.00 mm .787 in | ** | -M180 -3 | 26 | |
| -8 | 1G8 | 23.30 mm .917 in | ** | -M210 -4 | 26 | |
| -12 | 1G12 | 31.60 mm 1.244 in | ** | -M320 -6 | 26 | |
| -16 | 1G16 | 37.40 mm 1.472 in | ** | -M370 -8 | 26 | |
| -20 | 1G20 | 42.50 mm 1.673 in | ** | -M420 | 26 | |
| 2661, FC318 | | | | | | |
| -12 | 1G12 | 29.65 mm 1.167 in | 5.0 mm .197 in | -51 ² -54 ¹ | 28 | |
| | | 29.72 mm 1.170 in | 5.8 mm .228 in | -184 | 30 | |
| -16 | 1G16 | 35.35 mm 1.392 in | 8.0 mm .315 in | -51 | 28 | |
| | | 36.45 mm 1.435 in | 7.6 mm .299 in | -185 | 30 | |
| -20 | 1G20 | 43.85 mm 1.726 in | 5.0 mm .197 in | -86 | 27 | |
| | | 43.31 mm 1.705 in | 9.6 mm .378 in | -186 | 30 | |
| -24 | 1G24 | 51.70 mm 2.035 in | 19.1 mm .752 in | -31 | 29 | |
| -32 | 1G32 | 62.30 mm 2.453 in | 17.0 mm .669 in | -32 | 29 | |
| FC619 | | | | | | |
| -12 | 1G12 | 31.45 mm 1.240 in | ** | -M320 -6 | 26 | |
| -16 | 1G16 | 36.85 mm 1.450 in | ** | -M370 -8 | 26 | |
| -20 | 1G20 | 44.45 mm 1.750 in | ** | -M420 | 26 | |
| -24 | 1G24 | 51.05 mm 2.010 in | ** | -M520 | 26 | |
| -32 | 1G32 | 64.52 mm 2.540 in 2.540 in | ** | -M630 23 ⁴ 17 ³ | 26 | |
| FC466 | | | | | | |
| -4 | 1G4 | 12.70 mm .500 in | ** | -M120 -1 -90 | 26 | |
| -6 | 1G6 | 17.80 mm .701 in | ** | -M180 -2 | 26 | |
| -8 | 1G8 | 20.60 mm .811 in | ** | -M210 -3 | 26 | |
| -12 | 1G12 | 27.70 mm 1.091 in | ** | -M280 -5 | 26 | |

* Max. crimp ovality .20 mm/.008 in.

** Finished crimp ends at the scribe mark ±.75 mm (±.030 in.)

1 FT1307 die cage only.

2 FT1204-100-51 and FT1307-200-51 not approved.

3 Use FT1209-200-17 or FT1049-100-17.

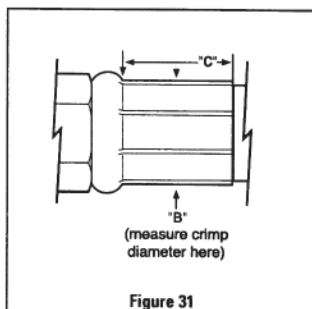
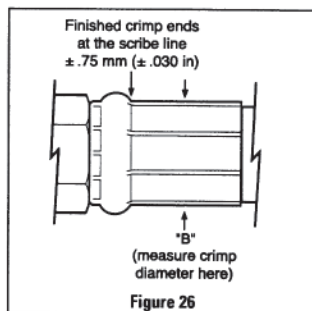
4 FT1209-200-23 not approved.



Powering Business Worldwide

CRIMP INFORMATION

Global OTC Crimp Style



* Max. crimp ovality .20 mm/.008 in.

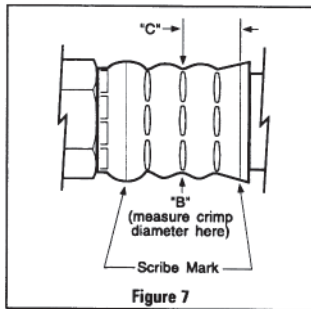
** Finished crimp ends at the scribe mark ±.75 mm (±.030 in.)

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|------------------------|---------------|-----------------------|-------------------------|--------------|--------------|-----------------------|
| | | ± .15 mm ± .006 in | ± .76 mm ± .030 in | | | |
| FC498, FC598 | | | | | | |
| -4 | 1G4 | 13.00 mm .512 in | ** | -M120 -1 | 26 | |
| -6 | 1G6 | 17.80 mm .701 in | ** | -M180 -2 | 26 | |
| -8 | 1G8 | 21.40 mm .843 in | ** | -M210 -3 | 26 | |
| -10 | 1G10 | 24.51 mm .965 in | ** | -M240 | 26 | |
| -12 | 1G12 | 28.50 mm 1.122 in | ** | -M280 -5 | 26 | |
| FC363, FC364 | | | | | | |
| -10 | 1G10 | 21.75 mm .857 in | ** | M210 | 26 | |
| -12 | 1G12 | 26.55 mm 1.045 in | ** | M240 | 26 | |
| -16 | 1G16 | 32.75 mm 1.291 in | ** | M320 | 26 | |
| -20 | 1G20 | 39.15 mm 1.543 in | ** | M370 | 26 | |
| -24 | 1G24 | 44.95 mm 1.771 in | ** | M420 | 26 | |
| FC699 | | | | | | |
| -04 | 1G4 | 12.85 mm .507 in | ** | M120 | 26 | |
| -06 | 1G6 | 17.85 mm .701 in | ** | M180 | 26 | |
| -08 | 1G8 | 20.60 mm .811 in | ** | M210 | 26 | |
| -10 | 1G10 | 24.35 mm .957 in | ** | M240 | 26 | |
| -12 | 1G12 | 28.55 mm 1.124 in | ** | M280 | 26 | |
| -16 | 1G16 | 34.75 mm 1.367 in | ** | M320 | 26 | |
| FC699 w/ FW1097 | | | | | | |
| -04 | FW1097 | 13.15 mm .517 in | 13.5 ±.4 (.575±.015) | M120 | 31 | |
| -06 | FW1097 | 15.55 mm .613 in | 14.6 ±.4 (.575±.015) | M150 | 31 | |
| -08 | FW1097 | 18.65 mm .733 in | 14.6 ±.4 (.575±.015) | M180 | 31 | |
| -10 | FW1097 | 22.55 mm .889 in | 17.4 ±.4 (.685±.015) | M210 | 31 | |
| -12 | FW1097 | 25.75 mm 1.015 in | 17.4 ±.4 (.685±.015) | M240 | 31 | |



Barrel Field Crimp Style

Use of the Aeroquip Calidapter (part no. FT1297) is recommended for measurement of barrel field crimp diameters. See accessories on page 37.



* Max. crimp ovality .30 mm/.012 in.

- 1 FT1008 dies only.
- 2 FT1049-100-SIZE, FT1204-100-SIZE and FT1307-200-SIZE only.
- 3 FT1204-100-51 and FT1307-200-51 not approved.
- 4 FT1204-100-52 and FT1307-200-52 not approved.
- 5 Approved at SAE 100R1 pressures only.
- 6 Approved at SAE 100R2 pressures only.

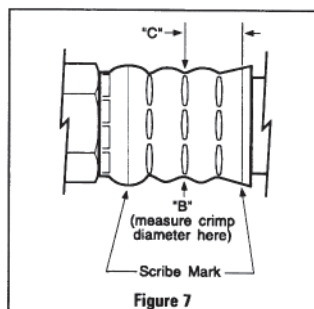
| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---------------------------------|---------------|-----------------------|-----------------------|---|--------------|-----------------------|
| | | ± .18 mm ± .007 in | ± .76 mm ± .030 in | | | |
| 2583, 2661, FC318 | | | | | | |
| -04 | FC1130 | 13.21 mm .520 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -06 | FC1130 | 18.54 mm .730 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -08 | FC1130 | 22.00 mm .865 in | 19.05 mm .750 in | -5 ¹ -52 ⁴ -53 ² | 7 | |
| -12 | FC1130 | 31.12 mm 1.225 in | 19.05 mm .750 in | -4 ¹ -51 ³ -54 ² | 7 | |
| -16 | FC1130 | 37.21 mm 1.465 in | 19.05 mm .750 in | -4 ¹ -51 | 7 | |
| -20 | FC1130 | 43.81 mm 1.725 in | 19.05 mm .750 in | -86 -88 | 7 | |
| GH663⁵, FC211 | | | | | | |
| -04 | FC1130 | 12.45 mm .490 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -06 | FC1130 | 16.90 mm .665 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -08 | FC1130 | 19.56 mm .770 in | 19.05 mm .750 in | -5 ¹ -52 ⁴ -53 ² | 7 | |
| -12 | FC1130 | 27.80 mm 1.090 in | 19.05 mm .750 in | -4 ¹ -51 ³ -54 ² | 7 | |
| -16 | FC1130 | 35.94 mm 1.415 in | 19.05 mm .750 in | -4 ¹ -51 | 7 | |
| GH793⁶, FC212 | | | | | | |
| -04 | FC1130 | 13.84 mm .545 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -06 | FC1130 | 17.02 mm .700 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -08 | FC1130 | 20.57 mm .810 in | 19.05 mm .750 in | -5 ¹ -52 ⁴ -53 ² | 7 | |
| -10 | FC1130 | 22.99 mm .905 in | 19.05 mm .750 in | -52 -53 ² | 7 | |
| -12 | FC1130 | 28.70 mm 1.130 in | 19.05 mm .750 in | -4 ¹ -51 ³ -54 ² | 7 | |
| -16 | FC1130 | 36.45 mm 1.435 in | 19.05 mm .750 in | -4 ¹ -51 | 7 | |
| -20 | FC1130 | 46.10 mm 1.815 in | 19.05 mm .750 in | -86 -88 | 7 | |



Powering Business Worldwide

Barrel Field Crimp Style

Use of the Aeroquip Calidapter (part no. FT1297) is recommended for measurement of barrel field crimp diameters. See accessories on page 37.



* Max. crimp ovality .30 mm/.012 in.

1 FT1008 dies only.

2 FT1049-100-SIZE, FT1204-100-SIZE and FT1307-200-SIZE only.

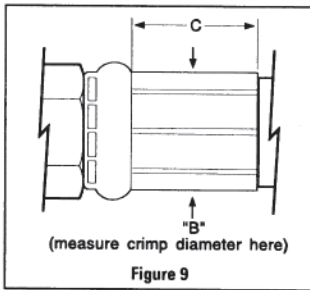
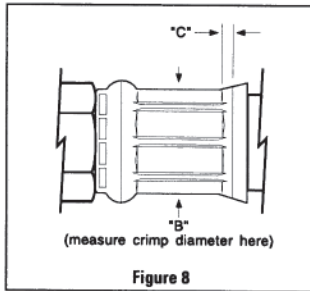
3 Qualified only for maximum +200°F hydraulic service with barrel field crimp fittings.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--|---------------|-----------------------|-----------------------|--|--------------|-----------------------|
| | | ± .18 mm ± .007 in | ± .76 mm ± .030 in | | | |
| FC310 | | | | | | |
| -04 | FC1130 | 12.32 mm .485 in | 19.05 mm .750 in | -51 -52 | 7 | |
| -06 | FC1130 | 16.13 mm .635 in | 19.05 mm .750 in | -51 -52 | 7 | |
| -08 | FC1130 | 19.18 mm .755 in | 19.05 mm .750 in | -51 -52 -53 ² | 7 | |
| -10 | FC1130 | 21.13 mm .832 in | 19.05 mm .750 in | -51 -52 -53 ² | 7 | |
| -12 | FC1130 | 27.31 mm 1.075 in | 19.05 mm .750 in | -4 ¹ -51 -54 ² | 7 | |
| -16 | FC1130 | 33.40 mm 1.315 in | 19.05 mm .750 in | -41 -51 | 7 | |
| -20 | FC1130 | 40.08 mm 1.578 in | 19.05 mm .750 in | -86 | 7 | |
| FC510³ (Note: Qualified only for maximum +200°F hydraulic service) | | | | | | |
| -04 | FC1130 | 12.07 mm .475 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -06 | FC1130 | 16.21 mm .638 in | 19.05 mm .750 in | -5 ¹ -52 | 7 | |
| -08 | FC1130 | 19.10 mm .752 in | 19.05 mm .750 in | -5 ¹ -52 -53 ² | 7 | |
| -10 | FC1130 | 21.01 mm .827 in | 19.05 mm .750 in | -5 ¹ -52 -53 ² | 7 | |
| -12 | FC1130 | 26.64 mm 1.049 in | 19.05 mm .750 in | -4 ¹ -54 ² | 7 | |
| -16 | FC1130 | 32.13 mm 1.265 in | 19.05 mm .750 in | -4 ¹ -51 -54 ² | 7 | |



Flat Field Crimp Style

Use of the Aeroquip Calidapter (part no. FT1297) is recommended for measurement of barrel field crimp diameters. See accessories on page 37.



* Max. crimp ovality .30 mm/.012 in.

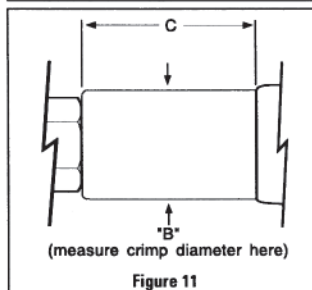
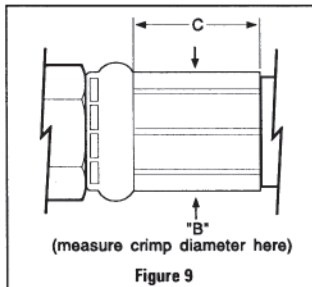
- 1 Use FT1204-100-0016 or FT1307-200-0016.
- 2 Use FT1208-100-1620 or FT1330-200-1620.
- 3 Use with FT1204-100-11 or FT1307-200-11.
- 4 Use FT1209-200-16 or FT1049-100-16.
- 5 Use FT1209-200-17 or FT1049-100-17.
- 6 Approved at SAE 100R1 pressures only.
- 7 Approved at SAE 100R2 pressures only.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|---------------------------------|---------------|-----------------------|-----------------------|---|--------------|-----------------------|
| | | ± .18 mm ± .007 in | ± .51 mm ± .020 in | | | |
| GH663¹, FC211 | | | | | | |
| -04 | FC1130 | 14.55 mm .573 in | 5.08 mm .200 in | -0004 | 8 | |
| -06 | FC1130 | 19.23 mm .757 in | 5.08 mm .200 in | -0608 | 8 | |
| -08 | FC1130 | 22.10 mm .870 in | 5.08 mm .200 in | -0608 | 8 | |
| -12 | FC1130 | 28.50 mm 1.122 in | 5.08 mm .200 in | -1012 | 8 | |
| -16 | FC1130 | 36.98 mm 1.456 in | 5.08 mm .200 in | -0016 ¹ -1620 ² | 8 | |
| GH793¹, FC212 | | | | | | |
| -04 | FC1130 | 16.00 mm .630 in | 5.08 mm .200 in | -0004 | 8 | |
| -06 | FC1130 | 20.07 mm .790 in | 5.08 mm .200 in | -0608 | 8 | |
| -08 | FC1130 | 24.00 mm .945 in | 5.08 mm .200 in | -0608 | 8 | |
| -12 | FC1130 | 31.06 mm 1.223 in | 5.08 mm .200 in | -1012 | 8 | |
| -16 | FC1130 | 38.48 mm 1.515 in | 5.08 mm .200 in | -0016 ¹ -1620 ² | 8 | |
| -24 | FC1130 | 60.27 mm 2.373 in | 46.23 mm 1.820 in | -11 ³ -16 ⁴ -M550 | 9 | |
| -32 | FC1130 | 73.96 mm 2.912 in | 58.67 mm 2.310 in | -17 ⁵ -M690 | 9 | |
| FC310 | | | | | | |
| -04 | FC1130 | 15.29 mm .602 in | 5.08 mm .200 in | -0004 | 8 | |
| -06 | FC1130 | 18.54 mm .730 in | 5.08 mm .200 in | -0608 | 8 | |
| -08 | FC1130 | 22.17 mm .873 in | 5.08 mm .200 in | -0608 | 8 | |
| -10 | FC1130 | 25.50 mm 1.004 in | 5.08 mm .200 in | -1012 | 8 | |
| -12 | FC1130 | 28.70 mm 1.130 in | 5.08 mm .200 in | -1012 | 8 | |
| -16 | FC1130 | 36.32 mm 1.430 in | 5.08 mm .200 in | -0016 ¹ -1620 ² | 8 | |
| 2661, FC318 | | | | | | |
| -12 | FC1130 | 32.26 mm 1.270 in | 5.08 mm .200 in | -1012 | 8 | |
| -16 | FC1130 | 38.20 mm 1.504 in | 5.08* mm .200 in | -0016 ¹ -1620 ² | 8 | |



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Flat Crimp Style



* Max. crimp ovality .20 mm/.008 in.

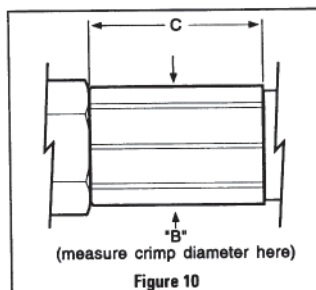
** Crimp full length of collar.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|--|---------------|-----------------------|-----------------------|---------------|--------------|-----------------------|
| | | ± .12 mm ± .005 in | ± .38 mm ± .015 in | | | |
| FC372, FC373, FC390, FC690, FC727 | | | | | | |
| -02 | FC1006 | 9.52 mm .375 in | 11.94 mm .470 in | -M090 | 9 | |
| -03 | FC1006 | 12.75 mm .502 in | 19.94 mm .785 in | -M120 -90 | 9 | |
| -04 | FC1006 | 14.47 mm .570 in | 22.48 mm .885 in | -M120 -91 | 9 | |
| -05 | FC1006 | 16.26 mm .640 in | 27.94 mm 1.100 in | -M150 -92 | 9 | |
| -06 | FC1006 | 17.90 mm .705 in | 32.39 mm 1.275 in | -M180 -93 | 9 | |
| -08 | FC1006 | 21.71 mm .855 in | 37.47 mm 1.475 in | -M210 -94 | 9 | |
| -10 | FC1006 | 24.58 mm .968 in | 38.10 mm 1.500 in | -M240 -94 | 9 | |
| -12 | FC1006 | 28.19 mm 1.110 in | 38.10 mm 1.500 in | -M280 -95 | 9 | |
| -16 | FC1006 | 33.78 mm 1.330 in | 51.44 mm 2.025 in | -M320 -100 | 9 | |
| FC374, FC375 | | | | | | |
| -03 | FC1006 | 12.75 mm .502 in | 19.94 mm .785 in | -M120 -90 | 9 | |
| -04 | FC1006 | 14.22 mm .560 in | 22.48 mm .885 in | -M120 -91 | 9 | |
| -06 | FC1006 | 17.65 mm .695 in | 32.39 mm 1.275 in | -M180 -93 | 9 | |
| -08 | FC1006 | 21.46 mm .845 in | 37.47 mm 1.475 in | -M210 -94 | 9 | |
| -12 | FC1006 | 27.68 mm 1.090 in | 38.10 mm 1.500 in | -M280 -95 | 9 | |
| -16 | FC1006 | 33.78 mm 1.330 in | 51.44 mm 2.025 in | -M320 -100 | 9 | |
| FC376, FC377 | | | | | | |
| -03 | FC1579 | 13.97 mm .550 in | 21.59 mm .850 in | -M120 -91 | 9 | |
| -04 | FC1579 | 15.75 mm .620 in | 27.94 mm 1.100 in | -M150 -92 | 9 | |
| -06 | FC1579 | 19.73 mm .777 in | 30.48 mm 1.200 in | -M180 -147 | 9 | |

| HOSE DASH SIZE | COLLAR PART # | COLLAR LENGTH | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIG. # | CRIMP MACHINE SETTING |
|--|---------------|----------------------|-----------------------|----------------|--------------|------------|-----------------------|
| | | | ± .12 mm ± .005 in | | | | |
| FC376, FC377 (protective guard collars) | | | | | | | |
| -03 | FF9843 | 21.84 mm .860 in | 24.13 mm .950 in | ** | -M240 -4 | 11 | |
| -04 | FF9843 | 23.62 mm .930 in | 26.67 mm 1.050 in | ** | -M240 -5 | 11 | |
| -06 | FF9843 | 25.40 mm 1.000 in | 30.35 mm 1.195 in | ** | -M280 -6 | 11 | |



Flat Crimp Style



NOTE: A positive backstop for fitting location is required for all hose sizes.

* Max. crimp ovality .08 mm/.006 in.

** Crimp full length of socket.

1 FC563 requires the removal of the polyester overbraid w/a thermal stripping tool (Aeroquip part number S1364) prior to crimping. Contact your customer service representative for more details.

2 The -M570 die cage spring plate cut-outs must be lengthened an additional 0.80mm (1/32") to allow the dies to retract sufficiently to accommodate -32 size fittings.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING | |
|--|---------------|-----------------------|-----------------------|----------------|----------------------------|-----------------------|-----------------------|
| | | ± .08 mm ± .003 in | | | | | |
| 2807, FC186, FC465 | | | | | | | |
| -03 | FC3596 | 6.99 mm .275 in | ** | -M070 -39 | 10 | | |
| -04 | FC3596 | 8.56 mm .337 in | ** | -M090 -39 | 10 | | |
| -05 | FC3443-04 | 10.34 mm .407 in | ** | -M090 -40 | 10 | | |
| -06 | FC3443-05 | 11.86 mm .467 in | ** | -M120 -41 | 10 | | |
| -08 | FC3596 | 14.40 mm .567 in | ** | -M150 -36 | 10 | | |
| -10 | FC3443-08 | 16.94 mm .667 in | ** | -M150 -37 | 10 | | |
| -12 | FC3596 | 19.99 mm .787 in | ** | -M180 -37 | 10 | | |
| -16 | FC3596 | 27.25 mm 1.073 in | ** | -M240 -5 | 10 | | |
| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIA. SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
| | | ± .51 mm ± .020 in | ± .08 mm ± .003 in | | | | |
| FC363, FC364, FC563¹ | | | | | | | |
| -06 | FC1347 | 29.97 mm 1.180 in | 16.64 mm .655 in | ** | -M150 -92 | 10 | |
| -08 | FC1347 | 29.97 mm 1.180 in | 21.46 mm .845 in | ** | -M210 -94 | 10 | |
| -12 | FC1347 | 29.97 mm 1.180 in | 27.91 mm 1.099 in | ** | -M280 -109 | 10 | |
| -16 | FC1347 | 29.97 mm 1.180 in | 33.96 mm 1.337 in | ** | -M320 -110 | 10 | |
| -20 | FC1347 | 29.97 mm 1.180 in | 40.56 mm 1.597 in | ** | -M370 -101 | 10 | |
| -24 | FC1347 | 35.56 mm 1.400 in | 46.23 mm 1.820 in | ** | -M465 -102 | 10 | |
| -32 | FC1347 | 35.56 mm 1.400 in | 58.34 mm 2.297 in | ** | -M570 ² -103 | 10 | |
| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIA. SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
| | | ± .51 mm ± .020 in | ± .12 mm ± .005 in | | | | |
| FC807 | | | | | | | |
| -03 | FC3596 | 7.00 mm .278 in | 15.20 mm .600 in | ** | M070 -39 | 10 | |
| -04 | FC3596 | 8.56 mm .337 in | 16.50 mm .650 in | ** | M090 -39 | 10 | |
| -05 | FC3443 | 10.34 mm .407 in | 16.50 mm .650 in | ** | M090 -40 | 10 | |
| -06 | FC3443 | 11.86 mm .467 in | 16.50 mm .650 in | ** | M120 -41 | 10 | |
| -08 | FC3596 | 14.40 mm .567 in | 23.90 mm .940 in | ** | M150 -36 | 10 | |
| -10 | FC3443 | 16.94 mm .667 in | 23.90 mm .940 in | ** | M150 -37 | 10 | |
| -12 | FC3596 | 19.99 mm .787 in | 23.90 mm .940 in | ** | M180 -37 | 10 | |
| -16 | FC3596 | 27.25 mm 1.073 in | 24.60 mm .970 in | ** | M240 -5 | 10 | |
| FC807 Brass Only | | | | | | | |
| -12 | FW1386 | 20.80 mm .819 in | 20.78 mm .818 in | ** | M180 -37 | 10 | |

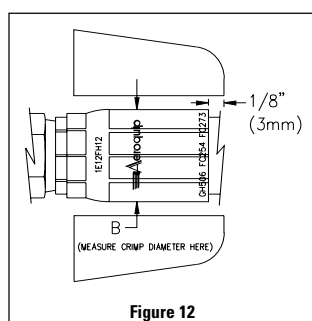


Powering Business Worldwide

Global Spiral TTC Crimp Style

Note: To achieve full flat crimp, locate back edge of socket approximately 3 mm (1/8") from back edge of crimp jaws.

On 1EA12FJ12 and 1EA12FR12 fittings, a 19.05 mm (3/4") to 31.75 mm (1-1/4") crimp locating rule should be used. Use the standard 3 mm (1/8") guideline for all other Spiral TTC fittings.



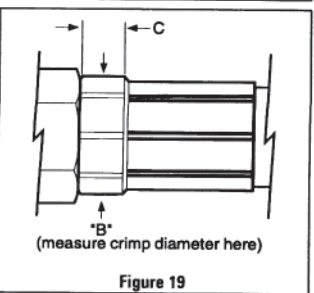
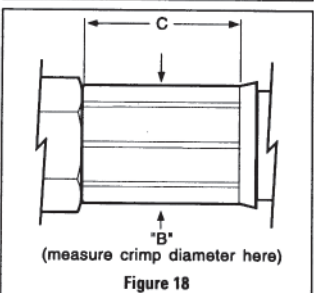
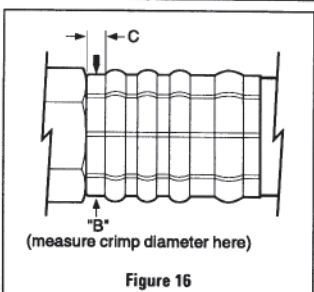
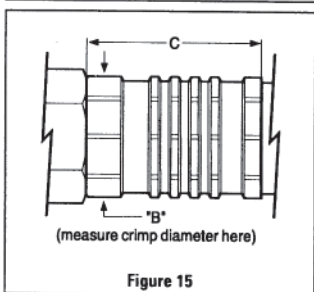
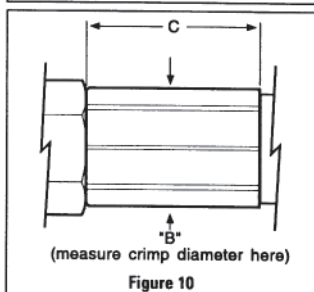
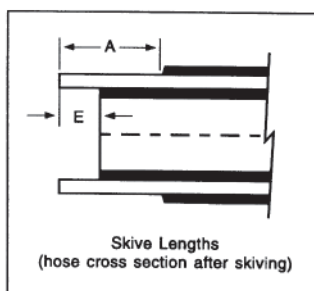
To achieve full flat crimp back edge of socket approximately 3mm (1/8") from the back edge of the crimp jaws as shown in Figure 12.

* Max. crimp ovality .30 mm/.012 in.

| HOSE DASH SIZE | SOCKET PART # | CRIMP DIA. B* | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------------|---------------|------------------------|--------------|--------------|-----------------------|
| | | ± .015 mm ± .006 in | | | |
| FC254 | | | | | |
| -12 | 1E12 | 36.50 mm 1.437 in | -82 | 12 | |
| -16 | 1E16 | 45.40 mm 1.787 in | -46 | 12 | |
| -20 | 1E20 | 53.20 mm 2.094 in | -14 | 12 | |
| -24 | 1E24 | 61.15 mm 2.409 in | -20 | 12 | |
| -32 | 1E32 | 73.65 mm 2.898 in | -23 | 12 | |
| FC273, FC273B | | | | | |
| -12 | 1E12 | 36.70 mm 1.445 in | -82 | 12 | |
| -16 | 1E16 | 45.40 mm 1.787 in | -46 | 12 | |
| -20 | 1Z20 | 57.10 mm 2.248 in | -15 | 12 | |
| -24 | 1Z24 | 64.15 mm 2.524 in | -16 | 12 | |
| -32 | 1Z32 | 79.05 mm 3.114 in | -21 | 12 | |
| FC606, FC606B | | | | | |
| -16 | 1Z16 | 49.10 mm 1.933 in | -46 | 12 | |
| -20 | 1Z20 | 56.20 mm 2.213 in | -15 | 12 | |
| -24 | 1Z24 | 64.15 mm 2.525 in | -16 | 12 | |
| GH466 | | | | | |
| -20 | 1Z20 | 56.90 mm 2.240 in | -15 | 12 | |
| -24 | 1Z24 | 64.25 mm 2.531 in | -16 | 12 | |
| GH506 | | | | | |
| -12 | 1E12 | 36.20 mm 1.425 in | -82 | 12 | |
| -16 | 1E16 | 44.90 mm 1.768 in | -46 | 12 | |
| -20 | 1E20 | 53.50 mm 2.106 in | -14 | 12 | |
| -24 | 1E24 | 60.40 mm 2.378 in | -20 | 12 | |
| -32 | 1E32 | 73.65 mm 2.898 in | -23 | 12 | |
| FC806 | | | | | |
| -16 | 1E16 | 44.90 mm 1.768 in | -46 | 12 | |



Internal Skive Crimp Style



| HOSE DASH SIZE | SOCKET PART # | SKIVE EXTERNAL LENGTH A | EXTERNAL TOOL | SKIVE INTERNAL LENGTH E | INTERNAL TOOL | CRIMP DIA. B* | CRIMP POS. C | DIE SUFFIX # | FIG. # | CRIMP MACHINE SETTING |
|---------------------|---------------|-------------------------|---------------|-------------------------|---------------------------|-----------------------|-----------------------|--|--------|-----------------------|
| | | ± .051mm ± .020 in | | ± .051mm ± .020 in | | ± .015mm ± .007 in | ± .051mm ± .020 in | | | |
| FC254 | | | | | | | | | | |
| -08 | FC2540 | 34.04 mm 1.340 in | FT1231-8 | 7.62 mm .300 in | FT1240-150-8 | 27.94 mm 1.100 in | ** | -83 ¹ -M280 ¹ | 15 | |
| -12 | FC2717 | 35.56 mm 1.400 in | FT1231-12 | 11.18 mm .440 in | FT1240-150-12 | 35.56 mm 1.400 in | ** | -82 ² | 15 | |
| -16 | FC2540 | 46.99 mm 1.850 in | FT1231-16 | 11.94 mm .470 in | FT1240-150-16 | 41.53 mm 1.635 in | 12.83 mm .505 in | -96 ² | 16 | |
| -20 | FC2540 | 52.07 mm 2.050 in | FT1231-20 | 11.94 mm .470 in | FT1240-150-20 | 50.80 mm 2.000 in | ** | -14 ² | 15 | |
| -24 | FC2540 | 52.07 mm 2.050 in | FT1231-24 | 14.48 mm .570 in | FT1240-150-24 | 57.15 mm 2.250 in | ** | -15 ² | 15 | |
| -32 | FC2540 | 58.42 mm 2.300 in | FT1231-32 | 18.80 mm .740 in | FT1240-150-32 | 72.26 mm 2.845 in | ** | -23 ² | 15 | |
| FC136 | | | | | | | | | | |
| -16 | FC2540 | 46.99 mm 1.850 in | FT1231-16 | 11.94 mm .470 in | FT1240-150-16 | 41.53 mm 1.635 in | 12.83 mm .505 in | -96 ² | 16 | |
| -20 | FC2540 | 52.07 mm 2.050 in | FT1231-20 | 11.94 mm .470 in | FT1240-100-20 | 50.80 mm 2.000 in | ** | -14 ² | 15 | |
| -24 | FC2540 | 52.07 mm 2.050 in | FT1231-24 | 14.48 mm .570 in | FT1240-100-24 | 57.15 mm 2.250 in | ** | -15 ² | 15 | |
| -32 | FC2540 | 58.42 mm 2.300 in | FT1231-32 | 18.80 mm .740 in | FT1240-100-32 | 72.26 mm 2.845 in | ** | -23 ² | 15 | |
| FC273 | | | | | | | | | | |
| -12 | FC2717 | 35.56 mm 1.400 in | FT1231-12 | 11.18 mm .440 in | FT1240-100-12 | 36.07 mm 1.420 in | ** | -82 ² | 15 | |
| -16 | FC2540 | 46.99 mm 1.850 in | FT1231-16 | 11.94 mm .470 in | FT1240-150-16 | 42.29 mm 1.665 in | 12.83 mm .505 in | -96 ² | 16 | |
| -20 | FC2717 | 52.07 mm 2.050 in | FT1231-20 | 11.94 mm .470 in | FT1240-100-20 | 55.37 mm 2.180 in | ** | -15 ² | 15 | |
| -24 | FC2717 | 52.07 mm 2.050 in | FT1231-24 | 14.48 mm .570 in | FT1240-100-24 | 62.23 mm 2.450 in | ** | -16 ² | 15 | |
| -32 | FC2717 | 29.21 mm 1.150 in*** | FT1231-32A | 18.80 mm .740 in | FT1240-100-32 | 78.61 mm 3.095 in | ** | -18 ² | 15 | |
| FC323, FC324 | | | | | | | | | | |
| -12 | FC2717 | 35.56 mm 1.400 in | FT1231-12 | 11.18 mm .440 in | FT1240-100-12 | 35.56 mm 1.400 in | ** | -82 ² | 15 | |
| -16 | FC2540 | 46.99 mm 1.850 in | FT1231-16 | 11.94 mm .470 in | FT1240-150-16 | 42.04 mm 1.655 in | 12.83 mm .505 in | -96 ² | 16 | |
| -20 | FC2540 | 52.07 mm 2.050 in | FT1231-20 | 11.94 mm .470 in | FT1240-100-20 | 51.18 mm 2.015 in | ** | -14 ² | 15 | |
| -24 | FC2540 | 52.07 mm 2.050 in | FT1231-24 | 14.48 mm .570 in | FT1240-100-24 | 57.79 mm 2.275 in | ** | -15 ² | 15 | |
| -32 | FC2540 | 58.42 mm 2.300 in | FT1231-32 | 18.80 mm .740 in | FT1240-100-32 | 72.77 mm 2.865 in | ** | -23 ² | 15 | |
| FC325 | | | | | | | | | | |
| -12 | FC2717 | 35.56 mm 1.400 in | FT1231-12 | 11.18 mm .440 in | FT1240-100-12 | 35.94 mm 1.415 in | ** | -82 ² | 15 | |
| -16 | FC2540 | 46.99 mm 1.850 in | FT1231-16 | 11.94 mm .470 in | FT1240-150-16 | 42.72 mm 1.682 in | 12.83 mm .505 in | -96 ² | 16 | |
| FC606 | | | | | | | | | | |
| -16 | FC1601 | 57.15 mm 2.250 in | FT1229-16B | 11.94 mm .470 in | FT1240-150-16 | 45.21 mm 1.780 in | ** | -46 ² | 10 | |
| -20 | FC1601 | 69.85 mm 2.750 in | FT1229-20B | 11.94 mm .470 in | FT1240-150-20 2.112 in | 53.64 mm .650 in | 16.51 mm | -151 ² | 19 | |

* Max. crimp ovality .30 mm/.012 in.

1 FT1320, FT1330 and FT1380 not approved.

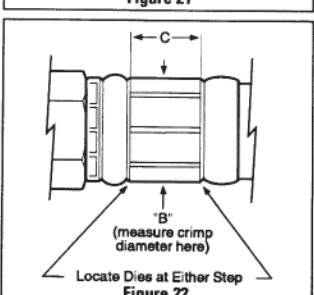
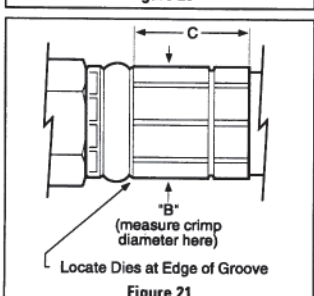
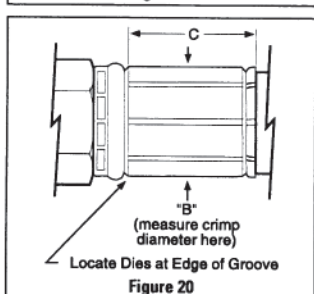
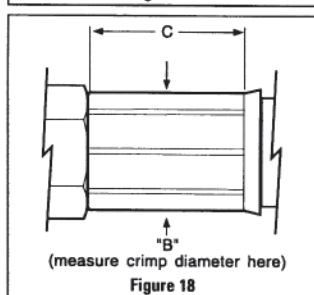
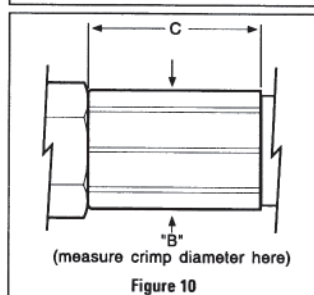
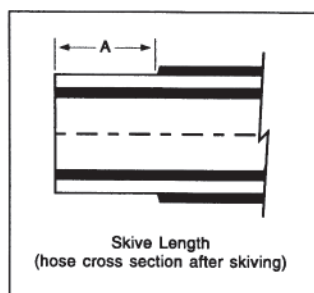
** Crimp full length of socket.

2 FT1049-100-SIZE or FT1209-200-SIZE only.

*** This is the correct measurement.



Spiral Single Skive Crimp Style



| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------|---------------|-----------------------|-----------------------|-----------------------|--------------|--------------|-----------------------|
| | | ± .50 mm ± .020 in | ± .18 mm ± .007 in | ± .38 mm ± .015 in | | | |

| FC254 | | | | | | | |
|-------|--------|----------------------|----------------------|----------------------|---------------------------------------|----------|--|
| -12 | FC1414 | 35.60 mm 1.400 in | 34.42 mm 1.355 in | 37.47 mm 1.475 in | -M320 ¹ -6 ¹ | 21 22 | |
| -16 | FC1414 | 47.00 mm 1.850 in | 41.28 mm 1.625 in | 39.50 mm 1.555 in | -M370 ¹ -8 ¹ | 21 22 | |
| -20 | FC1410 | 47.80 mm 1.880 in | 47.88 mm 1.885 in | 46.99 mm 1.850 in | -M465 ¹ -9 ¹ | 20 | |
| -24 | FC1410 | 55.40 mm 2.180 in | 56.01 mm 2.205 in | 52.32 mm 2.060 in | -M550 -11 | 20 | |

| FC273 | | | | | | | |
|-------|--------|----------------------|----------------------|----------------------|---------------------------------------|----------|--|
| -12 | FC1414 | 35.60 mm 1.400 in | 34.42 mm 1.355 in | 37.47 mm 1.475 in | -M320 ¹ -6 ¹ | 21 22 | |
| -16 | FC1414 | 47.00 mm 1.850 in | 41.28 mm 1.625 in | 39.50 mm 1.555 in | -M370 ¹ -8 ¹ | 21 22 | |

| FC323 | | | | | | | |
|-------|--------|----------------------|----------------------|----------------------|---------------------------------------|----------|--|
| -12 | FC1410 | 30.70 mm 1.210 in | 32.64 mm 1.285 in | 37.47 mm 1.475 in | -M320 -6 | 10 18 | |
| -16 | FC1410 | 33.00 mm 1.300 in | 38.86 mm 1.530 in | 39.50 mm 1.555 in | -M370 -8 | 10 18 | |
| -20 | FC1410 | 47.80 mm 1.880 in | 48.64 mm 1.915 in | 46.99 mm 1.850 in | -M465 ¹ -9 ¹ | 20 | |
| -24 | FC1410 | 55.40 mm 2.180 in | 56.64 mm 2.230 in | 52.32 mm 2.060 in | -M550 -11 | 20 | |

| FC324 | | | | | | | |
|-------|--------|----------------------|----------------------|----------------------|---------------------------------------|----------|--|
| -08 | FC1410 | 31.80 mm 1.250 in | 24.13 mm .950 in | 33.65 mm 1.325 in | -M240 -4 | 10 18 | |
| -12 | FC1410 | 30.70 mm 1.210 in | 32.64 mm 1.285 in | 37.47 mm 1.475 in | -M320 -6 | 10 18 | |
| -16 | FC1410 | 33.00 mm 1.300 in | 38.74 mm 1.525 in | 39.50 mm 1.555 in | -M370 ¹ -8 ¹ | 10 18 | |

* Max. crimp ovality .30 mm/.012 in.
1 FT1320, FT1330 and FT1380 not approved.

| HOSE DASH SIZE | SOCKET PART # | SKIVE LENGTH A | CRIMP DIA. B* | CRIMP LENGTH C | DIE SUFFIX # | SEE FIGURE # | CRIMP MACHINE SETTING |
|----------------|---------------|-----------------------|-----------------------|-----------------------|--------------|--------------|-----------------------|
| | | ± .50 mm ± .020 in | ± .12 mm ± .005 in | ± .38 mm ± .015 in | | | |

| FC736, GH493, FC136 | | | | | | | |
|---------------------|-----------------------|----------------------|----------------------|----------------------|---------------------------------------|----------|--|
| -06 | FC3471 | 22.90 mm .900 in | 20.74 mm .817 in | 29.97 mm 1.180 in | -M210 -3 | 10 18 | |
| -08 | FC3471 | 26.40 mm 1.040 in | 24.45 mm .963 in | 33.65 mm 1.325 in | -M240 -4 | 10 18 | |
| -10 | FC3471 | 30.00 mm 1.180 in | 28.50 mm 1.122 in | 36.32 mm 1.430 in | -M280 -5 | 10 18 | |
| -12 | FC1410 | 30.70 mm 1.210 in | 32.64 mm 1.285 in | 37.47 mm 1.475 in | -M320 -6 | 10 18 | |
| -16 | FC1410 | 33.00 mm 1.300 in | 39.12 mm 1.540 in | 39.50 mm 1.555 in | -M370 -8 | 10 18 | |
| -20 | FC1410 Pre-Crimped | 47.80 mm 1.880 in | 48.64 mm 1.915 in | 46.99 mm 1.850 in | -M465 ¹ -9 ¹ | 20 | |
| -24 | FC1410 Pre-Crimped | 55.40 mm 2.180 in | 56.64 mm 2.230 in | 52.32 mm 2.060 in | -M550 -11 | 22 | |
| -32 | FC1345 Pre-Crimped | 52.10 mm 2.050 in | 71.37 mm 2.810 in | 50.80 mm 2.000 in | -M690 -23 ² | 22 | |

* Max. crimp ovality .20 mm/.008 in.
1 FT1320, FT1330 and FT1380 not approved.
2 FT1209-200-23 not approved.



MatchMate Plus Crimp Machine Taget Settings

The FT1320 target settings are for use with the FT1320-550 crimp control sleeve. The FT1330 and FT1340 target settings are for use with

the digital encoders on those machines. The FT1307 target settings are for use with the micrometer on the machine.

| HOSE DASH SIZE | DIE CAGE | FT1320 -550 SLEEVE | FT1330 | FT1360 AND FT1340 | ET1280 AND FT1380 | FT1390 | TARGET DIA. |
|--------------------------------|----------|--------------------|--------|-------------------|-------------------|--------|-----------------------|
| | | | | | | | ± .15 mm ± .006 in |
| 3H194 with TTC Fittings | | | | | | | |
| 4 | -M150 | 51 | 760 | 855 | 067 | 233 | 15.75mm |
| | -2 | 72 | 555 | 836 | - | - | .620 in |
| 6 | -M180 | 59 | 680 | 810 | 095 | 261 | 19.56mm |
| | -3 | 60 | 675 | 950 | - | - | .770 in |
| 8 | -M240 | 43 | 838 | 922 | 036 | 199 | 23.88mm |
| | -4 | 70 | 574 | 842 | - | - | .940 in |
| 10 | -M240 | 70 | 576 | 720 | 147 | 311 | 26.80mm |
| | -5 | 60 | 674 | 918 | - | - | 1.055 in |
| 12 | -M320 | 42 | 850 | 936 | 024 | 193 | 31.75mm |
| | -6 | 75 | 518 | 810 | - | - | 1.250 in |
| 16 | -M370 | 74 | 531 | 688 | 166 | 332 | 40.39mm |
| | -8 | 85 | 419 | 730 | - | - | 1.590 in |
| 20 | -M420 | - | 518 | 670 | 176 | 340 | 45.72mm |
| | | | | | | | 1.800 in |
| 3H195 with TTC Fittings | | | | | | | |
| 4 | -M150 | 61 | 665 | 770 | 112 | 277 | 16.89mm |
| | -2 | 81 | 460 | 765 | - | - | .665 in |
| 6 | -M210 | 45 | 815 | 880 | 047 | 211 | 21.21mm |
| | -3 | 73 | 535 | 810 | - | - | .835 in |
| 8 | -M240 | 53 | 735 | 824 | 087 | 247 | 25.15mm |
| | -4 | 80 | 470 | 736 | - | - | .990 in |
| 10 | -M280 | 48 | 791 | 859 | 063 | 230 | 28.71mm |
| | | | | | | | 1.130 in |
| 12 | -M320 | 48 | 790 | 895 | 049 | 223 | 32.51mm |
| | -6 | 81 | 460 | 770 | - | - | 1.280 in |
| 16 | -M370 | 83 | 325 | 598 | 216 | 381 | 41.66mm |
| | -8 | 95 | 450 | 640 | - | - | 1.640 in |
| 20 | -M465 | - | 466 | 636 | 194 | 361 | 50.80mm |
| | -9 | - | - | 744 | - | - | 2.000 in |
| 24 | -M550 | - | - | 760 | - | 297 | 57.66mm |
| | -11 | - | - | 805 | - | - | 2.270 in |
| 32 | -M690 | - | - | 855 | - | 244 | 70.36mm |
| | -23 | - | - | 710 | - | - | 2.770 in |

| HOSE DASH SIZE | DIE CAGE | FT1320 -550 SLEEVE | FT1330 | FT1360 AND FT1340 | ET1280 AND FT1380 | FT1390 | TARGET DIA. |
|--------------------------------|----------|--------------------|--------|-------------------|-------------------|--------|-----------------------|
| | | | | | | | ± .15 mm ± .006 in |
| GH663 with TTC Fittings | | | | | | | |
| -4 | -M150 | 50 | 770 | 854 | 068 | 237 | 15.75mm |
| | -2 | 71 | 560 | 855 | - | - | .620 in |
| -6 | -M180 | 62 | 650 | 766 | 104 | 275 | 19.94mm |
| | -3 | 62 | 645 | 902 | - | - | .785 in |
| -8 | -M240 | 42 | 850 | 920 | 034 | 199 | 23.88mm |
| | -4 | 68 | 585 | 828 | - | - | .940 in |
| -10 | -M240 | 57 | 700 | 712 | - | - | 26.80mm |
| | -5 | 62 | 650 | 724 | - | - | 1.055 in |
| -12 | -M320 | 41 | 855 | 950 | 018 | 191 | 31.75mm |
| | -6 | 73 | 535 | 830 | - | - | 1.250 in |
| -16 | -M370 | 72 | 545 | 688 | 161 | 331 | 40.39mm |
| | -8 | 83 | 435 | 730 | - | - | 1.590 in |
| -20 | -M420 | - | 490 | 650 | 187 | 351 | 46.00mm |
| | | | | | - | - | 1.811 in |
| GH781 with TTC Fittings | | | | | | | |
| -4 | -M150 | 60 | 665 | 775 | 111 | 286 | 16.89mm |
| | -2 | 80 | 470 | 760 | - | - | .665 in |
| -6 | -M210 | 41 | 855 | 915 | 026 | 200 | 20.70mm |
| | -3 | 68 | 585 | 844 | - | - | .815 in |
| | -M180 | 69 | 580 | 704 | - | - | |
| -8 | -M240 | 50 | 765 | 846 | 071 | 234 | 24.77mm |
| | -4 | 77 | 500 | 760 | - | - | .975 in |
| -10 | -M280 | 46 | 810 | 890 | 045 | 214 | 28.32mm |
| | -5 | 72 | 545 | 810 | - | - | 1.115 in |
| -12 | -M320 | 39 | 875 | 960 | 013 | 184 | 31.62mm |
| | -6 | 73 | 540 | 835 | - | - | 1.245 in |
| -16 | -M370 | 66 | 605 | 728 | 137 | 306 | 39.75mm |
| | -8 | 78 | 490 | 780 | - | - | 1.565 in |
| -20 | -M465 | - | 680 | 806 | 091 | 262 | 48.26mm |
| | -9 | - | - | 915 | - | - | 1.900 in |
| -24 | -M550 | - | - | - | - | 182 | 54.74mm |
| | | | | | | | 2.155 in |
| -32 | -M690 | - | - | - | - | 175 | 68.58mm |
| | | | | | | | 2.700 in |

To determine the target setting, refer to the equipment operator's manual.



Powering Business Worldwide

CRIMP INFORMATION

MatchMate Plus Crimp Machine Target Settings

| HOSE DASH SIZE | DIE CAGE | FT1320 -550 SLEEVE | FT1360 AND FT1340 | ET1280 AND FT1380 | FT1390 | TARGET DIA. | |
|--------------------------------|-------------|--------------------------|-------------------------|-------------------------|--------|-----------------------|---------------------|
| | | | | | | ± .15 mm ± .006 in | |
| GH793 with TTC Fittings | | | | | | | |
| -4 | -M150 | 63 | 635 | 740 | 125 | 302 | 17.27mm .680 in |
| | -2 | 84 | 430 | 735 | - | - | |
| -6 | -M210 | 45 | 815 | 880 | 046 | 211 | 21.21mm .835 in |
| | -3 | 73 | 535 | 810 | - | - | |
| -8 | -M240 | 53 | 735 | 824 | 086 | 247 | 25.15mm .990 in |
| | -4 | 80 | 470 | 736 | - | - | |
| -10 | -M280 | 50 | 770 | 865 | 061 | 230 | 28.70mm 1.130 in |
| | -5 | 76 | 505 | 785 | - | - | |
| -12 | -M320 | 48 | 790 | 895 | 048 | 222 | 32.51mm 1.280 in |
| | -6 | 81 | 460 | 770 | - | - | |
| -16 | -M370 | 81 | 460 | 618 | 204 | 371 | 41.40mm 1.630 in |
| | -8 | 92 | 345 | 660 | - | - | |
| -20 | -M465 | - | 560 | 706 | 149 | 320 | 49.78mm 1.960 in |
| | -9 | - | - | 814 | - | - | |
| -24 | -M550 | - | - | 760 | - | 297 | 57.66mm 2.270 in |
| | -11 | - | - | 805 | - | - | |
| | -M570 | - | - | 868 | - | - | |
| -32 | -M690 | - | - | 815 | - | 266 | 70.87mm 2.790 in |
| | -23 | - | - | 670 | - | - | |
| | -17 | - | - | 745 | - | - | |

| HOSE DASH SIZE | DIE CAGE | FT1320 -550 SLEEVE | FT1360 AND FT1340 | ET1280 AND FT1380 | FT1390 | TARGET DIA. | |
|----------------------------------|-------------|--------------------------|-------------------------|-------------------------|--------|-----------------------|---------------------|
| | | | | | | ± .15 mm ± .006 in | |
| GH493 with TTC12 Fittings | | | | | | | |
| -6 | -M210 | 59 | 680 | 784 | 105 | 271 | 22.76mm .896 in |
| | -4 | 56 | 708 | 915 | - | - | |
| -8 | -M280 | 41 | 855 | 936 | 025 | 191 | 27.81mm 1.095 in |
| | -5 | 68 | 590 | 855 | - | - | |
| -10 | -M280 | 64 | 633 | 721 | 130 | 298 | 30.48mm 1.200 in |
| -12 | -M320 | 64 | 625 | 758 | 120 | 296 | 34.42mm 1.355 in |
| | -6 | 97 | 300 | 630 | - | - | |
| -16 | -M420 | - | 690 | 802 | 100 | 264 | 43.82mm 1.725 in |
| | -8 | - | 145 | - | - | - | |
| | -M370 | - | 250 | - | 290 | - | |
| -20 | -M520 | - | - | 920 | - | 197 | 52.20mm 2.055 in |
| | -M465 | - | 360 | - | 239 | - | |
| -24 | -M550 | - | - | 885 | - | 226 | 55.88mm 2.200 in |
| | -11 | - | - | 945 | - | - | |
| -32 | -M690 | - | - | 945 | - | 188 | 69.16mm 2.723 in |

To determine the target setting, refer to the equipment operator's manual.

NOTE: These target settings for Aeroquip crimp machines are provided to aid in establishing actual settings. While the settings on this chart will give crimp diameters close to, or at, the specified value, the machine operator must check to verify the actual diameter. Before using these target settings, the crimp machine must be properly calibrated. Consult your Aeroquip equipment manual for calibration procedures.



Aeroquip Crimp Machine Capabilities with MatchMate Plus Fittings

| CURRENT MODELS | TTC | TTC12 |
|--|------------|--------------|
| ET1000 | Thru -20 | Thru -16 |
| FT1380, ET1280 | Thru -20 | Thru -20 |
| FT1390 | All sizes | All sizes |
| PREVIOUS MODELS | | |
| FT1049*, FT1204, FT1209, FT1244, FT1307, FT1340 and FT1360 | All sizes | All sizes |
| FT1208 | Thru -12 | Thru -12 |
| FT1310 | Thru -16 | N/A |
| FT1320 | Thru -16 | Thru -12 |
| FT1330 Model "A"*** | Thru -16 | Thru -12 |
| FT1330 Model "B", FT1380P | Thru -20 | Thru -20 |
| FT1370 | Thru -20 | Thru -16 |

* Requires the addition of an FT1049-130-5 backstop spring for crimping TTC and TTC12 fittings.

** Model "A" discontinued in September 1991.

Tooling Compatibility Chart

| CRIMP MACHINES | | | | | | | | | | | | | | | | | | |
|-----------------------|---------------|---------------|---------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|---------------|----------------|---------------|
| TOOLING | FT1008 | FT1049 | FT1204 | FT1208 | FT1209 | FT1244 | FT1307 | FT1310 | FT1320 | FT1330 | FT1340 | FT1360 | FT1370 | FT1380 | FT1380P | FT1390 | ET1000 | ET1280 |
| FT1008-100-SIZE | X | | | | | | | | | | | | | | | | | |
| FT1049-100-SIZE | | X | | | | | | | | | | | | | | | | |
| FT1204-100-SIZE | | | X | | X ¹ | X | X ¹ | | | | X ¹ | X ¹ | | | | | X ¹ | |
| FT1208-100-SIZE | | | | X | | | | | | | | | | | | | | |
| FT1209-200-SIZE | | | | | X | | X | | | | X | X | | | | | X | |
| FT1307-200-SIZE | | | | | X | | X | | | | X | X | | | | | X | |
| FT1310-200-SIZE | | | | | | | | X | | | | | | | | | | |
| FT1330-200-SIZE | | | | | | | | | X | X | | | | | | | | |
| FT1330-275-SIZE | | | | | | | | | X | X | | | | | | | | |
| FT1380-200-SIZE | | | | | | | | | | | | | | X | X | X | | X |
| FT1380-201-SIZE | | | | | | | | | | | | | | X | X | X | | X |
| FT1380-275-SIZE | | | | | | | | | | | | | | X | X | X | | X |
| FT1390-200-SIZE | | | | | X | | X | | | | X | X | | | | | X | |
| ET400-SIZE | | | | | | | | | | | | | | | | | | X |
| ET420-SIZE | | | | | | | | | | | | | | | | | | X |
| ET1000-SIZE | | | | | | | | | | | | | | | | | | X |
| T-400-SIZE | | | | | | | | | | | | | | | | | | X |
| T-420-SIZE | | | | | | | | | | | | | | | | | | X |

1 Individual dies. Requires the use of die cage kit FT1307-2-9 or removable die cage FT1307-2-13.

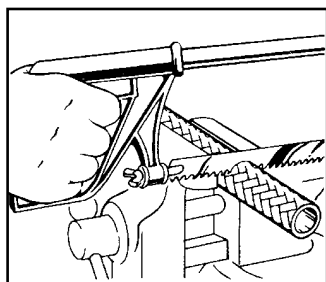


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Hose and Reusable Fittings

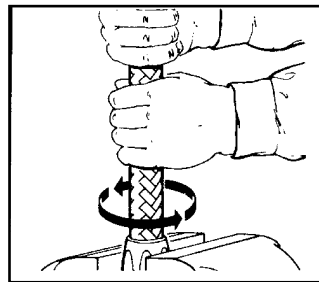
Standard (mandrelless) reusable fittings with single wire braid, multiple textile braid, hydraulic and LPG hose.

FC234, FC300, FC321, FC350, FC355, 302A, 303, 1503, 2580, 2651
(for fittings requiring mandrel, see page 324).



Step 1

Cut hose square with fine-tooth hacksaw or cut-off wheel.



Step 2

Put socket in vise.

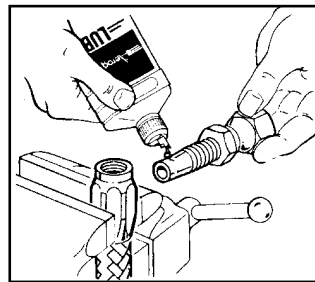
Screw hose counterclockwise into socket until it bottoms.

Back off $\frac{1}{4}$ turn.

When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket into the hose counterclockwise until it bottoms.

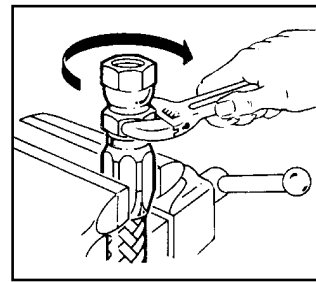
Back off $\frac{1}{4}$ turn.

Back off FC300, FC350 and FC355 $\frac{1}{4}$ to $\frac{1}{2}$ turn.



Step 3

Lubricate nipple and threads **LIBERALLY**. Use heavy oil or Aeroquip 222070 hose assembly lube.



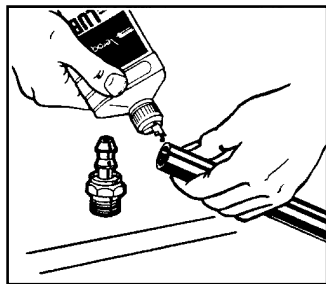
Step 4

Screw nipple clockwise into socket and hose. Leave $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nipple hex and socket.

Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.

SOCKETLESS Fittings with textile braid low pressure hose

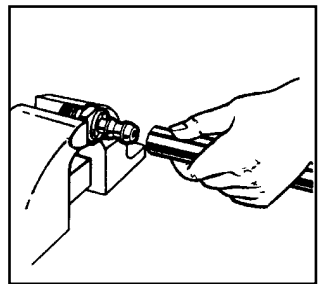
FC332, FC647, 2556, 2565, 2575



To Assemble

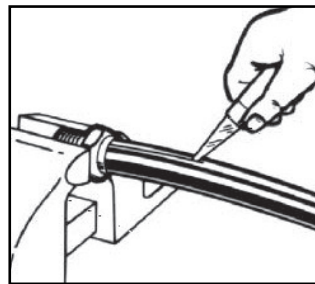
Step 1

Cut hose to required length with a sharp knife. Oil inside of hose and outside of nipple **LIBERALLY**.



Step 2

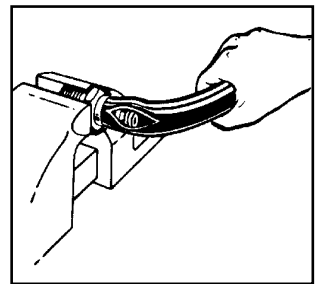
Push hose on fitting until hose end bottoms underneath protective cap as shown. For quantity production use a **SOCKETLESS Fitting assembly machine**. Recommendations for cleaning, inspection and testing are summarized on page 318.



To Disassemble

Step 1

Slit hose lengthwise from protective cap to end of nipple.

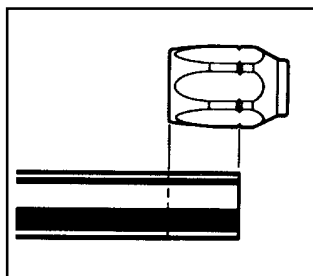


Step 2

Bend hose, then snap hose off with a quick tug.



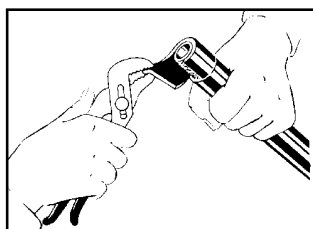
Standard reusable fittings with Hi-Pac and two wire braid hose FC195, FC310, FC510, 2766, 2781



Step 1

Cut hose to length required using a fine-tooth hacksaw or cut-off wheel. Clean hose bore.

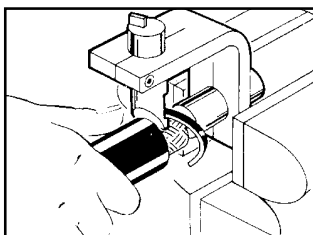
Hose must be stripped of its rubber cover before inserting in socket. Locate skiving point by putting hose end next to socket as shown. Measure from hose end of socket to notch on socket.



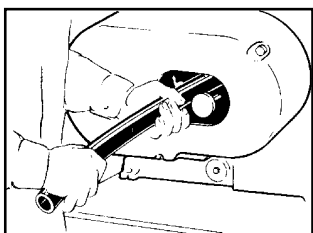
Step 1A

Skive Hose:

By Hand: Cut rubber cover around down to wire reinforcement. Slit lengthwise. Raise flap and pull off with pliers. Clean excess rubber off wire reinforcement with wire brush or soft wire wheel. Do not fray or flare wire reinforcement when brushing.

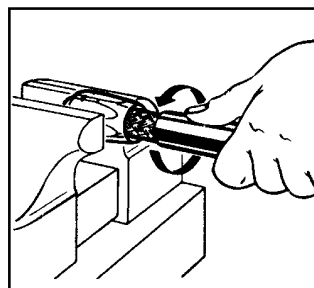


Skive Tool: Use the correct size FT1229 hose cover skiving tool. Mount the tool in a vise. Push the hose over the mandrel. Rotate the hose clockwise until it bottoms or secure hose in a vise and attach FT1279 auger to the skive tool. Insert mandrel into the hose and rotate clockwise until it bottoms.



Machine: Use the S1102 cut-off and skiving machine. Consult the owners manual. Select the correct mandrel. Turn on the machine. Put the hose over the mandrel and rotate.

Note: when skiving, remove the rubber cover until the wire reinforcement is exposed around the circumference of the hose.

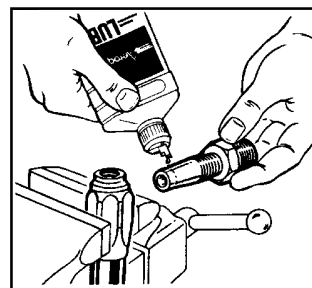


Step 2

Put socket in vise. Screw hose into socket counterclockwise until it bottoms.

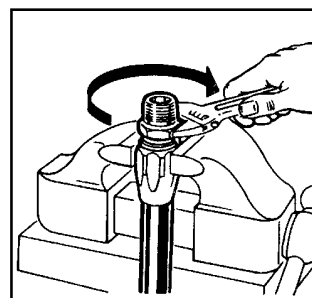
When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket onto the hose counterclockwise until it bottoms.

NOTE: Sockets for hose fittings in the -16, -24 and -32 sizes are furnished with internal annular grooves in place of helical grooves (all FC310 and FC510 hose sockets are annular grooved). Install socket by pushing hose into socket with a back and forth rocking and twisting motion until hose bottoms on shoulder of socket.



Step 3

Lubricate nipple threads and inside of hose liberally. Use heavy oil or Aeroquip 222070 hose assembly lube.



Step 4

Screw nipple clockwise into socket and hose.

Leave 1/32" to 1/16" clearance between nipple hex and socket.

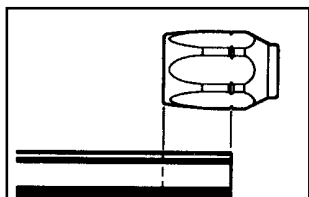
Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.



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Standard reusable fittings with four spiral wire hose

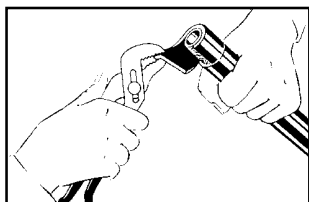
FC136, FC324, GH493, FC736



Step 1

Cut hose to length required using a fine-tooth hacksaw or cut-off wheel. Clean hose bore.

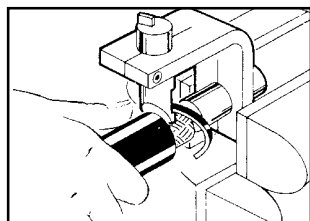
Hose must be stripped of its rubber cover before inserting into socket. Locate skiving point by putting hose end next to socket as shown. Measure from hose end of socket to notch on socket.



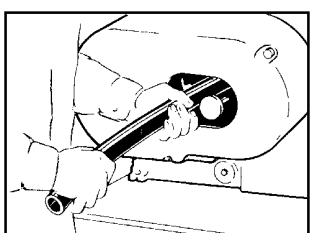
Step 1A

Skive Hose

By Hand: Cut rubber cover around down to wire reinforcement with a knife. Slit lengthwise. Raise flap and pull off with pliers. Clean excess rubber off wire reinforcement with wire brush or soft wire wheel. Do not fray or flare wire reinforcement when brushing.



Skive Tool: Use the correct size Eaton FT1229 hose cover skiving tool. Mount the tool in a vise. Push the hose over the mandrel. Rotate the hose clockwise until it bottoms or secure hose in a vise and attach FT1279 auger to the skive tool. Insert mandrel into the hose and rotate clockwise



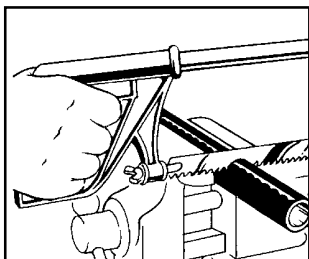
until it bottoms.

Machine: Use the Eaton S1102 cut-off and skiving machine. Consult the owners manual. Select the correct mandrel. Turn on the machine. Put the hose over the mandrel and rotate counterclockwise.

Note: when skiving, remove the rubber cover until the wire reinforcement is exposed around the circumference of the hose.

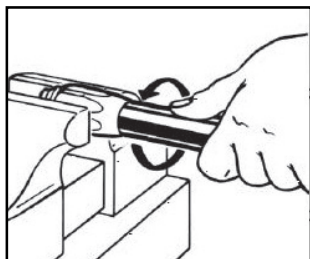
Thru-the-cover style reusable fittings with hose

FC211, FC212, GH663, GH793



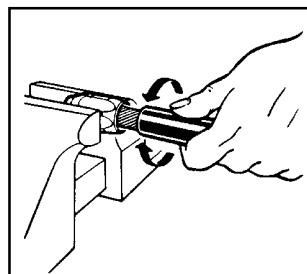
Step 1

Cut hose to length required using a fine tooth hacksaw or cut-off machine. Clean hose bore.



Step 2

Liberaly lubricate hose cover with Aeroquip 222070 hose assembly lube.

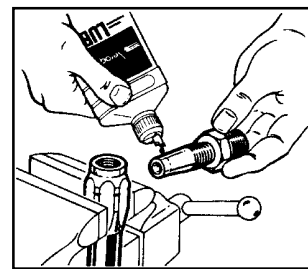


Step 2

Sockets for hose fittings are furnished with internal annular grooved design. Install socket by pushing hose into socket with a back and forth rocking and clockwise twisting motion until hose bottoms on shoulder of socket.

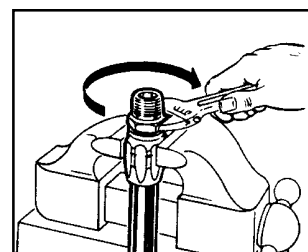
An alternate method is to insert the hose in a vise. Install socket by pushing onto the hose with a back and forth rocking and clockwise twisting motion until the hose bottoms on the shoulder of socket.

A rawhide hammer or similar tool may be used to tap the socket onto the hose but avoid damage to internal socket threads. Be sure not to damage hose cover or wire reinforcement.



Step 3

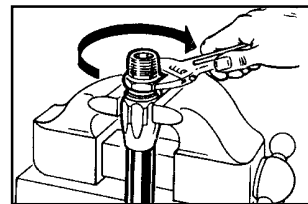
Liberaly lubricate nipple threads and inside of hose. Use heavy weight oil or Aeroquip 222070 hose assembly lube.



Step 4

Screw nipple clockwise into socket and hose. Leave a $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nipple hex and socket.

Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.



Step 4

Screw nipple clockwise into socket and hose. Leave $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nipple hex and socket.

Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.

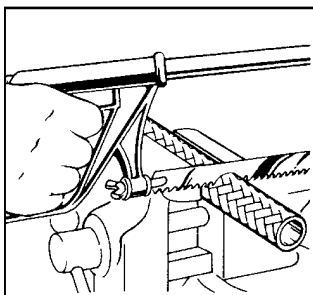
Step 3

Liberaly lubricate nipple threads and inside of hose. Use heavy weight oil or Aeroquip 222070 hose assembly lube.



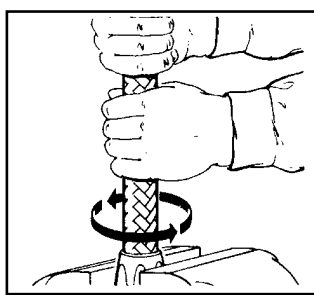
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Standard (mandrelless) reusable fittings with engine, air brake and railroad air brake hose 1531, 1531A, 2550, 2554, 2570 (for fittings requiring mandrel, see page 324)



Step 1

Cut hose square to length required with fine-tooth hacksaw or cut-off wheel. Clean hose bore.

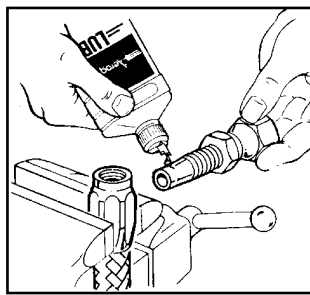


Step 2

Put socket in vise. Screw hose counterclockwise into socket until hose bottoms. Back off $\frac{1}{4}$ turn.

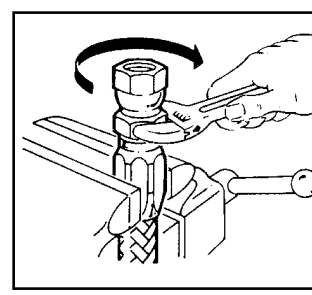
When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket into the hose counterclockwise until it bottoms. Back off $\frac{1}{4}$ turn.

NOTE: For 2550, 2554 and 2570 hose: Sockets for these hose fittings are furnished with internal annular grooved design. Install socket by pushing hose into socket with a back and forth rocking and twisting motion until hose bottoms on shoulder of socket. Back off $\frac{1}{4}$ turn.



Step 3

Lubricate nipple threads and inside of hose LIBERALLY with Aeroquip 222070 hose assembly lube or heavy weight oil.



Step 4

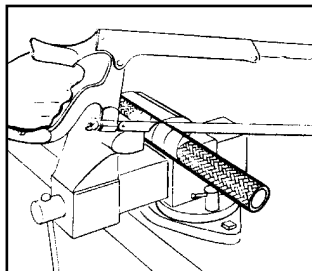
Screw nipple clockwise into socket and hose. Leave a $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nipple hex and socket.

Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.



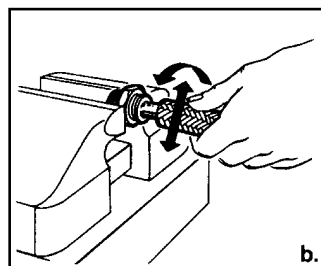
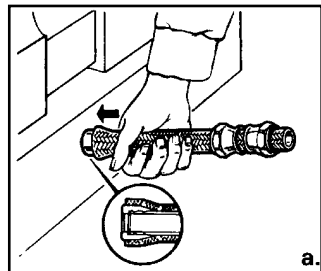
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"super gem"[®] Fittings with PTFE hose FC465, 2807, 2808, FC807



Step 1

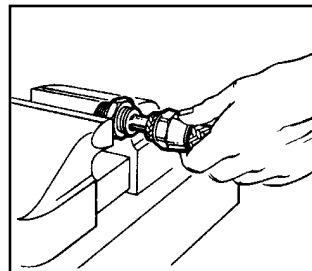
Wrap hose with masking tape at cut-off point and cut square to length through taped area using a cut-off machine or fine-tooth hacksaw. Remove tape and trim any loose wires flush with tube stock. Any burrs on the bore of the tube stock should be removed with a knife. Clean the hose bore. Sometimes wire braid will tend to "neck down" on one end and flare out, on the opposite end. This is a characteristic of wire braid hose and can be used to an advantage in the assembly of the "super gem" sockets. Slip two sockets back to back over the "necked down" end of the hose.



Step 2

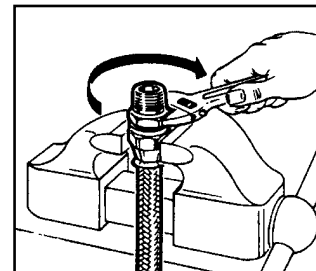
a. Push the sleeve over the end of the tube and under the wire braid by hand. Complete positioning of the sleeve by pushing the hose end against a flat surface. Visually inspect to see that tube stock butts against the inside shoulder of the sleeve.

b. Set the sleeve barbs into the PTFE tube by using assembly tool FT1038A or working the hose bore over the nipple into the end of the sleeve and tube. Assembly kit FT1081 is also available.



Step 3

Lubricate nipple and socket threads. For stainless steel fittings, use a molydisulfide base lubricant (e.g., Molykote[®] Type G), lubricants containing chloride are not recommended. Other material combinations use standard petroleum lubricants. Hold the nipple with hex in vise. Push hose over nipple with twisting motion until seated against nipple chamfer. Push socket forward and hand start threading of socket to nipple.



Step 4

Wrench tighten nipple hex until clearance with socket hex is $\frac{1}{32}$ " or less. Tighten further to align corners of nipple and socket hexes. Recommendations for cleaning, inspection and testing are summarized on page 318.

To disassemble: Unscrew and remove nipple; slide socket back on hose by tapping against flat surface; remove sleeve with pliers. New sleeves are recommended upon reuse of the fitting.

**Molykote Type G is a registered trademark of the Dow Corning Corporation.*

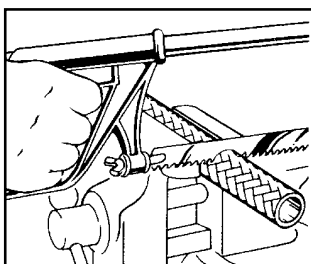


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Hose and Reusable Fittings

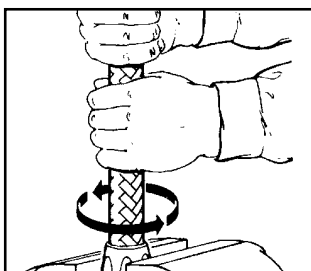
Mandrel Type Fittings—

Standard reusable fittings with single wire braid, multiple textile braid, hydraulic, LPG hose, engine and air brake hose
FC234, FC300, FC321, FC350, FC355, 302A, 303, 1503, 2580, 2651



Step 1

Cut hose square with fine-tooth hacksaw or cut-off wheel. Clean hose bore.



Step 2

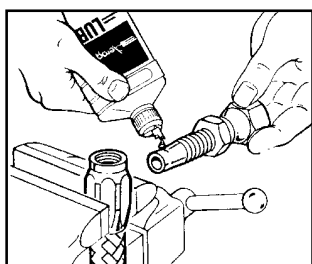
Put socket in vise.

Screw hose counterclockwise into socket until it bottoms.

When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket onto the hose counterclockwise until it bottoms.

Back off $\frac{1}{4}$ turn.

Back off FC300, FC350 and FC355 hose $\frac{1}{4}$ to $\frac{1}{2}$ turn.

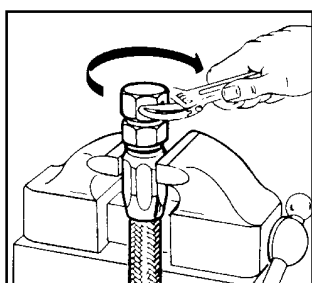


Step 3

MALE ENDS: Push assembly tool into nipple.

SWIVEL ENDS: Tighten nipple and nut on assembly tool.

Lubricate nipple, mandrel and inside of hose liberally. Use heavy oil or Aeroquip 222070 hose assembly lube.



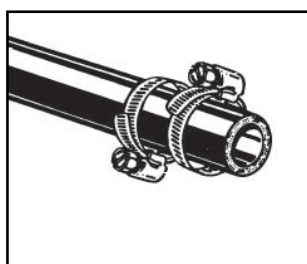
Step 4

MALE ENDS: Screw nipple clockwise into socket and hose. Leave a $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nipple hex and socket.

SWIVEL ENDS: Screw nipple clockwise into socket and hose. Leave $\frac{1}{32}$ " to $\frac{1}{16}$ " clearance between nut and socket.

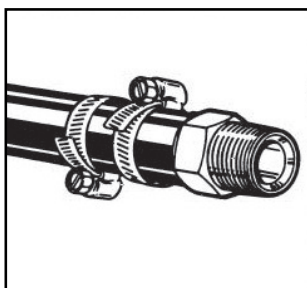
Recommendations for cleaning, inspection and testing are summarized on page 318. Disassemble in reverse order.

Nipple and clamp with suction hose 2661, FC619



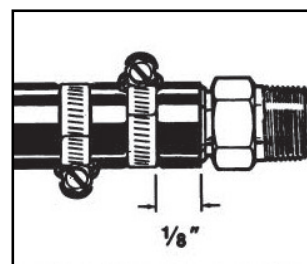
Step 1

Cut hose square to length required using a fine-tooth hacksaw or cut-off wheel. Clean hose bore. Slide band clamp over hose cover.



Step 2

Insert nipple into hose until hose end bottoms on nipple shoulder.



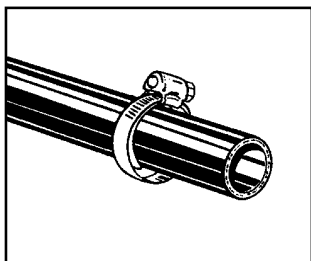
Step 3

Evenly space two band clamps from end of hose to end of nipple (see above). The band clamps should be tightened 180° from each other. Tighten clamps to 100 in-lbs. Recommendations for cleaning, inspection and testing are summarized on page 318.



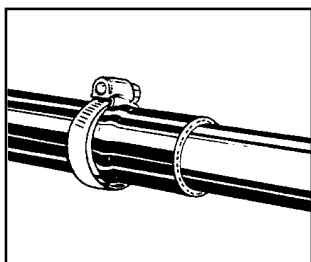
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Silicone hose FC252/FC352



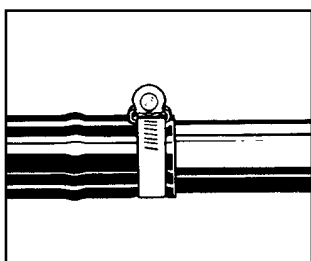
Step 1

Cut hose square to length required with a sharp knife. Slide extended hose clamp (FF9148) over hose cover.



Step 2

Push hose over beaded tube.



Step 3

Locate extended hose clamp (FF9148) near the end of hose and tighten the clamp.

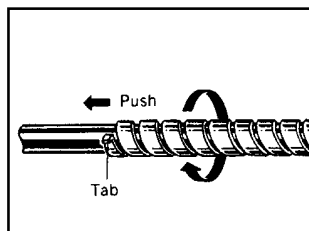
Clamps: Extended hose clamps or clamps with a shoe are recommended for securing to formed and beaded male tube ends.

CAUTION: Do not use wire type clamps for securing silicone hose.

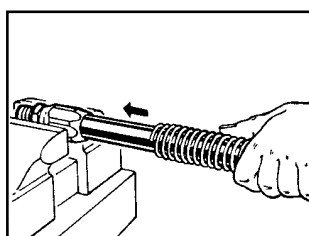
Note: Use of the FF9148 hose clamp will help prevent extrusion of the rubber cover through the clamp.

900705 Steel protec- tive coil sleeve

900564 Steel protec- tive coil spring



900705 sleeve



900564 spring

Step 1

Follow the appropriate assembly instructions through the assembly of one end fitting. Insert one end fitting in vise.

Step 2

Cut coil length. Coil should be cut to overall assembly length "OA" minus the sum of the overall length of each end fitting. ("A" dimension).

Step 3

3a) 900705 Steel Protective Coil Sleeve

The hose and the coil should be held straight. Taping or capping the hose end can prevent frayed wire ends from snagging on the coil. Bend one end to the coil outward to form a slight tab to assist grasping. (Cut off or bend back when installation is complete.) Hold the tab with the thumb of one hand while twisting the coil clockwise approximately one foot back from the coil tab. When the coil opens up sufficiently, slip the tab end to the coil over the hose. Move the coil onto the hose by pulling at the tab end while pushing with the other hand. Be careful not to exceed the resiliency of the coil by stretching it too far.

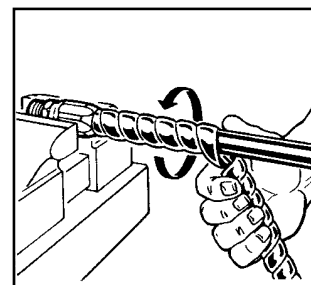
3b) 900564 Steel Protective Coil Spring

Slide coil over hose.

Step 4

Proceed with assembly of second end fitting.

900952 Plastic coil sleeve



Step 1

Follow the appropriate hose assembly instructions through the assembly of both end fittings. Insert end fitting in vise.

Step 2

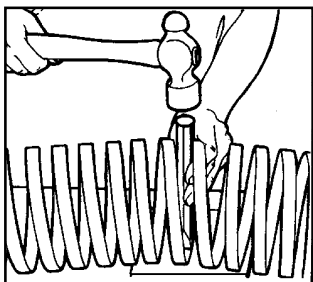
Cut coil length. Coil should be cut to overall assembly length "OA" minus the sum of the overall length of each end fitting. ("A" dimension).

Step 3

Wrap the coil on the hose.



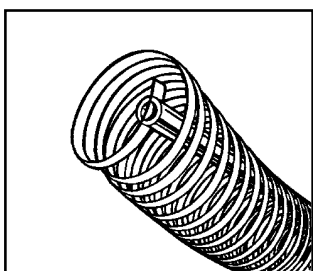
Internal support coils
222005, 222022



Step 1

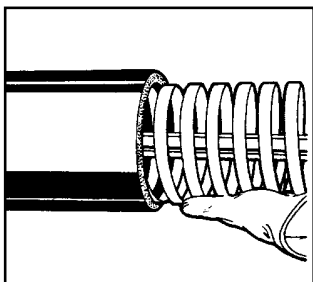
Cut coil length. The coils should be cut to the hose length, minus the nipple length, minus the hose intrusion. For any given hose assembly the support coil length equals the overall hose assembly length minus the sum of the overall lengths of each end fitting. ("A" dimensions.)

Small size of the coil can usually be cut with strap cutters or sheet metal shears. The larger sizes are best cut with a heavy sharp chisel or bolt cutter. With small sizes skip directly to Step 3.



Step 2

Compress the coil (large sizes only). It is necessary to reduce the coil diameter slightly in order to insert it into the hose. The easiest approach is to use a length of pipe with a notch cut in one end. Clamp the plain end of the pipe in a vise, slide the coil over the pipe and insert the free end of the coil into the notched end of the pipe. Then clamp the coil and pipe firmly together. Twist the coil to compress it prior to installation into the hose.

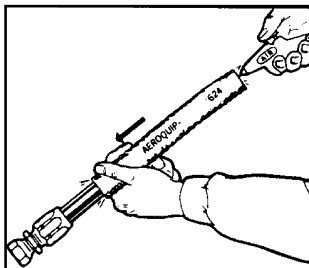


Step 3

Small sizes: The coil can be worked into the hose by hand without difficulty. Remove all burrs from the coil prior to insertion. This will prevent cutting of the hose tube. Position the coil midway between hose ends.

Large sizes: With the pipe still in position, as in Step 2, assemble the hose over the coil. With the coil fully centered in the hose, remove the pipe and clamp.

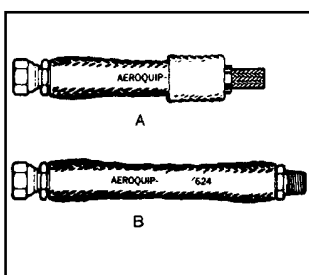
Firesleeve
624



Step 1

Follow the appropriate hose assembly instructions through the assembly of one end fitting. Cut firesleeve to same length as hose; using Firesleeve End Dip (AE13702-003) dip ends of firesleeve to a depth of three quarters of an inch and allow to dry at room temperature.

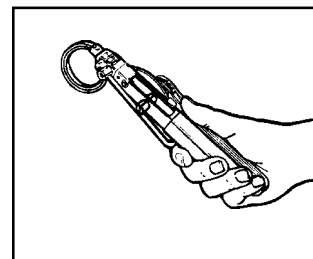
Start firesleeve over cut end of hose. Note: If applying sleeve over PTFE or stripped cover assemblies, wrap exposed wire with tape. Grasp sleeve and slip over the hose assembly as illustrated.



Step 2

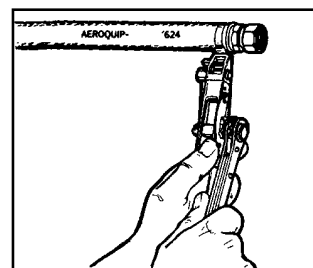
Skin sleeve back from cut end of hose enough to allow assembly of second end fitting. (2A)

Then center sleeve so that it completely covers both sockets. (2B)



Step 3

Insert tail of band clamp into hand clamping tool.



Step 4

Position band clamp over sleeve as shown and then draw tight with hand tool. Remove tool and cut free end of band clamp. Repeat on other end of assembly. To complete, bend protruding tail of clamp over clamp buckle. Also repair any scuffs or minor abrasions of firesleeve by brush application of End Dip AE13702-003.

REUSABLE INFORMATION



Powering Business Worldwide

How to Assemble Permanent Hose Fittings

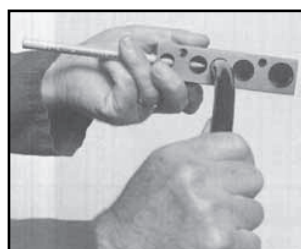
Instructions for using the Synflex Mark IX Swaging Machines

Permanent Fitting Chart Insertion Depth Table

| FITTING SERIES | | |
|----------------------|---------------------------|-------|
| INSERTION DEPTH (in) | | |
| | 903, 90H 90L 905 | 906 |
| Hose I.D. (in) | 7903,790H, 90A, 90N | |
| 1/8 | 9/16 | - |
| 3/16 | 25/32 | - |
| 1/4 | 1-1/16 | 7/8 |
| 5/16 | 1-1/8 | - |
| 3/8 | 1-1/4 | 1-1/4 |
| 1/2 | 1-1/2 | 1-1/2 |
| 5/8 | 1-9/16 | - |
| 3/4 | 1-11/16 | - |
| 1 | 2-1/16 | - |



1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-04007.

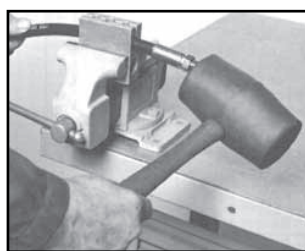


2. Mark hose for proper insertion depth into fitting. Use insertion depth chart or use Insertion Depth marker 45J0-04603.

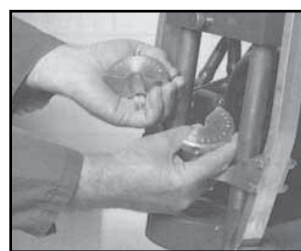


3. Oil inside hose diameter with SAE 20 oil.

Consult Eaton Performance Plastics for oxygen system special assembly recommendations.



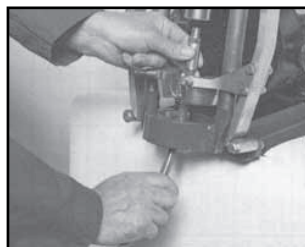
4. Insert hose into fitting to depth mark. (Use Vise Block 4504-00000 or 4504-01000 and rubber mallet to ease assembly.)



5. Insert the specified die and pusher into the swaging machine.



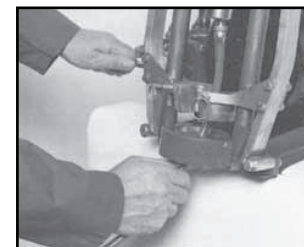
Lubricate die swaging surface with SAE 90 gear oil. For stainless steel fittings use Swage Lubricant 4545-01001.



6. Insert hose end into the pusher.



7. Pull control lever and guide fitting into the die until the pusher bottom is against the top of the die surface.



8. Push control lever to retract pusher and open die halves. Remove swaged hose assembly.



How to Assemble Permanent Hose Fittings

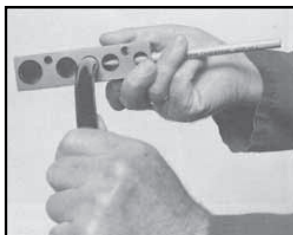
Instructions for using the Synflex SST Swaging Tool

Permanent Fitting Chart Insertion Depth Table

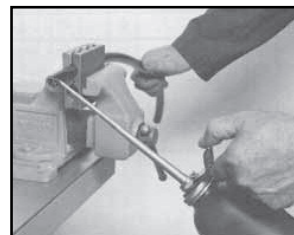
| Hose I.D. (in) | FITTING SERIES | |
|-------------------|--|-------|
| | INSERTION DEPTH (in) | |
| | 3903, 390A, 390P, 390H, 390L, 390S, 7903, 790H, 390N | 3906 |
| 1/8 | 9/16 | - |
| 3/16 | 25/32 | - |
| 1/4 | 1-1/16 | 7/8 |
| 5/16 | 1-1/8 | - |
| 3/8 | 1-1/4 | 1-1/4 |
| 1/2 | 1-1/2 | - |
| 5/8 | 1-9/16 | - |
| 3/4 | 1-11/16 | - |
| 1 | 2-3/16 | - |



1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-00000.

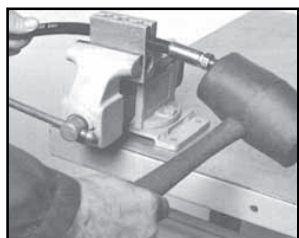


2. Mark hose for proper insertion depth into fitting. See page 14 for insertion depth table or use Insertion Depth marker 45J0-04603.



3. Lubricate inside hose diameter with SAE 20 oil or similar lightweight lubricant.

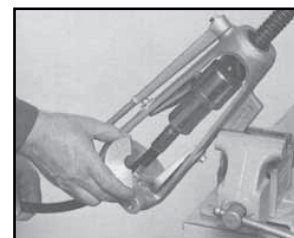
Consult Eaton Performance Plastics for oxygen system special assembly recommendations.



4. Insert hose into fitting to depth mark. (Use Vise Block 4504-00000 or 4504-01000 and rubber mallet to ease assembly.)



5. Insert the specified pusher with the pusher retainer in the raised position. Finger-tighten retaining screw to hold pusher firmly in place. Pusher must be allowed to rotate freely.



6. Place one die half into the base plate. **Lightly oil the inner surface of both die halves with SAE 90 gear oil. For stainless steel fittings use Swage Lubricant 4545-01001.**



7. Insert the assembled hose and fitting through the base plate and firmly into the pusher cavity. Place the other die half in base and lock into place by swinging clamps down firmly against top of dies. Rotate ball screw until fitting reaches the die.



8. With handle provided or 1-1/8 socket and ratchet, rotate screw CW until pusher bottom contacts top of die. Maintain pressure on ball screw and release die clamps. Slowly release pressure and rotate ball screw CCW until it is clear of the die. Remove swaged assembly.



Powering Business Worldwide

How to Assemble Reusable Hose Fittings

Use Synflex 3000, 3R80, 3E80, 37AL series only.

* Consult Eaton Training for oxygen system assembly recommendations.



1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted hose Cutter 4523-00000.

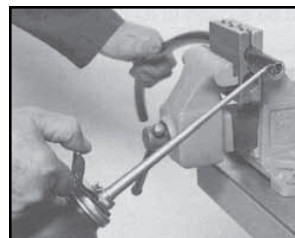
2. Use the table (to the right) to establish the length of hose that is inserted into the fitting socket.

Reusable Fitting Chart Insertion Depth Table

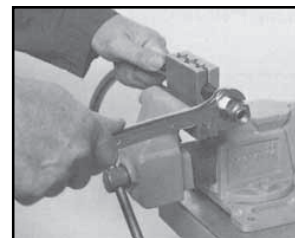
| Hose I.D. (in) | FITTING SERIES | |
|-------------------|----------------------------|---------|
| | INSERTION DEPTH (in) | |
| | 3901, 390J, 390K, 3908, | 3902 |
| 1/8 | 21/32 | - |
| 3/16 | 27/32 | 27/32 |
| 1/4 | 1 | 7/8 |
| 5/16 | 1-3/32 | 1-1/8 |
| 3/8 | 1-3/16 | 1-1/4 |
| 1/2 | 1-5/16 | 1-1/2 |
| 3/4 | 1-1/4 | 1-11/16 |
| 1 | 1-11/16 | - |



3. Use a rule for measurement and mark the hose with a colored pencil.
4. Insert hose into Vise Blocks (4504-0000 or 4504-01000) and tighten to hold hose firmly in place.



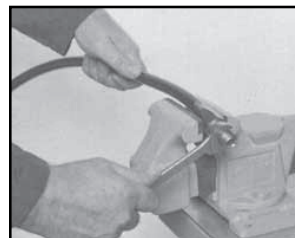
5. Lightly lubricate the outer surface of the hose to make it easier to push the fitting over the hose. For mild steel fittings and standard hose, use SAE 20 motor oil. For stainless steel fittings use Swage Lubricant 4545-01001*.



6. Push fitting socket over the lubricated hose and screw socket on by hand counterclockwise until the socket end is even with the depth mark. The end of the hose should be 3/32 inch to 1/16 inch from the inner shoulder of the fitting socket. It should NOT be bottomed against the shoulder. Do not over-tighten.



7. Remove hose and fitting assembly with Vise Blocks.
8. Place fitting socket in the vise and lubricate the mating fitting threads.



9. Screw the fitting insert clockwise into the socket with a wrench until the bottom of the insert hex contacts the socket shoulder. Do not over-tighten.



How to Separate Twin Line & Multi-Line Hose

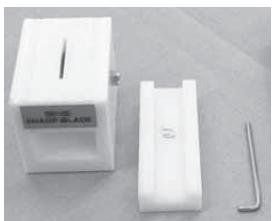
Synflex De-Twiner Die Reference Chart (4574-03000-xxx)

| Hose Product | Die* No. | Hose Product | Die* No. | Hose Product | Die* No. |
|--------------|----------|--------------|----------|--------------|----------|
| 3R30-03 | 27 | 30CT-04 | 3 | 3VE0-03 | 5 |
| 3R30-04 | 3 | 30CT-05 | 22 | 3VE0-04 | 16 |
| 3R30-06 | 10 | 30CT-06 | 11 | 3VE0-06 | 17 |
| 3R30-08 | 13 | 30CT-08 | 14 | | |
| | | | | 3840-03 | 18 |
| 3130-02 | 1 | 3360-03 | 2 | 3840-04 | 19 |
| 3130-03 | 2 | 3360-04 | 4 | 3840-06 | 20 |
| 3130-04 | 4 | 3360-05 | 23 | 3840-08 | 21 |
| 3130-05 | 8 | 3360-06 | 24 | | |
| 3130-06 | 11 | 3360-08 | 25 | 35NG-03 | 4 |
| 3130-08 | 13 | | | 35NG-04 | 26 |
| | | 3R80-04 | 9 | 35NG-06 | 12 |
| 3160-03 | 2 | 3R80-06 | 12 | 35NG-08 | 15 |
| 3160-04 | 4 | 3R80-08 | 15 | | |
| 3160-05 | 8 | 3E80-04 | 9 | 3V20-04 | 16 |
| 3160-06 | 11 | 3E80-06 | 12 | 3V20-06 | 17 |
| 3160-08 | 13 | 3E80-08 | 15 | | |
| | | | | 3251-08 | 6 |
| 37AL-03 | 2 | 3V10-03 | 5 | | |
| 37AL-04 | 3 | 3V10-04 | 16 | 31DW-04 | 5 |
| 37AL-05 | 7 | 3V10-06 | 17 | | |
| 37AL-06 | 10 | | | | |
| 37AL-08 | 13 | | | | |

*Die number stamped on end.

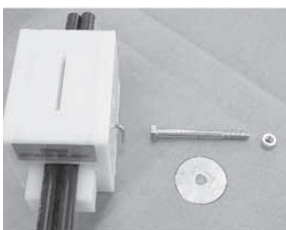
Instructions for using the Twin-Line Hose Separation Tool

CAUTION: Tool Contains a Sharp Blade. Do Not Put Your Hands or Objects Inside the Tool.



1. The De-Twiner tool 4574-01000 is designed to split twinned hose without any damage to the hose. Selecting the proper die is critical to operating this tool safely. The proper die can be selected from the attached chart. Customer service can assist in proper die selection. The hose should fit snugly in the die without any extra slop.
2. To insert the die into the tool, first remove the retainer pin. This pin should also fit snugly to prevent the die from moving. **DO NOT REACH INTO THE TOOL OR PUSH ANYTHING THROUGH THE TOOL TO REMOVE THE DIE!** The die extends out one side of the tool to allow ease of removal. Set the tool on its side with the long end of the die pointing up. Remove the die. Insert the new die from the same side and reset the pin.
3. Insert the assembled tool with die into a proper holding fixture (vise or other) and set stop at appropriate distance. The tool is cutting 2" before the exit end of the tool.
4. Apply a water soluble lubricant to the end of the first piece of product to be cut and slide it through the tool to the appropriate stop. Apply a few drops of lubricant to the end of each hose to be cut just before cutting. This will ease the cutting force and prolong blade life.

Blade Replacement



1. Replacement blades are available from Eaton Performance Plastics.
2. Use proper protective gear (cut resistant gloves) when replacing the blade. This blade is very sharp.
3. Remove blade retainer nut and slide out blade retainer bolt. Tip tool over and the blade should fall out from the top. **DO NOT TRY TO REMOVE IT FROM THE SLOT, THE MATERIAL SLIDES THROUGH.**
4. Insert new blade, bolt and nut. Tighten the locking nut only to the point that the bolt rotates as the product is cut. If it is too tight the blade and bolt will wear out prematurely.
5. The blade will last for thousands of cuts if properly installed and the operating procedures are followed correctly.

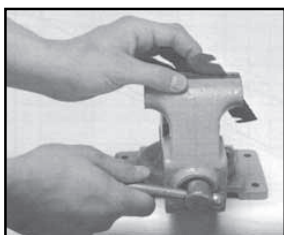




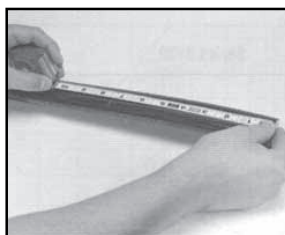
Powering Business Worldwide

How to Separate Twin Line & Multi-Line Hose

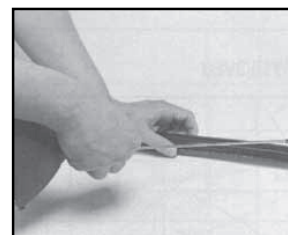
Instructions for using the Twin-Line Hose Separation Tool



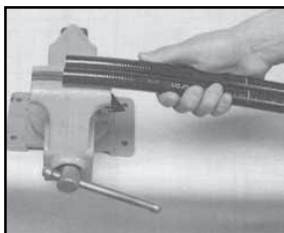
1. Remove the hose separation knife (Part Number 4573-00000) from the handle and place in a vise at a 45° angle to the top of the vise. Fasten securely in the vise jaws.



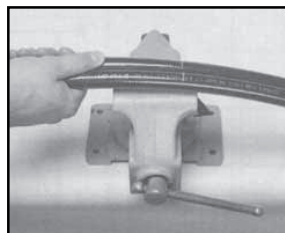
2. Measure and mark the distance to be separated.



3. Lightly lubricate the hoses on both sides at the connecting web with a soap solution or lubricating oil. This step reduces friction between the knife blade and hose cover surfaces, plus keeps the knife centered during the cutting step.



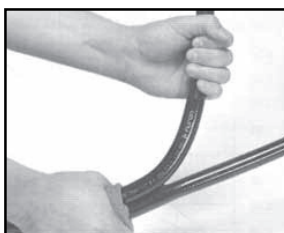
4. Push the hose into the "V" notch on the knife blade using a rocking motion to start the hoses into the blade.



5. Hold the hoses together and aligned with the blade while first pushing then pulling them to the mark, taking care not to cut the hose covers.



6. Remove the lubricant from the hoses and proceed with normal hose assembly.



7. Examine the hose cover material where the hoses were attached to ensure they have not been cut, or the reinforcement fiber exposed. If the hose covers shows signs of damage, the hose assembly should not be placed in service.