



# ILE Buyer's Guide

A Complete Line of Industrial Lubrication Equipment



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**Literature Index | Service Manuals | Literature**

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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			✓	✓	DIN		
		8 liter	94G008	12 VDC	✓				CPC	
			94G011	12 VDC	✓				✓	CPC
			94G020	24 VDC	✓				CPC	
			94G023	24 VDC	✓				✓	CPC
			94G038	24 VDC	✓				DIN	
			94G041	24 VDC	✓				✓	DIN
			94G065	90-240 VAC	✓				DIN	
			94G068	90-240 VAC	✓				✓	DIN
		94G071	90-240 VAC				✓	✓	DIN	

# Electric Pumps

## G1™ Pumps and Accessories

### G1 Standard (continued)

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

### G1 Standard Power Cables

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	
8 liter		94G061	90-240 VAC					✓	DIN	
		94G032	24VDC						DIN	
		94G035	24VDC					✓	DIN	
	94G059	90-240 VAC						DIN		
94G062	90-240 VAC					✓	DIN			

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

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

### G1 Plus Power Cables

126217	15 foot - 3 wire CPC connector
123750	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 . . . . .	-13° F to 158° F (-25° 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	
		96G041	24 VDC	✓			CPC	
		96G043	90-240 VAC	✓			DIN	
		96G056	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
		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
		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
		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)

Application	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	
	12 liter	96G164	24 VDC	1			✓	A	A	✓		A	CPC-5 Pin
	96G105	24 VDC	1-3	✓		✓	✓	✓	✓		✓, B	DIN	
	96G120	90-240 VAC	1-3	✓		✓	✓	✓	✓		✓, B	DIN	
	16 liter	96G168	24 VDC	1			✓	A	A	✓		A	CPC-5 Pin
	96G106	24 VDC	1-3	✓		✓	✓	✓	✓		✓, B	DIN	
	96G166	90-240 VAC	1			✓			✓		✓	DIN	
	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

Application	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	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	
	4 liter	96G175	90-240 VAC	1-2	✓	✓	✓	✓	✓		✓, B	DIN	
	8 liter	96G176	90-240 VAC	1-2	✓	✓	✓	✓	✓		✓, B	DIN	

\*Requires purchase of a vent valve kit

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

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

# Electric Pumps

## G3™ Pump Accessories

### G3 Accessories

571041	G3 Pump Element—the same adjustability as the pump included with G3
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
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
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
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

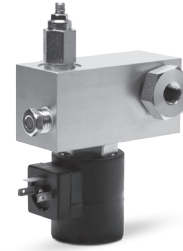


# Electric Pumps

## G3™ Pump Accessories

### G3 Vent Valves Ordering Information

Vent Valves for G3 Max Systems	
571169	G3 Max Pump Vent Valve Kit—Normally Closed, 12 VDC, 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) 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, 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, 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, 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, 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—For Normally Open, 12 or 24 VDC Valve, Deutsch Connector, 6 feet
16U790	Vent Valve Power Cable For Normally Open, 115 or 230 VAC Valve, DIN Connector, 15 feet
24N351	Save installation time and money without the need for additional cabling. Patch cable connects vent valves with DIN connection directly to the DIN Pump Power connector.



24M480



24N351



# Electric Pumps

## Modu-Flo®

### Highly Configurable Pump Solution For Nearly Any Application

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

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

### Typical Applications

- Presses and other in plant machines

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

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



Modu-Flo pump shown with grease reservoir

### 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
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.

# 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)
LM4533	20 pt Metal Oil Reservoir (562895), Floor-Mounting 60:1 Reduction (563389), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272), Individual Outputs (20 pt Oil, SPDT, 15 amps) (563317)
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)
LM5111	12 lb Plastic Grease Reservoir (562896)
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, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (557272)
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)
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)
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)
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)
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)



LM5111

# Electric Pumps

LubeMaster®

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)
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)
LM5644	12 lb Plastic Grease Reservoir (562896), Wall-Mounting 60:1 Reduction (563387), Outlet (1/2 HP, 115/230 VAC, Single Phase, 60 Hz, 1,140 rpm) (567272), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)
LM6311	20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388)
LM6314	20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)
LM6514	20 lb Plastic Grease Reservoir (562897), Floor-Mounting 10:1 Reduction (563388), 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)
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)
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)
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)
LM7614	12 lb Metal Grease Reservoir (562898), Wall-Mounting 60:1 Reduction (563387), 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)
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)
LM8314	20 lb Metal Grease Reservoir (562899), Floor-Mounting 10:1 Reduction (563388), 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)
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)
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)
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)

LM7214	12 lb Metal Grease Reservoir (562898), Clutch Drive (563383), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)
LM5114	12 lb Plastic Grease Reservoir (562896), Individual Outputs (12 lb and 20 lb Grease, SPDT) (563322)
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)
<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

# Electric Pumps

LubeMaster®

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
563388	10:1 Reduction, Floor-Mounting
563386	10:1 Reduction, Wall-Mounting
563389	60:1 Reduction, Floor-Mounting
563387	60:1 Reduction, Wall-Mounting
<b>LubeMaster Motors</b>	
557271	115/230 VAC, 1/2 HP, Single Phase, 60 Hz, 1,725 rpm
557270	230/460 VAC, 1/2 HP, 3-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>	
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
563015	12 pt Oil Low Level, SPDT, 10 watts
563016	20 pt Oil Low Level, SPDT, 10 watts
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
563962	Package of 6 Blowout Discs, Yellow, 1,450 psi, Oil
563965	Package of 6 Blowout Discs, Aluminum, 2,350 psi, Grease
563921	Seal Repair Kit
563915	Drive Repair Kit
563916	Output Manifold Kit - Standard
563938	Output Manifold Kit - High Output

# Electric Pumps

LubeMaster®

## LubeMaster Ordering Menu Code

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

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

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

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

### Pressure Indicator Option (sold 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

# 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-Flo (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

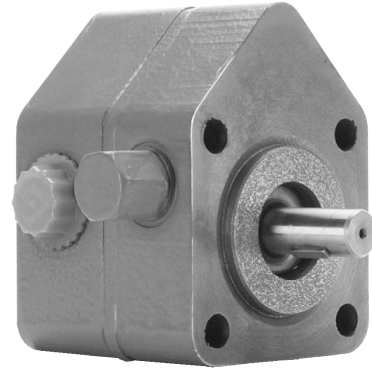
- Ideal for applications requiring continuous oil delivery up to 1,000 lubrication points

### 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

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



562850



562839

# 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

<b>Max Output Volume Per Minute</b>	
Oil .....	30.50 in <sup>3</sup> (500 cm <sup>3</sup> )
Grease .....	12.20 in <sup>3</sup> (200 cm <sup>3</sup> )
<b>Max Pressure</b>	
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



563379

### 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
Operating Air Required . . . . .	40-150 psi (2.276-10.3)115 VAC

### 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

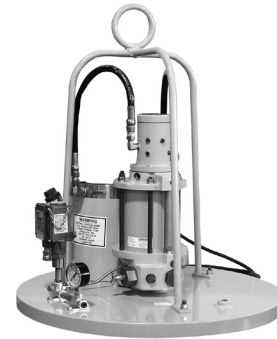
- Steel mills, pulp and paper, cement plants and other heavy-duty applications

### 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

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

# Pneumatic Pumps

## E-Series™

### Designed for Reliability

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

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

### Typical Applications

- Presses and other In plant machines

### Lubrication Used

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

### Technical Specifications

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

### 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
563364	E-Series Pump w/6 lb (2.72 kg) Plastic Cylindrical Grease Reservoir, Low Level Switch
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 - w/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
E-Series Grease Reservoirs	
562910	3 lb (1.36 kg) Plastic Cylindrical Reservoir
562888	5 lb (2.26 kg) Plastic Cylindrical Reservoir
564264	5 lb (2.26 kg) Metal Cylindrical Reservoir



563365

# Pneumatic Pumps

## E-Series™

### Ordering Information

<b>E-Series Assemblies w/Fixed Output Pump</b>	
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 (2.71 kg) Plastic Cylindrical Grease Reservoir
563364	E-Series Pump w/6 lb (2.71 kg) Plastic Cylindrical Grease Reservoir, Low Level Switch
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
<b>E-Series Components</b>	
563358	Pump only
563367	Adjustable Output Pump (*not fitted with Rupture Disc Assembly)
<b>E-Series Oil Reservoirs</b>	
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
<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)

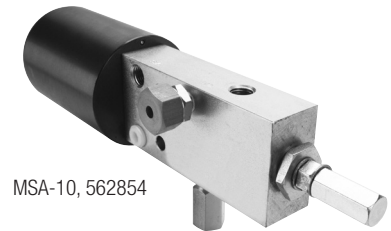
# Pneumatic Pumps

## 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



MSA-10, 562854

### 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)



MSA-100, 562855

### 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



# 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



562857

### Lubrication Used

- Oil and Grease

### Technical Specifications

Output per Stroke . . . . .	.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

### 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



564384

### 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

# 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



564012

# Mechanical Pumps

## LubeMaster® Ratchet Drive Pump

### Features and Benefits

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

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

### Typical Applications

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

### Lubrication Used

- Oil and Grease up to NLGI #2

### Technical Specifications

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



LM5214

### Ordering Information

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



# Mechanical Pumps

## LubeMaster® Ratchet Drive Pump

### LubeMaster Ordering Menu Code

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

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

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

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

#### Pressure Indicator Option (sold seperately)

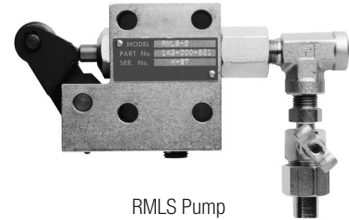
- POA - Standard Blowout, 1450 psi (100 bar), Oil, 563179
- POB - Standard Blowout, 2350 psi (162 bar) Grease, 563184
- POC - High-Pressure Blowout Switch, 1450 psi (100 bar), Oil, 563384
- POD - Standard Blowout, 2350 psi (162 bar), Grease, 563385

# 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.



RMLS Pump

### 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.



EMLS Pump

### Ordering Information

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

# 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



563305

### Typical Applications

- General machinery lubrication where power is limited or not available

### Lubrication Used

- Oil
- Grease up to NLGI #2

### Technical Specifications

Output per Stroke . . . . .01- 0.125 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™

### 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
- Ball bearing and pillow-block grease
- Synthetic industrial grease
- Construction and off-highway grease
- Mill 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™

### 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™

### 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



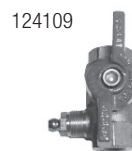
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124115



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

## Typical Applications

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

## Typical Fluids Handled

- Oil

## Technical Specifications

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



564020



564034

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

## Ordering Information

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

Thrif-T Luber - Type C Orifice	
564032	TLOC-3
564033	TLOC-4
564034	TLOC-5
564035	TLOC-2/0
564036	TLOC-3/0
Thrif-T Luber Hardware	
561217	TLMB-04 - 4-Port Manifold Bar
561218	TLMB-06 - 6-Port Manifold Bar
561219	TLMB-08 - 8-Port Manifold Bar
561220	TLMB-10 - 10-Port Manifold Bar
561215	TLTF-00 - Tee
561216	TLAB-00 - Anchor Block
558220	TLBF-00 - Bearing Fitting
558189	TLCN-00 - Compression Nut
558156	TLTC-01 - Tube Clip, 1-Tube
558157	TLTC-02 - Tube Clip, 2-Tubes
558158	TLTC-03 - Tube Clip, 3-Tubes
558159	TLTC-04 - Tube Clip, 4-Tubes
Thrif-T Luber Accessories	
564053	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

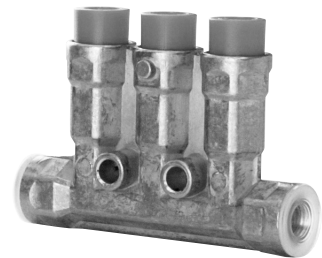
- Piston distributor style single line meters known world-wide for fast, simple installation
- Seven different groups with two different mounting types, thread to manifold or cast manifold to serve a broad range of lube point requirements
- Metering nipples can be changed to fine-tune your dispense volumes

## 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

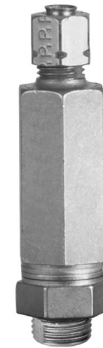
- Designed for frequent, medium-pressure metering; ideal for medium-sized forming or injection-molding machines. Includes system pressure monitoring

### 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



# Single Line Parallel

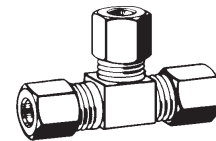
## LubriSystem® Accessories

### 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



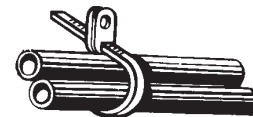
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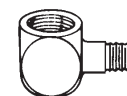
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15K783



556638



15K740



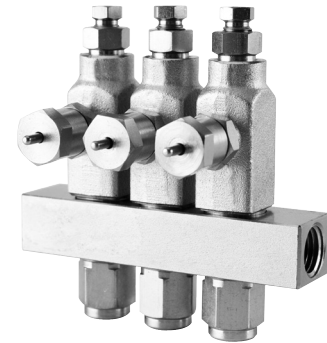
561132

# 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 (See graco.com for part numbers with metric threads)

GL-32 Carbon Steel Grease	
24A920	Replacement Injector
24A921	1-Injector Manifold
24A922	2-Injector Manifold
24A923	3-Injector Manifold
24A924	4-Injector Manifold
24A919	Stand-Alone Injector
24B360	Repair Kit
24B677	Injector Outlet Replacement Kit (nut, ferrule and adapter)
GL-32 304 Stainless Steel Grease	
24E390	Replacement Injector
24E391	1-Injector Manifold
24E392	2-Injector Manifold
24E393	3-Injector Manifold

24E394	4-Injector Manifold
24E389	Stand-Alone Injector
24F944	Repair Kit
24F943	Injector Outlet Replacement Kit (nut, ferrule and adapter)
GL-43 Carbon Steel Oil	
24E245	Replacement Injector
24E241	1-Injector Manifold
24E242	2-Injector Manifold
24E243	3-Injector Manifold
24E244	4-Injector Manifold
24E240	Stand-Alone Injector
24F201	Repair Kit
24B667	Injector Outlet Replacement Kit (nut, ferrule and adapter)

# 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 in3 (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

# Single Line Parallel

## GL-11™ Injectors

Single Line Parallel

### 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



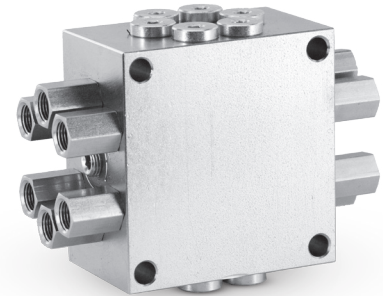
24A918

# 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
- Requires no special fittings, all fittings come with the valve block
- Built-in outlet check valves 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



24E409

### Typical Applications

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

### Typical Fluids Handled

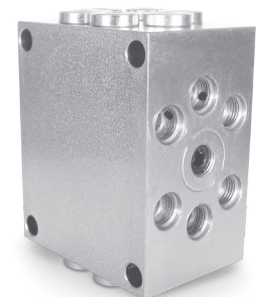
Oil or grease grades up to NLGI #2

### 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



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
MD-2	0.04 (0.66)	Cycle indicator switch
MD-3	Outlet 1 - 0.04 (0.66) Outlet 2 and 3 - 0.02 (0.33)	
MD-4	0.02 (0.33)	
MD-6	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

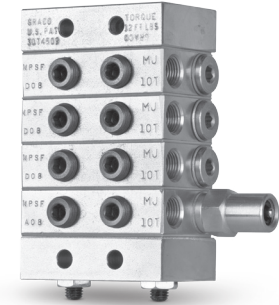
# Series Progressive

## 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

<b>MJ Tie Rods and Nut</b> (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
<b>MJ Miscellaneous Accessories</b>	
562915	Singling Kit
562914	Crossport Bar
557359	Crossport Kit - Upper Seal
557503	Crossport Kit - Lower Seal
561101	Mounting Bar
<b>MJ Spare Parts</b>	
557514	Replacement Gasket
563948	Cycle Indicator Repair Kit
563272	MJ Cycle Switch (SPDT) Bracket Assembly
563273	MJ Cycle Switch (SPDT) Bracket Assembly - Moisture Resistant

<b>MJ Working Sections</b> (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
<b>MJ w/Cycle Pin - Right</b> (Must be ordered in multiples of five)	
562508	MJ-10S
562509	MJ-15S
562510	MJ-10T
562511	MJ-15T
<b>MJ Inlet and End</b> (Must be ordered in multiples of five)	
560643	MJ Inlet
560645	MJ End
<b>MJ w/Cycle Pin - Left</b> (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

### 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

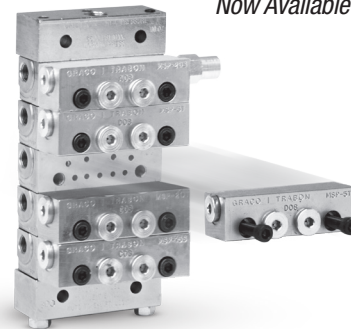
	Output Twin Outlet, in <sup>3</sup> (cm <sup>3</sup> )	Output Single Outlet, in <sup>3</sup> (cm <sup>3</sup> )	Cycle Indication
MSP5	0.005 (0.08)	0.010 (0.16)	Electronic proximity switch, magnetic visual indicator
MSP10	0.010 (0.16)	0.020 (0.33)	
MSP15	0.015 (0.26)	0.030 (0.49)	
MSP20	0.020 (0.33)	0.040 (0.66)	
MSP25	0.025 (0.41)	0.050 (0.82)	Electronic proximity switch, magnetic visual indicator, cycle indicator switch
MSP30	0.030 (0.49)	0.060 (0.98)	
MSP35	0.035 (0.57)	0.070 (1.15)	
MSP40	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

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



Series Progressive



# 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
<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

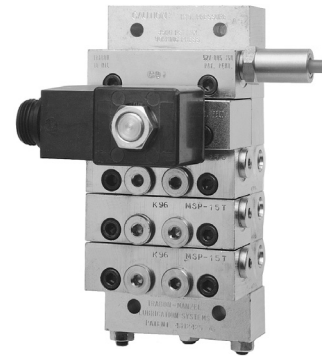
557214	Replacement Coil - 563452, 563453
563456	NPT Pneumatic Shunt Inlet
<b>MSP Zero-Leak Shut-Off Inlets</b>	
563457	115 VAC, 12 in. 2-Wire Lead Connection, 1/4-18 NPT Port Thread
563460	115 VAC, BH 3-Pin Connection, 1/4-18 NPT Port Thread
563468	115 VAC, BH 3-Pin Connection, 9/16-18 SAE Port Thread
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

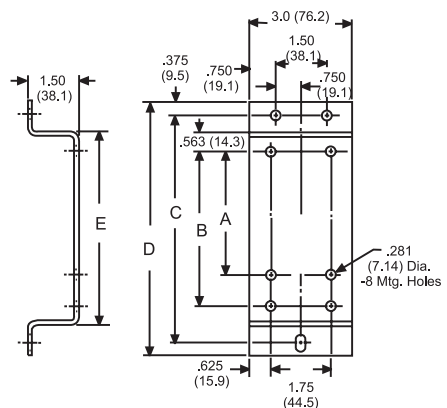
### Typical Fluids Handled

- 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

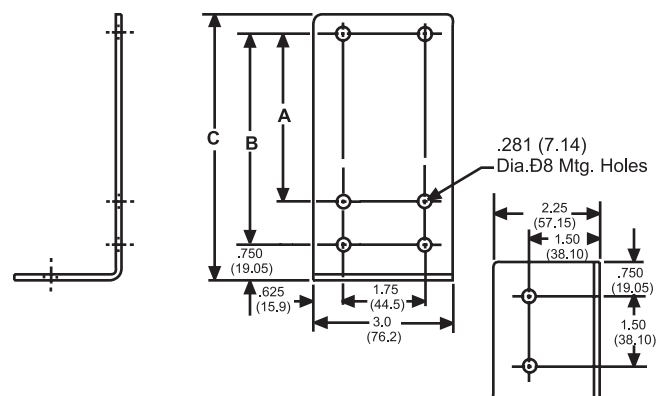


### Ordering Information

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

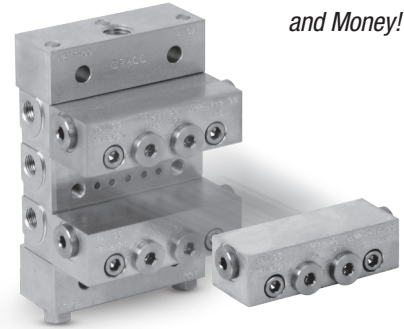
## Trabon® MSP Stainless Steel Divider Valves

### 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

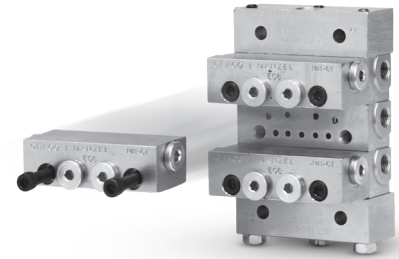
# Series Progressive

## 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

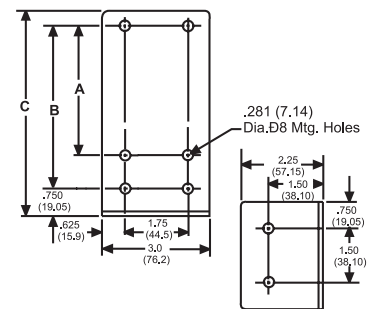
# Series Progressive

## Manzel® MHH Divider Valves

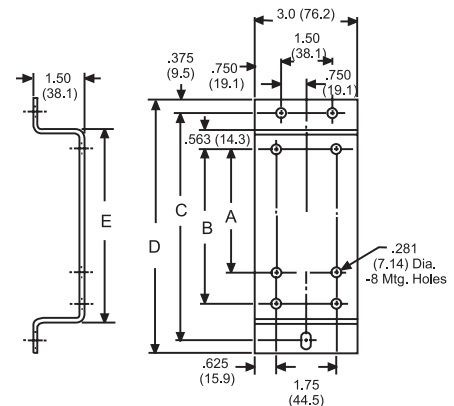
### Ordering Information

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

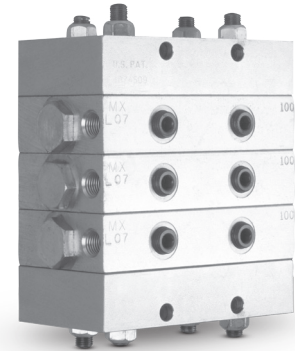
### Technical Specifications

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

MX w/Cycle Pin (Must be ordered in multiples of two)	
562523	MX-50T, with Cycle Pin Indicator, Right
562518	MX-50S, with Cycle Pin Indicator, Right
562524	MX-75T, with Cycle Pin Indicator, Right
562519	MX-75S, with Cycle Pin Indicator, Right
562525	MX-100T, with Cycle Pin Indicator, Right
562520	MX-100S, with Cycle Pin Indicator, Right
562526	MX-125T, with Cycle Pin Indicator, Right
562521	MX-125S, with Cycle Pin Indicator, Right
562527	MX-150T, with Cycle Pin Indicator, Right
562522	MX-150S, with Cycle Pin Indicator, Right
562533	MX-50T, with Cycle Pin Indicator, Left
562528	MX-50S, with Cycle Pin Indicator, Left
562534	MX-75T, with Cycle Pin Indicator, Left
562529	MX-75S, with Cycle Pin Indicator, Left
562569	MX-100T, with Cycle Pin Indicator, Left
562530	MX-100S, with Cycle Pin Indicator, Left
562535	MX-125T, with Cycle Pin Indicator, Left
562531	MX-125S, with Cycle Pin Indicator, Left
562536	MX-150T, with Cycle Pin Indicator, Left
562532	MX-150S, with Cycle Pin Indicator, Left
MX Tie Rods and Nut	
557488	3-Section Tie Rod
557489	4-Section Tie Rod
557490	5-Section Tie Rod
557491	6-Section Tie Rod
557492	7-Section Tie Rod
557493	8-Section Tie Rod
560576	9-Section Tie Rod
560577	10-Section Tie Rod
557494	Tie Rod Nut
MX Inlet and End Sections	
560620	MX Inlet
563287	MX End
Accessories	
562916	Singling Bar
562917	MX 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 (Must be ordered in multiples of two)</b>	
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 (Must be ordered in multiples of five)</b>	
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 (Three required per assembly)</b>	
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

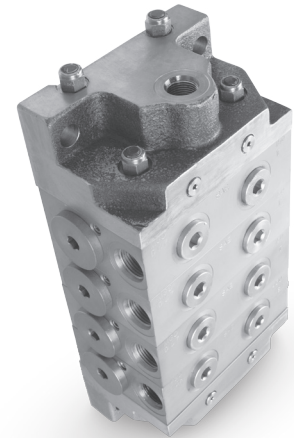
### Technical Specifications

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)

# 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 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



24B240

*Shown installed on MSP divider valve assembly*

### Typical Applications

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

### Typical Fluids Handled

- Oil

### Technical Specifications

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

### Ordering Information

AO Series Divider Valves	
24B237	Air/Oil Manifold Assembly, 3-Section
24B239	Air/Oil Manifold Assembly, 4-Section
24B240	Air/Oil Manifold Assembly, 5-Section
24B241	Air/Oil Manifold Assembly, 6-Section
24J814	Air/Oil Manifold Assembly, 3-Section without Air Sensor
24J815	Air/Oil Manifold Assembly, 4-Section without Air Sensor
24J816	Air/Oil Manifold Assembly, 5-Section without Air Sensor
24J817	Air/Oil Manifold Assembly, 6-Section without Air Sensor

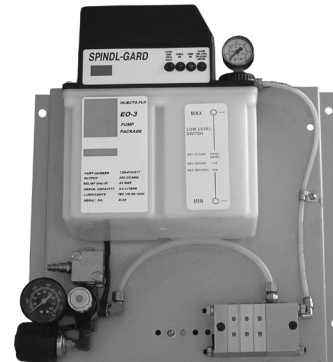
# Air Oil

## 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	

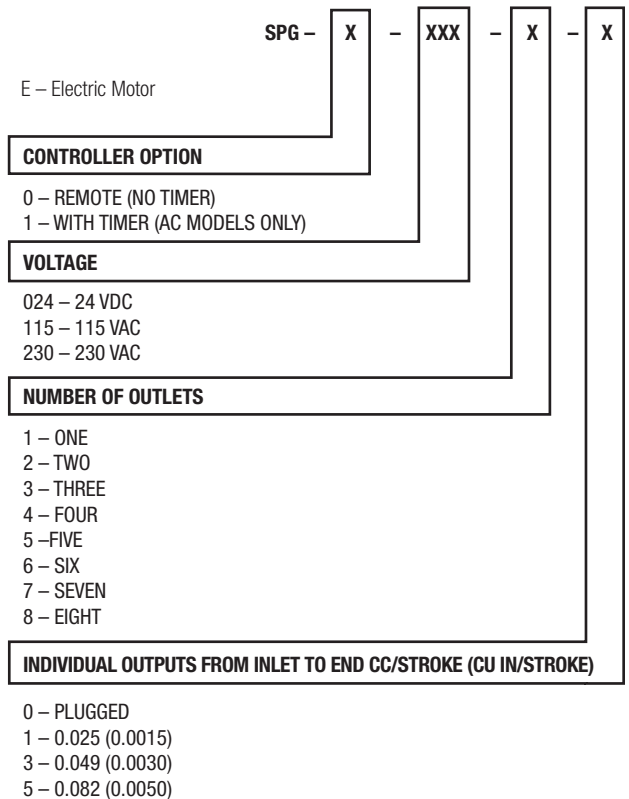
# Air Oil

## High Speed Spindl-Gard® Systems

### Ordering Information

High Speed Spindl-Gard Systems	
24B219	SPG-E-1-115-2-1-1
258301	SPG-E-1-115-6-33-3-3-3-3
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

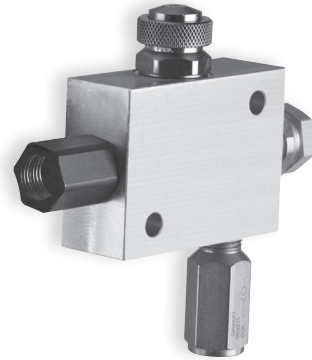
- Oil - minimum of 100 SUS at 100° F
- Grease - NLGI #1 at any temperature, NLGI #2 at 32° F or above

### 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

## 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					✓		



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

563159

Auto Relief psi (bar)	750 (52)	1000 (69)	1250 (86)	1500 (103)	2000 (138)	2500 (172)	3000 (207)
MJ	✓	✓		✓	✓		
MSP	✓	✓	✓	✓	✓	✓	✓
MXP	✓	✓	✓	✓	✓	✓	✓
MX		✓		✓	✓	✓	✓



*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

# General Accessories

## Rupture Indicator

### Features and Benefits

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

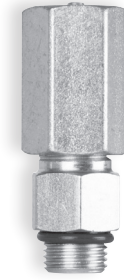
- High pressure from blockage causes a disc to rupture
- Lubricant forces an indicator pin to protrude, indicating the blockage
- High pressure backs up through the system and trips a switch to shut the system off
- When fault is corrected, disc must be replaced and pin reset

### Typical Applications

- Works with MHH divider valves

### Ordering Information

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



563227

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

# General Accessories

## Rupture to Atmosphere Indicator

### Features and Benefits

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

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



563182

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

### Ordering Information

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

# General Accessories

## Magnetic Visual Indicator

### Features and Benefits

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

### Ordering Information

Divider Valve Cycle Indicators and Switches	
563251	MS/MHH Visual Cycle Indicator Assembly - O-ring Seal
563260	MX/MXP Visual Cycle Indicator Assembly
563250	MS/MHH Visual Cycle Indicator Assembly - Gasket Seal



563251

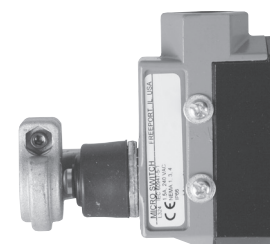
### Cycle Switch

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

### Technical Specifications

Voltage	Amp Rating
125/250/480VAC .....	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

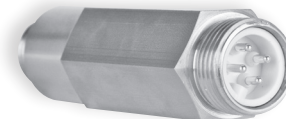
General Accessories

# 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

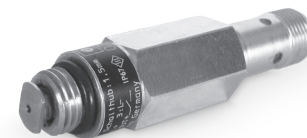


557747

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

### Ordering Information

Divider Valve Proximity Switches	
24K415	CD 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 PH - 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

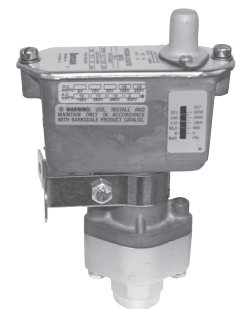
Pressure Switches	
557830	1,500 psi (103 bar), 10-150 psi (.7-10 bar) Adjustable Range (Factory Set @ 50 psi / 10 bar ), Moisture Resistant
557828	4,700 psi (324 bar), 400-4,700 psi (28-324 bar) Adjustable Range (Factory Set @ 750 psi / 52 bar), Moisture Resistant
557829	4,700 psi (324 bar), 400-4,700 psi (28-324 bar) Adjustable Range (Factory Set @ 1,150 psi / 79 bar), Moisture Resistant

### Features and Benefits

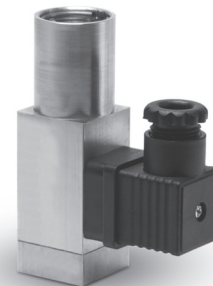
- High-low, adjustable pressure switches

### 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

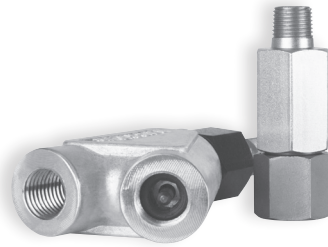
## Broken Line Indicators

### 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 - 1/4 inch (6.4 mm) Male x (2) 1/4 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	
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 Brass 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

# 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
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



24B591

### 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

# 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						4	4							
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

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



563842

### 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 (ridgid 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)

### 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

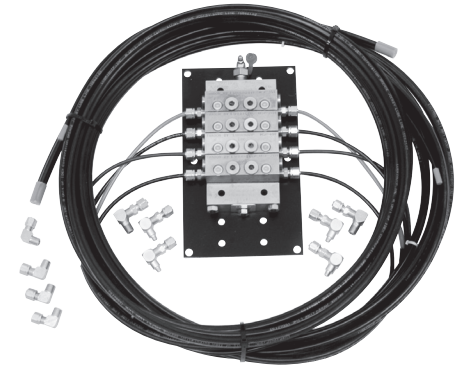
- 11 different kits let you customize your EZ Greaser system
- Once installed, use your manual grease gun to lubricate multiple lube points from one fitting

### 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	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	1	1	1	1							

On-Road Mobile Lubrication Systems

# 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/lowervolume setting
- Delivers 3.0 oz (85 g) of grease per stroke when using the high-volume/lowpressure 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 safely tapping low pressure hydraulics
- Pre-packaged modules ready-to-work with both injector and divider valve systems
- Multiple pump and accessory options for use with refinery drum and custom tank installations
- Self-lubricating vertical design for long life and reliable operation in high vibration environments
- Ultra-quiet hydraulic motor—no need for add-on mufflers
- High efficiency motor design uses less hydraulic oil

### Typical Applications

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

### Typical Fluids Handled

- NLGI #2 grade grease

### Technical Specifications

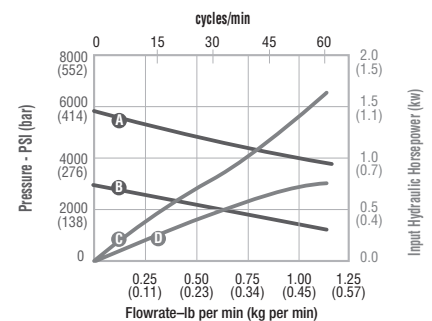
Part Number	247540	247443	247450
Drum Size	60 lb (27 kg)	120 lb (55 kg)	400 lb (180 kg)
Overall Pump Length	33.9 inch (861 mm)	41.5 inch (1054 mm)	48.5 inch (1232 mm)
Pump Lower Length	19.75 inch (501 mm)	26.75 inch (679 mm)	33.75 inch (857 mm)
Maximum Hydraulic Input Pressure	600 psi (41 bar)	600 psi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

### Ordering Information

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



### Pump Performance



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

Test Fluid: NLGI #1 grade grease

# Off-Road Mobile Lubrication Systems

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

### Ordering Information

Dyna-Star 10:1 Modules And Kits	
247574	Dyna-Star 10:1 60 lb (27 kg) Pump Module - Injector - Overall height 35.15 in (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	
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
24A918	GL-11 injector



247574



241573



24B591



114905



24A918

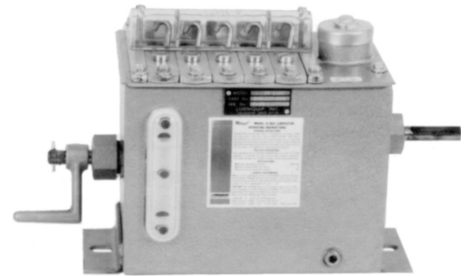


# Compressor Lubrication

## 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
MABBAG	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

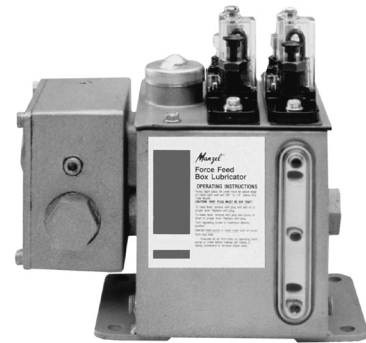
- Provide a proven, cost-effective way to assemble customized oil systems that meet specific requirements by using standard modular components
- Increase opportunities to standardize lube system components and reduce lube maintenance and service costs
- Are dependable and backed by the industry's most 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 8), 200:1 End Rotary RH
MBE1KM	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 9), 200:1 End Rotary RH
MBE1MC	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 11), 37.5:1 Ratchet RH
MBE1ME	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 11), 1:1 Direct Drive LH
MBE1NG	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 12), 37.5:1 Ratchet LH
MBE1NR	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 12), 50:1 Right Angle RH
MBE2ER	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 4), 50:1 Right Angle RH
MBE2JM	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 8), 200:1 End Rotary RH

# Compressor Lubrication

## Manzel® MBL Box Lubricators

### Ordering Information

Manzel® MBL Box Lubricators	
MBE2KA	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 1:1 Direct Drive RH
MBE2KG	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 37.5:1 Ratchet LH
MBE2KL	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 100:1 End Rotary RH
MBE2KN	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 400:1 End Rotary RH
MBE2KZ	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 9), 188:1 Right Angle LH
MBE2LA	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 10), 1:1 Direct Drive RH
MBE2LL	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 10), 100:1 End Rotary RH
MBE2NA	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 1:1 Direct Drive RH
MBE2NE	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 1:1 Direct Drive LH
MBE2NM	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 200:1 End Rotary RH
MBE2NT	16 pint reservoir (12 pump stations max), 1/4 inch (6.4 mm) GBL 7500 pump (qty 12), 375:1 Right Angle RH
MBE4EN	16 pint reservoir (12 pump stations max), 3/16 inch (4.8 mm) GBL 7500 pump (qty 4), Rens Level 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
MBL0AA	8 pint reservoir (5 pump stations max), with motor mount base, no pumps installed, 1:1 Direct Drive RH
MBL0AM	8 pint reservoir (5 pump stations max), with motor mount base, no pumps installed, 200:1 End Rotary RH
MBL0AN	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
MBR7YY	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



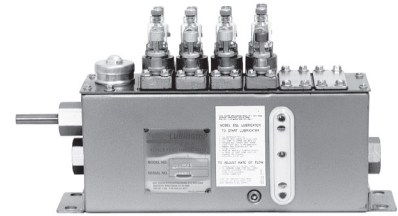
Alarm  
24K466

# Compressor Lubrication

## Manzel® DSL Lubricators and Pumps

### Features and Benefits

- Rugged construction for high performance and durability
- Complete assembly—includes 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

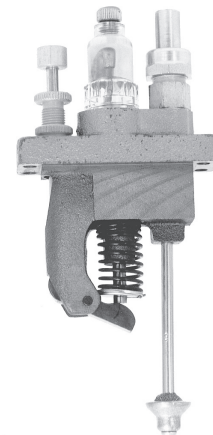
- Compressors and industrial equipment

### 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



562951

### Ordering Information

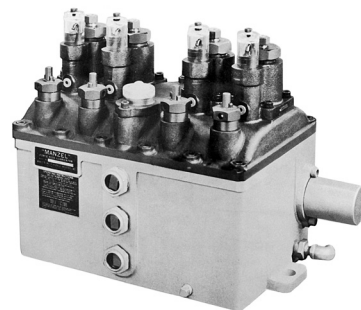
562918	HP-15 6 Feed Gear Box Without Pumps
562919	HP-15 6 Feed Gear Box With Pumps
564272	HP-15 6 Feed Gear Box With Pumps And Heater
562951	HP-15 Pump
556700	HP-15 Sight Glass
563113	HP-15 Plunger And Cylinder Assembly
564334	In-line Check Valve

# 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

## Manzel® MVB Box Lubricators

### Ordering Menu Code

MVB	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
<b>DRIVE OPTION</b>													
DAA - RATCHET DRIVE, 102-2 DAB - STANDARD DRIVE, 203-2 DAC - STANDARD DRIVE, 207-2 DAD - REVERSE DRIVE, 303-2 DAE - 90° DRIVE, 401-2 DAF - VERTICAL DRIVE, 501-2 D99 - SPECIAL SPECIFY PART NUMBER													
<b>RATIO OPTION</b>													
RAA - 1:1   RAD - 1:3   RAG - 4:1   RAK - 16:1 RAB - 1:2   RAE - 3:1   RAH - 1:8   RAC - 2:1 RAF - 1:4   RAJ - 8:1													
<b>CAM OPTION STATION 1</b>													
CAA - SINGLE-LOBE CAB - DOUBLE-LOBE CAC - TRIPLE-LOBE													
<b>CAM OPTION STATION 2</b>													
FAA - SINGLE-LOBE FAB - DOUBLE-LOBE FAC - TRIPLE-LOBE													
<b>PUMP OPTION STATION 1</b>													
AOO - NONE AOA - 1/4 DIA PUMP ONLY, (542-999-050) AOB - 3/8 DIA PUMP ONLY, (542-999-060) AOC - 1/4 DIA PUMP W/SYSTEM FILL, (542-999-070) AOD - 3/8 DIA PUMP W/SYSTEM FILL, (542-999-080)													
<b>PUMP OPTION STATION 2</b>													
BOO - NONE   BOC - 1/4 DIA PUMP W/SYSTEM FILL, (542-999-070)   BOA - 1/4 DIA PUMP ONLY, (542-999-050) BOD - 3/8 DIA PUMP W/SYSTEM FILL, (542-999-080)   BOB - 3/8 DIA PUMP ONLY, (542-999-060)													
<b>*PRESSURE INDICATOR OPTION STATION 1</b>													
POA - STANDARD BLOWOUT, 2350 PSI, (509-230-160) P99 - SPECIAL SPECIFY PART NUMBER													
<b>*PRESSURE INDICATOR OPTION STATION 2</b>													
HOA - STANDARD BLOWOUT, 2350 PSI, (509-230-160)   H99 - SPECIAL SPECIFY PART NUMBER													
<b>*GAUGE OPTION STATION 1</b>													
GOA - GAUGE 0-3000 PSI, DRY, (543-362-000)   GOD - GAUGE 0-10000 PSI, LIQUID FILLED, (493-020-207) GOB - GAUGE 0-3000 PSI, LIQUID FILLED, (510-770-240)   G99 - SPECIAL SPECIFY PART NUMBER GOC - GAUGE 0-10000 PSI, DRY, (493-020-206)													
<b>*GAUGE OPTION STATION 2</b>													
JOA - GAUGE 0-3000 PSI, DRY, (543-362-000)   JOD - GAUGE 0-10000 PSI, LIQUID FILLED, (493-020-207) JOB - GAUGE 0-3000 PSI, LIQUID FILLED, (510-770-240)   J99 - SPECIAL SPECIFY PART NUMBER JOC - GAUGE 0-10000 PSI, DRY, (493-020-206)													
<b>*BASE OPTION</b>													
KOA - STANDARD, SEE NOTE 1													
<b>*MOTOR OPTION</b>													
MOA - 1/4 HP, 115/230 VAC, 60 HZ, SINGLE-PHASE, 1725 RPM, TENV, 56 FRAME MOB - 1/4 HP, 230/460 VAC, 60 HZ, THREE-PHASE, 1725 RPM, TENV, 56 FRAME M99 - SPECIAL SPECIFY PART NUMBER													

\*OMIT IF NOT REQUIRED

**NOTE:** (1) Base option KOA allows for mounting of a 56 frame motor to MVB package and includes coupling and coupling guard. When base option KOA is ordered drive option DAC is to be ordered, along with either gear ratio RAJ (8:1) or RAK (16:1). This is to ensure that motor is properly mounted and maximum input rpm is not exceeded.

# 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

<b>Input Power Requirements</b>	
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
<b>Relay Outputs (Zone Fault and Power Failure)</b>	
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 .....	0.006 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

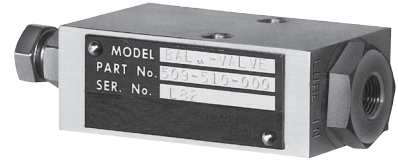
# Compressor Lubrication Accessories

## 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

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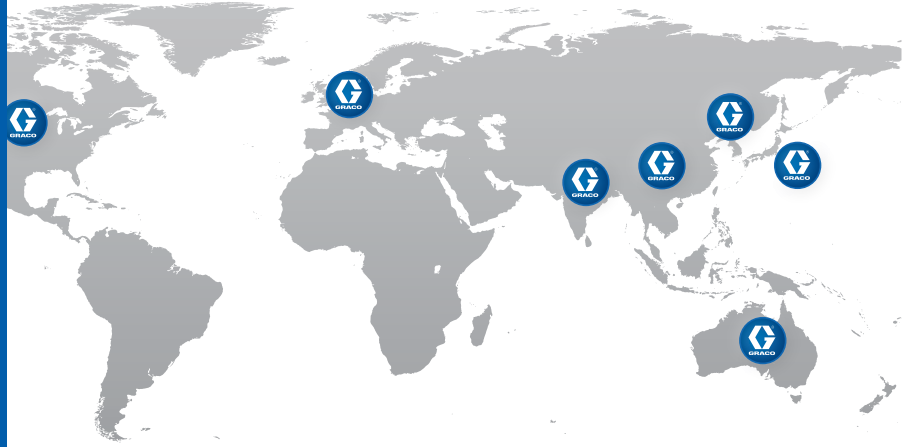
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