

# ILE Buyer's Guide

A Complete Line of Industrial Lubrication Equipment



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Literature Index | Service Manuals | Literature

# Table of Contents

---

Graco Pumps-at-a-Glance . . . . .	6
Electric Pumps	
G1™ . . . . .	7-10
G3™ . . . . .	11-15
G-Series Pump Accessories . . . . .	16-17
Modu-Flo® . . . . .	18
LubeMaster® . . . . .	19-22
Miniature Meter-Flo® . . . . .	23-24
Meter-Flo® . . . . .	25
Injecto-Flo® EO-1 and EO-3 . . . . .	26
Injecto-Flo® II. . . . .	27-28
Thrif-T-Luber® . . . . .	29
Maxi-Flo™ . . . . .	30
Electro-Hydraulic Barrel Pumps . . . . .	31
Pneumatic Pumps	
Modu-Flo® . . . . .	32-33
E-Series™ . . . . .	34-35
MSA-10™ and MSA-100™ . . . . .	36
Injecto-Flo® AO-1. . . . .	37
LubriSystem® . . . . .	38
Manual Pumps	
Manual Grease Gun . . . . .	39
PH Pump™ . . . . .	40
LubriSystem® . . . . .	41
Thrif-T-Luber® . . . . .	42
Mechanical Pumps	
LubeMaster® Ratchet Drive . . . . .	43-44
MLS Series™ . . . . .	45
Hydraulic Pumps	
Modu-Flo® . . . . .	46
Single Series™ Single Point Lubricators . . . . .	47-52
Single Line Resistive Metering Devices	
Thrif-T-Luber® . . . . .	53
Single Line Parallel Metering Devices	
Piston Distributors . . . . .	54-56
LubriSystem® Injectors . . . . .	57-58
GL-32™ and GL-43™ Injectors . . . . .	59-60
GL-1™ Injectors . . . . .	61
GL-11™ Injectors . . . . .	62
Series Progressive Metering Devices	
Trabon® USP Mono Block . . . . .	63
Trabon® MD Divider Valve . . . . .	64
Trabon® MJ Divider Valve . . . . .	65
Trabon® MSP Divider Valve . . . . .	66-68
Trabon® MSP Stainless Steel Divider Valve . . . . .	69-70
Manzel® MHH Divider Valve . . . . .	71-72
Trabon® MX Divider Valve . . . . .	73-74
Trabon® MXP Divider Valve . . . . .	75-76
Trabon® MGO Divider Valve . . . . .	77-78
Air Oil	
A/O Series™ Valves . . . . .	79
High Speed Spindl-Gard® Systems . . . . .	80-81

# Table of Contents

---

## General Accessories

Trabon® Spra-Control™ Valve . . . . .	82
Zone Valves . . . . .	83
Reset Indicators . . . . .	84
Automatic Relief Indicator . . . . .	85
Rupture Indicators . . . . .	86
Rupture to Atmosphere Indicators . . . . .	87
Magnetic Visual Indicator . . . . .	88
Cycle Switch . . . . .	88
Proximity Switch . . . . .	89
Pressure Switch . . . . .	90
Broken Line Indicator . . . . .	91
Filters . . . . .	92
Fittings . . . . .	93
Pressure Gauges and Check Valves . . . . .	94
Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware . . . . .	95-97

## Controllers

GLC 2200™ Controller . . . . .	98
GLC 4400™ Controller . . . . .	99
Solid State Timer . . . . .	100
WMP III Maxi-Monitor® . . . . .	101

## On-Road Mobile Lubrication

Grease Jockey® Pump Kits . . . . .	102
Grease Jockey® Right and Left Front Pump Kits for Trucks . . . . .	103
Grease Jockey® Rear Axle Modules Truck and Tractor Kits . . . . .	103
Grease Jockey® Pneumatic Universal Truck Kits . . . . .	104-105
Universal Trailer Lubrication Kits . . . . .	106
Easy Greaser® for Trucks and Trailers . . . . .	107
Manual Hand Pump . . . . .	108

## Off-Road Mobile Lubrication

Dyna-Star® 10:1 Hydraulically Powered Pumps . . . . .	109-110
Dyna-Star® 5:1 and Fireball 300 50:1 . . . . .	110
G3 Lubrication Kits . . . . .	111

## Lubrication Systems

Dyna-Star® HP and HF 24 VDC . . . . .	112-114
---------------------------------------	---------

## Compressor Lubrication

Manzel® Model 25 Lubricator . . . . .	115-117
Manzel® MBL Box Lubricator . . . . .	118-125
Manzel® GBL 7500 . . . . .	126
Manzel® DSL Box Lubricators and Pumps . . . . .	127-128
Model HP-15 High Pressure . . . . .	129
Model HP-50 High Pressure Lubricators . . . . .	130
Manzel® MVB Pumps . . . . .	131-132

## Compressor Lubrication Accessories

Lube Sentinel II Monitor™ . . . . .	133
Manzel® Lube-Line Alert . . . . .	134
Pneumatic/Electric Lube Sentry Valve . . . . .	135
Balancing Valve . . . . .	136

Index . . . . .	137-143
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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
Electric-Hydraulic Barrel Pump	•			•						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
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			✓	✓
		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			✓	✓



# 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

126217	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				✓		✓

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

<sup>1</sup> = 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.

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

### G1 Plus Power Cables

126217	15 foot - 3 wire CPC connector
126218	15 foot - 5 wire CPC connector
126219	20 foot - 5 wire CPC connector
126220	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	
	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	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	✓	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	Manual Run	Wiper Arm	Follower Plate	External Low Level*	Low Level	Power Connection
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	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	✓		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/ Press. Input	Machine Count	Vent Valve Output*	Alarm Output	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		
		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		
		96G168	24 VDC	1				✓	A	A	✓		A	CPC-5 Pin	
		96G106	24 VDC	1-3	✓	✓	✓	✓	✓	✓		✓, B	DIN		
		96G166	90-240 VAC	1				✓			✓		✓	DIN	
		96G121	90-240 VAC	1-3	✓	✓	✓	✓	✓	✓	✓		✓, B	DIN	
	Oil	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/ Press. Input	Machine Count	Vent Valve Output*	Alarm Output	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	

\*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
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—24VDC 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 MHH™ 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—Provides the pressure sensing required for GL32™ and GL43™ Injector Systems. 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 Fill 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





# 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 in³ (4.7 cc)
. . . . .	115 VAC - 0.58 in³ (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	
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, 230/460 VAC, 3-Phase, 60 Hz, 1,725 rpm) (557270)
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)
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) (557272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)



LM5111

# Electric Pumps

LubeMaster®

## Ordering Information

LubeMaster Pumps	
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, 1,140 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, 1,140 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®

<b>LubeMaster Reservoirs</b>	
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
<b>LubeMaster Drive Option</b>	
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
<b>LubeMaster Motors</b>	
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
<b>LubeMaster Low Level Switches</b>	
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
<b>LubeMaster Pressure Indicators</b>	
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
<b>LubeMaster Pressure Gauge</b>	
557713	Liquid Filled Pressure Gauge, 0-3,000 psi
<b>LubeMaster Spare Parts</b>	
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.

	<b>LM</b>	-	<b>X</b>	-	<b>X</b>	-	<b>X</b>	-	<b>X</b>
<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.

<p><b>Pressure Indicator Option</b> (sold seperately)</p> <p>POA - Standard Blowout, 1450 psi (100 bar), Oil, 563179</p> <p>POB - Standard Blowout, 2350 psi (162 bar) Grease, 563184</p> <p>POC - High-Pressure Blowout Switch, 1450 psi (100 bar), Oil, 563384</p> <p>POD - Standard Blowout, 2350 psi (162 bar), Grease, 563385</p>
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# 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



MM2211

### 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

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)



563557

### 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

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

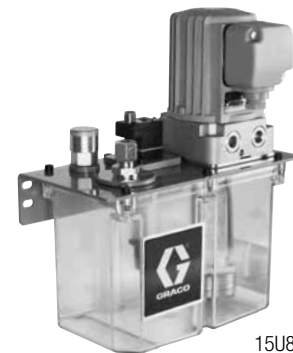
Oil	30.50 in <sup>3</sup> (500 cm <sup>3</sup> )
Grease	12.20 in <sup>3</sup> (200 cm <sup>3</sup> )

#### 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

<b>Injecto-Flo II Fluid Grease Pumps - 3 liter Reservoirs (no control), 230 VAC</b>	
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)
<b>Injecto-Flo II Fluid Grease Pumps - 6 liter Reservoirs (no control), 230 VAC</b>	
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)
<b>Injecto-Flo II Oil Pumps w/Integrated Control</b>	
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
<b>Injecto-Flo II Fluid Grease Pumps w/Integrated Control</b>	
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> )
	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



563379

### 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

# Barrel and Drum Pumps

## Electro-Hydraulic Barrel Pumps

### Features and Benefits

Heavy-duty drum pump requires no air supply, just plug it in and you're ready to go. Installs on a 400 pound grease or 55 gallon drum, eliminating the need to transfer lubricants. Sealed hydraulic power circuit ensures long trouble-free operation.

### Typical Applications

- Steel mills, pulp and paper, cement plants and other heavy-duty applications

### Typical Fluids Handled

- Oil and grease up to NLGI #2

### Technical Specifications

Output per Minute	
H-430.....	6 in <sup>3</sup> (98 cm <sup>3</sup> )
H-420.....	11 in <sup>3</sup> (108 cm <sup>3</sup> )
H-410.....	22 in <sup>3</sup> (360 cm <sup>3</sup> )
H-411.....	38 in <sup>3</sup> (623 cm <sup>3</sup> )
1/2 HP Motor .....	115/230 VAC, 1 phase or 230/460 VAC, 3 phase
Pressure .....	3,500 psi (241 bar)
Reservoir.....	400 pound for grease or 55 gallon for oil

### Ordering Information

Electro-Hydraulic Barrel Pumps w/out Motor	
564259	H-420
564260	H-430
564261	H-411
562863	H-410
564262	H-430 w/out Pressure Switch
Power Units	
564391	H-420
564392	H-430
564390	H-411
563406	H-410
Motors	
557271	1/2 HP, 115/230 Vac, 1 phase, 60 Hz
557270	1/2 HP, 230/460 Vac, 3 phase, 60 Hz
Spare Parts and Kits	
563402	H-400 Pump Only
563922	Pump Repair kit
563404	Pressure Switch
557352	Pressure Gauge
557376	Outlet Strainer



# 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

<b>Modu-Flo Grease Reservoirs</b>	
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
564267	40 lb Plastic Cylindrical Reservoir
564268	40 lb Plastic Cylindrical Reservoir w/Low Level Switch
564264	5 lb Metal Cylindrical Reservoir
562906	6 lb Metal Cylindrical Reservoir
562886	12 lb Metal Cylindrical Reservoir
562887	20 lb Metal Cylindrical Reservoir
<b>Modu-Flo Low Level Switch Assemblies</b>	
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
<b>Modu-Flo Pressure Switch Assemblies</b>	
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
<b>Modu-Flo Solenoid Valves</b>	
563315	3-Way Pneumatic Solenoid Valve, 115 VAC
563332	3-Way Pneumatic Solenoid Valve, 24 VDC
<b>Modu-Flo Timer/Controller</b>	
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

### 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



563365

# Pneumatic Pumps

## E-Series™

### Ordering Information

<b>E-Series Grease Reservoirs</b>	
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
<b>E-Series Low Level Options - Not available for 3 lb Cylindrical Reservoirs</b>	
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
<b>E-Series Accessories - For Field Installation</b>	
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-.120in <sup>3</sup> (.66-1.97cm <sup>3</sup> )
Max Pump Stroke per Minute	Single-Acting - 15 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

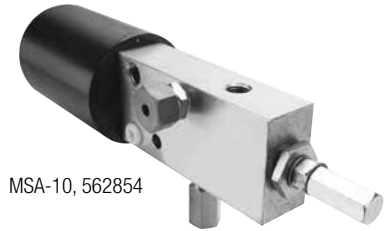
#### MSA-100

Material	Aluminum
Seals	Buna-N and Fluoroelastomer
Output per Stroke	.400-.800in <sup>3</sup> (6.57-13.11cm <sup>3</sup> )
Max Pump Stroke per Minute	Single-Acting - 15 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 in <sup>3</sup> (13 cm <sup>3</sup> )
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), 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. (1.5cc)  
Pressure Rating . . . . .5,000 psi (345 bar)  
Reservoir Capacity . . . . .1 pint (500cc), 1 lb (0.453 kg) or use 14-14.5 oz grease cartridge  
Pump body and Reservoir Material . . . . . Steel  
Storage Case Material. . . . .HDPE Plastic



562857

### Ordering Information

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

# 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- or four-outlet valve that mounts under the pump outlet. This valve allows the pump to serve up to four different systems or to supply one or two separate manual reversing systems
- 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),  
 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)



564422

### 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

# 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 in <sup>3</sup> (8.2 cm <sup>3</sup> )
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
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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



LM5214

### 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> )

### 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

Mechanical Pumps

### 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.

<b>Pressure Indicator Option</b> (sold seperately)	
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 - Standard Blowout, 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

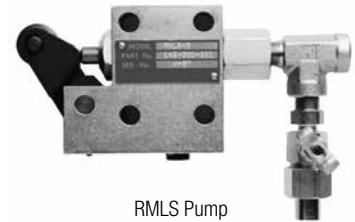
RMLS-5 . . . . . 0.012 cu.in. @ 3/8 in  
RMLS-50 . . . . . 0.050 cu.in. @ 17/32 in

#### 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 . . . . . 0.01- 0.125 in<sup>3</sup> (0.16-2.0 cm<sup>3</sup>)  
 Output Pressure . . . . . 3,000 psi (207 bar)

### Ordering Information

Part Number	Model Description	Max Pump Output/Stroke in <sup>3</sup> (cm <sup>3</sup> )	Maximum Cycles/Minute	Ratio	Max. Hydraulic Pressure, 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 (14-138)	Oil or grease up to NLGI #2
563345	HLJ-5X pump, double acting (no reservoir)	0.03-.09 (0.49-1.5)	50	2.2:1	200-3000 (14-207)	
563307	HLJ-25 pump, double acting (no reservoir)	0.03-0.12 (.49-2.0)	50	5.5:1	200-2000 (14-138)	

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



# Single Point Lubricators

## Single Series™

### Easy to use with minimal up-front investment

Graco's Electrochemical (gas) and Electromechanical (motor-driven) Single Series lubricators automatically deliver small, predetermined amounts of lubricant at frequent intervals for an uninterrupted supply of fresh lubricant directly to your bearing or lubrication point. Prevents over and under lubrication problems associated with manual lubrication (grease gun) methods.

- Extend equipment life
- Reduce operating costs
- Increase productivity
- Less waste

### Typical Applications

#### EC-120™

A durable and reliable general purpose lubricator that installs easily, in almost any position. Suitable for use in potentially explosive atmospheres in Europe. ATEX Approvals: CE Ex I M2 c X, CE Ex II 2G c IIC 80°C X, CE Ex II 2D c 80°C X.

#### EP-120™

Transparent plastic gives you at-a-glance indication of the lubricant level. Ideal for hygienically clean and food safe locations. Also great for high corrosion locations. Suitable for use in potentially explosive atmospheres in Europe.

#### TC-130™

An electrochemical lubricator that features electronic temperature compensation. The discharge period is easy to program on the reusable control unit, and can be turned on/off at any time to stop the lube output. Suitable for use in potentially explosive atmospheres.

### Typical Fluids Handled

- Multi-use lithium EP-2™ grease
- Construction and off-highway grease
- Ball bearing and pillow-block grease
- Mill grease
- Food grade H1™ grease
- Synthetic industrial grease

### Technical Specifications

#### EC-120™

Housing Design.....	Metal
Drive Type .....	Electrochemical (gas)
Discharge Time.....	1, 3, 6, or 12 months
Lubricant Volume .....	120 cc
Operating Temp .....	0 to 40° C / 32 to 104° F
Max Pressure .....	4 bar / 58 psi

#### EP-120™

Housing Design.....	Transparent Plastic
Drive Type .....	Electrochemical (gas)
Discharge Time.....	1, 3, 6, or 12 months
Lubricant Volume .....	120 cc
Operating Temp .....	0 to 40° C / 32 to 104° F
Max Pressure .....	4 bar / 58 psi

#### TC-130™

Housing Design.....	Transparent Plastic
Drive Type .....	Electrochemical (gas)
Discharge Time.....	1-12 months
Lubricant Volume .....	130 cc
Operating Temp .....	-20 to 60° C / -4 to 140° F
Max Pressure .....	6 bar / 87 psi



# Single Point Lubricators

## Single Series™

Single Point Lubricators

### Ordering Information

EC-120 Lubricators	
24D855	EC-120, 1 Mo, Lithium EP-2
24D856	EC-120, 1 Mo, Construction
24D857	EC-120, 1 Mo, Bearing
24D858	EC-120, 1 Mo, Milling
24D859	EC-120, 1 Mo, Food
24D860	EC-120, 1 Mo, Synthetic
24D861	EC-120, 1 Mo, Ultra
24D862	EC-120, 1 Mo, Lithium EP-1
24D863	EC-120, 3 Mo, Lithium EP-2
24D864	EC-120, 3 Mo, Construction
24D865	EC-120, 3 Mo, Bearing
24D866	EC-120, 3 Mo, Milling
24D867	EC-120, 3 Mo, Food
24D868	EC-120, 3 Mo, Synthetic
24D869	EC-120, 3 Mo, Ultra
24D870	EC-120, 3 Mo, Lithium EP-1
24D871	EC-120, 6 Mo, Lithium EP-2
24D872	EC-120, 6 Mo, Construction
24D873	EC-120, 6 Mo, Bearing
24D874	EC-120, 6 Mo, Milling
24D875	EC-120, 6 Mo, Food
24D876	EC-120, 6 Mo, Synthetic
24D877	EC-120, 6 Mo, Ultra
24D878	EC-120, 6 Mo, Lithium EP-1
24D879	EC-120, 12 Mo, Lithium EP-2
24D880	EC-120, 12 Mo, Construction
24D881	EC-120, 12 Mo, Bearing
24D882	EC-120, 12 Mo, Milling
24D883	EC-120, 12 Mo, Food
24D884	EC-120, 12 Mo, Synthetic
24D885	EC-120, 12 Mo, Ultra
24D886	EC-120, 12 Mo, Lithium EP-1
EP-120 Lubricators	
24J949	EP-120, 1 Mo, Lithium EP-2
24J950	EP-120, 1 Mo, Construction
24J951	EP-120, 1 Mo, Bearing
24J952	EP-120, 1 Mo, Milling
24J953	EP-120, 1 Mo, Food
24J954	EP-120, 1 Mo, Synthetic
24J955	EP-120, 1 Mo, Ultra
24J956	EP-120, 1 Mo, Lithium EP-1
24J957	EP-120, 3 Mo, Lithium EP-2
24J958	EP-120, 3 Mo, Construction
24J959	EP-120, 3 Mo, Bearing
24J960	EP-120, 3 Mo, Milling

24J961	EP-120, 3 Mo, Food
24J962	EP-120, 3 Mo, Synthetic
24J963	EP-120, 3 Mo, Ultra
24J964	EP-120, 3 Mo, Lithium EP-1
24J965	EP-120, 6 Mo, Lithium EP-2
24J966	EP-120, 6 Mo, Construction
24J967	EP-120, 6 Mo, Bearing
24J968	EP-120, 6 Mo, Milling
24J969	EP-120, 6 Mo, Food
24J970	EP-120, 6 Mo, Synthetic
24J971	EP-120, 6 Mo, Ultra
24J972	EP-120, 6 Mo, Lithium EP-1
24J973	EP-120, 12 Mo, Lithium EP-2
24J974	EP-120, 12 Mo, Construction
24J975	EP-120, 12 Mo, Bearing
24J976	EP-120, 12 Mo, Milling
24J977	EP-120, 12 Mo, Food
24J978	EP-120, 12 Mo, Synthetic
24J979	EP-120, 12 Mo, Ultra
24J980	EP-120, 12 Mo, Lithium EP-1
TC-130 Lubricators	
24J981	TC-130, 1 to 12 Mo, Lithium EP-2
24J982	TC-130, 1 to 12 Mo, Construction
24J983	TC-130, 1 to 12 Mo, Bearing
24J984	TC-130, 1 to 12 Mo, Milling
24J985	TC-130, 1 to 12 Mo, Food
24J986	TC-130, 1 to 12 Mo, Synthetic
24J987	TC-130, 1 to 12 Mo, Ultra
24J988	TC-130, 1 to 12 Mo, Lithium EP-1
TC-130 Replacement Cartridges	
24M684	Lithium EP-2
24M685	Construction
24M686	Bearing
24M687	Milling
24M688	Food
24M689	Synthetic
24M690	Ultra
24M691	Lithium EP-1



# Single Point Lubricators

## Single Series™

### Easy to Use with Minimal Up-front Investment

Graco's Electrochemical (gas) and Electromechanical (motor-driven) Single Series lubricators automatically delivers small, predetermined amounts of lubricant at frequent intervals for an uninterrupted supply of fresh lubricant directly to your bearing or lubrication point. Prevents over and under lubrication problems associated with manual lubrication (grease gun) methods.

### Features and Benefits

- Extend equipment life
- Reduce operating costs
- Increase productivity
- Less waste

### Typical Applications

#### EM-Drive™

Battery-powered, motor-drive delivers precise lubrication, regardless of temperature and vibration. Easy-to-read LED feedback indicators ensure trouble-free operation. Suitable for Class I, Div 2 groups A,B,C,D, Class II, Div 2 groups F,G, and Class III hazardous locations. UL Listed.

#### EM-XP™

Delivers precise lubrication, regardless of temperature and vibration. External power turns on and off with the cycle of the machine it's lubricating—ideally suited for inconsistently used equipment.

#### EM-XC™

Delivers precise lubrication, regardless of temperature and vibration. Precisely match lubrication output with your machine's operating conditions—works with your PLC to lubricate only when you need it.

### Typical Fluids Handled

- Multi-use lithium EP-2™ grease
- Construction and off-highway grease
- Ball bearing and pillow-block grease
- Mill grease
- Synthetic industrial grease
- Food grade H1™ grease

### Technical Specifications

#### EM-Drive™

Housing Design .....	Plastic w/transparent reservoir
Drive Type .....	Electromechanical (motor-driven)
Discharge Time.....	1, 3, 6, or 12 months
Lubricant Volume.....	60, 120, or 250 cc
Operating Temp .....	-10 to 50° C / 14 to 122° F
Max Pressure .....	5 bar / 75 psi

#### EM-XP™

Housing Design .....	Plastic w/transparent reservoir
Drive Type .....	Electromechanical (motor-driven)
Discharge Time.....	1, 3, 6 or 12 months
Lubricant Volume.....	60, 120, or 250 cc
Operating Temp .....	-10 to 50° C / 14 to 122° F
Max Pressure .....	5 bar / 75 psi

#### EM-XC™

Housing Design.....	Plastic w/transparent reservoir
Drive Type .....	Electromechanical (motor-driven)
Discharge amount.....	0.26 to 2.11 cc per activation
Lubricant Volume .....	60, 120, or 250 cc
Operating Temp .....	-10 to 50° C / 14 to 122° F
Max Pressure .....	5 bar / 75 psi



# Single Point Lubricators

## Single Series™

Single Point Lubricators

### Ordering Information

EM-Drive Lubricators	
24E028	EM-DRIVE, 60 cc, Lithium EP-2
24E029	EM-DRIVE, 60 cc, Construction
24E030	EM-DRIVE, 60 cc, Bearing
24E031	EM-DRIVE, 60 cc, Milling
24E032	EM-DRIVE, 60 cc, Food
24E033	EM-DRIVE, 60 cc, Synthetic
24E034	EM-DRIVE, 60 cc, Ultra
24E035	EM-DRIVE, 60 cc, Lithium EP-1
24E036	EM-DRIVE, 120 cc, Lithium EP-2
24E037	EM-DRIVE, 120 cc, Construction
24E038	EM-DRIVE, 120 cc, Bearing
24E039	EM-DRIVE, 120 cc, Milling
24E040	EM-DRIVE, 120 cc, Food
24E041	EM-DRIVE, 120 cc, Synthetic
24E042	EM-DRIVE, 120 cc, Ultra
24E043	EM-DRIVE, 120 cc, Lithium EP-1
24E044	EM-DRIVE, 250 cc, Lithium EP-2
24E045	EM-DRIVE, 250 cc, Construction
24E046	EM-DRIVE, 250 cc, Bearing
24E047	EM-DRIVE, 250 cc, Milling
24E048	EM-DRIVE, 250 cc, Food
24E049	EM-DRIVE, 250 cc, Synthetic
24E050	EM-DRIVE, 250 cc, Ultra
24E051	EM-DRIVE, 250 cc, Lithium EP-1
EM-XP Lubricators	
24E054	EM-XP 60 cc, Lithium EP-2
24E055	EM-XP 60 cc, Construction
24E056	EM-XP 60 cc, Bearing
24E057	EM-XP 60 cc, Milling
24E058	EM-XP 60 cc, Food
24E059	EM-XP 60 cc, Synthetic
24E060	EM-XP 60 cc, Ultra
24E061	EM-XP 60 cc, Lithium EP-1
24E062	EM-XP 120 cc, Lithium EP-2
24E063	EM-XP 120 cc, Construction
24E064	EM-XP 120 cc, Bearing
24E065	EM-XP 120 cc, Milling
24E066	EM-XP 120 cc, Food
24E067	EM-XP 120 cc, Synthetic
24E068	EM-XP 120 cc, Ultra
24E069	EM-XP 120 cc, Lithium EP-1
24E070	EM-XP 250 cc, Lithium EP-2
24E071	EM-XP 250 cc, Construction
24E072	EM-XP 250 cc, Bearing
24E073	EM-XP 250 cc, Milling

24E074	EM-XP 250 cc, Food
24E075	EM-XP, 250 cc, Synthetic
24E076	EM-XP, 250 cc, Ultra
24E077	EM-XP 250 cc, Lithium EP-1



# Single Point Lubricators

## Single Series™

EM-XC Lubricators	
24E080	EM-XC 60 cc, Lithium EP-2
24E081	EM-XC 60 cc, Construction
24E082	EM-XC 60 cc, Bearing
24E083	EM-XC 60 cc, Milling
24E084	EM-XC 60 cc, Food
24E085	EM-XC 60 cc, Synthetic
24E086	EM-XC 60 cc, Ultra
24E087	EM-XC 60 cc, Lithium EP-1
24E088	EM-XC 120 cc, Lithium EP-2
24E089	EM-XC 120 cc, Construction
24E090	EM-XC 120 cc, Bearing
24E091	EM-XC 120 cc, Milling
24E092	EM-XC 120 cc, Food
24E093	EM-XC 120 cc, Synthetic
24E094	EM-XC 120 cc, Ultra
24E095	EM-XC 120 cc, Lithium EP-1
24E096	EM-XC 250 cc, Lithium EP-2
24E097	EM-XC 250 cc, Construction
24E098	EM-XC 250 cc, Bearing
24E099	EM-XC 250 cc, Milling
24E100	EM-XC 250 cc, Food
24E101	EM-XC 250 cc, Synthetic
24E102	EM-XC 250 cc, Ultra
24E103	EM-XC 250 cc, Lithium EP-1
24E582	Refill, 60 cc, Lithium EP-2
24E583	Refill, 60 cc, Construction
24E584	Refill, 60 cc, Bearing
24E585	Refill, 60 cc, Milling
24E586	Refill, 60 cc, Food
24E587	Refill, 60 cc, Synthetic
24E588	Refill, 60 cc, Ultra
24E589	Refill, 60 cc, Lithium EP-1
24E590	Refill, 120 cc, Lithium EP-2
24E591	Refill, 120 cc, Construction
24E592	Refill, 120 cc, Bearing
24E593	Refill, 120 cc, Milling
24E594	Refill, 120 cc, Food
24E595	Refill, 120 cc, Synthetic
24E596	Refill, 120 cc, Ultra
24E597	Refill, 120 cc, Lithium EP-1
24E598	Refill, 250 cc, Lithium EP-2
24E599	Refill, 250 cc, Construction

24E600	Refill, 250 cc, Bearing
24E601	Refill, 250 cc, Milling
24E602	Refill, 250 cc, Food
24E603	Refill, 250 cc, Synthetic
24E604	Refill, 250 cc, Ultra
24E605	Refill, 250 cc, Lithium EP-1



# Single Point Lubricators

## Single Series™

Single Point Lubricators

### Mounting Hardware Ordering Information

Model	EM series	EC-120	EP-120	
124086	X	X	X	Clip, Support, EM
124087	X	X	X	Bracket, Wall, Lubricator
124088		X	X	Fitting, Insert, 1/4 inch m x 1/4 inch f
124094	X	X	X	Bracket, Mounting, Small
124095	X	X	X	Bracket, Mounting, Medium
124096	X			Bracket, Mounting, Large
124097	X	X	X	Bracket, Mounting, Flat
124098	X	X	X	Bracket, Mounting, L
124099	X	X	X	Bracket, Mounting, Bulkhead
124100	X	X	X	Clamp, Beam, 1 inch (25.4 mm)
124101	X	X	X	Bracket, Dual Unit
124105	X			Adapter, 1/4 fnpt x 1/4 mnpt
124106	X			Adapter, 1/4 fnpt x 1/8 mnpt
<b>Brushes</b>				
124089	X	X	X	Brush, Pighair, 1/4 fnpt x 3/4
124090	X	X	X	Brush, Oil, 1 x 1.5
124091	X	X	X	Brush, Oil, 1 x 2.4
124092	X	X	X	Brush, Oil, 1 x 4
124114	X	X	X	Brush, Nylon, 1/8 mnpt x 5/8
124115	X	X	X	Brush, Nylon, 1/8 mnpt x 2
<b>Electric Motor (Device Being Lubricated) Drain Plug Replacements</b>				
124107	X	X	X	Valve, Relief, 1/8 m 5 lb
124108	X	X	X	Valve, Relief, 1/8 m 1 lb
<b>Vibration Isolation</b>				
124116	X			Kit, Accessory, Heavy Spring
<b>Water Protection</b>				
124110	X			Cap, Wet, EM-Drive
124111	X			Cap, Protection, 60-120 cc
124112	X			Cap, Protection, 250 cc
<b>Replacement Parts</b>				
124279	X			Harness, Cable, Power, EM-XP/XC
123951	X			Motor, EM-XC
123950	X			Motor, EM-XP
123949	X			Motor, EM-Drive
<b>Accessories</b>				
124113	X	X	X	Applicator, Felt Chain, 2 x .5
124102	X	X	X	Oil Throttle Check Valve (1/4 inch m x 1/4 inch f)
124109	X	X	X	Kit, Accessory, Purge
124119	X			Paddle, Lube, Open Gear
124304		X	X	Explosive Atmospheres Grounding Clamp



124086



124087



124088



124095



124098



124099



124100



124101



124106



124089



124111



124090



124114



124116



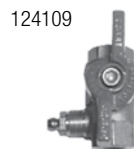
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124113



124102

# 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



564020

## Typical Applications

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

## Typical Fluids Handled

- Oil



564034

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

## 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

## 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	TLLF-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> (0.01 – 0.16 cm <sup>3</sup> )	.0006 – .006 in <sup>3</sup> (0.01 – 0.10 cm <sup>3</sup> )	.006 – .036 in <sup>3</sup> (0.1 – 0.6 cm <sup>3</sup> )	.006 – .018 in <sup>3</sup> (0.1 – 0.3 cm <sup>3</sup> )	0.012 – 0.09 in <sup>3</sup> (0.2 – 1.5 cm <sup>3</sup> )	.006 – .018 in <sup>3</sup> (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 – 0.26 in <sup>3</sup> (0.033 – 0.426 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	.020 (0.328)	4	563636	563635
8	.026 (0.426)	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

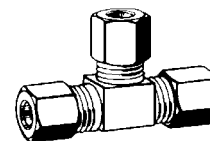
## LubriSystem® Accessories

### Ordering Information

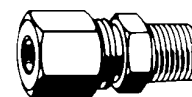
Heavy Wall Lube Lines (tubing)	
561132	Main Line (pump to manifold): 5/16 inches OD x .059 inches wall (7.9 mm x 1.5 mm), black, 60 feet (18.3 m) Burst Pressure Min. - 1,500 psi (103 bar) at 75° F (24° C)
561131	Point Distribution Line (injector to lube point): 3/16 in OD x .044 inches wall (4.8 mm x 1.1mm), 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



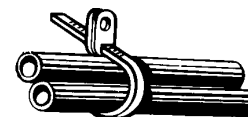
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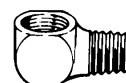
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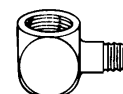
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15K783



556638



15K740



561132

Single Line Parallel

# Single Line Parallel

## GL-32™ and GL-43™ Injector

### 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)



24A923

### 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

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

# Single Line Parallel

## GL-32™ and GL-43™ Injector

### 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, 6mm outlet, BSPP (must order in quantities of five)
24F550	Replacement Injector, 6mm outlet, BSPP (must order in quantities of five)
24F551	1-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F552	2-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F553	3-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F554	4-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F555	Injector Outlet Adapter Kit, 4mm outlet
24F556	Injector Outlet Adapter Kit, 6mm 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, 6mm outlet, BSPP (must order in quantities of five)
24F543	Replacement Injector, 6mm outlet, BSPP (must order in quantities of five)
24F544	1-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F545	2-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F546	3-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F548	4-Injector Manifold, 6mm outlet, 1/8 BSPP inlet
24F201	Repair Kit

# Single Line Parallel

## GL-1™ 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



114905

### 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 .....	1,850 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 Injectors and Manifold	
114901	GL-1 Injector, One Point
114902	GL-1 Injector, Two Point
114903	GL-1 Injector, Three Point
114904	GL-1 Injector, Four Point
114905	GL-1 Injector, Five Point
114909	Replacement GL-1 Injector
GL Injector Manifolds (no injector included)	
114911	GL-1 Injector Manifold, One Point
114912	GL-1 Injector Manifold, Two Point
114913	GL-1 Injector Manifold, Three Point
114914	GL-1 Injector Manifold, Four Point
114915	GL-1 Injector Manifold, Five Point
GL Injector Accessories	
115119	GL-1 Injector Cover Kit, Plastisol
115120	GL-1 Injector Crossport Kit

# 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

### 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

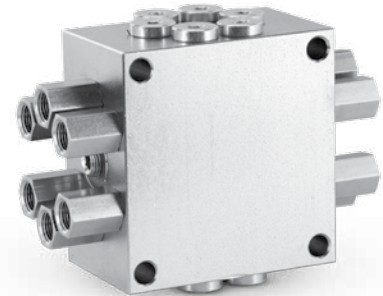
- Oil or grease grades up to NLGI #2

### Technical Specifications

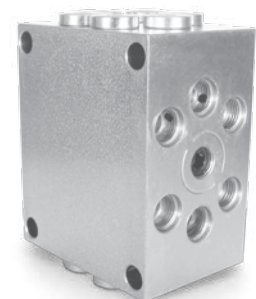
Maximum Pressure, psi (bar)	5,076 (350)
Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> )	0.012 in <sup>3</sup> (.20 cm <sup>3</sup> )
Cycle Indication	Electronic proximity switch, magnetic visual indicator
Max Operating Temperature	350° F (176° C)

### Ordering Information

USP Valves w/Adapters	
24E406	USP 6 Outlet Mono Block
24E407	USP 8 Outlet Mono Block
24E408	USP 10 Outlet Mono Block
24E409	USP 12 Outlet Mono Block
24E410	USP 14 Outlet Mono Block
24E411	USP 16 Outlet Mono Block
USP Bare Blocks w/o Adapters	
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 Accessories	
24E857	Outlet Adapter and Seal
125011	Seal
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
24F467	Doubling Plug



24E409



24J334



24E857

# Series Progressive

## Trabon® MD 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)

	Output per Outlet, in <sup>3</sup> (cm <sup>3</sup> )	Cycle Indication
<b>MD-2</b>	0.04 (0.66)	Cycle indicator switch
<b>MD-3</b>	Outlet 1 - 0.04 (0.66) Outlet 2 and 3 - 0.02 (0.33)	
<b>MD-4</b>	0.02 (0.33)	
<b>MD-6</b>	0.01 (0.16)	Not available

### Ordering Information

MD Divider Valves	
562656	MD-2
562657	MD-3
562658	MD-4
562659	MD-6
562653	MD-2, Cycle Pin
562654	MD-3, Cycle Pin
562655	MD-4, Cycle Pin
563270	MD-2, Cycle Switch, Bracket Assembly
563271	MD-3, Cycle Switch, Bracket Assembly
564356	MD-4, Cycle Switch, Bracket Assembly
MD Spare Parts	
563555	Cycle Indicator End Plug Assembly
556540	Standard MD 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, taking the guesswork out of troubleshooting
- 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, in <sup>3</sup> (cm <sup>3</sup> )	Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> )	Cycle Indication
<b>MJ5</b>	0.005 (0.08)	0.010 (0.16)	Not available
<b>MJ10</b>	0.010 (0.16)	0.020 (0.33)	Cycle indicator switch
<b>MJ15</b>	0.015 (0.26)	0.030 (0.49)	

### Ordering Information

MJ Tie Rods and Nut (Two required per assembly)	
557515	3-Section Tie Rod
557516	4-Section Tie Rod
557517	5-Section Tie Rod
557518	6-Section Tie Rod
557519	7-Section Tie Rod
557520	8-Section Tie Rod
560649	9-Section Tie Rod
556371	Tie Rod Nut
MJ Miscellaneous Accessories	
562915	Singling Kit
562914	Crossport Bar
557359	Crossport Kit - Upper Seal
557503	Crossport Kit - Lower Seal
561101	Mounting Bar
MJ Spare Parts	
557514	Replacement Gasket
563948	Cycle Indicator Repair Kit
563272	MJ Cycle Switch (SPDT) Bracket Assembly
563273	MJ Cycle Switch (SPDT) Bracket Assembly - Moisture Resistant

MJ Working Sections (Must be ordered in multiples of five)	
562500	MJ-5S
562501	MJ-10S
562502	MJ-15S
562503	MJ-5T
562504	MJ-10T
562505	MJ-15T
MJ w/Cycle Pin - Right (Must be ordered in multiples of five)	
562508	MJ-10S
562509	MJ-15S
562510	MJ-10T
562511	MJ-15T
MJ Inlet and End (Must be ordered in multiples of five)	
560643	MJ Inlet
560645	MJ End
MJ w/Cycle Pin - Left (Must be ordered in multiples of five)	
562512	MJ-10S
562513	MJ-10T
564205	MJ-15T

# 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

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



### 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

	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>MSP5</b>	0.005 (0.08)	0.010 (0.16)	Electronic proximity switch, magnetic visual indicator
<b>MSP10</b>	0.010 (0.16)	0.020 (0.33)	
<b>MSP15</b>	0.015 (0.26)	0.030 (0.49)	
<b>MSP20</b>	0.020 (0.33)	0.040 (0.66)	Electronic proximity switch, magnetic visual indicator, cycle indicator switch
<b>MSP25</b>	0.025 (0.41)	0.050 (0.82)	
<b>MSP30</b>	0.030 (0.49)	0.060 (0.98)	
<b>MSP35</b>	0.035 (0.57)	0.070 (1.15)	
<b>MSP40</b>	0.040 (0.66)	0.080 (1.31)	

### Ordering Information

MSP Working Sections (Must be ordered in multiples of five)	
562711	MSP-5S
562712	MSP-10S
562713	MSP-15S
562714	MSP-20S
562715	MSP-25S
562716	MSP-30S
562717	MSP-35S
562718	MSP-40S
562720	MSP-5T
562721	MSP-10T
562722	MSP-15T
562723	MSP-20T
562724	MSP-25T
562725	MSP-30T

562726	MSP-35T
562727	MSP-40T
562660	MSP By-Pass Section
MSP w/Cycle Pin - Right (Must be ordered in multiples of five)	
562729	MSP-20S
562730	MSP-25S
562731	MSP-30S
562732	MSP-35S
562733	MSP-40S
562739	MSP-20T
562740	MSP-25T
562741	MSP-30T
562742	MSP-35T
562743	MSP-40T

# Series Progressive

## Trabon® MSP Divider Valve

### Ordering Information

<b>MSP w/Cycle Pin - Left</b> (Must be ordered in multiples of five)	
562734	MSP-20S
562735	MSP-25S
562736	MSP-30S
562737	MSP-35S
562738	MSP-40S
562744	MSP-20T
562745	MSP-25T
562746	MSP-30T
562747	MDS-35T
562748	MSP-40T
<b>MSP Inlets, Intermediate Base and End Sections</b> (Must be ordered in multiples of five)	
560919	Inlet, 1/4-18 NPSF Ports (NPT)
560936	Inlet, 1/4-19 BSPP (ISO 1179) Ports (BSP)
560943	Inlet, 7/16-20 UNF-2B Ports (SAE)
560976	Inlet, ISO 6149-1-M12 x 1.5 Ports (MET)
563421	Inlet, NPSF, Bleed Ports
563422	Inlet, SAE, Bleed Ports
563425	Intermediate Base, 1/8-27 NPSF Ports (NPT)
563451	Intermediate Base, 7/16-20 UNF-2B Ports (SAE)
563447	Intermediate Base, 1/8-28 BSPP (ISO 1179) Ports (BSP)
563479	Intermediate Base, No Outlets
563424	Standard End
563279	End, Alternate Inlet Port Plug
563280	"Bottom-Feed" End Section with Hydraulic Fitting
563480	MSP Modular Filter Block
<b>MSP Base Plate Assemblies</b>	
24G485	MSP - 3 Section, NPSF
24G486	MSP - 4 Section, NPSF
24G487	MSP - 5 Section, NPSF
24G488	MSP - 6 Section, NPSF
24G489	MSP - 7 Section, NPSF
24G490	MSP - 8 Section, NPSF
24N915	MSP - 3 Section, BSPP
24N916	MSP - 4 Section, BSPP
24N917	MSP - 5 Section, BSPP
24N918	MSP - 6 Section, BSPP
24N919	MSP - 7 Section, BSPP
24N920	MSP - 8 Section, BSPP
<b>MSP Shunt Inlets</b>	
563448	NPT, 115 VAC, Hirschmann Connection - Left (NC)
563452	NPT, 115 VAC, BH 3-Pin Connection - Right (NO)
563453	NPT, 115 VAC, BH 3-Pin Connection - Left (NC)
563454	NPT, 24 VDC, BH 3-Pin Connection - Right (NO)
563455	NPT, 24 VDC, BH 3-Pin Connection - Left (NC)
560953	SAE, 115 VAC, BH 3-Pin Connection - Right (NO)
563463	SAE, 115 VAC, BH 3-Pin Connection - Left (NC)
563482	SAE, 24 VDC, BH 3-Pin Connection - Right (NO)
563483	SAE, 24 VDC, BH 3-Pin Connection - Left (NC)

563493	BSPP, 24 VDC, BH 3-Pin Connection - Right (NO)
563494	BSPP, 24 VDC, BH 3-Pin Connection - Left (NC)
557213	Replacement Solenoid - 563452, 563453
557215	Replacement Solenoid - 563454, 563455
557214	Replacement Coil - 563452, 563453
563456	NPT Pneumatic Shunt Inlet
<b>MSP Zero-Leak Shut-Off Inlets</b>	
563457	115 VAC, 12 in. 2-Wire Lead Connection, 1/4-18 NPT Port Thread
563460	115 VAC, BH 3-Pin Connection, 1/4-18 NPT Port Thread
563468	115 VAC, BH 3-Pin Connection, 9/16-18 SAE Port Thread
563464	24 VDC, BH 3-Pin Connection, 1/4-18 NPT Port Thread
563467	24 VDC, BH 3-Pin Connection, 9/16-18 SAE Port Thread
563074	Inlet restrictor
558021	6 ft (3 Pin) Mini-Straight Cable
558799	BSPP (ISO1170) plug
558022	12 ft (3 Pin) Mini-Straight Cable
567251	SAE plug with o-ring
563481	MSP Zero-Leak (w/o Manual Override) Solenoid Valve Section, w/o Coil
557349	NPT plug
557226	Replacement Coil - 563460, 563468
557225	Replacement Coil - 563464, 563467
<b>MSP Repair and Zero-Leak Kits</b>	
563933	Valve Repair Kit - Cartridge w/out Coil, Screws, Seat, Nut Wrench
563461	MSP Zero Leak/Shunt Inlet Mount Kit
<b>MSP Tie Rods and Nut</b>	
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
557738	9-Section Tie Rod
557739	10-Section Tie Rod
557740	11-Section Tie Rod
556371	Tie Rod Nut
<b>Accessories</b>	
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	MSP standard o-ring (BUNA-N), black
557722	MSV high pressure o-ring (90 DURO Fluoroelastomer), green
556371	MSP tie rod nut (3 required per assembly)
557776	MSP indicator port plug
563929	MSP Cycle pin indicator repair kit, o-ring
563928	MSP Cycle pin indicator repair kit, gasket

# Series Progressive

## MSP Modular Zero-Leak Valve

### Features and Benefits

- Enables customized, exact control for each individual zone, prevent over lubrication, reduce plumbing and installation costs
- The base plate/valve block design allows the removal and replacement of the shut-off valve module without disturbing line connections and introducing air or contamination into the system. Zones may be individually controlled and monitored to verify that the system's performance fulfills the system design requirements

### Typical Applications

- Automotive transfer lines, conveyor lines, flexible machining centers and complete plant lubrication systems



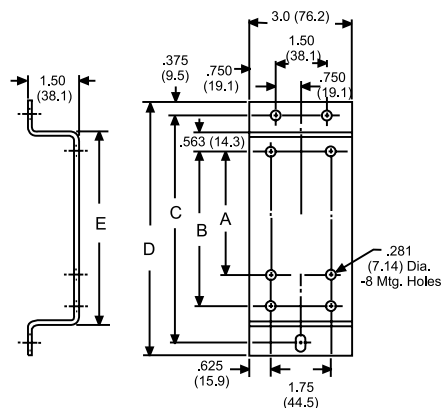
### Typical Fluids Handled

- Oil

### Technical Specifications

Position .....	Normally Closed
Material .....	Plated Steel
Pressure (max) .....	3,000 psi (207 bar)
Operating Temperature .....	-20° F to +130 °F (-29° C to +54° C)
Lubricant .....	Oil, ISO VGA 32-200
Electrical Rating:	
(AC) ... 104-125 VAC at 55-65 Hz, 13w at 115 VAC, 0.130A Holding Current, Continuous Duty Coil, Class H Insulation	
(DC) .....	20-28 VDC, 13w at 24 VDC, Continuous Duty Coil, 0.500A Holding Current, Class H Insulation
Filtration .....	Use in conjunction with Modular 25 Micron Modular Filter Section (563480)
Torque .....	Valve Block Mounting Screw (556514)

Side Mount Hole Configuration

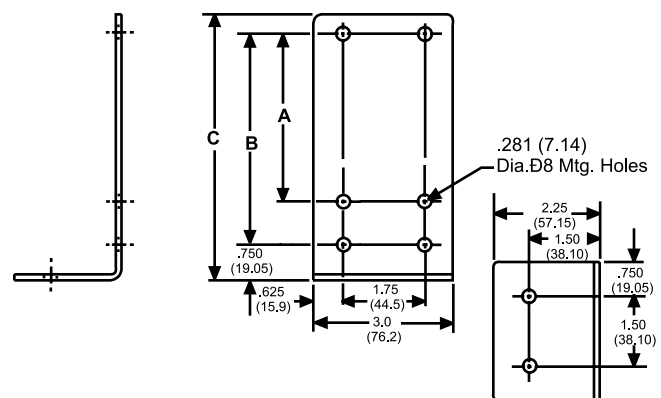


### Ordering Information

MSP Modular Zero-Leak Components	
563479	MSP Zero-Leak Solenoid Valve Base Plate
563481	MSP Zero-Leak (w/o Manual Override) Solenoid Valve Section, w/o Coil
558893	3 Pin Mini Connector Adaptor w/Indicator Light - 120 VAC
557226	Solenoid Coil - 120 VAC (3 Pin Mini)
557225	Solenoid Coil - 24 VDC (3 Pin Mini)
558886	Solenoid Coil - 24 VDC (4 Pin Micro)
558021	Brad Harrison Mating Cable, 6 ft / 183 cm (3 Pin) Mini-Straight
558022	Brad Harrison Mating Cable, 12 ft / 3.65 m (3 Pin) Mini-Straight
563279	"Bottom-Feed" End Section w/ Port Plug
557349	"Bottom-Feed" Port Plug
MSP Modular Filter Section	
563479	MSP Modular Filter Base Plate
563480	MSP Modular Filter Block, 25 microns nominal
Mounting Accessories	
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 Mounting 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 Mounting 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 Mounting 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 Mounting 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 Mounting 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 Mounting 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



# Series Progressive

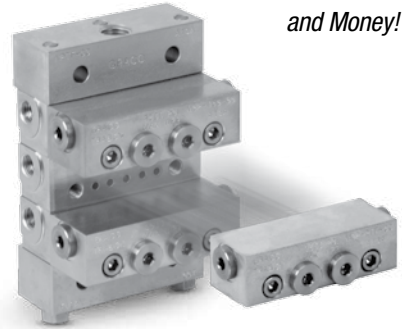
## Trabon® MSP Stainless Steel Divider Valves

### 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 to 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 Working Sections (Must be ordered in multiples of five)	
24B479	MSP-5T-SS
24B474	MSP-5S-SS
562758	MSP-10T-SS
562755	MSP-10S-SS
24B480	MSP-15T-SS
24B475	MSP-15S-SS
562759	MSP-20T-SS
562756	MSP-20S-SS
24B481	MSP-25T-SS
24B476	MSP-25S-SS
24B482	MSP-30T-SS
24B477	MSP-30S-SS
24B483	MSP-35T-SS
24B478	MSP-35S-SS
562760	MSP-40T-SS
562757	MSP-40S-SS

MSP Inlets, Intermediate Base and End Sections (Must be ordered in multiples of five)	
15Y070	MSP Inlet SS, 1/4-18 NPSF
16P368	MSP Inlet SS, 1/4-19 BSPP
24B497	MSP-SS Intermediate Base, 1/8-27 NPSF Ports (NPT)
24N369	MSP-SS Intermediate Base, 1/8-28 BSPP Ports (BSP)
24B498	MSP-SS Standard End

MSP Base Plate Assemblies	
24N382	3 Section Base Plate Assembly SS; NPSF
24N383	4 Section Base Plate Assembly SS; NPSF
24N384	5 Section Base Plate Assembly SS; NPSF
24N385	6 Section Base Plate Assembly SS; NPSF
24N386	7 Section Base Plate Assembly SS; NPSF
24N387	8 Section Base Plate Assembly SS; NPSF
24N388	3 Section Base Plate Assembly SS; BSPP
24N389	4 Section Base Plate Assembly SS; BSPP
24N390	5 Section Base Plate Assembly SS; BSPP
24N391	6 Section Base Plate Assembly SS; BSPP
24N392	7 Section Base Plate Assembly SS; BSPP
24N393	8 Section Base Plate Assembly SS; BSPP

# Series Progressive

## Trabon® MSP Stainless Steel Divider Valves

### Ordering Information

MSP Tie Rods and Nut	
126247	3 Section Tie Rod for MSP-SS
126248	4 Section Tie Rod for MSP-SS
126249	5 Section Tie Rod for MSP-SS
126250	6 Section Tie Rod for MSP-SS
126251	7 Section Tie Rod for MSP-SS
126252	8 Section Tie Rod for MSP-SS
15Y069	9 Section Tie Rod for MSP-SS
560956	10 Section Tie Rod for MSP-SS
558633	Tie Rod Nut-SS
Accessories	
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

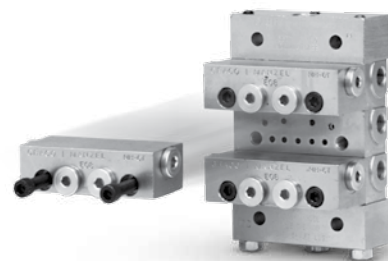
# Series Progressive

## 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



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

### 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, in <sup>3</sup> (cm <sup>3</sup> )	Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> )
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)
MHH18	0.018 (0.295)	0.036 (0.590)
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
562680	MHH-9S
562681	MHH-12S
562682	MHH-18S
562683	MHH-24S
562684	MHH-30S
562685	MHH-6T
562686	MHH-9T
562687	MHH-12T
562688	MHH-18T
562689	MHH-24T
562690	MHH-30T



# Series Progressive

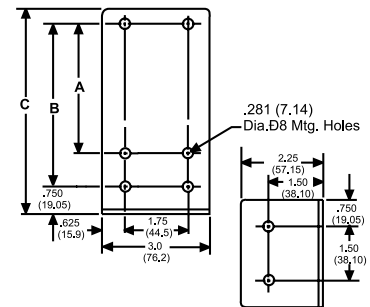
## Manzel® MHH Divider Valves

Series Progressive

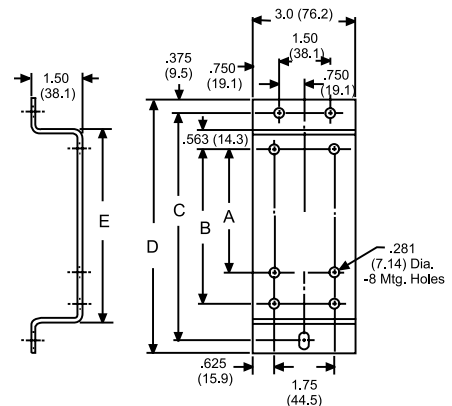
### Ordering Information

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 Mnt. 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 its 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, in <sup>3</sup> (cm <sup>3</sup> )	Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> )	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, 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

<b>MX w/Cycle Pin (Must be ordered in multiples of two)</b>	
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
<b>MX Tie Rods and Nut</b>	
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
<b>MX Inlet and End Sections</b>	
560620	MX Inlet
563287	MX End
<b>Accessories</b>	
562916	Singling Bar
562917	MX Cross Port 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 Cross Ported 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, 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

<b>MXP w/Cycle Pin - Right</b> (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
<b>MXP Inlet, Intermediate Base and End Sections</b> (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/out Outlet Check, 1/4-18 NPSF
563518	End Section
<b>MXP Tie Rods and Nut</b> (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
<b>MXP Accessories</b>	
563524	Cross Port, Left
563525	Cross Port, Right
563526	Cross Port, 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

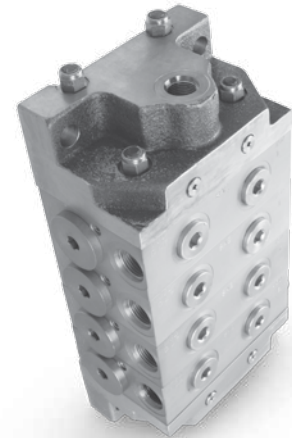
### Technical Specifications

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, 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)

Series Progressive

# 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

A0 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) Dewpoint
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	



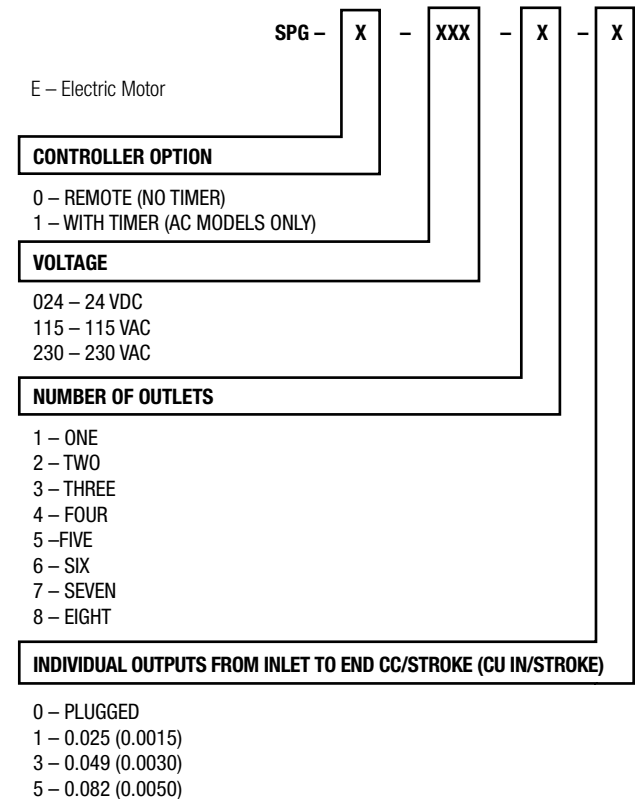
# Air Oil

## 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-1-230-5-5-5-5-5-5
258301	SPG-E-1-115-6-3-3-3-3-3-3
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 w/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



# 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

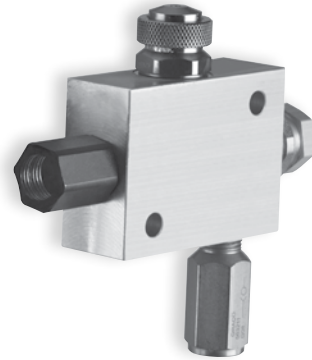
- Oil - minimum of 100 SUS at 100° F
- Grease - NLGI #1 at any temperature, NLGI #2 at 32° F or above

### 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

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### 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 psi (bar)	250 (17)	500 (35)	750 (52)	1000 (69)	1500 (103)	2000 (138)	2500 (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 psi (bar)	750 (52)	1000 (69)	1250 (86)	1500 (103)	2000 (138)	2500 (172)	3000 (207)
MJ	✓	✓		✓	✓		
MSP	✓	✓	✓	✓	✓	✓	✓
MXP	✓	✓	✓	✓	✓	✓	✓
MX		✓		✓	✓	✓	✓



563159

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

### 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, 4000 psi (276 bar)

# 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



563182

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

Rupture to Atmosphere psi (bar)	1,450 (100)	1,750 (121)	2,050 (141)	2,350 (162)	2,950 (203)	3,250 (224)
MJ		✓		✓	✓	✓
MSP		✓		✓	✓	✓
MX	✓	✓	✓	✓	✓	

### 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

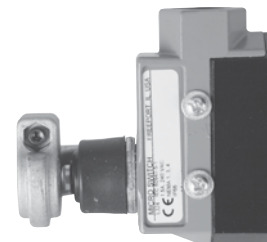
### Cycle Switch

- 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
125/250/480VAC .....	15A
125 VDC .....	1/2A
250 VDC .....	1/4A
24 VDC .....	6A*

\*non-inductive



563272

*Integrates to controllers, starters or PLCs*

### 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

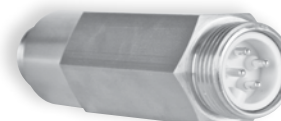


# General Accessories

## 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



557747

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

### 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)



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



24K414

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

### Ordering Information

Pressure Switches	
24K414	Set pressure range 290-580 psi (20-40 bar), reset pressure range 175-5685 psi (12-392 bar), M12 connector (female), 9.6-32 VDC, 1/4 inch (7.6 cm) npt thread (male)

### 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 4700 psi



557829

### 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

### 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 580-5800 psi (40-400 bar)



115124



24N181

# General Accessories

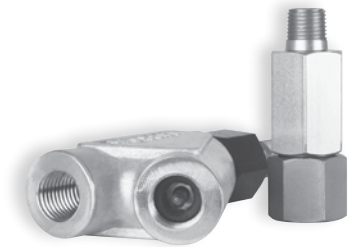
## Broken Line Indicators

### 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

### 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) By-Pass
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

# 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) 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball
563199	15 psi (1.03 bar), 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), Steel Body/Ball
563196	35 psi (2.4 bar), 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball
563200	35 psi (2.4 bar), 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), Steel Body/Ball
563201	60 psi (4.1 bar), 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), Steel Body/Ball
563197	125 psi (8.6 bar), 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball
563198	250 psi (17.2 bar), 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball
563202	250 psi (17.2 bar), 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), Steel Body/Ball
563051	360 psi (24.8 bar), 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/Ball
563206	8-15 psi (.5-1.03 bar), 1/4 inch (6.4 mm) (M) x 1/4 inch (6.4 mm) (F), Steel Body/Ball

563210	10 psi (.69 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), Steel Body/Ball
563207	35 psi (2.4 bar), 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPSF (F), Steel Body/Ball
563211	35 psi (2.4 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), Steel Body/Ball
563208	100 psi (6.9 bar), 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPSF (F), Steel Body/Ball
563209	250 psi (17.2 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPTF (M), Steel Body/Ball
563054	20-50 psi (1.4-3.4 bar), 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
563055	20-50 psi (1.4-3.4 bar), 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
563052	20-50 psi (1.4-3.4 bar), 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
563047	35-50 psi (2.4-3.4 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS Body/NBR Ball
563046	35-60 psi (2.4-4.1 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS Body/FKM Ball
563048	35 psi (2.4 bar), 1/8 inch (3.2 mm) NPSF (F) x 1/8 inch (3.2 mm) NPTF (M), Steel Body/FKM Ball
563049	35 psi (2.4 bar), 1/8 inch (3.2 mm) NPTF (M) x 1/8 inch (3.2 mm) NPSF (F), Steel Body/FKM Ball
Double Ball Check Valves	
563203	60-90 psi (4.1-6.2 bar), Twin Tandem, 1/4 inch (6.4 mm) NPTF (M) x 1/8 inch (3.2 mm) NPTF (M), SS Body/Ball
563205	60-90 psi (4.1-6.2 bar), Twin Tandem, 1/4 inch (6.4 mm) NPTF (M) x 1/4 inch (6.4 mm) NPTF (M), SS Body/Ball
563058	25-45 psi (1.7-3.1 bar), 1/4 inch (6.4 mm) IP (F) x 1/4 inch (6.4 mm) IP (M), Brass Body/Ball
563059	25-45 psi (1.7-3.1 bar), 1/4 inch (6.4 mm) in O.D. Pipe Inlet (F), 1/4 inch (6.4 mm) NPT (M) Outlet, Brass Body/Ball
563061	35-60 psi (2.4-4.1 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS Body/FKM Ball
563060	35-60 psi (2.4-4.1 bar), 1/4 inch (6.4 mm) NPSF (F) x 1/4 inch (6.4 mm) NPSF (F), SS Body/NBR Ball

# General Accessories

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

### Ordering Information

1/8" ID Hoses and Accessories	
16U982	Hose, 1/8" ID, 3000 PSI, 200 Feet, Braided with Polyurethane Cover
16U107	Hose, 1/8" ID, 3000 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, 2750 PSI, 100 Feet, Braided with Polyurethane Cover
16U003	Hose, 1/4" ID, 2750 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, 2500 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, 1350 PSI, 100 Feet
16A171	Tubing, 3/16" OD, Double Tube, 1350 PSI, 100 Feet
16A172	Tubing, 3/16" OD, Triple Tube, 1350 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

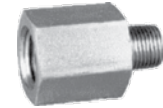
## Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware

### 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

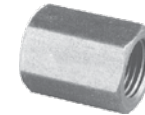
## Installation Accessories – Hose, Tubing, Fittings, and Mounting Hardware

### Ordering Information

Clamps	
127012	3/8" Clamp Dia x 9/32 mounting hole
557944	1/2" Clamp Dia x 9/32 mounting hole
127515	1 1/2" Clamp Dia 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



24N468

### 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

# 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 w/out Enclosure
DC Timer	
557925	DC Timer
557926	DC Timer for Grease Jockey Systems

# 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; 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); 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), AC; 2 amp AGC fuse supplied; Determined by input power supply
Fault Relay .....	2 isolated, non-fused, double-pole, doublethrow 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!
- A full range of options to choose from

### 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 (rubber bag) .....	10 lbs. (4.5 kg)
Reservoir Capacity (rigid clear plastic) .....	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
Lube Cycle Frequency .....	7 Adjustable settings: 1/2 to 6 hours
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)



### Grease Jockey Pump Kits

	Part #	Fill Port	Solenoid	Timer	Wiring Harness	Mounting Plate	Mainline and Hardware	Extra Fittings Kit
<b>Pneumatic</b>								
Pump Only, No Reservoir	563625	Straight						
Pump with 6# Rigid Reservoir	563589	Straight						
Pump with 10# Flexible Reservoir	563570	Straight						
Pump with 12# Rigid Reservoir	563590	Straight						
Pump with 6# Rigid Reservoir	563593	Elbow						
Pump with 10# Flexible Reservoir	563594	Elbow						
Pump with 10# Flexible Reservoir	563886	Elbow	12 VDC					
Pump with 6# Rigid Reservoir	563888	Elbow	12 VDC					
Pump with 10# Flexible Reservoir	563847	Straight	12 VDC	External	Yes	Yes	Yes	Yes
Pump with 6# Rigid Reservoir	563854	Straight	12 VDC	External	Yes	Yes	Yes	Yes
Pump with 12# Rigid Reservoir	563874	Straight	12 VDC	External	Yes	Yes	Yes	Yes
Pump with 10# Flexible Reservoir	563882	Straight	12 VDC	External	Yes	Yes	Yes	Yes

# 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	3	3					2							0	0		
Right Front Kit	5	563860	3	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

	# 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															
Fifth Wheel Kit	6	563653											4				4		4	4			8	8		
Fifth Wheel Kit	6	563659											4					4	4	4					8	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	8
Fifth Wheel Kit	12	563744											4	4	4	4		4	4	4	4		8	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

On-Road Mobile Lubrication Systems

	Reservoir	# 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																					
				0	1	2	3	4	8	0	1	2	3	4	8										
Single Axle Tractor Kit w/ 6#	Rigid	27	563897	3	3	1	0	2				0	0	0				1	0				3		
Single Axle Tractor Kit w/ 6#	Rigid	28	563891	3	3	1	0	2				0	0	0				1	0				3		
Spotter Truck Kit w/ 6#	Rigid	35	563823	3	3	1	0	2	3	3	3				8	8	3	1	1				3		
Tandem Axle Tractor Kit w/ 6#	Rigid	33	563846	3	3	1	0	2	3	3	3	0	0					1	0	1	0				
Tandem Axle Tractor Kit w/ 6#	Rigid	34	563809	3	3	1	0	2	3	3	3							1	0						
Tandem Axle Tractor Kit w/ 6#	Rigid	34	563814	3	3	1	0	2	3	3	3	0	0					1	0	1	0				
Single Axle Tractor Kit w/ 10#	Flex	30	563801	3	3	1	0	2	3	3	3	0	0					1	0						
Single Axle Tractor Kit w/ 10#	Flex	34	563836	3	3	1	0	2	3	3	3							1	0						
Spotter Truck Kit w/10#	Flex	35	563826	3	3	1	0	2	3	3	3				8	8	3	1	1				3		
Tandem Axle Tractor Kit w/ 10#	Flex	24	563839	3	3			2				0	0					1	0	1	0				
Tandem Axle Tractor Kit w/ 10#	Flex	29	563827	3	3	1	0	2				0	0					1	0	1	0				
Tandem Axle Tractor Kit w/ 10#	Flex	34	563802	3	3	1	0	2	3	3	3	0	0					1	0	1	0				
Tandem Axle Tractor Kit w/ 10#	Flex	34	563812	3	3	1	0	2	3	3	3							1	0						
Tandem Axle Tractor Kit w/ 10#	Flex	38	563813	3	3	1	0	2	3	3	3							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	0.020	0.026



# 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	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	
3	3	2	2	1	0	2	3	3	3						1	0						1	1											8	8	8	8	
3	3	2	2	1	0	2	3	3	3						1	0						4	4	4	4	4	4	4	4	4				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			2									1	0	1	0				1	1											8	8	8	8	
3	3	2	2	1	1	2						0			1	0	1	0				1	1											8	8	8	8	
3	3	2	2	1	0	2	3	3	3						1	0	1	0				1	1											8	8	8	8	
3	3	2	2	1	0	2	3	3	3						1	0						4	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				4	4	4	4	4	4	4	4	4				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

## Easy Greaser®

### Features and Benefits

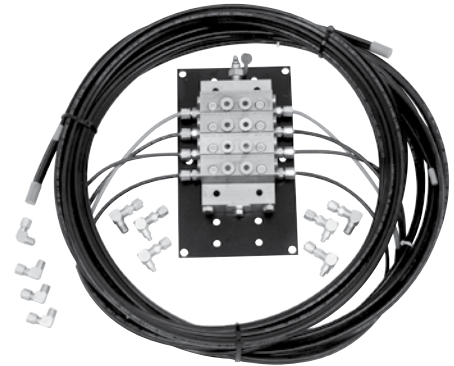
- 11 different kits let you customize your EZ Greaser system
- Once installed, use your manual grease gun to lubricate multiple lube points from one fitting

### Typical Applications

- Truck, tractor and trailer chassis lubrication

### Typical Fluids Handled

- Grease up to NLGI #2



563853

### Technical Specifications

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

### Truck kit Ordering Information

	# 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

	# of Grease Points	Part Number	Slack Adjuster	S-Cam	S-Cam	Slack Adjuster	S-Cam	S-Cam	Slack Adjuster	S-Cam	S-Cam	Slack Adjuster	S-Cam	S-Cam	Slack Adjuster	S-Cam	S-Cam	Bearing	Bearing	Gear Nut	Gear Nut	Crank
			Left Front									Right Front					Left and Right Rear					
			Number of Grease Points																			
EZ Greaser Landing Gear Kit	5	563824																1	1	1	1	1
Single Axle Trailer Kit - EZ Greaser MSP Manual w/ Std Fittings	6	563810	1	1	1	1	1	1														
EZ Greaser Tandem Axle with Enclosed S-Cams	8	563863	1	1		1	1		1	1		1	1	1	1							
EZ Greaser Trailer Tandem Axle Kit w/ Non-enclosed S-Cams	12	563877	1	1	1	1	1	1	1	1	1	1	1	1	1	1						

# On-Road Mobile Lubrication Systems

## Manual Hand 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

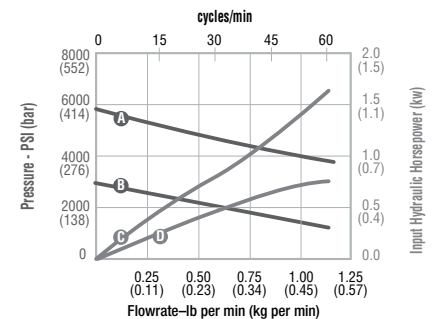
Part Number	247540	247443	247450
Drum Size	60 lb (27 kg)	120 lb (55 kg)	400 lb (180 kg)
Overall Pump Length	33.9 inch (861 mm)	41.5 inch (1054 mm)	48.5 inch (1232 mm)
Pump Lower Length	19.75 inch (501 mm)	26.75 inch (679 mm)	33.75 inch (857 mm)
Maximum Hydraulic Input Pressure	600 psi (41 bar)	600 psi (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



- Ⓐ 600 psi hydraulic inlet pressure
- Ⓑ 300 psi hydraulic inlet pressure
- Ⓒ Hp (600 psi hydraulic input)
- Ⓓ 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 (842mm). 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 (DV) - Overall height 35.15 in (842mm). 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 - DV - 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

# 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

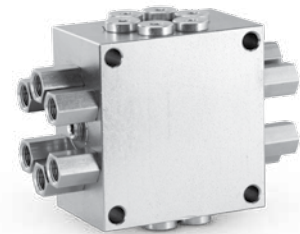
G3 Pump Lubrication Kits		Manual
24R376	Wheel Loader, 8L G3 DMS, USP, 22 point	333502
24R377	Wheel Loader, 8L G3 DMS, USP, 31 point	333503
24R378	Telehandler/Loadall, 4L G3 DMS, USP, 21 point	333504
24R379	Backhoe, 4L G3 DMS, USP, 43 point	333505
24N815	Excavator, 8L G3 DMS, USP, 19 point	333501

### 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® HP and HF 24 VDC

### Features and Benefits

- Mechanical auto fill shut off and remote-mounted fill port ensures clean and efficient refills
- High-quality helical hardened steel gears are lubricated for life and sealed to keep contaminants out for longer lasting performance
- Vent valve mounts directly to pump with no special brackets or hoses for a compact design and less parts to break or wear out
- Entire pump IP69K rated to keep out moisture
- Built-in pressure relief for safety and compact, efficient installations
- 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
- 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	-40° to 149° F (-40° to 65° C)
HP Models	14° to 149° F (-10° to 65° C)
Audible Sound Pressure	
71 dB(A)	

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



77X102



77X001



# Lubrication Systems

## Dyna-Star® 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.....	110-240V AC
Input Frequency.....	50/60 Hz
Output Voltage.....	24V DC
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® 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 Stand Alone Pump with Tube-in-Tube for 35 or 60 pound reservoir
77X002	24 VDC HP Stand Alone Pump Stand Alone Pump with Tube-in-Tube for 90 or 120 pound reservoir
77X003	24 VDC HP Stand Alone Pump 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 Shut Off for 60 pound reservoir
77X103	24 VDC HP Injector Module with Pump, Tube-in-Tube, Vent Valve, Cover, Tank and Auto Fill Shut Off for 90 pound reservoir
77X104	24 VDC HP Injector Module with Pump, Tube-in-Tube, Vent Valve, Follower Plate, Low Level Kit, Cover, Tank for 60 pound reservoir
77X105	24 VDC HP Injector Module with Pump, Tube-in-Tube, Vent Valve, Follower Plate, Low Level Kit, Cover, 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 Shut Off (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 5000 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



77X102



77X524



77X514



77X515



77X500



77X513



77X523



77X542

Lubrication Systems

# 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 inches (mm)	Max Pressure psi (bar)	Drops Per Stroke		Cubic Inches Per Stroke		Cubic cm Per Stroke		Strokes Per 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

#### Reservoir

##### Code Former Codes and Descriptions

- A R1 - 6.25 pt, 4 pump stations max
- B R2 - 9.25 pt, 8 pump stations max
- C R3 - 13 pt, 12 pump stations max
- D R4 - 16 pt, 16 pump stations max
- E R5 - 19.75 pt, 20 pump stations max

**NOTE : Unused pump stations covered with blanking plate(s)**

#### Pump Size

##### Code Former Codes and Descriptions

- A P-1 - 3/16 inch (4.8 mm) Diameter Plunger, 1,000 psi (68.9 bar) max Operating Pressure
- B P-2 - 5/16 inch (7.9 mm) Diameter Plunger, 1,000 psi (68.9 bar) max Operating Pressure

#### Pump Quantity

Code	Qty	Code	Qty	Code	Qty	Code	Qty
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		

#### Drive Options

##### Code Former Codes and Descriptions

- A D1R - Direct Rotary Right Hand Mount
- B D2R - Standard Ratchet (w/out drive arm) - Right Hand Mount
- C D3R - 37.5:1 Ratio - Right Hand Mount
- D D4R - 75:1 Ratio - Right Hand Mount
- E D1L - Direct Rotary Left Hand Mount
- F D2L - Standard Ratchet (w/out drive arm) - Left Hand Mount
- G D3L - 37.5:1 Ratio - Left Hand Mount
- 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-LO
MAAADB	R1-P1-3-D2R-LO
MAAAEB	R1-P1-4-D2R-LO
MAAAEC	R1-P1-4-D3R-LO
MAABBB	R1-P2-1-D2R-LO
MAABBC	R1-P2-1-D3R-LO
MAABBF	R1-P2-1-D2L-LO
MAABBG	R1-P2-1-D3L-LO
MAABDB	R1-P2-3-D2R-LO
MAABDC	R1-P2-3-D3R-LO
MAABEB	R1-P2-4-D2R-LO
MAABEF	R1-P2-4-D2L-LO
MAB - Up to 8 pumps	
MABAAB	R2-P1-0-D2R-LO
MABACH	R2-P1-2-D4L-LO
MABAFC	R2-P1-5-D3R-LO
MABAFG	R2-P1-5-D3L-LO
MABAHC	R2-P1-7-D3R-LO
MABAHG	R2-P1-7-D3L-LO
MABAJA	R2-P1-8-D1R-LO
MABBAC	R2-P2-0-D3R-LO
MABBCC	R2-P2-2-D3L-LO
MABBEC	R2-P2-4-D3R-LO
MABBEE	R2-P2-4-D1L-LO
MABBFF	R2-P2-5-D2L-LO
MABBFG	R2-P2-5-D3L-LO
MABBGA	R2-P2-6-D1R-LO
MABBGB	R2-P2-6-D2R-LO
MABBGC	R2-P2-6-D3R-LO
MABBGF	R2-P2-6-D2L-LO
MABBHC	R2-P2-7-D3R-LO
MABBHG	R2-P2-7-D3L-LO

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

# 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
- Are 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 Contoller "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 Contoller "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 Contoller "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 Contoller "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 9), 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 Contoller "F3",
MBE5CA	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 2), Rens Level Contoller "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) inch 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 Contoller "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

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

Manzel® MBL Box Lubricators	
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
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 Contoller "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 Contoller "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

# Compressor Lubrication

## Manzel® MBL Box Lubricators

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### Ordering Information

Manzel® MBL Box Lubricators	
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® 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

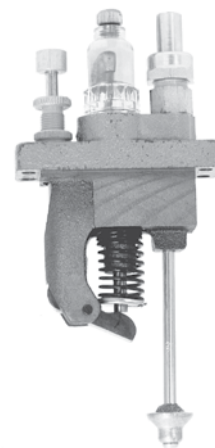
- Compressors and industrial equipment

### 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	24A473	12 station, 16 pt, 37.5:1 - Left Drive
256908	(D2) 9/32 Pressurized Inlet Pump	24A474	12 station, 16 pt, 37.5:1 - Right Drive
256929	Vacuum Inlet Pump w/Suction Tube length reduced by 1 in	24A475	12 station, 16 pt, 75:1 - Left Drive
24A453	3 station, 4 pt, 283:1 - Right Drive	24A476	12 station, 16 pt, 75:1 - Right Drive
24A454	9 station, 12 pt, 283:1 - Right Drive	24A477	3 station, 4 pt, 40:1 - Left Front Drive
24A455	3 station, 4 pt, 1:1 - Left Drive	24A478	3 station, 4 pt, 40:1 - Right Front Drive
24A456	3 station, 4 pt, 1:1 - Right Drive	24A479	3 station, 4 pt, 60:1 - Left Front Drive
24A457	6 station, 4 pt, 1:1 - Left Drive	24A480	3 station, 4 pt, 60:1 - Right Front Drive
24A458	6 station, 8 pt, 1:1 - Right Drive	24A481	3 station, 4 pt, 40:1 - Left Rear Drive
24A459	9 station, 12 pt, 1:1 - Left Drive	24A482	3 station, 4 pt, 40:1 - Right Rear Drive
24A460	9 station, 12 pt, 1:1 - Right Drive	24A483	3 station, 4 pt, 60:1 - Left Rear Drive
24A461	3 station, 4 pt, 37.5:1 - Left Drive	24A484	3 station, 4 pt, 60:1 - Right Rear Drive
24A462	3 station, 4 pt, 37.5:1 - Right Drive	24A485	6 station, 8 pt, 40:1 - Left Front Drive
24A463	3 station, 4 pt, 75:1 - Left Drive	24A486	6 station, 8 pt, 40:1 - Right Front Drive
24A464	3 station, 4 pt, 57:1 - Right Drive	24A487	6 station, 8 pt, 60:1 - Left Front Drive
24A465	6 station, 8 pt, 37.5:1 - Left Drive	24A488	6 station, 8 pt, 60:1 - Right Front Drive
24A466	6 station, 8 pt, 37.5:1 - Right Drive	24A489	6 station, 8 pt, 40:1 - Left Rear Drive
24A467	6 station, 8 pt, 75:1 - Left Drive	24A490	6 station, 8 pt, 40:1 - Right Rear Drive
24A468	6 station, 8 pt, 75:1 - Right Drive	24A491	6 station, 8 pt, 60:1 - Left Rear Drive
24A469	9 station, 12 pt, 37.5:1 - Left Drive	24A492	6 station, 8 pt, 60:1 - Right Rear Drive
24A470	9 station, 12 pt, 37.5:1 - Right Drive	24A493	9 station, 12 pt, 40:1 - Left Front Drive
24A471	9 station, 12 pt, 75:1 - Left Drive	24A494	9 station, 12 pt, 40:1 - Right Front Drive
24A472	9 station, 12 pt, 75:1 - Right 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
256929	DSL, 9/32
256907	DSL, 9/32
256908	DSL, 9/32, w/out Suction



# 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 Without Pumps
562919	HP-15 6 Feed Gear Box With Pumps
564272	HP-15 6 Feed Gear Box With 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 50,000 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	50,000	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 Prox 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 rpm (pump strokes 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 Accessories

## Lube Sentinel II Monitor™

### Features and Benefits

- Same unit is configurable to monitor one or two zones
- Monitors net lube flow to the machine and recognizes both low-lube and high-lube faults
- Displays “per 24 hour lube rates” in pints, gallons, milliliters, liters, ounces and counts
- Displays instantaneous (last cycle) rate, average (last 10 cycles) rate and cumulative lube total - updated with every cycle
- Fault times and rates are automatically recalculated if displayed unit of measure is altered
- Fault times and rates can be automatically proportioned as machine speeds change using a tach pulse sensor (nonprovided)
- Fault enunciation can be delayed to avoid nuisance alarms shutdowns
- Faults can be reset and zones can be bypassed remotely
- Suitable for use in fast cycling applications
- Includes highly reliable electronic circuitry, packaged to resist the influence of electrical noise



562870



563932

### Technical Specifications

Input Power Requirements	
115 VAC .....	100 mA
Fuses FU-1 and FU-2 .....	1/4 x 1 in - 0.5 amp, 250 VAC, medium lag (buss # AGC, or equivalent); 5 x 20 mm - 0.5 amp, 250 VAC, medium lag (buss # GMA, or equivalent); Uses Medium Lag Fuses Only. Do Not Use Fast Acting Fuses
Proximity Switch Pulse Inputs .....	24 VDC/12 mA each
Tach Sensor or Pulse Input .....	24 VDC/12 mA
Zone Bypass and Alarm Inputs .....	24 VDC/12 mA each
Relay Outputs (Zone Fault and Power Failure)	
Rated Load .....	0.5 A @ 125 VAC, 1 A @ 30 VDC
Max Carry Current .....	2A
Max Operating Voltage .....	250 VAC, 220 VDC
Max Switching Capacity .....	62.5 VA, 60W
Min. Permissible Load .....	10 µA, 10 mVDC
Current Consumption .....	70 mA @ 115 VAC, 150 mA @ 24 VDC
RS232 Communications Port Adapter .....	(Inter connection wire supplied by others); Waldom - Molex Housing # 22-01-2067; Waldom - Molex Pins # 08-50-0114
Max Pulse Rate .....	300 per min. (150 divider cpm) @ 50% duty cycle
Max Cycle Time .....	10.9 min.
Ambient/Storage Temperature Range (LCD Limited) .....	-4° F to 158° F (-20° C to 70° C)
Net Weight (approx) .....	JIC - 8.4 lbs; Explosion-Proof - 18.3 lbs

### Ordering Information

Lube Sentinel II Monitor and Accessories	
562870	JIC Enclosure
562871	Hazardous Area Enclosure (Class 1, Groups B-D, Div 1) (Class 2, Groups E-G, Div 1)
563936	Pre-Existing JIC Enclosure
563937	Pre-Existing Enclosure (Class 1, Groups C-D)
558045	SLS Logic Module
558046	SLS Power Module w/I/O
563927	Safety Set Module Kit
563932	Data Wand Only

# 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 .....	.0006 cu.in. to 190 cu.in. per minute @ 100 SUS 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 2,000 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



# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
15K740	58, 93, 95	24A464	127	24D868	48	24E103	51
15K783	58, 93, 95	24A465	127	24D869	48	24E240	60
15K784	93	24A466	127	24D870	48	24E241	60
15M037	93	24A467	127	24D871	48	24E242	60
15M038	57	24A468	127	24D872	48	24E243	60
15M045	93, 95	24A469	127	24D873	48	24E244	60
15M442	110	24A470	127	24D874	48	24E245	60
15R993	76	24A471	127	24D875	48	24E389	60
15R994	76	24A472	127	24D876	48	24E390	60
15U854	81	24A473	127	24D877	48	24E391	60
15U855	81	24A474	127	24D878	48	24E392	60
15U856	81	24A475	127	24D879	48	24E393	60
15U857	78	24A476	127	24D880	48	24E394	60
15U858	27	24A477	127	24D881	48	24E406	63
15U859	27	24A478	127	24D882	48	24E407	63
15U860	27	24A479	127	24D883	48	24E408	63
15X624	54	24A480	127	24D884	48	24E409	63
15X625	55	24A481	127	24D885	48	24E410	63
15X626	55	24A482	127	24D886	48	24E411	63
15X667	54	24A483	127	24E028	50	24E582	51
15X668	54	24A484	127	24E029	50	24E583	51
15X669	54	24A485	127	24E030	50	24E584	51
15X670	54	24A486	127	24E031	50	24E585	51
15X671	54	24A487	127	24E032	50	24E586	51
15X672	54	24A488	127	24E033	50	24E587	51
15X673	54	24A489	127	24E034	50	24E588	51
15X674	54	24A490	127	24E035	50	24E589	51
15X675	55	24A491	127	24E036	50	24E590	51
15X676	55	24A492	127	24E037	50	24E591	51
15X677	55	24A493	127	24E038	50	24E592	51
15X678	55	24A494	127	24E039	50	24E593	51
15X679	55	24A495	127	24E040	50	24E594	51
15X680	55	24A496	128	24E041	50	24E595	51
15X681	55	24A497	128	24E042	50	24E596	51
15X682	55	24A498	128	24E043	50	24E597	51
15X683	54	24A499	128	24E044	50	24E598	51
15X684	54	24A501	128	24E045	50	24E599	51
15X685	54	24A502	128	24E046	50	24E600	51
15X686	54	24A503	128	24E047	50	24E601	51
15X687	54	24A504	128	24E048	50	24E602	51
15X688	54	24A505	128	24E049	50	24E603	51
15X689	54	24A506	128	24E050	50	24E604	51
15X690	54	24A507	128	24E051	50	24E605	51
15X691	55	24A509	128	24E054	50	24E857	63
15X692	55	24A918	62, 110	24E055	50	24F201	60
15X693	55	24A919	59, 60	24E056	50	24F467	63
15X694	55	24A920	59, 60	24E057	50	24F596	72
15X695	55	24A921	59	24E058	50	24F597	72
15X696	55	24A922	59	24E059	50	24F598	72
15X697	55	24A923	59	24E060	50	24F599	72
15X698	55	24A924	59	24E061	50	24F600	72
15X699	55	24B219	81	24E062	50	24F601	72
15X700	55	24B237	79	24E063	50	24F943	60
15X701	55	24B239	79	24E064	50	24F944	60
15X702	55	24B240	79	24E065	50	24G485	67
15X703	55	24B241	79	24E066	50	24G486	67
15X704	55	24B359	62	24E067	50	24G487	67
15X705	55	24B360	59	24E068	50	24G488	67
15X706	55	24B427	17, 26	24E069	50	24G489	67
15Y069	70	24B474	69	24E070	50	24G490	67
15Y070	69	24B475	69	24E071	50	24J331	63
16A169	95	24B476	69	24E072	50	24J332	63
16A171	95	24B477	69	24E073	50	24J333	63
16A172	95	24B478	69	24E074	50	24J334	63
16P368	69	24B479	69	24E075	50	24J335	63
16T671	98	24B480	69	24E076	50	24J336	63
16U003	95	24B481	69	24E077	50	24J391	126
16U105	95	24B482	69	24E080	51	24J392	126
16U107	95	24B483	69	24E081	51	24J393	126
16U310	95	24B495	70	24E082	51	24J394	126
16U586	95	24B496	70	24E083	51	24J395	126
16U587	95	24B497	69	24E084	51	24J396	126
16U982	95	24B498	69	24E085	51	24J397	126
16U983	95	24B591	99, 110	24E086	51	24J398	126
16V941	114	24B596	99	24E087	51	24J399	126
16V942	114	24B667	60	24E088	51	24J949	48
16W144	114	24B677	59	24E089	51	24J950	48
17D023	96	24D855	48	24E090	51	24J951	48
17D024	96	24D856	48	24E091	51	24J952	48
24A453	127	24D857	48	24E092	51	24J953	48
24A454	127	24D858	48	24E093	51	24J954	48
24A455	127	24D859	48	24E094	51	24J955	48
24A456	127	24D860	48	24E095	51	24J956	48
24A457	127	24D861	48	24E096	51	24J957	48
24A458	127	24D862	48	24E097	51	24J958	48
24A459	127	24D863	48	24E098	51	24J959	48
24A460	127	24D864	48	24E099	51	24J960	48
24A461	127	24D865	48	24E100	51	24J961	48
24A462	127	24D866	48	24E101	51	24J962	48
24A463	127	24D867	48	24E102	51	24J963	48

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
24J964	48	24V837	16	94G052	10	96G079	14
24J965	48	24W981	98	94G053	10	96G080	14
24J966	48	77X000	114	94G054	9	96G081	14
24J967	48	77X001	112, 114	94G055	10	96G082	13
24J968	48	77X002	114	94G056	10	96G088	14
24J969	48	77X003	114	94G057	10	96G089	15
24J970	48	77X011	114	94G058	10	96G090	14
24J971	48	77X012	114	94G059	10	96G092	14
24J972	48	77X013	114	94G060	10	96G093	15
24J973	48	77X014	114	94G061	10	96G094	14
24J974	48	77X015	114	94G062	10	96G096	14
24J975	48	77X016	114	94G063	8	96G097	15
24J976	48	77X100	114	94G064	8	96G098	15
24J977	48	77X101	114	94G065	8	96G099	15
24J978	48	77X102	113, 114	94G066	8	96G100	15
24J979	48	77X103	114	94G067	8	96G103	14
24J980	48	77X104	114	94G068	8	96G104	15
24J981	48	77X105	114	94G069	8	96G105	15
24J982	48	77X111	114	94G070	8	96G106	15
24J983	48	77X112	114	94G071	8	96G107	15
24J984	48	77X121	114	94G072	9	96G108	15
24J985	48	77X122	114	94G073	9	96G109	15
24J986	48	77X500	114	94G074	9	96G110	15
24J987	48	77X510	114	94G075	9	96G111	15
24J988	48	77X511	114	94G076	9	96G112	15
24K414	16, 90	77X512	114	94G077	9	96G113	14
24K415	16, 83, 89	77X513	114	96G000	12	96G115	15
24K466	126	77X514	114	96G001	12	96G116	15
24K466	126	77X515	114	96G002	12	96G118	14
24M466	16	77X521	114	96G003	12	96G119	15
24M480	17	77X522	114	96G005	12	96G120	15
24M644	96	77X523	114	96G006	12	96G121	15
24M684	48	77X524	114	96G007	12	96G122	15
24M685	48	77X540	114	96G008	12	96G123	15
24M686	48	77X541	114	96G011	13	96G124	15
24M687	48	77X542	114	96G012	13	96G125	15
24M688	48	77X543	114	96G013	13	96G126	15
24M689	48	77X544	114	96G014	13	96G127	15
24M690	48	94G000	9	96G017	14	96G132	15
24M691	48	94G001	10	96G018	14	96G133	15
24N007	63	94G002	10	96G019	14	96G135	13
24N008	63	94G003	9	96G020	14	96G136	13
24N009	63	94G004	10	96G021	14	96G137	13
24N181	90, 114	94G005	10	96G023	14	96G138	13
24N351	17	94G006	8	96G024	14	96G139	13
24N369	69	94G007	8	96G025	14	96G140	13
24N373	70	94G008	8	96G026	14	96G141	14
24N382	69	94G009	8	96G027	13	96G142	15
24N383	69	94G010	8	96G028	13	96G143	14
24N384	69	94G011	8	96G029	13	96G144	15
24N385	69	94G012	9	96G030	14	96G145	14
24N386	69	94G013	10	96G031	14	96G146	15
24N387	69	94G014	10	96G032	14	96G147	13
24N388	69	94G015	9	96G033	13	96G148	13
24N389	69	94G016	10	96G034	13	96G149	13
24N390	69	94G017	10	96G035	14	96G150	13
24N391	69	94G018	8	96G036	14	96G151	14
24N392	69	94G019	8	96G037	14	96G152	15
24N393	69	94G020	8	96G038	12	96G153	15
24N402	17	94G021	8	96G039	12	96G154	15
24N405	25	94G022	8	96G040	12	96G155	14
24N406	25	94G023	8	96G041	12	96G156	15
24N407	25	94G024	9	96G042	12	96G157	15
24N408	25	94G025	10	96G043	12	96G158	15
24N409	25	94G026	10	96G044	12	96G159	14
24N468	98	94G027	9	96G045	12	96G160	14
24N815	111	94G028	10	96G048	12	96G161	15
24N945	70	94G029	10	96G049	12	96G162	15
24N948	70	94G030	10	96G050	12	96G163	13
24N949	70	94G031	10	96G051	12	96G164	15
24N951	70	94G032	10	96G052	12	96G165	15
24N952	70	94G033	10	96G053	12	96G166	15
24P295	16	94G034	10	96G055	12	96G167	13
24P296	16	94G035	10	96G056	12	96G168	15
24P314	98	94G036	8	96G057	12	96G169	15
24P686	98	94G037	8	96G058	12	96G174	15
24P687	98	94G038	8	96G059	12	96G175	15
24P731	17	94G039	8	96G060	12	96G176	15
24P976	83	94G040	8	96G061	12	96G178	14
24P977	83	94G041	8	96G062	12	96G182	12
24P978	83	94G042	9	96G068	13	96G183	14
24R377	111	94G043	9	96G069	13	96G184	12
24R378	111	94G044	9	96G070	14	96G187	12
24R379	111	94G045	9	96G071	14	96G188	15
24R631	70	94G046	9	96G072	14	96G189	12
24R632	70	94G047	9	96G073	13	96G192	12
24R633	70	94G048	9	96G075	13	96G195	15
24T296	83	94G049	10	96G076	13	100054	96
24V204	81	94G050	10	96G077	13	100206	96
24V531	81	94G051	9	96G078	13	100848	96

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
100854	96	122594	28	124110	52	256907	127, 128
110712	96	122595	28	124111	52	256908	127, 128
111697	97	122596	28	124112	52	256929	127, 128
113093	97	122597	28	124113	52	258248	103
114901	61, 110	122598	28	124114	52	258262	130
114902	61, 110	122789	56	124115	52	258263	130
114903	61, 110	122790	56	124116	52	258301	81
114904	61, 110	122791	56	124119	52	258347	81
114905	61, 110	122792	56	124279	52	312349	110
114909	61, 110	122793	56	124300	16	313855	99
114911	61	122794	56	124301	16	553322	20
114912	61	122795	56	124304	52	555406	76
114913	61	122796	56	124333	16, 89	555453	96
114914	61	122797	56	124594	16	555457	70
114915	61	122798	56	124595	16	555726	93, 95
114916	62	122799	56	124640	16	555727	93
115119	61	122800	56	125011	63	555741	115
115120	61	122801	56	126005	16	555742	115
115122	16, 85	122804	54	126217	9, 10	555743	115
115124	90, 110, 114	122805	54	126218	10	555749	93, 96
121474	16	122806	54	126219	10	555808	57
121654	54	122807	54	126220	10	556011	26
121655	54	122808	54	126247	70	556012	26
121656	54	122809	54	126248	70	556013	26
121657	54	122810	54	126249	70	556014	26
121658	55	122811	54	126250	70	556015	26
121659	55	122812	54	126251	70	556016	26
121660	55	122813	55	126252	70	556018	26, 37
121661	55	122814	55	126331	16	556019	26, 37
121662	55	122815	55	127012	97	556023	101
121663	55	122816	55	127013	95	556024	101
121664	55	122817	55	127123	17	556025	101
121665	55	122818	55	127145	97	556026	126
121666	55	122819	55	127512	96	556371	65, 67, 72
121667	55	122820	55	127513	96	556402	93, 96
121668	55	122821	55	127514	96	556403	93, 96
121669	55	122822	55	127515	97	556404	96
121670	55	122823	55	127516	95	556407	93, 97
121671	55	122824	55	127551	95	556408	96
121672	55	122825	55	127552	95	556416	96
122276	72	122826	55	127553	95	556419	97
122545	27	122827	55	127554	95	556420	93, 97
122546	27	122841	56	127555	95	556424	78
122547	27	122861	56	127722	95	556448	93
122548	27	122862	56	127723	95	556540	64, 67, 72
122549	27	122863	56	127724	95	556572	76
122550	27	122864	56	127725	95	556586	57
122551	27	122865	56	128006	95	556587	57
122552	27	122866	56	150287	96	556624	134
122553	27	122868	56	156022	96	556632	93
122554	27	122869	56	156296	96	556633	93
122555	27	122885	56	156580	96	556634	93, 95
122556	27	122886	56	156849	96	556635	93
122557	27	122887	56	158683	95	556636	58, 93
122558	27	122888	56	159842	96	556637	58, 93
122559	27	122889	56	162024	97	556638	58, 93
122560	27	122890	56	165198	96	556639	58, 93
122561	27	122891	56	200389	39	556640	58, 93
122562	27	122895	27, 28	224751	110	556642	58, 93
122563	27	122896	28	239887	110	556643	58, 93
122564	27	122897	28	241485	110	556644	58, 93
122565	27	122898	28	241486	110	556645	58, 93
122566	27	122899	28	241572	110	556646	58, 93
122567	27	122989	56	241573	110	556647	58, 93
122568	27	122990	56	243159	110	556648	58, 93
122569	27	123358	9, 10, 17	243170	110	556649	93
122570	27	123949	52	243191	110	556650	93
122571	27	123950	52	243501	110	556651	58
122572	27	123951	52	244023	110	556652	93
122573	27	124086	52	247443	109, 110	556653	93
122574	27	124087	52	247444	110	556654	58
122575	27	124088	52	247450	109, 110	556656	93
122576	27	124089	52	247456	110	556660	58, 93
122577	27	124090	52	247457	110	556661	93
122578	27	124091	52	247538	110	556662	93
122579	27	124092	52	247540	109, 110	556664	95
122580	27	124094	52	247574	110	556666	58, 93
122581	28	124095	52	247575	110	556670	93
122582	28	124096	52	247700	110	556677	53
122583	28	124097	52	247701	114	556687	115
122584	28	124098	52	247702	114	556688	115
122585	28	124099	52	247703	110	556689	115
122586	28	124100	52	247704	110	556690	115
122587	28	124101	52	247705	110	556691	115
122588	28	124102	52	247706	110	556692	115
122589	28	124105	52	247707	110	556693	115
122590	28	124106	52	247886	16, 108	556694	115
122591	28	124107	52	247902	110	556700	129
122592	28	124108	52	247970	110	556721	115
122593	28	124109	52	256778	18	556722	115



# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
556723	115	557807	92	558881	130	562514	73
556724	115	557810	23	558886	68	562515	73
556725	115	557811	92	558893	68	562516	73
556762	93, 96	557813	25	558895	25	562517	73
556763	93, 95	557814	25	558899	30	562518	74
556764	93, 95	557815	25	558906	58	562519	74
556773	93, 95	557816	25	558910	96	562520	74
556812	134	557817	25	558933	89	562521	74
556939	134	557818	25	558938	89	562522	74
556944	134	557819	25	558947	90	562523	74
557132	92	557820	25	558948	94	562524	74
557134	81	557821	23	558949	25	562525	74
557153	92	557822	23	558950	25	562526	74
557154	92	557824	131	558951	25	562527	74
557213	67	557825	23, 33	558953	25	562528	74
557214	67	557826	29, 30, 35	558954	25	562529	74
557215	67	557827	131	558955	25	562530	74
557225	67, 68	557828	90	558959	39	562531	74
557226	67, 68	557829	16, 33, 90	560477	81	562532	74
557270	19, 20, 21, 22, 31, 44	557830	90	560478	81	562533	74
557271	19, 20, 21, 22, 31, 44	557864	40, 41, 94	560528	93, 97	562534	74
557272	19, 20, 21, 22, 44	557866	94	560530	93, 95	562535	74
557273	19, 20, 21, 22, 44	557877	58	560532	93, 95	562536	74
557278	94	557880	58	560533	93, 95	562538	73
557285	18	557898	57	560534	93, 95	562539	73
557286	23	557901	57	560535	96	562540	73
557287	18	557925	38, 100	560537	96	562541	73
557293	23	557941	108	560540	96	562542	73
557323	74	557943	58	560541	96	562543	73
557349	67, 68, 72, 97	557944	58, 95, 97	560542	96	562545	73
557352	16, 31, 94	557945	58	560543	96	562546	73
557359	65	557946	58	560576	74	562547	128
557374	58	557947	58	560577	74	562548	128
557376	31	557950	93, 97	560591	78	562549	128
557391	74	557954	93	560592	78	562550	128
557392	93, 96	557955	93	560593	78	562551	128
557393	93, 96	557963	58	560594	78	562552	128
557395	58, 93, 95	557968	93	560595	78	562553	128
557422	86	557969	96	560596	78	562554	128
557423	86	557997	25	560597	78	562555	128
557488	74	557998	25	560598	78	562561	128
557489	74	558018	89	560600	78	562562	128
557490	74	558021	67, 68, 89	560601	78	562563	128
557491	74	558022	67, 68, 89	560602	78	562564	128
557492	74	558023	89	560603	78	562565	128
557493	74	558024	89	560604	78	562566	128
557494	74, 78	558025	89	560605	78	562567	128
557503	65	558026	89	560606	78	562569	74
557509	74	558031	29, 30, 100	560620	74	562570	77
557514	65	558045	133	560643	65	562571	77
557515	65	558046	133	560645	65	562572	77
557516	65	558156	53	560649	65	562573	77
557517	65	558157	53	560919	67, 72	562574	77
557518	65	558158	53	560920	68, 72	562575	77
557519	65	558159	53	560936	67, 72	562576	77
557520	65	558189	53	560943	67, 72	562577	77
557546	88	558220	53	560953	67	562578	78
557547	28	558296	29, 53	560956	70	562579	78
557559	94	558297	94	560973	70	562580	78
557641	29, 30	558298	94	560974	70	562581	78
557700	92	558306	54	560976	67, 72	562582	78
557701	92	558307	54	561029	76	562583	78
557713	21, 94	558308	54	561031	81	562584	78
557722	67	558309	54	561032	81	562585	78
557731	67, 72	558310	54	561101	65	562627	127
557732	67, 72	558311	56	561102	74, 76	562629	127
557733	67, 72	558312	56	561113	58	562653	64
557734	67, 72	558313	56	561114	58	562654	64
557735	67, 72	558314	56	561131	58	562655	64
557736	67, 72	558315	56	561132	58	562656	64
557741	89	558316	56	561143	53	562657	64
557745	89	558317	56	561215	53	562658	64
557746	89	558318	56	561216	53	562659	64
557747	89	558319	56	561217	53	562660	66
557752	89	558320	56	561218	53	562679	71
557766	76	558321	56	561219	53	562680	71
557767	76	558322	56	561220	53	562681	71
557768	76	558323	56	561430	96	562682	71
557769	76	558324	56	562500	65	562683	71
557770	76	558325	56	562501	65	562684	71
557771	76	558326	56	562502	65	562685	71
557772	76	558327	56	562503	65	562686	71
557773	76	558328	56	562504	65	562687	71
557774	76	558329	56	562505	65	562688	71
557776	67, 72, 76	558330	56	562508	65	562689	71
557779	92	558331	56	562509	65	562690	71
557781	33, 35, 88	558332	56	562510	65	562711	66
557803	92	558633	70	562511	65	562712	66
557804	92	558795	97	562512	65	562713	66
557806	92	558799	67, 72	562513	65	562714	66

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
562715	66	562884	33, 35, 41	563128	81	563252	84
562716	66	562885	33, 35, 41	563129	81	563253	84
562717	66	562886	33, 35	563130	81	563254	84
562718	66	562887	33, 35	563131	81	563255	84
562720	66	562888	33, 35	563132	81	563256	84
562721	66	562889	32, 34, 41	563137	18	563257	84
562722	66	562890	32, 34, 41	563145	92	563258	84
562723	66	562891	32, 34	563146	93	563260	88
562724	66	562892	19, 21, 22, 38, 44	563147	93	563269	88
562725	66	562893	19, 21, 22, 38, 44	563148	93	563270	64, 88
562726	66	562894	21, 22, 44	563150	93	563271	64, 88
562727	66	562895	19, 21, 22, 43, 44	563154	93	563272	65, 88
562729	66	562896	19, 20, 21, 22, 38, 43, 44	563156	16, 85	563273	65, 88
562730	66	562897	20, 21, 22, 38, 43, 44	563157	16, 85	563275	82
562731	66	562898	20, 21, 22, 43, 44	563158	16, 85	563276	82
562732	66	562899	20, 21, 22, 43, 44	563159	16, 85	563277	78
562733	66	562904	32, 34, 41	563160	16, 40, 85	563278	78
562734	67	562905	33, 35, 41	563161	16, 85	563279	67, 88
562735	67	562906	33, 35	563162	29, 53, 85	563280	67
562736	67	562907	38	563164	85	563287	74
562737	67	562908	20, 21, 22, 44	563165	85	563301	28
562738	67	562910	33, 35	563166	85	563304	32
562739	66	562911	33	563167	85	563305	46
562740	66	562914	65	563168	85	563306	32
562741	66	562915	65	563169	85	563307	46
562742	66	562916	74	563170	85	563308	32
562743	66	562917	74	563171	85	563315	33, 35, 38
562744	67	562918	129	563172	85	563316	21, 22, 33, 35, 38, 44
562745	67	562919	129	563173	85	563317	19, 21, 22, 33, 35, 38, 44
562746	67	562925	130	563174	85	563318	33, 38
562747	67	562926	130	563175	85	563319	32, 34
562748	67	562927	130	563176	85	563320	32, 34
562755	69	562928	130	563178	93, 96	563321	32, 34
562756	69	562929	130	563179	21, 22, 44, 87	563322	19, 20, 21, 22, 33, 35, 38, 43, 44
562757	69	562949	115	563182	87	563323	18, 32
562758	69	562950	115	563183	87	563324	18, 32
562759	69	562951	129	563184	21, 22, 44, 87	563325	33
562760	69	562952	130	563185	87	563326	33
562813	75	562988	115	563186	87	563327	33
562814	75	562994	81	563187	87	563329	32
562815	75	562995	93	563188	87	563330	18, 32
562816	75	563014	24, 33, 38	563191	87	563331	18, 32
562817	75	563015	21, 22, 33, 35, 38, 44	563192	87	563332	33, 35, 38
562818	75	563016	21, 22, 33, 35, 38, 44	563193	87	563337	32
562819	75	563020	130	563194	87	563339	33
562820	75	563024	130	563195	94	563340	33
562821	75	563030	134	563196	94	563341	33
562822	75	563031	134	563197	94	563345	46
562823	75	563032	134	563198	94	563346	18
562824	75	563033	134	563199	94	563355	18, 32
562825	76	563041	134	563200	94	563356	18, 111
562826	76	563042	134	563201	94	563358	34
562827	76	563043	134	563202	94	563359	34
562828	76	563044	134	563203	94	563361	34
562829	76	563046	94	563205	94	563362	34
562830	76	563047	94	563206	94	563363	34
562831	76	563048	81, 94	563207	94	563364	34
562832	76	563049	81, 94	563208	94	563365	34
562833	76	563051	94	563209	94	563367	34
562834	76	563052	94	563210	94	563374	30
562835	75	563054	94	563211	94	563375	30, 94
562837	17, 26	563055	94	563212	93	563376	30
562838	26	563058	94	563213	93	563378	35
562839	26	563060	94	563214	93	563379	30
562840	26	563061	94	563215	93	563380	21, 44
562841	26	563068	91	563221	86	563383	20, 21, 22, 43, 44
562842	26	563069	91	563222	86	563384	21, 22, 44
562843	26	563070	91	563223	86	563385	21, 22, 44
562844	26	563072	36	563224	86	563386	19, 20, 21, 22, 44
562845	37	563073	92	563225	86	563387	19, 20, 21, 22, 44
562846	37	563074	67, 92	563226	86	563388	19, 20, 21, 22, 44
562847	17, 26	563075	91	563228	86	563389	19, 20, 21, 22, 44
562849	26	563076	91	563229	86	563393	40
562850	17, 26	563077	91	563230	136	563402	31
562851	17, 26	563078	91	563231	84	563404	31
562852	17, 26	563079	91	563232	84	563406	31
562854	36	563080	91	563233	84	563421	67, 72
562855	36	563091	81, 92	563234	84	563422	67, 72
562857	39	563092	92	563235	84	563424	67, 72
562858	45	563093	84	563236	84	563425	67, 72
562860	45	563094	92	563237	84	563427	89
562861	45	563095	92	563239	84	563435	68, 72
562863	31	563096	92	563240	84	563436	68, 72
562870	133	563097	92	563241	84	563437	68, 72
562871	133	563100	92	563242	84	563438	68, 72
562872	38, 100	563102	92	563243	84	563439	68, 72
562880	92	563103	92	563244	84	563440	68, 72
562881	92	563111	130	563245	84	563444	67, 72
562882	92	563113	129	563250	88	563447	67
562883	92	563127	81	563251	67, 72, 88	563448	67

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
563451	67	563637	57	563920	131	564227	128
563452	67	563638	57	563921	21	564229	128
563453	67	563644	103	563922	31	564244	127
563454	67	563645	103	563926	78	564259	31
563455	67	563646	103	563927	133	564260	31
563456	67	563647	103	563928	67, 72	564261	31
563457	67	563652	103	563929	67, 72	564262	31
563460	67	563653	103	563930	30	564264	33, 35
563461	67	563659	103	563932	133	564267	33
563463	67	563706	103	563933	67	564268	33
563464	67	563715	103	563936	133	564272	129
563465	67, 72	563716	103	563937	133	564276	130
563467	67	563717	103	563938	21	564277	130
563468	67	563727	103	563939	115	564278	130
563469	67, 72	563728	103	563940	81	564279	130
563470	67, 72	563737	103	563941	81	564280	130
563471	67, 72	563738	103	563942	81	564282	130
563472	67, 72	563743	103	563945	35	564283	130
563476	89	563744	103	563948	65	564317	115
563477	89	563748	103	563952	87	564322	33
563478	89	563759	93	563954	87	564334	129
563479	67, 68	563762	38	563955	87	564336	130
563480	67, 68, 92	563769	57	563956	87	564337	81
563481	67, 68	563770	58	563957	87	564343	92
563482	67	563776	93	563959	87	564348	81
563483	67	563777	93	563960	87	564350	93
563484	89	563801	104	563961	87	564352	93
563485	16, 89	563802	104	563962	21, 87	564355	86
563486	89	563809	104	563963	87	564356	64, 88
563489	81	563810	107	563964	87	564357	88
563493	67	563812	104	563965	21, 87	564365	40
563494	67	563813	104	563966	87	564375	34
563495	83, 89	563814	104	563969	89	564376	30
563501	16, 89	563823	104	563970	89	564377	21
563502	135	563824	107	564003	92	564378	40
563503	135	563826	104	564004	92	564379	40
563504	135	563827	104	564005	92	564381	40
563505	135	563829	106	564006	92	564383	40
563506	135	563836	104	564007	92	564384	40
563507	92	563839	104	564008	92	564385	40
563508	92	563840	106	564009	92	564386	40
563509	92	563842	106	564010	92	564387	40
563510	92	563846	104	564012	42	564389	40
563511	92	563847	102	564019	53	564390	31
563512	92	563848	106	564020	53	564391	31
563513	92	563849	106	564021	53	564392	31
563514	92	563850	106	564022	53	564399	89
563515	92	563851	106	564023	53	564400	89
563516	92	563852	106	564024	53	564401	89
563518	76	563853	107	564025	53	564402	89
563519	76	563854	102	564026	53	564403	89
563520	76	563855	107	564027	53	564406	92
563521	76	563858	103	564028	53	564411	25
563522	76	563859	103	564029	53	564412	23
563524	76	563860	103	564030	53	564413	23
563525	76	563863	107	564031	53	564414	23
563526	76	563864	107	564032	53	564415	23
563527	76	563865	106	564033	53	564419	41
563555	64	563866	106	564034	53	564420	41
563557	25	563874	102	564035	53	564421	41
563558	23	563877	107	564036	53	564422	41
563565	131	563878	106	564038	53	564423	41
563566	131	563880	106	564039	53	564439	29
563570	102	563881	106	564040	53	564443	81
563571	38	563882	102	564041	53	564444	81
563572	38	563884	106	564042	53	564445	81
563573	38	563886	102	564043	53	567251	67, 72
563574	38	563888	102	564044	53	567270	20
563575	38	563891	104	564045	53	567272	19
563576	38	563893	107	564046	53	568906	40
563577	38	563895	107	564047	53	571026	16
563578	38	563896	107	564053	53, 92	571028	16
563579	38	563897	104	564059	87	571030	16
563580	41	563898	20	564065	29	571031	16
563589	102	563900	45	564067	29	571032	16
563590	102	563901	45	564068	29	571033	16
563593	102	563902	32	564138	27	571036	16
563594	102	563903	32	564200	84	571041	16
563625	102	563904	32	564205	65	571058	16
563627	57	563909	35	564210	128	571063	16
563628	57	563911	136	564211	128	571064	16
563629	57	563912	36	564212	128	571070	16
563630	57	563913	36	564213	128	571162	16
563631	57	563914	101	564214	128	966171	12
563632	57	563915	21	564219	128	966172	12
563633	57	563916	21	564222	128	BN1KM	123
563634	57	563917	74, 76	564223	128	LM2323	19
563635	57	563918	131	564225	128	LM2533	19
563636	57	563919	131	564226	128	LM3131	19

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
LM4211	43	MBA1BA	118	MBD5GE	120	MBM2FN	123
LM4451	19	MBA1CB	118	MBD7HN	120	MBM2GM	123
LM4523	19	MBA1CF	118	MBE0AA	120	MBM2GN	123
LM4533	19	MBA1CM	118	MBE0AC	120	MBM2JL	123
LM5111	19	MBA2BF	118	MBE0AE	120	MBM3FL	123
LM5114	19	MBA2BR	118	MBE0AG	120	MBM4EM	123
LM5211	43	MBA2CE	118	MBE0AH	120	MBN1BM	123
LM5214	43	MBA2CR	118	MBE1FJ	120	MBN1JM	123
LM5311	19	MBA3CD	118	MBE1HN	120	MBN1LN	123
LM5331	19	MBB0AA	118	MBE1JA	120	MBN1MN	123
LM5514	19	MBB0AB	118	MBE1JE	120	MBN1NK	123
LM5521	19	MBB0AC	118	MBE1JM	120	MBN2JK	123
LM5544	19	MBB0AG	118	MBE1KM	120	MBN2MN	123
LM5644	19	MBB0AH	118	MBE1MC	120	MBN3DN	123
LM6214	43	MBB0AM	118	MBE1ME	120	MBN3NK	123
LM6311	20	MBB0AN	118	MBE1NG	120	MBP0AW	123
LM6314	20	MBB1CM	118	MBE1NR	120	MBP1RU	123
LM6334	20	MBB1CZ	118	MBE2ER	120	MBP1SU	123
LM6344	20	MBB1DA	118	MBE2JM	120	MBP2NW	123
LM6514	20	MBB1DM	118	MBE2KA	121	MBP2NY	123
LM6524	20	MBB2BB	118	MBE2KG	121	MBR0AY	123
LM6534	20	MBB2CA	118	MBE2KL	121	MBR1UY	123
LM6544	20	MBB2CB	118	MBE2KN	121	MBR1VU	123
LM7211	43	MBB2CD	118	MBE2KZ	121	MBR1WU	123
LM7214	20	MBB2CE	119	MBE2LA	121	MBR7VY	123
LM7344	20	MBB2CM	119	MBE2LL	121	MBS0AU	123
LM7514	20	MBB2CN	119	MBE2NA	121	MBS0AX	124
LM7534	20	MBB2DC	119	MBE2NE	121	MBS0AY	124
LM7614	20	MBB2DG	119	MBE2NM	121	MBS2XA	124
LM7654	20	MBB2DM	119	MBE2NT	121	MBS2ZA	124
LM8211	43	MBB3CA	119	MBE4EN	121	MB33LY	124
LM8314	20	MBC0AA	119	MBE5CA	121	MM1111	23
LM8334	20	MBC0AC	119	MBF0AA	121	MM1112	23
LM8354	20	MBC0AE	119	MBF0AE	121	MM1121	23
LM8454	20	MBC0AG	119	MBF0AG	121	MM1122	23
LM8531	20	MBC0AL	119	MBF0AH	121	MM1212	23
LM8534	20	MBC0AS	119	MBF1RA	121	MM1222	23
LM8554	20	MBC1EB	119	MBF1SA	121	MM1311	23
LM9511	20	MBC1EE	119	MBF2JA	121	MM1312	23
LM9521	20	MBC1EJ	119	MBF2MD	121	MM1322	23
MAAACB	117	MBC1FE	119	MBF2NB	121	MM1411	23
MAAADB	117	MBC2BL	119	MBF2NE	121	MM1412	23
MAAAEB	117	MBC2CM	119	MBF2PA	121	MM1422	23
MAAAEC	117	MBC2CN	119	MBF2PE	121	MM2112	23
MAABBB	117	MBC2DB	119	MBF2RC	121	MM2122	23
MAABBC	117	MBC2EA	119	MBF2TE	121	MM2211	23
MAABBF	117	MBC2EB	119	MBF3CA	121	MM2212	23
MAABBG	117	MBC2ED	119	MBF3NA	121	MM2221	23
MAABDB	117	MBC2EF	119	MBF3PA	121	MM2222	23
MAABDC	117	MBC2FB	119	MBG0AA	121	MM2312	23
MAABEB	117	MBC2FE	119	MBG0AC	121	MM2322	23
MAABEF	117	MBC2FG	119	MBG0AE	121	MM2411	23
MABAAB	117	MBC2FL	119	MBG0AG	121	MM2412	23
MABACH	117	MBC3EB	119	MBG0AH	121	MM3112	23
MABAFC	117	MBC5DE	119	MBG1VA	121	MM3122	23
MABAFG	117	MBC7CM	119	MBG1WA	121	MM3211	23
MABAHC	117	MBD0AA	119	MBG2TE	121	MM3212	23
MABAHG	117	MBD0AE	119	MBH0AA	121	MM3312	23
MABAJA	117	MBD0AH	119	MBH0AE	121	MM3322	23
MABBAC	117	MBD0AL	119	MBH2UA	121	MM3411	23
MABBCC	117	MBD0AM	119	MBH2ZE	121	MM3412	23
MABBEC	117	MBD0AN	119	MBH3ZA	122	MM3422	23
MABBEE	117	MBD1DN	119	MBJ1BM	122		
MABBFF	117	MBD1EE	119	MBJ1CN	122		
MABBFG	117	MBD1EM	119	MBK0AL	122		
MABBGA	117	MBD1EN	119	MBK0AN	122		
MABBGB	117	MBD1FA	120	MBK1BN	122		
MABBGC	117	MBD1FN	120	MBK1CM	122		
MABBGF	117	MBD1GL	120	MBK1CN	122		
MABBHC	117	MBD1GN	120	MBK2CN	122		
MABBHG	117	MBD1GT	120	MBK2DA	122		
MACAEH	117	MBD1JA	120	MBK2DC	122		
MACAGH	117	MBD2BR	120	MBK2DF	122		
MACAHF	117	MBD2DA	120	MBK3CL	122		
MACAKE	117	MBD2DD	120	MBK3DK	122		
MACALC	117	MBD2DF	120	MBL0AA	122		
MACANB	117	MBD2DM	120	MBL0AM	122		
MACBJB	117	MBD2FF	120	MBL0AN	122		
MACBKA	117	MBD2FR	120	MBL1EA	122		
MACBLC	117	MBD2GA	120	MBL1EN	122		
MACBLG	117	MBD2GK	120	MBL2EA	122		
MADBCC	117	MBD2GL	120	MBL2EN	122		
MADBLH	117	MBD2GR	120	MBL2FN	122		
MADBSG	117	MBD2GZ	120	MBL3CN	122		
MAEAAB	117	MBD2JA	120	MBL7CM	122		
MAEBGE	117	MBD2JB	120	MBM1HN	122		
MBA0AA	118	MBD2JE	120	MBM1JM	122		
MBA0AM	118	MBD3FC	120	MBM2EK	122		
MBA0AN	118	MBD3GA	120	MBM2EM	122		



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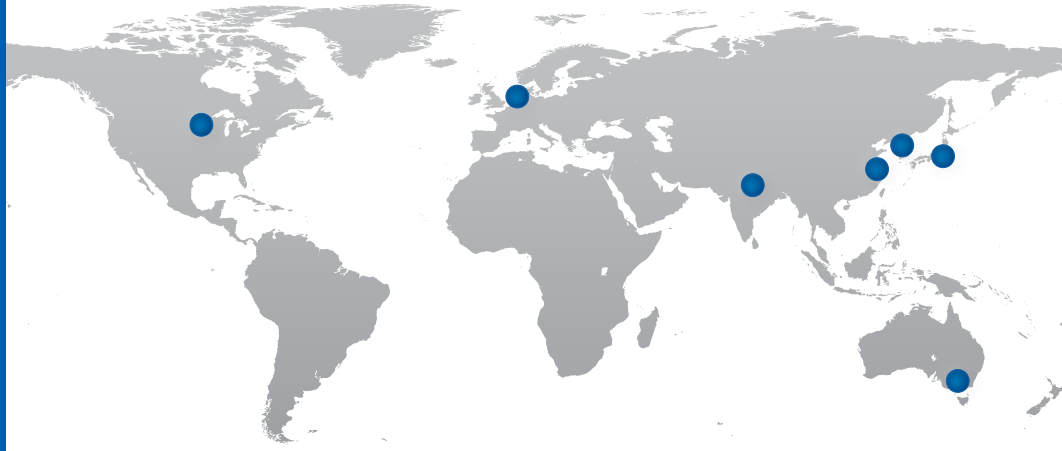
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