

The Eaton logo is displayed in white, bold, sans-serif capital letters against a blue background. The background of the entire top half of the page is a solid blue color with white line-art illustrations of various hydraulic and pneumatic components, including hoses, fittings, and valves, arranged in a grid-like pattern.

EATON

Synflex®

Mini Catalog

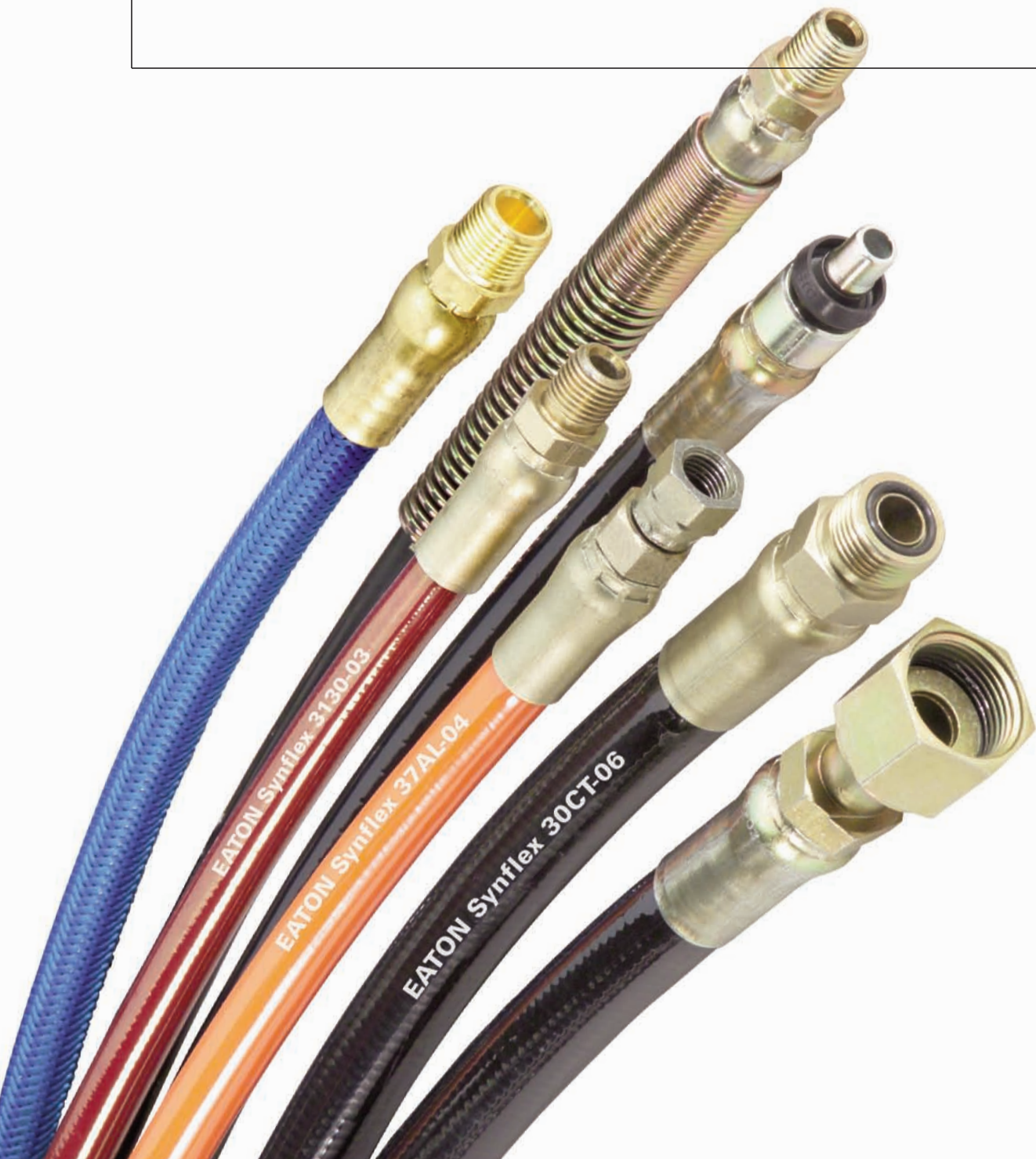


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Hose Selection Chart

Core 5 Hoses Only

Applications/Product

APPLICATIONS/ PRODUCT	Agriculture and Horticulture	Air Tools	Barber/ Dental/ Salon Chairs	Carpet Cleaners	Carwash	Chemical Transfer	Cooling/ Misting/Dust Suppression	Foam Systems	Food Processing	Forestry- Delimber	Gas Transfer	General Construction	Handicap/ Wheel Chair Lift	Hospital Surgical Beds/Tables
Hydraulic Hose														
3R30	✓	✓	✓		✓	✓	✓				✓		✓	✓
3130	✓		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
3580	✓									✓		✓		
30CT	✓									✓	✓	✓		
3R80	✓					✓			✓	✓	✓	✓		

Core 5 Hoses Only

Product

PRODUCT	General Hydraulic	Lubrication Systems	Machine Tools/ Robotics	Marine	Material Handling/ Forklifts	Nuclear	Off-Shore Exploration Construction	Paint Spray Systems	Pneumatic Systems	Pressure Washers	Recreational Vehicles (RVs)	Rental Construction Equipment	Rescue	Tree Trimmers	Utility, Municipalities	Water Jetter, Drain/Sewer
1. Hydraulic Hose																
3R30	✓										✓					✓
3130	✓	✓	✓	✓	✓				✓	✓	✓			✓		✓
3580	✓	✓	✓	✓	✓				✓		✓			✓	✓	
30CT	✓	✓	✓		✓						✓					
3R80	✓										✓		✓			

Hose

3R30 Low Pressure Hose

Meets SAE 100R3 Performance Specifications



PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MIN. BEND RADIUS		RECOMM'D WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB / KG		SWAGE DIE	PERMANENT FITTING
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	Part No. 4540	Steel Series*
3R30-03	3/16	4.8	.384	9.8	1	25	1,750	120	7,000	480	3.6	5.4	3W3	903
3R30-04	1/4	6.4	.487	12.4	1-1/4	32	1,500	103	6,000	414	5.3	7.9	3W4	903
3R30-06	3/8	9.5	.637	16.2	2	51	1,250	86	5,000	344	8.1	12.1	3W6	903
3R30-08	1/2	12.7	.818	20.8	3	76	1,000	69	4,000	276	14.1	21.0	308	903

*Steel fittings shown on pages 6-11. For stainless steel and Monel fitting availability, see hose fitting selection.

Features

- Low Volumetric Expansion
- Rugged Design

Applications

- Low Pressure Hydraulics (Hospital Beds)
- Hand Tools: Air Power Tools (Impact Tools, Nail Guns, Stapler Guns and Tire Inflation)
- Lubrication Systems
- High Pressure Pneumatic Systems
- Pressure Wash Hose
- Cooling Mist Systems

Construction

- Black Perforated Polyurethane Cover
- Spiraled Synthetic Fiber Reinforcement (-03 thru -06, -08 is braided)
- Nylon-Lined Core Tube

Temperature Range

- -40°F to 212°F (-40°C to 100°C) or to 150°F (66°C), With Water-Based or Fire Resistant Fluids

3130 Medium Pressure Hose

Meets SAE 100R7 Specifications



PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MIN. BEND RADIUS		RECOMM'D WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB / KG		SWAGE DIE	PERMANENT FITTING
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	Part No. 4540	Steel Series*
3130-02**	1/8	3.2	.335	8.5	1/2	13	2,500	172	10,000	689	2.5	3.7	302	903
3130-03	3/16	4.8	.427	10.8	3/4	19	3,000	207	12,000	827	4.6	6.8	303	903
3130-04	1/4	6.4	.510	13.0	1-1/4	32	3,000	207	12,000	827	5.7	8.5	304	903
3130-05	5/16	7.9	.594	15.1	1-3/4	44	2,500	172	10,000	689	6.9	10.3	305	903
3130-06	3/8	9.5	.669	17.0	2	51	2,250	155	9,000	620	9.5	14.1	306	903
3130-08	1/2	12.7	.816	20.7	3	76	2,000	138	8,000	552	14.1	21.0	308	903
3130-12	3/4	19.1	1.067	27.1	5	127	1,250	86	5,000	345	19.3	28.7	312	903
3130-16	1	25.4	1.340	34.0	8	203	1,000	69	4,000	276	26.4	39.3	316	903*

*Steel fittings shown on pages 6-11. For stainless steel and Monel fitting availability, see hose fitting selection.

**At safety factor

Features

- Long Continuous Lengths
- Low Elongation
- Best Value 100R7 Hose

Applications

- General Hydraulics
- Material Handling
- Forklift
- High Pressure Gas Transfer
- Chemical Transfer

Construction

- Black Perforated Polyurethane Cover
- Spiraled or Braided Synthetic Fiber Reinforcement
- Nylon-Lined Core Tube

Temperature Range

- -40°F to 212°F (-40°C to 100°C) or to 150°F (66°C), With Water-Based or Fire Resistant Fluids

Hose

3580 Medium Pressure Hose

Meets or exceeds SAE 100 R1 & R7 Performance Specifications
Steel Wire Reinforcement



PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MIN. BEND RADIUS		RECOMM'D WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB / KG		SWAGE DIE	PERMANENT FITTING
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	Part No. 4540	Steel Series*
3580-04	1/4	6.4	.485	12.3	1-3/4	44	3,500	241	14,000	965	10.3	15.3	3W4	903
3580-06	3/8	9.5	.645	16.4	2-1/4	57	3,250	224	13,000	896	18.1	26.9	306	903
3580-08	1/2	12.7	.765	19.4	3-1/4	83	3,000	207	12,000	828	20.7	30.8	308	903
3580-12	3/4	19.1	1.065	27.1	6	152	2,250	155	9,000	620	33.6	50.0	312	903

*Steel fittings shown on pages 6-11. For stainless steel and Monel fitting availability, see hose fitting selection.

Features

- Single Permanent Fitting Series Fits All Sizes
- SAE 100R7 Dimensions
- Cut Resistant – Heavy Duty Design
- Crush Resistant

Applications

- Lubrication Systems
- Mobile General Hydraulics
- Agriculture Equipment

Construction

- Black Polyurethane Non-Perforated Cover
- Braided Bronze Coated Steel Wire Reinforcement
- Polyester Core Tube

Temperature Range

- -40°F to 225° F (-40°C to 107°C) or to 140°F (60°C), With Water-Based or Fire Resistant Fluids

30CT Constant Pressure Hose

Meets or Exceeds SAE 100R18 Specifications



PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MIN. BEND RADIUS		RECOMM'D WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB / KG		SWAGE DIE	PERMANENT FITTING
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m	Part No.4540	Steel Series*
30CT-03	3/16	4.8	.420	10.7	1	25.4	3,000	207	12,000	828	5.3	7.9	303	903
30CT-04	1/4	6.4	.478	12.1	1-1/4	31.8	3,000	207	12,000	828	6.0	8.9	3W4	903
30CT-05	5/16	7.9	.610	15.5	1-1/2	38.1	3,000	207	12,000	828	9.9	14.7	305	903
30CT-06	3/8	9.5	.660	16.8	2	50.8	3,000	207	12,000	828	12.2	18.2	306	903
30CT-08	1/2	12.7	.850	21.5	3-1/2	88.9	3,000	207	12,000	828	16.6	24.6	A08	903
30CT-10	5/8	16.0	1.062	27.0	4	101.6	3,000	207	12,000	828	27.8	41.2	N10	90N

*Steel fittings shown on pages 6-11. For stainless steel and Monel fitting availability, see hose fitting selection.

Features

- Highly Flexible, Even in Cold Temperatures
- Small O.D.
- Lightweight, yet Rugged Construction

Applications

- Forklift
- Construction
- General Hydraulics
- Chemical and Gas Transfer
- Agricultural Equipment
- Material Handling
- Freezer Applications
- Machines Tools and Robotics
- Lubrication Equipment
- Portable Hydraulic Tools

Construction

- Black Non-Stick Perforated Polymeric Cover
- Braided Synthetic Fiber Reinforcement
- Polymeric Core Tube

Temperature Range

- -65°F to 200°F (-54°C to 94°C), With Water-Based or Fire Resistant Fluids

Hose

3R80 High Pressure Hose

Meets SAE 100R8 Specifications



PART NUMBER	NOMINAL I.D.		MAXIMUM O.D.		MINIMUM BEND RADIUS		RECOMMENDED WORKING PRESSURE		MINIMUM BURST PRESSURE		WEIGHT LB / KG		SWAGE DIE	PERMANENT FITTING	REUSABLE FITTING
	in	mm	in	mm	in	mm	psi	bar	psi	bar	100ft	100m			
3R80-03	3/16	4.8	.515	13.1	1-1/2	38	5,000	345	20,000	1,379	7.7	11.5	H03	90H	90J
3R80-04	1/4	6.4	.625	15.9	2	51	5,000	345	20,000	1,379	11.8	17.6	H04	90H	90J
3R80-06	3/8	9.5	.765	19.4	2-1/2	64	4,000	276	16,000	1,103	14.8	22.0	H06	90H	90J
3R80-08	1/2	12.7	.892	22.7	4	102	3,500	241	14,000	965	19.0	28.3	H08	90H	90J
3R80-12	3/4	19.1	1.138	28.9	6-1/2	165	2,250	155	9,000	620	25.6	38.1	H12	90H	90J
3R80-16	1	25.4	1.468	37.3	10	254	2,000	138	8,000	552	38.5	57.3	H16	90H	90J

*Steel fittings shown on pages 6-11. For stainless steel and Monel fitting availability, see hose fitting selection.

Features

- Long Life in Impulse Cycling and Flexing
- Designed for Permanent or Reusable Fittings

Applications

- General Hydraulic Systems
- Hydraulic Tools
- Mobile Equipment
- High Pressure Pneumatic Systems
- High Pressure Chemical Transfer

Construction

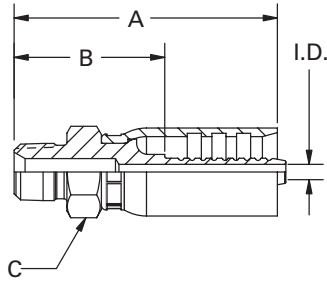
- Black Perforated Polyurethane Cover
- Braided Synthetic Fiber Reinforcement
- Nylon Core Tube

Temperature Range

- -40°F to 212° F (-40°C to 100°C) or to 150°F (66°C), With Water-Based or Fire Resistant Fluids

Permanent Attached Hose Fittings

Male Pipe Rigid

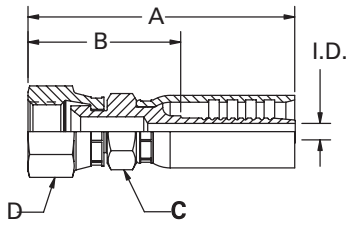


HOSE I.D.	PIPE SIZE	PART NUMBER		BORE I.D.	OVERALL LENGTH A	CUT OFF B	HEX C	FORMER PART NUMBER
		FITTING	PUSHER 4599					
1/8	1/8	90302-021000	MP023	.074	1.296	0.735	1/2	3903-02102
1/8	1/4	90302-041000	MP026	.074	1.481	0.92	5/8	3903-02104
3/16	1/8	90303-021000	MP001	.109	1.870	1.070	9/16	3903-03102
3/16	1/4	90303-041000	MP004	.109	2.057	1.257	11/16	3903-03104
3/16	3/8	90303-061000	MP005	.109	2.151	1.351	3/4	3903-03106
1/4	1/8	90304-021000	MP002	.156	2.120	1.040	5/8	3903-04102
1/4	1/4	90304-041000	MP004	.156	2.307	1.227	11/16	3903-04104
1/4	3/8	90304-061000	MP005	.156	2.401	1.321	3/4	3903-04106
1/4	1/2	90304-081000	MP009	.156	2.651	1.571	15/16	3903-04108
5/16	1/4	90305-041000	MP004	.219	2.307	1.182	11/16	3903-05104
5/16	3/8	90305-061000	MP005	.219	2.401	1.276	3/4	3903-05106
3/8	1/4	90306-041000	MP005	.281	2.589	1.339	3/4	3903-06104
3/8	3/8	90306-061000	MP005	.281	2.589	1.339	3/4	3903-06106
3/8	1/2	90306-081000	MP009	.281	2.839	1.589	15/16	3903-06108
1/2	1/4	90308-041000	MP008	.391	2.776	1.281	7/8	3903-08104
1/2	3/8	90308-061000	MP008	.391	2.776	1.281	7/8	3903-08106
1/2	1/2	90308-081000	MP009	.391	3.026	1.531	15/16	3903-08108
1/2	3/4	90308-121000	MP011	.391	3.026	1.531	1-1/8	3903-08112
3/4	1/2	90312-081000	MP011	.500	3.213	1.526	1-1/8	3903-12108
3/4	3/4	90312-121000	MP011	.625	3.213	1.526	1-1/8	3903-12112
1	1	90316-161000	MP013	.812	3.964	1.899	1-3/8	3903-16116
3/16	1/8	90H03-021000	MP001	.109	1.870	1-1/16	9/16	390H-03102
3/16	1/4	90H03-041000	MP004	.109	2.057	1-1/4	11/16	390H-03104
3/16	3/8	90H03-061000	MP005	.109	2.151	1-3/8	3/4	390H-03106
1/4	1/8	90H04-021000	MP002	.156	2.120	1-1/16	5/8	390H-04102
1/4	1/4	90H04-041000	MP004	.156	2.307	1-1/4	11/16	390H-04104
1/4	3/8	90H04-061000	MP005	.156	2.401	1-5/16	3/4	390H-04106
1/4	1/2	90H04-081000	MP009	.156	2.651	1-9/16	15/16	390H-04108
5/16	1/4	90H05-041000	MP004	.219	2.307	1-1/16	11/16	390H-05104
3/8	1/4	90H06-041000	MP005	.281	2.589	1-5/16	3/4	390H-06104
3/8	3/8	90H06-061000	MP005	.281	2.589	1-5/16	3/4	390H-06106
3/8	1/2	90H06-081000	MP009	.281	2.839	1-9/16	15/16	390H-06108
1/2	3/8	90H08-061000	MP008	.391	2.776	1-1/4	7/8	390H-08106
1/2	1/2	90H08-081000	MP009	.391	3.026	1-1/2	15/16	390H-08108
1/2	3/4	90H08-121000	MP011	.391	3.026	1-1/2	1-1/8	390H-08112
5/8	1/2	90H10-081000	MP011	.469	3.213	1-5/8	1-1/8	390H-10108
3/4	1/2	90H12-081000	MP011	.500	3.213	1-3/8	1-1/8	390H-12108
3/4	3/4	90H12-121000	MP011	.625	3.213	1-3/8	1-1/8	390H-12112
1	1	90H16-161000	MP013	.812	3.964	1-5/8	1-3/8	390H-16116
3/4	3/4	90N12-121000	MP011	.625	3.298	1-11/16	1-1/8	390N-12112
1	1	90N16-161000	MP013	.813	3.966	1-13/16	1-3/8	390H-16116

Shaded parts can be ordered, but are non-stock items.

Permanent Attached Hose Fittings

JIC 37° Swivel



Some Female swivels have double seats which make them compatible with either JIC 37° or SAE 45° male connectors.

Torque Values (in - lbs) for Steel Female Swivel Fittings

Size	Min.	Max.
4	50	150
5	70	200
6	90	300
8	150	500
10	220	700
12	300	1,000
16	450	1,400

The maximum torques listed are based upon strength rather than sealing properties. Use of any torque within the min-max range will prevent damage or leakage.

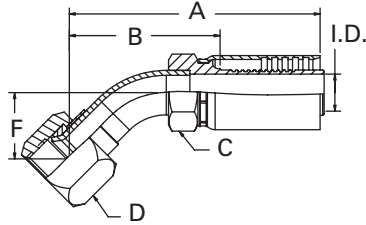
HOSE I.D.	DASH SIZE	THREAD	PART NUMBER		PUSHER 4599	BORE I.D.	OVERALL				FORMER PART NUMBER
			FITTING				LENGTH A	CUT OFF B	HEX C	HEX D	
1/8	-3	3/8-24	90302-035400		FP017	.078	1.613	1-7/16	1/2	9/16	3903-02543
1/8	-4	7/16-20	90302-045400		FP010	.078	1.676	1-1/16	1/2	5/8	3903-02544
1/8	-5	1/2-20	90302-055400		FP029	.078	1.675	1-1/16	1/2	3/4	3903-02545
3/16	-3	3/8-24	90303-035400		FP017	.109	2.151	1-5/16	9/16	9/16	3903-03543
3/16	-4	7/16-20	90303-045400		FP011	.109	2.151	1-3/8	9/16	5/8	3903-03544
3/16	-5	1/2-20	90303-055400		FP001	.109	2.151	1-3/8	9/16	3/4	3903-03545
1/4	-4	7/16-20	90304-045400		FP012	.156	2.526	1-7/16	5/8	5/8	3903-04544
1/4	-5	1/2-20	90304-055400		FP013	.156	2.526	1-7/16	5/8	3/4	3903-04545
1/4	-5	1/2-20	90304-055400		FP012	.156	2.526	1-7/16	5/8	5/8	3903-04545
1/4	-6	9/16-18	90304-065400		FP013	.156	2.526	1-7/16	5/8	3/4	3903-04546
5/16	-4	7/16-20	90305-045400		FP012	.219	2.526	1-7/16	5/8	5/8	3903-05544
5/16	-5	1/2-20	90305-055400		FP013	.219	2.683	1-1/4	5/8	3/4	3903-05545
5/16	-6	9/16-18	90305-065400		FP013	.219	2.683	1-3/8	5/8	3/4	3903-05546
3/8	-4	7/16-20	90306-045400		MP007	.281	2.808	1-1/4	13/16	5/8	3903-06544
3/8	-5	1/2-20	90306-055400		FP013	.234	2.808	1-1/4	3/4	3/4	3903-06545
3/8	-6	9/16-18	90306-065400		FP015	.281	2.964	1-1/2	3/4	3/4	3903-06546
3/8	-8	3/4-16	90306-085400		FP005	.281	3.151	1-3/8	3/4	15/16	3903-06548
3/8	-10	7/8-14	90306-105400		FP006	.281	3.151	1-1/2	7/8	1-1/16	3903-06550
1/2	-8	3/4-16	90308-085400		FP016	.391	3.245	1-5/8	7/8	15/16	3903-08548
1/2	-10	7/8-14	90308-105400		FP006	.391	3.432	1-5/8	7/8	1-1/16	3903-08550
1/2	-12	1-1/16-12	90308-125400		FP008	.391	3.432	1-5/8	1-1/8	1-1/4	3903-08552
3/4	-10	7/8-14	90312-105400		FP021	.484	3.494	1-5/8	1-1/8	1-1/16	3903-12550
3/4	-12	1-1/16-12	90312-125400		FP008	.625	3.494	1-5/8	1-1/8	1-1/4	3903-12552
3/4	-14	1-3/16-12	90312-145400		FP009	.625	3.499	1-11/16	1-3/8	1-1/2	3903-12554
3/4	-16	1-5/16-12	90312-165400		FP009	.625	3.500	1-11/16	1-3/8	1-1/2	3903-12556
1	-16	1-5/16-12	90316-165400		FP009	.812	4.057	1-11/16	1-3/8	1-1/2	3903-16556
3/16	-4	7/16-20	90H03-045400		FP011	.109	2.151	1-3/8	9/16	5/8	390H-03544
3/16	-5	1/2-20	90H03-055400		FP001	.109	2.151	1-3/8	9/16	3/4	390H-03545
1/4	-4	7/16-20	90H04-045400		FP012	.156	2.526	1-7/16	5/8	5/8	390H-04544
1/4	-5	1/2-20	90H04-055400		FP013	.156	2.526	1-7/16	5/8	3/4	390H-04545
1/4	-6	9/16-18	90H04-065400		FP013	.156	2.526	1-7/16	5/8	3/4	390H-04546
5/16	-6	9/16-18	90H05-065400		FP013	.219	2.526	1-1/4	5/8	3/4	390H-05546
3/8	-4	7/16-20	90H06-045400		MP007	.281	2.683	1-1/4	13/16	5/8	390H-06544
3/8	-5	1/2-20	90H06-055400		FP013	.234	2.683	1-1/4	3/4	3/4	390H-06545
3/8	-6	9/16-18	90H06-065400		FP015	.281	2.808	1-3/8	3/4	3/4	390H-06546
3/8	-8	3/4-16	90H06-085400		FP005	.281	2.808	1-3/8	3/4	15/16	390H-06548
3/8	-10	7/8-14	90H06-105400		FP006	.281	2.964	1-1/2	7/8	1-1/16	390H-06550
1/2	-8	3/4-16	90H08-085400		FP016	.391	3.151	1-5/8	7/8	15/16	390H-08548
1/2	-10	7/8-14	90H08-105400		FP006	.391	3.151	1-5/8	7/8	1-1/16	390H-08550
1/2	-12	1-1/16-12	90H08-125400		FP008	.391	3.245	1-5/8	1-1/8	1-1/4	390H-08552
5/8	-10	7/8-14	90H10-105400		FP021	.469	3.432	1-7/8	1-1/8	1-1/16	390H-10550
5/8	-12	1-1/16-12	90H10-125400		FP008	.469	3.432	1-7/8	1-1/8	1-1/4	390H-10552
3/4	-10	7/8-14	90H12-105400		FP021	.625	3.432	1-5/8	1-1/8	1-1/16	390H-12550
3/4	-12	1-1/16-12	90H12-125400		FP008	.625	3.432	1-5/8	1-1/8	1-1/4	390H-12552
3/4	-14	1-3/16-12	90H12-145400		FP009	.625	3.307	1-11/16	1-3/8	1-1/2	390H-12554
3/4	-16	1-5/16-12	90H12-165400		FP009	.625	3.494	1-11/16	1-3/8	1-1/2	390H-12556
1	-16	1-5/16-12	90H16-165400		FP009	.812	4.057	1-11/16	1-3/8	1-1/2	390H-16556
5/8	-10	7/8-14	90N10-105400		FP008	.469	3.470	1-7/8	1-1/8	1-1/16	390N-10550
5/8	-12	1-1/16-12	90N10-125400		FP021	.469	3.470	1-7/8	1-1/8	1-1/4	390N-10552
3/4	-10	7/8-14	90N10-125400		FP021	.484	3.486	1-3/4	1-1/8	1-1/16	390N-12550
3/4	-12	1-1/16-12	90N12-125400		FP008	.625	3.486	1-3/4	1-1/8	1-1/4	390N-12552
1	-16	1-5/16-12	90N16-165400		FP009	.812	4.062	1-3/4	1-3/8	1-1/2	390N-16556

Shaded parts can be ordered, but are non-stock items.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

Permanent Attached Hose Fittings

45° Bent Tube Female Swivel, JIC 37°



HOSE I.D.	DASH SIZE	THREAD	PART NUMBER		BORE I.D.	OVERALL LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART NO
			FITTING	PUSHER 4599							
3/16	-4	7/16-20	90303-045440	TP204	.109	2.298	1.498	9/16	9/16	.467	3903-03604
1/4	-4	7/16-20	90304-045440	TP204	.156	2.548	1.468	5/8	9/16	.467	3903-04604
1/4	-5	1/2-20	90304-055440	TP205	.156	2.640	1.560	5/8	5/8	.526	3903-04605
1/4	-6	9/16-18	90304-065440	TP206	.156	2.728	1.648	5/8	11/16	.588	3903-04606
5/16	-6	9/16-18	90305-065440	TP206	.219	2.728	1.603	5/8	11/16	.588	3903-05606
3/8	-6	9/16-18	90306-065440	TP206	.281	2.916	1.666	3/4	11/16	.588	3903-06606
3/8	-8	3/4-16	90306-085440	TP208	.281	3.097	1.847	3/4	7/8	.713	3903-06608
1/2	-8	3/4-16	90308-085440	TP308	.391	3.278	1.783	7/8	7/8	.713	3903-08608
1/2	-10	7/8-14	90308-105440	TP310	.391	3.455	1.960	7/8	1	.839	3903-08610
3/4	-12	1-1/16-12	90312-125440	TP312	.625	4.261	2.574	1-1/8	1-1/4	1.118	3903-12612
1	-16	1-5/15-12	90316-165440	TP316	.812	4.951	2.886	1-3/8	1-1/2	1.146	3903-16616
3/16	-4	7/16-20	90H03-045440	TP204	.109	2.298	1.498	9/16	9/16	.467	390H-03604
1/4	-4	7/16-20	90H04-045440	TP204	.156	2.548	1.468	5/8	9/16	.467	390H-04604
1/4	-5	1/2-20	90H04-055440	TP205	.156	2.640	1.560	5/8	5/8	.526	390H-04605
3/8	-6	9/16-18	90H06-065440	TP206	.281	2.916	1.666	3/4	11/16	.588	390H-06606
3/8	-8	3/4-16	90H06-085440	TP208	.281	3.097	1.847	3/4	7/8	.713	390H-06608
1/2	-8	3/4-16	90H08-085440	TP308	.391	3.278	1.783	7/8	7/8	.713	390H-08608
1/2	-10	7/8-14	90H08-105440	TP310	.391	3.455	1.960	7/8	1	.839	390H-08610
3/4	-12	1-1/16-12	90H12-125440	TP312	.625	4.261	2.574	1-1/8	1-1/4	1.118	390H-12612
1	-16	1-5/16-12	90H16-165440	TP316	.812	4.951	2.886	1-3/8	1-1/2	1.146	390H-16616

Shaded parts can be ordered, but are non-stock items.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

*Requires a 3/16" Shim

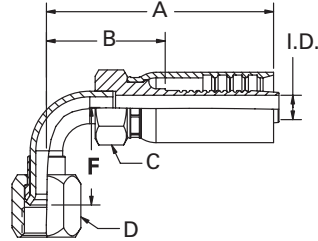
Permanent Attached Hose Fittings

Torque Values (in - lbs) for Bent Tube Fittings with Female Swivels

Size	Min.	Max.
4	37	112
5	52	150
6	67	225
8	112	375
10	165	525
12	225	750
16	337	1,050

The maximum torques listed are based upon strength rather than sealing properties. Use of any torque within the min-max range will prevent damage or leakage.

90° Short Bent Tube Female Swivel, JIC 37°



HOSE I.D.	DASH SIZE	THREAD	PART NUMBER FITTING	PUSHER 4599	BORE I.D.	OVERALL LENGTH A	CUT OFF B	HEX C	HEX D	DROP F	FORMER PART NO
1/8	-3	3/8-24	90302-0354S0	TP204	.078	1.545	0.984	1/2	7/16	.750	3903-02643
1/8	-4	7/16-20	90302-0454S0	SP038	.078	1.671	1.110	1/2	9/16	.875	3903-02644
3/16	-4	7/16-20	90303-0454S0	TP204	.109	2.120	1.320	9/16	9/16	.875	3903-03644
1/4	-4	7/16-20	90304-0454S0	TP204	.156	2.308	1.228	5/8	9/16	.875	3903-04644
1/4	-5	1/2-20	90304-0554S0	TP205	.156	2.370	1.290	5/8	5/8	1.000	3903-04645
1/4	-6	9/16-18	90304-0654S0	TP206	.156	2.432	1.352	5/8	11/16	1.125	3903-04646
5/16	-5	1/2-20	90305-0554S0	TP205	.219	2.370	1.245	5/8	5/8	1.000	3903-05645
5/16	-6	9/16-18	90305-0654S0	TP206	.219	2.495	1.370	5/8	11/16	1.125	3903-05646
3/8	-4	7/16-20	90306-0454S0	TP204	.156	2.501	1.251	3/4	9/16	.875	3903-06644
3/8	-6	9/16-18	90306-0654S0	TP206	.281	2.620	1.370	3/4	11/16	1.125	3903-06646
3/8	-8	3/4-16	90306-0854S0	TP208	.281	2.751	1.501	3/4	7/8	1.375	3903-06648
3/8	-10	7/8-14	90306-1054S0	TP310	.281	2.870	1.620	7/8	1	1.625	3903-06650
1/2	-8	3/4-16	90308-0854S0	TP308	.391	2.995	1.500	7/8	7/8	1.375	3903-08648
1/2	-10	7/8-14	90308-1054S0	TP310	.391	3.120	1.625	7/8	1	1.625	3903-08650
3/4	-10	7/8-14	90312-1054S0	TP312	.500	3.328	1.641	1-1/8	1	1.625	3903-12650
3/4	-12	1-1/16-12	90312-1254S0	TP312	.625	3.870	2.183	1-1/8	1-1/4	2.312	3903-12652
3/4	-12	1-3/16-12	90312-1454S0	TP314	.625	4.115	2.428	1-1/4	1-3/8	2.500	3903-12654
3/4	-16	1-5/16-12	90312-1654S0	TP314	.625	4.117	2.43	1-1/4	1-1/2	2.500	3903-12656
1	-12	1-1/16-12	90316-1254S0	TP316	.578	4.438	2.373	1-3/8	1-1/4	2.312	3903-16652
1	-16	1-5/16-12	90316-1654S0	TP316	.812	4.683	2.618	1-3/8	1-1/2	2.500	3903-16656
3/16	-4	7/16-20	90H03-0454S0	TP204	.109	2.120	1.320	9/16	9/16	.875	390H-03644
1/4	-4	7/16-20	90H04-0454S0	TP204	.156	2.308	1.228	5/8	9/16	.875	390H-04644
1/4	-5	1/2-20	90H04-0554S0	TP205	.156	2.370	1.290	5/8	5/8	1.000	390H-04645
1/4	-6	9/16-18	90H04-0654S0	TP206	.156	2.432	1.352	5/8	11-1/16	1.125	390H-04646
5/16	-6	9/16-18	90H05-0654S0	TP206	.219	2.495	1.370	5/8	11/16	1.125	390H-05646
3/8	-4	7/16-20	90H06-0454S0	TP204	.156	2.501	1.251	3/4	9/16	.875	390H-06644
3/8	-6	9/16-18	90H06-0654S0	TP206	.281	2.620	1.370	3/4	11/16	1.125	390H-06646
3/8	-8	3/4-16	90H06-0854S0	TP208	.281	2.751	1.501	3/4	7/8	1.375	390H-06648
3/8	-10	7/8-14	90H06-1054S0	TP310	.281	2.870	1.620	7/8	1	1.625	390H-06650
1/2	-8	3/4-16	90H08-0854S0	TP308	.391	2.995	1.500	7/8	7/8	1.375	390H-08648
1/2	-10	7/8-14	90H08-1054S0	TP310	.391	3.120	1.625	7/8	1	1.625	390H-08650
5/8	-12	1-1/16-12	90H10-1254S0	TP312	.469	3.870	2.298	1-1/8	1-1/4	2.312	390H-10652
3/4	-10	7/8-14	90H12-1054S0	TP312	.625	3.328	1.641	1-1/8	1	1.625	390H-12650
3/4	-12	1-1/16-12	90H12-1254S0	TP312	.625	3.870	2.183	1-1/8	1-1/4	2.312	390H-12652
3/4	-14	1-3/16-12	90H12-1454S0	TP314	.625	4.115	2.428	1-1/4	1-3/8	2.500	390H-12654
3/4	-16	1-5/16-12	90H12-1654S0	TP316	.625	4.117	2.430	1-1/4	1-1/2	2.500	390H-12656
16	-12	1-1/16-12	90H16-1254S0	TP316	.578	4.438	2.373	1-3/8	1-1/4	2.312	390H-16652
1	-16	1-5/16-12	90H16-1654S0	TP316	.812	4.683	2.618	1-3/8	1-1/2	2.500	390H-16656

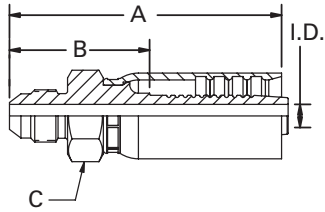
Shaded parts can be ordered, but are non-stock items.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

*Requires a 3/16" Shim

Permanent Attached Hose Fittings

JIC 37° Male Rigid



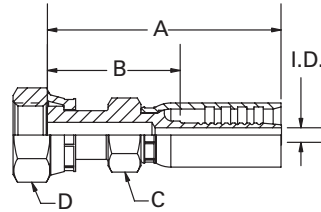
HOSE I.D.	PIPE SIZE	THREAD DIMENSION	PART NUMBER		BORE I.D.	OVERALL LENGTH A	CUT OFF B	HEX C	FORMER PART NO
			FITTING	PUSHER 4599					
3/16	-3	3/8-24	90303-035000	MP001	1.974	1.174	15/16	9/16	3903-03503
3/16	-4	7/16-20	90303-045000	MP001	2.045	1.245	1-1/4	9/16	3903-03504
1/4	-4	7/16-20	90304-045000	MP002	2.295	1.215	1-1/4	5/8	3903-04504
1/4	-5	1/2-20	90304-055000	MP002	2.295	1.215	1-1/4	5/8	3903-04505
1/4	-6	9/16-18	90304-065000	MP005	2.395	1.315	1.320	3/4	3903-04506
5/16	-5	1/2-20	90305-055000	MP002	2.295	1.170	1-1/16	5/8	3903-05505
5/16	-6	9/16-18	90305-065000	MP004	2.301	1.176	1-5/16	11/16	3903-05506
3/8	-5	1/2-20	90306-055000	MP005	2.577	1.327	1-5/16	3/4	3903-06505
3/8	-6	9/16-18	90306-065000	MP005	2.583	1.333	1-3/8	3/4	3903-06506
3/8	-8	3/4-16	90306-085000	MP007	2.684	1.434	1-3/8	13/16	3903-06508
1/2	-8	3/4-16	90308-085000	MP008	2.871	1.376	1-7/16	7/8	3903-08508
1/2	-10	7/8-14	90308-105000	MP009	3.043	1.539	1-7/16	15/16	3903-08510
1/2	-12	1-1/16-12	90308-125000	MP011	3.140	1.654	1-1/2	1-1/8	3903-08512
3/4	-12	1-1/16-12	90312-125000	MP011	3.327	1.640	1-1/2	1-1/8	3903-12512
3/4	-14	1-3/16-12	90312-145000	MP014	3.353	1.666	1-9/16	1-1/4	3903-12514
3/4	-16	1-5/16-12	90312-165000	MP013	3.374	1.687	1-9/16	1-3/8	3903-12516
1	-16	1-5/16-12	90316-165000	MP013	3.937	1.872	1-5/8	1-3/8	3903-16516
3/16	-4	7/16-20	90H03-045000	MP001	2.045	1.245	1-1/4	9/16	390H-03504
1/4	-4	7/16-20	90H04-045000	MP002	2.295	1.215	1-1/4	5/8	390H-04504
1/4	-5	1/2-20	90H04-055000	MP002	2.295	1.215	1-1/4	5/8	390H-04505
1/4	-6	9/16-18	90H04-065000	MP005	2.395	1.315	1-5/16	3/4	390H-04506
3/8	-6	9/16-18	90H06-065000	MP005	2.583	1.333	1-1/8	3/4	390H-06506
3/8	-8	3/4-16	90H06-085000	MP007	2.684	1.434	1-1/4	13/16	390H-06508
1/2	-8	3/4-16	90H08-085000	MP008	2.871	1.376	1-1/4	7/8	390H-08508
1/2	-10	7/8-14	90H08-105000	MP009	3.034	1.539	1-1/2	15/16	390H-08510
1/2	-12	1-1/16-12	90H08-125000	MP011	3.140	1.645	1-1/2	1-1/8	390H-08512
3/4	-12	1-1/16-12	90H12-125000	MP011	3.327	1.640	1-1/2	1-1/8	390H-12512
3/4	-14	1-3/16-12	90H12-145000	MP014	3.353	1.666	1-9/16	1-1/4	390H-12514

Shaded parts can be ordered, but are non-stock items.

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Permanent Attached Hose Fittings

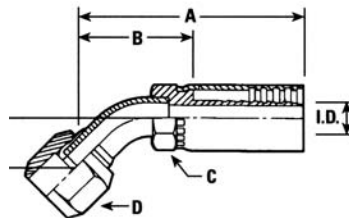
Straight with Female Swivel, O-Ring Face Seal



HOSE I.D.	DASH SIZE	THREAD	PART NUMBER			OVERALL		HEX C	HEX D	FORMER PART NO
			FITTING	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B			
1/8	-4	9/16-18	90302-044000	MP045	.078	1.780	1.219	5/8	11/16	3903-02404
1/4	-4	9/16-18	90304-044000	MP045	0.156	2.600	1.520	5/8	11/16	3903-04404
5/16	-4	9/16-18	90305-044000	MP045	.219	2.600	1.475	5/8	11/16	3903-05404
5/16	-6	11/16-16	90305-064000	MP037	.375	2.670	1.545	5/8	13/16	3903-05406
3/8	-6	11/16-16	90306-064000	SP031	.272	2.690	1.44	3/4	7/8	3903-06406
3/8	-8	13/16-16	90306-084000	MP046	.272	3.038	1.788	3/4	15/16	3903-06408
1/2	-8	13/16-16	90308-084000	FP040	.382	3.060	1.565	15/16	1-1/16	3903-08408
3/4	-12	1-3/16-12	90312-124000	MP039	.610	3.642	1.955	1-1/8	1-3/8	3903-12412
1	-16	1-7/16-12	90316-164000	MP042	.811	4.360	2.170	1-3/8	1-5/8	3903-16416
1/4	-4	9/16-18	90H04-044000	MP045	.156	2.600	1.520	5/8	11/16	390H-04404
3/8	-6	11/16-16	90H06-064000	SP031	.272	2.690	1.440	3/4	7/8	390H-06406
1/2	-8	13/16-16	90H08-084000	FP040	.382	3.060	1.565	7/8	1-1/16	390H-08408
1/2	-10	1-14	90H08-104000	TP310	.382	3.325	1.830	7/8	1-1/8	390H-08410
5/8	-10	1-14	90H10-104000	TP312	.469	3.632	2.060	1-1/8	1-1/8	390H-10410
5/8	-12	1-3/16-12	90H10-124000	MP039	.469	3.642	2.070	1-1/8	1-3/8	390H-10412
3/4	-12	1-3/16-12	90H12-124000	MP039	.610	3.642	1.995	1-1/8	1-3/8	390H-12412
1	-16	1-7/16-12	90H16-164000	MP042	.811	4.360	2.170	1-3/8	1-5/8	390H-16416

Shaded parts can be ordered, but are non-stock items.

Female Swivel, 45° Elbow, O-Ring Face Seal



HOSE I.D.	DASH SIZE	THREAD	PART NUMBER			OVERALL		HEX C	HEX D	DROP F	FORMER PART NO
			FITTING	PUSHER 4599	BORE I.D.	LENGTH A	CUT OFF B				
1/8	-4	9/16-18	90302-044040	TP204*	.078	1.963	1-5/16	1/2	11/16	.409	3903-02444
1/4	-4	9/16-18	90304-044040	TP204	.156	2.551	1-1/2	5/8	11/16	.409	3903-04444
5/16	-4	9/16-18	90305-044040	TP204	.219	2.610	1-7/16	5/8	11/16	.409	3903-05444
5/16	-6	11/16-16	90305-064040	TP206	.219	2.632	1-1/2	5/8	13/16	.429	3903-05446
3/8	-6	11/16-16	90306-064040	TP206	.281	2.825	1-1/2	3/4	13/16	.429	3903-06446
1/2	-8	13/16-16	90308-084040	TP308	.391	3.315	1-3/4	7/8	15/16	.590	3903-08448
3/4	-12	1-3/16-12	90302-124040	TP312	.625	3.980	2-1/4	1-1/8	1-3/8	.831	3903-12452
1/4	-4	9/16-18	90H04-044040	TP204	.156	2.551	1-1/2	5/8	11/16	.409	390H-04444
3/8	-6	11/16-16	90H06-064040	TP206	.281	2.825	1-1/2	3/4	13/16	.429	390H-06446
1/2	-8	13/16-16	90H08-084040	TP308	.391	3.315	1-3/4	7/8	15/16	.590	390H-08448
3/4	-12	1-3/16-12	90H12-124040	TP312	.625	3.980	2-1/4	1-1/8	1-3/8	.831	390H-12452

Shaded parts can be ordered, but are non-stock items.

Fittings are manufactured from plated steel. Dimensions are in inches unless otherwise specified.

*Requires a 3/16" Shim

Hose Fitting Swaging Machines and Tools

SST



Designed to Attach Synflex Permanent Fittings to Synflex Hose

- Synflex swaging equipment produces smooth, uniform fitting surfaces, without raised edges or ridges common in other fitting methods.
- Complete range of fitting swaging pushers and dies, up to -16 size are ordered separately.

SST

Part Number: 4530-01002

- Portable hand operated machine for field assembly

Frame can be attached to bench vise or directly to a table with separate mounting bracket

Weight: 8 lbs (3.6kg)

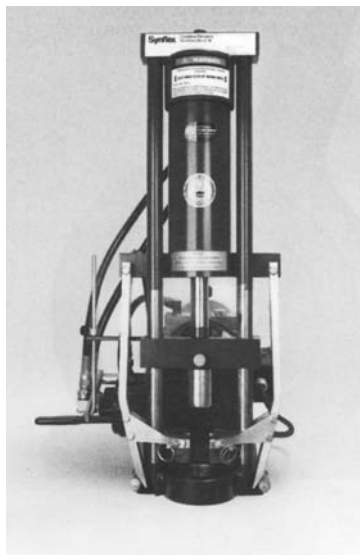
Carrying Case



Carrying Case for Portable Hand Swager SST

Part No: 45J0-04300

Mark IX



Mark IX

- Fully automatic; opens dies to release completed fitting assembly
- Fast actuation; capable of 5-second cycle time
- Three power supply options for a broad range of production needs
- Weight: 131 lbs (59.4kg). (option 1&2)

Option 1

1HP, 60Hz, 115/208/230V Single Phase Motor; Medium Duty; Part Number: 4530-009S0

Option 2

1HP, 60 Hz, 230/460 V Three Phase Motor; Medium Duty; Part Number: 4530-009S1

Option 3

- For Heavy Duty, continuous high speed production assembly, the Mark IX (a) can be equipped with a high capacity power unit (b)
- (a) Mark IX swaging machine without standard power supply. Part Number: 4530-009S4
- (b) Commercial duty hydraulic power unit with 5HP three phase 230/460 volt motor, 5 gallon reservoir; 4.1 GPM displacement. Part Number: 453C-00020

Pushers, Dies

Pushers



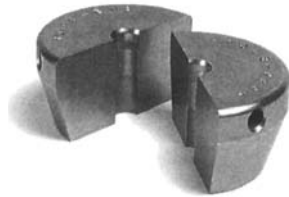
Pushers

- Pusher selection is based on fitting end design chosen from assembly. Pusher part numbers are listed in the Permanent Fitting Tables on pages 6-11.

Example:

- To attach a 3/8 inch I.D. hose to a JIC 37° Female Swivel fitting with a -6 thread size Part Number 90306-065400, page 2, use pusher Part Number 4599-FP015

Dies



Dies

- Swaging dies are applied in paired sets. Die selection is based on hose series and size. Die part numbers are listed in hose specification charts.

Example:

- To attach fitting Part Number 90306-065400 to a series 3130 3/8 inch I.D. hose, die Part Number 4540-306 is selected from the table in pages 3-5.

Die Pusher Storage Rack



Die Pusher Storage Rack

- Rack holds 12 pushers and 8 dies. Welded 16 gauge steel frame can be wall mounted or used on bench top. Rack is 19 inches wide; 22-1/2 inches high; extends 3 inches from mounting surface.

Part Number: 45J0-03401

How to Assemble Permanent Hose Fittings

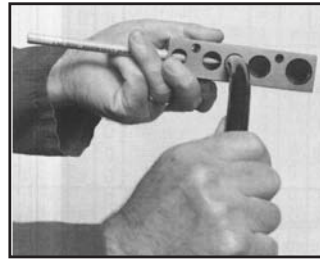
Instructions for using the Synflex Mark IX Swaging Machines

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	-



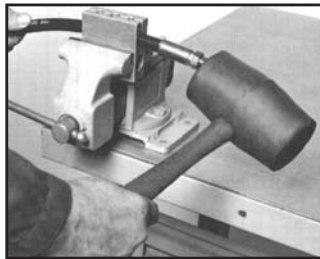
1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-00000.



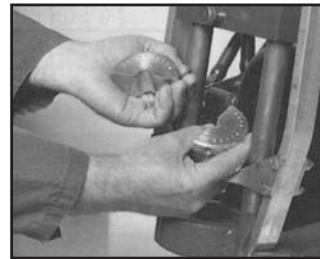
2. Mark hose for proper insertion depth into fitting. Use insertion depth chart or use Insertion Depth marker 45J0-04603.



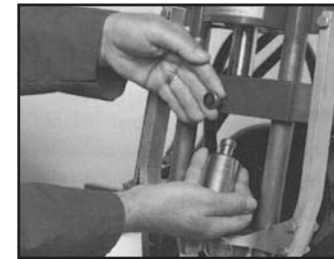
3. Oil inside hose diameter with SAE 20 oil.
Consult Eaton Performance Plastics for oxygen system special assembly recommendations.



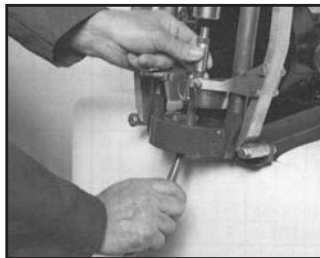
4. Insert hose into fitting to depth mark. (Use Vise Block 4504-00000 or 4504-01000 and rubber mallet to ease assembly.)



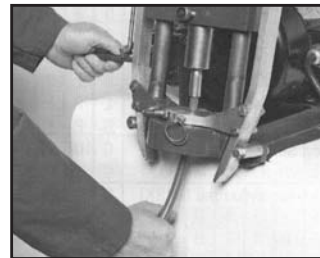
5. Insert the specified die and pusher into the swaging machine.



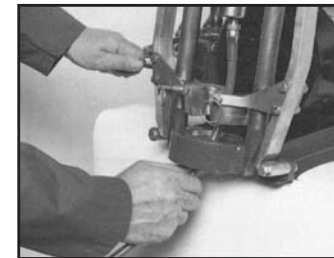
Lubricate die swaging surface with SAE 90 gear oil. For stainless steel fittings use Swage Lubricant 4545-01001.



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.

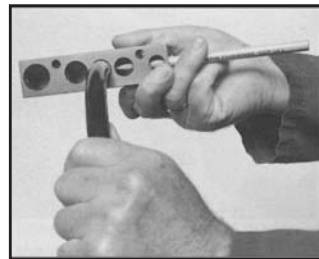
Instructions for using the Synflex SST Swaging Tool

The SST may be used in several ways:

- Clamp it by the “ear” in a vise.
- Lay it on the floor with reaction arm in place.
- Bolt it upright on your workbench using bench mounting bracket 4530-CP216.



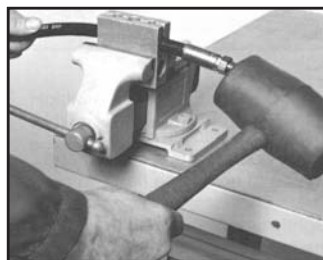
1. Cut hose squarely with Hand-Held Hose Cutter 4523-04006 or Bench-Mounted Hose Cutter 4523-00000.



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 retainers in the raised position. Fingertighten 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.

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