

# ILE Buyer's Guide

A Complete Line of Industrial Lubrication Equipment



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# Graco Pumps-at-a-Glance

## Selecting the Right Pump is Easy!

Choose your pump based on the system metering device, power source and fluid type.



= Series Progressive



= Single Line Parallel



= Single Line Resistive

| Graco Pump           | Metering Device |     |     | Power Source |    |           |           |        |            | Fluid Type          |
|----------------------|-----------------|-----|-----|--------------|----|-----------|-----------|--------|------------|---------------------|
|                      | SP              | SLP | SLR | AC           | DC | Pneumatic | Hydraulic | Manual | Mechanical |                     |
| Dyna-Star®           | •               | •   |     | •            | •  |           | •         |        |            | Grease              |
| E-Series™            | •               |     |     |              |    | •         |           |        |            | Oil or grease       |
| G1™                  | •               |     |     | •            | •  |           |           |        |            | Oil or grease       |
| G3™                  | •               | •   |     | •            | •  |           |           |        |            | Oil or grease       |
| Injecto-Flo®         | •               | •   |     | •            |    | •         |           |        |            | Oil                 |
| Injecto-Flo® II      |                 | •   |     | •            |    |           |           |        |            | Oil or fluid grease |
| LubeMaster®          | •               |     |     | •            | •  |           |           |        | •          | Oil or grease       |
| LubePro™             | •               | •   |     |              |    | •         |           |        |            | Oil or grease       |
| LubriSystem®         |                 | •   |     |              |    | •         |           | •      |            | Oil or grease       |
| Manual Grease Gun    | •               | •   | •   |              |    |           |           | •      |            | Oil or grease       |
| Maxi-Flo®            | •               |     |     | •            |    |           |           |        |            | Oil                 |
| Meter-Flo®           | •               |     |     | •            |    |           |           |        |            | Oil                 |
| Miniature Meter-Flo® | •               |     |     | •            |    |           |           |        |            | Oil                 |
| Modu-Flo®            | •               |     |     | •            | •  | •         | •         |        |            | Oil or grease       |
| MSA™                 | •               |     |     |              |    | •         |           |        |            | Oil or grease       |
| PH Pump              | •               |     |     |              |    |           |           | •      |            | Oil or grease       |
| Thrif-T Luber®       |                 |     | •   | •            |    |           |           | •      |            | Oil                 |

# Electric Pumps

## G1™ Pumps

### Simple Solution. Sophisticated Results.

Choose the user-friendly Graco G1 Pump where you need a reliable, simple alternative to manual lubrication. Work smarter and get better productivity from your equipment and maintenance staff with G1 Series lubrication pumps.

### Features and Benefits

- Choice of 2, 4, or 8 liter reservoirs for oil or grease. Size to match your system needs.
- Connect to DC (12 or 24v) and AC (90-240v) power sources with CPC or DIN-style connectors for easy, no hassle installations
- Available with stirring paddle and wiper arm to keep material from separating. Optional follower plate ensures grease stays level for extreme angle installations.
- G1 comes with one pump element installed that reliably delivers lubricant when you need it
- G1 Standard™ has no internal controller for a low cost solution. G1 Plus™ has built-in on/off timer with optional low level feature that shuts down the pump when empty. Manual run initiates lube cycles on-demand with the option for remote control.

### Typical Applications

- On-Road Lubrication
- Off-Road Lubrication
- Series Progressive Lubrication

### Lubrication Used

- Oil
- NLGI #000 to NLGI #2

### Technical Specifications

|                                  |                                                     |
|----------------------------------|-----------------------------------------------------|
| Max Pressure . . . . .           | 5,100 psi (352 bar)                                 |
| Power . . . . .                  | 12 VDC, 24 VDC, 90-240 VAC                          |
| Operating Temperature . . . . .  | -40° F to 158° F (-40° C to 70° C)                  |
| Reservoir Size. . . . .          | .2, 4 or 8 liter                                    |
| Maximum Run Time . . . . .       | 30 minutes                                          |
| Control Options. . . . .         | Standard or Plus                                    |
| Output per Element /Min. . . . . | 0.25 in. <sup>3</sup> (4 cm <sup>3</sup> ) / minute |
| IP Rating . . . . .              | IP69K                                               |
| Instruction Manual . . . . .     | 332316                                              |



G1 Standard



G1 Plus

# Electric Pumps

## G1™ Pumps and Accessories



### G1 Standard

Comes standard with no controller for use with separate or existing machine control for a low cost solution. Capable of sending a low level signal to your external controller or PLC with the low level option.

|             |        | Reservoir Size | Part Number | Voltage    | Wiper Arm | Follower Plate | External Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|-----------|----------------|--------------------|------------------|
| Application | Grease | 2 liter        | 94G006      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G009      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G018      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G021      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G036      | 24 VDC     | •         |                |                    | DIN              |
|             |        |                | 94G039      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 94G063      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 94G066      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 94G069      | 90-240 VAC |           | •              | •                  | DIN              |
|             |        | 4 liter        | 94G007      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G010      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G019      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G022      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G037      | 24 VDC     | •         |                |                    | DIN              |
|             |        |                | 94G040      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 94G064      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 94G067      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 94G070      | 90-240 VAC |           | •              | •                  | DIN              |
|             |        | 8 liter        | 94G008      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G011      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G020      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 94G023      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 94G038      | 24 VDC     | •         |                |                    | DIN              |
|             |        |                | 94G041      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 94G065      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 94G068      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 94G071      | 90-240 VAC |           | •              | •                  | DIN              |



# Electric Pumps

## G1™ Pumps and Accessories

### G1 Standard (continued)

|             | Reservoir Size | Part Number | Voltage | Wiper Arm  | Follower Plate | External Low Level | Power Connection |
|-------------|----------------|-------------|---------|------------|----------------|--------------------|------------------|
| Application | Oil            | 2 liter     | 94G042  | 24 VDC     |                |                    | DIN              |
|             |                |             | 94G045  | 24 VDC     |                | •                  | DIN              |
|             |                |             | 94G072  | 90-240 VAC |                |                    | DIN              |
|             |                |             | 94G075  | 90-240 VAC |                | •                  | DIN              |
|             |                | 4 liter     | 94G043  | 24 VDC     |                |                    | DIN              |
|             |                |             | 94G046  | 24 VDC     |                | •                  | DIN              |
|             |                |             | 94G073  | 90-240 VAC |                |                    | DIN              |
|             |                |             | 94G076  | 90-240 VAC |                | •                  | DIN              |
|             | 8 liter        |             | 94G044  | 24 VDC     |                |                    | DIN              |
|             |                |             | 94G047  | 24 VDC     |                | •                  | DIN              |
|             |                |             | 94G074  | 90-240 VAC |                |                    | DIN              |
|             |                |             | 94G077  | 90-240 VAC |                | •                  | DIN              |

### G1 Standard Power Cables

|        |                            |
|--------|----------------------------|
| 127783 | 15' - 3 wire CPC connector |
| 16U790 | 15' - DIN connector        |



### G1 Plus

Built-in controller with selectable pump on/pump off timer comes with local manual run and password protection. Optional low level sensing and shut-down available, as well as remote manual run when adding the 5 wire CPC cable and remote push button accessories.

|             | Reservoir Size | Part Number | Voltage | Remote Manual Run* | Wiper Arm | Follower Plate | External Low Level <sup>1</sup> | Low Level | Power Connection |
|-------------|----------------|-------------|---------|--------------------|-----------|----------------|---------------------------------|-----------|------------------|
| Application | Grease         | 2 liter     | 94G000  | 12 VDC             | •         | •              |                                 |           | CPC              |
|             |                |             | 94G003  | 12 VDC             | •         | •              | •                               | •         | CPC              |
|             |                |             | 94G012  | 24 VDC             | •         | •              |                                 |           | CPC              |
|             |                |             | 94G015  | 24 VDC             | •         | •              | •                               | •         | CPC              |
|             |                |             | 94G024  | 24 VDC             |           | •              |                                 |           | DIN              |
|             |                |             | 94G027  | 24 VDC             |           | •              |                                 | •         | DIN              |
|             |                |             | 94G048  | 90-240 VAC         |           | •              |                                 |           | DIN              |
|             |                |             | 94G051  | 90-240 VAC         |           | •              |                                 | •         | DIN              |
|             |                |             | 94G054  | 90-240 VAC         |           |                | •                               | •         | DIN              |

\* = Requires use of the 5 wire CPC cable and remote push button accessory.

1 = External Low Level indicated on Remote Manual Run accessory when using 5 wire CPC cable and remote push button accessory.

# Electric Pumps

## G1™ Pumps and Accessories

### G1 Plus (continued)

|             |        | Reservoir Size | Part Number | Voltage    | Remote Manual Run* | Wiper Arm | Follower Plate | External Low Level <sup>1</sup> | Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|--------------------|-----------|----------------|---------------------------------|-----------|------------------|
| Application | Grease | 4 liter        | 94G001      | 12 VDC     | •                  | •         |                |                                 |           | CPC              |
|             |        |                | 94G004      | 12 VDC     | •                  | •         |                | •                               | •         | CPC              |
|             |        |                | 94G013      | 24 VDC     | •                  | •         |                |                                 |           | CPC              |
|             |        |                | 94G016      | 24 VDC     | •                  | •         |                | •                               | •         | CPC              |
|             |        |                | 94G025      | 24 VDC     |                    | •         |                |                                 |           | DIN              |
|             |        |                | 94G028      | 24 VDC     |                    | •         |                |                                 | •         | DIN              |
|             |        |                | 94G049      | 90-240 VAC |                    | •         |                |                                 |           | DIN              |
|             |        |                | 94G052      | 90-240 VAC |                    | •         |                |                                 | •         | DIN              |
|             |        |                | 94G055      | 90-240 VAC |                    |           | •              |                                 | •         | DIN              |
|             |        | 8 liter        | 94G002      | 12 VDC     | •                  | •         |                |                                 |           | CPC              |
|             |        |                | 94G005      | 12 VDC     | •                  | •         |                | •                               | •         | CPC              |
|             |        |                | 94G014      | 24 VDC     | •                  | •         |                |                                 |           | CPC              |
|             |        |                | 94G017      | 24 VDC     | •                  | •         |                | •                               | •         | CPC              |
|             |        |                | 94G026      | 24 VDC     |                    | •         |                |                                 |           | DIN              |
|             |        |                | 94G029      | 24 VDC     |                    | •         |                |                                 | •         | DIN              |
|             |        |                | 94G050      | 90-240 VAC |                    | •         |                |                                 |           | DIN              |
|             |        |                | 94G053      | 90-240 VAC |                    | •         |                |                                 | •         | DIN              |
|             |        |                | 94G056      | 90-240 VAC |                    |           | •              |                                 | •         | DIN              |
|             | Oil    | 2 liter        | 94G030      | 24VDC      |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G033      | 24VDC      |                    |           |                |                                 | •         | DIN              |
|             |        |                | 94G057      | 90-240 VAC |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G060      | 90-240 VAC |                    |           |                |                                 | •         | DIN              |
|             |        | 4 liter        | 94G031      | 24VDC      |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G034      | 24VDC      |                    |           |                |                                 | •         | DIN              |
|             |        |                | 94G058      | 90-240 VAC |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G061      | 90-240 VAC |                    |           |                |                                 | •         | DIN              |
|             |        | 8 liter        | 94G032      | 24VDC      |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G035      | 24VDC      |                    |           |                |                                 | •         | DIN              |
|             |        |                | 94G059      | 90-240 VAC |                    |           |                |                                 |           | DIN              |
|             |        |                | 94G062      | 90-240 VAC |                    |           |                |                                 | •         | DIN              |

\* = Requires use of the 5 wire CPC cable and remote push button accessory.

1 = External Low Level indicated on Remote Manual Run accessory when using 5 wire CPC cable and remote push button accessory.

### G1 Plus Power Cables

|        |                                |
|--------|--------------------------------|
| 127783 | 15 foot - 3 wire CPC connector |
| 127780 | 15 foot - 5 wire CPC connector |
| 127781 | 20 foot - 5 wire CPC connector |
| 127782 | 30 foot - 5 wire CPC connector |
| 16U790 | 15 foot - DIN connector        |

# Electric Pumps

## G3™ Pumps

### Versatile Design Helps Solve Today's Lubrication Challenges

Temperature changes, changing grease types and challenging installation requirements are no problem for the G3 electric lubrication pump. With its flexible design, including adjustable pump elements and an ability to work with both injector-based and series progressive systems, G3 is a rugged, cost-effective pump designed to serve multiple markets and applications. The pump features three control choices, which means added flexibility for easy lube system set-up, operation and troubleshooting. The pump extends machinery life, reduces operating costs and increases productivity for usage in a wide variety of markets, including in-plant manufacturing, mobile and wind turbines.

### Features and Benefits

- Advanced flow dynamics—helps to prevent grease separation
- Load minimizing drive—for longer life
- Adjustable stroke pump—ensures a custom fit
- Five reservoir sizes to select from—provides a custom fit
- The most advanced user controls in its class—allows you to customize for your unique needs

### Typical Applications

- On-Road
- Off-Road
- In-Plant Machine and Conveyor Lubrication
- Wind Energy

### Lubrication Used

- Oil
- NLGI #000 to NLGI #2

### Technical Specifications

|                                                    |                                                                                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Max Pressure                                       | 5,100 psi (352 bar)                                                                                                             |
| Power                                              | 12 VDC, 24 VDC, 90-240 VAC                                                                                                      |
| Operating Temperature                              | -40° F to 158° F (-40° C to 70° C)                                                                                              |
| Reservoir Size                                     | 2, 4, 8, 12 or 16 liter                                                                                                         |
| Maximum Run Time                                   | 30 minutes                                                                                                                      |
| Control Options                                    | Standard, Pro or Max                                                                                                            |
| Output per Element /Min.                           | 0.12 in <sup>3</sup> , 0.18 in <sup>3</sup> , 0.25 in <sup>3</sup> (2 cm <sup>3</sup> , 3 cm <sup>3</sup> , 4 cm <sup>3</sup> ) |
| Certifications/Ratings                             | CE, ETL*, IP69K                                                                                                                 |
| *Conforms to UL 73, certified to CSA 22.2 No 68-09 |                                                                                                                                 |
| Instruction Manual                                 | 3A0414                                                                                                                          |

### G3 with Data Management System (DMS)

- Simple data transfer to your PC via USB flash drive for further analysis using Excel® or Notepad®
- Provides performance history for lube system events, such as cycle detection, error logs and allows a quick check of lubrication performance to meet your system requirements
- Preferred lube cycle program can be stored and transferred to other G3 pumps in your fleet for quick and accurate repeatability
- Provides you the comfort and security in knowing your pump is being properly maintained and your lube system is protecting your valuable asset



Standard Model



Pro Model



Max Model



# Electric Pumps

## G3™ Pumps



### G3 Standard

Comes standard with no controller for use with separate or existing machine control for a low cost solution. Some models capable of sending a low level signal to your external controller or PLC.

|             |        | Reservoir Size | Part Number | Voltage    | Wiper Arm | Follower Plate | External Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|-----------|----------------|--------------------|------------------|
| Application | Grease | 2 liter        | 96G000      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G003      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G001      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G005      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G006      | 24 VDC     |           | •              | •                  | CPC              |
|             |        |                | 96G182      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 96G002      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 96G007      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 96G008      | 90-240 VAC |           | •              | •                  | DIN              |
|             |        | 4 liter        | 96G038      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G044      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G040      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G048      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G053      | 24 VDC     |           | •              | •                  | CPC              |
|             |        |                | 96G184      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 96G042      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 96G055      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 96G062      | 90-240 VAC |           | •              | •                  | DIN              |
|             |        | 8 liter        | 96G039      | 12 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G045      | 12 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G049      | 24 VDC     | •         |                | •                  | CPC              |
|             |        |                | 96G192      | 24 VDC     |           | •              | •                  | CPC              |
|             |        |                | 96G041      | 24 VDC     | •         |                |                    | CPC              |
|             |        |                | 96G189      | 24 VDC     | •         |                | •                  | DIN              |
|             |        |                | 96G043      | 90-240 VAC | •         |                |                    | DIN              |
|             |        |                | 96G056      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        |                | 96G187      | 90-240 VAC |           | •              | •                  | DIN              |
|             |        | 12 liter       | 96G057      | 90-240 VAC | •         |                | •                  | DIN              |
|             |        | 12 liter       | 96G171      | 24 VDC     | •         |                |                    | CPC              |
|             |        | 12 liter       | 96G199      | 24 VDC     | •         |                | •                  | CPC              |
|             |        | 16 liter       | 96G172      | 24 VDC     | •         |                |                    | CPC              |
|             |        | 16 liter       | 96G058      | 90-240 VAC | •         |                | •                  | DIN              |
|             | Oil    | 2 liter        | 96G050      | 24 VDC     |           |                | •                  | CPC              |
|             |        |                | 96G059      | 90-240 VAC |           |                | •                  | DIN              |
|             |        | 4 liter        | 96G051      | 24 VDC     |           |                | •                  | CPC              |
|             |        |                | 96G060      | 90-240 VAC |           |                | •                  | DIN              |
|             |        | 8 liter        | 96G052      | 24 VDC     |           |                | •                  | CPC              |
|             |        |                | 96G061      | 90-240 VAC |           |                | •                  | DIN              |

# Electric Pumps

## G3™ Pumps



### G3 Pro

Built-in controller with selectable pump on/pump off timer comes with local manual run and password protection with pre-lube function to initiate lube cycle on start-up. Optional low level sensing, warning and shut-down alarm available as well as remote manual run.

|             |        | Reservoir Size | Part Number | Voltage    | Remote Manual Run | Wiper Arm | Follower Plate | External Low Level* | Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|-------------------|-----------|----------------|---------------------|-----------|------------------|
| Application | Grease | 2 liter        | 96G027      | 12 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G033      | 12 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G028      | 24 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G011      | 24 VDC     | •                 | •         |                | •                   | •         | CPC              |
|             |        |                | 96G012      | 24 VDC     | •                 |           | •              | •                   | •         | CPC              |
|             |        |                | 96G034      | 24 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G029      | 90-240 VAC |                   | •         |                |                     |           | DIN              |
|             |        |                | 96G013      | 90-240 VAC |                   | •         |                |                     | •         | DIN              |
|             |        |                | 96G014      | 90-240 VAC |                   |           | •              |                     | •         | DIN              |
|             |        | 4 liter        | 96G135      | 12 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G147      | 12 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G137      | 24 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G196      | 24 VDC     |                   | •         |                |                     |           | DIN              |
|             |        |                | 96G068      | 24 VDC     | •                 | •         |                | •                   | •         | CPC              |
|             |        |                | 96G073      | 24 VDC     | •                 |           | •              | •                   | •         | CPC              |
|             |        |                | 96G149      | 24 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G139      | 90-240 VAC |                   | •         |                |                     |           | DIN              |
|             |        |                | 96G075      | 90-240 VAC |                   | •         |                |                     | •         | DIN              |
|             |        |                | 96G082      | 90-240 VAC |                   |           | •              |                     | •         | DIN              |
|             |        | 8 liter        | 96G136      | 12 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G148      | 12 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G138      | 24 VDC     |                   | •         |                |                     |           | CPC              |
|             |        |                | 96G069      | 24 VDC     | •                 | •         |                | •                   | •         | CPC              |
|             |        |                | 96G150      | 24 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G194      | 24 VDC     | A                 |           | •              | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G140      | 90-240 VAC |                   | •         |                |                     |           | DIN              |
|             |        |                | 96G076      | 90-240 VAC |                   | •         |                |                     | •         | DIN              |
|             |        | 12 liter       | 96G163      | 24 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G077      | 90-240 VAC |                   | •         |                |                     | •         | DIN              |
|             |        | 16 liter       | 96G167      | 24 VDC     | A                 | •         |                | A                   | •         | CPC-5 Pin        |
|             |        |                | 96G078      | 90-240 VAC |                   | •         |                |                     | •         | DIN              |

A = On these Pro Control models the remote manual run input, remote low level warning output and power are combined in the CPC-5 Pin connector and cord.

\* = External Low Level is indicated on the Manual Run Control device.

# Electric Pumps

## G3™ Pumps

### G3 Pro (continued)

|             | Reservoir Size | Part Number | Voltage | Remote Manual Run | Wiper Arm | Follower Plate | External Low Level* | Low Level | Power Connection |
|-------------|----------------|-------------|---------|-------------------|-----------|----------------|---------------------|-----------|------------------|
| Application | Oil            | 2 liter     | 96G070  | 24 VDC            | •         |                | •                   | •         | CPC              |
|             |                |             | 96G079  | 90-240 VAC        |           |                |                     | •         | DIN              |
|             |                | 4 liter     | 96G071  | 24 VDC            | •         |                | •                   | •         | CPC              |
|             |                |             | 96G080  | 90-240 VAC        |           |                |                     | •         | DIN              |
|             |                | 8 liter     | 96G072  | 24 VDC            | •         |                | •                   | •         | CPC              |
|             |                |             | 96G081  | 90-240 VAC        |           |                |                     | •         | DIN              |

A = On Pro control models the remote manual run input, remote low level warning output and power are combined in the CPC-5 Pin connector and cord.

\* = External low level is indicated on the manual run control device.

### G3 Max



Built-in controller with selectable pump on/pump off timer has low level warning and shut-down alarm or set up faults to an external alarm. Comes with manual run and password protection with pre-lube function to initiate lube cycle on start-up. Mix and match up to three cycle and pressure switches for custom installations and feedback. Machine count input is ideally suited for inconsistently used equipment. Optional Data Management System™ (DMS) uses a common USB port to quickly configure, store and transfer error log history to Excel® or Notepad® for longer equipment life and performance.

|             | Reservoir Size | Part Number | Voltage | # of Cycle/ Press. Input | Machine Count | Vent Valve Output* | Alarm Output | Remote Manual Run | Wiper Arm | Follower Plate | Low Level | Power Connection |
|-------------|----------------|-------------|---------|--------------------------|---------------|--------------------|--------------|-------------------|-----------|----------------|-----------|------------------|
| Application | Grease         | 2 liter     | 96G030  | 12 VDC                   | 1             |                    |              |                   | •         |                | •         | CPC              |
|             |                |             | 96G021  | 12 VDC                   | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G035  | 12 VDC                   | 1             |                    | •            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G031  | 24 VDC                   | 1             |                    |              |                   | •         |                | •         | CPC              |
|             |                |             | 96G017  | 24 VDC                   | 1             | •                  |              | •                 | •         |                | •, B      | CPC              |
|             |                |             | 96G018  | 24 VDC                   | 1             | •                  |              | •                 |           | •              | •, B      | CPC              |
|             |                |             | 96G036  | 24 VDC                   | 1             | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G023  | 24 VDC                   | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G024  | 24 VDC                   | 1-3           | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |                |             | 96G178  | 24 VDC                   | 1             |                    | •            |                   | •         |                | •         | DIN              |
|             |                |             | 96G032  | 90-240 VAC               | 1             |                    |              |                   | •         |                | •         | DIN              |
|             |                |             | 96G019  | 90-240 VAC               | 1             | •                  |              |                   | •         |                | •         | DIN              |
|             |                |             | 96G020  | 90-240 VAC               | 1             | •                  |              |                   |           | •              | •         | DIN              |
|             |                |             | 96G025  | 90-240 VAC               | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G026  | 90-240 VAC               | 1-3           | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |                |             | 96G037  | 90-240 VAC               | 1             |                    | •            |                   | •         |                | •, B      | DIN              |
|             |                | 4 liter     | 96G141  | 12 VDC                   | 1             |                    |              |                   | •         |                | •         | CPC              |
|             |                |             | 96G159  | 12 VDC                   | 1             | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G151  | 12 VDC                   | 1             | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G096  | 12 VDC                   | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G143  | 24 VDC                   | 1             |                    |              |                   | •         |                | •         | CPC              |
|             |                |             | 96G088  | 24 VDC                   | 1             | •                  |              | •                 | •         |                | •, B      | CPC              |
|             |                |             | 96G090  | 24 VDC                   | 1             | •                  |              | •                 |           | •              | •, B      | CPC              |
|             |                |             | 96G160  | 24 VDC                   | 1             | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G155  | 24 VDC                   | 1             | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |                |             | 96G103  | 24 VDC                   | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G113  | 24 VDC                   | 1-3           | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |                |             | 96G145  | 90-240 VAC               | 1             |                    |              |                   | •         |                | •         | DIN              |
|             |                |             | 96G092  | 90-240 VAC               | 1             | •                  |              |                   | •         |                | •         | DIN              |
|             |                |             | 96G094  | 90-240 VAC               | 1             | •                  |              |                   |           | •              | •         | DIN              |
|             |                |             | 96G118  | 90-240 VAC               | 1-3           | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |                |             | 96G128  | 90-240 VAC               | 1-3           | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |                |             | 96G183  | 90-240 VAC               | 1             |                    | •            |                   | •         |                | •         | DIN              |

\*Requires purchase of a vent valve kit

A = On Max control models the remote manual run button input, remote alarm output, remote low level output and power are combined in the CPC-5 pin connector and cord.

B = On Max control models, external low level is indicated by the manual run control device and/or the alarm output

# Electric Pumps

## G3™ Pumps

### G3 Max (continued)

|             |        | Reservoir Size | Part Number | Voltage    | # of Cycle/<br>Press. Input | Machine Count | Vent Valve Output* | Alarm Output | Remote Manual Run | Wiper Arm | Follower Plate | Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|-----------------------------|---------------|--------------------|--------------|-------------------|-----------|----------------|-----------|------------------|
| Application | Grease | 8 liter        | 96G142      | 12 VDC     | 1                           |               |                    |              |                   | •         |                | •         | CPC              |
|             |        |                | 96G152      | 12 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G097      | 12 VDC     | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G144      | 24 VDC     | 1                           |               |                    |              |                   | •         |                | •         | CPC              |
|             |        |                | 96G089      | 24 VDC     | 1                           |               | •                  |              | •                 | •         |                | •, B      | CPC              |
|             |        |                | 96G156      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G104      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G093      | 90-240 VAC | 1                           |               | •                  |              |                   | •         |                | •         | DIN              |
|             |        |                | 96G146      | 90-240 VAC | 1                           |               |                    |              |                   | •         |                | •         | DIN              |
|             |        |                | 96G119      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G197      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |        | 12 liter       | 96G164      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G105      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G120      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        | 16 liter       | 96G168      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G106      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G166      | 90-240 VAC | 1                           |               | •                  |              |                   | •         |                | •         | DIN              |
|             |        | Oil            | 96G121      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        | 2 liter        | 96G107      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        |                | 96G122      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        | 4 liter        | 96G108      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        |                | 96G123      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        | 8 liter        | 96G109      | 24 VDC     | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        |                | 96G124      | 90-240 VAC | 1-3                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |

### G3 Max with Data Management System

|             |        | Reservoir Size | Part Number | Voltage    | # of Cycle/<br>Press. Input | Machine Count | Vent Valve Output* | Alarm Output | Remote Manual Run | Wiper Arm | Follower Plate | Low Level | Power Connection |
|-------------|--------|----------------|-------------|------------|-----------------------------|---------------|--------------------|--------------|-------------------|-----------|----------------|-----------|------------------|
| Application | Grease | 2 liter        | 96G098      | 12 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G110      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G115      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |        |                | 96G125      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G132      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |        | 4 liter        | 96G161      | 12 VDC     | 1                           | •             |                    | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G153      | 12 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G099      | 12 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G162      | 24 VDC     | 1                           | •             |                    | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G157      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G111      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G116      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |        |                | 96G126      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G133      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 |           | •              | •, B      | DIN              |
|             |        | 8 liter        | 96G154      | 12 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        |                | 96G100      | 12 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G158      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | •, B      | CPC-5 Pin        |
|             |        |                | 96G112      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        |                | 96G127      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        | 12 liter       | 96G165      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             |        | 16 liter       | 96G169      | 24 VDC     | 1                           |               | •                  | A            | A                 | •         |                | A         | CPC-5 Pin        |
|             | Oil    | 2 liter        | 96G174      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        | 2 liter        | 96G190      | 24 VDC     | 1-2                         | •             | •                  | •            | •                 | •         |                | •, B      | DIN              |
|             |        | 4 liter        | 96G175      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        | 4 liter        | 96G188      | 24 VDC     | 1                           | •             |                    | A            | A                 | •         |                | •, B      | CPC-5 Pin        |
|             |        | 8 liter        | 96G176      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 |           |                | •, B      | DIN              |
|             |        | 8 liter        | 96G195      | 24 VDC     | 1                           | •             |                    | A            | A                 | •         |                | •, B      | CPC-5 Pin        |
|             |        | 12 liter       | 96G186      | 12 VDC     | 1                           | •             |                    | A            | A                 | •         |                | •, B      | CPC-5 Pin        |
|             |        | 16 liter       | 96G201      | 90-240 VAC | 1-2                         | •             | •                  | •            | •                 | •         |                | •         | DIN              |

\*Requires purchase of a vent valve kit

A = On Max control DMS models the remote manual run button input, remote alarm output, remote low level output and power are combined in the CPC-5 Pin connector and cord.

B = On these Max control models, external low level is indicated by the manual run control device and/or the alarm output

# Electric Pumps

## G-Series Pump Accessories

### Accessories

|        |                                                                                                                                                                                                                                                   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 571041 | G3 pump element—the same adjustability as the pump included with G3                                                                                                                                                                               |
| 24V837 | Food and Beverage Upgrade Kit—contains pump element, stainless zerk fitting, and stainless reservoir plugs                                                                                                                                        |
| 571063 | Two pump union kit—combines the output of the left and right pumps for larger lubrication needs                                                                                                                                                   |
| 571026 | Three pump union kit—joins the output of the left, right and center pumps for maximum output                                                                                                                                                      |
| 24P296 | Two pump union kit for use with pump mounted vent valve                                                                                                                                                                                           |
| 24P295 | Three pump union kit for use with pump mounted vent valve                                                                                                                                                                                         |
| 571028 | Adjustable return-to-reservoir pressure relief kit – 500-3500 psi (35-241 bar)                                                                                                                                                                    |
| 571036 | Protective front cover kit—snaps over the front control panel on Pro and Max G3 models—black                                                                                                                                                      |
| 571255 | Protective front cover kit—snaps over the front control panel on Pro and Max G3 models—clear                                                                                                                                                      |
| 126005 | Liquid-filled pressure gauge—0-5,000 psi (0-344.7 bar) - 1/4 inch (6.4 mm) NPT brass back mount connection                                                                                                                                        |
| 557352 | Dry pressure gauge—0-5,000 psi (0-344.7 bar), 1/4 inch (6.4 mm) NPT brass bottom mount connection                                                                                                                                                 |
| 571030 | Remote manual run/monitoring light—12 VDC                                                                                                                                                                                                         |
| 571032 | Remote manual run/monitoring light kit—12 VDC, includes 16 foot M12 cable                                                                                                                                                                         |
| 571031 | Remote manual run/monitoring light—24 VDC, 90-240 VAC                                                                                                                                                                                             |
| 571033 | Remote manual monitoring light run kit—24 VDC, 90-240 VAC, includes 16 foot M12 cable                                                                                                                                                             |
| 571058 | Pressure relief-to-atmosphere kit—requires one of the following six pressure relief valves:                                                                                                                                                       |
| 563156 | Pressure relief valve—750 psi (52 bar)                                                                                                                                                                                                            |
| 563157 | Pressure relief valve—1000 psi (69 bar)                                                                                                                                                                                                           |
| 563158 | Pressure relief valve—1500 psi (103 bar)                                                                                                                                                                                                          |
| 563159 | Pressure relief valve—2000 psi (138 bar)                                                                                                                                                                                                          |
| 563160 | Pressure relief valve—2500 psi (172 bar)                                                                                                                                                                                                          |
| 563161 | Pressure relief valve—3000 psi (207 bar)                                                                                                                                                                                                          |
| 115122 | Pressure relief valve to atmosphere, 1/8" NPT male, 4000 psi (276 bar)                                                                                                                                                                            |
| 571070 | Pressure relief valve adapter, 1/4" BSPP                                                                                                                                                                                                          |
| 124300 | Accessory cable—16 foot male M12 connector on one end and flying leads on the other end                                                                                                                                                           |
| 124333 | Accessory cable—16 foot male M12 connector on one end and female M12 connector on the other end                                                                                                                                                   |
| 126331 | Accessory cable—16 foot female M12 on one end and flying leads on the other end                                                                                                                                                                   |
| 124640 | Alarm output accessory cable—DIN connector to flying leads, 6.5 feet                                                                                                                                                                              |
| 124301 | M12 female connector for 6-8 mm cable                                                                                                                                                                                                             |
| 124594 | M12 4-pin male connector for 6-8 mm cable                                                                                                                                                                                                         |
| 124595 | M12 4-pin male connector for 8-11 mm cable                                                                                                                                                                                                        |
| 125910 | G3 Pump mounting bracket                                                                                                                                                                                                                          |
| 563485 | Electronic proximity switch—12 VDC, 24 VDC or 90-249 VAC. Use to read movement and provide feedback of piston in series progressive divider valve. Includes five foot cable installed into switch with flying leads. Requires purchase of 124594. |
| 563501 | Electronic proximity switch with LED—24 VDC or 90-240 VAC. Use to read movement and provide feedback and provide feedback in piston of divider valve. Requires purchase of a cable with M12 female connection.                                    |
| 24K415 | Cycle indicating proximity switch—designed to work with Graco's USP™, MSP™, and MH™ series progressive divider valves. Requires purchase of a cable with M12 female connection.                                                                   |
| 557829 | Electronic pressure switch—use to read pressure in an injector-based system. After injectors dispense, G3 will trigger pump shut down and vent. Includes five foot cable installed into switch with flying leads. Requires purchase of 124595.    |
| 24K414 | Pressure switch—requires purchase of a cable with M12 female connection.                                                                                                                                                                          |
| 24M644 | High capacity fill zerk with quick disconnect and dust cover                                                                                                                                                                                      |
| 556420 | Male run tee—1/4 inch (6.4 mm) male x (2) 1/4 inch (6.4 mm) female                                                                                                                                                                                |
| 121474 | Female coupler                                                                                                                                                                                                                                    |
| 247886 | Manual pump—fits 5 gallon or 35 pound pail                                                                                                                                                                                                        |
| 571162 | Manual hand pump—use with grease cartridges, installs into alternative pump element port. Not recommended for pumps with follower plates or three-pump union kits.                                                                                |
| 571064 | Cold temperature fill relief kit—prevents over pressurizing when filling in cold temperatures                                                                                                                                                     |
| 571159 | G3 pump support bracket for mobile installations—secures 12 and 16 liter reservoirs.                                                                                                                                                              |





# Electric Pumps

## G-Series Pump Accessories

### Vent Valves Ordering Information

| Accessories                                         |                                                                                                                                                                                                  |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16T854                                              | Vent valve output cover with o-ring, IP69K rated                                                                                                                                                 |
| 24P731                                              | DIN power/alarm cover with gasket and screw, IP69K rated                                                                                                                                         |
| 127123                                              | DIN connector, field-wireable, female                                                                                                                                                            |
| Vent Valves for G3 Max Systems                      |                                                                                                                                                                                                  |
| 571169                                              | G3 Max pump vent valve kit—normally closed, 12 VDC, NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, cable included                                       |
| 571171                                              | G3 Max pump vent valve kit—normally closed, 12 VDC, BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, cable included                                      |
| 571170                                              | G3 Max pump vent valve kit—normally closed, 24 VDC (also for G3 Max AC pumps), NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, cable included            |
| 571172                                              | G3 Max pump vent valve kit—normally closed, 24 VDC (also for G3 Max AC Pumps), BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, cable included           |
| Vent Valves and Accessories for G3 Standard Systems |                                                                                                                                                                                                  |
| 24M478                                              | G3 Standard pump vent valve kit—normally open, 12 VDC, NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with Deutsch connector—see 24N402  |
| 24M481                                              | G3 Standard pump vent valve kit—normally open, 12 VDC, BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with Deutsch connector—see 24N402 |
| 24M479                                              | G3 Standard pump vent valve kit—normally open, 24 VDC, NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with Deutsch connector—see 24N402  |
| 24M482                                              | G3 Standard pump vent valve kit—normally open, 24 VDC, BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with Deutsch connector—see 24N402 |
| 24M480                                              | G3 Standard pump vent valve kit—normally open, 115 VAC, NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with DIN connector—see 16U790     |
| 24M483                                              | G3 Standard pump vent valve kit—normally open, 115 VAC, BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with DIN connector—see 16U790    |
| 24N182                                              | G3 Standard pump vent valve kit—normally open, 230 VAC, NPT, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with DIN connector—see 16U790     |
| 24M484                                              | G3 Standard pump vent valve kit—normally open, 230 VAC, BSPP, adjustable pressure relief, 500-3500 psi (35-241 bar), mounts directly to G3 pump, requires cable with DIN connector—see 16U790    |
| 24N402                                              | Vent valve power cable—normally open, 12 or 24 VDC valve, Deutsch connector, 6 feet                                                                                                              |
| 16U790                                              | Vent valve power cable—normally open, 115 or 230 VAC valve, DIN connector, 15 feet                                                                                                               |
| 24N351                                              | Save installation time and money without the need for additional cabling. Patch cable connects vent valves with DIN connection directly to the DIN Pump Power connector.                         |



24M480



24N351

# Electric Pumps

## Modu-Flo®

### Highly Configurable Pump Solution For Nearly Any Application

The Modu-Flo system is ideal for applications where minimizing downtime is critical. Customizing is easy—just mix and match pumps, reservoirs and manifolds in any configuration to meet most applications. Replace the pump or reservoir, without disconnecting lubrication lines. Electric pumps available for use with AC or DC supply voltage make Modu-Flo the right solution for any automated electric lubrication system.

- Modular system design allows configurations to work in all applications
- Easy to standardize on components and reduce inventory
- Adjustable pump output for fast, convenient customizing

### Typical Applications

- Presses and other in plant machines

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

|                                  |                                                |
|----------------------------------|------------------------------------------------|
| Output per Stroke . . . . .      | 0.024 cu.in. (0.4 cc)                          |
| Motor . . . . .                  | 24 VDC, 115 VAC                                |
| Max Output per Min. . . . .      | 24 VDC - 0.29 in <sup>3</sup> (4.7 cc)         |
| . . . . .                        | 115 VAC - 0.58 in <sup>3</sup> (9.5 cc)        |
| Max Operating Pressure . . . . . | 2,500 psi (172 bar)                            |
| Max Run Time . . . . .           | 4 Minutes                                      |
| Operating Temp . . . . .         | 20° F to 140° F (-7° C to 60° C)               |
| Operating Environment . . . . .  | 24 VDC - Inside/Outside, 115 VAC - Inside Only |

### Ordering Information

| Modu-Flo Pumps       |                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------|
| 563356               | 24 VDC motor, 20 ft connector cable                                                     |
| 563346               | 115 VAC motor, 20 ft connector cable                                                    |
| 563333               | Pump-to-reservoir manifold, NPT, liquid filled gauge, fill check, outlet check, blowout |
| 563329               | Pump-to-reservoir manifold, NPT, w/out hardware or fittings                             |
| 563355               | Pump-to-reservoir manifold, SAE, dry gauge, fill check, outlet check, blowout           |
| 563357               | Pump-to-reservoir manifold, BSPP, dry gauge, fill check, outlet check, blowout          |
| 563324               | Pump-to-reservoir manifold, NPT, dry gauge, fill check, outlet check, blowout           |
| 563331               | Pump-to-reservoir manifold, NPT, dry gauge, fill check, outlet check, tubed blowout     |
| Modu-Flo Spare Parts |                                                                                         |
| 563137               | 20 ft connector cable for 24 VDC                                                        |
| 256778               | Modu-Flo pump repair kit                                                                |
| 557287               | 24 VDC gear motor                                                                       |
| 557285               | 115 VAC gear motor                                                                      |

See pneumatic Modu-Flo section for a complete list of configurable parts.



Modu-Flo pump shown with grease reservoir

# Electric Pumps

LubeMaster®

## Built For Severe-duty Environments

The LubeMaster is a rugged pump package designed for demanding applications. The adjustable output and anti-friction drive bearings make it both reliable and efficient. Rugged cast iron main body and heavy-duty internal components deliver consistent performance in harsh applications. With several reservoir choices and accessories to choose from, the LubeMaster pump can be easily customized to meet virtually all application needs.

## Typical Applications

- Cement plants, paper processing, steel mills and other harsh environments

## Typical Fluids Used

- Oil
- Grease up to NLGI #2

## Technical Specifications

|                          |                                                          |
|--------------------------|----------------------------------------------------------|
| Cycle Rate               | 1-175 Strokes per minute                                 |
| Output Volume per Minute | 0.01-8.62 in <sup>3</sup> (0.16-143.41 cm <sup>3</sup> ) |
| Max Output Pressure      | 5,000 psi (340 bar)                                      |
| Material                 | Plastic or Metal, Cylindrical                            |
| Reservoir Size           | Oil - 12 pint, 20 pint, Grease - 12 lb, 20 lb            |
| Motor                    | 115/230 VAC, 230/460 VAC                                 |

## Ordering Information

| LubeMaster Pumps |                                                                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LM1552           | 12 pt Plastic Oil Reservoir (562892), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273), Individual Outputs (12 pt Oil, SPDT, 15 amps) (563316)             |
| LM2323           | 20 pt Plastic Oil Reservoir (562893), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,725 rpm) (557271), Individual Outputs (20 pt Oil, SPDT, 15 amps) (563317)        |
| LM2533           | 20 pt Plastic Oil Reservoir (562893), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (20 pt Oil, SPDT, 15 amps) (563317)             |
| LM3131           | 12 pt Metal Oil Reservoir (562894), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270)                                                                                                               |
| LM4451           | 20 pt Metal Oil Reservoir (562895), Wall-Mounting 10:1 Reduction (563386), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273)                                                                        |
| LM4523           | 20 pt Metal Oil Reservoir (562895), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,725 rpm) (557271), Individual Outputs (20 pt Oil, SPDT, 15 amps) (563317)          |
| LM4533           | 20 pt Metal Oil Reservoir (562895), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (20 pt Oil, SPDT, 15 amps) (563317)               |
| LM5111           | 12 lb Plastic Grease Reservoir (562896)                                                                                                                                                                            |
| LM5114           | 12 lb Plastic Grease Reservoir (562896), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                                                                |
| LM5311           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 10:1 Reduction (563388)                                                                                                                                    |
| LM5331           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270)                                                                  |
| LM5334           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)      |
| LM5514           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 60:1 Reduction (563389), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                        |
| LM5521           | 12 lb Plastic Grease Reservoir (562896), Wall-Mounting 10:1 Reduction (563386), Outlet (1/2 HP, 115/230 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557271)                                                                   |
| LM5534           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)      |
| LM5544           | 12 lb Plastic Grease Reservoir (562896), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322) |



LM5111

# Electric Pumps

LubeMaster®

## Ordering Information

| LubeMaster Pumps |                                                                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LM5644           | 12 lb Plastic Grease Reservoir (562896), Wall-Mounting 60:1 Reduction (563387), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (567272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)  |
| LM6311           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388)                                                                                                                                    |
| LM6314           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                        |
| LM6334           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)      |
| LM6344           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322) |
| LM6514           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                        |
| LM6524           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,725 rpm) (557271), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322) |
| LM6534           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)      |
| LM6544           | 20 lb Plastic Grease Reservoir (562897), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322) |
| LM7214           | 12 lb Metal Grease Reservoir (562898), Clutch Drive (563383), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                                           |
| LM7344           | 12 lb Metal Grease Reservoir (562898), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)   |
| LM7514           | 12 lb Metal Grease Reservoir (562898), Floor-Mounting 60:1 Reduction (563389), Individual Outputs (12 lb or 20 lb Grease, SPDT) (563322)                                                                           |
| LM7534           | 12 lb Metal Grease Reservoir (562898), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557273), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)        |
| LM7614           | 12 lb Metal Grease Reservoir (562898), Wall-Mounting 60:1 Reduction (563387), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                           |
| LM7654           | 12 lb Metal Grease Reservoir (562898), Wall-Mounting 60:1 Reduction (563387), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)         |
| LM8114           | 20 lb Metal Grease Reservoir (562899), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                                                                  |
| LM8314           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 10:1 Reduction (563388), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                          |
| LM8334           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (567270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)        |
| LM8354           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 10:1 Reduction (563388), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)        |
| LM8454           | 20 lb Metal Grease Reservoir (562899), Wall-Mounting 10:1 Reduction (563386), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)         |
| LM8514           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 60:1 Reduction (563389), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)                                                                          |
| LM8531           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270)                                                                    |
| LM8534           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)        |
| LM8554           | 20 lb Metal Grease Reservoir (562899), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 230/460 VAC, 3-Phase, 60 Hz, 1,140 rpm) (557273), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)        |
| LM9511           | Power Prime Reservoir Assembly (562908), Floor-Mounting 60:1 Reduction (563389)                                                                                                                                    |
| LM9521           | Power Prime Reservoir Assembly (562908), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,725 rpm) (557271)                                                             |

# Electric Pumps

LubeMaster®

| LubeMaster Reservoirs          |                                                         |
|--------------------------------|---------------------------------------------------------|
| 562892                         | 12 pt Plastic Oil Reservoir                             |
| 562893                         | 20 pt Plastic Oil Reservoir                             |
| 562894                         | 12 pt Metal Oil Reservoir                               |
| 562895                         | 20 pt Metal Oil Reservoir                               |
| 562896                         | 12 lb Plastic Grease Reservoir                          |
| 562897                         | 20 lb Plastic Grease Reservoir                          |
| 562898                         | 12 lb Metal Grease Reservoir                            |
| 562899                         | 20 lb Metal Grease Reservoir                            |
| 562908                         | Overhead Supply Reservoir                               |
| LubeMaster Drive Option        |                                                         |
| 563383                         | Clutch Drive w/Arm                                      |
| 563386                         | 10:1 Reduction, Wall-Mounting                           |
| 563387                         | 60:1 Reduction, Wall-Mounting                           |
| 563388                         | 10:1 Reduction, Floor-Mounting                          |
| 563389                         | 60:1 Reduction, Floor-Mounting                          |
| LubeMaster Motors              |                                                         |
| 557270                         | 230/460 VAC, 1/2 HP, 3-Phase, 60 Hz, 1,725 rpm          |
| 557271                         | 115/230 VAC, 1/2 HP, Single Phase, 60 Hz, 1,725 rpm     |
| 557272                         | 115/230 VAC, 1/2 HP, Single Phase, 60 Hz, 1,140 rpm     |
| 557273                         | 230/460 VAC, 1/2 HP, 3-Phase, 60 Hz, 1,140 rpm          |
| LubeMaster Low Level Switches  |                                                         |
| 563015                         | 12 pt Oil Low Level, SPDT, 10 watts                     |
| 563016                         | 20 pt Oil Low Level, SPDT, 10 watts                     |
| 563316                         | 12 pt Oil Low Level, SPDT, 15 amps                      |
| 563317                         | 20 pt Oil Low Level, SPDT, 15 amps                      |
| 563322                         | 12 and 20 lb Grease Low Level                           |
| 564377                         | 12 and 20 lb Grease Low Level, Exp Proof                |
| LubeMaster Pressure Indicators |                                                         |
| 563179                         | Standard Blowout, 1,450 psi, Oil                        |
| 563184                         | Standard Blowout, 2,350 psi, Grease                     |
| 563384                         | High-Pressure Blowout Switch, 1,450 psi, Oil            |
| 563385                         | High-Pressure Blowout Switch, 2,350 psi, Grease         |
| LubeMaster Pressure Gauge      |                                                         |
| 557713                         | Liquid Filled Pressure Gauge, 0-3,000 psi               |
| LubeMaster Spare Parts         |                                                         |
| 563380                         | Bare Pump                                               |
| 563915                         | Drive Repair Kit                                        |
| 563916                         | Output Manifold Kit - Standard                          |
| 563921                         | Seal Repair Kit                                         |
| 563938                         | Output Manifold Kit - High Output                       |
| 563962                         | Package of 6 Blowout Discs, Yellow, 1,450 psi, Oil      |
| 563965                         | Package of 6 Blowout Discs, Aluminum, 2,350 psi, Grease |

# Electric Pumps

LubeMaster®

## LubeMaster Ordering Menu Code

NOTE: Utilize number code not lettered code from literature for ordering purposes.

|                             |                                                                   |    |                                              |   |   |   |   |   |   |   |
|-----------------------------|-------------------------------------------------------------------|----|----------------------------------------------|---|---|---|---|---|---|---|
|                             |                                                                   | LM | -                                            | X | - | X | - | X | - | X |
| <b>Pump</b>                 |                                                                   |    |                                              |   |   |   |   |   |   |   |
| LM LubeMaster pump - 563380 |                                                                   |    |                                              |   |   |   |   |   |   |   |
| <b>Reservoir Option</b>     |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | OPA, 12 pt plastic oil reservoir - 562892                         | 6  | GPB, 20 lb plastic grease reservoir - 562897 |   |   |   |   |   |   |   |
| 2                           | OPB, 20 pt plastic oil reservoir - 562893                         | 7  | GMA, 12 lb metal grease reservoir - 562898   |   |   |   |   |   |   |   |
| 3                           | OMA, 12 pt metal oil reservoir - 562894                           | 8  | GMB, 20 lb metal grease reservoir - 562899   |   |   |   |   |   |   |   |
| 4                           | OMB, 20 pt metal oil reservoir - 562895                           | 9  | OHS, power prime reservoir assembly - 562908 |   |   |   |   |   |   |   |
| 5                           | GPA, 12 lb plastic grease reservoir - 562896                      |    |                                              |   |   |   |   |   |   |   |
| <b>Drive Option</b>         |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | none                                                              | 4  | DOC, 10:1 reduction, wall-mounting - 563386  |   |   |   |   |   |   |   |
| 2                           | DOA, clutch drive w/arm - 563383                                  | 5  | DOD, 60:1 reduction, floor-mounting - 563389 |   |   |   |   |   |   |   |
| 3                           | DOB, 10:1 reduction, floor-mounting - 563388                      | 6  | DOE, 60:1 reduction, wall-mounting - 563387  |   |   |   |   |   |   |   |
| <b>Motor Option</b>         |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | none                                                              |    |                                              |   |   |   |   |   |   |   |
| 2                           | MOA, 1/2 HP, 115/230 VAC, single phase, 60 Hz, 1,725 rpm - 557271 |    |                                              |   |   |   |   |   |   |   |
| 3                           | MOB, 1/2 HP, 230/460 VAC, 3-phase, 60 Hz, 1,725 rpm - 557270      |    |                                              |   |   |   |   |   |   |   |
| 4                           | MOC, 1/2 HP, 115/230 VAC, single phase, 60 Hz, 1,140 rpm - 557272 |    |                                              |   |   |   |   |   |   |   |
| 5                           | MOD, 1/2 HP, 230/460 VAC, 3-phase, 60 Hz, 1,140 rpm - 557273      |    |                                              |   |   |   |   |   |   |   |
| <b>Low Level Option</b>     |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | LOO, none                                                         | 4  | LOC, 12 and 20 lb grease, SPDT - 563322      |   |   |   |   |   |   |   |
| 2                           | LOA, 12 pt oil, SPDT, 15 amps - 563316                            | 5  | LOD, 12 pt oil, SPST, 10 watts - 563015      |   |   |   |   |   |   |   |
| 3                           | LOB, 20 pt oil, SPDT, 15 amps - 563317                            | 6  | LOE, 20 pt oil, SPST, 10 watts - 563016      |   |   |   |   |   |   |   |

Note: Drive Options 3, 4, 5 and 6 contains all required mounting hardware (mounting plate, coupler, coupler guard, nuts, bolts and washers).

Pricing: In order to obtain Menu pricing for LubeMaster components, a pump must be ordered with each drive option on the same purchase order. All drives ordered w/out a pump on the same purchase order will be treated as a spare part and priced accordingly.

### Pressure Indicator Option (sold separately)

POA - Standard Blowout, 1,450 psi (100 bar), Oil, 563179  
 POB - Standard Blowout, 2,350 psi (162 bar) Grease, 563184  
 POC - High-Pressure Blowout Switch, 1,450 psi (100 bar), Oil, 563384  
 POD - High-Pressure Blowout Switch, 2,350 psi (162 bar), Grease, 563385



# Electric Pumps

## Miniature Meter-Flo®

### Versatile All In One Pump Package

Designed for use with virtually any type of Series Progressive or Single Line Resistive oil lubrication system. The Miniature MeterFlo's rugged steel reservoir and motor assembly withstands the toughest applications. Capable of high volumetric output operating continuously at pressures up to 1,000 psi (69 bar).

- Compact with several options to create a complete system using feedback and control

### Typical Applications

- Ideal for smaller series progressive systems requiring continuous lubrication

### Lubrication Used

- Oil - 160-15,000 SUS

### Technical Specifications

Output Volume per minute. . . . . 1, 5, 8, 14 in<sup>3</sup> (16, 82, 131, 229 cm<sup>3</sup>)  
 Output Pressure . . . . . 0-2,000 psi (0-138 bar)  
 Material . . . . . Metal, Rectangular  
 Reservoir Size. . . . . 1.5, 3, 5 gal (12, 24, 40 pint)  
 Motor. . . . . 115 VAC

### Ordering Information

| Miniature Meter-Flo (MMF) Electric (Motor Driven) Pumps w/Reservoirs |                                                                                                                  |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| MM1111                                                               | 1.5 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi                                                            |
| MM1112                                                               | 1.5 gal Res., 1 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                             |
| MM1121                                                               | 1.5 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch                                      |
| MM1122                                                               | 1.5 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)  |
| MM1211                                                               | 1.5 gal Res., 5 in <sup>3</sup> /min., 2,000 psi                                                                 |
| MM1212                                                               | 1.5 gal Res., 5 in <sup>3</sup> /min., 2,000 psi, Low Level Switch (Reed-Type, SPST)                             |
| MM1222                                                               | 1.5 gal Res., 5 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch (Reed-Type, SPST)                         |
| MM1311                                                               | 1.5 gal Reservoir, 8 in <sup>3</sup> /min., 2,000 psi                                                            |
| MM1312                                                               | 1.5 gal Res., 8 in <sup>3</sup> /min., 2,000 psi, Low Level Switch (Reed-Type, SPST)                             |
| MM1322                                                               | 1.5 gal Reservoir, 8 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)  |
| MM1411                                                               | 1.5 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi                                                           |
| MM1412                                                               | 1.5 gal Res., 14 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                            |
| MM1422                                                               | 1.5 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST) |
| MM2112                                                               | 3 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                          |
| MM2122                                                               | 3 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)    |
| MM2211                                                               | 3 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi                                                              |
| MM2212                                                               | 3 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi, Low Level Switch (Reed-Type, SPST)                          |
| MM2221                                                               | 3 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch                                        |
| MM2222                                                               | 3 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)    |
| MM2312                                                               | 3 gal Reservoir, 8 in <sup>3</sup> /min., 2,000 psi, Low Level Switch (Reed-Type, SPST)                          |
| MM2322                                                               | 3 gal Reservoir, 8 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)    |
| MM2411                                                               | 3 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi                                                             |



MM2211

|        |                                                                                                                |
|--------|----------------------------------------------------------------------------------------------------------------|
| MM2412 | 3 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                       |
| MM2422 | 3 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST) |
| MM3112 | 5 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                        |
| MM3122 | 5 gal Reservoir, 1 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)  |
| MM3211 | 5 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi (Reed-Type, SPST)                                          |
| MM3212 | 5 gal Reservoir, 5 in <sup>3</sup> /min., 2,000 psi, Low Level Switch (Reed-Type, SPST)                        |
| MM3312 | 5 gal, 8 in <sup>3</sup> /min., 2,000 psi, Low Level Switch                                                    |
| MM3322 | 5 gal Reservoir, 8 in <sup>3</sup> /min., 2,000 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST)  |
| MM3411 | 5 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi                                                           |
| MM3412 | 5 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi, Low Level Switch (Reed-Type, SPST)                       |
| MM3422 | 5 gal Reservoir, 14 in <sup>3</sup> /min., 1,500 psi, High-Pressure Switch, Low Level Switch (Reed-Type, SPST) |

| Miniature Meter-Flow (MMF) Spare Parts |                                                                                     |
|----------------------------------------|-------------------------------------------------------------------------------------|
| 564412                                 | MMF Assembly - Pump, Gearmotor, Reducer Assembly, 1 in <sup>3</sup> /min. Flowrate  |
| 564413                                 | MMF Assembly - Pump, Gearmotor, Reducer Assembly, 5 in <sup>3</sup> /min. Flowrate  |
| 564414                                 | MMF Assembly - Pump, Gearmotor, Reducer Assembly, 8 in <sup>3</sup> /min. Flowrate  |
| 564415                                 | MMF Assembly - Pump, Gearmotor, Reducer Assembly, 14 in <sup>3</sup> /min. Flowrate |
| 557286                                 | Motor, 115 VAC                                                                      |
| 557293                                 | Gear Box, 1 in <sup>3</sup> /min. (12.5:1)                                          |
| 557822                                 | Gear Pump Only, 1 to 8 in <sup>3</sup> /min.                                        |
| 557821                                 | Gear Pump Only, 14 in <sup>3</sup> /min.                                            |
| 557810                                 | Suction Strainer                                                                    |
| 563558                                 | Relief Valve                                                                        |
| 557825                                 | Replacement Level Switch                                                            |

# Electric Pumps

## Miniature Meter-Flo®

### Miniature Meter-Flo Ordering Menu Code

NOTE: Utilize number code not lettered code from literature for ordering purposes.

MM - X - X - X - X

#### Reservoir Option

- 1 RA, 1.5 gallon reservoir
- 2 RB, 3 gallon reservoir
- 3 RC, 5 gallon reservoir

#### Pump / Flow Option (\*)

- 1 PA, 1 cu.in. / minute (1,500 psi maximum operating pressure)
- 2 PB, 5 cu.in. / minute (2,000 psi maximum operating pressure)
- 3 PC, 8 cu.in. / minute (2,000 psi maximum operating pressure)
- 4 PD, 14 cu.in. / minute (1,500 psi maximum operating pressure)

#### Pressure Switch Option

- 1 SO, no pressure switch
- 2 SA, high pressure switch

#### Low Level Option

- 1 LO, no low level switch
- 2 LA, low level switch, reed-type, SPST - 563014

(\*) All pump flow rates are based on 160 SUS (at 100 F) 10W oil, 70 F at 1,000 psi.

Example: Miniature Meterflo (MM) pump package consisting of a 3 gallon reservoir, 5 cu.in./minute pump output, high pressure switch and low level switch.  
Ordering Code: MM2222



# Electric Pumps

Meter-Flo®

## Continuous Duty Durability

With its solid pump housing, these rugged gear pumps are designed for dependable operation in high demand applications. The gear pump is available with a direct-coupled 1/2 horsepower motor capable of 1,725 rpm's with output volumes of 245 cubic inches per minute. Eleven different pump models to choose from.

## Typical Applications

- Ideal for applications requiring continuous oil delivery up to 1,000 lubrication points

## Lubrication Used

- Oil - 300-3,000 SUS

## Technical Specifications

Output Volume per minute. . . . . 14-245 in<sup>3</sup> (230-4015 cm<sup>3</sup>)  
Max Output Pressure . . . . . 300-1,500 psi (300-3,000 bar)  
Operating Temp . . . . . 50° F to 150° F (10° C to 65.5° C)

## Ordering Information

| Meter-Flo Pumps |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 557814          | 9 in <sup>3</sup> /min. (147 cm <sup>3</sup> /min.) @ 1,140 rpm, 14 in <sup>3</sup> /min. (229 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw        |
| 557819          | 9 in <sup>3</sup> /min. (147 cm <sup>3</sup> /min.) @ 1,140 rpm, 14 in <sup>3</sup> /min. (229 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, cw         |
| 557813          | 18 in <sup>3</sup> /min. (295 cm <sup>3</sup> /min.) @ 1,140 rpm, 30 in <sup>3</sup> /min. (492 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw       |
| 557815          | 56 in <sup>3</sup> /min. (918 cm <sup>3</sup> /min.) @ 1,140 rpm, 84 in <sup>3</sup> /min. (1,377 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw     |
| 558949          | 56 in <sup>3</sup> /min. (918 cm <sup>3</sup> /min.) @ 1,140 rpm, 84 in <sup>3</sup> /min. (1,377 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, cw      |
| 557816          | 76 in <sup>3</sup> /min. (1,245 cm <sup>3</sup> /min.) @ 1,140 rpm, 117 in <sup>3</sup> /min. (1,917 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw  |
| 558950          | 76 in <sup>3</sup> /min. (1,245 cm <sup>3</sup> /min.) @ 1,140 rpm, 117 in <sup>3</sup> /min. (1,917 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, cw   |
| 557817          | 111 in <sup>3</sup> /min. (1,819 cm <sup>3</sup> /min.) @ 1,140 rpm, 168 in <sup>3</sup> /min. (2,753 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw |
| 558951          | 111 in <sup>3</sup> /min. (1,819 cm <sup>3</sup> /min.) @ 1,140 rpm, 168 in <sup>3</sup> /min. (2,753 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, cw  |
| 557818          | 26 in <sup>3</sup> /min. (426 cm <sup>3</sup> /min.) @ 1,140 rpm, 40 in <sup>3</sup> /min. (655 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw       |
| 557820          | 161 in <sup>3</sup> /min. (2,638 cm <sup>3</sup> /min.) @ 1,140 rpm, 245 in <sup>3</sup> /min. (4,015 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, ccw |
| 558955          | 161 in <sup>3</sup> /min. (2,638 cm <sup>3</sup> /min.) @ 1,140 rpm, 245 in <sup>3</sup> /min. (4,015 cm <sup>3</sup> /min.) @ 1,725 rpm, npt Ports, cw  |
| 558953          | 9 in <sup>3</sup> /min. (147 cm <sup>3</sup> /min.) @ 1,140 rpm, 14 in <sup>3</sup> /min. (229 cm <sup>3</sup> /min.) @ 1,725 rpm, sae Ports             |
| 558954          | 26 in <sup>3</sup> /min. (426 cm <sup>3</sup> /min.) @ 1,140 rpm, 40 in <sup>3</sup> /min. (655 cm <sup>3</sup> /min.) @ 1,725 rpm, sae Ports            |
| Motor Option    |                                                                                                                                                          |
| 558895          | 1/2 HP, 115/230 VAC, 1,725 rpm, Single Phase                                                                                                             |



563557

| Repair Kits                             |                                                       |
|-----------------------------------------|-------------------------------------------------------|
| 557997                                  | MeterFlo Seal Kit - 540-800-XX1 Models                |
| 557998                                  | MeterFlo Relief Valve Repair Kit - 540-800-XX1 Models |
| Meter-Flo Paddle Base and Pump Packages |                                                       |
| 563557                                  | Paddle Base w/Pump 557814                             |
| 564411                                  | Paddle Base w/Pump 557813                             |
| 24N405                                  | Paddle Base w/Pump 557815                             |
| 24N406                                  | Paddle Base w/Pump 557816                             |
| 24N407                                  | Paddle Base w/Pump 557817                             |
| 24N408                                  | Paddle Base w/Pump 557818                             |
| 24N409                                  | Paddle Base w/Pump 557820                             |

# Electric Pumps

## Injecto-Flo® EO-1 and EO-3

### Reliable Machine Tool Lubrication

#### EO-1 and EO-3

A cost effective, low pressure oil solution designed for use with any high volume, intermittent lubrication system. Can be used with Injecto-Flo II series piston distributor products. EO-1 is ideal for small to medium size single line parallel systems requiring intermittent metered lubrication with an electrically driven pump. EO-3 has integrated control and bright LED's to verify system operation. Built-in vent valve gets you up and working with piston distributors fast—no kits to purchase and assemble.

### Typical Applications

- In-plant medium size machine tool lubrication applications

### Typical Fluids Handled

- Oil - ISO 50-1500 (SUS 250-5000)

### Technical Specifications

Power ..... 115 VAC, 230 VAC  
Motor Speed..... 1,680 rpm @ 60 Hz, 1,340 rpm @ 50 Hz

#### EO-1

Pump Flow Rate ..... 12 in<sup>3</sup>/min. (200 cm<sup>3</sup>/min.)  
Pressure..... 145-650 psi (10-45 bar)  
Reservoir ..... Plastic, Rectangular  
Reservoir Size..... 6.3, 7.6, 12.6, 15.8 or 25.3 pint

#### EO-3

Pump Flow Rate ..... 8.5 in<sup>3</sup>/min. (140 cm<sup>3</sup>/min.)  
Pressure..... 350 psi (24 bar)  
Operating Temp ..... 14° F to 120° F (-10° C to 49° C)  
Reservoir ..... Plastic, Rectangular  
Reservoir Size..... 7.6 or 12.6 pint  
Manual..... 313839A

### Ordering Information

| Injecto-Flo EO-1 Pumps |                                                                           |
|------------------------|---------------------------------------------------------------------------|
| 562837                 | Pump w/3 liter Plastic Reservoir, 115 VAC                                 |
| 24B427                 | Pump w/3 liter Plastic Reservoir, 230 VAC                                 |
| 562849                 | Pump w/3 liter Plastic Reservoir, 230 VAC                                 |
| 562838                 | Pump w/3.6 liter Plastic Reservoir, 230 VAC                               |
| 562839                 | Pump w/6 liter Plastic Reservoir, 115 VAC                                 |
| 562840                 | Pump w/6 liter Plastic Reservoir, 230 VAC                                 |
| 562841                 | Pump w/6 liter Plastic Reservoir, 230 VAC                                 |
| 562842                 | Pump w/6 liter Plastic Reservoir, 230 VAC, Return Port                    |
| 562843                 | Pump w/6 liter Metal Reservoir, 115 VAC                                   |
| 562844                 | Pump w/12 liter Metal Reservoir, 115 VAC                                  |
| Injecto-Flo EO-3 Pumps |                                                                           |
| 562851                 | Pump w/3 liter Plastic Reservoir, 115 VAC, Remote Control                 |
| 562850                 | Pump w/3 liter Plastic Reservoir, 115 VAC, Timer Control, Pressure Switch |
| 562852                 | 3.6 liter Plastic Reservoir, 115 VAC                                      |
| 562847                 | 6 liter Reservoir, 115 VAC                                                |



562850



562839

| Injecto-Flo EO-1 Spare Parts |                                                         |
|------------------------------|---------------------------------------------------------|
| 556015                       | Adjustable Relief Valve                                 |
| 556013                       | Gear Pump only                                          |
| 556016                       | Low Level Switch Assembly for 6 and 12 liter Reservoirs |
| 556014                       | Suction Strainer                                        |
| 556011                       | 115 VAC Motor                                           |
| 556012                       | 230 VAC Motor                                           |
| Low Level Switches           |                                                         |
| 556018                       | Low Level Switch                                        |
| 556019                       | Low Level Switch                                        |

# Electric Pumps

## Injecto-Flo® II

### Durable Long Lasting Machine Tool Pump

Great versatility in a small package has many control options. A dependable high-quality gear pump for years of trouble-free operation combined with Injecto-Flo II piston distributor metering devices completes your oil or fluid grease lubrication system. Internal controller with LED alarms is easy to program for any application. Built-in vent valve gets you up and working with piston distributors fast—no kits to purchase and assemble.

### Typical Applications

- Ideal solution for automatic lubrication on small and mid-sized machines

### Typical Fluids Handled

- Oil - 50 to 100 cst
- Fluid Grease NLGI #000

### Technical Specifications

#### Max Output Volume Per Minute

Oil ..... 30.50 in<sup>3</sup> (500 cm<sup>3</sup>)

Grease ..... 12.20 in<sup>3</sup> (200 cm<sup>3</sup>)

#### Max Pressure

Oil ..... 360 psi (25 bar)

Grease ..... 580 psi (40 bar)

Power ..... 230 VAC

Reservoir ..... Plastic, Rectangular

Reservoir Size ..... .3, 6 liter



122895



15U858

### Ordering Information

| Injecto-Flo II Oil Pumps - 3 liter Reservoirs (no control), 230 VAC |                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------|
| 122545                                                              | 0.2 lpm, Screw Cap                                         |
| 122546                                                              | 0.2 lpm, Straight Connector (10 mm Pipe)                   |
| 122547                                                              | 0.5 lpm, Screw Cap                                         |
| 122548                                                              | 0.5 lpm, Straight Connector (10 mm Pipe)                   |
| 122549                                                              | 0.2 lpm, Single w/DIN, Screw Cap                           |
| 122550                                                              | 0.2 lpm, Single w/DIN, Straight Connector (10 mm Pipe)     |
| 122551                                                              | 0.5 lpm, Single w/DIN, Screw Cap                           |
| 122552                                                              | 0.5 lpm, Single w/DIN, Straight Connector (10 mm Pipe)     |
| 122553                                                              | 0.2 lpm, Single w/M12 Top, Screw Cap                       |
| 15U859                                                              | 0.2 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe) |
| 122554                                                              | 0.5 lpm, Single w/M12 Top, Screw Cap                       |
| 122555                                                              | 0.5 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe) |
| 122556                                                              | 0.2 lpm, Dual w/DIN, Screw Cap                             |
| 122557                                                              | 0.2 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)       |
| 122558                                                              | 0.5 lpm, Dual w/DIN, Screw Cap                             |
| 122559                                                              | 0.5 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)       |
| 122560                                                              | 0.2 lpm, Dual w/M12 Top, Screw Cap                         |
| 122561                                                              | 0.2 lpm, Dual w/M12 Top, Straight Connector (10 mm Pipe)   |
| 122562                                                              | 0.5 lpm, Dual w/M12 Top, Screw Cap                         |
| 15U858                                                              | 0.5 lpm, Dual w/M12 Top Straight Connector (10 mm Pipe)    |

| Injecto-Flo II Oil Pumps - 6 liter Reservoirs (no control), 230 VAC |                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------|
| 122563                                                              | 0.2 lpm, Screw Cap                                         |
| 122564                                                              | 0.2 lpm, Straight Connector (10 mm Pipe)                   |
| 122565                                                              | 0.5 lpm, Screw Cap                                         |
| 122566                                                              | 0.5 lpm, Straight Connector (10 mm Pipe)                   |
| 122567                                                              | 0.2 lpm, Single w/DIN, Screw Cap                           |
| 122568                                                              | 0.2 lpm, Single w/DIN, Straight Connector (10 mm Pipe)     |
| 564138                                                              | 0.5 lpm, Single w/DIN, Screw Cap                           |
| 122569                                                              | 0.5 lpm, Single w/DIN, Straight Connector (10 mm Pipe)     |
| 122570                                                              | 0.2 lpm, Single w/M12 Top, Screw Cap                       |
| 122571                                                              | 0.2 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe) |
| 122572                                                              | 0.5 lpm, Single w/M12 Top, Screw Cap                       |
| 122573                                                              | 0.5 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe) |
| 122574                                                              | 0.2 lpm, Dual w/DIN, Screw Cap                             |
| 122575                                                              | 0.2 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)       |
| 122576                                                              | 0.5 lpm, Dual w/DIN, Screw Cap                             |
| 122577                                                              | 0.5 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)       |
| 122578                                                              | 0.2 lpm, Dual w/M12 Top, Screw Cap                         |
| 122579                                                              | 0.2 lpm, Dual w/M12 Top, Straight Connector (10 mm Pipe)   |
| 122580                                                              | 0.5 lpm, Dual w/M12 Top, Screw Cap                         |
| 15U860                                                              | 0.5 lpm, Dual w/M12 Top Straight Connector (10 mm Pipe)    |



# Electric Pumps

## Injecto-Flo® II

### Ordering Information

| Injecto-Flo II Fluid Grease Pumps - 3 liter Reservoirs (no control), 230 VAC |                                                                                                                                          |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 122581                                                                       | 0.2 lpm, Screw Cap                                                                                                                       |
| 563301                                                                       | 0.2 lpm, Straight Connector (10 mm Pipe)                                                                                                 |
| 122582                                                                       | 0.2 lpm, Single w/DIN, Screw Cap                                                                                                         |
| 122583                                                                       | 0.2 lpm, Single w/DIN, Straight Connector (10 mm Pipe)                                                                                   |
| 122584                                                                       | 0.2 lpm, Single w/M12 Top, Screw Cap                                                                                                     |
| 122585                                                                       | 0.2 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe)                                                                               |
| 122586                                                                       | 0.2 lpm, Dual w/DIN, Screw Cap                                                                                                           |
| 122587                                                                       | 0.2 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)                                                                                     |
| 122588                                                                       | 0.2 lpm, Dual w/M12 Top, Screw Cap                                                                                                       |
| 557547                                                                       | 0.2 lpm, Dual w/M12 Top, Straight Connector (10 mm Pipe)                                                                                 |
| Injecto-Flo II Fluid Grease Pumps - 6 liter Reservoirs (no control), 230 VAC |                                                                                                                                          |
| 122589                                                                       | 0.2 lpm, Screw Cap                                                                                                                       |
| 122590                                                                       | 0.2 lpm, Straight Connector (10 mm Pipe)                                                                                                 |
| 122591                                                                       | 0.2 lpm, Single w/DIN, Screw Cap                                                                                                         |
| 122592                                                                       | 0.2 lpm, Single w/DIN, Straight Connector (10 mm Pipe)                                                                                   |
| 122593                                                                       | 0.2 lpm, Single w/M12 Top, Screw Cap                                                                                                     |
| 122594                                                                       | 0.2 lpm, Single w/M12 Top, Straight Connector (10 mm Pipe)                                                                               |
| 122595                                                                       | 0.2 lpm, Dual w/DIN, Screw Cap                                                                                                           |
| 122596                                                                       | 0.2 lpm, Dual w/DIN, Straight Connector (10 mm Pipe)                                                                                     |
| 122597                                                                       | 0.2 lpm, Dual w/M12 Top, Screw Cap                                                                                                       |
| 122598                                                                       | 0.2 lpm, Dual w/M12 Top, Straight Connector (10 mm Pipe)                                                                                 |
| Injecto-Flo II Oil Pumps w/Integrated Control                                |                                                                                                                                          |
| 122895                                                                       | 3 liter, 0.2 lpm, 230 VAC w/Time or Pulse, Manual Lube, Level Switch, Pressure Gauge, Pressure Switch, Green Light, Red Light, Screw Cap |
| 122897                                                                       | 6 liter, 0.2 lpm, 230 VAC w/Time or Pulse, Manual Lube, Level Switch, Pressure Gauge, Pressure Switch, Green Light, Red Light, Screw Cap |
| 122898                                                                       | 6 liter, 0.5 lpm, 230 VAC w/Time or Pulse, Manual Lube, Level Switch, Pressure Gauge, Pressure Switch, Green Light, Red Light, Screw Cap |
| Injecto-Flo II Fluid Grease Pumps w/Integrated Control                       |                                                                                                                                          |
| 122896                                                                       | 3 liter, 0.2 lpm, 230 VAC w/Time or Pulse, Manual Lube, Level Switch, Pressure Gauge, Pressure Switch, Green Light, Red Light, Screw Cap |
| 122899                                                                       | 6 liter, 0.2 lpm, 230 VAC w/Time or Pulse, Manual Lube, Level Switch, Pressure Gauge, Pressure Switch, Green Light, Red Light, Screw Cap |

# Electric Pumps

## Thrif-T Luber®

### Low Pressure Orifice Lubrication

Big on features with a small price, the perfect fit for entry-level, Single Line Resistive orifice lubrication systems. A complete electric package includes pump, reservoir and integrated control (remote version optional) for fast and easy installation. Use with Thrif-T Luber orifice dispensers for a complete system.

### Typical Applications

- Small machine tools

### Lubrication Used

- Oil - 100-10,000 SUS

### Technical Specifications

|                                 |                                             |
|---------------------------------|---------------------------------------------|
| Max Output per Minute . . . . . | 0.42 in <sup>3</sup> (6.9 cm <sup>3</sup> ) |
| Max Output Pressure . . . . .   | 150 psi (10 bar)                            |
| Operating Temp . . . . .        | 0° F to 140° F (-18° C to 60° C)            |
| Motor . . . . .                 | 115 VAC                                     |
| Reservoir . . . . .             | 4 pint (1.9 Liters)                         |

### Ordering Information

| Thrif-T Luber Pumps w/Reservoir |                                                       |
|---------------------------------|-------------------------------------------------------|
| 564068                          | TLEP-10 - Thrif-T Luber Electric Pump, 115 VAC Timer  |
| 564067                          | TLEP-11 - Thrif-T Luber Electric Pump, 115 VAC Remote |
| Thrif-T Luber Replacement Parts |                                                       |
| 558031                          | Timer Replacement Board                               |
| 563162                          | Replacement Relief Valve                              |
| 564065                          | Replacement Pump                                      |
| 564439                          | Replacement Reservoir and Motor Housing               |
| 557641                          | Replacement Gearmotor, 115 VAC                        |
| 557826                          | Replacement Low Level Switch                          |
| 558296                          | 0-300 psi gauge                                       |



# Electric Pumps

## Maxi-Flo™

### Machine Tool Lubrication with System Monitoring

Compact design with everything you need to get your single line resistive oil lubrication system installed and running quickly. A standard package comes complete with reservoir, pump, gear motor, and choice of internal or remote control. Simple slide switches allow for easy setup of pump run cycle time. Bright LED indicators for low level and power allow for easy troubleshooting and verification.

- Integrated control with manual run button for easy setup
- Compact design fits anywhere
- 500 psi (34 bar) rating for using with various orifice metering devices

### Typical Applications

- Small machine tools

### Lubrication Used

- Oil - 60-30,000 SUS

### Technical Specifications

|                               |                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Max Output per Stroke         | 0.01 in <sup>3</sup> (0.165 cm <sup>3</sup> )                                                                            |
| Pump Output Volume per Minute | 12 rpm@60hz, 0.120 in <sup>3</sup> (1.97 cm <sup>3</sup> )<br>10 rpm@50hz, 0.100 in <sup>3</sup> (1.64 cm <sup>3</sup> ) |
| Max Output Pressure           | 500 psi (34 bar)                                                                                                         |
| Operating Temp                | 0° F to 140° F (-18° C to 60° C)                                                                                         |
| Material                      | Plastic, Rectangular                                                                                                     |
| Reservoir Size                | 4 pints (1.9 liters)                                                                                                     |
| Motor                         | 115 VAC, 50/60 hz                                                                                                        |

### Ordering Information

| Maxi-Flo Packages |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| 563379            | 115 VAC, 4 pt Plastic Rectangular Oil Reservoir, Solid State Timer Control |
| 563376            | 115 VAC, 4 pt Plastic Rectangular Oil Reservoir, Remote Control            |
| Accessories       |                                                                            |
| 564376            | High Pressure Switch                                                       |
| 558899            | Gauge, 0-1,000 psi                                                         |
| Replacement Parts |                                                                            |
| 558031            | Timer Replacement Board, 115 VAC                                           |
| 557641            | Replacement 115 VAC Gearmotor                                              |
| 563374            | Replacement Pump                                                           |
| 557826            | Replacement Low Level Switch                                               |
| 563930            | Replacement Reservoir/Timer Housing Kit                                    |
| 563375            | Replacement Relief Indicator                                               |



563379

# Pneumatic Pumps

LubePro™

## Built to Last. Built to Perform.

For nearly 50 years, Graco Fire-Ball™ pumps have been a mainstay in the lubrication marketplace for durability and long life. LubePro™ series pumps leverage the same proven quality and leading technology, offering a robust solution where high output and fast lubrication cycles and flow rates are needed to optimally lubricate equipment while it's working.

## Features and Benefits

- High-strength, shatter-resistant reservoir
- Easy to install utilizing existing mounting holes
- Fast cycle rate and flow
- Integrated vent automatically relieves pressure on return stroke
- Pneumatic power – easily installed into existing air line

## Typical Applications

- Packaging
- Glass Manufacturing
- Tire Production
- Thermoforming
- Injection Molding
- Paper Production
- Labelers
- Automation Machinery
- Presses

## Lubrication Used

- 40 cSt oil minimum
- NLGI #000 to NLGI #2 grease

## Technical Specifications

|                             | A900 Series                                  | A1900 Series                                 | A2600 Series                                 |
|-----------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| Fluid Handling Capabilities | 40 cSt oil minimum                           | 40 cSt oil minimum                           | Up to #2 grease                              |
| Maximum Working Pressure    | 1,350 psi (93.1 bar)                         | 3,500 psi (241 bar)                          |                                              |
| Pressure Ratio              | 9:1                                          | 19:1                                         | 26:1                                         |
| Pump Output Per Stroke      | 1.5 in <sup>3</sup> (24.58 cm <sup>3</sup> ) | 3.0 in <sup>3</sup> (49.16 cm <sup>3</sup> ) | 2.2 in <sup>3</sup> (36.05 cm <sup>3</sup> ) |
| Reservoir Capacity          | 2.8 liters (170.9 in <sup>3</sup> )          | 2 liters (122 in <sup>3</sup> )              |                                              |
| Maximum Air Inlet Pressure  | 150 psi (10.3 bar)                           | 185 psi (12.8 bar)                           | 135 psi (9.3 bar)                            |
| Air Inlet Size              | 1/4 in. -18 NPSF                             | 1/4 in. NPT                                  |                                              |
| Fluid Outlet Size           | 1/4 in. -18 NPT                              | 3/4 in. NPT                                  |                                              |
| Operating Temperature       | -4° F - 149° F (-20° C - 65° C)              | 14° F - 149° F (-10° C - 65° C)              |                                              |

## Ordering Information

| LubePro™ Pumps |                                                       |
|----------------|-------------------------------------------------------|
| 24X717         | A900 oil pump, 9:1                                    |
| 24X694         | A900 oil pump, 9:1 with low level                     |
| 17C753         | A1900 oil pump, 19:1                                  |
| 17C752         | A1900 oil pump, 19:1 with low level                   |
| 17C750         | A2600 grease pump, 26:1                               |
| 17C751         | A2600 grease pump, 26:1 with low level                |
| 18C753         | A1900 oil pump, 19:1, BSPP Fittings                   |
| 18C752         | A1900 oil pump, 19:1 with low level, BSPP fittings    |
| 18C750         | A2600 grease pump, 26:1, BSPP fittings                |
| 18C751         | A2600 grease pump, 26:1 with low level, BSPP fittings |

| LubePro™ Accessories |                                                                    |
|----------------------|--------------------------------------------------------------------|
| 128305               | 4-way air valve, 12 VDC                                            |
| 128254               | 4-way air valve, 24 VDC                                            |
| 128255               | 4-way air valve, 110 VAC                                           |
| 128257               | 4-way air valve, 220 VAC                                           |
| 560734               | Air valve reservoir mounting bracket                               |
| 24Y079               | Installation kit – 12 VDC air valve, bracket, air lines, fittings  |
| 24Y080               | Installation kit – 24 VDC air valve, bracket, air lines, fittings  |
| 24Y081               | Installation kit – 110 VAC air valve, bracket, air lines, fittings |
| 24Y082               | Installation kit – 220 VAC air valve, bracket, air lines, fittings |



17C750



17C753



24X694

# Pneumatic Pumps

## Modu-Flo®

### Features and Benefits

Mix and match pumps, reservoir and manifolds in any configuration to meet any application. Replace the pump or reservoir without disconnecting lubrication lines.

- Easy to standardize on components and reduce inventory
- Adjustable pump output for fast, convenient customizing

### Typical Applications

- In plant machinery, presses and mixers

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

Output per Stroke

|                        |                                                        |
|------------------------|--------------------------------------------------------|
| AL-5                   | 0.01-0.03 in <sup>3</sup> (0.16-0.49 cm <sup>3</sup> ) |
| AL-25                  | 0.03-0.12 in <sup>3</sup> (0.49-1.96 cm <sup>3</sup> ) |
| AL-50                  | 0.06-0.24 in <sup>3</sup> (0.94-3.93 cm <sup>3</sup> ) |
| Max Strokes per Minute | 30                                                     |
| Max Output Pressure    | 3,500 psi (241 bar)                                    |
| Ratio                  | 30:1                                                   |

### Ordering Information

| Modu-Flo Pumps w/out Reservoirs              |                                                                                                                                 |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 563304                                       | AL-5, Pneumatic 30:1, 0.010-0.030 in <sup>3</sup> /stroke, 0.164-0.492 cm <sup>3</sup>                                          |
| 563306                                       | AL-25, Pneumatic 30:1, 0.030-0.120 in <sup>3</sup> /stroke, 0.492-1.966 cm <sup>3</sup>                                         |
| 563308                                       | AL-50, Pneumatic 30:1, 0.060-0.240 in <sup>3</sup> /stroke, 0.938-3.933 cm <sup>3</sup>                                         |
| Modu-Flo Pump Assembly Repair Kits           |                                                                                                                                 |
| 563902                                       | AL-5, Single or Double Acting Repair Kit                                                                                        |
| 563903                                       | AL-25, Single or Double Acting Repair Kit                                                                                       |
| 563904                                       | AL-50, Single or Double Acting Repair Kit                                                                                       |
| 563337                                       | Modu-Flo Pump Mounting Kit - Mounting Screws, O-Rings                                                                           |
| Modu-Flo Manifold Assemblies and Accessories |                                                                                                                                 |
| 563329                                       | Pump/Reservoir Manifold only (npt)                                                                                              |
| 563324                                       | Pump/Reservoir Manifold (npt) w/Outlet Check Valve, System Fill Check Valve, Blowout Assembly, 0-3,000 psi Pressure Gauge       |
| 563331                                       | Pump/Reservoir Manifold (npt) w/Outlet Check Valve, System Fill Check Valve, Tubed Blowout Assembly, 0-3,000 psi Pressure Gauge |
| 563355                                       | Pump/Reservoir Manifold (sae) w/Outlet Check Valve, System Fill Check Valve, Blowout Assembly, Pressure Gauge                   |
| 563323                                       | Remote Pump Manifold (npt) w/Outlet Check Valve, System Fill Check Valve, Blowout Assembly                                      |
| 563330                                       | Remote Pump Manifold (npt) w/Outlet Check Valve, System Fill Check Valve, Tubed Blowout Assembly                                |
| Modu-Flo Oil Reservoirs                      |                                                                                                                                 |
| 562891                                       | 5 pt Plastic Cylindrical Reservoir                                                                                              |
| 562904                                       | 6 pt Plastic Cylindrical Reservoir                                                                                              |
| 562889                                       | 12 pt Plastic Cylindrical Reservoir                                                                                             |
| 562890                                       | 20 pt Plastic Cylindrical Reservoir                                                                                             |
| 563319                                       | 12 pt Tank                                                                                                                      |
| 563320                                       | 24 pt Tank                                                                                                                      |
| 563321                                       | 40 pt Tank                                                                                                                      |



Pump package shown with oil reservoir



Pump package shown with grease reservoir



# Pneumatic Pumps

## Modu-Flo®

### Ordering Information

| Modu-Flo Grease Reservoirs           |                                                                                            |
|--------------------------------------|--------------------------------------------------------------------------------------------|
| 562910                               | 3 lb Plastic Cylindrical Reservoir                                                         |
| 562911                               | 3 lb Plastic Cylindrical Reservoir w/Low Level Switch Actuator (order separately)          |
| 562888                               | 5 lb Plastic Cylindrical Reservoir                                                         |
| 562905                               | 6 lb Plastic Cylindrical Reservoir                                                         |
| 562884                               | 12 lb Plastic Cylindrical Reservoir                                                        |
| 562885                               | 20 lb Plastic Cylindrical Reservoir                                                        |
| 564264                               | 5 lb Metal Cylindrical Reservoir                                                           |
| 562906                               | 6 lb Metal Cylindrical Reservoir                                                           |
| 562886                               | 12 lb Metal Cylindrical Reservoir                                                          |
| 562887                               | 20 lb Metal Cylindrical Reservoir                                                          |
| Modu-Flo Low Level Switch Assemblies |                                                                                            |
| 563316                               | 15 amp Low Level Switch for 5 and 12 pt Cylindrical Oil Reservoirs, SPDT                   |
| 563318                               | 15 amp Low Level Switch for 6 pt Cylindrical Oil Reservoirs and all Tank Reservoirs, SPDT  |
| 563317                               | 15 amp Low Level Switch for 20 pt Cylindrical Oil Reservoirs, SPDT                         |
| 563014                               | 10 watt Low Level Switch for 6 pt Cylindrical Oil Reservoirs and all Tank Reservoirs, SPST |
| 563015                               | 10 watt Low Level Switch for 5 and 12 pt Cylindrical Oil Reservoirs, SPST                  |
| 563016                               | 10 watt Low Level Switch for 20 pt Cylindrical Oil Reservoirs, SPST                        |
| 564322                               | 10 watt Low Level Switch for 12, 24 and 40 pt Tanks, Dual SPST                             |
| 563322                               | Low Level Switch for 5, 6, 12 and 20 pt Cylindrical Grease Reservoirs                      |
| 557825                               | Replacement Low Level Switch for 563014, 563015, 563016                                    |
| 557781                               | Replacement Low Level Switch for 563322                                                    |
| Modu-Flo Pressure Switch Assemblies  |                                                                                            |
| 557829                               | Pressure Switch for all Reservoirs                                                         |
| 563325                               | High Pressure Blowout Switch for 5 pt or 5 lb Reservoirs                                   |
| 563326                               | High Pressure Blowout Switch for 12 and 20 pt or 12 and 20 lb Reservoirs                   |
| 563327                               | High Pressure Blowout Switch for all Rectangular Reservoirs                                |
| Modu-Flo Solenoid Valves             |                                                                                            |
| 563315                               | 3-Way Pneumatic Solenoid Valve, 115 VAC                                                    |
| 563332                               | 3-Way Pneumatic Solenoid Valve, 24 VDC                                                     |
| Modu-Flo Timer/Controller            |                                                                                            |
| 563339                               | Solid State AC Timer for all Tanks                                                         |
| 563340                               | Solid State AC Timer for 5 pt and 5 lb Cylindrical Reservoirs                              |
| 563341                               | Solid State AC Timer for 6, 12 and 20 pt, 6, 12 and 20 lb Cylindrical Reservoirs           |

# Pneumatic Pumps

## E-Series™

### Designed for Reliability

The E-Series pump is a great, minimum cost, entry level alternative to standard pneumatic pump products. This all-in-one pump package comes complete with no assembly required and is easy to install. All pump packages include high-pressure rupture disc assembly and lube outlet check valve. The E-Series offers many reservoir options for either grease or oil. Great for any application where price is a concern and installation time is at a premium.

- Easy field installation of accessories without disturbing existing plumbing
- Smart pump design with few moving parts ensures long-lasting dependability

### Typical Applications

- Presses and other In plant machines

### Lubrication Used

- Oil up to 30,000 SUS
- Grease up to NLGI #2

### Technical Specifications

|                     |                                                     |
|---------------------|-----------------------------------------------------|
| Output per Stroke   | 0.03 in <sup>3</sup> (0.49 cm <sup>3</sup> )        |
| Max Output Pressure | 2,000 psi (138 bar)                                 |
| Ratio               | 20:1                                                |
| Reservoir Material  | Plastic, Cylindrical or Rectangular                 |
| Reservoir Size      | 3 and 6 lb (1.36 kg and 2.72 kg), 4 pt (1.89 liter) |
| Air Pressure        | 40-150 psi                                          |
| Cycle Rate          | 10 CPM grease, 30 CPM oil                           |



563365

### Ordering Information

| E-Series Assemblies w/Fixed Output Pump |                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 563365                                  | E-Series Pump w/3 lb (1.36 kg) Plastic Cylindrical Grease Reservoir, Low Level Switch, Pressure Gauge                      |
| 563363                                  | E-Series Pump w/6 lb (2.72 kg) Plastic Cylindrical Grease Reservoir with 2350 psi (162 bar) Rupture Disc                   |
| 563364                                  | E-Series Pump w/6 lb (2.72 kg) Plastic Cylindrical Grease Reservoir, Low Level Switch with 2350 psi (162 bar) Rupture Disc |
| 563361                                  | E-Series Pump w/4 pt (1.89 liter) Plastic Rectangular Oil Reservoir                                                        |
| 563362                                  | E-Series Pump w/4 pt (1.89 liter) Plastic Rectangular Oil Reservoir, Low Level Switch                                      |
| E-Series Components                     |                                                                                                                            |
| 563358                                  | Pump only - with 1750 psi (121 bar) Rupture Disc                                                                           |
| 563367                                  | Adjustable Output Pump .01 - 0.03 in <sup>3</sup> (0.16-0.49 cm <sup>3</sup> ) (*not fitted with Rupture Disc Assembly)    |
| E-Series Oil Reservoirs                 |                                                                                                                            |
| 563359                                  | 4 pt (1.89 liter) Plastic Rectangular Reservoir                                                                            |
| 562891                                  | 5 pt (2.36 liter) Plastic Cylindrical Reservoir                                                                            |
| 562904                                  | 6 pt (2.84 liter) Plastic Cylindrical Reservoir                                                                            |
| 562889                                  | 12 pt (5.67 liter) Plastic Cylindrical Reservoir                                                                           |
| 562890                                  | 20 pt (9.45 liter) Plastic Cylindrical Reservoir                                                                           |
| 564375                                  | 40 pt (18.93 liter) Cylindrical - Plastic                                                                                  |
| 563319                                  | 12 pt (5.67 liter) Rectangular - Metal                                                                                     |
| 563320                                  | 24 pt (11.36 liter) Rectangular - Metal                                                                                    |
| 563321                                  | 40 pt (18.93 liter) Rectangular - Metal                                                                                    |

# Pneumatic Pumps

## E-Series™

### Ordering Information

| E-Series Grease Reservoirs                                                 |                                                                                                  |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 562910                                                                     | 3 lb (1.36 kg) Plastic Cylindrical Reservoir                                                     |
| 562888                                                                     | 5 lb (2.26 kg) Plastic Cylindrical Reservoir                                                     |
| 564264                                                                     | 5 lb (2.26 kg) Metal Cylindrical Reservoir                                                       |
| 562905                                                                     | 6 lb (2.71 kg) Plastic Cylindrical Reservoir                                                     |
| 562906                                                                     | 6 lb (2.71 kg) Metal Cylindrical Reservoir                                                       |
| 562884                                                                     | 12 lb (5.42 kg) Plastic Cylindrical Reservoir                                                    |
| 562886                                                                     | 12 lb (5.42 kg) Metal Cylindrical Reservoir                                                      |
| 562885                                                                     | 20 lb (9.04 kg) Plastic Cylindrical Reservoir                                                    |
| 562887                                                                     | 20 lb (9.04 kg) Metal Cylindrical Reservoir                                                      |
| E-Series Low Level Options - Not available for 3 lb Cylindrical Reservoirs |                                                                                                  |
| 563378                                                                     | 10 watt Low Level Switch for 4 pt (1.89 liter) Rectangular Oil Reservoirs                        |
| 563015                                                                     | 10 watt Low Level Switch for 5 pt (2.36 liter) and 12 pt (5.67 liter) Cylindrical Oil Reservoirs |
| 563016                                                                     | 10 watt Low Level Switch for 20 pt (9.46 liter) Cylindrical Oil Reservoirs                       |
| 563316                                                                     | 15 amp Low Level Switch for 5 pt (2.37 liter) and 6 pt (2.84 liter) Cylindrical Oil Reservoirs   |
| 563317                                                                     | 15 amp Low Level Switch for 20 pt (9.45 liter) Cylindrical Oil Reservoirs                        |
| 563322                                                                     | 15 amp Low Level Switch for all Grease Reservoirs                                                |
| 557826                                                                     | 10 watt Replacement Switch                                                                       |
| 557781                                                                     | 15 amp Replacement Switch                                                                        |
| E-Series Accessories - For Field Installation                              |                                                                                                  |
| 563315                                                                     | 3-Way Modular Pneumatic Valve - 115 VAC                                                          |
| 563332                                                                     | 3-Way Modular Pneumatic Valve - 24 VDC                                                           |
| 563909                                                                     | Pump Repair Kit (fixed output)                                                                   |
| 563945                                                                     | Pump Repair Kit (adjustable E-Series Pump)                                                       |

# Pneumatic Pumps

## MSA-10™ and MSA-100™

### Durable In-Line Pumps

MSA Series products are used together with main lubrication supply lines where the pump is fed directly with no additional reservoir required. No reservoir makes the MSA Series ideal for locations that are difficult to reach or undesirable to enter. Use the MSA-10 for standard applications and the MSA-100 when high operating pressures and larger outputs are required.

- Ideal for applications where space is a premium
- Handles high pressure lubricant feed of direct line intake
- Used with or without a reservoir for the ultimate flexibility

### Typical Applications

- In-plant manufacturing presses, machinery and processing equipment

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

#### MSA-10

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Material                   | Steel                                                |
| Output per Stroke          | .04-.120 in <sup>3</sup> (.66-1.97 cm <sup>3</sup> ) |
| Max Pump Stroke per Minute | Single-Acting - 15<br>Double-Acting - 60             |
| Max Output Pressure        | 3,000 psi (207 bar)                                  |
| Air Pressure               | 40-150 psi                                           |
| Max Lube Inlet             | 500 psi (34 bar)                                     |
| Ratio                      | 25:1                                                 |

#### MSA-100

|                            |                                                         |
|----------------------------|---------------------------------------------------------|
| Material                   | Aluminum                                                |
| Seals                      | Buna-N and Fluoroelastomer                              |
| Output per Stroke          | .400-.800 in <sup>3</sup> (6.57-13.11 cm <sup>3</sup> ) |
| Max Pump Stroke per Minute | Single-Acting - 15<br>Double-Acting - 30                |
| Max Output Pressure        | 3,000 psi (207 bar)                                     |
| Air Pressure               | 60-140 psi                                              |
| Max Lube Inlet             | 500 psi (34 bar)                                        |
| Ratio                      | 25:1                                                    |

\*Supplied with Rupture-to-Atmosphere Indicator rated to 1,450 psi (100) (standard)

### Ordering Information

| MSA Pumps            |                                                   |
|----------------------|---------------------------------------------------|
| 562854               | MSA-10 Air Operated Pump                          |
| 562855               | MSA-100 Air Operated Pump                         |
| MSA Kits             |                                                   |
| 563912               | MSA-10 Repair Parts Kit                           |
| 563913               | MSA-100 Repair Parts Kit                          |
| MSA Restrictor Valve |                                                   |
| 563072               | Air Inlet Restrictor Valve for MSA-10 and MSA-100 |



MSA-10, 562854



MSA-100, 562855

# Pneumatic Pumps

## Injecto-Flo® AO-1

### Compact Air-Operated Oil Pump

The AO-1 pneumatic pumps are compact in size to fit into any application, but deliver higher pump output rates with its short pump off time between cycles. Great for applications using piston distributors for oil lubrication. Several reservoir sizes and materials to choose from. Has built-in vent valve to get you up and running fast.

### Typical Applications

- Small to medium machine tools

### Lubrication Used

- Oil (250-5,000 SUS)

### Technical Specifications

|                                      |                                         |
|--------------------------------------|-----------------------------------------|
| Output per Stroke (single shot only) | 0.80 in³ (13 cm³)                       |
| Max Output Pressure                  | 450 psi (31 bar)                        |
| Ratio                                | 4.5:1                                   |
| Reservoir Material                   | Plastic or Metal, Rectangular           |
| Reservoir Size                       | 4 pt (1.89 liter) or 10 pt (4.73 liter) |
| Minimum On-Time                      | .5 seconds                              |
| Minimum Off-Time                     | .15 seconds                             |

### Ordering Information

| Injecto-Flo AO-1 Pumps |                                                       |
|------------------------|-------------------------------------------------------|
| 562845                 | Pump, 4 pt (1.89 liter) Plastic Rectangular Reservoir |
| 562846                 | Pump, 10 pt (4.73 liter) Metal Rectangular Reservoir  |
| Low Level Switches     |                                                       |
| 556018                 | Low Level Switch                                      |
| 556019                 | Low Level Switch                                      |



562845

# Pneumatic Pumps

LubriSystem®

## Air Operated Pump for Single Line Parallel Systems

Easy to design, modify and adjust for oil or grease applications large or small. Great for operation of piston distributors. Rugged construction maximizes your productivity—upgrading to the internal timer control completely automates the system. All packages include internal pressure relief, so no need to install extra parts with additional costs. Combine with LubriSystem injectors for easy, low cost system design solutions.

- Ability to serve large systems—up to 100 lube points or more
- Efficient design promotes increase productivity and less downtime
- Several reservoir choices for both oil and grease applications

## Typical Applications

- In plant equipment and machinery

## Lubrication Used

- Oil and Grease up to NLGI #1

## Technical Specifications

|                     |                                                                                                                    |
|---------------------|--------------------------------------------------------------------------------------------------------------------|
| Output per Stroke   | 1.5 in <sup>3</sup> (24.6 cm <sup>3</sup> )                                                                        |
| Max Output Pressure | 360-1,350 psi (25-93 bar)                                                                                          |
| Air Inlet Pressure  | 40-150 psi (3-10 bar)                                                                                              |
| Ratio               | 9:1                                                                                                                |
| Reservoir Material  | Plastic, Cylindrical                                                                                               |
| Reservoir Size      | 6 lb (2.72 kg), 12 lb (5.44 kg) or 20 lb (9.06 kg),<br>6 pt (2.84 liter), 12 pt (5.68 liter) or 20 pt (9.46 liter) |



563575

## Ordering Information

| LubriSystem Pump w/out Reservoir                             |                                                                                               |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 563579                                                       | Standard Pump                                                                                 |
| LubriSystem Standard Oil Pumps                               |                                                                                               |
| 563574                                                       | LubriSystem Pump w/6 pt (2.84 liter) Plastic Cylindrical Reservoir                            |
| 563575                                                       | LubriSystem Pump w/12 pt (5.68 liter) Plastic Cylindrical Reservoir                           |
| 563576                                                       | LubriSystem Pump w/20 pt (9.46 liter) Plastic Cylindrical Reservoir                           |
| 563577                                                       | LubriSystem Pump w/6 pt (2.84 liter) Plastic Cylindrical Reservoir, 10 watt Low Level Switch  |
| 563578                                                       | LubriSystem Pump w/12 pt (5.68 liter) Plastic Cylindrical Reservoir, 10 watt Low Level Switch |
| LubriSystem Standard Air Operated Pumps Reservoir Assemblies |                                                                                               |
| 563571                                                       | LubriSystem Pump w/6 lb (2.72 kg) Plastic Cylindrical Reservoir                               |
| 563572                                                       | LubriSystem Pump w/6 lb (2.72 kg) Plastic Cylindrical Reservoir, Low Level Switch             |
| 563573                                                       | LubriSystem Pump w/12 lb (5.44 kg) Plastic Cylindrical Reservoir, Low Level Switch            |
| LubriSystem Plastic Oil Reservoirs                           |                                                                                               |
| 562892                                                       | 12 pt (5.68 liter) Reservoir                                                                  |
| 562893                                                       | 20 pt (9.46 liter) Reservoir                                                                  |
| LubriSystem Plastic Grease Reservoirs                        |                                                                                               |
| 562907                                                       | 6 lb (2.72 kg) Reservoir                                                                      |
| 562896                                                       | 12 lb (5.44 kg) Reservoir                                                                     |
| 562897                                                       | 20 lb (9.06 kg) Reservoir                                                                     |

| LubriSystem Low Level Switches - Oil Reservoirs only    |                                                            |
|---------------------------------------------------------|------------------------------------------------------------|
| 563014                                                  | 10 watt Low Level Switch for 6 pt (2.84 liter) Reservoirs  |
| 563015                                                  | 10 watt Low Level Switch for 12 pt (5.68 liter) Reservoirs |
| 563016                                                  | 10 watt Low Level Switch for 20 pt (9.46 liter) Reservoirs |
| 563318                                                  | 15 amp Low Level Switch for 6 pt (2.84 liter) Reservoirs   |
| 563316                                                  | 15 amp Low Level Switch for 12 pt (5.68 liter) Reservoirs  |
| 563317                                                  | 15 amp Low Level Switch for 20 pt (9.46 liter) Reservoirs  |
| LubriSystem Low Level Switches - Grease Reservoirs only |                                                            |
| 563322                                                  | 15 amp Low Level Switch for all Grease Reservoirs          |
| LubriSystem Solenoid Valves                             |                                                            |
| 563315                                                  | 115 VAC Solenoid Valve                                     |
| 563332                                                  | 24 VDC Solenoid Valve                                      |
| LubriSystem Solid State Timer                           |                                                            |
| 562872                                                  | Solid State Timer, 115 VAC                                 |
| 557925                                                  | DC Timer                                                   |
| LubriSystem Repair Kits                                 |                                                            |
| 563762                                                  | Standard Pump Repair/Rebuild Kit - includes Pump Diaphragm |

# Manual Pumps

## Grease Gun

### Features and Benefits

A simple, compact, cost-effective way to deliver oil or grease. Ideal for purging existing centralized systems when changing lubrication or performing maintenance.

- Ideal for troubleshooting and system testing
- Handy carrying case for easy portability

### Lubrication Used

- Oil and Grease

### Technical Specifications

|                                  |                                                                     |
|----------------------------------|---------------------------------------------------------------------|
| Output per Stroke                | 0.09 cu.in. (1.5 cc)                                                |
| Pressure Rating                  | 5,000 psi (345 bar)                                                 |
| Reservoir Capacity               | 1 pint (500 cc), 1 lb (0.453 kg) or use 14-14.5 oz grease cartridge |
| Pump body and Reservoir Material | Steel                                                               |
| Storage Case Material            | HDPE Plastic                                                        |

### Ordering Information

| Manual Grease Gun |                                 |
|-------------------|---------------------------------|
| 562857            | Pump package with carrying case |
| 558959            | Wall mount bracket              |
| 200389            | 6 inch rigid extension          |



562857

# Manual Pumps

## PH Pump™

### Versatile and Tough

Built with aluminum and steel components to meet the high standards of performance and quality you expect from Graco products. Available with a choice of standard clear plastic or metal Modu-Flo reservoirs for either oil or grease. Modular pump/reservoir design plus built-in features enable the PH Manual Pump to be customized for a wide range of applications.

- Built-in volume indicator provides easy verification that lubricant is being delivered to the system and that divider valves are completing lube cycles
- Wide applicability is provided by an optional two-outlet valve that mounts under the pump outlet. This valve allows the pump to serve two different systems or to supply one separate manual reversing system.
- Single-acting positive displacement pump design minimizes the number of moving and wearing parts for extended pump life and reduced maintenance
- Built-in automatic relief valve protects system components from over-pressure
- Built-in outlet check valve prevents back pressure from damaging pump and minimizes chance for contaminants to get into the pump or the lube supply

### Typical Applications

- In-plant equipment and machinery

### Lubrication Used

- Oil and Grease

### Technical Specifications

|                                       |                                                                                                                                                                   |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pump Output                           | 0.150 cu.in. (2.46 cm <sup>3</sup> ) per full stroke                                                                                                              |
| Maximum Operating Pressure            | 3,000 psi (207 bar)                                                                                                                                               |
| High Pressure Protection Relief Valve | Set @ 2,500 psi (172 bar)                                                                                                                                         |
| Force to Operate Handle               | 29 lb (13.14 kg) per 1,000 psi @ rated pressure                                                                                                                   |
| Reservoir Capacities                  | 5 pint (2.37 liter) or 5 lb (2.27 kg), 6 pint (2.84 liter) or 6 lb (2.72 kg),<br>12 pint (5.68 liter) or 12 lb (5.44 kg), 20 pint (9.46 liter) or 20 lb (9.06 kg) |

### Ordering Information

| PH Pump |                                                               |
|---------|---------------------------------------------------------------|
| 563393  | Pump (w/out reservoir)                                        |
| 564378  | Pump w/5 pint (2.37 liter) Plastic Cylindrical Oil Reservoir  |
| 564379  | Pump w/5 lb. (2.27 kg) Plastic Cylindrical Grease Reservoir   |
| 564381  | Pump w/5 lb. (2.27 kg) Metal Cylindrical Grease Reservoir     |
| 564389  | Pump w/6 lb. (2.72 kg) Plastic Cylindrical Grease Reservoir   |
| 564383  | Pump w/12 lb. (5.44 kg) Plastic Cylindrical Grease Reservoir  |
| 564386  | Pump w/20 lb. (9.06 kg) Plastic Cylindrical Grease Reservoir  |
| 564385  | Pump w/20 pint (9.46 liter) Plastic Cylindrical Oil Reservoir |
| 564384  | Pump w/12 lb. (5.44 kg) Metal Cylindrical Grease Reservoir    |
| 564387  | Pump w/6 pint (2.84 liters) Plastic Cylindrical Oil Reservoir |
| 564365  | Two-Outlet Valve                                              |
| 557864  | 3,000 psi (207 bar) Pressure Gauge                            |
| 563160  | Automatic 2,500 psi (172 bar) Relief Valve                    |
| 558906  | Coupler for Grease Fill Stud                                  |



564384



# Manual Pumps

LubriSystem®

## Features and Benefits

The LubriSystem hand pump package offers versatility for use in any application, large or small. Great for operation with Injectors or Piston Distributors, with oil or grease. Sturdy construction of aluminum and steel to provide years of service. Compact design can be used in areas where space is limited. Rugged bracket allows the pump package to be mounted in place in any applications.

- Bracket-mount design for easy installation
- Rugged design for years of operation
- Built-in pressure venting for use with injectors

## Typical Applications

- General machinery lubrication where power is limited or not available

## Lubrication Used

- Oil
- Grease up to NLGI #1

## Technical Specifications

|                         |                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Output per Stroke       | 0.125 in <sup>3</sup> (2 cm <sup>3</sup> )                                                                              |
| Output Pressure         | 3,000 psi (207 bar)                                                                                                     |
| Force to Operate Handle | 20 lb (9 kg) per 1,000 psi (69 bar)                                                                                     |
| Reservoir               | Plastic, Cylindrical                                                                                                    |
| Reservoir Size          | 6 pint (2.84 liter) or 6 lb (2.72 kg), 12 pint (5.68 liter) or 12 lb (5.44 kg), 20 pint (9.46 liter) or 20 lb (9.06 kg) |

## Ordering Information

| LubriSystem Hand-Operated Pumps               |                                                                       |
|-----------------------------------------------|-----------------------------------------------------------------------|
| 564419                                        | Hand Pump w/12 pt (5.86 liter) Plastic Oil Reservoir, 3,000 psi Gauge |
| 564420                                        | Hand Pump w/20 pt (9.46 liter) Plastic Oil Reservoir, 3,000 psi Gauge |
| 564421                                        | Hand Pump w/6 lb (2.72 kg) Plastic Grease Reservoir, 3,000 psi Gauge  |
| 564422                                        | Hand Pump w/12 lb (5.44 kg) Plastic Grease Reservoir, 3,000 psi Gauge |
| 564423                                        | Hand Pump w/20 lb (9.06 kg) Plastic Grease Reservoir, 3,000 psi Gauge |
| LubriSystem Hand-Operated Pump Components     |                                                                       |
| 563580                                        | Hand Pump Body w/out Reservoir                                        |
| LubriSystem Hand-Operated Pump Pressure Gauge |                                                                       |
| 557864                                        | 3,000 psi Gauge                                                       |
| LubriSystem Hand-Operated Pump Reservoirs     |                                                                       |
| 562904                                        | 6 pt (2.84 liter) Plastic Oil Reservoir                               |
| 562889                                        | 12 pt (5.68 liter) Plastic Oil Reservoir                              |
| 562890                                        | 20 pt (9.46 liter) Plastic Oil Reservoir                              |
| 562905                                        | 6 lb (2.72 kg) Plastic Grease Reservoir                               |
| 562884                                        | 12 lb (5.44 kg) Plastic Grease Reservoir                              |
| 562885                                        | 20 lb (9.06 kg) Plastic Grease Reservoir                              |



564422

# Manual Pumps

## Thrif-T Luber®

### Features and Benefits

A simple and effective positive displacement pump that delivers up to 0.50 cubic inches per stroke. Compact design easily mounts on any piece of equipment. A spring return drives the piston for controlled lubrication delivery.

- Modular system design allows configurations to work in all applications
- Easy to standardize on components and reduce inventory
- Adjustable pump output for fast, convenient customizing

### Typical Applications

- Small machine tools

### Lubrication Used

- Oil (100-10,000 SUS)

### Technical Specifications

Output per Stroke . . . . . 0.50 in³ (8.2 cm³)  
Output Pressure . . . . . 75 psi (5 bar)  
Operating Temp . . . . . 0° F to 140° F (-17.8° C to 60° C)  
Reservoir Size . . . . . 4 pt (1.89 liter)

### Ordering Information

| Thrif-T Lube Pump |                                               |
|-------------------|-----------------------------------------------|
| 564012            | TLMP-00 - Thrif-T Luber Manual Pump, Standard |



564012

# Mechanical Pumps

## LubeMaster® Ratchet Drive Pump

### Features and Benefits

Lubricates only while the machine is running! The LubeMaster Clutch Drive is a rugged, reliable pump powered mechanically by the machine using the lubrication. This pump is ideal for applications where lubrication cycles vary and are unpredictable.

- Rugged design for harsh-duty applications
- Mechanical link to machine—lubricates only while machine is running
- No separate power supply required

### Typical Applications

- Presses, Banbury mixers, rubber mills, upsetters, heading machines, crane trolleys

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

| Min./Max. Pump Output Chart |                 |                     |                       | Output Per Hour                                 |                                                  |
|-----------------------------|-----------------|---------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| Degrees of Throw            | Effective Ratio | Impulses Per Minute | Pump Strokes Per Hour | Minimum                                         | Maximum                                          |
| 12°                         | 30:1            | 5 Min.              | 10                    | .100 in <sup>3</sup> (1.639 cm <sup>3</sup> )   | .500 in <sup>3</sup> (8.195 cm <sup>3</sup> )    |
| 60°                         | 6:1             | 150 Max.            | 1500                  | 15.00 in <sup>3</sup> (245.85 cm <sup>3</sup> ) | 75.00 in <sup>3</sup> (1229.25 cm <sup>3</sup> ) |



LM5214

### Ordering Information

| LubeMaster |                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LM6214     | 20 lb (9.06 kg) Plastic Grease Reservoir (562897), Clutch Drive w/Arm (563383), Individual Outputs (12 lb / 5.44 kg and 20 lb / 9.06 kg Grease, SPDT) (563322) |
| LM8211     | 20 lb (9.06 kg) Metal Grease Reservoir (562899), Clutch Drive w/Arm (563383)                                                                                   |
| LM4211     | 20 pt (9.46 liter) Metal Oil Reservoir (562895), Clutch Drive w/Arm (563383)                                                                                   |
| LM7211     | 12 lb (5.44 kg) Metal Grease Reservoir (562898), Clutch Drive w/Arm (563383)                                                                                   |
| LM5211     | 12 lb (5.44 kg) Plastic Grease Reservoir (562896), Clutch Drive w/Arm (563383)                                                                                 |
| LM5214     | 12 lb (5.44 kg) Plastic Grease Reservoir (562896), Clutch Drive w/Arm (563383), Individual Outputs (12 lb / 5.44 kg and 20 lb / 9.06 kg Grease, SPDT) (563322) |

# Mechanical Pumps

## LubeMaster® Ratchet Drive Pump

### LubeMaster Ordering Menu Code

NOTE: Utilize number code not lettered code from literature for ordering purposes.

|                             |                                                                   |    |                                              |   |   |   |   |   |   |   |
|-----------------------------|-------------------------------------------------------------------|----|----------------------------------------------|---|---|---|---|---|---|---|
|                             |                                                                   | LM | -                                            | X | - | X | - | X | - | X |
| <b>Pump</b>                 |                                                                   |    |                                              |   |   |   |   |   |   |   |
| LM LubeMaster pump - 563380 |                                                                   |    |                                              |   |   |   |   |   |   |   |
| <b>Reservoir Option</b>     |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | OPA, 12 pt plastic oil reservoir - 562892                         | 6  | GPB, 20 lb plastic grease reservoir - 562897 |   |   |   |   |   |   |   |
| 2                           | OPB, 20 pt plastic oil reservoir - 562893                         | 7  | GMA, 12 lb metal grease reservoir - 562898   |   |   |   |   |   |   |   |
| 3                           | OMA, 12 pt metal oil reservoir - 562894                           | 8  | GMB, 20 lb metal grease reservoir - 562899   |   |   |   |   |   |   |   |
| 4                           | OMB, 20 pt metal oil reservoir - 562895                           | 9  | OHS, power prime reservoir assembly - 562908 |   |   |   |   |   |   |   |
| 5                           | GPA, 12 lb plastic grease reservoir - 562896                      |    |                                              |   |   |   |   |   |   |   |
| <b>Drive Option</b>         |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | none                                                              | 4  | DOC, 10:1 reduction, wall-mounting - 563386  |   |   |   |   |   |   |   |
| 2                           | DOA, clutch drive w/arm - 563383                                  | 5  | DOD, 60:1 reduction, floor-mounting - 563389 |   |   |   |   |   |   |   |
| 3                           | DOB, 10:1 reduction, floor-mounting - 563388                      | 6  | DOE, 60:1 reduction, wall-mounting - 563387  |   |   |   |   |   |   |   |
| <b>Motor Option</b>         |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | none                                                              |    |                                              |   |   |   |   |   |   |   |
| 2                           | MOA, 1/2 HP, 115/230 VAC, single phase, 60 Hz, 1,725 rpm - 557271 |    |                                              |   |   |   |   |   |   |   |
| 3                           | MOB, 1/2 HP, 230/460 VAC, 3-phase, 60 Hz, 1,725 rpm - 557270      |    |                                              |   |   |   |   |   |   |   |
| 4                           | MOC, 1/2 HP, 115/230 VAC, single phase, 60 Hz, 1,140 rpm - 557272 |    |                                              |   |   |   |   |   |   |   |
| 5                           | MOD, 1/2 HP, 230/460 VAC, 3-phase, 60 Hz, 1,140 rpm - 557273      |    |                                              |   |   |   |   |   |   |   |
| <b>Low Level Option</b>     |                                                                   |    |                                              |   |   |   |   |   |   |   |
| 1                           | LOO, none                                                         | 4  | LOC, 12 and 20 lb grease, SPDT - 563322      |   |   |   |   |   |   |   |
| 2                           | LOA, 12 pt oil, SPDT, 15 amps - 563316                            | 5  | LOD, 12 pt oil, SPST, 10 watts - 563015      |   |   |   |   |   |   |   |
| 3                           | LOB, 20 pt oil, SPDT, 15 amps - 563317                            | 6  | LOE, 20 pt oil, SPST, 10 watts - 563016      |   |   |   |   |   |   |   |

Note: Drive Options 3, 4, 5 and 6 contains all required mounting hardware (mounting plate, coupler, coupler guard, nuts, bolts and washers).

Pricing: In order to obtain Menu pricing for LubeMaster components, a pump must be ordered with each drive option on the same purchase order. All drives ordered w/out a pump on the same purchase order will be treated as a spare part and priced accordingly.

#### Pressure Indicator Option (sold separately)

POA - Standard Blowout, 1450 psi (100 bar), Oil, 563179  
 POB - Standard Blowout, 2350 psi (162 bar) Grease, 563184  
 POC - High-Pressure Blowout Switch, 1450 psi (100 bar), Oil, 563384  
 POD - High-Pressure Blowout Switch, 2350 psi (162 bar), Grease, 563385

# Mechanical Pumps

## MLS Series™

### Simple Installation and Operation

MLS Mechanical Lube Pumps are designed for automatic lubrication of machinery where machine motion can be used as the power source for the pump. Two pump types are available where the mechanical action is transmitted directly to the pump piston, combining compactness and simplicity. RMLS Pumps are equipped with a cam roller for cam or stop actuation. The EMLS-5 Pump is furnished with a drive arm with adjustable clevis position for powering the pump via a connecting rod from an eccentric pin in the end of a rotating shaft or other back-and-forth movement.

### Typical Applications

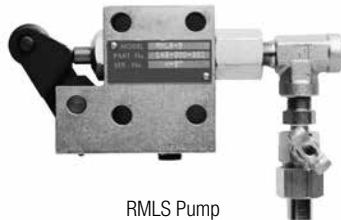
- Where mechanical machine drive can be utilized

### Technical Specifications

|                                   |                                          |
|-----------------------------------|------------------------------------------|
| Min. Piston Stroke Lube Discharge |                                          |
| RMLS-5                            | 0.005 cu.in @ 3/16 in                    |
| RMLS-50                           | 0.050 cu.in @ 5/16 in                    |
| Max Piston Stroke Lube Discharge  |                                          |
| RMLS-5                            | 0.012 cu.in. @ 3/8 in                    |
| RMLS-50                           | 0.050 cu.in. @ 17/32 in                  |
| EMLS-5                            |                                          |
| Arm Travel                        | 2-3/4 in, 2-1/16 in, 1-5/16 in           |
| Piston Travel                     | 3/8 in, 9/32 in, 1-5/16 in               |
| Lube Discharge                    | 0.012 cu.in., 0.008 cu.in., 0.005 cu.in. |

### Ordering Information

| MLS Series Pumps |                        |
|------------------|------------------------|
| 562860           | RMLS-5                 |
| 562861           | EMLS-5                 |
| 562858           | RMLS-50                |
| 563900           | RMLS/EMLS-5 Repair Kit |
| 563901           | RMLS-50 Repair Kit     |



RMLS Pump



EMLS Pump

# Hydraulic Pumps

## Modu-Flo®

### Features and Benefits

The Modu-Flo system is ideal for applications where minimizing downtime is critical. Customizing is easy—just mix and match pumps, reservoir and manifolds in any configuration to meet any application. Replace the pump or reservoir without disconnecting lubrication lines. Choose from a wide variety of hydraulic pumps that operate with grease or oil.

- Modular system design allows configurations to work in all applications
- Easy to standardize on components and reduce inventory
- Adjustable pump output for fast, convenient customization

### Typical Applications

- General machinery lubrication where power is limited or not available

### Lubrication Used

- Oil
- Grease up to NLGI #2

### Technical Specifications

Output per Stroke . . . . .01- 0.125 in³ (0.16-2.0 cm³)  
Output Pressure . . . . .3,000 psi (207 bar)

### Ordering Information

| Part Number | Model Description                         | Max Pump Output/Stroke<br>in³ (cm³) | Maximum<br>Cycles/Minute | Ratio | Max. Hydraulic Pressure,<br>psi (bar) | Lubrication Type               |
|-------------|-------------------------------------------|-------------------------------------|--------------------------|-------|---------------------------------------|--------------------------------|
| 563305      | HLJ-5 pump, double acting (no reservoir)  | 0.01-0.03 (0.16-0.49)               | 60                       | 5.5:1 | 200-2000<br>(14-138)                  | Oil or grease up to<br>NLGI #2 |
| 563345      | HLJ-5X pump, double acting (no reservoir) | 0.03-.09 (0.49-1.5)                 | 50                       | 2.2:1 | 200-3000<br>(14-207)                  |                                |
| 563307      | HLJ-25 pump, double acting (no reservoir) | 0.03-0.12 (.49-2.0)                 | 50                       | 5.5:1 | 200-2000<br>(14-138)                  |                                |

See pneumatic Modu-Flo section for a complete list of configurable parts.



# Single Line Resistive

## Thrif-T Luber®

### Simple Solutions to Tight Spaces and Budgets

- Fast payback—easily pays for itself!
- Easy system design and modification
- Full range of metering amounts for lubricating almost any machine
- Available in three types and ten flow ranges to meet lube requirements
- Quality sintered bronze filters won't shred or clog like felt filters

### Typical Applications

- Simple time and flow metering system; ideal for small to medium-sized lathes or grinders

### Typical Fluids Handled

- Oil

### Technical Specifications

|                        |                          |
|------------------------|--------------------------|
| Cracking Pressure..... | 2 psi (0.1 bar)          |
| Maximum Pressure.....  | 150 psi (10 bar)         |
| Filter Rating.....     | 40 micron                |
| Orifice Type A.....    | Direct to bearing        |
| Orifice Type B.....    | Manifold                 |
| Orifice Type C.....    | Direct to bearing or Tee |



564020



564034

*Quality sintered bronze filters won't shred or clog like felt filters*

### Ordering Information

| Thrif-T Luber - Type A Orifice |          |
|--------------------------------|----------|
| 564019                         | TLOA-0   |
| 564020                         | TLOA-1   |
| 564021                         | TLOA-2   |
| 564022                         | TLOA-3   |
| 564023                         | TLOA-4   |
| 564024                         | TLOA-5   |
| 564025                         | TLOA-2/0 |
| 564026                         | TLOA-3/0 |
| 564027                         | TLOA-4/0 |
| 564028                         | TLOA-5/0 |
| Thrif-T Luber - Type B Orifice |          |
| 564038                         | TLOB-0   |
| 564039                         | TLOB-1   |
| 564040                         | TLOB-2   |
| 564041                         | TLOB-3   |
| 564042                         | TLOB-4   |
| 564043                         | TLOB-5   |
| 564044                         | TLOB-2/0 |
| 564045                         | TLOB-3/0 |
| 564046                         | TLOB-4/0 |
| 564047                         | TLOB-5/0 |
| Thrif-T Luber - Type C Orifice |          |
| 564029                         | TLOC-0   |
| 564030                         | TLOC-1   |
| 564031                         | TLOC-2   |

| Thrif-T Luber - Type C Orifice |                                                          |
|--------------------------------|----------------------------------------------------------|
| 564032                         | TLOC-3                                                   |
| 564033                         | TLOC-4                                                   |
| 564034                         | TLOC-5                                                   |
| 564035                         | TLOC-2/0                                                 |
| 564036                         | TLOC-3/0                                                 |
| Thrif-T Luber Hardware         |                                                          |
| 561217                         | TLMB-04 - 4-Port Manifold Bar                            |
| 561218                         | TLMB-06 - 6-Port Manifold Bar                            |
| 561219                         | TLMB-08 - 8-Port Manifold Bar                            |
| 561220                         | TLMB-10 - 10-Port Manifold Bar                           |
| 561215                         | TLTF-00 - Tee                                            |
| 561216                         | TLAB-00 - Anchor Block                                   |
| 558220                         | TLBF-00 - Bearing Fitting                                |
| 558189                         | TLCN-00 - Compression Nut                                |
| 558156                         | TLTC-01 - Tube Clip, 1-Tube                              |
| 558157                         | TLTC-02 - Tube Clip, 2-Tubes                             |
| 558158                         | TLTC-03 - Tube Clip, 3-Tubes                             |
| 558159                         | TLTC-04 - Tube Clip, 4-Tubes                             |
| Thrif-T Luber Accessories      |                                                          |
| 564053                         | TLIF-00 - In-Line Filter                                 |
| 558296                         | TLPG-00 - Pressure Gauge                                 |
| 561143                         | TLTP-25 - 5/32 inches (3.96 mm) Tubing, 25 feet (762 cm) |
| 563162                         | Relief Valve - 150 psi (10 bar)                          |
| 556677                         | Reservoir Plug                                           |

# Single Line Parallel

## Piston Distributors

### Features and Benefits

- Piston distributor style single line meters known world-wide for fast, simple installation
- Seven different groups with two different mounting types, thread to manifold or cast manifold to serve a broad range of lube point requirements
- Metering nipples can be changed to fine-tune your dispense volumes

### Typical Applications

- Compact metering system with a wide range of outputs; ideal for medium-sized cutting machine tools

### Typical Fluids Handled

- Oil - 32 to 2,000 cst
- Fluid grease up to NLGI #00

### Technical Specifications

|                         | 3400 Series                                                    | 3410 Series                                                    | 3500 Series                                                 | 3510 Series                                                 | 3900 Series                                                  | 3910 Series                                                 |
|-------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------|
| Oil/Fluid Grease        | Oil                                                            | Fluid grease                                                   | Oil                                                         | Fluid grease                                                | Oil                                                          | Fluid grease                                                |
| Reset Pressure          | 150 psi (10 bar)                                               | 150 psi (10 bar)                                               | 150 psi (10 bar)                                            | 150 psi (10 bar)                                            | 150 psi (10 bar)                                             | 150 psi (10 bar)                                            |
| Max. Operating Pressure | 650 psi (45 bar)                                               | 650 psi (45 bar)                                               | 650 psi (45 bar)                                            | 650 psi (45 bar)                                            | 650 psi (45 bar)                                             | 650 psi (45 bar)                                            |
| Output Range            | .0006 – .009 in <sup>3</sup><br>(0.01 – 0.16 cm <sup>3</sup> ) | .0006 – .006 in <sup>3</sup><br>(0.01 – 0.10 cm <sup>3</sup> ) | .006 – .036 in <sup>3</sup><br>(0.1 – 0.6 cm <sup>3</sup> ) | .006 – .018 in <sup>3</sup><br>(0.1 – 0.3 cm <sup>3</sup> ) | 0.012 – 0.09 in <sup>3</sup><br>(0.2 – 1.5 cm <sup>3</sup> ) | .006 – .018 in <sup>3</sup><br>(0.1 – 0.3 cm <sup>3</sup> ) |
| Metering Nipple Options | 5                                                              | 4                                                              | 4                                                           | 3                                                           | 5                                                            | 3                                                           |
| Cast Manifold Outlets   | 2, 3, or 5                                                     | 2, 3, or 5                                                     | 2, 3, or 5                                                  | 2, 3, or 5                                                  | 2 or 3                                                       | 2 or 3                                                      |

### Ordering Information

| 3400 Series Single Point Piston Distributors - Oil          |                         |
|-------------------------------------------------------------|-------------------------|
| 558306                                                      | 0.01 cc Output, M8 x 1  |
| 558307                                                      | 0.03 cc Output, M8 x 1  |
| 558308                                                      | 0.06 cc Output, M8 x 1  |
| 558309                                                      | 0.10 cc Output, M8 x 1  |
| 558310                                                      | 0.16 cc Output, M8 x 1  |
| 122804                                                      | 0.01 cc Output, M10 x 1 |
| 122805                                                      | 0.03 cc Output, M10 x 1 |
| 122806                                                      | 0.06 cc Output, M10 x 1 |
| 122807                                                      | 0.10 cc Output, M10 x 1 |
| 122808                                                      | 0.16 cc Output, M10 x 1 |
| 3410 Series Single Point Piston Distributors - Fluid Grease |                         |
| 121654                                                      | 0.01 cc Output, M8 x 1  |
| 121655                                                      | 0.03 cc Output, M8 x 1  |
| 121656                                                      | 0.06 cc Output, M8 x 1  |
| 121657                                                      | 0.10 cc Output, M8 x 1  |
| 122809                                                      | 0.01 cc Output, M10 x 1 |
| 122810                                                      | 0.03 cc Output, M10 x 1 |
| 122811                                                      | 0.06 cc Output, M10 x 1 |
| 122812                                                      | 0.10 cc Output, M10 x 1 |

| 3400/3410 Series Bar Manifolds                |                  |
|-----------------------------------------------|------------------|
| Inlet/Outlet, use with M8 Piston Distributors |                  |
| 15X624                                        | Tee M8/M8-1 Port |
| 15X667                                        | M10/M8-2 Port    |
| 15X668                                        | M10/M8-3 Port    |
| 15X669                                        | M10/M8-4 Port    |
| 15X670                                        | M10/M8-5 Port    |
| 15X671                                        | M10/M8-6 Port    |
| 15X672                                        | M10/M8-7 Port    |
| 15X673                                        | M10/M8-8 Port    |
| 15X674                                        | M10/M8-10 Port   |
| 15X683                                        | M14/M8-2 Port    |
| 15X684                                        | M14/M8-3 Port    |
| 15X685                                        | M14/M8-4 Port    |
| 15X686                                        | M14/M8-5 Port    |
| 15X687                                        | M14/M8-6 Port    |
| 15X688                                        | M14/M8-7 Port    |
| 15X689                                        | M14/M8-8 Port    |
| 15X690                                        | M14/M8-10 Port   |





# Single Line Parallel

## Piston Distributors

### Ordering Information

| 3500 Series Single Point Piston Distributors - Oil          |                         |
|-------------------------------------------------------------|-------------------------|
| 121658                                                      | 0.10 cc Output, M10 x 1 |
| 121659                                                      | 0.20 cc Output, M10 x 1 |
| 121660                                                      | 0.40 cc Output, M10 x 1 |
| 121661                                                      | 0.60 cc Output, M10 x 1 |
| 122813                                                      | 0.10 cc Output, M12 x 1 |
| 122814                                                      | 0.20 cc Output, M12 x 1 |
| 122815                                                      | 0.40 cc Output, M12 x 1 |
| 122816                                                      | 0.60 cc Output, M12 x 1 |
| 3510 Series Single Point Piston Distributors - Fluid Grease |                         |
| 121662                                                      | 0.10 cc Output, M10 x 1 |
| 121663                                                      | 0.20 cc Output, M10 x 1 |
| 121664                                                      | 0.30 cc Output, M10 x 1 |
| 122817                                                      | 0.10 cc Output, M12 x 1 |
| 122818                                                      | 0.20 cc Output, M12 x 1 |
| 122819                                                      | 0.30 cc Output, M12 x 1 |

| 3900 Series Single Point Piston Distributors - Oil          |                           |
|-------------------------------------------------------------|---------------------------|
| 122820                                                      | 0.20 cc Output, M12 x 1   |
| 122821                                                      | 0.40 cc Output, M12 x 1   |
| 122822                                                      | 0.60 cc Output, M12 x 1   |
| 122823                                                      | 1.00 cc Output, M12 x 1   |
| 122824                                                      | 1.50 cc Output, M12 x 1   |
| 121665                                                      | 0.20 cc Output, M14 x 1.5 |
| 121666                                                      | 0.40 cc Output, M14 x 1.5 |
| 121667                                                      | 0.60 cc Output, M14 x 1.5 |
| 121668                                                      | 1.00 cc Output, M14 x 1.5 |
| 121669                                                      | 1.50 cc Output, M14 x 1.5 |
| 3910 Series Single Point Piston Distributors - Fluid Grease |                           |
| 122825                                                      | 0.10 cc Output, M12 x 1   |
| 122826                                                      | 0.20 cc Output, M12 x 1   |
| 122827                                                      | 0.30 cc Output, M12 x 1   |
| 121670                                                      | 0.10 cc Output, M14 x 1.5 |
| 121671                                                      | 0.20 cc Output, M14 x 1.5 |
| 121672                                                      | 0.30 cc Output, M14 x 1.5 |

| 3500/3510 Series Bar Manifolds                 |                    |
|------------------------------------------------|--------------------|
| Inlet/Outlet, use with M10 Piston Distributors |                    |
| 15X625                                         | Tee M10/M10-1 Port |
| 15X675                                         | M10/M10-2 Port     |
| 15X676                                         | M10/M10-3 Port     |
| 15X677                                         | M10/M10-4 Port     |
| 15X678                                         | M10/M10-5 Port     |
| 15X679                                         | M10/M10-6 Port     |
| 15X680                                         | M10/M10-7 Port     |
| 15X681                                         | M10/M10-8 Port     |
| 15X682                                         | M10/M10-10 Port    |
| 15X691                                         | M14/M10-2 Port     |
| 15X692                                         | M14/M10-3 Port     |
| 15X693                                         | M14/M10-4 Port     |
| 15X694                                         | M14/M10-5 Port     |
| 15X695                                         | M14/M10-6 Port     |
| 15X696                                         | M14/M10-7 Port     |
| 15X697                                         | M14/M10-8 Port     |
| 15X698                                         | M14/M10-10 Port    |

| 3900/3910 Series Bar Manifolds                 |                    |
|------------------------------------------------|--------------------|
| Inlet/Outlet, use with M14 Piston Distributors |                    |
| 15X626                                         | Tee M14/M14-1 Port |
| 15X699                                         | M14/M14-2 Port     |
| 15X700                                         | M14/M14-3 Port     |
| 15X701                                         | M14/M14-4 Port     |
| 15X702                                         | M14/M14-5 Port     |
| 15X703                                         | M14/M14-6 Port     |
| 15X704                                         | M14/M14-7 Port     |
| 15X705                                         | M14/M14-8 Port     |
| 15X706                                         | M14/M14-10 Port    |

# Single Line Parallel

## Piston Distributors

### Ordering Information

| 3400 Cast Manifolds   |                                                            |
|-----------------------|------------------------------------------------------------|
| 122841                | 2 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 122861                | 3 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 122862                | 5 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 3400 Metering Nipples |                                                            |
| 122989                | 0.01 cc (#1)                                               |
| 558311                | 0.03 cc (#2)                                               |
| 558312                | 0.06 cc (#3)                                               |
| 558313                | 0.10 cc (#4)                                               |
| 558314                | 0.16 cc (#5)                                               |
| 3410 Cast Manifolds   |                                                            |
| 122863                | 2 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 122864                | 3 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 122865                | 5 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 3410 Metering Nipples |                                                            |
| 122990                | 0.01 cc (#1)                                               |
| 558324                | 0.03 cc (#2)                                               |
| 558325                | 0.06 cc (#3)                                               |
| 558326                | 0.10 cc (#4)                                               |
| 3500 Cast Manifolds   |                                                            |
| 122866                | 2 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 122868                | 3 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 122869                | 5 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 3500 Metering Nipples |                                                            |
| 558315                | 0.10 cc (#4)                                               |
| 558316                | 0.20 cc (#5)                                               |
| 558317                | 0.40 cc (#6)                                               |
| 558318                | 0.60 cc (#7)                                               |
| 3510 Cast Manifolds   |                                                            |
| 122885                | 2 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 122886                | 3 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 122887                | 5 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 3510 Metering Nipples |                                                            |
| 558327                | 0.10 cc (#4)                                               |
| 558328                | 0.20 cc (#5)                                               |
| 558329                | 0.30 cc (#6)                                               |

| 3900 Cast Manifolds                                  |                                                            |
|------------------------------------------------------|------------------------------------------------------------|
| 122888                                               | 2 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 122889                                               | 3 Outlets, Oil PD, Complete w/Red Plastic Cover            |
| 3900 Metering Nipples                                |                                                            |
| 558319                                               | 0.20 cc (#5)                                               |
| 558320                                               | 0.40 cc (#6)                                               |
| 558321                                               | 0.60 cc (#7)                                               |
| 558322                                               | 1.00 cc (#8)                                               |
| 558323                                               | 1.50 cc (#9)                                               |
| 3910 Cast Manifolds                                  |                                                            |
| 122890                                               | 2 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 122891                                               | 3 Outlets, Fluid Grease PD, Complete w/White Plastic Cover |
| 3910 Metering Nipples                                |                                                            |
| 558330                                               | 0.10 cc (#4)                                               |
| 558331                                               | 0.20 cc (#5)                                               |
| 558332                                               | 0.30 cc (#6)                                               |
| Direct-to-Bearing Piston Distributors - For Oil Only |                                                            |
| 122789                                               | Direct Type F (M14/D4/0.03 cc)                             |
| 122790                                               | Direct Type F (M14/D4/0.06 cc)                             |
| 122791                                               | Direct Type F (M14/D4/0.10 cc)                             |
| 122792                                               | Direct Type F (M14/D6/0.03 cc)                             |
| 122793                                               | Direct Type F (M14/D6/0.06 cc)                             |
| 122794                                               | Direct Type F (M14/D6/0.10 cc)                             |
| 122795                                               | Direct Type GB (D10.35/0.03 cc)                            |
| 122796                                               | Direct Type GB (D10.35/0.06 cc)                            |
| 122797                                               | Direct Type GB (D10.35/0.10 cc)                            |
| 122798                                               | Direct Type GC (D13.5/0.10 cc)                             |
| 122799                                               | Direct Type GC (D13.5/0.20 cc)                             |
| 122800                                               | Direct Type GC (D13.5/0.30 cc)                             |
| 122801                                               | Direct Type GC (D13.5/0.40 cc)                             |

Refer to Graco manual #313759 for more details on Piston Distributors.

# Single Line Parallel

## LubriSystem® Injectors

### Features and Benefits

- Two piece compression fitting included for fast, easy installation
- Bundled system tubing available for easy installation
- Threaded outlet allows for manifold or direct-to-bearing mounting
- Adjustable output volume

### Typical Applications

- Designed for frequent, medium-pressure metering; ideal for medium-sized forming or injection-molding machines. Includes system pressure monitoring.

### Typical Fluids Handled

- Oil to NLGI #0

### Technical Specifications

|                                          |                                                                |
|------------------------------------------|----------------------------------------------------------------|
| Operating Pressure (max) .....           | 2,500 psi (173 bar)                                            |
| Output Range .....                       | 0.002 – 0.024 in <sup>3</sup> (0.033 – 0.393 cm <sup>3</sup> ) |
| Minimum Pressure to Fire Injectors ..... | 450 psi (31 bar)                                               |
| Reset Pressure .....                     | 160 psi (11 bar)                                               |
| Minimum On-Time .....                    | 30 seconds                                                     |
| Minimum Off-Time .....                   | 3 minutes                                                      |

### Ordering Information

| Injectors                             |                                           |                    |                                |                                   |
|---------------------------------------|-------------------------------------------|--------------------|--------------------------------|-----------------------------------|
| Size #                                | Output cu.in. (cm <sup>3</sup> )          | Adjustment Spacers | Aluminum Alloy Injectors (Oil) | Aluminum Alloy Injectors (Grease) |
|                                       |                                           |                    | Part No.                       | Part No.                          |
| 0                                     | .002 (0.033)                              | —                  | 563628                         | 563627                            |
| 1                                     | .005 (0.082)                              | 1                  | 563630                         | 563629                            |
| 2                                     | .009 (0.148)                              | 2                  | 563632                         | 563631                            |
| 3                                     | .012 (0.197)                              | 3                  | 563634                         | 563633                            |
| 4                                     | .015 (0.246)                              | 4                  | 563636                         | 563635                            |
| 8                                     | .024 (0.393)                              | 4                  | 563638                         | 563637                            |
| Spare O-ring                          |                                           |                    | 556587                         | 556586                            |
| LubriSystem Manifolds and Accessories |                                           |                    |                                |                                   |
| 563769                                | Injector cycle Indicator                  |                    |                                |                                   |
| 15M038                                | Injector port plugs for aluminum manifold |                    |                                |                                   |
| 555808                                | End of line manifold plugs                |                    |                                |                                   |
| 557901                                | Manifold Injector Outlet Plug             |                    |                                |                                   |
| 557898                                | Aluminum output adjustment spacer         |                    |                                |                                   |



# Single Line Parallel

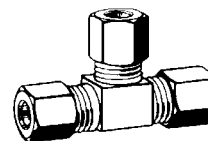
## LubriSystem® Accessories

### Ordering Information

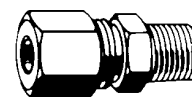
| Heavy Wall Lube Lines (tubing)         |                                                                                                                                                                                       |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 561132                                 | Main Line (pump to manifold): 5/16 inches OD x .059 inches wall (7.9 mm x 1.5 mm), black, 60 feet (18.3 m) Burst Pressure Min. - 1,500 psi (103 bar) at 75° F (24° C)                 |
| 561131                                 | Point Distribution Line (injector to lube point): 3/16 in OD x .044 inches wall (4.8 mm x 1.1 mm), black, 60 feet (18.3 m) Burst Pressure Min. - 2,000 psi (138 bar) at 75° F (24° C) |
| Self-Aligning Ferrules And Nuts        |                                                                                                                                                                                       |
| 556660                                 | Brass Nut, w/captive ferrule, 3/16 inch (4.8 mm) tube                                                                                                                                 |
| 556666                                 | Brass Nut, w/captive ferrule, 5/16 inch (7.9 mm) tube                                                                                                                                 |
| 556651                                 | Stainless Steel Nut, 1/8 inch (3.2 mm) tube                                                                                                                                           |
| 556654                                 | Stainless Steel Ferrule, 1/8 inch (3.2 mm) tube                                                                                                                                       |
| 557963                                 | Brass Inserts for 5/16 inch (7.9 mm) tubing (pack of 20)                                                                                                                              |
| Tees And Unions                        |                                                                                                                                                                                       |
| 556636                                 | Male Branch Tee, 5/16 inch (7.94 mm) tube, 1/8 inch (3.2 mm) NPTF Brass                                                                                                               |
| 556637                                 | Union Tee, 5/16 (7.94 mm) tube, Brass                                                                                                                                                 |
| 556647                                 | Union, 3/16 (4.8 mm) tube, Brass                                                                                                                                                      |
| 556648                                 | Union, 5/16 (4.8 mm) tube, Brass                                                                                                                                                      |
| Brass Connectors                       |                                                                                                                                                                                       |
| 556642                                 | Female Connector, 3/16 inch (4.8 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                    |
| 556643                                 | Female Connector, 5/16 inch (7.94 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                   |
| 556644                                 | Male Connector, 3/16 inch (4.8 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                      |
| 556645                                 | Male Connector, 5/16 inch (7.94 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                     |
| 556646                                 | Male Connector, 5/16 inch (7.94 mm) tube x 1/4 inch (6.35 mm) NPTF                                                                                                                    |
| Tubing Straps                          |                                                                                                                                                                                       |
| 563770                                 | 100 pieces, 11-1/2 inch (292 mm)                                                                                                                                                      |
| Steel Pipe and Adapter Elbows          |                                                                                                                                                                                       |
| 15K740                                 | 1/4 inch-28 inch / 6.35 mm-711 cm (male) x 1/8 inch (3.2 mm) NPTF (female), 90° Adapter Elbow                                                                                         |
| 15K783                                 | 90° Street Elbow, 1/8 inch (3.2 mm) NPTF                                                                                                                                              |
| 557395                                 | 45° Street Elbow, 1/8 inch (3.2 mm) NPTF                                                                                                                                              |
| Brass Male Tube Elbows                 |                                                                                                                                                                                       |
| 556638                                 | 3/16 inch (4.8 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                                      |
| 556639                                 | 5/16 inch (7.94 mm) tube x 1/8 inch (3.2 mm) NPTF                                                                                                                                     |
| 556640                                 | 5/16 inch (7.94 mm) tube x 1/4 inch (6.35 mm) NPTF                                                                                                                                    |
| Harness Clamps and Brackets            |                                                                                                                                                                                       |
| 557943                                 | 5/16 inch (7.94 mm) diameter                                                                                                                                                          |
| 557946                                 | 3/8 inch (9.53 mm) diameter                                                                                                                                                           |
| 557944                                 | 7/16 inch (11.11 mm) diameter                                                                                                                                                         |
| 557947                                 | 1/2 inch (12.7 mm) diameter                                                                                                                                                           |
| 557945                                 | 5/8 inch (15.22 mm) diameter                                                                                                                                                          |
| Miscellaneous                          |                                                                                                                                                                                       |
| 561113                                 | Air Line Restrictor, 1/2 inch x 1/8 inch (12.7 mm x 3.2 mm), M to F Pipe                                                                                                              |
| 561114                                 | Air Line Restrictor, 3/8 inch x 1/8 inch (9.53 mm x 3.2 mm), M to F Pipe                                                                                                              |
| 557374                                 | Trabon Style Fill Stud                                                                                                                                                                |
| 557880                                 | Grease Jockey Style Fill Stud                                                                                                                                                         |
| Fill Couplers, mate w/above fill studs |                                                                                                                                                                                       |
| 558906                                 | Coupler for use with 557374                                                                                                                                                           |
| 557877                                 | Coupler for use with 557880                                                                                                                                                           |



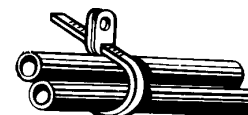
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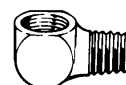
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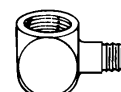
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561132

# Single Line Parallel

## GL-32™ and GL-43™ Injectors

### Features and Benefits

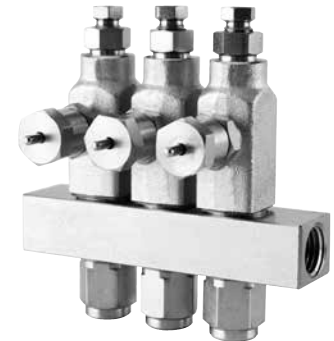
- Accurate, reliable and adjustable lubrication for each lube point. Systems are easy to design, fast to set up and allow you to add or subtract lube points without having to redesign your lubrication system
- Versatile high performance—works with oil and grease grades to NLGI #2
- All injectors come standard with fluoroelastomer seals for use with synthetic lubricants and high temperature applications—up to 350° F (176° C)

### Typical Applications

- In-plant machinery, mobile equipment and anywhere adjustable lubrication output is desired

### Typical Fluids Handled

- Oil (10 weight minimum) and grease up to NLGI #2



24A923

### Technical Specifications

#### Grease

|                                      |                                                          |
|--------------------------------------|----------------------------------------------------------|
| Maximum Operating Pressure           | 3,500 psi (241 bar)                                      |
| Minimum Operating Pressure           | 1,200 psi (83 bar)                                       |
| Typical Operating Pressure           | 1,500 psi (103 bar)                                      |
| Reset Pressure                       | 200 psi (13.7 bar)                                       |
| Output Volume Per Cycle (adjustable) | 0.001–0.008 in <sup>3</sup> (0.02–0.13 cm <sup>3</sup> ) |
| Maximum Temperature Rating           | 350° F (176° C)                                          |
| Cycle Indication                     | Visual Pin                                               |
| Instruction Manual                   | 313798                                                   |

#### Oil

|                                      |                                                          |
|--------------------------------------|----------------------------------------------------------|
| Maximum Operating Pressure           | 1,000 psi (69 bar)                                       |
| Minimum Operating Pressure           | 750 psi (52 bar)                                         |
| Typical Operating Pressure           | 850 psi (59 bar)                                         |
| Reset Pressure                       | 150 psi (10 bar)                                         |
| Output Volume Per Cycle (adjustable) | 0.001–0.008 in <sup>3</sup> (0.02–0.13 cm <sup>3</sup> ) |
| Maximum Temperature Rating           | 350° F (176° C)                                          |
| Cycle Indication                     | Visual Pin                                               |
| Instruction Manual                   | 313798                                                   |

### Ordering Information

| GL-32 Carbon Steel Grease |                                                                  |
|---------------------------|------------------------------------------------------------------|
| 24A919                    | Stand-Alone Injector, 1/4 NPT (must order in quantities of five) |
| 24A920                    | Replacement Injector, 1/4 NPT (must order in quantities of five) |
| 24A921                    | 1-Injector Manifold, 1/4 NPT                                     |
| 24A922                    | 2-Injector Manifold, 1/4 NPT                                     |
| 24A923                    | 3-Injector Manifold, 1/4 NPT                                     |
| 24A924                    | 4-Injector Manifold, 1/4 NPT                                     |
| 24B677                    | Injector Outlet Replacement Kit (nut, ferrule and adapter), NPT  |

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 24F507 | Stand-Alone Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F508 | Replacement Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F509 | 1-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F510 | 2-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F511 | 3-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F512 | 4-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F513 | Injector Outlet Adapter Kit, 4 mm outlet                                   |
| 24F514 | Injector Outlet Adapter Kit, 6 mm outlet                                   |
| 24B360 | Repair Kit                                                                 |

# Single Line Parallel

## GL-32™ and GL-43™ Injectors

### Ordering Information

| GL-32 304 Stainless Steel Grease |                                                                            |
|----------------------------------|----------------------------------------------------------------------------|
| 24E389                           | Stand-Alone Injector, 1/4 NPT (must order in quantities of five)           |
| 24E390                           | Replacement Injector, 1/4 NPT (must order in quantities of five)           |
| 24E391                           | 1-Injector Manifold, 1/4 NPT                                               |
| 24E392                           | 2-Injector Manifold, 1/4 NPT                                               |
| 24E393                           | 3-Injector Manifold, 1/4 NPT                                               |
| 24E394                           | 4-Injector Manifold, 1/4 NPT                                               |
| 24F943                           | Injector Outlet Replacement Kit (nut, ferrule and adapter), NPT            |
| 24F549                           | Stand-Alone Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F550                           | Replacement Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F551                           | 1-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F552                           | 2-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F553                           | 3-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F554                           | 4-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F555                           | Injector Outlet Adapter Kit, 4 mm outlet                                   |
| 24F556                           | Injector Outlet Adapter Kit, 6 mm outlet                                   |
| 24F944                           | Repair Kit                                                                 |
| GL-43 Carbon Steel Oil           |                                                                            |
| 24E240                           | Stand-Alone Injector, 1/4 NPT (must order in quantities of five)           |
| 24E245                           | Replacement Injector, 1/4 NPT (must order in quantities of five)           |
| 24E241                           | 1-Injector Manifold, 1/4 NPT                                               |
| 24E242                           | 2-Injector Manifold, 1/4 NPT                                               |
| 24E243                           | 3-Injector Manifold, 1/4 NPT                                               |
| 24E244                           | 4-Injector Manifold, 1/4 NPT                                               |
| 24B667                           | Injector Outlet Replacement Kit (nut, ferrule and adapter), NPT            |
| 24F542                           | Stand-Alone Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F543                           | Replacement Injector, 6 mm outlet, BSPP (must order in quantities of five) |
| 24F544                           | 1-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F545                           | 2-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F546                           | 3-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F548                           | 4-Injector Manifold, 6 mm outlet, 1/8 BSPP inlet                           |
| 24F201                           | Repair Kit                                                                 |

# Single Line Parallel

## GL-33™ and GL-42™ Injectors

### Features and Benefits

- Accurate, reliable and adjustable lubrication for each lube point. Systems are easy to design, fast to set up and allow you to add or subtract lube points without having to redesign your lubrication system
- Versatile high performance—works with oil and grease grades to NLGI #2
- All injectors come standard with fluoroelastomer seals for use with synthetic lubricants and high temperature applications—up to 350° F (176° C)

### Typical Applications

- In-plant machinery, mobile equipment and anywhere adjustable lubrication output is desired

### Typical Fluids Handled

- Oil (10 weight minimum) and grease up to NLGI #2



24W404

### Technical Specifications

#### Grease

|                                      |                                                          |
|--------------------------------------|----------------------------------------------------------|
| Maximum Operating Pressure           | 3,500 psi (241 bar)                                      |
| Minimum Operating Pressure           | 1,200 psi (83 bar)                                       |
| Typical Operating Pressure           | 1,500 psi (103 bar)                                      |
| Reset Pressure                       | 200 psi (13.7 bar)                                       |
| Output Volume Per Cycle (adjustable) | 0.001–0.003 in <sup>3</sup> (0.02–0.05 cm <sup>3</sup> ) |
| Maximum Temperature Rating           | 350° F (176° C)                                          |
| Cycle Indication                     | Visual Pin                                               |
| Instruction Manual                   | 334495                                                   |

#### Oil

|                                      |                                                          |
|--------------------------------------|----------------------------------------------------------|
| Maximum Operating Pressure           | 1,000 psi (69 bar)                                       |
| Minimum Operating Pressure           | 750 psi (52 bar)                                         |
| Typical Operating Pressure           | 850 psi (59 bar)                                         |
| Reset Pressure                       | 150 psi (10 bar)                                         |
| Output Volume Per Cycle (adjustable) | 0.001–0.003 in <sup>3</sup> (0.02–0.05 cm <sup>3</sup> ) |
| Maximum Temperature Rating           | 350° F (176° C)                                          |
| Cycle Indication                     | Visual Pin                                               |
| Instruction Manual                   | 334495                                                   |

### Ordering Information

| GL-33 Carbon Steel Grease |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| 24W401                    | 1-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W402                    | 2-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W403                    | 3-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W404                    | 4-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24X302                    | 5-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W405                    | 6-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W406                    | 9-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W407                    | 10-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                    |
| 24W408                    | 15-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                    |
| 24W483                    | Replacement injector, 1/8 outlet (must order in quantities of five)                   |
| 24W487                    | Stand-alone injector, 1/8 NPT(f) inlet, 1/8 outlet (must order in quantities of five) |

|        |                                                                                        |
|--------|----------------------------------------------------------------------------------------|
| 24W501 | 1-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W502 | 2-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W503 | 3-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W504 | 4-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24X303 | 5-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W505 | 6-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W506 | 10-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W507 | 15-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W484 | Replacement injector, 6 mm outlet (must order in quantities of five)                   |
| 24W488 | Stand-alone injector, 1/8 NPT(f) inlet, 6 mm outlet (must order in quantities of five) |

# Single Line Parallel

## GL-33™ and GL-42™ Injectors and Accessories

### Ordering Information

| GL-33 Stainless Steel Grease |                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------|
| 24W601                       | 1-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W602                       | 2-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W603                       | 3-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W604                       | 4-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24X304                       | 5-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W605                       | 6-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W606                       | 10-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W607                       | 15-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W485                       | Replacement injector, 1/8 outlet (must order in quantities of five)                    |
| 24W489                       | Stand-alone injector, 1/8 NPT(f) inlet, 1/8 outlet (must order in quantities of five)  |
| 24W701                       | 1-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W702                       | 2-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W703                       | 3-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W704                       | 4-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24X305                       | 5-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W705                       | 6-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W706                       | 10-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W707                       | 15-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W486                       | Replacement injector, 6 mm outlet (must order in quantities of five)                   |
| 24W490                       | Stand-alone injector, 1/8 NPT(f) inlet, 6 mm outlet (must order in quantities of five) |
| GL-42 Carbon Steel Oil       |                                                                                        |
| 24W801                       | 1-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W802                       | 2-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W803                       | 3-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W804                       | 4-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24X306                       | 5-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W805                       | 6-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W806                       | 9-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                      |
| 24W807                       | 10-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W808                       | 15-injector manifold, 1/8 NPT(f) inlet, 1/8 outlet                                     |
| 24W491                       | Replacement injector, 1/8 outlet (must order in quantities of five)                    |
| 24W493                       | Stand-alone injector, 1/8 NPT(f) inlet, 1/8 outlet (must order in quantities of five)  |
| 24W901                       | 1-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W902                       | 2-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W903                       | 3-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W904                       | 4-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24X307                       | 5-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W905                       | 6-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                       |
| 24W906                       | 10-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W907                       | 15-injector manifold, 1/8 BSPP inlet, 6 mm outlet                                      |
| 24W492                       | Replacement injector, 6 mm outlet (must order in quantities of five)                   |
| 24W494                       | Stand-alone injector, 1/8 NPT(f) inlet, 6 mm outlet (must order in quantities of five) |

| GL-32, GL-33, GL-42, and GL-43 Outlet Fittings |                                      |
|------------------------------------------------|--------------------------------------|
| 17B168                                         | JIC-4 male outlet, carbon steel      |
| 17B169                                         | JIC-4 male outlet, stainless steel   |
| 17B780                                         | 1/8 NPT(f) outlet, carbon steel      |
| 17B781                                         | 1/8 NPT(f) outlet, stainless steel   |
| 17B879                                         | 1/8 OD tube, push to connect         |
| 17B880                                         | 1/4 OD tube, push to connect         |
| 24F513                                         | 4 mm OD outlet tube, carbon steel    |
| 24F555                                         | 4 mm OD outlet tube, stainless steel |
| 24B677                                         | 1/8 OD outlet tube, carbon steel     |
| 24F943                                         | 1/8 OD outlet tube, stainless steel  |
| 24F514                                         | 6 mm OD outlet tube, carbon steel    |
| 24F556                                         | 6 mm OD outlet tube, stainless steel |
| 17B782                                         | Outlet closure plug, carbon steel    |
| 17B783                                         | Outlet closure plug, stainless steel |
| Accessories                                    |                                      |
| 24W495                                         | Manual grease fitting adapter        |
| 17B785                                         | Measuring chamber vinyl cap          |
| 24W913                                         | GL33 overhaul kit, carbon steel      |
| 24W914                                         | GL33 overhaul kit, stainless steel   |
| 24W915                                         | GL42 overhaul kit                    |
| 24B360                                         | GL32 overhaul kit, carbon steel      |
| 24F944                                         | GL32 overhaul kit, stainless steel   |
| 24F201                                         | GL43 overhaul kit                    |



# Single Line Parallel

## GL-1™ and GL-1™ High Corrosion Protection (HCP) Injectors

### Features and Benefits

- Easy to change output volume in the field—no need to remove plumbing
- Innovative seal retention for long life
- Adjustable output to custom fit the system for each lube point
- Output from one or more injectors can be cross ported to another injector to increase output to a large bearing
- Visual indicator pin for quick and easy system diagnostics
- Zerk fitting for system diagnostic, trouble shooting and supply priming

### Typical Applications

- Rugged, medium-pressure metering system for pumping grease; ideal for heavier-duty applications such as mobile mining vehicles, milling, cement batch plants or material processing equipment.
- GL-1 HCP provides C5-M (1,400 hours Salt-Spray Environment) corrosion protection as defined by EN ISO 12944 Part 2. Ideal for use in marine applications or other environments where atmospheric corrosion is a concern.

### Typical Fluids Handled

- Grease up to NLGI #2

### Technical Specifications

|                                    |                                               |
|------------------------------------|-----------------------------------------------|
| Reset Pressure .....               | 600 psi (41 bar)                              |
| Maximum Pressure .....             | 3,500 psi (241 bar)                           |
| Suggested Operating Pressure ..... | 2,500 psi (172 bar)                           |
| Minimum Operating Pressure .....   | 1,850 psi (128 bar)                           |
| Output Range .....                 | 0.008 – 0.08 in <sup>3</sup> (0.13 – 1.31 cc) |
| Number of Adjustment Turns .....   | 8                                             |
| Cycle Indicator .....              | Visual                                        |

### Ordering Information

|                                                             | GL-1   | GL-1 HCP |
|-------------------------------------------------------------|--------|----------|
| <b>GL-1 Injectors and Manifold Assemblies</b>               |        |          |
| GL-1 one point assembly                                     | 114901 | 24X401   |
| GL-1 two point assembly                                     | 114902 | 24X402   |
| GL-1 three point assembly                                   | 114903 | 24X403   |
| GL-1 four point assembly                                    | 114904 | 24X404   |
| GL-1 five point assembly                                    | 114905 | 24X405   |
| GL-1 six point assembly                                     | 117206 | 24X406   |
| GL-1 single replacement injector (no manifold)              | 114909 | 24X153   |
| <b>GL-1 Bare Injector Manifolds (no injectors included)</b> |        |          |
| One bank GL-1 manifold                                      | 114911 | 17D401   |
| Two bank GL-1 manifold                                      | 114912 | 17D402   |
| Three bank GL-1 manifold                                    | 114913 | 17D403   |
| Four bank GL-1 manifold                                     | 114914 | 17D404   |
| Five bank GL-1 manifold                                     | 114915 | 17D405   |
| Six bank GL-1 manifold                                      | 118206 | 17D906   |
| <b>GL-1 Injector Accessories</b>                            |        |          |
| GL-1 injector cover kit, plastisol*                         | 115119 | N/A      |
| GL-1 injector crossport kit                                 | 115120 | 128139   |
| GL-1 zerk and cap kit*                                      | 114916 | 17C155   |
| GL-1 adjustment screw and lock nut*                         | 126030 | N/A      |

\*Must be ordered in quantities of ten.



114905

# Single Line Parallel

## GL-11™ Injectors

### Features and Benefits

- Adjustable output volumes to custom fit the system for each lube point
- Convenient top-mounted cycle pin indicator provides quick, at-a-glance confirmation that the injector is functioning properly
- Hex head adjustment for easy turning from most any orientation

### Typical Applications

- Rugged, medium-pressure metering system for pumping grease; ideal for heavier-duty applications such as mobile mining vehicles, milling, cement batch plants or material processing equipment.

### Typical Fluids Handled

- Grease up to NLGI #2

### Technical Specifications

|                                   |                                                          |
|-----------------------------------|----------------------------------------------------------|
| Reset Pressure .....              | 600 psi (41 bar)                                         |
| Maximum Pressure .....            | 3,500 psi (241 bar)                                      |
| Suggested Operating Pressure..... | 2,500 psi (172 bar)                                      |
| Minimum Operating Pressure .....  | 1,000 psi (69 bar)                                       |
| Output Range .....                | 0.05 – 0.5 in <sup>3</sup> (0.82 – 8.2 cm <sup>3</sup> ) |
| Number of Adjustment Turns.....   | 14                                                       |
| Cycle Indicator .....             | Visual                                                   |

### Ordering Information

| GL Injectors and Accessories |                           |
|------------------------------|---------------------------|
| 24A918                       | GL-11 injector            |
| 24B359                       | GL-11 injector repair kit |
| 114916                       | GL-11 zerk and cap kit    |



24A918

# Series Progressive

## Trabon® USP Mono Block Divider Valve

### Features and Benefits

- Series progressive metering in a one piece block—no assembly required!
- Space efficient design with 6, 8, 10, 12, 14, or 16 outlets. Outlets can be combined to meet larger bearing needs
- Fittings have built-in outlet check valves to ensure accurate lube delivery every time
- Works with standard MSP magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event
- Fluoroelastomer seals come standard, great for high temperature applications or synthetic lubricants

### Typical Applications

- Mobile, industrial, food and beverage, wind, and many more

### Typical Fluids Handled

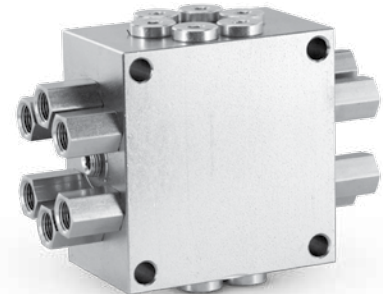
- Oil or grease grades up to NLGI #2

### Technical Specifications

|                                                          |                                                        |
|----------------------------------------------------------|--------------------------------------------------------|
| Maximum Pressure, psi (bar)                              | 5,076 (350)                                            |
| Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> ) | 0.012 in <sup>3</sup> (.20 cm <sup>3</sup> )           |
| Cycle Indication                                         | Electronic proximity switch, magnetic visual indicator |
| Max Operating Temperature                                | 350° F (176° C)                                        |

### Ordering Information

| USP Bare Valves - Must order required outlet fittings to complete installation |                                                     |
|--------------------------------------------------------------------------------|-----------------------------------------------------|
| 24J331                                                                         | USP 6 outlet mono block                             |
| 24J332                                                                         | USP 8 outlet mono block                             |
| 24J333                                                                         | USP 10 outlet mono block                            |
| 24J334                                                                         | USP 12 outlet mono block                            |
| 24J335                                                                         | USP 14 outlet mono block                            |
| 24J336                                                                         | USP 16 outlet mono block                            |
| USP Outlet Fittings                                                            |                                                     |
| 24E232                                                                         | 1/8" NPSF female with check valve                   |
| 16V778                                                                         | 1/4" nylon tubing push-to-connect with check valve  |
| 16V779                                                                         | 3/16" nylon tubing push-to-connect with check valve |
| 16V780                                                                         | 6 mm nylon tubing push-to-connect with check valve  |
| 16V782                                                                         | 1/4" steel tubing compression with check valve      |
| 16V784                                                                         | 3/16" nylon tubing compression with check valve     |
| 16V785                                                                         | 6 mm steel tubing compression with check valve      |
| 24F467                                                                         | Doubling plug                                       |
| USP Accessories                                                                |                                                     |
| 24N007                                                                         | Weld bar for 6 and 8 outlet valves                  |
| 24N008                                                                         | Weld bar for 10 and 12 outlet valves                |
| 24N009                                                                         | Weld bar for 14 and 16 outlet valves                |



24J334

# Series Progressive

## Trabon® MD Mono Block Divider Valve

### Features and Benefits

The Trabon MD Series is the most compact series progressive solution making it a perfect fit for tight spaced applications

- Available with 2, 3, 4, or 6 outlets
- Easy to install on new or existing equipment
- Use our cycle indicator pin models to provide positive assurance of a successful lube event
- Fluoroelastomer seals for high temperature applications or synthetic lubricants

### Typical Applications

- Industrial or mobile applications where space is at a premium

### Typical Fluids Handled

- Oil or grease up to NLGI #2

### Technical Specifications

|                                                              |                                                                                                                         |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Material.....                                                | Steel                                                                                                                   |
| Pressure (max) .....                                         | 3,000 psi (207 bar)                                                                                                     |
| Net Weight (approx.) .....                                   | 1 lb 8 oz (0.68 kg)                                                                                                     |
| Volume (Lubricant to cycle divider valve one complete cycle) |                                                                                                                         |
| MD-2.....                                                    | 0.040 in <sup>3</sup> (0.66 cm <sup>3</sup> ) each                                                                      |
| MD-3.....                                                    | 0.040 in <sup>3</sup> (0.66 cm <sup>3</sup> ) outlet 1 and 0.020 in <sup>3</sup> (0.33 cm <sup>3</sup> ) outlet 2 and 3 |
| MD-4.....                                                    | 0.020 in <sup>3</sup> (0.33 cm <sup>3</sup> ) each                                                                      |
| MD-6.....                                                    | 0.010 in <sup>3</sup> (0.16 cm <sup>3</sup> ) each                                                                      |
| Max Operating Temperature.....                               | 350° F (176° C)                                                                                                         |

### Ordering Information

|      | Number of Outlets | Output per Outlet, in <sup>3</sup> (cm <sup>3</sup> )  | Valve Only | Valve with Cycle Pin | Valve with Cycle Switch and Bracket Assembly |
|------|-------------------|--------------------------------------------------------|------------|----------------------|----------------------------------------------|
| MD-2 | 2                 | 0.04 (0.66)                                            | 562656     | 562653               | 563270                                       |
| MD-3 | 3                 | Outlet 1 - 0.04 (0.66)<br>Outlet 2 and 3 - 0.02 (0.33) | 562657     | 562654               | 563271                                       |
| MD-4 | 4                 | 0.02 (0.33)                                            | 562658     | 562655               | 564356                                       |
| MD-6 | 6                 | 0.01 (0.16)                                            | 562659     | N/A                  |                                              |

| MD Spare Parts |                                   |
|----------------|-----------------------------------|
| 563555         | Cycle indicator end plug assembly |
| 122276         | Viton o-ring                      |



562658

# Series Progressive

## Trabon® MJ Divider Valve

### Features and Benefits

The Trabon MJ series features a compact and easily customizable design that can be tailor fit to meet a variety of specific lube requirements. Capable of handling grease grades up to NLGI #1.

- Space efficient—from 6 to 16 points from one block assembly
- Built-in outlet check valves ensure accurate lube delivery, every time
- Alternate outlet on face of valves can be fitted with optional performance indicators
- Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event

### Typical Applications

- Machine tools, textile, glass and can machinery, and mobile equipment

### Typical Fluids Handled

- Oil or Grease up to NLGI #1

### Technical Specifications

Material.....Plated Steel  
 Maximum Pressure ..... 2,000 psi (137.89 bar)  
 Max Operating Temperature.....200° F (93° C)  
 Max Cycle Rate with Cycle Pin .....60 cycles/minute

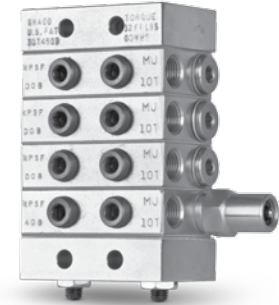
|      | Output Twin Outlet, in³ (cm³) | Output Single Outlet, in³ (cm³) | Cycle Indication       |
|------|-------------------------------|---------------------------------|------------------------|
| MJ5  | 0.005 (0.08)                  | 0.010 (0.16)                    | Not available          |
| MJ10 | 0.010 (0.16)                  | 0.020 (0.33)                    | Cycle indicator switch |
| MJ15 | 0.015 (0.26)                  | 0.030 (0.49)                    |                        |

### Ordering Information

| MJ Valve Working Sections (Must be ordered in multiples of 5) |             |                              |                  |                                |                       |
|---------------------------------------------------------------|-------------|------------------------------|------------------|--------------------------------|-----------------------|
| Outlet                                                        | Description | Output Per Outlet, in³ (cm³) | Model Number     |                                |                       |
|                                                               |             |                              | Standard Section | With Cycle Pin – Right         | With Cycle Pin – Left |
| Single                                                        | MJ-5S       | 0.010 (0.16)                 | 562500           | Cycle indication not available |                       |
|                                                               | MJ-10S      | 0.020 (0.33)                 | 562501           | 562508                         | 562512                |
|                                                               | MJ-15S      | 0.030 (0.49)                 | 562502           | 562509                         | N/A                   |
| Twin                                                          | MJ-5T       | 0.005 (0.08)                 | 562503           | Cycle indication not available |                       |
|                                                               | MJ-10T      | 0.010 (0.16)                 | 562504           | 562510                         | 562513                |
|                                                               | MJ-15T      | 0.015 (0.26)                 | 562505           | 562511                         | 564205                |

| Build Your Own MJ Base Plate Assemblies |                      |              |
|-----------------------------------------|----------------------|--------------|
| Component                               | Description          | Model Number |
|                                         |                      | NPSF         |
| Inlet*                                  | Standard inlet       | 560643       |
| End section*                            | Standard end section | 560645       |
| Tie rods - (2 required)                 | 3-section**          | 557515       |
|                                         | 4-section**          | 557516       |
|                                         | 5-section**          | 557517       |
|                                         | 6-section**          | 557518       |
|                                         | 7-section**          | 557519       |
|                                         | 8-section**          | 557520       |
|                                         | 9-section**          | 560649       |
| Tie rod nuts (2 required)               | Tie rod nuts         | 556371       |

\*Must be ordered in multiples of five. \*\*Two tie rods and tie rod nuts required for assembly.



# Series Progressive

## Trabon® MSP Divider Valve

### Features and Benefits

The Trabon MSP Series sets the industry standard for quality, reliability, and ease of use features. It was the original modular-style series progressive divider valve—and is still the best!

- Quick change valve sections can be removed from the base assembly without disturbing any lube lines—minimizing labor cost and maximizing your machine uptime
- Accessories such as magnetic and electronic proximity switch cycle indicators provide positive assurance of a successful lube event
- Alternate outlet on face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting
- Built-in outlet check valves ensure accurate lube delivery, every time

### Typical Applications

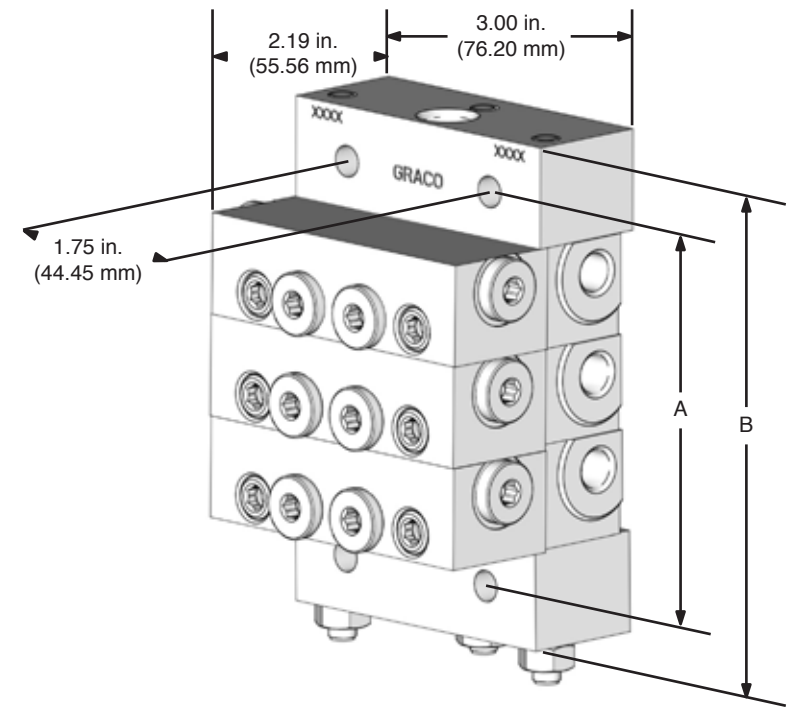
- Mobile, industrial, food and beverage, wind, and many more

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

### Technical Specifications

|                                       |                     |
|---------------------------------------|---------------------|
| Material.....                         | Plated Steel        |
| Maximum Pressure.....                 | 3,500 psi (241 bar) |
| Max Operating Temperature.....        | 350° F (176 °C)     |
| Max Cycle Rate with Cycle Pin.....    | 60 cycles/minute    |
| Max Cycle Rate without Cycle Pin..... | 200 cycles/minute   |



*Pre-assembled and tested base plates now available!*

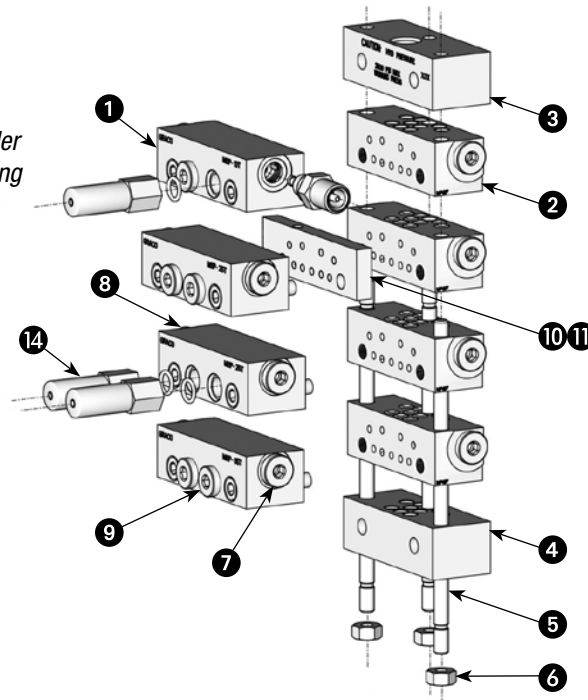


| Number of Valve Sections | Dimensions (for reference only) |                    |
|--------------------------|---------------------------------|--------------------|
|                          | A                               | B                  |
| 3                        | 3.6 in. (91.4 mm)               | 4.6 in. (116.8 mm) |
| 4                        | 4.5 in. (114.3 mm)              | 5.0 in. (127.0 mm) |
| 5                        | 5.4 in. (137.2 mm)              | 6.4 in. (162.6 mm) |
| 6                        | 6.3 in. (160.0 mm)              | 7.4 in. (188.0 mm) |
| 7                        | 7.3 in. (185.4 mm)              | 8.3 in. (210.8 mm) |
| 8                        | 8.2 in. (208.3 mm)              | 9.2 in. (233.7 mm) |

# Series Progressive

## Trabon® MSP Divider Valve

Easily configure the MSP Divider Valve system using the following item selection chart.



Note: Not shown in diagram – Bypass Block (562660), Cycle Indicators and Proximity Switches (refer to specific product pages), and Mounting Brackets (see page 66).

### Ordering Information

MSP Valve Working Sections (Must be ordered in multiples of 5)

| Item | Outlet | Description | Output Per Outlet,<br>in <sup>3</sup> (cm <sup>3</sup> ) | Model Number     |                        |                       |
|------|--------|-------------|----------------------------------------------------------|------------------|------------------------|-----------------------|
|      |        |             |                                                          | Standard Section | With Cycle Pin – Right | With Cycle Pin – Left |
| 1    | Single | MSP-5S      | 0.010 (0.16)                                             | 562711           | N/A                    |                       |
|      |        | MSP-10S     | 0.020 (0.33)                                             | 562712           |                        |                       |
|      |        | MSP-15S     | 0.030 (0.49)                                             | 562713           |                        |                       |
|      |        | MSP-20S     | 0.040 (0.66)                                             | 562714           | 562729                 | 562734                |
|      |        | MSP-25S     | 0.050 (0.82)                                             | 562715           | 562730                 | 562735                |
|      |        | MSP-30S     | 0.060 (0.98)                                             | 562716           | 562731                 | 562736                |
|      |        | MSP-35S     | 0.070 (1.15)                                             | 562717           | 562732                 | 562737                |
|      |        | MSP-40S     | 0.080 (1.31)                                             | 562718           | 562733                 | 562738                |
|      | Twin   | MSP-5T      | 0.005 (0.08)                                             | 562720           | N/A                    |                       |
|      |        | MSP-10T     | 0.010 (0.16)                                             | 562721           |                        |                       |
|      |        | MSP-15T     | 0.015 (0.26)                                             | 562722           |                        |                       |
|      |        | MSP-20T     | 0.020 (0.33)                                             | 562723           | 562739                 | 562744                |
|      |        | MSP-25T     | 0.025 (0.41)                                             | 562724           | 562740                 | 562745                |
|      |        | MSP-30T     | 0.030 (0.49)                                             | 562725           | 562741                 | 562746                |
|      |        | MSP-35T     | 0.035 (0.57)                                             | 562726           | 562742                 | 562747                |
|      |        | MSP-40T     | 0.040 (0.66)                                             | 562727           | 562743                 | 562748                |

### Pre-Configured MSP Base Plate Assemblies

Includes inlets, intermediate base plate sections, end section, tie rods, and nuts.

| Item | Maximum Number of Outlets | Number of Valve Sections | Model Number |        | Dimensions (for reference only) |                    |
|------|---------------------------|--------------------------|--------------|--------|---------------------------------|--------------------|
|      |                           |                          | NPSF         | BSPP   | A                               | B                  |
| 2    | 6                         | 3                        | 24G485       | 24N915 | 3.6 in. (91.4 mm)               | 4.6 in. (116.8 mm) |
|      | 8                         | 4                        | 24G486       | 24N916 | 4.5 in. (114.3 mm)              | 5.0 in. (127.0 mm) |
|      | 10                        | 5                        | 24G487       | 24N917 | 5.4 in. (137.2 mm)              | 6.4 in. (162.6 mm) |
|      | 12                        | 6                        | 24G488       | 24N918 | 6.3 in. (160.0 mm)              | 7.4 in. (188.0 mm) |
|      | 14                        | 7                        | 24G489       | 24N919 | 7.3 in. (185.4 mm)              | 8.3 in. (210.8 mm) |
|      | 16                        | 8                        | 24G490       | 24N920 | 8.2 in. (208.3 mm)              | 9.2 in. (233.7 mm) |

# Series Progressive

## Trabon® MSP Divider Valve

### Ordering Information

#### Build Your Own MSP Base Plate Assemblies

| Item | Component                                                     | Description                    | Model Number |        |        |        | Note                                              |
|------|---------------------------------------------------------------|--------------------------------|--------------|--------|--------|--------|---------------------------------------------------|
|      |                                                               |                                | NPSF         | BSPP   | SAE    | MET    |                                                   |
| 2    | Intermediate base plate                                       | Single section                 | 563425       | 563447 | 563451 |        | Must be ordered in multiples of 5                 |
| 3    | Inlet options<br><i>Additional specialty inlets available</i> | Standard                       | 560919       | 560936 | 560943 | 560976 |                                                   |
|      |                                                               | With bleed ports               | 563421       |        | 563422 |        |                                                   |
| 4    | End section options                                           | Standard                       | 563424       |        |        |        |                                                   |
|      |                                                               | With alternate inlet port plug | 563279       |        |        |        |                                                   |
| 5    | Tie rods (3 required)                                         | 3-section                      | 557731       |        |        |        | 3 tie rods and tie rod nuts required for assembly |
|      |                                                               | 4-section                      | 557732       |        |        |        |                                                   |
|      |                                                               | 5-section                      | 557733       |        |        |        |                                                   |
|      |                                                               | 6-section                      | 557734       |        |        |        |                                                   |
|      |                                                               | 7-section                      | 557735       |        |        |        |                                                   |
|      |                                                               | 8-section                      | 557736       |        |        |        |                                                   |
|      |                                                               | 9-section                      | 557738       |        |        |        |                                                   |
|      |                                                               | 10-section                     | 557739       |        |        |        |                                                   |
|      |                                                               | 11-section                     | 557740       |        |        |        |                                                   |
| 6    | Tie rod nuts (3 required)                                     | Tie rod nuts                   | 556371       |        |        |        |                                                   |

#### Pipe, Piston Enclosure, and Indicator Port Plugs

| Item | Component             | Model Number |        |                      |     | Note                                                      |
|------|-----------------------|--------------|--------|----------------------|-----|-----------------------------------------------------------|
|      |                       | NPSF         | BSPP   | SAE                  | MET |                                                           |
| 7    | Outlet Port Plug      | 557349 (NPT) | 558799 | 567251 (with o-ring) |     | 1 outlet port plug is required for each "S" valve section |
| 8    | Piston Enclosure Plug | 557716       |        |                      |     |                                                           |
| 9    | Indicator Port Plug   | 557776       |        |                      |     |                                                           |

#### Optional Components

| Item | Component                               | Description                                                                             | Model Number | Note                                                           |
|------|-----------------------------------------|-----------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------|
| 10   | Crossport Bar                           | Right                                                                                   | 563469       | 1 outlet port plug is required for each crossport bar          |
|      |                                         | Left                                                                                    | 563470       |                                                                |
|      |                                         | Right and Left                                                                          | 563471       | 2 outlet port plugs are required for each double crossport bar |
| 11   | Singling Bar                            | Converts a "T" valve to an "S" valve                                                    | 563472       |                                                                |
| 12   | Bypass Block                            | MSP Bypass Section                                                                      | 562660       |                                                                |
| 13   | Cycle Indicators and Proximity Switches | Magnetic Visual Cycle Indicator                                                         | 563251       |                                                                |
|      |                                         | SPDT Cycle Switch, provides electrical signal to controller or PLC                      | 563272       |                                                                |
|      |                                         | SPDT Cycle Switch, provides electrical signal to controller or PLC - Moisture Resistant | 563273       |                                                                |
|      |                                         | 6 Digit Mechanical Cycle Counter                                                        | 563444       |                                                                |
|      |                                         | Proximity Switches                                                                      | See Page 87  |                                                                |
| 14   | Performance Indicators                  | Reset Indicator                                                                         | See Page 82  |                                                                |
|      |                                         | Automatic Relief Indicator                                                              | See Page 83  |                                                                |
|      |                                         | Rupture to Atmosphere Indicator                                                         | See Page 85  |                                                                |
|      |                                         | Pressure Switches                                                                       | See Page 88  |                                                                |
|      |                                         | Broken Line Indicator                                                                   | See Page 89  |                                                                |
| 15   | Mounting Brackets                       | Choose from universal, top, or side mounting                                            | See Page 66  |                                                                |



# Series Progressive

## Trabon® MSP Modular Specialty Inlets

### Shunt Inlet (oil and fluid grease only)

A three-way valve, either electronic or pneumatic: allows lubricant to enter divider valve, bypasses it to another divider valve, or diverts it back to tank. Replace standard inlet or mount in-line with remote manifold kit.

| Shunt Inlet Components    |                                                        |                 |        |        |
|---------------------------|--------------------------------------------------------|-----------------|--------|--------|
| Component                 | Description                                            | Connection Type |        |        |
|                           |                                                        | NPSF            | BSPP   | SAE    |
| Shunt Inlet Sections      | 115 VAC, Hirschmann connection - left (NC)             | 563448          | N/A    | N/A    |
|                           | 115 VAC, BH 3-pin connection - right (NO)              | 563452          | N/A    | 560953 |
|                           | 115 VAC, BH 3-pin connection - left (NC)               | 563453          | N/A    | 563463 |
|                           | 24 VDC, BH 3-pin connection - right (NO)               | 563454          | 563493 | 563482 |
|                           | 24 VDC, BH 3-pin connection - left (NC)                | 563455          | 563494 | 563483 |
|                           | Pneumatic Shunt Inlet, 1/8" NPSF air inlet             | 563456          | N/A    | N/A    |
| Connection Cable          | 6 ft (3-pin) mini-straight connection cable            | 558021          |        |        |
|                           | 12 ft (3-pin) mini-straight connection cable           | 558022          |        |        |
| Remote Mount Manifold Kit | Includes outlet manifold, o-ring and 2 mounting screws | 563461          | N/A    |        |
| Replacement Parts         | 115 VAC replacement solenoid                           | 557213          |        |        |
|                           | 24 VDC replacement solenoid                            | 557215          |        |        |
|                           | 115 VAC replacement coil                               | 557214          |        |        |

### Zero-Leak Shut-Off Inlet (oil only)

A two-way valve that can be used with either continuous or intermittent pressurized harder systems. Replaces a standard inlet section or mounts in-line with a remote manifold kit.

| Zero-Leak Shut-Off Inlet Components    |                                                        |                 |      |        |
|----------------------------------------|--------------------------------------------------------|-----------------|------|--------|
| Component                              | Description                                            | Connection Type |      |        |
|                                        |                                                        | NPSF            | BSPP | SAE    |
| Zero-Leak Shut-Off Inlet Valve Section | 115 VAC, 12 in. 2-wire lead connection                 | 563457          | N/A  | N/A    |
|                                        | 115 VAC, BH 3-pin connection                           | 563460          | N/A  | 563468 |
|                                        | 24 VDC, BH 3-pin connection                            | 563464          | N/A  | 563467 |
| Connection Cable                       | 6 ft (3-pin) mini-straight connection cable            | 558021          |      |        |
|                                        | 12 ft (3-pin) mini-straight connection cable           | 558022          |      |        |
| Inlet Restrictor and Filter            | Inlet restrictor with 90 micron last chance filter     | 563074          | N/A  |        |
| Remote Mount Manifold Kit              | Includes outlet manifold, o-ring and 2 mounting screws | 563461          | N/A  |        |
| Replacement Parts                      | 115 VAC replacement coil                               | 557226          |      |        |
|                                        | 24 VDC replacement coil                                | 557225          |      |        |
|                                        | Zero leak valve repair kit                             | 563933          |      |        |

# Series Progressive

## Trabon® MSP Mounting Accessories and Spare Parts

### Ordering Information

| Mounting Accessories |                                |                          |                     |                 |                 |                 |                 |
|----------------------|--------------------------------|--------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|
| Model Number         | Description                    | Number of Valve Sections | Dimensions In. (mm) |                 |                 |                 |                 |
|                      |                                |                          | A                   | B               | C               | D               | E               |
| 560920               | Mounting Bar (Fig. 1)          |                          | 4 (101.6)           | 1-3/4 (44.5)    | 1 (25.4)        | —               | —               |
| 563465               | Weld Bar Kit*                  |                          | 4 (101.6)           | 1-3/4 (44.5)    | 1 (25.4)        | —               | —               |
| 563435               | Top Mounting Bracket (Fig. 2)  | 3 - 4                    | 3-37/64 (90.9)      | 4-1/2 (114.3)   | 5-21/32 (143.7) | —               | —               |
| 563436               | Top Mounting Bracket (Fig. 2)  | 5 - 6                    | 5-27/64 (137.7)     | 6-11/32 (161.1) | 7-1/2 (190.5)   | —               | —               |
| 563437               | Top Mounting Bracket (Fig. 2)  | 7 - 8                    | 7-17/64 (184.5)     | 8-3/16 (208.0)  | 9-11/32 (237.3) | —               | —               |
| 563438               | Side Mounting Bracket (Fig. 3) | 3 - 4                    | 3-37/64 (90.9)      | 4-1/4 (114.3)   | 6-5/8 (168.3)   | 3-7/8 (187.3)   | 5-5/8 (142.9)   |
| 563439               | Side Mounting Bracket (Fig. 3) | 5 - 6                    | 5-27/64 (137.7)     | 6-11/32 (161.1) | 8-15/32 (215.5) | 9-7/32 (234.2)  | 7-15/32 (198.7) |
| 563440               | Side Mounting Bracket (Fig. 3) | 7 - 8                    | 7-17/64 (184.5)     | 8-3/16 (208.0)  | 10-5/8 (262.0)  | 11-1/16 (281.0) | 9-5/16 (236.5)  |

\*Kit 563465 includes two mounting bars (560920), screws, washers, and lock washers.

### Spare Parts

| Model Number | Description                                                        |
|--------------|--------------------------------------------------------------------|
| 563929       | MSP cycle pin indicator repair kit, o-ring                         |
| 563928       | MSP cycle pin indicator repair kit, gasket                         |
| 556540       | MSP o-ring (BUNA-N), black                                         |
| 557722       | MSP high pressure o-ring (90 DURO Fluoroelastomer), green          |
| 122276       | MSP standard high pressure o-ring (90 DURO Fluoroelastomer), black |
| 556568       | Piston enclosure o-ring                                            |
| 557721       | MSP (70 Duro) Viton o-ring                                         |
| 556513       | Valve block mounting screws                                        |
| 556514       | Valve block mounting screw for crossport/singling plate            |
| 556327       | Outlet check ball                                                  |
| 557737       | Outlet check spring                                                |

Fig. 1

Mounting Bar

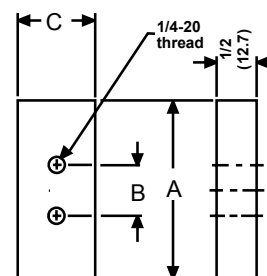


Fig. 2

Top Mount Bracket

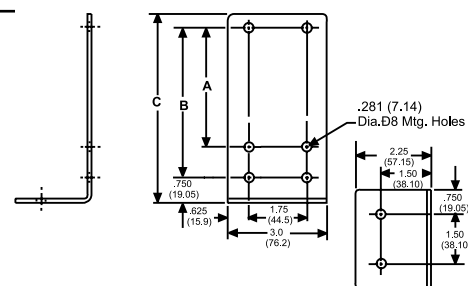
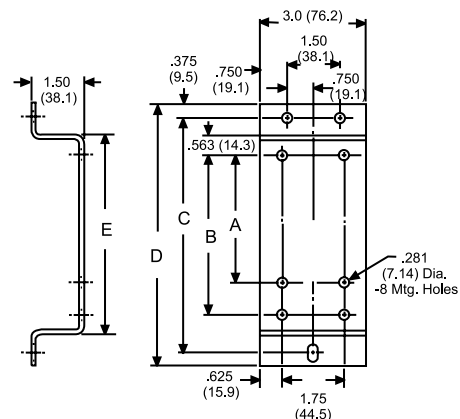


Fig. 3

Side Mount Bracket



# Series Progressive

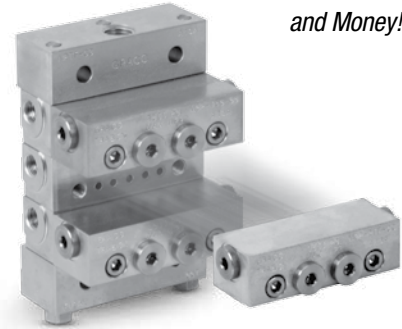
## Trabon® MSP Stainless Steel Divider Valves

### Features and Benefits

Trabon® MSP Series sets the industry standard for quality, reliability, and ease of use features. It was the original modular-style series progressive divider valve – and is still the best! Now get the same reliable valve in stainless steel.

- Face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting
- Can be easily accessorized with electronic proximity switches to provide positive assurance of a successful lube event
- Outlet checks ensure accurate lube delivery, every time
- Quick change valve sections can be removed from the base assembly without disturbing any lube lines—minimizing labor cost and maximizing your machine uptime
- Manufactured in our factory for quality and reliability. Each assembly is honed and match fitted for precise lube delivery every time

*Pre-Assembled and  
Tested Base Plates  
Save You Time  
and Money!*



### Typical Applications

- Machine tools, textile, glass and can machinery, and mobile equipment

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

### Technical Specifications

|                                       |                    |
|---------------------------------------|--------------------|
| Material.....                         | Stainless Steel    |
| Maximum Pressure.....                 | 3500 psi (241 bar) |
| Max Operating Temperature.....        | 140° F (60 °C)     |
| Max Cycle Rate with Cycle Pin.....    | 60 cycles/minute   |
| Max Cycle Rate without Cycle Pin..... | 200 cycles/minute  |

### Ordering Information

| MSP Stainless Steel Working Sections (Must be ordered in multiples of five) |             |                                                          |                                  |
|-----------------------------------------------------------------------------|-------------|----------------------------------------------------------|----------------------------------|
| Outlet                                                                      | Description | Output Per Outlet,<br>in <sup>3</sup> (cm <sup>3</sup> ) | Standard Section<br>Model Number |
| Single                                                                      | MSP-5S-SS   | 0.010 (0.16)                                             | 24B474                           |
|                                                                             | MSP-10S-SS  | 0.020 (0.33)                                             | 562755                           |
|                                                                             | MSP-15S-SS  | 0.030 (0.49)                                             | 24B475                           |
|                                                                             | MSP-20S-SS  | 0.040 (0.66)                                             | 562756                           |
|                                                                             | MSP-25S-SS  | 0.050 (0.82)                                             | 24B476                           |
|                                                                             | MSP-30S-SS  | 0.060 (0.98)                                             | 24B477                           |
|                                                                             | MSP-35S-SS  | 0.070 (1.15)                                             | 24B478                           |
|                                                                             | MSP-40S-SS  | 0.080 (1.31)                                             | 562757                           |
| Twin                                                                        | MSP-5T-SS   | 0.005 (0.08)                                             | 24B479                           |
|                                                                             | MSP-10T-SS  | 0.010 (0.16)                                             | 562758                           |
|                                                                             | MSP-15T-SS  | 0.015 (0.26)                                             | 24B480                           |
|                                                                             | MSP-20T-SS  | 0.020 (0.33)                                             | 562759                           |
|                                                                             | MSP-25T-SS  | 0.025 (0.41)                                             | 24B481                           |
|                                                                             | MSP-30T-SS  | 0.030 (0.49)                                             | 24B482                           |
|                                                                             | MSP-35T-SS  | 0.035 (0.57)                                             | 24B483                           |
|                                                                             | MSP-40T-SS  | 0.040 (0.66)                                             | 562760                           |

# Series Progressive

## Trabon® MSP Stainless Steel Divider Valves

### Ordering Information

#### Pre-Configured MSP Stainless Base Plate Assemblies

Includes inlets, intermediate base plate sections, end section, tie rods, and nuts.

| Maximum Number of Outlets | Number of Valve Sections | Model Number |        |
|---------------------------|--------------------------|--------------|--------|
|                           |                          | NPSF         | BSPP   |
| 6                         | 3                        | 24N382       | 24N388 |
| 8                         | 4                        | 24N383       | 24N389 |
| 10                        | 5                        | 24N384       | 24N390 |
| 12                        | 6                        | 24N385       | 24N391 |
| 14                        | 7                        | 24N386       | 24N392 |
| 16                        | 8                        | 24N387       | 24N393 |

#### Build Your Own MSP Stainless Base Plate Assemblies

| Component                      | Description          | Model Number |        |
|--------------------------------|----------------------|--------------|--------|
|                                |                      | NPSF         | BSPP   |
| Intermediate base plate - SS*  | Single section       | 24B479       | 24N369 |
| Inlet - SS*                    | Standard inlet       | 15Y070       | 16P368 |
| End section - SS*              | Standard end section | 24B498       |        |
| Tie rods - SS<br>(3 required)  | 3-section**          | 126247       |        |
|                                | 4-section**          | 126248       |        |
|                                | 5-section**          | 126249       |        |
|                                | 6-section**          | 126250       |        |
|                                | 7-section**          | 126251       |        |
|                                | 8-section**          | 126252       |        |
|                                | 9-section**          | 15Y069       |        |
|                                | 10-section**         | 560956       |        |
| Tie rod nuts - SS (3 required) | Tie rod nuts         | 558633       |        |

\*Must be ordered in multiples of five. \*\*Three tie rods and tie rod nuts required for assembly.

#### Additional Components

|        |                                                |
|--------|------------------------------------------------|
| 24B495 | 1000 psi reset indicator w/memory, o-ring seal |
| 24B496 | 1500 psi reset indicator w/memory, o-ring seal |
| 24N373 | 2000 psi reset indicator w/memory, o-ring seal |
| 560974 | 303 SS MSP indicator port plug                 |
| 560973 | 303 SS piston bore plug                        |
| 555457 | SS base closure plug accessory                 |
| 24N945 | Valve, relief, 1/8 NPT, 750 psi SST            |
| 24N948 | Valve, relief, 1/8 NPT, 1500 psi SST           |
| 24N949 | Valve, relief, 1/8 NPT, 2000 psi SST           |
| 24N951 | Valve, relief, 1/8 NPT, 2500 psi SST           |
| 24N952 | Valve, relief, 1/8 NPT, 3000 psi SST           |
| 24R631 | Crossport bar, both                            |
| 24R632 | Crossport bar, right                           |
| 24R633 | Crossport bar left                             |

# Series Progressive

## Manzel® MHH Divider Valves

### Features and Benefits

Same capable design as the Trabon MSP Series, with even tighter and more exacting tolerances. The Manzel MHH Series delivers highly accurate lube delivery for demanding high-pressure grease and oil applications.

- Quick change valve sections can be removed from the base assembly without disturbing any lube lines—minimizing labor cost and maximizing your machine uptime
- Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event
- Alternate outlet on face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting
- Built-in outlet check valves ensure accurate lube delivery every time

### Typical Applications

- Compressors, industrial equipment, and where high-pressure lubrication is required

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

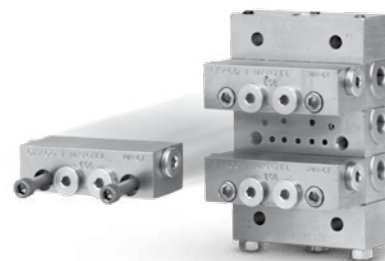
### Technical Specifications

Material.....Plated Steel  
 Maximum Pressure .....7,500 psi (517 bar)  
 Maximum Operating Temperature.....350° F (176° C)  
 Maximum Cycle Rate .....200 cycles/minute

|       | Output Twin Outlet, in³ (cm³) | Output Single Outlet, in³ (cm³) |
|-------|-------------------------------|---------------------------------|
| MHH6  | 0.006 (0.098)                 | 0.012 (0.197)                   |
| MHH9  | 0.009 (0.149)                 | 0.018 (0.295)                   |
| MHH12 | 0.012 (0.197)                 | 0.024 (0.393)                   |
| MHH15 | 0.015 (.246)                  | 0.030 (.492)                    |
| MHH18 | 0.018 (0.295)                 | 0.036 (0.590)                   |
| MHH21 | 0.021 (.0344)                 | 0.042 (0.688)                   |
| MHH24 | 0.024 (0.393)                 | 0.048 (0.787)                   |
| MHH30 | 0.030 (0.492)                 | 0.060 (0.983)                   |

### Ordering Information

| MHH Working Sections (Must be ordered in multiples of five) |         |        |         |
|-------------------------------------------------------------|---------|--------|---------|
| 562679                                                      | MHH-6S  | 562685 | MHH-6T  |
| 562680                                                      | MHH-9S  | 562686 | MHH-9T  |
| 562681                                                      | MHH-12S | 562687 | MHH-12T |
| 24X029                                                      | MHH-15S | 24X027 | MHH-15T |
| 562682                                                      | MHH-18S | 562688 | MHH-18T |
| 24X030                                                      | MHH-21S | 24X028 | MHH-21T |
| 562683                                                      | MHH-24S | 562689 | MHH-24T |
| 562684                                                      | MHH-30S | 562690 | MHH-30T |



*Pre-Assembled and  
Tested Base Plates  
Now Available!*

Series Progressive

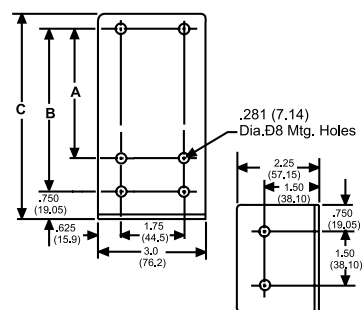
# Series Progressive

## Manzel® MHH Divider Valves

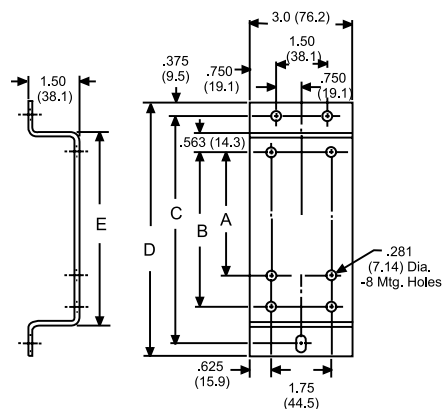
### Ordering Information

| MHH Base Plate Assemblies - Inlet, Intermediates, Ends and Tie Rods       |                                                                                                                                                                |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24F596                                                                    | MHH - 3 section, NPSF                                                                                                                                          |
| 24F597                                                                    | MHH - 4 section, NPSF                                                                                                                                          |
| 24F598                                                                    | MHH - 5 section, NPSF                                                                                                                                          |
| 24F599                                                                    | MHH - 6 section, NPSF                                                                                                                                          |
| 24F600                                                                    | MHH - 7 section, NPSF                                                                                                                                          |
| 24F601                                                                    | MHH - 8 section, NPSF                                                                                                                                          |
| MHH Inlets, Intermediates and Ends (must be ordered in multiples of five) |                                                                                                                                                                |
| 560919                                                                    | Inlet, 1/4-18 NPSF (NPT)                                                                                                                                       |
| 560936                                                                    | Inlet, 1/4-19 BSPP                                                                                                                                             |
| 560943                                                                    | Inlet, 7/16-20 UNF-28 (SAE)                                                                                                                                    |
| 560976                                                                    | Inlet, 150 6149-1-M12X15                                                                                                                                       |
| 563421                                                                    | Inlet, NPSF, bleed ports                                                                                                                                       |
| 563422                                                                    | Inlet, SAE, bleed ports                                                                                                                                        |
| 563424                                                                    | End, NPSF                                                                                                                                                      |
| 563425                                                                    | Intermediate, 1/8-27 NPSF                                                                                                                                      |
| MHH Tie Rods and Nut                                                      |                                                                                                                                                                |
| 557731                                                                    | 3-section tie rod                                                                                                                                              |
| 557732                                                                    | 4-section tie rod                                                                                                                                              |
| 557733                                                                    | 5-section tie rod                                                                                                                                              |
| 557734                                                                    | 6-section tie rod                                                                                                                                              |
| 557735                                                                    | 7-section tie rod                                                                                                                                              |
| 557736                                                                    | 8-section tie rod                                                                                                                                              |
| 556371                                                                    | Tie rod nut                                                                                                                                                    |
| Accessories                                                               |                                                                                                                                                                |
| 563469                                                                    | Crossport bar, right                                                                                                                                           |
| 563470                                                                    | Crossport bar, left                                                                                                                                            |
| 563471                                                                    | Crossport bar, right and left                                                                                                                                  |
| 563472                                                                    | Singling bar                                                                                                                                                   |
| 563444                                                                    | Counter                                                                                                                                                        |
| 563465                                                                    | Weld bar kit                                                                                                                                                   |
| 563251                                                                    | No weep cycle indicator                                                                                                                                        |
| 556540                                                                    | Standard o-ring (BUNA-N), black                                                                                                                                |
| 122276                                                                    | High pressure o-ring (90 DURO Fluoroelastomer), green                                                                                                          |
| 556371                                                                    | Tie rod nut (3 required per assembly)                                                                                                                          |
| 557776                                                                    | Indicator port plug                                                                                                                                            |
| 558799                                                                    | BSPP (ISO1170) plug                                                                                                                                            |
| 567251                                                                    | SAE plug with o-ring                                                                                                                                           |
| 557349                                                                    | NPT plug                                                                                                                                                       |
| 563928                                                                    | Cycle pin indicator repair kit, gasket                                                                                                                         |
| 563929                                                                    | Cycle pin indicator repair kit, o-ring                                                                                                                         |
| Mounting                                                                  |                                                                                                                                                                |
| 560920                                                                    | Mounting bar, 4 inch (101.6 mm) x 1-3/4 inch (44.5 mm) (B) 1 inch (25.4 mm) with 1/4 inch (6.4 mm)-20 thread                                                   |
| 563435                                                                    | Top-mount bracket, (A) 3-37/64 inch (90.9 mm) (B) 4-1/2 inch (114.3 mm) (C) 5-21/32 inch (143.7 mm)                                                            |
| 563436                                                                    | Top-mount bracket, (A) 5-27/64 inch (137.7 mm) (B) 6-11/32 inch (161.1 mm) (C) 7-1/2 inch (190.5 mm)                                                           |
| 563437                                                                    | Top-mount bracket, (A) 7-17/64 inch (184.5 mm) (B) 8-3/16 inch (208.0 mm) (C) 9-11/32 inch (237.3 mm)                                                          |
| 563438                                                                    | Side-mount bracket, (A) 3-37/64 inch (90.9 mm) (B) 4-1/4 inch (114.3 mm) (C) 6-5/8 inch (168.3 mm) (D) 3-7/8 inch (187.3 mm) (E) 5-5/8 inch (142.9 mm)         |
| 563439                                                                    | Side-mount bracket, (A) 5-27/64 inch (137.7 mm) (B) 6-11/32 inch (161.1 mm) (C) 8-15/32 inch (215.5 mm) (D) 9-7/32 inch (234.2 mm) (E) 7-15/32 inch (198.7 mm) |
| 563440                                                                    | Side-mount bracket, (A) 7-17/64 inch (184.5 mm) (B) 8-3/16 inch (208.0 mm) (C) 10-5/8 inch (262.0 mm) (D) 11-1/16 inch (281.0 mm) (E) 9-5/16 inch (236.5 mm)   |

Top Mount Hole Configuration



Side Mount Hole Configuration



# Series Progressive

## Trabon® MX Divider Valve

### Features and Benefits

Greater output volumes for heavy service requirements make the Trabon MX Series ideal for steel and paper mill systems with it's economical and compact design.

- Durable design withstands harsh environments and operating conditions
- Built-in outlet check valves ensure accurate lube delivery every time
- Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event
- Alternate outlet on face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting

### Typical Applications

- Pulp and paper, steel mills, heavy- and high-volume industrial applications

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

### Technical Specifications

Material.....Plated Steel  
Maximum Pressure .....3,000 psi (207 bar)  
Maximum Operating Temperature.....200° F (93° C)  
Maximum Cycle Rate with Cycle Pin.....60 cycles/minute  
Maximum Cycle Rate without Cycle Pin .....200 cycles/minute

|               | Output Twin Outlet, in³ (cm³) | Output Single Outlet, in³ (cm³) | Cycle Indication                                       |
|---------------|-------------------------------|---------------------------------|--------------------------------------------------------|
| <b>MX-25</b>  | 0.025 (0.41)                  | 0.050 (0.82)                    | Electronic proximity switch                            |
| <b>MX-50</b>  | 0.050 (0.82)                  | 0.100 (1.64)                    | Electronic proximity switch,<br>cycle indicator switch |
| <b>MX-75</b>  | 0.075 (1.23)                  | 0.150 (2.46)                    |                                                        |
| <b>MX-100</b> | 0.100 (1.64)                  | 0.200 (3.28)                    |                                                        |
| <b>MX-125</b> | 0.125 (2.05)                  | 0.250 (4.10)                    |                                                        |
| <b>MX-150</b> | 0.150 (2.46)                  | 0.300 (4.92)                    |                                                        |

### Ordering Information

| MX Working Sections |         |
|---------------------|---------|
| 562514              | MX-25S  |
| 562515              | MX-25T  |
| 562516              | MX-50S  |
| 562517              | MX-50T  |
| 562538              | MX-75S  |
| 562539              | MX-75T  |
| 562540              | MX-100S |
| 562541              | MX-100T |
| 562542              | MX-125S |
| 562543              | MX-125T |
| 562545              | MX-150S |
| 562546              | MX-150T |



# Series Progressive

## Trabon® MX Divider Valve

### Ordering Information

| MX w/Cycle Pin (Must be ordered in multiples of two) |                                                                           |
|------------------------------------------------------|---------------------------------------------------------------------------|
| 562523                                               | MX-50T, with cycle pin indicator, right                                   |
| 562518                                               | MX-50S, with cycle pin indicator, right                                   |
| 562524                                               | MX-75T, with cycle pin indicator, right                                   |
| 562519                                               | MX-75S, with cycle pin indicator, right                                   |
| 562525                                               | MX-100T, with cycle pin indicator, right                                  |
| 562520                                               | MX-100S, with cycle pin indicator, right                                  |
| 562526                                               | MX-125T, with cycle pin indicator, right                                  |
| 562521                                               | MX-125S, with cycle pin indicator, right                                  |
| 562527                                               | MX-150T, with cycle pin indicator, right                                  |
| 562522                                               | MX-150S, with cycle pin indicator, right                                  |
| 562533                                               | MX-50T, with cycle pin indicator, left                                    |
| 562528                                               | MX-50S, with cycle pin indicator, left                                    |
| 562534                                               | MX-75T, with cycle pin indicator, left                                    |
| 562529                                               | MX-75S, with cycle pin indicator, left                                    |
| 562569                                               | MX-100T, with cycle pin indicator, left                                   |
| 562530                                               | MX-100S, with cycle pin indicator, left                                   |
| 562535                                               | MX-125T, with cycle pin indicator, left                                   |
| 562531                                               | MX-125S, with cycle pin indicator, left                                   |
| 562536                                               | MX-150T, with cycle pin indicator, left                                   |
| 562532                                               | MX-150S, with cycle pin indicator, left                                   |
| MX Tie Rods and Nut                                  |                                                                           |
| 557488                                               | 3-section tie rod                                                         |
| 557489                                               | 4-section tie rod                                                         |
| 557490                                               | 5-section tie rod                                                         |
| 557491                                               | 6-section tie rod                                                         |
| 557492                                               | 7-section tie rod                                                         |
| 557493                                               | 8-section tie rod                                                         |
| 560576                                               | 9-section tie rod                                                         |
| 560577                                               | 10-section tie rod                                                        |
| 557494                                               | Tie rod nut                                                               |
| MX Inlet and End Sections                            |                                                                           |
| 560620                                               | MX inlet                                                                  |
| 563287                                               | MX end                                                                    |
| Accessories                                          |                                                                           |
| 562916                                               | Singling bar                                                              |
| 562917                                               | MX crossport bar, RH or LH                                                |
| 561102                                               | MX mounting bar                                                           |
| 557509                                               | MX intermediate gasket (1 required per section)                           |
| 557494                                               | MX tie rod nut (8 required per assembly)                                  |
| 557323                                               | MX enclosure plug seal, gasket                                            |
| 557391                                               | 1/4 inch (6.4 mm) NPT outlet plug for singled and crossported MX sections |
| 563917                                               | MX cycle indicator pin repair kit, current style                          |



# Series Progressive

## Trabon® MXP Divider Valves

### Features and Benefits

The Trabon MXP Series' greater output volume makes it easy to customize your assembly to meet larger machine requirements.

- Quick change valve sections can be removed from the base assembly without disturbing any lube lines—minimizing labor cost and maximizing your machine uptime
- Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event
- Alternate outlet on face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting
- Built-in outlet check valves ensure accurate lube delivery every time

### Typical Applications

- Pulp and paper, steel mills, heavy- and high-volume industrial applications

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

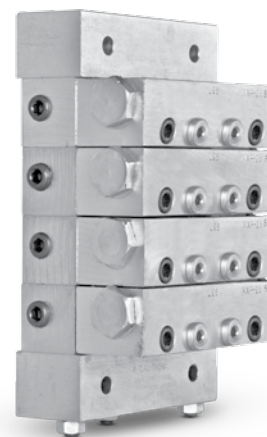
### Technical Specifications

Material.....Plated Steel  
Maximum Pressure ..... 3,000 psi (207 bar)  
Maximum Operating Temperature..... 350° F (176° C)  
Maximum Cycle Rate with Cycle Pin..... 60 cycles/minute  
Maximum Cycle Rate without Cycle Pin ..... 200 cycles/minute

|                | Output Twin Outlet, in <sup>3</sup> (cm <sup>3</sup> ) | Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> ) | Cycle Indication                                       |
|----------------|--------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| <b>MXP-25</b>  | 0.025 (0.41)                                           | 0.050 (0.82)                                             | Electronic proximity switch                            |
| <b>MXP-50</b>  | 0.050 (0.82)                                           | 0.100 (1.64)                                             | Electronic proximity switch,<br>cycle indicator switch |
| <b>MXP-75</b>  | 0.075 (1.23)                                           | 0.150 (2.46)                                             |                                                        |
| <b>MXP-100</b> | 0.100 (1.64)                                           | 0.200 (3.28)                                             |                                                        |
| <b>MXP-125</b> | 0.125 (2.05)                                           | 0.250 (4.10)                                             |                                                        |
| <b>MXP-150</b> | 0.150 (2.46)                                           | 0.300 (4.92)                                             |                                                        |

### Ordering Information

| MXP Working Sections (Must be ordered in multiples of two) |            |
|------------------------------------------------------------|------------|
| 562813                                                     | MXP-25T    |
| 562819                                                     | MXP-25S    |
| 562814                                                     | MXP-50T    |
| 562820                                                     | MXP-50S    |
| 562815                                                     | MXP-75T    |
| 562821                                                     | MXP-75S    |
| 562816                                                     | MXP-100T   |
| 562822                                                     | MXP-100S   |
| 562817                                                     | MXP-125T   |
| 562823                                                     | MXP-125S   |
| 562818                                                     | MXP-150T   |
| 562824                                                     | MXP-150S   |
| 562835                                                     | MXP bypass |



# Series Progressive

## Trabon® MXP Divider Valves

### Ordering Information

| MXP w/Cycle Pin - Right (Must be ordered in multiples of two)                        |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 562830                                                                               | MXP-50S                                                           |
| 562831                                                                               | MXP-75S                                                           |
| 562832                                                                               | MXP-100S                                                          |
| 562833                                                                               | MXP-125S                                                          |
| 562834                                                                               | MXP-150S                                                          |
| 562825                                                                               | MXP-50T                                                           |
| 562826                                                                               | MXP-75T                                                           |
| 562827                                                                               | MXP-100T                                                          |
| 562828                                                                               | MXP-125T                                                          |
| 562829                                                                               | MXP-150T                                                          |
| MXP Inlet, Intermediate Base and End Sections (Must be ordered in multiples of five) |                                                                   |
| 15R994                                                                               | Inlet, 3/4-16 SAE o-ring ports                                    |
| 15R993                                                                               | Inlet, 3/8-18 NPSF                                                |
| 561029                                                                               | Inlet, 3/8-19 BSPP (ISO 1179)                                     |
| 563519                                                                               | Intermediate base, 1/4-18 NPSF                                    |
| 563521                                                                               | Intermediate base, 9/16-18 SAE o-ring                             |
| 563522                                                                               | Intermediate base, 1/4-19 BSPP (ISO 1179)                         |
| 563527                                                                               | Intermediate base w/outlet check, 1/4-18 NPSF                     |
| 563518                                                                               | End section                                                       |
| MXP Tie Rods and Nut (Three required per assembly)                                   |                                                                   |
| 557766                                                                               | 3-section tie rod                                                 |
| 557767                                                                               | 4-section tie rod                                                 |
| 557768                                                                               | 5-section tie rod                                                 |
| 557769                                                                               | 6-section tie rod                                                 |
| 557770                                                                               | 7-section tie rod                                                 |
| 557771                                                                               | 8-section tie rod                                                 |
| 557772                                                                               | 9-section tie rod                                                 |
| 563520                                                                               | 10-section tie rod                                                |
| 555406                                                                               | Tie rod nut                                                       |
| MXP Accessories                                                                      |                                                                   |
| 563524                                                                               | Crossport, left                                                   |
| 563525                                                                               | Crossport, right                                                  |
| 563526                                                                               | Crossport, left and right                                         |
| 557773                                                                               | MXP standard valve section seal, o-ring (90 DURO Fluoroelastomer) |
| 555406                                                                               | MXP tie rod nut (3 required per assembly)                         |
| 563917                                                                               | MXP cycle pin indicator repair kit, new style                     |
| 557774                                                                               | MXP enclosure plug                                                |
| 556572                                                                               | Enclosure plug o-ring                                             |
| 557776                                                                               | MXP indicator port plug                                           |
| 561102                                                                               | Mounting bar                                                      |

# Series Progressive

## Trabon® MGO Divider Valves

### Features and Benefits

The Trabon MGO Series offers the largest output available in a series progressive system. Ideal for heavy-duty and large bearing applications with wide temperature variations and high volume requirements. Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide positive assurance of a successful lube event.

- Alternate outlet on face of valves can be fitted with optional performance indicators, taking the guesswork out of troubleshooting
- Robust design is virtually indestructible and built to perform in extreme environments

### Typical Applications

- Pulp and paper, steel mills, heavy- and high-volume industrial applications

### Typical Fluids Handled

- Oil or Grease up to NLGI #2

### Technical Specifications

Material.....Plated Steel  
Maximum Pressure.....6,000 psi (413 bar)  
Maximum Operating Temperature.....350° F (176° C)  
Maximum Cycle Rate with Cycle Pin.....60 cycles/minute  
Maximum Cycle Rate without Cycle Pin.....200 cycles/minute

|         | Output Twin Outlet, in <sup>3</sup> (cm <sup>3</sup> ) | Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> ) | Cycle Indication                                       |
|---------|--------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| MGO-150 | 0.150 (2.46)                                           | 0.300 (4.92)                                             | Electronic proximity switch,<br>cycle indicator switch |
| MGO-300 | 0.300 (4.92)                                           | 0.600 (9.83)                                             |                                                        |
| MGO-450 | 0.450 (7.37)                                           | 0.900 (14.7)                                             |                                                        |
| MGO-600 | 0.600 (9.83)                                           | 1.200 (19.7)                                             |                                                        |

### Ordering Information

| MGO Working Sections |          |
|----------------------|----------|
| 562570               | MGO-150S |
| 562571               | MGO-300S |
| 562572               | MGO-450S |
| 562573               | MGO-600S |
| 562574               | MGO-150T |
| 562575               | MGO-300T |
| 562576               | MGO-450T |
| 562577               | MGO-600T |



# Series Progressive

## Trabon® MGO Divider Valves

### Ordering Information

| MGO with Cycle Pin - Right                                                                    |                                      |
|-----------------------------------------------------------------------------------------------|--------------------------------------|
| 562578                                                                                        | MGO-150S                             |
| 562579                                                                                        | MGO-300S                             |
| 562580                                                                                        | MGO-450S                             |
| 562581                                                                                        | MGO-600S                             |
| 562582                                                                                        | MGO-150T                             |
| 562583                                                                                        | MGO-300T                             |
| 562584                                                                                        | MGO-450T                             |
| 562585                                                                                        | MGO-600T                             |
| MGO Inlet and End                                                                             |                                      |
| 563277                                                                                        | MGO inlet                            |
| 563278                                                                                        | MGO end                              |
| MGO Spare Parts                                                                               |                                      |
| 556424                                                                                        | Singled ported sections port plug    |
| 563926                                                                                        | 1-section o-ring kit                 |
| MGO Tie Rods and Nut (Two (2) short tie rods and two (2) long tie rods required per assembly) |                                      |
| 560591                                                                                        | 3-section tie rod - short            |
| 560592                                                                                        | 4-section tie rod - short            |
| 560593                                                                                        | 5-section tie rod - short            |
| 560594                                                                                        | 6-section tie rod - short            |
| 560595                                                                                        | 7-section tie rod - short            |
| 560596                                                                                        | 8-section tie rod - short            |
| 560597                                                                                        | 9-section tie rod - short            |
| 560598                                                                                        | 10-section tie rod - short           |
| 560600                                                                                        | 3-section tie rod - long             |
| 560601                                                                                        | 4-section tie rod - long             |
| 560602                                                                                        | 5-section tie rod - long             |
| 560603                                                                                        | 6-section tie rod - long             |
| 15U857                                                                                        | 7-section tie rod - long             |
| 560604                                                                                        | 8-section tie rod - long             |
| 560605                                                                                        | 9-section tie rod - long             |
| 560606                                                                                        | 10-section tie rod - long            |
| 557494                                                                                        | Tie rod nut (2 required per tie rod) |

# Air Oil

## Air Oil Series Valves

### Features and Benefits

A Graco exclusive design! The Air Oil solution that detects air line or oil line faults in your system. Series progressive monitoring ensures your critical bearings are lubricated properly.

- Convenient manifold design mounts directly to the face of standard Graco series progressive divider valve assembly
- Check valve design prevents oil from being forced into the air system if lube lines get crushed or bearings get blocked
- Air combines with the oil after the fluid outlet check, preventing air from backing up into your source oil system
- Complete kits include manifold, air sensor, and check valves for easy installation

### Typical Applications

- Steel mills, pulp and paper processing, high temperature and dirty environments

### Typical Fluids Handled

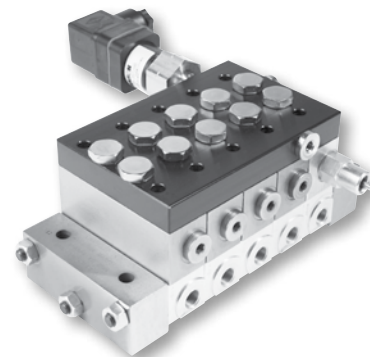
- Oil

### Technical Specifications

|                           |                                               |
|---------------------------|-----------------------------------------------|
| Material.....             | Aluminum                                      |
| Minimum Air Pressure..... | 45 psi (3.1 bar)                              |
| Maximum Air Pressure..... | 250 psi (17 bar)                              |
| Output.....               | 3, 4, 5 or 6 Section Divider Valve Assemblies |

### Ordering Information

| AO Series Divider Valves |                                                         |
|--------------------------|---------------------------------------------------------|
| 24B237                   | Air/oil manifold assembly, 3-section                    |
| 24B239                   | Air/oil manifold assembly, 4-section                    |
| 24B240                   | Air/oil manifold assembly, 5-section                    |
| 24B241                   | Air/oil manifold assembly, 6-section                    |
| 24J814                   | Air/oil manifold assembly, 3-section without air sensor |
| 24J815                   | Air/oil manifold assembly, 4-section without air sensor |
| 24J816                   | Air/oil manifold assembly, 5-section without air sensor |
| 24J817                   | Air/oil manifold assembly, 6-section without air sensor |



24B240

*Shown installed on MSP  
divider valve assembly*

# Air Oil

## High Speed Spindl-Gard® Systems

### Features and Benefits

The High-Speed Spindl-Gard® System is a highly efficient, cost-effective method for lubricating spindle bearings, using air/oil technology. Components include an electric motor driven pump, with 3 liter (0.8 gallon) plastic reservoir, air/oil dispensing module, and an optional programmable timer/controller (AC models only).

- Advanced air/oil concept provides highly effective lubrication, reduces oil consumption, lowers operating temperature and protects spindle bearings from coolant ingress and minimizes thermal distortion resulting in improved production accuracy
- Thin oil film dramatically reduces viscous shear and hydrodynamic drag on the bearing, resulting in reduced friction and lower energy consumption
- Airflow adjustment for each bearing point provides better control
- Oil output selectable for each bearing point helps to customize the system
- Eliminates the clean up and environmental problems that result from mist systems



### Typical Applications

- Spindle Bearings

### Typical Fluids Handled

- Oils up to ISO 460 (2500 SUS)

### Technical Specifications

|                                                                                                                                                                                                                                                                |                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Pump Output .....                                                                                                                                                                                                                                              | 8.5 in <sup>3</sup> /minute (140 cc/minute)                                |
| Motor Power .....                                                                                                                                                                                                                                              | 1/8 HP                                                                     |
| Motor Voltage and Current Consumption .....                                                                                                                                                                                                                    | 115 ± 10% VAC, 50/60 Hz, 1 phase, 3.8 A in-rush, 1.8 A running,            |
| .....                                                                                                                                                                                                                                                          | 230 ± 10% VAC, 50/60 Hz, 1 phase, 1.9A in-rush, 0.94A running, 24VDC, 60 w |
| Pressure Relief Setting .....                                                                                                                                                                                                                                  | 350 psi (34 bar)                                                           |
| Output Block Regulator .....                                                                                                                                                                                                                                   | 30-60 psi (2.07-4.14 bar)                                                  |
| Output Block Regulator .....                                                                                                                                                                                                                                   | 30-60 psi (2.07-4.14 bar)                                                  |
| Seals.....                                                                                                                                                                                                                                                     | Buna-N O-Rings                                                             |
| Plastic Reservoir .....                                                                                                                                                                                                                                        | 0.8 gal (3 liters)                                                         |
| Low-Level.....                                                                                                                                                                                                                                                 | N.C. (held open), 115/230 VAC, 10 watt                                     |
| Controls Options Remote (External Control or Customer PLC) .....                                                                                                                                                                                               | 115/230 VAC, 1 ph, 50/60 Hz, 24 VDC                                        |
| *AC Timer.....                                                                                                                                                                                                                                                 | 115/230 VAC, 1 ph, 50/60 Hz                                                |
| Work (On) Time.....                                                                                                                                                                                                                                            | 5-20 seconds                                                               |
| Pause (Off) Time .....                                                                                                                                                                                                                                         | 2.5-30 minute                                                              |
| Fault Output.....                                                                                                                                                                                                                                              | (Dry Contacts), 5 amp max up to 230 VAC                                    |
| Air Cleanliness.....                                                                                                                                                                                                                                           | 5 micron, 40° F (4° C) dew point                                           |
| Operating Temperature .....                                                                                                                                                                                                                                    | 40° F to 120° F (4° C to 49° C)                                            |
| Lube Output .....                                                                                                                                                                                                                                              | 0.0015, 0.0030 and 0.005 cu in/cycle (0.025, 0.049 and 0.082 cc/cycle)     |
| Pressure Switch Set Points                                                                                                                                                                                                                                     |                                                                            |
| Air (N.C.) .....                                                                                                                                                                                                                                               | 25 psi (1.7 bar), nonadjustable                                            |
| Oil (N.O.) .....                                                                                                                                                                                                                                               | 320 psi (22 bar), nonadjustable                                            |
| Nozzles .....                                                                                                                                                                                                                                                  | Tube ID/Orifice Ratio (See Figure 2)                                       |
| Delivery Tube Length.....                                                                                                                                                                                                                                      | 24 in to 50 ft (0.6 m to 15.24 m)                                          |
| Lubricant Filtration: It is recommended that the lubricant in any lubrication system be filtered to the minimum level recommended by the Society of Automotive Engineers (SAE) which corresponds to the ISO Standard 4460 ratings/ specifications of ISO 18/14 |                                                                            |

# Air Oil

## High Speed Spindl-Gard® Systems

### Ordering Information

| High Speed Spindl-Gard Systems                                         |                                                                      |
|------------------------------------------------------------------------|----------------------------------------------------------------------|
| 24B219                                                                 | SPG-E-1-115-2-1-1                                                    |
| 24V204                                                                 | SPG-E-1-115-2-5-5                                                    |
| 24V531                                                                 | SPG-E-1-230-5-5-5-5-5                                                |
| 258301                                                                 | SPG-E-1-115-6-3-3-3-3-3                                              |
| 258347                                                                 | SPG-E-1-115-6-3-3-3-1-1-3                                            |
| 564445                                                                 | SPG-E-0-024-3-3-3-3                                                  |
| High Speed Spindl-Gard (HSSG) Blocks                                   |                                                                      |
| 563130                                                                 | 0.0015 in <sup>3</sup> displacement                                  |
| 563131                                                                 | 0.0030 in <sup>3</sup> displacement                                  |
| 563132                                                                 | 0.0050 in <sup>3</sup> displacement                                  |
| High Speed Spindl-Gard (HSSG) Components                               |                                                                      |
| 563489                                                                 | 10 micron oil filter element                                         |
| 561031                                                                 | Inlet block                                                          |
| 561032                                                                 | Outlet block                                                         |
| Spindl-Gard Nozzles                                                    |                                                                      |
| 563127                                                                 | Nozzle tube adapter                                                  |
| 560478                                                                 | 10 in. nozzle tube - 2 outlet, 180°                                  |
| 560477                                                                 | 10 in. nozzle tube - 1 outlet, 90°                                   |
| 562994                                                                 | End outlet nozzle                                                    |
| 563128                                                                 | Spray nozzle assembly for headwalls over 1 in. thick                 |
| Spindl-Gard Accessories                                                |                                                                      |
| 563048                                                                 | Injection point check valve, 1/8 in. NPTF                            |
| 563049                                                                 | Discharge point check valve, 1/8 in. NPTF                            |
| 564337                                                                 | Relief valve, 2 psi                                                  |
| 563091                                                                 | In-line lube filter, 2 micron, 1/4 in. NPSF (FM) to 1/4 in. NPTF (M) |
| 557134                                                                 | Replacement filter element - in-line lube filter                     |
| 564348                                                                 | Air flow switch with lights                                          |
| 563129                                                                 | SG air/oil mixing tee                                                |
| High Speed Spindl-Gard (HSSG) Tie Rod Kits - Nuts and Washers included |                                                                      |
| 564443                                                                 | Tie rod kit - 1 air/oil lube point                                   |
| 563940                                                                 | Tie rod kit - 2 air/oil lube point                                   |
| 564444                                                                 | Tie rod kit - 3 air/oil lube point                                   |
| 15U854                                                                 | Tie rod kit - 4 air/oil lube point                                   |
| 15U855                                                                 | Tie rod kit - 5 air/oil lube point                                   |
| 563941                                                                 | Tie rod kit - 6 air/oil lube point                                   |
| 563942                                                                 | Tie rod kit - 7 air/oil lube point                                   |
| 15U856                                                                 | Tie rod kit - 8 air/oil lube point                                   |

### Spindl-Gard Ordering Menu Code

SPG – X – XXX – X – X

E – Electric Motor

**CONTROLLER OPTION**

0 – REMOTE (NO TIMER)  
1 – WITH TIMER (AC MODELS ONLY)

**VOLTAGE**

024 – 24 VDC  
115 – 115 VAC  
230 – 230 VAC

**NUMBER OF OUTLETS**

1 – ONE  
2 – TWO  
3 – THREE  
4 – FOUR  
5 – FIVE  
6 – SIX  
7 – SEVEN  
8 – EIGHT

**INDIVIDUAL OUTPUTS FROM INLET TO END CC/STROKE (CU IN/STROKE)**

0 – PLUGGED  
1 – 0.025 (0.0015)  
3 – 0.049 (0.0030)  
5 – 0.082 (0.0050)

# General Accessories

## Trabon® Spra-Control™ Valve

### Features and Benefits

- Conserves air—air required only during spray interval
- Versatile—can be used with any centralized lube system or mechanical oiler and will handle grease or oil
- External mix nozzle purges itself and prevents clogging
- Saves lubricant by spraying smaller amounts at frequent intervals, provides better film, with no waste

### Typical Fluids Handled

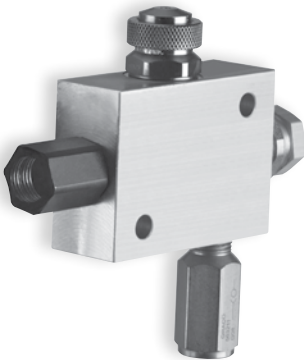
- Oil - minimum of 100 SUS at 100° F
- Grease - NLGI #1 at any temperature, NLGI #2 at 32° F or above

### Technical Specifications

|                      |                                       |
|----------------------|---------------------------------------|
| Minimum Air Pressure | 20 psi (1.4 bar)                      |
| Maximum Air Pressure | 150 psi 10.3 bar)                     |
| Spray Patterns       | 4 inch or 8 inch (10.2 cm or 20.3 cm) |

### Ordering Information

| Gear Spray Valves |                                                                           |
|-------------------|---------------------------------------------------------------------------|
| 563275            | Air-lube control valve and nozzle assembly - 4 in. spray diameter, normal |
| 563276            | Air-lube control valve and nozzle assembly - 8 in. spray diameter, wide   |



Ball mills run at peak performance with Graco's Air-Lube Spra-Control Valve



# General Accessories

## Zone Valves

### Features and Benefits

- Designed to custom fit lubrication systems and control when sections or zones of the system will receive lubricant
- Available in two- or three-way styles
- Three-way valves available with 12 VDC or 24 VDC
- Available with normally closed and normally open valves for added convenience
- DC models meet typical application requirements

### Ordering Information

| Zone Valves |                                                                             |
|-------------|-----------------------------------------------------------------------------|
| 24P976      | Two-way valve, 24 VDC, normally open, Deutsch cable, 3500 psi (241 bar)     |
| 24T296      | Two-way valve, 24 VDC, normally closed, Deutsch cable, 3500 psi (241 bar)   |
| 24P977      | Three-way valve, 24 VDC, normally closed, Deutsch cable, 3500 psi (241 bar) |
| 24P978      | Three-way valve, 12 VDC, normally closed, Deutsch cable, 3500 psi (241 bar) |



24P976



24P977

# General Accessories

## Reset Indicator

### Features and Benefits

- Provides quick troubleshooting tool with visual indication
- No tools for reset or parts to replace after indication
- Easy information on blocked lines, high system pressure or blocked bearings

### Technical Specifications

| Reset w/Memory<br>psi (bar) | 250<br>(17) | 500<br>(35) | 750<br>(52) | 1000<br>(69) | 1500<br>(103) | 2000<br>(138) | 2500<br>(172) |
|-----------------------------|-------------|-------------|-------------|--------------|---------------|---------------|---------------|
| MJ                          | •           | •           | •           | •            | •             | •             |               |
| MSP                         | •           | •           | •           | •            | •             | •             | •             |
| MXP                         | •           | •           | •           | •            | •             | •             | •             |
| MX                          | •           | •           | •           | •            | •             | •             | •             |
| MGO                         |             |             |             |              | •             |               |               |



563242

Simple point troubleshooting with visual indication

### Ordering Information

| Divider Valve Reset Indicator w/Memory for MJ, MSP, MHH and MXP              |                     |
|------------------------------------------------------------------------------|---------------------|
| 563231                                                                       | 250 psi (17 bar)    |
| 563232                                                                       | 500 psi (35 bar)    |
| 563233                                                                       | 750 psi (52 bar)    |
| 563234                                                                       | 1,000 psi (69 bar)  |
| 563235                                                                       | 1,500 psi (103 bar) |
| 563236                                                                       | 2,000 psi (138 bar) |
| 563237                                                                       | 2,500 psi (172 bar) |
| 563238                                                                       | 3,500 psi (241 bar) |
| Divider Valve Reset Indicator w/Memory and O-Ring Seal for MX                |                     |
| 563239                                                                       | 250 psi (17 bar)    |
| 563240                                                                       | 500 psi (35 bar)    |
| 563241                                                                       | 750 psi (52 bar)    |
| 563242                                                                       | 1,000 psi (69 bar)  |
| 563243                                                                       | 1,500 psi (103 bar) |
| 563244                                                                       | 2,000 psi (138 bar) |
| 563245                                                                       | 2,500 psi (172 bar) |
| Divider Valve Reset Indicators w/Memory and O-Ring Seal for MSP, MHH and MXP |                     |
| 563252                                                                       | 250 psi (17 bar)    |
| 563253                                                                       | 500 psi (35 bar)    |
| 563254                                                                       | 750 psi (52 bar)    |
| 563255                                                                       | 1,000 psi (69 bar)  |
| 563256                                                                       | 1,500 psi (103 bar) |
| 563257                                                                       | 2,000 psi (138 bar) |
| 563258                                                                       | 2,500 psi (172 bar) |
| 563261                                                                       | 3,000 psi (207 bar) |
| 563262                                                                       | 5,000 psi (345 bar) |
| 563263                                                                       | 3,500 psi (241 bar) |
| Divider Valve Reset Indicators w/Memory and O-Ring Seal for MGO              |                     |
| 564200                                                                       | 1,500 psi (103 bar) |

# General Accessories

## Automatic Relief Indicator

### Features and Benefits

These performance indicators pinpoint lube line blockages but allow the lube system to continue to supply lubrication to points that are not blocked.

- Allows machine to continue to run while non-critical bearings are lubricated
- No time or effort required for reset after blockage is cleared
- Easy information on blocked lines, high system pressure or blocked bearings

### Typical Applications

- Works with MSP, MX, MXP, MJ and MHH divider valves

### Technical Specifications

| Auto Relief<br>psi (bar) | 750<br>(52) | 1,000<br>(69) | 1,250<br>(86) | 1,500<br>(103) | 2,000<br>(138) | 2,500<br>(172) | 3,000<br>(207) |
|--------------------------|-------------|---------------|---------------|----------------|----------------|----------------|----------------|
| MJ                       | •           | •             |               | •              | •              |                |                |
| MSP                      | •           | •             | •             | •              | •              | •              | •              |
| MXP                      | •           | •             | •             | •              | •              | •              | •              |
| MX                       |             | •             |               | •              | •              | •              | •              |

### Ordering Information

| Divider Valve Automatic Relief Indicators |                                                                         |
|-------------------------------------------|-------------------------------------------------------------------------|
| 563156                                    | Works with MX, 750 psi (52 bar)                                         |
| 563157                                    | Works with MX, 1,000 psi (69 bar)                                       |
| 563158                                    | Works with MX, 1,500 psi (103 bar)                                      |
| 563159                                    | Works with MX, 2,000 psi (138 bar)                                      |
| 563160                                    | Works with MX, 2,500 psi (172 bar)                                      |
| 563161                                    | Works with MX, 3,000 psi (207 bar)                                      |
| 563163                                    | Works with MSP, MXP, MHH, and MJ, 750 psi (52 bar)                      |
| 563164                                    | Works with MSP, MXP, MHH, and MJ, 1,000 psi (69 bar)                    |
| 563165                                    | Works with MSP, MXP, MHH, and MJ, 1,250 psi (86 bar)                    |
| 563166                                    | Works with MSP, MXP, MHH, and MJ, 1,500 psi (103 bar)                   |
| 563167                                    | Works with MSP, MXP, MHH, and MJ, 2,000 psi (138 bar)                   |
| 563168                                    | Works with MSP, MXP, MHH, and MJ, 2,500 psi (172 bar)                   |
| 563169                                    | Works with MSP, MXP, MHH, and MJ, 3,000 psi (207 bar)                   |
| 563170                                    | MSP, MXP, and MHH, 750 psi (52 bar) with o-ring seal                    |
| 563171                                    | MSP, MXP, and MHH, 1,000 psi (69 bar) with o-ring seal                  |
| 563172                                    | MSP, MXP, and MHH, 1,250 psi (86 bar) with o-ring seal                  |
| 563173                                    | MSP, MXP, and MHH, 1,500 psi (103 bar) with o-ring seal                 |
| 563174                                    | MSP, MXP, and MHH, 2,000 psi (138 bar) with o-ring seal                 |
| 563175                                    | MSP, MXP, and MHH, 2,500 psi (172 bar) with o-ring seal                 |
| 563176                                    | MSP, MXP, and MHH, 3,000 psi (207 bar) with o-ring seal                 |
| 115122                                    | Pressure relief valve to atmosphere, 1/8" NPT male, 4,000 psi (276 bar) |



563159

*Keep your machine running while lubrication gets to critical points*

# General Accessories

## Rupture Indicator

### Features and Benefits

Used on MH divider valve applications where lube system pressures exceed 2,500 psi.

- High pressure from blockage causes a disc to rupture
- Lubricant forces an indicator pin to protrude, indicating the blockage
- High pressure backs up through the system and trips a switch to shut the system off
- When fault is corrected, disc must be replaced and pin reset

### Typical Applications

- Works with MHH divider valves

### Ordering Information

| Divider Valve Rupture Indicators w/Memory |                                      |
|-------------------------------------------|--------------------------------------|
| 563220                                    | 3,700 psi (255 bar)                  |
| 563227                                    | 7,300 psi (503 bar)                  |
| 563228                                    | 2,800 psi (193 bar)                  |
| 564355                                    | 4,600 psi (317 bar)                  |
| 563223                                    | 5,500 psi (379 bar)                  |
| 563225                                    | 6,400 psi (441 bar)                  |
| 563229                                    | 2,800 psi (193 bar) with o-ring seal |
| 563221                                    | 3,700 psi (255 bar) with o-ring seal |
| 563222                                    | 4,600 psi (317 bar) with o-ring seal |
| 563224                                    | 5,500 psi (379 bar) with o-ring seal |
| 563226                                    | 6,400 psi (441 bar) with o-ring seal |
| Replacement Rupture Discs                 |                                      |
| 557422                                    | 2,800 psi (193 bar)                  |
| 557423                                    | 3,700 psi (255 bar)                  |
| 557424                                    | 4,600 psi (317 bar)                  |
| 557425                                    | 5,500 psi (379 bar)                  |
| 557427                                    | 6,400 psi (441 bar)                  |
| 557428                                    | 7,300 psi (503 bar)                  |
| 557429                                    | 8,200 psi (565 bar)                  |



563227

*Know quickly when critical bearings aren't getting lubricated*

# General Accessories

## Rupture to Atmosphere Indicator

### Features and Benefits

- Used in conjunction with system pressure switch—can warn of a fault while allowing lube system to continue to deliver to critical bearings
- Requires replacement of the rupture disc to restart the lube system
- Easy information on blocked lines, high system pressure or blocked bearings

| Rupture to Atmosphere<br>psi (bar) | 1,450<br>(100) | 1,750<br>(121) | 2,050<br>(141) | 2,350<br>(162) | 2,950<br>(203) | 3,250<br>(224) |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| MJ                                 |                | •              |                | •              | •              | •              |
| MSP                                |                | •              |                | •              | •              | •              |
| MX                                 | •              | •              | •              | •              | •              |                |



563182

*Blockages are easy to detect  
with the simple Rupture to  
Atmosphere indicator*

### Ordering Information

| Rupture-to-Atmosphere Indicators for MJ, MSP, MHH and MXP            |                                                                                    |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 564059                                                               | 1,750 psi (121 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563191                                                               | 2,350 psi (162 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563192                                                               | 2,950 psi (203 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563193                                                               | 3,250 psi (224 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563194                                                               | 5,000 psi (345 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563218                                                               | 6,400 psi (441 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563219                                                               | 7,300 psi (503 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| 563217                                                               | 5,500 psi (379 bar), 1/8 inch-27 inch (.3175 cm-68.6 cm) npt(f)                    |
| Rupture-to-Atmosphere Indicators for MX                              |                                                                                    |
| 563179                                                               | 1,450 psi (100 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f)                     |
| 563182                                                               | 1,750 psi (121 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f)                     |
| 563183                                                               | 2,050 psi (141 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f)                     |
| 563184                                                               | 2,350 psi (162 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f)                     |
| 563185                                                               | 2,950 psi (203 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f)                     |
| 563186                                                               | 1,450 psi (100 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f), with spud assembly |
| 563187                                                               | 1,750 psi (121 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f), with spud assembly |
| 563188                                                               | 2,350 psi (162 bar), 1/4 inch-18 inch (.635 cm-45.7 cm) npt(f), with spud assembly |
| Replacement Rupture Packs of 6 (11/16 inch / 17.5 mm diameter discs) |                                                                                    |
| 563962                                                               | 1,450 psi (100 bar) - yellow                                                       |
| 563963                                                               | 1,750 psi (121 bar) - red                                                          |
| 563964                                                               | 2,050 psi (141 bar) - orange                                                       |
| 563965                                                               | 2,350 psi (162 bar) - aluminum                                                     |
| 563966                                                               | 2,940 psi (203 bar) - blue                                                         |
| Replacement Rupture Packs of 25 (3/8 inch / 9.5 mm diameter discs)   |                                                                                    |
| 563952                                                               | 900 psi (62 bar) - black                                                           |
| 563954                                                               | 1,450 psi (100 bar) - yellow                                                       |
| 563955                                                               | 1,750 psi (121 bar) - red                                                          |
| 563956                                                               | 2,050 psi (141 bar) - orange                                                       |
| 563957                                                               | 2,350 psi (162 bar) - aluminum                                                     |
| 563958                                                               | 2,650 psi (183 bar) - pink                                                         |
| 563959                                                               | 2,950 psi (203 bar) - blue                                                         |
| 563960                                                               | 3,250 psi (224 bar) - purple                                                       |
| 563961                                                               | 5,000 psi (345 bar) - brown                                                        |

# General Accessories

## Magnetic Visual Indicator

### Features and Benefits

Six steel balls in a clear sleeve follow a magnet which moves with the cycling piston, providing a clear visual indication of lube cycles.

### Ordering Information

| Divider Valve Cycle Indicators and Switches |                                                      |
|---------------------------------------------|------------------------------------------------------|
| 563251                                      | MS/MHH visual cycle indicator assembly - o-ring seal |
| 563260                                      | MX/MXP visual cycle indicator assembly               |
| 563250                                      | MS/MHH visual cycle indicator assembly - gasket seal |



563251

### Cycle Switch

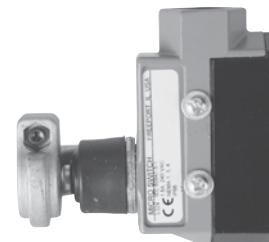
- Monitors piston movement to ensure completed lubrication cycle—must have cycle indicator pin
- Provides positive feedback based on actual metering piston movement
- Mounts to MJ, MSP, MXP, or MX divider with cycle pin option with simple install
- Able to be set for normally open or normally closed operation

### Technical Specifications

| Voltage               | Amp Rating |
|-----------------------|------------|
| 125/250/480 VAC ..... | 15A        |
| 125 VDC .....         | 1/2A       |
| 250 VDC .....         | 1/4A       |
| 24 VDC .....          | .6A*       |
| *non-inductive        |            |

### Ordering Information

| Cycle Switches |                                                                         |
|----------------|-------------------------------------------------------------------------|
| 563270         | MD-2, cycle switch, bracket assembly                                    |
| 563271         | MD-3, cycle switch, bracket assembly                                    |
| 564356         | MD-4, cycle switch, bracket assembly                                    |
| 563269         | MGO cycle switch (SPDT), bracket assembly                               |
| 557781         | Replacement cycle switch for 563269, 563270, 563271, 564356, 563272     |
| 564357         | MHP cycle switch (DPDT) bracket assembly                                |
| 563272         | MJ/MS/MHH/MXP cycle switch (SPDT) bracket assembly                      |
| 563273         | MJ/MS/MHH/MXP cycle switch (SPDT) bracket assembly - moisture resistant |
| 557546         | Replacement bracket - 563272, 563273, 564357                            |



563272

*Integrates to controllers, starters or PLCs*

# General Accessories

## Proximity Switches

### Features and Benefits

- Available in 115 VAC or 12-32 VDC
- Available for all series progressive families to provide cycle rates up to 200 CPM
- Pressure ratings up to 10,000 psi (690 bar)
- Variety of electrical connections and voltages with or without LED indication
- Select models available with UL and CSA approvals

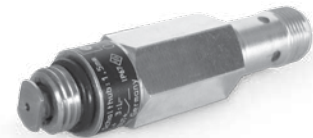
### Ordering Information

| Divider Valve Proximity Switches  |                                                                            |
|-----------------------------------|----------------------------------------------------------------------------|
| 24K415                            | DC PNP, 10-36 VDC, 7/16 inch (11.1 mm) thread, M12 connection, USP/MSP/MHH |
| 558938                            | FSM., 115 VAC, 5-pin BH - MXP/MX                                           |
| 563495                            | FSM., 20-28 VDC, 4-pin CH - MGO                                            |
| 563970                            | FSM., 115 VAC, 3-pin CH - MGO                                              |
| 564400                            | FSmech, 20-32 VDC, 5-pin BH, LED - MXP/MX                                  |
| 564401                            | FSmech, 115 AC or 10-32 VDC, explosion proof - MXP/MX                      |
| 557752                            | FSM., 20-28 VDC, 4-pin CH - MXP/MX                                         |
| 563969                            | FSM., 115 VAC, 3-pin BH - MXP/MX                                           |
| 563476                            | FSM., 115 VAC, 3-pin BH - MXP/MX                                           |
| 557747                            | FSM., 12-23 VDC, 4-pin CH - MSP/MHH                                        |
| 557741                            | FSM., 115 VAC, 3-pin BH - MSP/MHH                                          |
| 557746                            | FSM., 115 VAC, 5-pin BH - MSP/MHH                                          |
| 563486                            | FSmech, 12-32 VDC, 3-pin BH, LED - MXP/MX                                  |
| 563478                            | FSmech, 12-32 VDC, 3-pin BH, LED - MSP/MHH                                 |
| 563501                            | FSmech, 12-32 VDC, 4-pin micro, LED - MSP/MHH                              |
| 563477                            | FSmech, 12-32 VDC, 5-pin BH, LED - MSP/MHH                                 |
| 563484                            | FSmech, AC/DC, 5-pin BH - MSP/MH                                           |
| 557745                            | FSM, explosion-proof, 115 VAC, MSP/MHH                                     |
| 563485                            | FSmech, explosion-proof, 115 VAC or 10-32 VDC, MSP/MHH                     |
| 563427                            | Reed type, 115 VAC or 10-32 VDC, 1/2 inch (12.7 mm) NPT, MSP/MHH           |
| 564402                            | O-ring seal style cycle-Indicator proximity switch for MGO                 |
| 564399                            | O-ring seal style proximity switch                                         |
| 564403                            | O-ring seal style cycle-Indicator proximity switch for MX and MXP          |
| 558933                            | Magnetic proximity cycle switch                                            |
| 558018                            | Replacement switch housing for 563427                                      |
| Proximity Switch Connector Cables |                                                                            |
| 124333                            | M12 cable, male and female, 16 feet (4.88 m)                               |
| 558021                            | 3-pin cable, straight connector - 6 feet (1.83 m)                          |
| 558022                            | 3-pin cable, straight connector - 12 feet (3.66 m)                         |
| 558025                            | 4-pin cable, straight connector, polarity - PNP - 12 feet (3.66 m)         |
| 558026                            | 4-pin cable, 90° connector, polarity - PNP - 12 feet (3.66 m)              |
| 558023                            | 5-pin cable, straight connector - 6 feet (1.83 m)                          |
| 558024                            | 5-pin cable, straight connector - 12 feet (3.66 m)                         |



557747

Magnetically-operated sensing devices for sending system data to the controller or PLC



24K415

# General Accessories

## Pressure Switches

### Features and Benefits

- Easy to visually adjust line pressure and reset pressure to ensure your lube system has vented properly
- LED lights visually display pressure switch functions
- Modern 4-pin M12 micro-connector easily connects to the G3 and other controllers
- Turns off your pump or controller and activates venting once the lube system reaches the desired pressure level
- 1/4 NPT thread allows quick connection to injector systems

### Ordering Information

| Pressure Switches |                                                                                                                                                                      |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24K414            | Set pressure range 290-580 psi (20-40 bar), reset pressure range 175-5,685 psi (12-392 bar), M12 connector (female), 9.6-32 VDC, 1/4 inch (7.6 cm) NPT thread (male) |



24K414

*IP67 rated – Durable design allows it to operate in harsh environments*

### Features and Benefits

- Moisture resistant and factory set to ensure accuracy for long life and reliability
- Sends an alarm signal to alert either a high- or low-pressure condition
- Available for hydraulic pressures from 10 to 4,700 psi

### Ordering Information

| Pressure Switches |                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| 557830            | 1,500 psi (103 bar), 10-150 psi (.7-10 bar) adjustable range (factory set @ 50 psi / 10 bar ), moisture-resistant       |
| 557828            | 4,700 psi (324 bar), 400-4,700 psi (28-324 bar) adjustable range (factory set @ 750 psi / 52 bar), moisture-resistant   |
| 557829            | 4,700 psi (324 bar), 400-4,700 psi (28-324 bar) adjustable range (factory set @ 1,150 psi / 79 bar), moisture-resistant |



557829

### Features and Benefits

- High-low, adjustable pressure switches

### Ordering Information

| Pressure Switches |                                                                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 115124            | Single post pressure switch                                                                                                                                                                                                                     |
| 558947            | Dual post control pressure switch                                                                                                                                                                                                               |
| 24N181            | IP65 rated for harsh environments. Fluoroelastomer seals are suitable for use in high temperature environments and synthetic lubricants. Large orifice reduces grease solidification. Din connector. Adjustable from 580-5,800 psi (40-400 bar) |



115124



24N181



# General Accessories

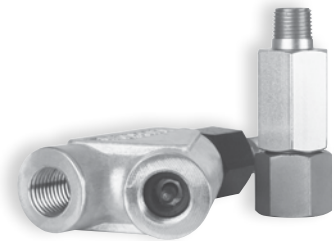
## Broken Line Indicators

### Features and Benefits

- Monitors lube line integrity to ensure lubricant is delivered to critical bearings
- Provides a visual or electronic indication
- Works with terminating oil or grease systems as well as recirculating systems

### Technical Specifications

|                       | BLI500               | BLI1000               | BLI1500               |
|-----------------------|----------------------|-----------------------|-----------------------|
| Simulator Pressure    | 60 psi (4.1 bar)     | 100 psi (6.9 bar)     | 150 psi (10.3 bar)    |
| Maximum Pump Pressure | 1,000 psi (69.0 bar) | 1,500 psi (103.4 bar) | 2,500 psi (172.4 bar) |



563078

*The only device that provides visual indication that bearing lines are intact*

### Ordering Information

| Broken Line Indicators |                                            |
|------------------------|--------------------------------------------|
| 563068                 | 500 psi (34.5 bar) indicator               |
| 563069                 | 1,000 psi (68.9 bar) indicator             |
| 563070                 | 1,500 psi (103.4 bar) indicator            |
| 563075                 | 60 psi (4.1 bar) simulator                 |
| 563076                 | 100 psi (6.9 bar) simulator                |
| 563077                 | 150 psi (10.3 bar) simulator               |
| 563078                 | Broken line indicator kit - 563068, 563075 |
| 563079                 | Broken line indicator kit - 563069, 563076 |
| 563080                 | Broken line indicator kit - 563070, 563077 |

# General Accessories

## Filters and Brushes

### Ordering Information

| Inlet and In-Line Oil Filters - Non-Replaceable Elements            |                                                                                 |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 563091                                                              | MSP Standard Inlet 10 micron Oil Filter, NPT                                    |
| 563094                                                              | MSP Standard Zero Leak Shunt Valve Inlet 90 micron Oil Filter, NPT              |
| 563074                                                              | MSP Standard Zero Leak Inlet 90 micron Oil Filter/Restrictor, NPT               |
| 563073                                                              | MSP Zero Leak Shunt Valve Inlet 90 micron Oil Filter, SAE                       |
| 563480                                                              | MSP Modular Zero Leak Valve 25 micron Oil Filter                                |
| Single and Dual Cartridge Filter and Replacement Filter Spare Parts |                                                                                 |
| 557803                                                              | 10 micron Replacement Filter Element - 564004, 183-000-141                      |
| 557806                                                              | 10 micron Replacement Filter Element - 183-000-071, 183-000-201                 |
| 557804                                                              | 25 micron Replacement Filter Element - 562883, 183-000-051, 183-000-151         |
| 557807                                                              | 25 micron Replacement Filter Element - 183-000-081, 183-000-121, 183-000-211    |
| 557811                                                              | 1-2 micron Extra-Long Replacement Filter Cartridge                              |
| Spin-On Oil Filters                                                 |                                                                                 |
| 563092                                                              | 10 micron Spin-On Filter Assembly, NPT, Internal 25 psi (1.7 bar) Bypass        |
| 563095                                                              | 10 micron Spin-On Filter Assembly, NPT, External 150 psi (10.3 bar) Relief      |
| 564343                                                              | 10 micron Remote Mount Spin-On Filter Assembly, NPT, Fill Stud                  |
| 563096                                                              | 25 micron Spin-On Filter Assembly, NPT, External 150 psi (10.3 bar) Relief      |
| 563100                                                              | 25 micron Spin-On Filter Assembly, ISO 6149, External 150 psi (10.3 bar) Relief |
| 563093                                                              | 10 micron Replacement Filter Element - 563092, 563095, 564343                   |
| 563097                                                              | 25 micron Replacement Filter Element - 563096, 563100                           |
| In-Line Oil Filters - High-Pressure                                 |                                                                                 |
| 563511                                                              | 10 micron In-Line Oil Filter, NPT                                               |
| 563512                                                              | 25 micron In-Line Oil Filter, NPT                                               |
| 563513                                                              | 10 micron In-Line Oil Filter, SAE                                               |
| 563514                                                              | 25 micron In-Line Oil Filter, SAE                                               |
| 563516                                                              | 10 micron In-Line Oil Filter, BSPP (ISO 1179)                                   |
| 563515                                                              | 25 micron In-Line Oil Filter, BSPP (ISO 1179)                                   |
| 563509                                                              | 10 micron Replacement Filter Element - 563511, 563513, 563516                   |
| 563510                                                              | 25 micron Replacement Filter Element - 563512, 563514, 563515                   |
| In-Line Oil/Grease Filters - High-Pressure                          |                                                                                 |
| 563508                                                              | 44 micron, 325 Mesh In-Line Block Strainer (NPT)                                |
| 563507                                                              | 149 micron, 100 Mesh In-Line Block Strainer (NPT)                               |
| 564406                                                              | 149 micron, 100 Mesh In-Line Block Strainer, BSPP (ISO 1179)                    |
| 557701                                                              | 44 micron Replacement Filter Element - 563508                                   |
| 557700                                                              | 149 micron Replacement Filter Element - 563507, 564406                          |
| In-Line Oil Filters - Low-Pressure, Thrif-T Luber Orifice System    |                                                                                 |
| 564053                                                              | Thrif-T Luber (TLLF-00) 25 micron In-Line Oil Filter, NPT                       |
| 557132                                                              | Replacement Filter Element - 564053                                             |

| Oil/Grease Strainers                                            |                                                |
|-----------------------------------------------------------------|------------------------------------------------|
| 563103                                                          | 44 micron, 325 Mesh Fill-Point Strainer        |
| 563102                                                          | 149 micron, 100 Mesh Fill-Point Strainer       |
| 563145                                                          | 350 micron, 40 Mesh Fill-Point Strainer        |
| 557154                                                          | 44 micron Replacement Filter Element - 563103  |
| 557153                                                          | 149 micron Replacement Filter Element - 563102 |
| 557779                                                          | 350 micron Replacement Filter Element - 563145 |
| Single Cartridge Type Filters w/Electrical and Visual Indicator |                                                |
| 564003                                                          | 10 micron Filter, BSPP Thread                  |
| 564004                                                          | 20 micron Filter, BSPP Thread                  |
| 564005                                                          | 10 micron Filter, ISO 6149 Thread              |
| 564006                                                          | 20 micron Filter, ISO 6149 Thread              |
| 562880                                                          | 10 micron Filter, SAE ISO 11026 Thread         |
| 564007                                                          | 20 micron Filter, SAE ISO 11926 Thread F865    |
| Single Cartridge Type Filters w/Visual Indicator                |                                                |
| 562881                                                          | 10 micron Filter, BSPP Thread                  |
| 564008                                                          | 20 micron Filter, BSPP Thread                  |
| 564009                                                          | 10 micron Filter, ISO 6149 Thread              |
| 564010                                                          | 20 micron Filter, ISO 6149 Thread              |
| 562882                                                          | 10 micron Filter, SAE ISO 11026 Thread         |
| 562883                                                          | 20 micron Filter, SAE ISO 11926 Thread F865    |
| Brushes/Applicators                                             |                                                |
| 124089                                                          | Brush, pighair, 1/4 fnpt x 3/4                 |
| 124090                                                          | Brush, Oil, 1 x 1.5                            |
| 124091                                                          | Brush, Oil, 1 x 2.4                            |
| 124092                                                          | Brush, Oil, 1 x 4                              |
| 124114                                                          | Brush, Nylon, 1/8 mnpt x 5/8                   |
| 124115                                                          | Brush, Nylon, 1/8 mnpt x 2                     |
| 124113                                                          | Applicator, Felt Chain, 2 x .5                 |
| 124119                                                          | Paddle, Lube, Open Gear                        |



124089



124113



124119

# General Accessories

## Fittings

### Ordering Information

| Pipe Fittings              |                                                                                                         |
|----------------------------|---------------------------------------------------------------------------------------------------------|
| 560532                     | 45° Street Elbow - 1/4 inch (6.4 mm) Female x 1/4 inch (6.4 mm) Male, Steel                             |
| 560530                     | 90° Street Elbow - 1/4 inch (6.4 mm) Female x 1/8 inch (3.2 mm) Male, Steel                             |
| 15M045                     | 90° Street Elbow - 1/4 inch (6.4 mm) Female x 1/4 inch (6.4 mm) Male, Steel                             |
| 560533                     | 90° Street Elbow - 1/8 inch (3.2 mm) Female x 1/4 inch (6.4 mm) Male, Steel                             |
| 560534                     | Fitting - Street Elbow, 3/8 inch (9.5 mm) Male x 3/8 inch (9.5 mm) Female                               |
| 560528                     | Hex Coupling - 1/8 inch (3.2 mm) Female, Steel                                                          |
| 556402                     | Reducing Brushing - 1/4 inch (6.4 mm) Male x 1/8 inch (6.4 mm) Female, Steel                            |
| 563178                     | Extension Nipple - 1/8 inch (6.4 mm) Female x 1/8 inch (6.4 mm) Male, 2-1/4 inch (5.7 cm) Length, Steel |
| 556632                     | Male Connector - 1/4 inch (6.4 mm) T x 1/8 inch (3.2 mm) Male, Brass                                    |
| 556633                     | Male Connector - 1/4 inch (6.4 mm) T x 1/4 inch (6.4 mm) Male, Brass                                    |
| 556634                     | Male Elbow - 1/4 inch (6.4 mm) T x 1/8 inch (3.2 mm) Male, Brass                                        |
| 555726                     | Male Elbow - 1/4 inch (6.4 mm) T x 1/4 inch (6.4 mm) Male, Brass                                        |
| 555727                     | Tube Sleeve - 3/16 inch (4.8 mm) T, Brass                                                               |
| 556635                     | Tube Sleeve - 1/4 inch (6.4 mm) T, Brass                                                                |
| Straight and Angle Swivels |                                                                                                         |
| 563212                     | 90° Angle Swivel - 1/8 inch (3.2 mm)                                                                    |
| 563214                     | 90° Angle Swivel - 1/4 inch (6.4 mm)                                                                    |
| 564350                     | 90° Angle Swivel - 1/2 inch (12.7 mm)                                                                   |
| 563213                     | 180° Straight Swivel - 1/8 inch (3.2 mm)                                                                |
| 563215                     | 180° Straight Swivel - 1/4 inch (6.4 mm)                                                                |
| 563154                     | 180° Straight Swivel - 1/2 inch (12.7 mm)                                                               |
| 564352                     | 180° Straight Swivel - 1 inch (2.5 cm)                                                                  |
| 563146                     | 90° Compact Swivel - 1/4 inch (6.4 mm)                                                                  |
| 563147                     | 180° Compact Swivel - 1/4 inch (6.4 mm)                                                                 |
| 563150                     | 180° Compact Swivel - 1/8 inch (3.2 mm)                                                                 |
| 563148                     | 90° Swivel Adapter - 1/8 inch (3.2 mm) NPT x 1/8 inch (3.2 mm) NPT Female                               |
| Tube Fittings              |                                                                                                         |
| 556448                     | Zerk Adapter Quick Fitting                                                                              |
| 556636                     | Male Tee - 5/16 inch (7.9 mm) Tube, 1/8 inch (3.2 mm) NPTF                                              |
| 556637                     | Union Tee - 5/16 inch (7.9 mm) Tube                                                                     |
| 556638                     | Male Elbow - 3/16 inch (4.8 mm) Tube 1/8 inch (3.2 mm) NPTF                                             |
| 556639                     | Male Elbow - 5/16 inch (7.9 mm) Tube, 1/8 inch (3.2 mm) NPTF                                            |
| 556640                     | Male Elbow - 5/16 inch (7.9 mm) Tube, 1/4 inch (6.4 mm) NPT                                             |
| 556642                     | Female Connector - 3/16 inch (4.8 mm) Tube, 1/8 inch (3.2 mm) NPT                                       |
| 556643                     | Female Connector - 5/16 inch (7.9 mm) Tube, 1/8 inch (3.2 mm) NPT                                       |
| 556644                     | Male Connector - 3/16 inch (4.8 mm) Tube, 1/8 inch (3.2 mm) NPTF                                        |
| 556645                     | Male Connector - 5/16 inch (7.9 mm) Tube, 1/8 inch (3.2 mm) NPTF                                        |
| 556646                     | Male Connector - 5/16 inch (7.9 mm) Tube, 1/4 inch (6.4 mm) NPT                                         |
| 556647                     | Union - 3/16 inch (4.8 mm) Tube                                                                         |
| 556648                     | Union - 5/16 inch (7.9 mm) Tube                                                                         |
| 556649                     | Nut - 3/16 inch (4.8 mm) Tube                                                                           |

| 556650                              | Nut - 5/16 inch (7.9 mm) Tube                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------|
| 556652                              | Sleeve - 3/16 inch (4.8 mm) Tube                                                             |
| 556653                              | Sleeve - 5/16 inch (7.9 mm) Tube                                                             |
| 556656                              | 5/16 inch (7.9 mm) Tube Brass Insert - Minimum Order of 20 (Price Each)                      |
| 556660                              | 3/16 inch (4.8 mm) Tube Nut and Sleeve                                                       |
| 562995                              | Male Connector - 3/16 inch (4.8 mm) Tube, 1/4-28 inch (6.4 mm-71.1 cm) SAE Male              |
| 556661                              | Straight Connector - Push-to-Connect 3/16 inch (4.8 mm) Tube, 1/8 inch (3.2 mm) PM           |
| 556662                              | Elbow - 90 feet (27.4 m), Push-to-Connect 3/16 inch (4.8 mm) Tube, 1/8 inch (3.2 mm) PM      |
| 556666                              | 5/16 inch (7.9 mm) Tube Nut and Sleeve                                                       |
| 556670                              | 90° Elbow - 3/16 inch (4.8 mm) Tube, 1/8 inch (3.2 mm) NPT Female                            |
| 15K783                              | 90° Elbow - 1/8 inch (3.2 mm) NPTF Male/Female                                               |
| 557395                              | 45° Street Elbow - 1/8 inch (3.2 mm) NPTF Male/Female                                        |
| 560534                              | Street Elbow Fitting - 3/8 inch (9.5 mm) Male, 3/8 inch (9.5 mm) Female                      |
| 563759                              | Air-Operated Tractor Hardware Package - 30 Point                                             |
| 557954                              | Adapter - 45° Elbow, 1/4-28 inch (6.4 mm-71.1 cm) SAE Male x 1/8 inch (3.2 mm) NPTF Female   |
| 557968                              | Zerk Fitting - 1/8 inch (3.2 mm) NPT @ 65° Angle                                             |
| 563776                              | Zerk Adapter - 90°                                                                           |
| 563777                              | Zerk Adapter - Straight                                                                      |
| Miscellaneous Adapters and Fittings |                                                                                              |
| 556403                              | Reducing Bushing - 3/8 inch (9.5 mm) NPT x 1/8 inch (3.2 mm) NPT Female                      |
| 556407                              | Fitting Tee - 1/8 inch (6.4 mm) Male x (2) 1/8 inch (6.4 mm) Female                          |
| 556420                              | Fitting Tee - 1/4 inch (6.4 mm) Male x (2) 1/4 inch (6.4 mm) Female                          |
| 15M037                              | Press-to-Fit - 1/8 inch (3.2 mm) NPSF                                                        |
| 563148                              | 90° Swivel Adapter - 1/8 inch (3.2 mm) NPT x 1/8 inch (3.2 mm) NPT Female                    |
| 557392                              | Extension - 1/8 inch (3.2 mm) NPT x 1/8 inch (3.2 mm) NPTF, 3/4 inch (19 mm) Long            |
| 557393                              | Extension - 1/8 inch (3.2 mm) NPT x 1/8 inch (3.2 mm) NPTF, 1-1/4 inch (3.18 cm) Long        |
| 557950                              | Bulkhead FTG - 1/8 inch (3.2 mm) NPT                                                         |
| 15K740                              | Elbow Adapter - 1/4-28 inch (6.4 mm-71.1 cm) SAE Male x 1/8 inch (3.2 mm) NPTF Female        |
| 15K784                              | Elbow Adapter - 1/4-28 inch (6.4 mm-71.1 cm) SAE Male x 1/8 inch (3.2 mm) NPTF Female, Short |
| 557955                              | Straight Adapter - 1/4-28 inch (6.4 mm-71.1 cm) SAE Male x 1/8 inch (3.2 mm) NPTF Female     |
| Hose Fittings                       |                                                                                              |
| 555749                              | Connector - 1/8 inch (3.2 mm) NPT, #4 JIC                                                    |
| 556762                              | Connector - 1/4 inch (6.4 mm) NPT, #4 JIC                                                    |
| 556763                              | 90° Elbow - 1/8 inch (3.2 mm) NPT, #4 JIC                                                    |
| 556764                              | 90° Elbow - 1/4 inch (6.4 mm) NPT, #4 JIC                                                    |
| 556773                              | Hose End - Field Installed, Swivel End, #4 JIC                                               |

# General Accessories

## Pressure Gauges and Check Valves

### Ordering Information

| Pressure Gauges - Bottom and Back Mounted    |                                                                                                                                                          |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 126005                                       | 0-5,000 psi (0-344.7 bar), 1/4 inch (6.4 mm) NPT brass back mount connection, liquid-filled, operating range -40° F to 150° F (-40° C to 66° C)          |
| 557866                                       | 0-3,000 psi (0-206.8 bar), standard                                                                                                                      |
| 558948                                       | 0-150 psi (0-10.3 bar), 1/4 inch (6.4 mm) NPT brass bottom mount connection, standard                                                                    |
| 557559                                       | 0-3,000 psi (0-206.8 bar), 1/4 inch (6.4 mm) NPT brass bottom mount connection, standard                                                                 |
| 557352                                       | 0-5,000 psi (0-344.7 bar), 1/4 inch (6.4 mm) NPT brass bottom mount connection, standard                                                                 |
| 557278                                       | 0-1,500 psi (0-103.4 bar), 1/4 inch (6.4 mm) NPT brass back mount connection, standard                                                                   |
| 557864                                       | 0-3,000 psi (0-206.8 bar), 1/4 inch (6.4 mm) NPT brass back mount connection, standard                                                                   |
| 558297                                       | 0-10,000 psi, 1/4 in. NPT brass back mount connection, standard                                                                                          |
| 557713                                       | 0-3,000 psi (0-206.8 bar), 1/4 inch (6.4 mm) NPT steel bottom mount connection, liquid-filled                                                            |
| 558298                                       | 0-10,000 psi (0-689.5 bar), 1/4 inch (6.4 mm) NPT steel back mount connection, liquid-filled                                                             |
| Outlet Check Valves                          |                                                                                                                                                          |
| 563196                                       | Single check valve, 1/8-27 inch (3.2 mm-68.6 cm) NPTF x 1/8-27 inch (3.2 mm-68.6 cm) NPSF carbon steel, steel ball, 5,000 psi (344.7 bar) max            |
| 563052                                       | Single check valve, 7/16-20 inch (11.1 mm-50.8 cm) x 7/16-20 inch (11.1 mm-50.8 cm) SAE stainless steel, fluoroelastomer ball, 7,500 psi (517.1 bar) max |
| 563054                                       | Single check valve, 7/16-20 inch (11.1 mm-50.8 cm) x 7/16-20 inch (11.1 mm-50.8 cm) SAE stainless steel, steel ball, 3,500 psi (241.3 bar) max           |
| Maxi-Flo Relief Valve - Field-Installed Only |                                                                                                                                                          |
| 563375                                       | 600 psi (41.4 bar)                                                                                                                                       |
| Single Ball Check Valves                     |                                                                                                                                                          |
| 563195                                       | 10 psi (.69 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max          |
| 563199                                       | 15 psi (1.03 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max         |
| 563196                                       | 35 psi (2.4 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max          |
| 563200                                       | 35 psi (2.4 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max          |
| 563201                                       | 60 psi (4.1 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max          |
| 563197                                       | 125 psi (8.6 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max         |
| 563198                                       | 250 psi (17.2 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max        |
| 563202                                       | 250 psi (17.2 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max        |
| 563051                                       | 360 psi (24.8 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball, 5,000 psi (344.7 bar) max        |
| 563206                                       | 10 psi (.69 bar) nominal cracking pressure, 1/4 inch (6.4 mm) (M) x 1/4 inch (6.4 mm) (F), steel body/ball, 5,000 psi (344.7 bar) max                    |

| 563210                   | 10 psi (.69 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 563207                   | 35 psi (2.4 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max                            |
| 563211                   | 35 psi (2.4 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max                            |
| 563208                   | 100 psi (6.9 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPSF (F), steel body/ball, 5,000 psi (344.7 bar) max                           |
| 563209                   | 250 psi (17.2 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), steel body/ball, 5,000 psi (344.7 bar) max                          |
| 563054                   | 35 psi (2.4 bar) nominal cracking pressure, 7/16-20 inch (14.3 mm-50.8 cm) SAE (M) x 7/16-20 inch (14.3 mm-50.8 cm) SAE (F), SS body/steel ball, 3,500 psi (241.3 bar) max |
| 563055                   | 35 psi (2.4 bar) nominal cracking pressure, 9/16-18 inch (14.3 mm-45.7 cm) SAE (M) x 9/16-18 inch (14.3 mm-45.7 cm) SAE (F), SS body/steel ball, 3,500 psi (241.3 bar) max |
| 563052                   | 35 psi (2.4 bar) nominal cracking pressure, 7/16-20 inch (14.3 mm-50.8 cm) SAE (M) x 7/16-20 inch (14.3 mm-50.8 cm) SAE (F), SS body/FKM ball, 7,500 psi (517.1 bar) max   |
| 563047                   | 42 psi (2.9 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS body/NBR ball, 7,500 psi (517.1 bar) max                           |
| 563046                   | 48 psi (3.3 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS body/FKM ball, 7,500 psi (517.1 bar) max                           |
| 563048                   | 35 psi (2.4 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), steel body/FKM ball, 100 psi (6.9 bar) max                            |
| 563049                   | 35 psi (2.4 bar) nominal cracking pressure, 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), steel body/FKM ball, 100 psi (6.9 bar) max                            |
| Double Ball Check Valves |                                                                                                                                                                            |
| 563203                   | 45 psi (3.1 bar) nominal cracking pressure, twin tandem, 1/4 inch (6.4 mm) NPTF (M) x 1/8 inch (3.2 mm) NPTF (M), SS body/ball, 10,000 psi (690 bar) max                   |
| 563205                   | 45 psi (3.1 bar) nominal cracking pressure, twin tandem, 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPTF (M), SS body/ball, 10,000 psi (690 bar) max                   |
| 563058                   | 35 psi (2.4 bar) nominal cracking pressure, 1/4 inch (6.4 mm) IP (F) x 1/4 inch (6.4 mm) IP (M), brass body/ball, 3,000 psi (206.9 bar) max                                |
| 563059                   | 35 psi (2.4 bar) nominal cracking pressure, 1/4 inch (6.4 mm) in O.D. pipe inlet (F), 1/4 inch (6.4 mm) NPT (M) outlet, brass body/ball, 3,000 psi (206.9 bar) max         |
| 563061                   | 48 psi (3.3 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS body/FKM ball, 7,500 psi (517.1 bar) max                           |
| 563060                   | 48 psi (3.3 bar) nominal cracking pressure, 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS body/NBR ball, 7,500 psi (517.1 bar) max                           |

# General Accessories

## Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware

### Ordering Information

| 1/8" ID Hoses and Accessories     |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|
| 16U982                            | Hose, 1/8" ID, 3,000 PSI, 200 Feet, Braided with Polyurethane Cover                 |
| 16U107                            | Hose, 1/8" ID, 3,000 PSI, 400 Feet, Braided with Polyurethane Cover                 |
| 16U983                            | Hose Guard, 3/8" ID, 160 Feet                                                       |
| 16U310                            | Hose Guard, 3/8" ID, 320 Feet                                                       |
| 127013                            | Field-Installable Swivel Hose End Fitting, 1/8" ID Hose, #4 JIC, SAE 7/16-20 female |
| 127516                            | Field-Installable Swivel Hose End Fitting, 1/8" ID Hose, 1/8 NPT Male               |
| 128006                            | Clamp, 3/8" OD Hose                                                                 |
| 1/4" ID Hoses and Accessories     |                                                                                     |
| 16U586                            | Hose, 1/4" ID, 2,750 PSI, 100 Feet, Braided with Polyurethane Cover                 |
| 16U003                            | Hose, 1/4" ID, 2,750 PSI, 125 Feet, Braided with Polyurethane Cover                 |
| 16U587                            | Hose Guard, 1/2" ID 80 Feet                                                         |
| 16U105                            | Hose Guard, 1/2" ID 100 Feet                                                        |
| 556773                            | Field-Installable Swivel Hose End Fitting, 1/4" ID Hose, #4 JIC, SAE 7/16-20 female |
| 557944                            | Clamp, 7/16" OD Hose                                                                |
| 1/8" OD Tubing and Accessories    |                                                                                     |
| 127554                            | Tubing, 1/8" OD, 625 PSI, 100 Feet                                                  |
| 127551                            | 1/8" Tube x 1/8" Straight Fitting                                                   |
| 556664                            | 1/8" Tube x 1/8" Elbow Fitting                                                      |
| 1/4" OD Tubing and Accessories    |                                                                                     |
| 127555                            | Tubing, 1/4" OD, 625 PSI, 100 Feet                                                  |
| 127552                            | 1/4" Tube x 1/4" Straight Fitting                                                   |
| 555726                            | 1/4" Tube x 1/4" Elbow Fitting                                                      |
| 127553                            | 1/4" Tube x 1/8" Straight Fitting                                                   |
| 556634                            | 1/4" Tube x 1/8" Elbow Fitting                                                      |
| 3/16" OD Tubing and Bulk Fittings |                                                                                     |
| 16A169                            | Tubing, 3/16" OD, Single Tube, 1,350 PSI, 100 Feet                                  |
| 16A171                            | Tubing, 3/16" OD, Double Tube, 1,350 PSI, 100 Feet                                  |
| 16A172                            | Tubing, 3/16" OD, Triple Tube, 1,350 PSI, 100 Feet                                  |
| 127722                            | Male Elbow, 3/16" Tube x 1/8" NPT, Brass, Quantity 250                              |
| 127723                            | Male Connector, 3/16" Tube x 1/8" NPT, Brass, Quantity 250                          |
| 127724                            | Union, 3/16" Tube, Brass, Quantity 50                                               |
| 127725                            | Union, 5/16" Tube, Brass, Quantity 50                                               |
| Elbows                            |                                                                                     |
| 556763                            | #4 JIC SAE 7/16-20 male x 1/8" NPT male                                             |
| 556764                            | #4 JIC SAE 7/16-20 male x 1/4" NPT male                                             |
| 15K740                            | 1/4-28 NPT male X 1/8" NPT female                                                   |
| 15K783                            | 1/8 NPT male X 1/8 NPT female                                                       |
| 560530                            | 1/8 NPT male X 1/4 NPT female                                                       |
| 15M045                            | 1/4 NPT male X 1/4 NPT female                                                       |
| 560533                            | 1/4 NPT male X 1/8 NPT female                                                       |
| 560534                            | 3/8 NPT male X 3/8 NPT female                                                       |
| 158683                            | 1/2 NPT male X 1/2 NPT female                                                       |
| 45° Elbows                        |                                                                                     |
| 557395                            | 1/8 NPT male X 1/8 NPT female                                                       |
| 560532                            | 1/4 NPT male X 1/4 NPT female                                                       |



16U586



15K783



557395

# General Accessories

## Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware

### Ordering Information

| Reducing Bushings     |                                                  |
|-----------------------|--------------------------------------------------|
| 556402                | 1/4 NPT male X 1/8 NPT female                    |
| 556403                | 3/8 NPT male X 1/8 NPT female                    |
| 556404                | 3/8 NPT male X 1/4 NPT female                    |
| 100206                | 1/2 NPT male X 1/4 NPT female                    |
| Expanding Bushings    |                                                  |
| 556416                | 1/8 NPT male X 1/4 NPT female                    |
| 156580                | 1/8 NPT male X 3/8 NPT female                    |
| 150287                | 1/4 NPT male X 3/8 NPT female                    |
| 159842                | 1/4 NPT male X 1/2 NPT female                    |
| 156022                | 3/8 NPT male X 1/2 NPT female                    |
| Pipe Extensions M x F |                                                  |
| 557392                | 1/8 NPT male X 1/8 NPT female, 3/4 long          |
| 557393                | 1/8 NPT male X 1/8 NPT female, 1-1/4 long        |
| 563178                | 1/8 NPT male X 1/8 NPT female, 2-1/4 long        |
| Adapter               |                                                  |
| 555749                | #4 JIC SAE 7/16-20 male x 1/8" NPT male          |
| 556762                | #4 JIC, SAE 7/16-20 male x 1/4" NPT male         |
| 555453                | 1/4 NPT male X 1/4 NPT male                      |
| 556408                | 1/4 NPT male X 1/8 NPT male                      |
| 156296                | 3/8 NPT male X 1/8 NPT male                      |
| 165198                | 3/8 NPT male X 1/4 NPT male                      |
| 156849                | 3/8 NPT male X 3/8 NPT male                      |
| Anchor Mounts         |                                                  |
| 560540                | 180° Straight Anchor Fitting, 1/8" NPSF          |
| 560541                | 180° Straight Anchor Fitting, 1/4" NPSF          |
| 558910                | 180° Straight Anchor Fitting, 1/2" NPSF          |
| 560542                | Cross Anchor Fitting, 1/4" NPSF                  |
| 560543                | Cross Anchor Fitting, 1/8" NPSF                  |
| 561430                | 180° Straight Anchor Fitting, 2 lines, 1/4" NPSF |
| 560535                | 90° Drop Elbow Brass, 1/8" NPSF                  |
| 560537                | Wing Tee, 1/4" NPTF                              |
| Grease Zerks          |                                                  |
| 557969                | Grease Zerk Cover                                |
| 100054                | 1/8", 10,000 PSI                                 |
| 100848                | 1/4", 10,000 PSI                                 |
| Fill Studs            |                                                  |
| 24M644                | QD Style w/Cap                                   |
| 110712                | 1/4" Button Head                                 |
| 100854                | 3/8" Button Head                                 |
| Mounting Weld Studs   |                                                  |
| 127512                | 1/4-20 x .710" long                              |
| 127513                | 1/4-20 x .96" long                               |
| 127514                | 1/4-20 x 1.2" long                               |
| 17D024                | 1/4-20 x 2" long                                 |
| 17D023                | 3/8-16 x 1.25" long                              |



556402



556416



557392



555453



100848



24M644

# General Accessories

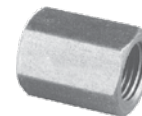
## Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware

### Ordering Information

| Clamps          |                                            |
|-----------------|--------------------------------------------|
| 127012          | 3/8" clamp diameter x 9/32 mounting hole   |
| 557944          | 1/2" clamp diameter x 9/32 mounting hole   |
| 127515          | 1 1/2" clamp diameter x 9/32 mounting hole |
| Bulkheads       |                                            |
| 557950          | 1/8 NPT bulkhead                           |
| Hose Vise Block |                                            |
| 127145          | 1/8", 1/4", 1/2" ID hose                   |
| Hex Coupling    |                                            |
| 560528          | 1/8 NPT female X 1/8 NPT female            |
| 113093          | 1/4 NPT female X 1/4 NPT female            |
| 162024          | 3/8 NPT female X 3/8 NPT female            |
| Run Tee         |                                            |
| 556419          | 1/8 NPT male X 1/8 NPT female (2)          |
| 556420          | 1/4 NPT male X 1/4 NPT female (2)          |
| Branch Tee      |                                            |
| 558795          | 1/8 NPT male X 1/8 NPT female (2)          |
| 556407          | 1/4 NPT male X 1/4 NPT female (2)          |
| Plugs           |                                            |
| 557349          | 1/8" NPT socket head                       |
| 111697          | 1/4" NPT square head                       |
| 100040          | 3/8" NPT square head                       |
| Cable Tie       |                                            |
| 127009          | Cable tie 14.75" x .31", qty 25            |



557950



560528



556419



100040



# Controllers GLC 2200™ Controller

## Features and Benefits

- Easy to mount without having to open up the control box
- LEDs let you know what your system is doing at a glance
- Easy to read digital display makes it simple to program and monitor your equipment
- In-cab visual and audible alarms let the operator know your equipment needs attention. Or set up a remote alarm to alert service or maintenance staff
- Simple icon based push buttons make programming easy
- Color coded wiring harness with flying leads and easy to follow wiring diagrams makes installations efficient

## Available Inputs

- Pressure/cycle switch
- Low level switch

## Available Outputs

- Pump power control
- External alarms—both low level and pressure/cycle faults

## Typical Applications

- Heavy construction, mining, other mobile on-road and off-road equipment

## Technical Specifications

|                             |                                    |
|-----------------------------|------------------------------------|
| Height .....                | 5.53 inch (140 mm)                 |
| Width .....                 | 2.75 inch (70 mm)                  |
| Depth .....                 | 1.38 inch (35 mm)                  |
| Protection Grade .....      | IP54                               |
| Operating Temperature ..... | -40° F to 176° F (-40° C to 80° C) |
| Standards .....             | CE Marked                          |
| Power Source DC .....       | 9 - 30 VDC                         |
| Manual .....                | 3A2960A                            |

## Ordering Information

| GLC 2200 |                                                              |
|----------|--------------------------------------------------------------|
| 24N468   | GLC 2200 controller                                          |
| 24P314   | GLC 2200 wiring harness – 5 feet (150 cm) with flying leads  |
| 24W981   | GLC 2200 wiring harness – 10 feet (300 cm) with flying leads |
| 24P686   | GLC 2200 connector (1) and pins (12)                         |
| 24P687   | GLC 2200 connectors (5) and pins (60)                        |
| 16T671   | Crimper                                                      |



24N468



# Controllers

## GLC 4400™ Controller

### Features and Benefits

- Customize your lubrication time, pressure, cycle counts and machine counts for maximum precision and productivity
- Simple icon- and menu-based user interface is easy to setup and operate, saving valuable technician time
- Special operation modes save setup and inspection time
- Rugged and weatherproof, meeting stringent IP69K protection requirements
- Works with single line resistive, single line parallel, series progressive and dual line systems

### Available Inputs

- Pressure/cycle switch
- Machine count switch
- Reservoir level switch
- Remote manual run switch

### Available Outputs

- Pump control signal
- Low level alarm signal
- Pressure/cycle alarm
- System okay signal

### Typical Applications

- Heavy construction, mining, other mobile off-road equipment
- In plant machinery, food and beverage, wind energy

### Technical Specifications

|                             |                                    |
|-----------------------------|------------------------------------|
| Height.....                 | 4.7 in (120 mm)                    |
| Width.....                  | 4.8 in (122 mm)                    |
| Depth.....                  | 3.6 in (91 mm)                     |
| Protection Grade.....       | IP 69K                             |
| Operating Temperature ..... | -40° F to 145° F (-40° C to 63° C) |
| Net Weight .....            | 2 lbs (0.9 kg)                     |
| Standards .....             | CE Marked                          |
| Manual .....                | 313855                             |

### Ordering Information

| GLC 4400 |             |
|----------|-------------|
| 24B591   | 9-30 VDC    |
| 24B596   | 100-240 VAC |



24B591

# Controllers Solid-State Timer

## Features and Benefits

The Solid-State Timer from Graco operates on standard 115/230 VAC 50/60 Hz input power, and provides a total on and off cycle with “on” periods to meet your specific lubrication system’s requirements. Total cycle times can be set from 1/2 minute to 32 hours. “On” time during the total cycle time can be set from 12 seconds to 13 minutes. The “on” time occurs at the beginning of each period.

- Solid-state technology combined with multiple-level protection ensures dependable performance
- Exceptional flexibility of settings allows this timer to be used with many types of simple or sophisticated lubrication systems
- Manual run button can be used to check system integrity as well as to simplify system filling and air purging
- Face-mounted LED displays timer status at a glance
- Tamper-resistant design puts cycle setting controls inside the covered case
- Easy mounting and installation
- Built-in memory keeps the timer “alive” for 1-1/2 hours during power failures and machine shutdown



562872

## Technical Specifications

|                                            |                                        |
|--------------------------------------------|----------------------------------------|
| Electrical .....                           | 115/230 VAC; 50/60 hz; 3 ampere (max.) |
| Temperature Range:                         |                                        |
| Operating .....                            | 0° to 131° F (-18° to 55° C)           |
| Storage .....                              | -67° to 185° F (-55° to 85° C)         |
| Enclosure .....                            | High Impact Plastic                    |
| Component Technology .....                 | Solid-State CMOS                       |
| Cycle Interval, Adjustable:                |                                        |
| Range 1 .....                              | 0.5 - 30 minutes                       |
| Range 2 .....                              | 0.5 - 32 hours                         |
| “On” Time .....                            | 0.2 - 13 minutes                       |
| Vibration .....                            | 5g's 50 Hz                             |
| Standard: LED Indicator, Manual Run Button |                                        |

## Ordering Information

| Solid State Timer |                                                     |
|-------------------|-----------------------------------------------------|
| 562872            | 115/230 VAC                                         |
| 558031            | Solid state (SS) timer board only without enclosure |
| DC Timer          |                                                     |
| 557925            | DC timer                                            |

# Controllers

## WMP III Maxi-Monitor®

### Features and Benefits

The WMP III Maxi-Monitor is a micro processor based controller, dedicated to the operation and monitoring of a centralized lubrication system. WMP III is designed to schedule lube intervals and monitor the operation of Trabon pumps and divider valves in intermittent operating systems.

- Lube programs can be changed to meet changing conditions or work schedules
- High flexibility means you can handle a variety of applications with the same basic WMP Controller
- By working with one basic unit, operating and maintenance personnel quickly become familiar with the WMP and use it more effectively
- Programming is done thru the keypad mounted on the face of the enclosure



556023

### Technical Specifications

|                                      |                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply.....                    | 115 + 15 % VAC, 50/60 Hz; 230 + 15% VAC, 50/90 Hz;<br>24 + 15% VDC; 12 + 10% VDC. Voltage must be specified when ordering             |
| Inputs.....                          | Same voltage of WMP III in use                                                                                                        |
| Current Consumptions.....            | 0.1 amp for AC (less external loads); 0.4 amp for DC (less external loads);<br>0.5 amp 3AG fuse supplied; 115, 230 VAC and 12, 24 VDC |
| External Pump Load .....             | 115, 230 VAC or 12, 24 VDC; 2 amp max(4 amp typical inrush),<br>AC; 2 amp AGC fuse supplied; Determined by input power supply         |
| Fault Relay .....                    | 2 isolated, non-fused, double-pole, double-throw form, C contacts, 5 amp resistive                                                    |
| Count Rate .....                     | 15 CTS/SEC max @ 50% duty cycle; min.                                                                                                 |
| Transient Withstanding Capacity..... | 2000 Volts for 1 millisecond (typical); Joule Max                                                                                     |
| Temperature Range (LCD limited)      |                                                                                                                                       |
| Ambient .....                        | 10° F to 113° F (-21° C to 45° C)                                                                                                     |
| Storage .....                        | -8° F to 140° F (-25° C to 60° C)                                                                                                     |
| Time Base .....                      | Crystal Controller Time Base                                                                                                          |
| Weight .....                         | 9.3 lbs (4.2 kg)                                                                                                                      |
| Programming Selections               |                                                                                                                                       |
| Program Range.....                   | 2-9999 sec; 1-9999 min.; 1-9999 hrs; 2-9999 stroke counts                                                                             |
| Monitor Range.....                   | 1-9999 sec; 1-9999 min.; 1-9998 hrs; 1-9998 stroke counts                                                                             |
| System Cycle Range .....             | 1-9999 counts                                                                                                                         |

### Ordering Information

| WMP III Maxi-Monitor |                 |
|----------------------|-----------------|
| 556023               | 115 VAC         |
| 556024               | 230 VAC         |
| 556025               | 24 VDC          |
| 563914               | Shock mount kit |

# On-Road Mobile Lubrication Systems

## Grease Jockey®

### Features and Benefits

- Keeps your chassis operating, even in harsh on-road conditions
- Lubricant goes where it's supposed to, automatically, with little or no waste
- Field-proven—some of the largest fleets have been using Grease Jockey for decades!

### Typical Applications

- Truck and tractor lubrication, class 4, 5, 6, 7, and 8 vehicles

### Typical Fluids Handled

- NLGI #0, #00 or #000 Grease

### Technical Specifications

|                                        |                                              |
|----------------------------------------|----------------------------------------------|
| Construction .....                     | Cast aluminum body and bracket               |
| Lubricant .....                        | NLGI #0, #00 or #000 grease                  |
| Output per Cycle .....                 | 1.5 cu. in (24.6 cm <sup>3</sup> )           |
| Reservoir Capacity .....               | 6 lbs. (2.7 kg), 12 lbs. (5.4 kg)            |
| Inlet supply (dry) (air pump) .....    | 150 psi (1034 kPa) max; 60 psi (414 kPa) min |
| Air-to-lube Ratio (max.) .....         | 9:1                                          |
| Solenoid Voltage (air) .....           | 12 or 24 VDC                                 |
| Electrical .....                       | 9 to 32 VDC (12 or 24 VDC Nominal)           |
| Enclosure (air pump) .....             | High-impact sealed plastic                   |
| Component Technology .....             | Solid-state                                  |
| Pump "ON" Time .....                   | Programmable: 1 sec. to 99 min.              |
| Lube Cycle Frequency .....             | Programmable: 1 min. to 99 hrs.              |
| Main Supply to Modules .....           | .5/16 in O.D. heavywall nylon                |
| Module to Point .....                  | .3/16 in O.D. heavywall nylon                |
| Operating Pressure (nylon lines) ..... | 1,350 psi (9,310 kPa)                        |



|                                | Part # | Fill Port | Solenoid | Timer/Wiring Harness Kit | Mounting Plate | Mainline and Hardware | Extra Fittings Kit |
|--------------------------------|--------|-----------|----------|--------------------------|----------------|-----------------------|--------------------|
| <b>Grease Jockey Pump Kits</b> |        |           |          |                          |                |                       |                    |
| Pump Only, No Reservoir        | 563625 | Straight  |          |                          |                |                       |                    |
| Pump with 6# Rigid Reservoir   | 563589 | Straight  |          |                          |                |                       |                    |
| Pump with 12# Rigid Reservoir  | 563590 | Straight  |          |                          |                |                       |                    |
| Pump with 6# Rigid Reservoir   | 563593 | Elbow     |          |                          |                |                       |                    |
| Pump with 6# Rigid Reservoir   | 563888 | Elbow     | 12 VDC   |                          |                |                       |                    |
| Pump with 6# Rigid Reservoir   | 563854 | Straight  | 12 VDC   | 24W479                   | Yes            | Yes                   | Yes                |
| Pump with 12# Rigid Reservoir  | 563874 | Straight  | 12 VDC   | 24W479                   | Yes            | Yes                   | Yes                |

### Ordering Information

| <b>Grease Jockey Pump Accessories</b> |                                                          |
|---------------------------------------|----------------------------------------------------------|
| 24W482                                | Grease Jockey digital timer                              |
| 24W479                                | Grease Jockey digital timer with Delphi 56 connector     |
| 24W480                                | Grease Jockey digital timer with Delphi 280 connector    |
| 25A118                                | Grease Jockey digital timer with flying leads            |
| 25A044                                | Service startup and spares kit                           |
| 557932                                | 12 VDC replacement solenoid                              |
| 563641                                | 12 VDC replacement solenoid kit with 1/4" NPT(m) fitting |
| 24E017                                | 24 VDC replacement solenoid                              |

# On-Road Mobile Lubrication Systems

Grease Jockey®

## Grease Jockey Right and Left Front Kits for Trucks

|                 | # of Grease Points | Part Number | Upper King Pin | Lower King Pin | Drag Link | Drag Link | Slack Adjuster | S-Cam | Tie Rod | Spring Pin | Spring Hanger-Upper | Spring Hanger-Lower | Steer Assist | Steer Assist | Clutch Pedal | Clutch Cross Shaft-Right | Clutch Cross Shaft-Left | Clutch Throw Out Bearing |
|-----------------|--------------------|-------------|----------------|----------------|-----------|-----------|----------------|-------|---------|------------|---------------------|---------------------|--------------|--------------|--------------|--------------------------|-------------------------|--------------------------|
|                 |                    |             | Right Front    |                |           |           |                |       |         |            |                     |                     |              |              |              |                          |                         |                          |
|                 |                    |             | Injector Size  |                |           |           |                |       |         |            |                     |                     |              |              |              |                          |                         |                          |
| Right Front Kit | 5                  | 563727      |                |                |           |           |                | 2     |         |            |                     |                     |              |              |              |                          |                         |                          |
| Right Front Kit | 5                  | 563860      |                | 3              |           |           | 1 0            | 2     |         |            |                     |                     |              |              |              |                          |                         |                          |
| Right Front Kit | 7                  | 563859      | 3              | 3              |           |           | 1 0            | 2     |         |            |                     |                     |              |              | 0            | 0                        |                         |                          |
| Right Front Kit | 8                  | 563652      | 3              | 3              |           |           | 1 0            | 2     | 3       | 3          | 3                   |                     |              |              |              |                          |                         |                          |
| Right Front Kit | 8                  | 563715      | 3              | 3              |           |           | 1 0            | 2     |         |            |                     |                     |              |              | 0            | 0                        | 0                       |                          |
| Right Front Kit | 8                  | 563858      | 3              | 3              |           |           | 1 0            | 2     | 3       | 3          | 3                   |                     |              |              |              |                          |                         |                          |
| Right Front Kit | 10                 | 563645      | 3              | 3              |           |           | 1 0            | 2     | 3       | 3          | 3                   |                     |              |              | 0            | 0                        |                         |                          |
|                 |                    |             | Left Front     |                |           |           |                |       |         |            |                     |                     |              |              |              |                          |                         |                          |
| Left Front Kit  | 5                  | 563728      | 3              | 3              | 2         | 2         |                | 2     |         |            |                     |                     |              |              |              |                          |                         |                          |
| Left Front Kit  | 7                  | 563706      | 3              | 3              | 2         | 2         | 1 0            | 2     |         |            |                     |                     |              |              |              |                          |                         |                          |
| Left Front Kit  | 8                  | 563716      | 3              | 3              | 2         | 2         | 1 0            | 2     |         |            |                     |                     |              | 0            |              |                          |                         |                          |
| Left Front Kit  | 10                 | 563644      | 3              | 3              | 2         | 2         | 1 0            | 2     | 3       | 3          | 3                   |                     |              |              |              |                          |                         |                          |

## Grease Jockey Rear Axle Modules Truck and Tractor Kits

| Grease Jockey<br>Rear Axle Modules<br>Truck and Tractor Kits |    |        | # of Grease Points | Part Number | Slack Adjuster | S-Cam | Slack Adjuster | S-Cam | Rear Spring | Slack Adjuster | S-Cam | Slack Adjuster | S-Cam | Rear Spring | 5th Wheel Pivot-Right | 5th Wheel Pivot-Left | 5th Wheel Pivot Inner-Right | 5th Wheel Pivot Inner-Left | Boom Pivot-Right | Boom Pivot-Left | 5th Wheel Cylinder Upper-Right | 5th Wheel Cylinder Upper-Left | 5th Wheel Interlock | 5th Wheel Plate | Front Right | Front Left | Rear Right and Left |  |
|--------------------------------------------------------------|----|--------|--------------------|-------------|----------------|-------|----------------|-------|-------------|----------------|-------|----------------|-------|-------------|-----------------------|----------------------|-----------------------------|----------------------------|------------------|-----------------|--------------------------------|-------------------------------|---------------------|-----------------|-------------|------------|---------------------|--|
|                                                              |    |        |                    |             | Right Rear     |       |                |       |             | Left Rear      |       |                |       |             | 5th Wheel             |                      |                             |                            |                  |                 |                                |                               |                     |                 |             |            |                     |  |
|                                                              |    |        |                    |             | Injector Size  |       |                |       |             |                |       |                |       |             |                       |                      |                             |                            |                  |                 |                                |                               |                     |                 |             |            |                     |  |
|                                                              |    |        |                    |             |                |       |                |       |             |                |       |                |       |             |                       |                      |                             |                            |                  |                 |                                |                               |                     |                 |             |            |                     |  |
| Single Axle Kit                                              | 4  | 563647 | 1                  | 0           |                |       |                |       |             | 1              | 0     |                |       |             |                       |                      |                             |                            |                  |                 |                                |                               |                     |                 |             |            |                     |  |
| Single Axle Kit                                              | 6  | 563738 | 1                  | 0           |                |       |                |       |             | 1              | 0     |                |       |             |                       |                      |                             |                            | 4                | 4               |                                |                               |                     |                 |             |            |                     |  |
| Tandem Axle Kit                                              | 8  | 563646 | 1                  | 0           | 1              | 0     |                |       |             | 1              | 0     | 1              | 0     |             |                       |                      |                             |                            |                  |                 |                                |                               |                     |                 |             |            |                     |  |
| Tandem Axle Kit                                              | 10 | 563743 | 1                  | 0           | 1              | 0     |                |       |             | 1              | 0     | 1              | 0     |             |                       |                      |                             |                            | 4                | 4               |                                |                               |                     |                 |             |            |                     |  |
| Fifth Wheel Kit                                              | 6  | 563653 |                    |             |                |       |                |       |             |                |       |                |       |             | 4                     |                      |                             |                            | 4                |                 | 4                              | 4                             |                     | 8               | 8           |            |                     |  |
| Fifth Wheel Kit                                              | 6  | 563659 |                    |             |                |       |                |       |             |                |       |                |       |             |                       | 4                    |                             |                            |                  | 4               | 4                              | 4                             |                     |                 |             | 8          |                     |  |
| Fifth Wheel Kit                                              | 8  | 258248 |                    |             |                |       |                |       |             |                |       |                |       |             | 4                     | 4                    |                             |                            | 4                | 4               |                                |                               | 8                   | 8               | 8           | 8          |                     |  |
| Fifth Wheel Kit                                              | 10 | 563737 |                    |             |                |       |                |       |             |                |       |                |       |             | 4                     | 4                    |                             |                            | 4                | 4               | 4                              | 4                             |                     | 8               | 8           | 8          |                     |  |
| Fifth Wheel Kit                                              | 12 | 563744 |                    |             |                |       |                |       |             |                |       |                |       |             | 4                     | 4                    | 4                           | 4                          | 4                | 4               | 4                              | 4                             |                     | 8               | 8           | 8          |                     |  |
| Fifth Wheel and Single Axle Kit                              | 11 | 563748 | 1                  | 0           |                |       | 3              |       |             | 1              | 0     |                |       | 3           |                       |                      |                             |                            |                  |                 |                                | 1                             | 8                   | 8               | 8           | 8          |                     |  |
| Fifth Wheel and Single Axle Kit                              | 12 | 563717 | 1                  | 0           |                |       | 3              |       |             | 1              | 0     |                |       | 3           | 1                     | 1                    |                             |                            |                  |                 |                                |                               | 8                   | 8               | 8           | 8          |                     |  |

# On-Road Mobile Lubrication Systems

## Grease Jockey®

### Grease Jockey Pneumatic Universal Truck Kits

Kits include 6# pump kit (563854) and factory-configured injector manifold modules.

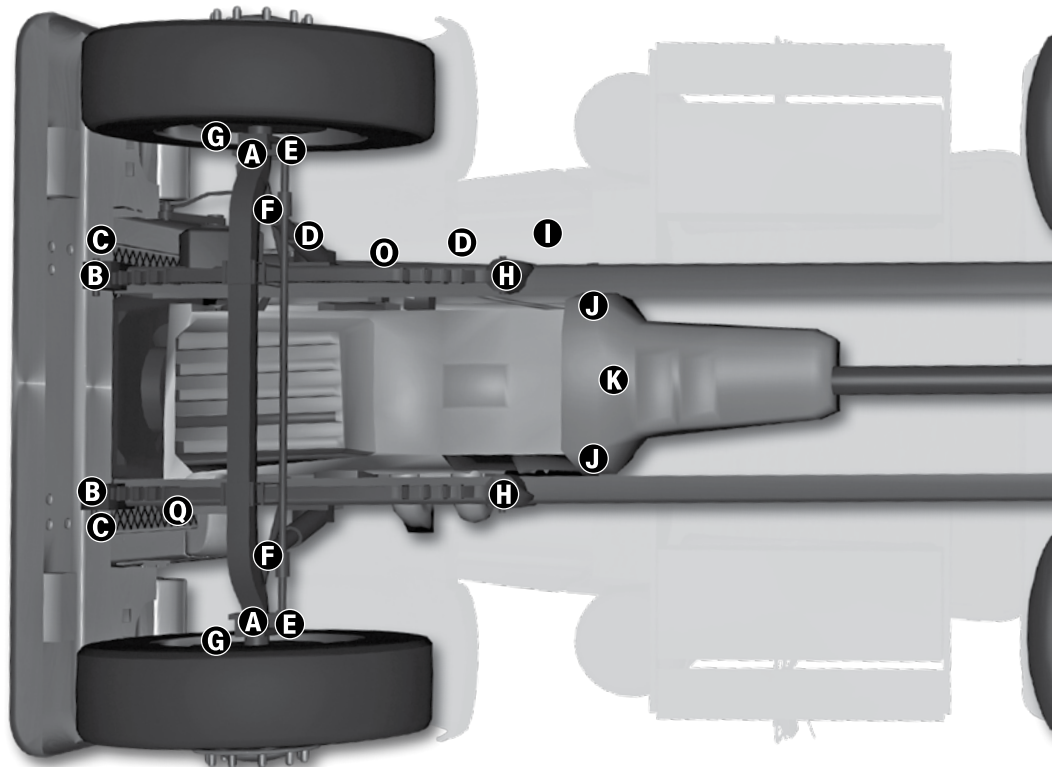
| <div>Grease Jockey Pneumatic Universal Truck Kits</div> <div><i>Kits include 6# pump kit (563854) and factory-configured injector manifold modules.</i></div> |    |        | # of Grease Points | Part Number | Upper King Pin | Lower King Pin | Slack Adjuster | S-Cam | Tie Rod | Spring Pin | Spring Hanger-Upper | Spring Hanger-Lower | Clutch Cross Shaft | Clutch Cross Shaft | Clutch Throw Out Bearing | "A" Frame Pivot | Lift Cylinder Top Pivot | Lift Cylinder Bottom Pivot | Slack Adjuster | S-Cam | Slack Adjuster | S-Cam | Rear Spring | Lift Cylinder Top Pivot |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------|--------------------|-------------|----------------|----------------|----------------|-------|---------|------------|---------------------|---------------------|--------------------|--------------------|--------------------------|-----------------|-------------------------|----------------------------|----------------|-------|----------------|-------|-------------|-------------------------|--|
|                                                                                                                                                               |    |        |                    |             | Right Front    |                |                |       |         |            |                     |                     |                    |                    |                          |                 |                         | Right Rear                 |                |       |                |       |             |                         |  |
|                                                                                                                                                               |    |        |                    |             | Injector Size  |                |                |       |         |            |                     |                     |                    |                    |                          |                 |                         |                            |                |       |                |       |             |                         |  |
|                                                                                                                                                               |    |        |                    |             |                |                |                |       |         |            |                     |                     |                    |                    |                          |                 |                         |                            |                |       |                |       |             |                         |  |
| Single Axle Tractor Kit                                                                                                                                       | 27 | 563897 | 3                  | 3           | 1              | 0              | 2              |       |         |            |                     |                     | 0                  | 0                  | 0                        |                 |                         |                            | 1              | 0     |                |       |             | 3                       |  |
| Single Axle Tractor Kit                                                                                                                                       | 28 | 563891 | 3                  | 3           | 1              | 0              | 2              |       |         |            |                     |                     | 0                  | 0                  | 0                        |                 |                         |                            | 1              | 0     |                |       |             | 3                       |  |
| Spotter Truck Kit                                                                                                                                             | 35 | 563823 | 3                  | 3           | 1              | 0              | 2              | 3     | 3       | 3          |                     |                     |                    |                    |                          | 8               | 8                       | 3                          | 1              | 1     |                |       |             | 3                       |  |
| Tandem Axle Tractor Kit                                                                                                                                       | 33 | 563846 | 3                  | 3           | 1              | 0              | 2              | 3     | 3       | 3          | 0                   | 0                   |                    |                    |                          |                 |                         |                            | 1              | 0     | 1              | 0     |             |                         |  |
| Tandem Axle Tractor Kit                                                                                                                                       | 34 | 563809 | 3                  | 3           | 1              | 0              | 2              | 3     | 3       | 3          |                     |                     |                    |                    |                          |                 |                         |                            | 1              | 0     |                |       |             |                         |  |
| Tandem Axle Tractor Kit                                                                                                                                       | 34 | 563814 | 3                  | 3           | 1              | 0              | 2              | 3     | 3       | 3          | 0                   | 0                   |                    |                    |                          |                 |                         |                            | 1              | 0     | 1              | 0     |             |                         |  |

#### Injector Size Key

| Injector Size         | 0     | 1     | 2     | 3     | 4     | 8     |
|-----------------------|-------|-------|-------|-------|-------|-------|
| Output Volume (cu in) | 0.002 | 0.005 | 0.009 | 0.012 | 0.015 | 0.024 |

### Truck and tractor lubrication systems lubricate these parts:

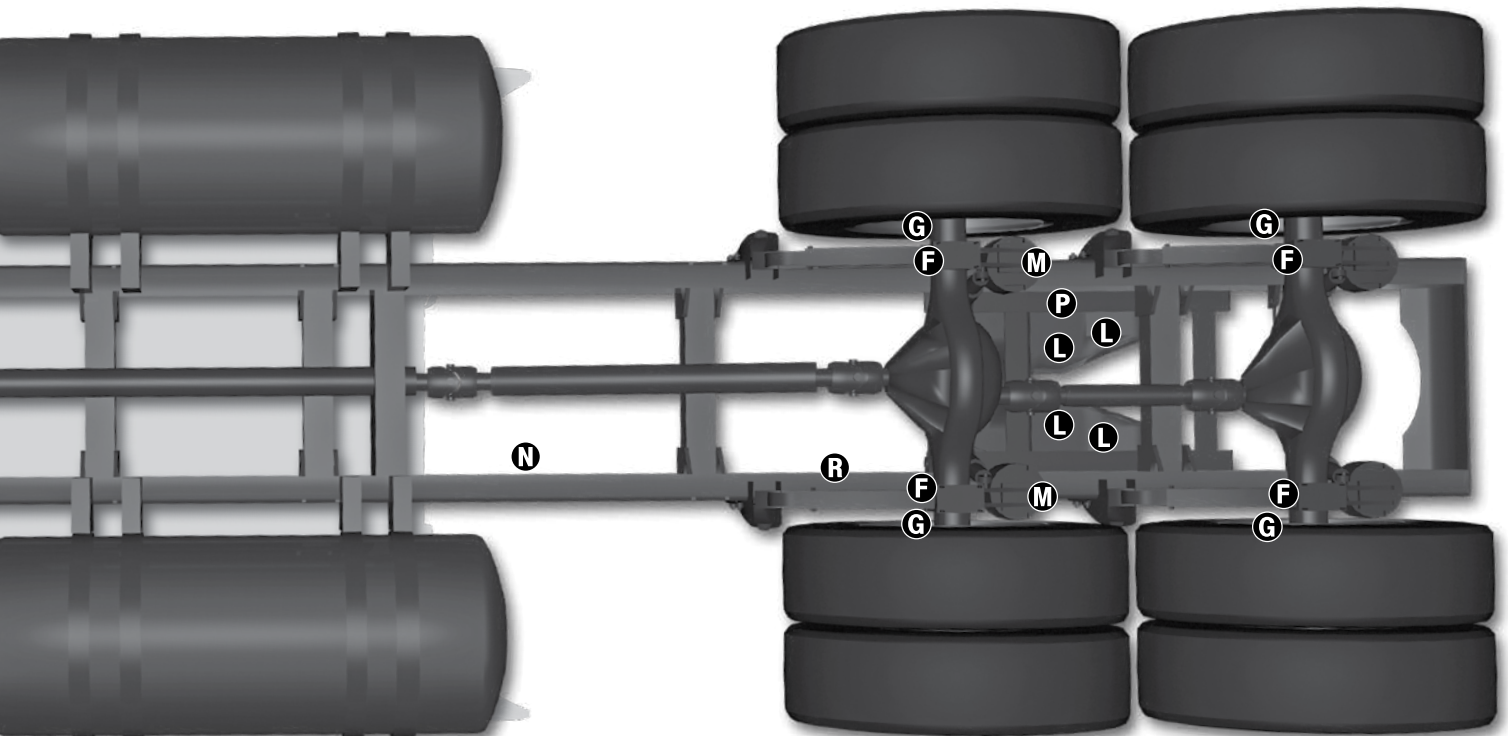
- A** Upper/Lower King Pins
- B** Hood Pins
- C** Spring Pins
- D** Drag Links
- E** Tie Rod Ends
- F** Slack Adjusters
- G** S-Cams
- H** Spring Hangers
- I** Clutch Pedal
- J** Clutch Cross Shafts
- K** Clutch Throw Out Bearing
- L** 5th Wheel Plate
- M** 5th Wheel Pivots
- N** Pump
- O** Right Front Module
- P** 5th Wheel Module
- Q** Left Front Module
- R** Rear Module



# On-Road Mobile Lubrication Systems

Grease Jockey®

| Upper King Pin | Lower King Pin | Drag Link-Front | Drag Link-Back | Slack Adjuster | S-Cam | Tie Rod | Spring Pin | Spring Hanger-Upper | Spring Hanger-Lower | Clutch Pedal | Clutch Cross Shaft | Clutch Throw Out Bearing | Lift Cylinder Top Pivot | Lift Cylinder Bottom Pivot | Slack Adjuster | S-Cam | Slack Adjuster | S-Cam | Rear Spring | Lift Cylinder Top Pivot | 5th Wheel Pivot-Right | 5th Wheel Pivot-Left | Boom Pivot-Right | Boom Pivot-Left | 5th Wheel Cylinder (Up. R.) | 5th Wheel Cylinder (Low. R.) | 5th Wheel Cylinder (Up. L.) | 5th Wheel Cylinder (Low. L.) | 5th Wheel Interlock | 5th Wheel Plate | 5th Wheel Plate | 5th Wheel Plate | 5th Wheel Plate |   |
|----------------|----------------|-----------------|----------------|----------------|-------|---------|------------|---------------------|---------------------|--------------|--------------------|--------------------------|-------------------------|----------------------------|----------------|-------|----------------|-------|-------------|-------------------------|-----------------------|----------------------|------------------|-----------------|-----------------------------|------------------------------|-----------------------------|------------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|---|
| Left Front     |                |                 |                |                |       |         |            |                     |                     |              |                    |                          |                         |                            | Left Rear      |       |                |       |             | 5th Wheel               |                       |                      |                  |                 |                             |                              |                             |                              |                     |                 |                 |                 |                 |   |
| Injector Size  |                |                 |                |                |       |         |            |                     |                     |              |                    |                          |                         |                            |                |       |                |       |             |                         |                       |                      |                  |                 |                             |                              |                             |                              |                     |                 |                 |                 |                 |   |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       |            |                     |                     | 0            |                    |                          |                         |                            | 1              | 0     |                |       | 3           |                         |                       |                      |                  |                 |                             |                              |                             |                              |                     | 2               | 8               | 8               | 8               | 8 |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       |            |                     |                     | 0            |                    |                          |                         |                            | 1              | 0     |                |       | 3           |                         | 1                     | 1                    |                  |                 |                             |                              |                             |                              |                     |                 | 8               | 8               | 8               | 8 |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       | 3          | 3                   | 3                   |              |                    |                          | 8                       | 3                          | 1              | 1     |                |       |             | 3                       |                       | 1                    | 1                |                 |                             |                              |                             |                              |                     |                 | 8               | 8               | 8               | 8 |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       | 3          | 3                   | 3                   |              |                    | 0                        |                         |                            | 1              | 0     | 1              | 0     |             |                         | 1                     | 1                    |                  |                 |                             |                              |                             |                              |                     |                 | 8               | 8               |                 |   |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       | 3          | 3                   | 3                   |              |                    |                          |                         |                            | 1              | 0     |                |       |             |                         | 4                     | 4                    | 4                | 4               | 4                           | 4                            | 4                           | 4                            |                     |                 | 8               | 8               | 8               | 8 |
| 3              | 3              | 2               | 2              | 1              | 0     | 2       | 3          | 3                   | 3                   |              |                    |                          |                         |                            | 1              | 0     | 1              | 0     |             |                         | 1                     | 1                    |                  |                 |                             |                              |                             |                              |                     |                 | 8               | 8               | 8               | 8 |



On-Road Mobile Lubrication Systems



# On-Road Mobile Lubrication Systems

## Trailer Lubrication Systems

### Features and Benefits

- Smooth landing gear operation
- Innovative design works with your parking or service brakes—no electrical power needed
- Adjustable pump output volume puts you in control
- Slack adjuster and S-Cam lubrication help stop brakes from sticking—improves brake operation and extends component life

### Typical Applications

- Pre-designed kits for all popular trailer types
- Tractors with 1, 2, 3, 4, 5, and 6 axles

### Typical Fluids Handled

- Grease up to NLGI #2

### Technical Specifications

|                                                |                                                  |
|------------------------------------------------|--------------------------------------------------|
| Construction .....                             | Cast aluminum body and steel mounting bracket    |
| Lubricant .....                                | NLGI #2 or lower                                 |
| Output per Cycle .....                         | 0.010-0.030 cu. inch (0.16-.49 cm <sup>3</sup> ) |
| Reservoir Capacity (rigid clear plastic) ..... | 4 lb (1.8 kg)                                    |
| Inlet supply (dry) (air pump) .....            | 40-150 psi (3-10 bar)                            |
| Air-to-lube Ratio (max.) .....                 | 20:1                                             |
| Main Supply to Modules .....                   | 1/4 inch I.D. hose                               |
| Module to Point .....                          | 3/16 inch O.D. heavywall nylon                   |
| Operating Pressure (nylon lines) .....         | 1,350 psi (9,310 kPa)                            |



563842

### Universal Trailer Kits Ordering Information

*Pneumatic (Trailer Pump Included)*

|                                                      | Part # | Grease points covered in kit |       |            |              | Total # of Grease Points |
|------------------------------------------------------|--------|------------------------------|-------|------------|--------------|--------------------------|
|                                                      |        | Slack Adjuster               | S-Cam | Clevis Pin | Landing Gear |                          |
| One Axle w/ Inner and Outer S-Cams                   | 563829 | 2                            | 4     | -          | -            | 6                        |
| Two Axle w/ Enclosed S-Cams                          | 563850 | 4                            | 4     | -          | -            | 8                        |
| Two Axle w/ Inner and Outer S-Cams                   | 563842 | 4                            | 8     | -          | -            | 12                       |
| Two Axle w/ Enclosed S-Cams and Clevis Pins          | 563878 | 4                            | 4     | 4          | -            | 12                       |
| Two Axle w/ Inner and Outer S-Cams and Clevis Pins   | 563851 | 4                            | 8     | 4          | -            | 16                       |
| Two Axle w/ Inner and Outer S-Cams and Landing Gear  | 563840 | 4                            | 8     | -          | 5            | 17                       |
| Three Axle w/ Enclosed S-Cams                        | 563880 | 6                            | 6     | -          | -            | 12                       |
| Three Axle w/ Enclosed S-Cams and Clevis Pins        | 563884 | 6                            | 6     | 6          | -            | 18                       |
| Three Axle w/ Inner and Outer S-Cams and Clevis Pins | 563849 | 6                            | 12    | 6          | -            | 24                       |
| Four Axle w/ Enclosed S-Cams and Clevis Pins         | 563881 | 8                            | 8     | 8          | -            | 24                       |
| Five Axle w/ Enclosed S-Cams                         | 563866 | 10                           | 10    | -          | -            | 20                       |
| Five Axle w/ Inner and Outer S-Cams and Clevis Pins  | 563848 | 10                           | 20    | 10         | -            | 40                       |
| Six Axle w/ Enclosed S-Cams                          | 563865 | 12                           | 12    | -          | -            | 24                       |
| Six Axle w/ Inner and Outer S-Cams and Clevis Pins   | 563852 | 12                           | 24    | 12         | -            | 48                       |



# On-Road Mobile Lubrication Systems

## EZ Greaser®

### Features and Benefits

- 11 different kits let you customize your EZ Greaser system
- Once installed, use your manual grease gun to lubricate multiple lube points from one fitting

### Typical Applications

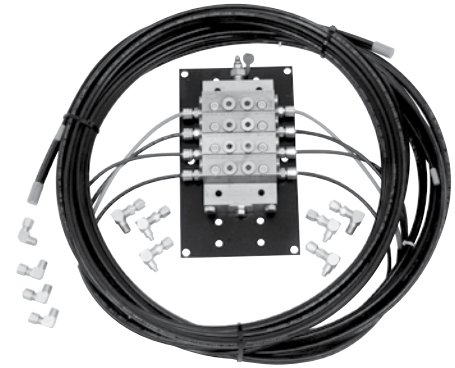
- Truck, tractor, and trailer chassis lubrication

### Typical Fluids Handled

- Grease up to NLGI #2

### Technical Specifications

Recommended Fluids..... Grease up to NLGI #2  
Maximum Operating Pressure..... 3,500 psi (241 bar)



563853

### Truck Kit Ordering Information

| Truck Kit Ordering Information              | Total Number of Grease Points | Part Number | Upper King Pin          | Lower King Pin | Drag Link | Slack Adjuster | S-Cam | Tie Rod | Spring Pin | Spring Hanger-Upper | Spring Hanger-Lower | Steer Assist | Steer Assist | Upper King Pin | Lower King Pin | Drag Link | Slack Adjuster | S-Cam | Tie Rod | Spring Pin | Spring Hanger-Upper | Spring Hanger-Lower | Slack Adjuster | S-Cam | Slack Adjuster      | S-Cam |   |  |
|---------------------------------------------|-------------------------------|-------------|-------------------------|----------------|-----------|----------------|-------|---------|------------|---------------------|---------------------|--------------|--------------|----------------|----------------|-----------|----------------|-------|---------|------------|---------------------|---------------------|----------------|-------|---------------------|-------|---|--|
|                                             |                               |             | Left Front              |                |           |                |       |         |            |                     |                     |              |              |                | Right Front    |           |                |       |         |            |                     |                     |                |       | Left and Right Rear |       |   |  |
|                                             |                               |             | Number of Grease Points |                |           |                |       |         |            |                     |                     |              |              |                |                |           |                |       |         |            |                     |                     |                |       |                     |       |   |  |
|                                             |                               |             |                         |                |           |                |       |         |            |                     |                     |              |              |                |                |           |                |       |         |            |                     |                     |                |       |                     |       |   |  |
| Front Brakes                                | 4                             | 563895      |                         |                |           | 1              | 1     |         |            |                     |                     |              |              |                |                |           | 1              | 1     |         |            |                     |                     |                |       |                     |       |   |  |
| Front Left and Right                        | 8                             | 563853      | 1                       | 1              | 1         |                |       | 1       |            |                     |                     |              |              | 1              | 1              | 1         |                |       | 1       |            |                     |                     |                |       |                     |       |   |  |
| Front Left and Right                        | 14                            | 563855      | 1                       | 1              | 1         |                |       | 1       | 1          | 1                   | 1                   |              |              | 1              | 1              | 1         |                |       | 1       | 1          | 1                   | 1                   |                |       |                     |       |   |  |
| Front Left and Right                        | 16                            | 563864      | 1                       | 1              | 1         |                |       | 1       | 1          | 1                   | 1                   | 1            | 1            | 1              | 1              | 1         |                |       | 1       | 1          | 1                   | 1                   |                |       |                     |       |   |  |
| Tandem Axle w/Spring Trunnions - Dump Truck | 10                            | 563893      |                         |                |           |                |       |         | 1          |                     |                     |              |              |                |                |           |                |       |         | 1          |                     |                     |                | 2     | 2                   | 2     | 2 |  |
| Tandem Axle w/Spring Pivots - Dump Truck    | 10                            | 563896      |                         |                |           |                |       |         | 1          |                     |                     |              |              |                |                |           |                |       |         | 1          |                     |                     |                | 2     | 2                   | 2     | 2 |  |

### Trailer Kit Ordering Information

|                                                                        | Total Number of Grease Points | Part Number | Slack Adjuster          | S-Cam | Bearing | Gear Nut | Crank |
|------------------------------------------------------------------------|-------------------------------|-------------|-------------------------|-------|---------|----------|-------|
|                                                                        |                               |             | Number of Grease Points |       |         |          |       |
|                                                                        |                               |             |                         |       |         |          |       |
| EZ Greaser Landing Gear Kit                                            | 5                             | 563824      |                         |       | 2       | 2        | 1     |
| Single Axle Trailer Kit - EZ Greaser MSP Manual with Standard Fittings | 6                             | 563810      | 2                       | 4     |         |          |       |
| EZ Greaser Tandem Axle with Enclosed S-Cams                            | 8                             | 563863      | 4                       | 4     |         |          |       |
| EZ Greaser Trailer Tandem Axle Kit with Non-enclosed S-Cams            | 12                            | 563877      | 4                       | 8     |         |          |       |

# On-Road Mobile Lubrication Systems

## Reservoir Refill Manual Pump

### Features and Benefits

- Heavy-duty materials and construction ensures reliability and long life
- Fill reservoirs in half the number of strokes of light-duty hand pumps
- Two stroke settings for high-pressure/low-volume and high-volume/low-pressure pumping
- Compact 35 lb or 5 gal (16 kg or 20 L) pail pump for greater mobility
- Pumps NLGI #2 grease and lower viscosities
- Follower plate keeps grease at the foot of the pump
- Dual-action pump delivers grease on both up and down strokes
- Delivers 2.3 oz (65 g) of grease per stroke when using the high-pressure/low-volume setting
- Delivers 3.0 oz (85 g) of grease per stroke when using the high-volume/low-pressure setting
- 5 ft (1.5 m) hose length with female quick-coupling



### Typical Applications

- Filling grease reservoir on automatic lubrication systems including Grease Jockey®, G3™, and more!

### Ordering Information

|        |                                                                                |
|--------|--------------------------------------------------------------------------------|
| 247886 | Filler pump assembly – includes pump, cover, follower plate, hose and coupling |
| 557941 | Grease, 35 lb (16 kg) pail of NLGI #00                                         |

# Off-Road Mobile Lubrication Systems

## Dyna-Star® 10:1 High Ratio Hydraulically-Powered Lubrication Pump

### Features and Benefits

- Achieve full pressure performance by tapping low pressure hydraulics
- Pre-packaged modules ready-to-work with both injector and divider valve systems
- Multiple pump and accessory options for use with refinery drum and custom tank installations
- Self-lubricating vertical design for long life and reliable operation in high vibration environments
- Ultra-quiet hydraulic motor—no need for add-on mufflers
- High efficiency motor design uses less hydraulic oil

### Typical Applications

- Heavy-duty construction and mining equipment
- Any application requiring durable, high-performing grease delivery

### Typical Fluids Handled

- NLGI #2 grade grease

### Technical Specifications

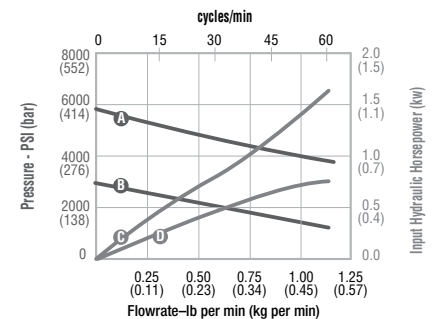
| Part Number                            | 247540                            | 247443                      | 247450                      |
|----------------------------------------|-----------------------------------|-----------------------------|-----------------------------|
| Drum Size                              | 60 lb (27 kg)                     | 120 lb (55 kg)              | 400 lb (180 kg)             |
| Overall Pump Length                    | 33.9 inch (861 mm)                | 41.5 inch (1054 mm)         | 48.5 inch (1232 mm)         |
| Pump Lower Length                      | 19.75 inch (501 mm)               | 26.75 inch (679 mm)         | 33.75 inch (857 mm)         |
| Maximum Hydraulic Input Pressure       | 600 psi (41 bar)                  | 600 psi (41 bar)            | 600 psi (41 bar)            |
| Maximum Hydraulic Fluid Input Volume   | 3 gpm (11.4 lpm)                  | 3 gpm (11.4 lpm)            | 3 gpm (11.4 lpm)            |
| Maximum Flow Output Rate               | 1.1 lb/min. (0.5 kg/min.)         | 1.1 lb/min. (0.5 kg/min.)   | 1.1 lb/min. (0.5 kg/min.)   |
| Maximum CPM                            | 60                                | 60                          | 60                          |
| Maximum Fluid Output Pressure          | 7500 psi (517 bar)                | 7500 psi (517 bar)          | 7500 psi (517 bar)          |
| Hydraulic Supply Inlet                 | 3/4 inch—16 JIC (37° Flare)       | 3/4 inch—16 JIC (37° Flare) | 3/4 inch—16 JIC (37° Flare) |
| Hydraulic Return Outlet                | 3/4 inch npt                      | 3/4 inch npt                | 3/4 inch npt                |
| Fluid Outlet                           | 1/2 inch npt                      | 1/2 inch npt                | 1/2 inch npt                |
| Maximum Incoming Hydraulic Fluid Temp. | 200° F (93° C)                    | 200° F (93° C)              | 200° F (93° C)              |
| 312350                                 | Manual for 247540, 247443, 247450 |                             |                             |

### Ordering Information

|        |                                      |
|--------|--------------------------------------|
| 247540 | Dyna-Star 10:1, 60 lb (27 kg) pump   |
| 247443 | Dyna-Star 10:1, 120 lb (55 kg) pump  |
| 247450 | Dyna-Star 10:1, 400 lb (180 kg) pump |



### Pump Performance



- A 600 psi hydraulic inlet pressure
- B 300 psi hydraulic inlet pressure
- C Hp (600 psi hydraulic input)
- D Hp (300 psi hydraulic input)

Test Fluid: NLGI #1 grade grease

# Off-Road Mobile Lubrication Systems

## Dyna-Star® 10:1, 5:1 and Fire-Ball® 300 50:1

### Ordering Information

| Dyna-Star 10:1 Modules And Kits |                                                                                                                                                                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 247574                          | Dyna-Star 10:1 60 lb (27 kg) pump module - injector - overall height 35.15 in (842 mm). Includes pump (247540), reservoir assembly (247575), hydraulic control assembly (247538) and vent valve assembly (243170). Fully assembled.  |
| 247706                          | Dyna-Star 10:1 60 lb (27 kg) pump kit - divider valve - overall height 35.15 in (842 mm). Includes pump (247540), reservoir assembly (247575) and hydraulic control assembly (247538). Not assembled.                                |
| 247444                          | Dyna-Star 10:1 90 lb (41 kg) pump module - injector - overall height 42.75 in (1086 mm). Includes pump (247443), reservoir assembly (241486), hydraulic control assembly (247538) and vent valve assembly (243170). Fully assembled. |
| 247707                          | Dyna-Star 10:1 90 lb (41 kg) pump kit - divider valve - overall height 42.75 in (1086 mm). Includes pump (247443), reservoir assembly (241486) and hydraulic control assembly (247538). Not assembled.                               |
| 247902                          | Pressure relief kit for 247706 and 247707                                                                                                                                                                                            |
| 312349                          | Manual for 247574, 247706, 247444, 247707                                                                                                                                                                                            |

| Dyna-Star 10:1 Refinery Drum And Custom Tank Applications |                |           |                          |         |          |          |           |           |
|-----------------------------------------------------------|----------------|-----------|--------------------------|---------|----------|----------|-----------|-----------|
| Description                                               | Refinery Drums |           | Custom Tank Applications |         |          |          |           |           |
| Weight lbs (kg)                                           | 120 (55)       | 400 (180) | 60 (27)                  | 60 (27) | 120 (55) | 120 (55) | 400 (180) | 400 (180) |
| Divider Valve (DV) or Injector Based                      | DV             | DV        | Injector                 | DV      | Injector | DV       | Injector  | DV        |
| Pump                                                      | 247443         | 247450    | 247540                   | 247540  | 247443   | 247443   | 247450    | 247450    |
| Hydraulic Control (1)                                     | 247705         | 247705    | 247538                   | 247538  | 247538   | 247538   | 247538    | 247538    |
| Vent Valve                                                |                |           | 243170                   |         | 243170   |          | 243170    |           |
| Cover                                                     | 247703         | 247704    |                          |         |          |          |           |           |
| Pump Gasket                                               | 15M442         | 15M442    | 15M442                   | 15M442  | 15M442   | 15M442   | 15M442    | 15M442    |
| Custom Tank Kit (2)                                       |                |           | 247970                   |         | 247456   |          | 247457    |           |

(1) Hydraulic control assembly (247705) includes longer hoses to enable remote mounting.

(2) Kits include pump (24750, 247443 or 247450), hydraulic control assembly (247538), vent valve (243170) and pump gasket (15M442).

| Dyna-Star 10:1 Module Accessories |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| 243170                            | Vent valve                                                   |
| 247538                            | Hydraulic control module                                     |
| 247700                            | Follower plate for 60 lb (27 kg) and 90 lb (41 kg) modules   |
| 244023                            | Level indicator for 60 lb (27 kg) and 90 lb (41 kg) modules* |
| 24B591                            | GLC 4400, 12/24 VDC controller                               |
| 115124                            | Pressure switch                                              |
| 247575                            | Reservoir - 60 lb (27 kg)                                    |
| 241486                            | Reservoir - 90 lb (41 kg)                                    |

| Fireball 300 And Dyna-Star 5:1 Modules and Accessories |                                                                                                                                                                     |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 241573                                                 | Fireball 300, 50:1 90 lb (41 kg) pump module. Includes pump (239887), reservoir assembly (241486), and vent valve assembly (241572)                                 |
| 241485                                                 | Follower plate (fits 241573)                                                                                                                                        |
| 243159                                                 | Dyna-Star 5:1 90 lb (41 kg) pump module. Includes pump (224751), reservoir assembly (241486), hydraulic control assembly (243501), and vent valve assembly (243170) |
| 243191                                                 | Follower plate (fits 243159)                                                                                                                                        |

| GL Injectors and Accessories |                                    |
|------------------------------|------------------------------------|
| 114901                       | One GL-1 injector and manifold     |
| 114902                       | Two GL-1 injectors and manifold    |
| 114903                       | Three GL-1 injectors and manifold  |
| 114904                       | Four GL-1 injectors and manifold   |
| 114905                       | Five GL-1 injectors and manifold   |
| 114909                       | Replacement GL-1 injector          |
| 115119                       | GL-1 injector cover kit, plastisol |
| 24A918                       | GL-11 injector                     |



247574



241573



24B591



114905



24A918

# Electric Pumps

## G1™ Pump and USP Divider Valve Automatic Lubrication Kits

### Everything You Need in One Simple Kit.

Pre-engineered lubrication kits are built from the proven, user-friendly G1 Plus pump and USP divider valve. Each kit contains the bracket and hardware you need to quickly order and install an automatic lubrication system.

### Features and Benefits

- Two-liter grease reservoir
- Connect to 24 VDC and 110-240 VAC power sources with CPC or DIN-style connectors for easy, no hassle installations
- G1 Plus™ has built-in on/off timer with optional low level feature that shuts down the pump when empty. Manual run initiates lube cycles on-demand with the option for remote control.

### Lubrication Used

- NLGI #000 to NLGI #2

### Ordering Information

| G1 Plus and USP Automatic Lubrication Kits |                                                                                                    |
|--------------------------------------------|----------------------------------------------------------------------------------------------------|
| 24V659                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 6, pressure relief       |
| 24V660                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 8, pressure relief       |
| 24V661                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 10, pressure relief      |
| 24V662                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 12, pressure relief      |
| 24V663                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 14, pressure relief      |
| 24V664                                     | G1 Plus grease pump, 24 VDC, 2 liter, low level, power cord, bracket, USP 16, pressure relief      |
| 24V680                                     | G1 Plus grease pump, 110-240 VAC, 2 liter, low level, power cord, bracket, USP 6, pressure relief  |
| 24V681                                     | G1 Plus grease pump, 110-240 VAC, 2 liter, low level, power cord, bracket, USP 8, pressure relief  |
| 24V682                                     | G1 Plus grease pump, 110-240 VAC, 2 liter, low level, power cord, bracket, USP 10, pressure relief |
| 24V683                                     | G1 Plus grease pump, 110-240 VAC, 2 liter, low level, power cord, bracket, USP 12, pressure relief |
| 24V684                                     | G1 Plus grease pump, 110-240 VAC, 2 liter, low level, power cord, bracket, USP 14, pressure relief |
| 24V685                                     | G1 Plus grease pump 110-240 VAC, 2 liter, low level, power cord, bracket, USP 16, pressure relief  |



24V680



# Off-Road Mobile Lubrication Systems

## G3™ Pump Kits

### Out-of-the-Box Lubrication Kits with Everything You Need for Installation

Each kit includes a 24 VDC pump, which is tested tough to withstand abuse from the elements. IP69K rated to handle the elements without an enclosure.

G3's Data Management System (DMS) makes it easy to transfer data to your PC via USB flash drive for further analysis using Excel® or Notepad®.

Each kit has the correct metering devices included. No need to figure out lubrication rates or calculate line lengths. Precision machined, honed and match-fit in our own factory for top performance.

Everything is included for faster installations with no special tools required. No more searching around for each adapter and connector—you get everything in one box ready for your installer.

- Continually monitored on-board lubrication regardless of length of operational schedules.
- Protects equipment from contamination, over- or under-lubrication, and mechanical failure caused by improper lubrication.
- Allows longer time between scheduled maintenance.
- Avoid breakdowns on the job site, schedule your equipment repairs and regular maintenance in the shop.

### Ordering Information

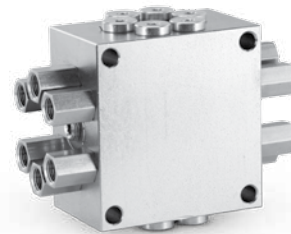
| G3 Pump Lubrication Kits |                                               | Manual |
|--------------------------|-----------------------------------------------|--------|
| 24R376                   | Wheel Loader, 8L G3 DMS, USP, 22 point        | 333502 |
| 24R377                   | Wheel Loader, 8L G3 DMS, USP, 31 point        | 333503 |
| 24R378                   | Telehandler/Loadall, 4L G3 DMS, USP, 21 point | 333504 |
| 24R379                   | Backhoe, 4L G3 DMS, USP, 43 point             | 333505 |
| 24N815                   | Excavator, 8L G3 DMS, USP, 19 point           | 333501 |

### What's Included:

- G3 Max Pump with Data Management System and remote manual run button
- USP Mono Block metering valves
- Hose and hose guarding
- Field-installable hose ends
- Fittings
- Accessories



G3 Max Model



USP Metering Valve



Hoses



Fittings and Accessories

# Lubrication Systems

## Dyna-Star® Electrically-Powered HP and HF 24 VDC

### Features and Benefits

- High-quality helical hardened steel gears are lubricated for life and sealed to keep contaminants out for longer lasting performance
- Ability to adjust motor controls like power input, motor speed, current control and signal input to perfectly match the pump to your application and environmental changes
- Mechanical auto-fill shutoff and remote-mounted fill port ensures clean and efficient refills
- Vent valve mounts directly to pump with no special brackets or hoses for a compact design and less parts to break or wear out
- IP69K rated
- Built-in pressure relief for safety and compact, efficient installations
- Cavitation-free fill and vent path provides simple and direct venting and filling to the foot of the pump
- Built-in lift ring is rated to 500 lbs (226 kg)
- Strong 12 gauge steel reservoir available in 60 lb (27 kg) or 90 lb (41 kg) size
- AC to DC Converter Box for fixed and in-plant applications

### Typical Applications

- Mining Operations
- Milling and Crushing
- Heavy-duty Construction
- Well Services
- Industrial (see next page for AC to DC Converter)

### Technical Specifications

| Maximum Lubricant Outlet Pressure |                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------|
| HF models                         | 3500 psi (24.1 MPa, 241 bar)                                                                          |
| HP models                         | 5000 psi (34.47 MPa, 344 bar)                                                                         |
| Electrical Requirements           |                                                                                                       |
| All models                        | 24 VDC                                                                                                |
| Input Voltage Range               |                                                                                                       |
| 24 VDC                            | 18 to 32 VDC                                                                                          |
| Flow Rate Range                   |                                                                                                       |
| HF models                         | 1.5 in <sup>3</sup> - 25 in <sup>3</sup> /minute (24.6 cm <sup>3</sup> - 410 cm <sup>3</sup> /minute) |
| HP models                         | 1.5 in <sup>3</sup> - 18 in <sup>3</sup> /minute (24.6 cm <sup>3</sup> - 295 cm <sup>3</sup> /minute) |
| Inlet/Outlet Sizes                |                                                                                                       |
| Tank/reservoir fill port          | 1/2 in NPT                                                                                            |
| Overflow port                     | 1/2 in NPT                                                                                            |
| Fluid outlet size                 | 3/8 in NPT                                                                                            |
| Operating Temperature             |                                                                                                       |
| HF models                         | 14° to 149° F (-10° to 65° C)                                                                         |
| HP models                         | -40° to 149° F (-40° to 65° C)                                                                        |
| Audible Sound Pressure            |                                                                                                       |
| 71 dB(A)                          |                                                                                                       |

**Product Manuals:** Pumps 332514, Pump Systems 332540, Auto-Fill Shutoff 332518, Low Level 332515, Electric Vent Valve 332519, Drum Covers and Follower Plates 312738, Remote Fill Port 333393



77X102



77X001



# Lubrication Systems

## Dyna-Star® Electrically-Powered HP and HF AC to DC Converter Box

### Features and Benefits

- Convenience of AC power and maintain the advantages of DC speed and amp control
- In-plant and fixed plant applications without expensive pneumatic and hydraulic power requirements
- Convenient hardware kit to make installation easy
- Two DC 20 amp outputs to power both pump and control
- On/off switch and detachable power cord to meet health and safety requirements

### Typical Applications

- Rock crushers
- Food processing
- Steel milling
- Fixed and in-plant applications

### Technical Specifications

|                                       |                               |
|---------------------------------------|-------------------------------|
| Input Voltage.....                    | 110-240 VAC                   |
| Input Frequency.....                  | 50/60 Hz                      |
| Output Voltage.....                   | 24 VDC                        |
| Output Current.....                   | 20 amps                       |
| IP Rating .....                       | IP24                          |
| Environmental Temperature Range ..... | 14° to 122° F (-10° to 50° C) |
| Power Cord Length .....               | 9 ft (2.7 m)                  |
| Manual.....                           | 333391                        |



77X524



Installation Hardware Included





# Lubrication Systems

## Dyna-Star® Electrically-Powered HP and HF 24 VDC

### Ordering Information

| Stand Alone Pumps           |                                                                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 77X000                      | 24 VDC HP stand-alone pump for 35 or 60 pound reservoir                                                                              |
| 77X001                      | 24 VDC HP stand-alone pump with tube-in-tube for 35 or 60 pound reservoir                                                            |
| 77X002                      | 24 VDC HP stand-alone pump with tube-in-tube for 90 or 120 pound reservoir                                                           |
| 77X003                      | 24 VDC HP stand-alone pump with tube-in-tube for 400 pound reservoir                                                                 |
| 77X014                      | 24 VDC HF stand-alone pump for 35 or 60 pound reservoir                                                                              |
| 77X015                      | 24 VDC HF stand-alone pump for 120 pound reservoir                                                                                   |
| 77X016                      | 24 VDC HF stand-alone pump for 400 pound reservoir                                                                                   |
| Custom Tank Injector Kits   |                                                                                                                                      |
| 77X011                      | 24 VDC HP pump and vent valve with tube-in-tube for 35 or 60 pound reservoir                                                         |
| 77X012                      | 24 VDC HP pump and vent valve with tube-in-tube for 90 or 120 pound reservoir                                                        |
| 77X013                      | 24 VDC HP pump and vent valve with tube-in-tube for 400 pound reservoir                                                              |
| Injector Pump Modules       |                                                                                                                                      |
| 77X100                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, cover, tank, and dip stick for 60 pound reservoir                     |
| 77X101                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, cover, tank and dip stick for 90 pound reservoir                      |
| 77X102                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, cover, tank and auto-fill shutoff for 60 pound reservoir              |
| 77X103                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, cover, tank and auto-fill shutoff for 90 pound reservoir              |
| 77X104                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, follower plate, low level kit, cover, and tank for 60 pound reservoir |
| 77X105                      | 24 VDC HP injector module with pump, tube-in-tube, vent valve, follower plate, low level kit, cover, and tank for 90 pound reservoir |
| Standard Drum Injector Kits |                                                                                                                                      |
| 77X111                      | 24 VDC HP pump, vent valve, and cover with tube-in-tube for 120 pound reservoir                                                      |
| 77X112                      | 24 VDC HP pump, vent valve, and cover with tube-in-tube for 400 pound reservoir                                                      |
| Standard Drum Kits          |                                                                                                                                      |
| 77X121                      | 24 VDC HF pump and cover for 120 pound reservoir                                                                                     |
| 77X122                      | 24 VDC HF pump and cover for 400 pound reservoir                                                                                     |
| Accessories                 |                                                                                                                                      |
| 77X500                      | Follower plate for Graco 60 pound and 90 pound Graco tank for tube-in-tube                                                           |
| 77X510                      | Follower plate for 35 pound bucket with and without tube-in-tube                                                                     |
| 247701                      | Follower plate for 120 pound drum without tube-in-tube                                                                               |
| 77X511                      | Follower plate for 120 pound drum with tube-in-tube                                                                                  |
| 247702                      | Follower plate for 400 pound drum without tube-in-tube                                                                               |
| 77X512                      | Follower plate for 400 pound drum with for tube-in-tube                                                                              |
| 77X513                      | Cover, cylinder, tie-rods and base to convert 60 pound length to 35 pound bucket                                                     |
| 77X514                      | Cover for 120 pound drum                                                                                                             |
| 77X515                      | Cover for 400 pound drum                                                                                                             |
| 77X521                      | Auto-fill shutoff (AFSO) - diaphragm, plate, valve, coupler, and pipes                                                               |
| 77X522                      | Low level kit sight glass, electric low level switch, and cable (requires follower plate 77X500)                                     |
| 77X523                      | 400 micron inline filter, maximum 5,000 psi (344 bar) inlet pressure                                                                 |
| 77X524                      | 110-230 VAC to 24 VDC converter box                                                                                                  |
| 77X527                      | Power cable for series progressive system (use with 77X528)                                                                          |
| 77X528                      | Extension power cable for both 77X527 and 77X529 - 15 feet (4.6 meters)                                                              |
| 77X529                      | Power cable for injector system (use with 77X528)                                                                                    |
| 77X540                      | 24 VDC electric vent valve with pressure relief                                                                                      |
| 77X541                      | Filter replacement kit - use with 77X523                                                                                             |
| 77X542                      | Remote-fill port manifold with vent                                                                                                  |
| 77X543                      | HF manifold with 4,000 psi pressure relief                                                                                           |
| 77X544                      | HP manifold with 5,000 psi pressure relief                                                                                           |
| 115124                      | Pressure switch - pressure adjustment visible in window                                                                              |
| 24N181                      | Pressure switch                                                                                                                      |



# Compressor Lubrication

## Manzel® Model 25 Lubricator

### Features and Benefits

- General-Purpose Lubrication: automatic, precision metering for all types of machinery
- Type Pumping Unit: Clear-Vue. sight feed chamber functions at atmospheric pressure. Shows amount of lubricant being pumped
- Unitized Construction: Contains complete feed regulating mechanism with inlet strainer
- Number of Feeds: 1 to 20 per lubricator, standard
- Available drives: Direct rotary (1:1), ratchet, 37.5:1 and 75:1 internal gear reductions
- Reservoirs: Single compartment, sheet metal construction
- Feed regulator: External screw-type precisely adjustable while idle or in operation
- Removable Pumping Unit: Self contained. All units interchangeable—remove two pump screws and lift out
- Hand Crank: Standard. Convenient for rapid priming of lines before start-up or for momentarily increasing supply of lubricant. Does not affect adjustment or individual pumping units. Direct replacement for Kipp Model 50 Box Lubricators



562949

### Typical Applications

- Provide lubrication to cylinder walls, bearings and other moving parts of equipment such as sugar mills, steam engines, presses and general machinery

### Typical Fluids Handled

- Mineral oil base or synthetics

### Technical Specifications

| Piston Size<br>inches (mm) | Max Pressure<br>psi (bar) | Drops Per<br>Stroke |     | Cubic Inches<br>Per Stroke |       | Cubic cm Per<br>Stroke |      | Strokes Per<br>Minute |     |
|----------------------------|---------------------------|---------------------|-----|----------------------------|-------|------------------------|------|-----------------------|-----|
|                            |                           | Min.                | Max | Min.                       | Max   | Min.                   | Max  | Min.                  | Max |
| 3/16 (4.8)                 | 1,000 (69)                | 1/6                 | 6   | .0003                      | .0122 | .008                   | .399 | 3                     | 490 |
| 5/16 (7.9)                 | 1,000 (69)                | 1/4                 | 12  | .0005                      | .0245 | .005                   | .199 | 3                     | 490 |

### Ordering Information

| Model 25 Pumps |                                  |
|----------------|----------------------------------|
| 562949         | 3/16 inch (4.8 mm) diameter pump |
| 562950         | 5/16 inch (7.9 mm) diameter pump |
| 564317         | Ratchet arm assembly             |
| 562988         | Replacement handle               |
| 563939         | Low level, fits into a pump slot |

| Feeds | Sight Glass | Gasket |
|-------|-------------|--------|
| 1     | 556687      | 556721 |
| 2     | 556688      | 556722 |
| 3     | 556689      | 555741 |
| 4     | 556690      | 556723 |
| 5     | 556691      | 555742 |
| 6     | 556692      | 556724 |
| 7     | 556693      | 555743 |
| 8     | 556694      | 556725 |

# Compressor Lubrication

## Manzel® Model 25 Box Lubricator Configurator

### Ordering Information

|                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |             |            |             |            |             |            |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|------------|-------------|------------|-------------|------------|---|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MA –       | X           | –          | X           | –          | X           | –          | X |
| <b>Reservoir</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |             |            |             |            |             |            |   |
| <b>Code   Former Codes and Descriptions</b><br>A   R1 - 6.25 pt, 4 pump stations max<br>B   R2 - 9.25 pt, 8 pump stations max<br>C   R3 - 13 pt, 12 pump stations max<br>D   R4 - 16 pt, 16 pump stations max<br>E   R5 - 19.75 pt, 20 pump stations max<br><b>NOTE : Unused pump stations covered with blanking plate(s)</b>                                                                                                                         |            |             |            |             |            |             |            |   |
| <b>Pump Size</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |             |            |             |            |             |            |   |
| <b>Code   Former Codes and Descriptions</b><br>A   P-1 - 3/16 inch (4.8 mm) Diameter Plunger, 1,000 psi (68.9 bar) max Operating Pressure<br>B   P-2 - 5/16 inch (7.9 mm) Diameter Plunger, 1,000 psi (68.9 bar) max Operating Pressure                                                                                                                                                                                                               |            |             |            |             |            |             |            |   |
| <b>Pump Quantity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |             |            |             |            |             |            |   |
| <b>Code</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Qty</b> | <b>Code</b> | <b>Qty</b> | <b>Code</b> | <b>Qty</b> | <b>Code</b> | <b>Qty</b> |   |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0          | G           | 6          | N           | 12         | V           | 18         |   |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1          | H           | 7          | P           | 13         | W           | 19         |   |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2          | J           | 8          | R           | 14         | X           | 20         |   |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3          | K           | 9          | S           | 15         |             |            |   |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4          | L           | 10         | T           | 16         |             |            |   |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5          | M           | 11         | U           | 17         |             |            |   |
| <b>Drive Options</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |             |            |             |            |             |            |   |
| <b>Code   Former Codes and Descriptions</b><br>A   D1R - Direct Rotary Right Hand Mount<br>B   D2R - Standard Ratchet (w/out drive arm) - Right Hand Mount<br>C   D3R - 37.5:1 Ratio - Right Hand Mount<br>D   D4R - 75:1 Ratio - Right Hand Mount<br>E   D1L - Direct Rotary Left Hand Mount<br>F   D2L - Standard Ratchet (w/out drive arm) - Left Hand Mount<br>G   D3L - 37.5:1 Ratio - Left Hand Mount<br>H   D4L - 75:1 Ratio - Left Hand Mount |            |             |            |             |            |             |            |   |

# Compressor Lubrication

## Manzel® Model 25 Box Lubricators

### Ordering Information

| MAA - Up to 4 pumps |                |
|---------------------|----------------|
| MAAACB              | R1-P1-2-D2R-L0 |
| MAAADB              | R1-P1-3-D2R-L0 |
| MAAAEB              | R1-P1-4-D2R-L0 |
| MAAAEC              | R1-P1-4-D3R-L0 |
| MAABBB              | R1-P2-1-D2R-L0 |
| MAABBC              | R1-P2-1-D3R-L0 |
| MAABBF              | R1-P2-1-D2L-L0 |
| MAABBG              | R1-P2-1-D3L-L0 |
| MAABDB              | R1-P2-3-D2R-L0 |
| MAABDC              | R1-P2-3-D3R-L0 |
| MAABEB              | R1-P2-4-D2R-L0 |
| MAABEF              | R1-P2-4-D2L-L0 |
| MAB - Up to 8 pumps |                |
| MABAAB              | R2-P1-0-D2R-L0 |
| MABACH              | R2-P1-2-D4L-L0 |
| MABAFC              | R2-P1-5-D3R-L0 |
| MABAFG              | R2-P1-5-D3L-L0 |
| MABAHC              | R2-P1-7-D3R-L0 |
| MABAHG              | R2-P1-7-D3L-L0 |
| MABAJA              | R2-P1-8-D1R-L0 |
| MABBAC              | R2-P2-0-D3R-L0 |
| MABBCG              | R2-P2-2-D3L-L0 |
| MABBEC              | R2-P2-4-D3R-L0 |
| MABBEE              | R2-P2-4-D1L-L0 |
| MABBFF              | R2-P2-5-D2L-L0 |
| MABBFG              | R2-P2-5-D3L-L0 |
| MABBGA              | R2-P2-6-D1R-L0 |
| MABBGB              | R2-P2-6-D2R-L0 |
| MABBGC              | R2-P2-6-D3R-L0 |
| MABBGF              | R2-P2-6-D2L-L0 |
| MABBHC              | R2-P2-7-D3R-L0 |
| MABBHG              | R2-P2-7-D3L-L0 |

| MAC - Up to 12 pumps |                 |
|----------------------|-----------------|
| MACAAA               | R3-P1-0-D1R-L0  |
| MACAEH               | R3-P1-4-D4L-L0  |
| MACAGH               | R3-P1-6-D4L-L0  |
| MACAHF               | R3-P1-7-D2L-L0  |
| MACAKE               | R3-P1-9-D1L-L0  |
| MACALC               | R3-P1-10-D3R-L0 |
| MACANB               | R3-P1-12-D2R-L0 |
| MACBJB               | R3-P2-8-D2R-L0  |
| MACBKA               | R3-P2-9-D1R-L0  |
| MACBLC               | R3-P2-10-D3R-L0 |
| MACBLG               | R3-P2-10-D3L-L0 |
| MAD - Up to 16 pumps |                 |
| MADBCC               | R4-P2-2-D3R-L0  |
| MADBLH               | R4-P2-10-D4L-L0 |
| MADBSG               | R4-P2-15-D3L-L0 |
| MAE - Up to 20 pumps |                 |
| MAEAAB               | R5-P1-0-D2R-L0  |
| MAEBGE               | R5-P2-6-D1L-L0  |

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Features and Benefits

- Provide a proven, cost-effective way to assemble customized oil systems that meet specific requirements by using standard modular components
- Increase opportunities to standardize lube system components and reduce lube maintenance and service costs
- Dependable and backed by the industry's most comprehensive international distributor network—with application expertise, parts stocks, and factory-trained service nearby, wherever you are located

### Typical Applications

- Provide lubrication to cylinder walls, bearings and other moving parts of equipment such as refineries, injection and storage, general manufacturing, air systems, and food processing equipment

### Typical Fluids Handled

- Mineral oil base or synthetics



### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                |
|-----------------------------|------------------------------------------------------------------------------------------------|
| MBA0AA                      | 4 pint reservoir (2 pump stations max), no pumps installed, 1:1 direct drive, RH               |
| MBA0AM                      | 4 pint reservoir (2 pump stations max), no pumps installed, 200:1 end rotary, RH               |
| MBA0AN                      | 4 pint reservoir (2 pump stations max), no pumps installed, 400:1 end rotary, RH               |
| MBA1BA                      | 4 pint reservoir (2 pump stations max), 3/16 inch GBL 7500 pump (qty 1), 1:1 direct drive, RH  |
| MBA1CB                      | 4 pint reservoir (2 pump stations max), 3/16 inch GBL 7500 pump (qty 2), end ratchet, RH       |
| MBA1CF                      | 4 pint reservoir (2 pump stations max), 3/16 inch GBL 7500 pump (qty 2), end ratchet, LH       |
| MBA1CM                      | 4 pint reservoir (2 pump stations max), 3/16 inch GBL 7500 pump (qty 2), 200:1 end rotary, RH  |
| MBA2BF                      | 4 pint reservoir (2 pump stations max), 1/4 inch GBL 7500 pump (qty 1), end ratchet, LH        |
| MBA2BR                      | 4 pint reservoir (2 pump stations max), 1/4 inch GBL 7500 pump (qty 1), 50:1 right angle, RH   |
| MBA2CE                      | 4 pint reservoir (2 pump stations max), 1/4 inch GBL 7500 pump (qty 2), 1:1 direct drive, LH   |
| MBA2CR                      | 4 pint reservoir (2 pump stations max), 1/4 inch GBL 7500 pump (qty 2), 50:1 right angle, RH   |
| MBA3CD                      | 4 pint reservoir (2 pump stations max), 3/8 inch GBL 7500 pump (qty 2), 75:1 ratchet, RH       |
| MBB0AA                      | 6 pint reservoir (3 pump stations max), no pumps installed, 1:1 direct drive, RH               |
| MBB0AB                      | 6 pint reservoir (3 pump stations max), no pumps installed, end ratchet, RH                    |
| MBB0AC                      | 6 pint reservoir (3 pump stations max), no pumps installed, 37.5:1 ratchet, RH                 |
| MBB0AG                      | 6 pint reservoir (3 pump stations max), no pumps installed, 37.5:1 ratchet, LH                 |
| MBB0AH                      | 6 pint reservoir (3 pump stations max), no pumps installed, 75:1 ratchet, LH                   |
| MBB0AM                      | 6 pint reservoir (3 pump stations max), no pumps installed, 200:1 end rotary, RH               |
| MBB0AN                      | 6 pint reservoir (3 pump stations max), no pumps installed, 400:1 end rotary, RH               |
| MBB1CM                      | 6 pint reservoir (3 pump stations max), 3/16 inch GBL 7500 pump (qty 2), 200:1 end rotary, RH  |
| MBB1CZ                      | 6 pint reservoir (3 pump stations max), 3/16 inch GBL 7500 pump (qty 2), 188:1 right angle, LH |
| MBB1DA                      | 6 pint reservoir (3 pump stations max), 3/16 inch GBL 7500 pump (qty 3), 1:1 direct drive, RH  |
| MBB1DM                      | 6 pint reservoir (3 pump stations max), 3/16 inch GBL 7500 pump (qty 3), 200:1 end rotary, RH  |
| MBB2BB                      | 6 pint reservoir (3 pump stations max), 1/4 inch GBL 7500 pump (qty 1), end ratchet, RH        |
| MBB2CA                      | 6 pint reservoir (3 pump stations max), 1/4 inch GBL 7500 pump (qty 2), 1:1 direct drive, RH   |
| MBB2CB                      | 6 pint reservoir (3 pump stations max), 1/4 inch GBL 7500 pump (qty 2), end ratchet, RH        |
| MBB2CD                      | 6 pint reservoir (3 pump stations max), 1/4 inch GBL 7500 pump (qty 2), 75:1 ratchet, RH       |

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| MBB2CE                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), 1:1 direct drive, LH                                                 |
| MBB2CM                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), 200:1 end rotary, RH                                                 |
| MBB2CN                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                 |
| MBB2DC                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 37.5:1 ratchet, RH                                                   |
| MBB2DG                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 37.5:1 ratchet, LH                                                   |
| MBB2DM                      | 6 pint reservoir (3 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 200:1 end rotary, RH                                                 |
| MBB3CA                      | 6 pint reservoir (3 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 2), 1:1 direct drive, RH                                                 |
| MBC0AA                      | 8 pint reservoir (5 pump stations max), no pumps installed, 1:1 direct drive, RH                                                                      |
| MBC0AC                      | 8 pint reservoir (5 pump stations max), no pumps installed, 37.5:1 ratchet, RH                                                                        |
| MBC0AE                      | 8 pint reservoir (5 pump stations max), no pumps installed, 1:1 direct drive, LH                                                                      |
| MBC0AG                      | 8 pint reservoir (5 pump stations max), no pumps installed, 37.5:1 ratchet, LH                                                                        |
| MBC0AL                      | 8 pint reservoir (5 pump stations max), no pumps installed, 100:1 end rotary, RH                                                                      |
| MBC0AS                      | 8 pint reservoir (5 pump stations max), no pumps installed, 188:1 right angle, RH                                                                     |
| MBC1EB                      | 8 pint reservoir (5 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), end ratchet, RH                                                     |
| MBC1EE                      | 8 pint reservoir (5 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 1:1 direct drive, LH                                                |
| MBC1EJ                      | 8 pint reservoir (5 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 25:1 end rotary, RH                                                 |
| MBC1FE                      | 8 pint reservoir (5 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 5), 1:1 direct drive, LH                                                |
| MBC2BL                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 1), 100:1 end rotary, RH                                                 |
| MBC2CM                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), 200:1 end rotary, RH                                                 |
| MBC2CN                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                 |
| MBC2DB                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), end ratchet, RH                                                      |
| MBC2EA                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 1:1 direct drive, RH                                                 |
| MBC2EB                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), end ratchet, RH                                                      |
| MBC2ED                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 75:1 ratchet, RH                                                     |
| MBC2EF                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), end ratchet, LH                                                      |
| MBC2FB                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), end ratchet, RH                                                      |
| MBC2FE                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 1:1 direct drive, LH                                                 |
| MBC2FG                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 37.5:1 ratchet, LH                                                   |
| MBC2FL                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 100:1 end rotary, RH                                                 |
| MBC3EB                      | 8 pint reservoir (5 pump stations max), 3/8 inch (6.4 mm) GBL 7500 pump (qty 4), end ratchet, RH                                                      |
| MBC5DE                      | 8 pint reservoir (5 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), Rens Level Controller "F3", 1:1 direct drive, LH                     |
| MBC7CM                      | 8 pint reservoir (5 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), Garza Level Controller "F4" (Class 1 Group D), 200:1 end rotary, RH |
| MBD0AA                      | 12 pint reservoir (8 pump stations max), no pumps installed, 1:1 direct drive, RH                                                                     |
| MBD0AE                      | 12 pint reservoir (8 pump stations max), no pumps installed, 1:1 direct drive, LH                                                                     |
| MBD0AH                      | 12 pint reservoir (8 pump stations max), no pumps installed, 75:1 ratchet, LH                                                                         |
| MBD0AL                      | 12 pint reservoir (8 pump stations max), no pumps installed, 100:1 end rotary, RH                                                                     |
| MBD0AM                      | 12 pint reservoir (8 pump stations max), no pumps installed, 200:1 end rotary, RH                                                                     |
| MBD0AN                      | 12 pint reservoir (8 pump stations max), no pumps installed, 400:1 end rotary, RH                                                                     |
| MBD1DN                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 3), 400:1 end rotary, RH                                               |
| MBD1EE                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 1:1 direct drive, LH                                               |
| MBD1EM                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 200:1 end rotary, RH                                               |
| MBD1EN                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 400:1 end rotary, RH                                               |

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                                                                        |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| MBD1FA                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 5), 1:1 direct drive, RH                                                |
| MBD1FN                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 5), 400:1 end rotary, RH                                                |
| MBD1GL                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 6), 100:1 end rotary, RH                                                |
| MBD1GN                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 6), 400:1 end rotary, RH                                                |
| MBD1GT                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 6), 375:1 right angle, RH                                               |
| MBD1JA                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 1:1 direct drive, RH                                                |
| MBD2BR                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 1), 50:1 right angle, RH                                                 |
| MBD2DA                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 1:1 direct drive, RH                                                 |
| MBD2DD                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 75:1 ratchet, RH                                                     |
| MBD2DF                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), end ratchet, LH                                                      |
| MBD2DM                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 3), 200:1 end rotary, RH                                                 |
| MBD2FF                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), end ratchet, LH                                                      |
| MBD2FR                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 50:1 right angle, RH                                                 |
| MBD2GA                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 1:1 direct drive, RH                                                 |
| MBD2GK                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 50:1 end rotary, RH                                                  |
| MBD2GL                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 100:1 end rotary, RH                                                 |
| MBD2GR                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 50:1 right angle, RH                                                 |
| MBD2GZ                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 188:1 right angle, LH                                                |
| MBD2JA                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 1:1 direct drive, RH                                                 |
| MBD2JB                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), end ratchet, RH                                                      |
| MBD2JE                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 1:1 direct drive, LH                                                 |
| MBD3FC                      | 12 pint reservoir (8 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 5), 37.5:1 ratchet, RH                                                   |
| MBD3GA                      | 12 pint reservoir (8 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 6), 1:1 direct drive, RH                                                 |
| MBD5GE                      | 12 pint reservoir (8 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), Rens Level Controller "F3", 1:1 direct drive, LH                     |
| MBD7HN                      | 12 pint reservoir (8 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 7), Garza Level Controller "F4" (Class 1 Group D), 400:1 end rotary, RH |
| MBE0AA                      | 16 pint reservoir (12 pump stations max), no pumps installed, 1:1 direct drive, RH                                                                     |
| MBE0AC                      | 16 pint reservoir (12 pump stations max), no pumps installed, 37.5:1 ratchet, RH                                                                       |
| MBE0AE                      | 16 pint reservoir (12 pump stations max), no pumps installed, 1:1 direct drive, LH                                                                     |
| MBE0AG                      | 16 pint reservoir (12 pump stations max), no pumps installed, 37.5:1 ratchet, LH                                                                       |
| MBE0AH                      | 16 pint reservoir (12 pump stations max), no pumps installed, 75:1 ratchet, LH                                                                         |
| MBE1FJ                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 5), 25:1 end rotary, RH                                                |
| MBE1HN                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 7), 400:1 end rotary, RH                                               |
| MBE1JA                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 1:1 direct drive, RH                                               |
| MBE1JE                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 1:1 direct drive, LH                                               |
| MBE1JM                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 200:1 end rotary, RH                                               |
| MBE1KM                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 9), 200:1 end rotary, RH                                               |
| MBE1MC                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 11), 37.5:1 ratchet, RH                                                |
| MBE1ME                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 11), 1:1 direct drive, LH                                              |
| MBE1NG                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 12), 37.5:1 ratchet, LH                                                |
| MBE1NR                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 12), 50:1 right angle, RH                                              |
| MBE2ER                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 50:1 right angle, RH                                                |
| MBE2JM                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 200:1 end rotary, RH                                                |



# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                                                     |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| MBE2KA                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 1:1 direct drive, RH                             |
| MBE2KG                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 37.5:1 ratchet, LH                               |
| MBE2KL                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 100:1 end rotary, RH                             |
| MBE2KN                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 400:1 end rotary, RH                             |
| MBE2KZ                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 188:1 right angle, LH                            |
| MBE2LA                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 10), 1:1 direct drive, RH                            |
| MBE2LL                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 10), 100:1 end rotary, RH                            |
| MBE2NA                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 1:1 direct drive, RH                            |
| MBE2NE                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 1:1 direct drive, LH                            |
| MBE2NM                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 200:1 end rotary, RH                            |
| MBE2NT                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 375:1 right angle, RH                           |
| MBE4EN                      | 16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), Rens Level Controller "F3",                     |
| MBE5CA                      | 16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), Rens Level Controller "F3", 1:1 direct drive, RH |
| MBF0AA                      | 24 pint reservoir (16 pump stations max), no pumps installed, 1:1 direct drive, RH                                                  |
| MBF0AE                      | 24 pint reservoir (16 pump stations max), no pumps installed, 1:1 direct drive, LH                                                  |
| MBF0AG                      | 24 pint reservoir (16 pump stations max), no pumps installed, 37.5:1 ratchet, RH                                                    |
| MBF0AH                      | 24 pint reservoir (16 pump stations max), no pumps installed, 75:1 ratchet, LH                                                      |
| MBF1RA                      | 24 pint reservoir (16 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 14), 1:1 direct drive, RH                           |
| MBF1SA                      | 24 pint reservoir (16 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 15), 1:1 direct drive, RH                           |
| MBF2JA                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 1:1 direct drive, RH                             |
| MBF2MD                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 11), 75:1 ratchet, RH                                |
| MBF2NB                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), end ratchet, RH                                 |
| MBF2NE                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 1:1 direct drive, LH                            |
| MBF2PA                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 13), 1:1 direct drive, RH                            |
| MBF2PE                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 13), 1:1 direct drive, LH                            |
| MBF2RC                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 14), 37.5:1 ratchet, LH                              |
| MBF2TE                      | 24 pint reservoir (16 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 16), 1:1 direct drive, LH                            |
| MBF3CA                      | 24 pint reservoir (16 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 2), 1:1 direct drive, RH                             |
| MBF3NA                      | 24 pint reservoir (16 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 12), 1:1 direct drive, RH                            |
| MBF3PA                      | 24 pint reservoir (16 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 13), 1:1 direct drive, RH                            |
| MBG0AA                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 1:1 direct drive, RH                           |
| MBG0AC                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 37.5:1 ratchet, LH                             |
| MBG0AE                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 1:1 direct drive, LH                           |
| MBG0AG                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 37.5:1 ratchet, RH                             |
| MBG0AH                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 75:1 ratchet, LH                               |
| MBG1VA                      | 32 pint reservoir (20 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 18), 1:1 direct drive, RH                           |
| MBG1WA                      | 32 pint reservoir (20 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 19), 1:1 direct drive, RH                           |
| MBG2TE                      | 32 pint reservoir (20 pump stations max), 1/4 (6.4 mm) inch GBL 7500 pump (qty 16), 1:1 direct drive, LH                            |
| MBH0AA                      | 40 pint reservoir (24 pump stations max), with motor mount base, no pumps installed, 1:1 direct drive, RH                           |
| MBH0AE                      | 40 pint reservoir (24 pump stations max), with motor mount base, no pumps installed, 1:1 direct drive, LH                           |
| MBH2UA                      | 40 pint reservoir (24 pump stations max), 1/4 (6.4 mm) GBL 7500 pump (qty 17), 1:1 direct drive, RH                                 |
| MBH2ZE                      | 40 pint reservoir (24 pump stations max), 1/4 (6.4 mm) GBL 7500 pump (qty 22), 1:1 direct drive, LH                                 |



# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                                                                                              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MBH3ZA                      | 40 pint reservoir (24 pump stations max), 3/8 inch (9.5 mm) GBL 7500 pump (qty 22), 1:1 direct drive, RH                                                                     |
| MBJ1BM                      | 4 pint reservoir (2 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 1), 200:1 end rotary, RH                                                |
| MBJ1CN                      | 4 pint reservoir (2 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                |
| MBK0AL                      | 6 pint reservoir (3 pump stations max), with motor mount base, no pumps installed, 100:1 end rotary, RH                                                                      |
| MBK0AN                      | 6 pint reservoir (3 pump stations max), with motor mount base, no pumps installed, 400:1 end rotary, RH                                                                      |
| MBK1BN                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 1), 400:1 end rotary, RH                                                |
| MBK1CM                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), 200:1 end rotary, RH                                                |
| MBK1CN                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                |
| MBK2CN                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                |
| MBK2DA                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 3), 1:1 direct drive, RH                                                |
| MBK2DC                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 3), 37.5:1 ratchet, RH                                                  |
| MBK2DF                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 3), end ratchet, LH                                                     |
| MBK3CL                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 2), 100:1 end rotary, RH                                                 |
| MBK3DK                      | 6 pint reservoir (3 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 3), 50:1 end rotary, RH                                                  |
| MBLOAA                      | 8 pint reservoir (5 pump stations max), with motor mount base, no pumps installed, 1:1 direct drive, RH                                                                      |
| MBLOAM                      | 8 pint reservoir (5 pump stations max), with motor mount base, no pumps installed, 200:1 end rotary, RH                                                                      |
| MBLOAN                      | 8 pint reservoir (5 pump stations max), with motor mount base, no pumps installed, 400:1 end rotary, RH                                                                      |
| MBL1EA                      | 8 pint reservoir (5 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 1:1 direct drive, RH                                                |
| MBL1EN                      | 8 pint reservoir (5 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), 400:1 end rotary, RH                                                |
| MBL2EA                      | 8 pint reservoir (5 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 1:1 direct drive, RH                                                 |
| MBL2EN                      | 8 pint reservoir (5 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 400:1 end rotary, RH                                                 |
| MBL2FN                      | 8 pint reservoir (5 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 400:1 end rotary, RH                                                 |
| MBL3CN                      | 8 pint reservoir (5 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 2), 400:1 end rotary, RH                                                 |
| MBL7CM                      | 8 pint reservoir (5 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 2), Garza Level Controller "F4" (Class 1 Group D), 200:1 end rotary, RH |
| MBM1HN                      | 12 pint reservoir (8 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 7), 400:1 end rotary, RH                                               |
| MBM1JM                      | 12 pint reservoir (8 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 200:1 end rotary, RH                                               |
| MBM2EK                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 50:1 end rotary, RH                                                 |
| MBM2EM                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 200:1 end rotary, RH                                                |
| MBM2FN                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 5), 400:1 end rotary, RH                                                |
| MBM2GM                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 200:1 end rotary, RH                                                |
| MBM2GN                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 6), 400:1 end rotary, RH                                                |
| MBM2JL                      | 12 pint reservoir (8 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 100:1 end rotary, RH                                                |
| MBM3FL                      | 12 pint reservoir (8 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 5), 100:1 end rotary, RH                                                |

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

| Manzel® MBL Box Lubricators |                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MBM4EM                      | 12 pint reservoir (8 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), Rens Level Controller "F3", 200:1 end rotary, RH                      |
| MBN1BM                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 1), 200:1 end rotary, RH                                                 |
| MBN1JM                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 8), 200:1 end rotary, RH                                                 |
| MBN1KM                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 9), 200:1 end rotary, RH                                                 |
| MBN1LN                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 10), 400:1 end rotary, RH                                                |
| MBN1MN                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 11), 400:1 end rotary, RH                                                |
| MBN1NK                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 12), 50:1 end rotary, RH                                                 |
| MBN2JK                      | 16 pint reservoir (12 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 50:1 end rotary, RH                                                   |
| MBN2MN                      | 16 pint reservoir (12 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 11), 400:1 end rotary, RH                                                 |
| MBN3DN                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 3), 400:1 end rotary, RH                                                  |
| MBN3NK                      | 16 pint reservoir (12 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 12), 50:1 end rotary, RH                                                  |
| MBP0AW                      | 24 pint reservoir (16 pump stations max), with motor mount base, no pumps installed, 200:1 heavy duty, RH                                                                       |
| MBP1RU                      | 24 pint reservoir (16 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 14), 100:1 heavy duty, RH                                                |
| MBP1SU                      | 24 pint reservoir (16 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 15), 100:1 heavy duty, RH                                                |
| MBP2NW                      | 24 pint reservoir (16 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 200:1 heavy duty, RH                                                 |
| MBP2NY                      | 24 pint reservoir (16 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 400:1 heavy duty, RH                                                 |
| MBR0AY                      | 32 pint reservoir (20 pump stations max), with motor mount base, no pumps installed, 400:1 heavy duty, RH                                                                       |
| MBR1UY                      | 32 pint reservoir (20 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 17), 400:1 heavy duty, RH                                                |
| MBR1VU                      | 32 pint reservoir (20 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 18), 100:1 heavy duty, RH                                                |
| MBR1WU                      | 32 pint reservoir (20 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 19), 100:1 heavy duty, RH                                                |
| MBR7VY                      | 32 pint reservoir (20 pump stations max), with motor mount base, 3/16 inch (4.8 mm) GBL 7500 pump (qty 18), Garza Level Controller "F4" (Class 1 Group D), 400:1 heavy duty, RH |
| MBS0AU                      | 40 pint reservoir (24 pump stations max), with motor mount base, no pumps installed, 100:1 heavy duty, RH                                                                       |
| MBS0AX                      | 40 pint reservoir (24 pump stations max), with motor mount base, no pumps installed, 300:1 heavy duty, RH                                                                       |
| MBS0AY                      | 40 pint reservoir (24 pump stations max), with motor mount base, no pumps installed, 400:1 heavy duty, RH                                                                       |
| MBS2XA                      | 40 pint reservoir (24 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 20), 1:1 direct drive, RH                                                 |
| MBS2ZA                      | 40 pint reservoir (24 pump stations max), with motor mount base, 1/4 inch (6.4 mm) GBL 7500 pump (qty 22), 1:1 direct drive, RH                                                 |
| MBS3LY                      | 40 pint reservoir (24 pump stations max), with motor mount base, 3/8 inch (9.5 mm) GBL 7500 pump (qty 10), 400:1 heavy duty, RH                                                 |

# Compressor Lubrication

## Manzel® MBL Box Lubricator Configurator

### Ordering Menu Code

MB – X – X – X – X

#### Reservoir

| Code | Former Codes and Descriptions    | Code | Former Codes and Descriptions                              |
|------|----------------------------------|------|------------------------------------------------------------|
| A    | T1 - 4 pt, 2 pump stations max   | J    | T1 and P1 - 4 pt, 2 pump stations max, motor mount base    |
| B    | T2 - 6 pt, 3 pump stations max   | K    | T2 and P2 - 6 pt, 3 pump stations max, motor mount base    |
| C    | T3 - 8 pt, 5 pump stations max   | L    | T3 and P3 - 8 pt, 5 pump stations max, motor mount base    |
| D    | T4 - 12 pt, 8 pump stations max  | M    | T4 and P4 - 12 pt, 8 pump stations max, motor mount base   |
| E    | T5 - 16 pt, 12 pump stations max | N    | T5 and P5 - 16 pt, 12 pump stations max, motor mount base  |
| F    | T6 - 24 pt, 16 pump stations max | P    | T6 and P6 - 24 pt, 16 pump stations max, motor mount base* |
| G    | T7 - 32 pt, 20 pump stations max | R    | T7 and P7 - 32 pt, 20 pump stations max, motor mount base* |
| H    | T8 - 40 pt, 24 pump stations max | S    | T8 and P8 - 40 pt, 24 pump stations max, motor mount base* |

\*Cannot use double reduction or right angle drives

#### Pump Size – GBL 7500 Suction Pumps

| Code | Former Code and Description                                             |
|------|-------------------------------------------------------------------------|
| 0    | No Pump                                                                 |
| 1    | GBL 7500 3/16 Suction                                                   |
| 2    | GBL 7500 1/4 Suction                                                    |
| 3    | GBL 7500 3/8 Suction                                                    |
| 4    | GBL 7500 3/16 and F3, RENS Level Controller - 556808                    |
| 5    | GBL 7500 1/4 and F3, RENS Level Controller                              |
| 6    | GBL 7500 3/8 and F3, RENS Level Controller                              |
| 7    | GBL 7500 3/16 and F4, GARZA Level Controller (Class 1 Group D) - 558221 |
| 8    | GBL 7500 1/4 and F4, GARZA Level Controller (Class 1 Group D)           |
| 9    | GBL 7500 3/8 and F4, GARZA Level Controller (Class 1 Group D)           |

#### Pump Quantity

| Code | Qty | Code | Qty | Code | Qty | Code | Qty | Code | Qty | Code | Qty |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| A    | 0   | E    | 4   | J    | 8   | N    | 12  | T    | 16  | X    | 20  |
| B    | 1   | F    | 5   | K    | 9   | P    | 13  | U    | 17  | Y    | 21  |
| C    | 2   | G    | 6   | L    | 10  | R    | 14  | V    | 18  | Z    | 22  |
| D    | 3   | H    | 7   | M    | 11  | S    | 15  | W    | 19  |      |     |

\$ - Multiply the number of pumps by the pump price and add level control price adder. All unused pump stations are covered with a removable blanking plate

#### Drive Options

| Code | Former Code and Description                              | Code | Former Code and Description              | Code | Former Code and Description     |
|------|----------------------------------------------------------|------|------------------------------------------|------|---------------------------------|
| A    | G01R - Direct End Rotary                                 | J    | G05R - Double Reduction End Rotary 25:1  | T    | G13R - RT Angle Rotary 375:1    |
| B    | G02R - End Ratchet (w/out drive arm) - 800 rpm max input | K    | G06R - Double Reduction End Rotary 50:1  | U    | G14R - 100:1 Ratio Gear Reducer |
| C    | G03R - End Rotary Ratchet 37.5:1 - 800 rpm max input     | L    | G07R - Double Reduction End Rotary 100:1 | V    | G15R - 150:1 Ratio Gear Reducer |
| D    | G04R - End Rotary Ratchet 75:1 - 800 rpm max input       | M    | G08R - Double Reduction End Rotary 200:1 | W    | G16R - 200:1 Ratio Gear Reducer |
| E    | G01L - Direct End Rotary                                 | N    | G09R - Double Reduction End Rotary 400:1 | X    | G17R - 300:1 Ratio Gear Reducer |
| F    | G02L - End Ratchet (w/out drive arm) - 800 rpm max input | P    | G10R - RT Angle Rotary 25:1              | Y    | G18R - 400:1 Ratio Gear Reducer |
| G    | G03L - End Rotary Ratchet 37.5:1 - 800 rpm max input     | R    | G11R - RT Angle Rotary 50:1              | Z    | G12L - Left Angel Rotary 188:1  |
| H    | G04L - End Rotary Ratchet 75:1 - 800 rpm max input       | S    | G12R - RT Angle Rotary 188:1             |      |                                 |

# Compressor Lubrication

## Manzel® MB Specialty Box Lubricators

### Features and Benefits

- Provide a proven, cost-effective way to assemble customized oil systems that meet specific requirements by using standard modular components
- Increase opportunities to standardize lube system components and reduce lube maintenance and service costs
- 60:1 – 2 pump stations max, use with GBL 7500 Gravity-Fed or Pressure-Fed Box Lubricator
- 118:1 – 4 or 6 pump stations max, use with any GBL 7500 pump

### Typical Applications

- MB60 is perfect for bolt-on gas compressor box lubrication solutions
- MB118 is the right size and durable for triplex and quintuplex mud pump applications

### Typical Fluids Handled

- Mineral oil base or synthetics

### Ordering Information

| Manzel® MB Specialty Box Lubricators |        |                                                                               |
|--------------------------------------|--------|-------------------------------------------------------------------------------|
| MB60                                 | 24V068 | 2 pint reservoir (2 pump stations max), no pumps installed, 60:1              |
|                                      | 24W633 | 4 pint reservoir (4 pump stations max), no pumps installed, 118:1             |
| MB118                                | 24W634 | 8 pint reservoir (6 pump stations max), no pumps installed, 118:1             |
|                                      | 24W636 | 4 pint reservoir (4 pump stations max), 1/4 inch GBL 7500 pump (qty 3), 118:1 |
|                                      | 24W635 | 8 pint reservoir (6 pump stations max), 1/4 inch GBL 7500 pump (qty 5), 118:1 |



24V068



24W636

# Compressor Lubrication

## Manzel® GBL 7500 Pump

### Features and Benefits

Each GBL 7500 single-piston pump is mechanically driven from a camshaft in the reservoir. They are adjustable from 1 to 27 drops per stroke and develop pressures up to 7500 psi (517 bar), depending on the piston size. All working parts are totally enclosed away from dirt, water, and impurities and are self-lubricated at all times by the fluid in the reservoir. Rugged construction for high performance and durability with easy to adjust pump output.

### Typical Applications

- Compressors

### Typical Fluids Handled

- Mineral or synthetics oil

### Technical Specifications

| Piston Size |     | Max Outlet Pressure |      |     | Drops/Stroke |      | Cubic Inch/Stroke |       | Cubic cm/Stroke |       | Strokes/minute |      |
|-------------|-----|---------------------|------|-----|--------------|------|-------------------|-------|-----------------|-------|----------------|------|
| inches      | mm  | PSI                 | MPa  | bar | Min.         | Max. | Min.              | Max.  | Min.            | Max.  | Min.           | Max. |
| 3/16        | 4.8 | 7500                | 51.7 | 517 | 0            | 7    | 0                 | 0.014 | 0               | 0.229 | 3              | 50   |
| 1/4         | 6.4 | 6000                | 41.4 | 414 | 0            | 12   | 0                 | 0.024 | 0               | 0.393 | 3              | 50   |
| 3/8         | 9.5 | 3500                | 24.1 | 241 | 0            | 27   | 0                 | 0.054 | 0               | 0.885 | 3              | 50   |

### Ordering Information

| GBL 7500 |                             |
|----------|-----------------------------|
| 24J391   | 3/16 inch (4.8 mm) suction  |
| 24J392   | 1/4 inch (6.4 mm) suction   |
| 24J393   | 3/8 inch (9.5 mm) suction   |
| 24J394   | 3/16 inch (4.8 mm) gravity  |
| 24J395   | 1/4 inch (6.4 mm) gravity   |
| 24J396   | 3/8 inch (9.5 mm) gravity   |
| 24J397   | 3/16 inch (4.8 mm) pressure |
| 24J398   | 1/4 inch (6.4 mm) pressure  |
| 24J399   | 3/8 inch (9.5 mm) pressure  |
| 24K466   | Suction alarm pump          |



Suction  
24J391



Gravity  
24J394



Pressure  
24J397



Alarm  
24K466

# Compressor Lubrication

## Manzel® DSL Lubricators and Pumps

### Features and Benefits

- Rugged construction for high performance and durability
- Complete assembly—including level sight gauge, fill cup and drain plug
- Precise camshaft alignment insures proper lubrication by all pumps
- Can be used in outdoor and ammonia (sour gas) environment
- Easy serviceability-pumps can be added or replaced quickly
- Pump output is easily adjustable



### Typical Applications

- Compressors and industrial equipment

### Typical Fluids Handled

- Mineral or synthetic oil

### Technical Specifications

| Ordering Code | Piston Size (inches) | Max. Pressure psi | Drops Per Stroke |      | Cubic Inches Per Stroke |      | Cubic cm Per Stroke |      | Strokes Per Minute |      |
|---------------|----------------------|-------------------|------------------|------|-------------------------|------|---------------------|------|--------------------|------|
|               |                      |                   | Min.             | Max. | Min.                    | Max. | Min.                | Max. | Min.               | Max. |
| D1            | 9/32                 | 3,000             | 2.0              | 6.25 | .0048                   | 0.15 | .079                | .245 | 3                  | 25   |
| D2            | 9/32                 | 3,000             | 2.0              | 6.25 | .0048                   | 0.15 | .079                | .245 | 3                  | 25   |



### Ordering Information

|        |                                                         |
|--------|---------------------------------------------------------|
| 256907 | (D1) 9/32 vacuum inlet pump                             |
| 256908 | (D2) 9/32 pressurized inlet pump                        |
| 256929 | Vacuum inlet pump w/suction tube length reduced by 1 in |
| 24A453 | 3 station, 4 pt, 283:1 - right drive                    |
| 24A454 | 9 station, 12 pt, 283:1 - right drive                   |
| 24A455 | 3 station, 4 pt, 1:1 - left drive                       |
| 24A456 | 3 station, 4 pt, 1:1 - right drive                      |
| 24A457 | 6 station, 8 pt, 1:1 - left drive                       |
| 24A458 | 6 station, 8 pt, 1:1 - right drive                      |
| 24A459 | 9 station, 12 pt, 1:1 - left drive                      |
| 24A460 | 9 station, 12 pt, 1:1 - right drive                     |
| 24A461 | 3 station, 4 pt, 37.5:1 - left drive                    |
| 24A462 | 3 station, 4 pt, 37.5:1 - right drive                   |
| 24A463 | 3 station, 4 pt, 75:1 - left drive                      |
| 24A464 | 3 station, 4 pt, 75:1 - right drive                     |
| 24A465 | 6 station, 8 pt, 37.5:1 - left drive                    |
| 24A466 | 6 station, 8 pt, 37.5:1 - right drive                   |
| 24A467 | 6 station, 8 pt, 75:1 - left drive                      |
| 24A468 | 6 station, 8 pt, 75:1 - right drive                     |
| 24A469 | 9 station, 12 pt, 37.5:1 - left drive                   |
| 24A470 | 9 station, 12 pt, 37.5:1 - right drive                  |
| 24A471 | 9 station, 12 pt, 75:1 - left drive                     |
| 24A472 | 9 station, 12 pt, 75:1 - right drive                    |

|        |                                            |
|--------|--------------------------------------------|
| 24A473 | 12 station, 16 pt, 37.5:1 - left drive     |
| 24A474 | 12 station, 16 pt, 37.5:1 - right drive    |
| 24A475 | 12 station, 16 pt, 75:1 - left drive       |
| 24A476 | 12 station, 16 pt, 75:1 - right drive      |
| 24A477 | 3 station, 4 pt, 40:1 - left front drive   |
| 24A478 | 3 station, 4 pt, 40:1 - right front drive  |
| 24A479 | 3 station, 4 pt, 60:1 - left front drive   |
| 24A480 | 3 station, 4 pt, 60:1 - right front drive  |
| 24A481 | 3 station, 4 pt, 40:1 - left rear drive    |
| 24A482 | 3 station, 4 pt, 40:1 - right rear drive   |
| 24A483 | 3 station, 4 pt, 60:1 - left rear drive    |
| 24A484 | 3 station, 4 pt, 60:1 - right rear drive   |
| 24A485 | 6 station, 8 pt, 40:1 - left front drive   |
| 24A486 | 6 station, 8 pt, 40:1 - right front drive  |
| 24A487 | 6 station, 8 pt, 60:1 - left front drive   |
| 24A488 | 6 station, 8 pt, 60:1 - right front drive  |
| 24A489 | 6 station, 8 pt, 40:1 - left rear drive    |
| 24A490 | 6 station, 8 pt, 40:1 - right rear drive   |
| 24A491 | 6 station, 8 pt, 60:1 - left rear drive    |
| 24A492 | 6 station, 8 pt, 60:1 - right rear drive   |
| 24A493 | 9 station, 12 pt, 40:1 - left front drive  |
| 24A494 | 9 station, 12 pt, 40:1 - right front drive |
| 24A495 | 9 station, 12 pt, 60:1 - left front drive  |

# Compressor Lubrication

## Manzel® DSL Lubricators and Pumps

### Ordering Information

|        |                                             |
|--------|---------------------------------------------|
| 24A496 | 9 station, 12 pt, 60:1 - right front drive  |
| 24A497 | 9 station, 12 pt, 40:1 - left rear drive    |
| 24A498 | 9 station, 12 pt, 40:1 - right rear drive   |
| 24A499 | 9 station, 12 pt, 60:1 - left rear drive    |
| 24A501 | 9 station, 12 pt, 60:1 - right rear drive   |
| 24A502 | 15 station, 20 pt, 60:1 - left front drive  |
| 24A503 | 15 station, 20 pt, 60:1 - right front drive |
| 24A504 | 15 station, 20 pt, 60:1 - left rear drive   |
| 24A505 | 15 station, 20 pt, 60:1 - right rear drive  |
| 24A506 | 3 station, 4 pt, 1:1 - right bottom drive   |
| 24A507 | 3 station, 4 pt, 2.5:1 - right bottom drive |
| 24A508 | 6 station, 8 pt, 1:1 - right bottom drive   |
| 24A509 | 6 station, 8 pt, 2.5:1 - right bottom drive |
| 562547 | DSL 4 pt Bot Rot 2.5 3FD                    |
| 562548 | DSL 8 pt Bot Rot 2.5 4FD                    |
| 562549 | DSL 4 pt LH Rear Rot 60 1FD                 |
| 562550 | DSL 4 pt LH Rear Rot 60 2FD                 |
| 562551 | DSL 4 pt LH Rear Rot 60 3FD                 |
| 562552 | DSL 8 pt LH Rear Rot 60 0FD                 |
| 562553 | DSL 12 pt LH Rear Rot 60 7FD                |
| 562554 | DSL 4 pt LH Rot 37.5 3FD                    |
| 562555 | DSL 4 pt LH Rot 37.5 6FD                    |
| 562561 | DSL 8 pt LH Rot 75 5FD                      |
| 562562 | DSL 16 pt LH Rot DL CAM 10FD                |
| 562563 | DSL 20 pt LH Rear Rot 60 10FD               |
| 562564 | DSL 4 pt Bot Rot 2.5 3FD                    |
| 562565 | DSL 8 pt Bot 060371 2.5 4FD                 |
| 562566 | DSL 8 pt RH Rear Rot 40 6FD                 |
| 562567 | DSL 8 pt RH Front Rot 40 5FD                |
| 564210 | DSL 4 pt LH Rot 75 3FD                      |
| 564211 | DSL 4 pt Bot Rot 2.5 2FD                    |
| 564212 | DSL-R6-D1-04-BS2-L                          |
| 564213 | DSL 4 pt RH Rear Rot 60                     |
| 564214 | DSL 8 pt 4FD RH Rot 37.5:1                  |
| 564219 | DSL 12 pt RH RR Recip 60                    |
| 564222 | DSL 8 pt LH Rear Rot 60                     |
| 564223 | DSL-R9-D1-5-ER4-L-P9                        |
| 564225 | DSL 12 pt LH Rear Rot 7FD                   |
| 564226 | DSL SST, 60:1 LH SPEC                       |
| 564227 | DSL-R6-D1-06-ER3-R-P06-M1                   |
| 564229 | DSL-R3-D1-2-SF0-ER4-L-P3                    |

# Compressor Lubrication

## Model HP-15™ High Pressure Lubricators

### Features and Benefits

The high pressure lubricator comprises one to six integral sight and pump assemblies in a cast iron reservoir. The unit is designed for direct connection to an electric motor/speed reducer power source. A Manzel® terminal check valve is recommended in the lubrication system. When required to maintain proper oil viscosity, the reservoir can be fitted with an electric heater.

### Typical Applications

- Multi-stage gas compression

### Typical Fluids Handled

- Mineral or synthetic oil

### Technical Specifications

| Number of Feeds | Max. Pressure | Reservoir Capacity (Quarts) (1) | Plunger Diameter (inches) | Drops Per Stroke |      | Cubic Inches Per Stroke |       | Cubic cm Per Stroke |       | Strokes Per Minute |      |
|-----------------|---------------|---------------------------------|---------------------------|------------------|------|-------------------------|-------|---------------------|-------|--------------------|------|
|                 |               |                                 |                           | Min.             | Max. | Min.                    | Max.  | Min.                | Max.  | Min.               | Max. |
| 1-6             | 18,000        | 7                               | 1/4                       | 1                | 4    | 0.002                   | 0.008 | 0.033               | 0.113 | 3                  | 36   |

### Ordering Information

|        |                                                     |
|--------|-----------------------------------------------------|
| 562918 | HP-15 6 feed gear box with 4 HP-15 pumps            |
| 562919 | HP-15 6 feed gear box with 6 HP-15 pumps            |
| 564272 | HP-15 6 feed gear box with 6 HP-15 pumps and heater |
| 562951 | HP-15 pump                                          |
| 556700 | HP-15 sight glass                                   |
| 563113 | HP-15 plunger and cylinder assembly                 |
| 564334 | In-line check valve                                 |



562951



# Compressor Lubrication

## Manzel® HP-50™ High Pressure Lubricators

### Features and Benefits

- Operating pressures to 60,000 psi for lubricating compressor and circulator cylinder walls, heavily loaded bearings and other moving parts
- Single plunger force feed design is highly efficient for injecting lubricants and/or compatible fluids into high pressure systems
- Vacuum sight feeds on self-contained pumping units show output of lubricant to individual lubrication points
- All working parts are totally enclosed and self-lubricated
- Individual pumping units easily removed for service
- Feed rate infinitely variable from minimum to maximum with simple hand adjustment



### Typical Applications

- Compressors and industrial equipment

### Typical Fluids Handled

- Mineral or synthetic oil

### Technical Specifications

| Number of Feeds | Max. Pressure | Reservoir Capacity (Quarts) (1) | Plunger Diameter (inches) | Drops Per Stroke |      | Cubic Inches Per Stroke |       | Cubic cm Per Stroke |       | Strokes Per Minute |      |
|-----------------|---------------|---------------------------------|---------------------------|------------------|------|-------------------------|-------|---------------------|-------|--------------------|------|
|                 |               |                                 |                           | Min.             | Max. | Min.                    | Max.  | Min.                | Max.  | Min.               | Max. |
| 1-4             | 60,000        | 9                               | 1/4                       | 1                | 4    | 0.002                   | 0.008 | 0.033               | 0.113 | 3                  | 36   |

### Ordering Information

| HP-50 Pump             |                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 562952                 | HP-50 Pump Assembly                                                                                                              |
| HP-50 Lubricator Boxes |                                                                                                                                  |
| 564276                 | HP-50 Lubricator without Pumps or Options                                                                                        |
| 562925                 | HP-50 Lubricator with 4 Pumps                                                                                                    |
| 562926                 | HP-50 Lubricator with 2 Pumps                                                                                                    |
| 562927                 | HP-50 Lubricator with 4 Pumps, Provision for Flange Mounted Auto Fill, and Nitrogen Purge Port                                   |
| 562928                 | HP-50 Lubricator with 4 Pumps, Low Level and Shaft Rotation Alarm                                                                |
| 562929                 | HP-50 Lubricator with 4 Pumps, Provisions for Flange Mounted Auto Fill and Low Level in Fill Plate                               |
| 564277                 | HP-50 Lubricator with 4 Pumps and Steam Heater                                                                                   |
| 564278                 | HP-50 Lubricator with 3 Pumps and Steam Heater                                                                                   |
| 564279                 | HP-50 Lubricator with 4 Pumps, Provision for Flange Mounted Auto Fill, Nitrogen Purge and Shaft Rotation/Low Level Alarm on Left |

| 564280            | HP-50 Lubricator with 4 Pumps, Provision for Flange Mounted Auto Fill, Nitrogen Purge and Shaft Rotation/Low Level Alarm on Right                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 564282            | HP-50 Lubricator with 4 Pumps, Shaft Rotation and Low Level Alarm                                                                                          |
| 564283            | HP-50 Lubricator with 4 Lubricator Boxes with 15 Pumps, Provision for Center Mounted Motor and Base                                                        |
| 258262            | HP-50 Lubricator with 4 Pumps and Low Level                                                                                                                |
| 258263            | HP-50 Lubricator with 4 Pumps, Provisions for Flange Mounted Auto Fill and Low Level in Fill Plate, and Proximity Switch Shaft Rotation Indicator on Right |
| HP-50 Accessories |                                                                                                                                                            |
| 563111            | HP-50 plunger and cylinder                                                                                                                                 |
| 564336            | HP-50 check valve                                                                                                                                          |
| 558881            | Electric heater, 120/240 VAC                                                                                                                               |
| 563020            | Shaft rotation alarm                                                                                                                                       |
| 563024            | Low level                                                                                                                                                  |

# Compressor Lubrication

## Manzel® MVB Pump

### Features and Benefits

The MVB lubrication system is a single line, series progressive system which divides pump output into predetermined proportional amounts and distributes these amounts to points of lubrication.

- One main supply from single pump
- Central monitoring of normal operation
- Automatic proportioning of lubricant through positive displacement valves
- Quick indication of problem areas

### Typical Applications

- Compressors and reciprocating engines

### Typical Fluids Handled

- Oil

### Technical Specifications

| Single Camshaft<br>rpm (pump strokes<br>per min..) | 1/4 piston         |        |                  |         | 3/8 piston         |        |                  |         |
|----------------------------------------------------|--------------------|--------|------------------|---------|--------------------|--------|------------------|---------|
|                                                    | Min. Output Adj.   |        | Max. Output Adj. |         | Min. Output Adj.   |        | Max. Output Adj. |         |
|                                                    | 0.12456*(constant) |        | 0.59832          |         | 0.29909*(constant) |        | 1.4902           |         |
| 20                                                 | 2.49               | (1.18) | 11.97            | (5.66)  | 5.98               | (2.83) | 29.92            | (14.15) |
| 30                                                 | 3.74               | (1.77) | 17.95            | (8.49)  | 8.97               | (4.24) | 44.88            | (21.23) |
| 40                                                 | 4.98               | (2.36) | 23.93            | (11.32) | 11.96              | (5.66) | 59.84            | (28.30) |
| 50                                                 | 6.23               | (2.95) | 29.92            | (14.15) | 14.95              | (7.07) | 74.80            | (35.38) |
| 60                                                 | 7.47               | (3.53) | 35.90            | (16.98) | 17.95              | (8.49) | 89.76            | (42.46) |
| 70                                                 | 8.72               | (4.12) | 41.88            | (19.81) | 20.94              | (9.90) | 104.72           | (49.53) |

### Ordering Information

|        |                                        |
|--------|----------------------------------------|
| 563565 | MVB 0.250 inch (6.35 mm) Piston Pump   |
| 563566 | MVB 0.375 inch (9.53 mm) Piston Pump   |
| 563920 | Seal kit for MVB pump                  |
| 563919 | 3/8 inch piston and sleeve replacement |
| 563918 | 1/4 inch piston and sleeve replacement |
| 557824 | 25 micron filter                       |
| 557827 | 10 micron filter                       |



563565



MVB Box lubricator

# Compressor Lubrication

## Manzel® MVB Box Lubricator Configurator

### Ordering Menu Code

MV – X – X – X – X

#### Drive

##### Code (Former Code) – Description

|   |                               |
|---|-------------------------------|
| A | (DAA) Ratchet Drive (102-2)   |
| B | (DAB) Standard Drive (203-2)  |
| C | (DAC) Standard Drive (207-2)  |
| D | (DAD) Reverse Drive (303-2)   |
| E | (DAE) 90-Degree Drive (401-2) |
| F | (DAF) Vertical Drive (501-2)  |
| G | (N/A) Tandem Drive            |

#### Gear Box Ratio and Mounting Base Option

##### Code (Former Code) – Description

|   |                                           |
|---|-------------------------------------------|
| A | (RAA) 1:1 Ratio Gear Box                  |
| B | (N/A) 1:1 Ratio Gear Box with a 10:1 Base |
| C | (N/A) 1:1 Ratio Gear Box with a 60:1 Base |
| D | (RAB) 1:2 Ratio Gear Box                  |
| E | (RAC) 2:1 Ratio Gear Box                  |
| F | (N/A) 2:1 Ratio Gear Box with a 10:1 Base |
| G | (N/A) 2:1 Ratio Gear Box with a 60:1 Base |
| H | (RAD) 1:3 Ratio Gear Box                  |

##### Code (Former Code) – Description

|   |                                           |
|---|-------------------------------------------|
| J | (RAE) 3:1 Ratio Gear Box                  |
| K | (N/A) 3:1 Ratio Gear Box with a 10:1 Base |
| L | (N/A) 3:1 Ratio Gear Box with a 60:1 Base |
| M | (RAF) 1:4 Ratio Gear Box                  |
| N | (RAG) 4:1 Ratio Gear Box                  |
| P | (N/A) 4:1 Ratio Gear Box with a 10:1 Base |
| R | (N/A) 4:1 Ratio Gear Box with a 60:1 Base |

##### Code (Former Code) – Description

|   |                                            |
|---|--------------------------------------------|
| S | (RAH) 1:8 Ratio Gear Box                   |
| T | (RAJ) 8:1 Ratio Gear Box                   |
| U | (N/A) 8:1 Ratio Gear Box with a KOA Base   |
| V | (N/A) 8:1 Ratio Gear Box with a 10:1 Base  |
| W | (RAK) 16:1 Ratio Gear Box                  |
| X | (N/A) 16:1 Ratio Gear Box with a KOA Base  |
| Y | (N/A) 16:1 Ratio Gear Box with a 10:1 Base |

#### Pump Station One Configuration\*

| Code | Cam Style   | Pump Size | Gauge PSI | Relief PSI | Code | Cam Style   | Pump Size | Gauge PSI | Relief PSI |
|------|-------------|-----------|-----------|------------|------|-------------|-----------|-----------|------------|
| A    | Single Lobe | No Pump   | None      | None       | K    | Double Lobe | 1/4"      | 10,000    | 4,600      |
| B    | Single Lobe | 1/4"      | None      | 6,400      | L    | Double Lobe | 3/8"      | None      | 1,750      |
| C    | Single Lobe | 1/4"      | 3,000     | 2,350      | M    | Double Lobe | 3/8"      | 3,000     | 1,750      |
| D    | Single Lobe | 1/4"      | 10,000    | 6,400      | N    | Triple Lobe | No Pump   | None      | None       |
| E    | Single Lobe | 3/8"      | None      | 2,350      | P    | Triple Lobe | 1/4"      | None      | 3,700      |
| F    | Single Lobe | 3/8"      | 3,000     | 2,350      | R    | Triple Lobe | 1/4"      | 3,000     | 2,350      |
| G    | Double Lobe | No Pump   | None      | None       | S    | Triple Lobe | 1/4"      | 10,000    | 3,700      |
| H    | Double Lobe | 1/4"      | None      | 4,600      | T    | Triple Lobe | 3/8"      | None      | 1,450      |
| J    | Double Lobe | 1/4"      | 3,000     | 2,350      | U    | Triple Lobe | 3/8"      | 3,000     | 1,450      |

\*Former codes AOA and AOC referred to 1/4" pump. Former codes AOB and AOD referred to 3/8" pump. Former code POA referred to standard (2,350 psi) blowout indicator. Former codes GOA, GOB, GOC, and GOD referred to gauge options; choose from standard gauge options shown above.

#### Pump Station Two Configuration\*\*

| Code | Cam Style   | Pump Size | Gauge PSI | Relief PSI | Code | Cam Style   | Pump Size | Gauge PSI | Relief PSI |
|------|-------------|-----------|-----------|------------|------|-------------|-----------|-----------|------------|
| A    | Single Lobe | No Pump   | None      | None       | K    | Double Lobe | 1/4"      | 10,000    | 4,600      |
| B    | Single Lobe | 1/4"      | None      | 6,400      | L    | Double Lobe | 3/8"      | None      | 1,750      |
| C    | Single Lobe | 1/4"      | 3,000     | 2,350      | M    | Double Lobe | 3/8"      | 3,000     | 1,750      |
| D    | Single Lobe | 1/4"      | 10,000    | 6,400      | N    | Triple Lobe | No Pump   | None      | None       |
| E    | Single Lobe | 3/8"      | None      | 2,350      | P    | Triple Lobe | 1/4"      | None      | 3,700      |
| F    | Single Lobe | 3/8"      | 3,000     | 2,350      | R    | Triple Lobe | 1/4"      | 3,000     | 2,350      |
| G    | Double Lobe | No Pump   | None      | None       | S    | Triple Lobe | 1/4"      | 10,000    | 3,700      |
| H    | Double Lobe | 1/4"      | None      | 4,600      | T    | Triple Lobe | 3/8"      | None      | 1,450      |
| J    | Double Lobe | 1/4"      | 3,000     | 2,350      | U    | Triple Lobe | 3/8"      | 3,000     | 1,450      |

\*\*Former codes BOA and BOC referred to 1/4" pump. Former codes BOB and BOD referred to 3/8" pump. Former code HOA referred to standard (2,350 psi) blowout indicator. Former codes JOA, JOB, JOC, and JOD referred to gauge options; choose from standard gauge options shown above.

#### NOTE: Motors for KOA base with 8:1 or 16:1 drives:

558289 (MOA) - 1/4 HP, 115/230 VAC, 60 Hz, single-phase, 1,725 rpm, TENV, 56F  
 558290 (MOB) - 1/4 HP, 230/460 VAC, 60 Hz, three-phase, 1,725 rpm, TENV, 56F

#### Motors for 10:1 or 60:1 drives:

557271 - 1/2 HP, 115/230 VAC, 60 Hz, single-phase, 1,725 rpm, TEFC, 56C  
 557270 - 1/2 HP, 230/460 VAC, 60 Hz, three-phase, 1,725 rpm, TENV, 56C

# Compressor Lubrication Accessories

## Manzel® Lube-Line Alert™

### Features and Benefits

- Indicates Flow or No-Flow at any point in the system ahead of the Lube-Line Alert inlet. Not affected by discharge pressure.
- Operates under continuous or intermittent low-flow rates
- Universal use—operates in any air free force feed lubrication system—any make lubricator
- Sensitive to a wide range of flow from .006 cubic inches to 190 cubic inches per minute
- Many type lubricants and viscosities—mineral or synthetic
- Time delay adjustment to compensate for viscosity and/or flow rate. Quick and easy to adjust.
- Explosion-proof—UL and CSA Listed for Class I Groups C and D and Class II Groups E, F and G. Division 1 and 2 when installed as per NEC 501.
- For connection to any electrical warning system—lights, sound devices, machinery shut-off relays, telephones, etc.
- A low-level and shaft rotation



563030

### Technical Specifications

|                                      |                                                                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| UL and CSA Electrical Ratings.....   | Single pole, Throw magnetically operated switch, 115 VAC, 60Hz, 10 watt, 28 VDC, 0.5 amp Resistive, 28 VDC, 0.5 amp Inductive |
| Max Switch Rating .....              | 350 VAC/VDC, 50 watt, 2 amp                                                                                                   |
| Max Operating Pressure .....         | 10,000 psi                                                                                                                    |
| Min. Pressure Drop Access Alert..... | 150 psi                                                                                                                       |
| Flow Rate .....                      | 0.006 cu.in. to 190 cu.in. per minute @ 100 SUS<br>0.006 cu.in. to 75 cu.in. per minute @ 2000 SUS                            |
| Fluid Viscosity.....                 | 100 to 9000 SUS                                                                                                               |
| Weight .....                         | 0.6 lbs                                                                                                                       |

### Ordering Information

| Lube-Line Alert     |                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| 563030              | N.C. Configuration w/Check Valves for 1/4 inch O.D. Tube, Standard Spring (installed), w/ Light Spring (loose)* |
| 563033              | N.O. Configuration w/Check Valves for 1/4 inch O.D. Tube, Standard Spring (installed), w/ Light Spring (loose)* |
| 563032              | N.O. Configuration w/Check Valves and Fittings for 1/8 inch NPTF Connections, Standard Spring (installed)       |
| Inlet Check Valves  |                                                                                                                 |
| 563042              | w/ 1/4 inch O.D. Tube Inlet (supplied w/1 and 2)                                                                |
| 563041              | w/ 7/16-20 Straight Female Thread Outlet (supplied w/3)                                                         |
| Outlet Check Valves |                                                                                                                 |
| 563044              | w/ 1/4 inch O.D. Tube Inlet (supplied w/1 and 2)                                                                |
| 563043              | w/ 7/16-20 Straight Female Thread Outlet (supplied w/3)                                                         |
| Fittings            |                                                                                                                 |
| 556624              | (w/Check Valves 4 and 5), 7/16-20 Straight Male Thread x 1/8 inch NPTF (2 supplied w/3)                         |
| Springs             |                                                                                                                 |
| 556944              | Standard Springs (installed at factory in 1 and 3)                                                              |
| 556939              | Light Spring for Low Flow Applicator (supplied loose w/1, installed in 2)*                                      |
| Repair Parts        |                                                                                                                 |
| 556812              | Switch Assembly                                                                                                 |
| 563031              | Plunger and Bushing Assembly                                                                                    |

\*When using the Light Spring 556939 (458-005-220), fluid viscosity should not exceed 350 SUS

# Compressor Lubrication Accessories

## Pneumatic/Electric Lube Sentry Valve

### Features and Benefits

The Lube Sentry Valve provides automatic warning and shutdown of compressors, pumps and engines when oil is not flowing properly to primary dividers in series type lube systems.

- Absence of check valves to avoid trapping contamination from included solids in the lubricant
- Bolted-together components simplifying maintenance. The microswitch assembly on the pneumatic valve can be removed without disturbing existing lines or shutting down the equipment being lubricated.

### Technical Specifications

|                                                                                       |                                    |
|---------------------------------------------------------------------------------------|------------------------------------|
| Material.....                                                                         | Steel                              |
| Max Pressure .....                                                                    | 6,000 psi (414 bar)                |
| Flow Rate (per day) .....                                                             | 4-400 pints (1.89-189.2 liters)    |
| Pressure Drop.....                                                                    | 250 psi (17 bar)                   |
| Seals.....                                                                            | Fluoroelastomer                    |
| Lubricant.....                                                                        | Oil (450-2000 SUS)                 |
| Net Weight .....                                                                      | 0.5 lb (2.265 kg)                  |
| Operating Temperature .....                                                           | -20° F to 180° F (-29° C to 82° C) |
| Air Pressure (Max Pneumatic Valve) .....                                              | 125 psi (9 bar)                    |
| Electrical Rating .....                                                               | 5 amps @ 125/250 VAC               |
| A,B or C @ 28 VDC, A- Inductive - 3 amp, B- Resistive - 5 amp, C- Max Inrush - 15 amp |                                    |

### Ordering Information

|        |                                 |
|--------|---------------------------------|
| 563506 | Pneumatic Lube Sentry, Complete |
| 563503 | Pneumatic Valve                 |
| 563502 | Actuator                        |
| 563505 | Electric Lube Sentry, Complete  |
| 563504 | Switch Assembly                 |



# Compressor Lubrication Accessories

## Balancing Valve

### Features and Benefits

The Graco® Balancing Valve assists divider valves to accurately proportion lubricant at high differential pressures. It is recommended for use when a pressure difference greater than 1,000 PSI exists between two or more of the points in a Graco divider valve system.

- Balancing valve is not affected by downstream pressure, assures accurate flow to all lubrication points
- Balancing valve is field adjustable. Reduces on-site inventory costs as one model meets all your system needs.
- Balancing valve is in-line mounted, so it lowers installation costs
- Balancing valve uses a wear-resistant tungsten-carbide ball to reduce maintenance costs



### Technical Specifications

|                              |                                                    |
|------------------------------|----------------------------------------------------|
| Material.....                | Steel                                              |
| Max Operating Pressure ..... | 6,500 psi                                          |
| Adjustable .....             | From 1,000 to 6,500 psi (Factory set at 3,000 psi) |
| Operating Temperature .....  | -10° F to 250° F (-23° C to 121° C)                |
| Lubricant.....               | Oil                                                |
| Seals.....                   | Fluoroelastomer                                    |
| Net Weight .....             | 1.19 lb (0.54 kg)                                  |

### Ordering Information

|        |                 |
|--------|-----------------|
| 563230 | Balancing Valve |
| 563911 | Valve Seal Kit  |

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| MBA0AN   | 117      | MBD2DA   | 119      | MBH0AE   | 120      | MM2112   | 23       |
| MBA1BA   | 117      | MBD2DD   | 119      | MBH2UA   | 120      | MM2122   | 23       |
| MBA1CB   | 117      | MBD2DF   | 119      | MBH2ZE   | 120      | MM2211   | 23       |
| MBA1CF   | 117      | MBD2DM   | 119      | MBH3ZA   | 121      | MM2212   | 23       |
| MBA1CM   | 117      | MBD2FF   | 119      | MBJ1BM   | 121      | MM2221   | 23       |
| MBA2BF   | 117      | MBD2FR   | 119      | MBJ1CN   | 121      | MM2222   | 23       |
| MBA2BR   | 117      | MBD2GA   | 119      | MBK0AL   | 121      | MM2312   | 23       |
| MBA2CE   | 117      | MBD2GK   | 119      | MBK0AN   | 121      | MM2322   | 23       |
| MBA2CR   | 117      | MBD2GL   | 119      | MBK1BN   | 121      | MM2411   | 23       |
| MBA3CD   | 117      | MBD2GR   | 119      | MBK1CM   | 121      | MM2412   | 23       |
| MBB0AA   | 117      | MBD2GZ   | 119      | MBK1CN   | 121      | MM3112   | 23       |
| MBB0AB   | 117      | MBD2JA   | 119      | MBK2CN   | 121      | MM3122   | 23       |
| MBB0AC   | 117      | MBD2JB   | 119      | MBK2DA   | 121      | MM3211   | 23       |
| MBB0AG   | 117      | MBD2JE   | 119      | MBK2DC   | 121      | MM3212   | 23       |
| MBB0AH   | 117      | MBD3FC   | 119      | MBK2DF   | 121      | MM3312   | 23       |
| MBB0AM   | 117      | MBD3GA   | 119      | MBK3CL   | 121      | MM3322   | 23       |
| MBB0AN   | 117      | MBD5GE   | 119      | MBK3DK   | 121      | MM3411   | 23       |
| MBB1CM   | 117      | MBD7HN   | 119      | MBL0AA   | 121      | MM3412   | 23       |
| MBB1CZ   | 117      | MBE0AA   | 119      | MBL0AM   | 121      | MM3422   | 23       |
| MBB1DA   | 117      | MBE0AC   | 119      | MBL0AN   | 121      |          |          |
| MBB1DM   | 117      | MBE0AE   | 119      | MBL1EA   | 121      |          |          |
| MBB2BB   | 117      | MBE0AG   | 119      | MBL1EN   | 121      |          |          |
| MBB2CA   | 117      | MBE0AH   | 119      | MBL2EA   | 121      |          |          |
| MBB2CB   | 117      | MBE1FJ   | 119      | MBL2EN   | 121      |          |          |
| MBB2CD   | 117      | MBE1HN   | 119      | MBL2FN   | 121      |          |          |
| MBB2CE   | 118      | MBE1JA   | 119      | MBL3CN   | 121      |          |          |
| MBB2CM   | 118      | MBE1JE   | 119      | MBL7CM   | 121      |          |          |
| MBB2CN   | 118      | MBE1JM   | 119      | MBM1HN   | 121      |          |          |
| MBB2DC   | 118      | MBE1KM   | 119      | MBM1JM   | 121      |          |          |
| MBB2DG   | 118      | MBE1MC   | 119      | MBM2EK   | 121      |          |          |
| MBB2DM   | 118      | MBE1ME   | 119      | MBM2EM   | 121      |          |          |
| MBB3CA   | 118      | MBE1NG   | 119      | MBM2FN   | 121      |          |          |
| MBC0AA   | 118      | MBE1NR   | 119      | MBM2GM   | 121      |          |          |
| MBC0AC   | 118      | MBE2ER   | 119      | MBM2GN   | 121      |          |          |
| MBC0AE   | 118      | MBE2JM   | 119      | MBM2JL   | 121      |          |          |
| MBC0AG   | 118      | MBE2KA   | 120      | MBM3FL   | 121      |          |          |
| MBC0AL   | 118      | MBE2KG   | 120      | MBM4EM   | 122      |          |          |
| MBC0AS   | 118      | MBE2KL   | 120      | MBN1BM   | 122      |          |          |
| MBC1EB   | 118      | MBE2KN   | 120      | MBN1JM   | 122      |          |          |
| MBC1EE   | 118      | MBE2KZ   | 120      | MBN1LN   | 122      |          |          |
| MBC1EJ   | 118      | MBE2LA   | 120      | MBN1MN   | 122      |          |          |
| MBC1FE   | 118      | MBE2LL   | 120      | MBN1NK   | 122      |          |          |
| MBC2BL   | 118      | MBE2NA   | 120      | MBN2JK   | 122      |          |          |
| MBC2CM   | 118      | MBE2NE   | 120      | MBN2MN   | 122      |          |          |
| MBC2CN   | 118      | MBE2NM   | 120      | MBN3DN   | 122      |          |          |
| MBC2DB   | 118      | MBE2NT   | 120      | MBN3NK   | 122      |          |          |



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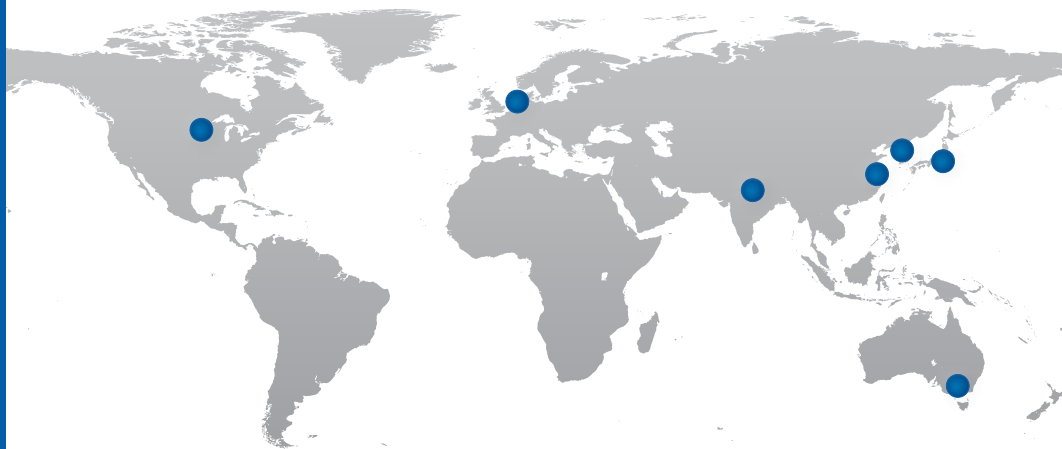
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