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***Illustrations and specifications are not binding in detail.
Designs are subject to modification and improvement without notice.***

DESCRIPTION

The series 1000, M2500G, 3000 progressive divider valve manifold distributes and proportions incoming oil or grease to bearing points.

A typical divider valve manifold consists of an inlet section, three to ten valves and an end section. One assembly can serve up to a maximum of 20 lubrication points.

Individual divider valve blocks have a discharge piston and built-in outlet check valves. Blocks are offered in various output sizes. The discharge capacity of a block is determined by varying the piston diameter in the valve block.

Twin valve blocks have two outlets located at each end of the assembly and supply rated discharge from each of the two outlets during one complete valve cycle.

Single outlet blocks have one end outlet plugged and supply twice the rated output to the open outlet.

External crossporting of adjacent valves can be achieved with a crossport kit to combine outputs.

PROGRESSIVE DIVIDER VALVE OPERATING SEQUENCE

Individual valve blocks operate in a “progressive” sequence. During operation, the piston within the block must complete a full discharge cycle before another piston begins operation. As long as lubricant is supplied under pressure to the inlet section of the divider, manifold valve blocks will continue to operate in a progressive manner.

When lubricant flow is interrupted to the inlet block, piston movement stops. When flow resumes, piston movement commences at the same point in the discharge cycle. Feed lines deliver lubricant from the valve block to individual lube points. Should a discharge line become blocked, it will stop all the valves operating. Indicators are available to alert a blockage.

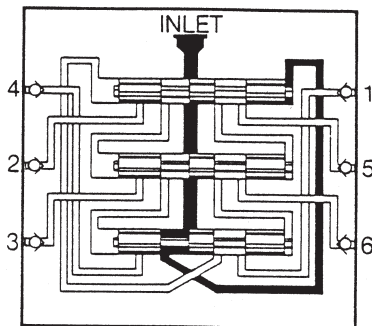


FIGURE 1

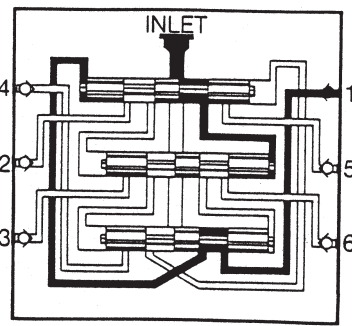


FIGURE 2

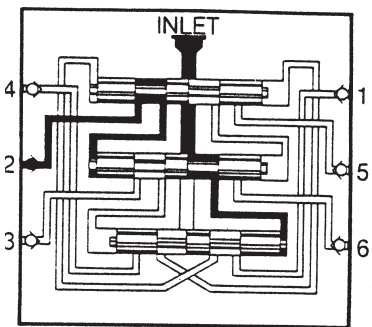


FIGURE 3

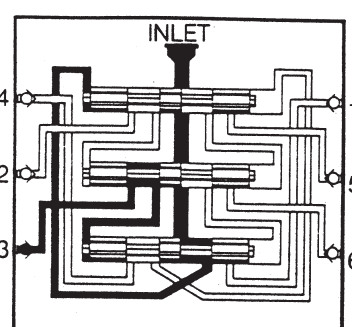


FIGURE 4

FIGURE 1: The inlet is connected to all piston chambers with only one piston free to move at any one time. With all pistons at the far right, lube flows against the right end of piston 1.

FIGURE 2: Lube flow moves piston 1 from right to left, displacing lube through passages to outlet 1. The shifting of piston 1 moves the lubricant flow against right side of piston 2.

FIGURE 3: Lube flow moves piston 2 from right to left displacing lube through outlet 2. The shifting of piston 2 moves the lubricant flow against right side of piston 3.

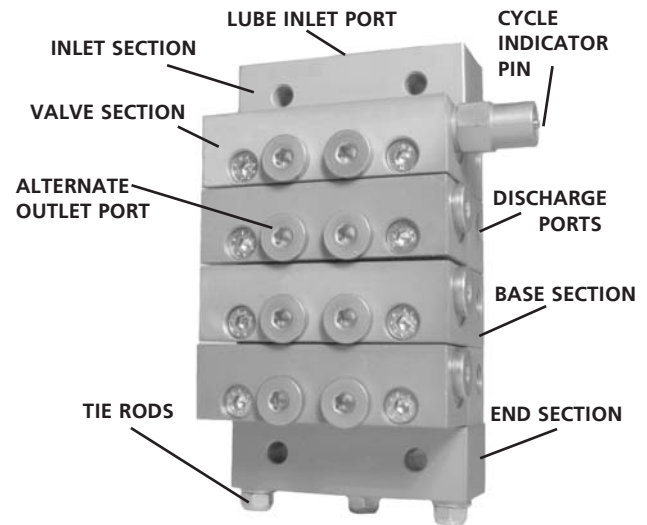
FIGURE 4: Lube flow shifts piston 3 from right to left displacing lube through outlet 3. The shifting of piston 3 moves the lubricant flow against right side of piston 1. (This would continue for as many valves mounted - 3-10 section)

Lube flow on left side of piston 1 begins the second cycle which shifts pistons from left to right, displacing lubricant through outlets 4, 5 and 6 of the valve.

DESCRIPTION

The M2500G Series valve manifolds are the principal components of a Single Line central lubricating system. The modular construction makes the system easy to install, and can be modified and maintained without removing any tubing. Operation of all valves in the system can be monitored by a single cycle indicator switch. Up to 20 bearings can be lubricated from one manifold assembly and up to 20 manifolds can be included in a system.

Zone control components can be used to build a system of any size and can be divided into individually controlled and monitored zones. This permits varied cycle times, rapid trouble-shooting and easy maintenance.



M2500B4G - 4 SECTION VALVE ASSEMBLY

FEATURES THAT MAKE THE DIFFERENCE

- VITON O-rings standard to protect against high heat & synthetic lubricants.
- Form, fit and functional interchangeable with all major competitive brands.
- SAE straight thread, NPSF or BSPP - all standard.
- Integral or in-line solenoid valve for zone control.
- Easy to assemble and replace valves without removing tube.
- Operating pressures to 5,800 psi.
- .005 to .080 cubic inch discharge volumes.
- Zinc-Nickel plating- 1000 hour salt spray.
- Three to Ten section valve manifolds available.

M2500G SPECIFICATIONS

- **Maximum operating pressure:**
5800 psi (400 BAR)
- **Minimum operating pressure:**
300 psi (20 BAR)
- **Discharge per cycle:**
.005 (.08cc) to .080 (1.31cc)
- **Lubricants:**
Oil to NLGI #2 grease
- **Seals:**
VITON O-rings (70 durometer)
- **Max. temperature:**
350°F (163°C)
- **Material:**
Zinc-Nickel Plated.

Approx. Net Weight (Divider Valve Assembly)		
3 section divider	6.2 lbs	2.8 kg
4 section divider	7.6 lbs	3.5 kg
5 section divider	9.1 lbs	4.1 kg
6 section divider	10.5 lbs	4.8 kg
7 section divider	11.9 lbs	5.4 kg
8 section divider	13.4 lbs	6.1 kg
9 section divider	14.8 lbs	6.7 kg
10 section divider	16.2 lbs	7.4 kg

M2500G DIVIDER VALVE ASSEMBLIES CONSIST OF AN INLET SECTION, BASE SECTIONS (3-10), END SECTION AND VALVES

VALVE SIZE	DISCHARGE CU. IN (cc)		VALVE SECTIONS			
	TWIN OUTLET	SINGLE OUTLET	TWIN OUTLET		SINGLE OUTLET	
			STANDARD	W/CYCLE PIN	STANDARD	W/CYCLE PIN
05	.005 (.08)	.010 (.16)	MCVA250105TG	---	MCVA250105SG	---
10	.010 (.16)	.020 (.33)	MCVA250110TG	---	MCVA250110SG	---
15	.015 (.25)	.030 (.49)	MCVA250115TG	---	MCVA250115SG	---
20	.020 (.33)	.040 (.66)	MCVA250120TG	MCV250120TPG	MCVA250120SG	MCV250120SPG
25	.025 (.41)	.050 (.82)	MCVA250125TG	MCV250125TPG	MCVA250125SG	MCV250125SPG
30	.030 (.49)	.060 (.98)	MCVA250130TG	MCV250130TPG	MCVA250130SG	MCV250130SPG
35	.035 (.57)	.070 (1.15)	MCVA250135TG	MCV250135TPG	MCVA250135SG	MCV250135SPG
40	.040 (.66)	.080 (1.31)	MCVA250140TG	MCV250140TPG	MCVA250140SG	MCV250140SPG

NOTES:

- Valve sections include VITON O-rings and mounting screws
- MCVA2501BPG** bypass valve with VITON O-rings is available.

PART NUMBERS TO ORDER DIVIDER BLOCK COMPONENTS

INLET SECTION

Inlet Type	#4 SAE	1/4-18 NPSF	1/4-19 BSPP
Standard	MCI2504AG	MCI2504BG	MCI2504CG
Zone-oil*	MCI2504ZA	MCI2504ZB	MCI2504ZC
Zone-grease*	MCI2506ZA	MCI2506ZB	MCI2506ZC

* Select Applicable Control Valve (MCZ2501 or MCZ2503) from page 12

TORQUE SPECIFICATIONS

- Tie Rod Nuts 5-8 foot pounds
- Outlet Port Fitting 8-9 foot pounds
- Piston Enclosure Plugs 12-15 foot pounds
- Valve mounting screws 8-9 foot pounds

VALVE BASE SECTIONS

Includes integral check valves, VITON O-rings

MCBA2502AG: #4 SAE discharge ports

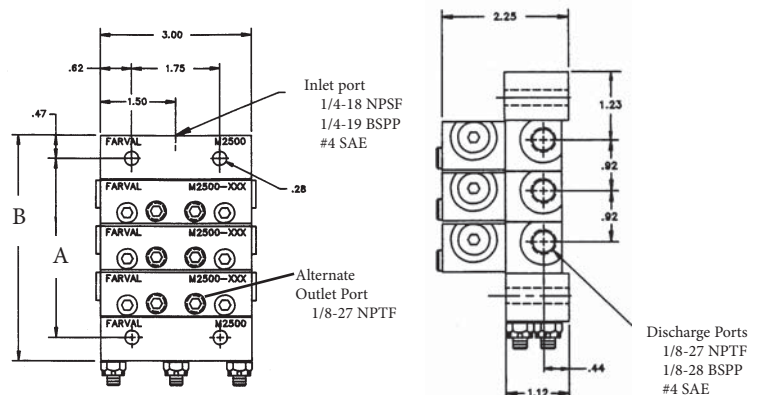
MCBA2502BG: 1/8-27 NPSF discharge ports

MCBA2502CG: 1/8-28 BSPP discharge ports

END SECTION

MCEA2503G Includes VITON O-rings

37484 Includes 1/8" NPT port for grease fitting



No. of Sections	Tie Rod Kit Number
3	MCRK25053G
4	MCRK25054G
5	MCRK25055G
6	MCRK25056G
7	MCRK25057G
8	MCRK25058G
9	MCRK25059G
10	MCRK250510G

NOTE: Tie rod kits include 3 tie rods & 3 nuts

No. of Sections	A		B	
	inch	mm	inch	mm
3	3.58	91	4.52	115
4	4.50	114	5.44	138
5	5.42	138	6.36	162
6	6.34	161	7.28	185
7	7.27	185	8.20	208
8	8.19	208	9.13	232
9	9.11	231	10.04	255
10	10.03	255	10.97	279

DESCRIPTION

The Series 1000 progressive divider valve manifold distributes and proportions incoming oil or grease to bearing points.

A typical divider valve manifold consists of an inlet section, three to nine valves and an end section. One assembly can serve up to a maximum of 18 lubrication points.

Individual divider valve blocks have a discharge piston and built-in outlet check valves. Blocks are offered in three output sizes. The discharge capacity of a block is determined by varying the piston diameter in the valve block.

Twin valve blocks have two outlets located at each end of the assembly and supply rated discharge from each of the two outlets during one complete valve cycle.

Single outlet blocks have one end outlet plugged and supply twice the rated output to the open outlet.

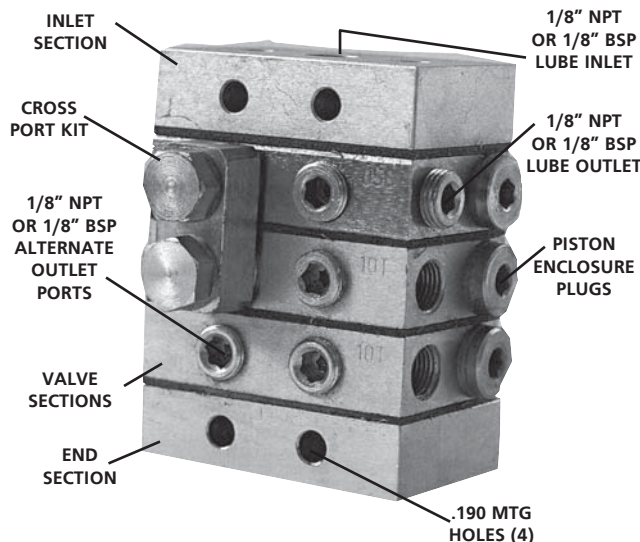
External crossporting of adjacent valves can be achieved with a crossporting kit to combine outputs.

PROGRESSIVE DIVIDER VALVE OPERATING SEQUENCE

Individual valve blocks operate in a “progressive” sequence. During operation, the piston within the block must complete a full discharge cycle before another piston begins operation. As long as lubricant is supplied under pressure to the inlet section of the divider, manifold valve blocks will continue to operate in a progressive manner.

When lubricant flow is interrupted to the inlet block, piston movement stops. When flow resumes, piston movement commences at the same point in the discharge cycle. Feed lines deliver lubricant from the valve block to individual lube points. Should a discharge line become blocked, it will stop all the valves operating.

Indicators are available to alert a blockage.



Refer to the following documents for more info:

+ Datasheet #27663: 1000 Divider Valves

1000 SERIES SPECIFICATIONS

- **Material**
Steel (zinc plated)
- **Maximum operating pressure:**
2000 psi (138 BAR)
- **Minimum operating pressure:**
300 psi (20 BAR)
- **Discharge per cycle**
.005 (.082cc) - .030 (.492cc)
- **Lubricants**
Oil to NLGI #2 grease
- **Seals:**
Non-asbestos composition with steel core
- **Max. temperature:**
350°F (163°C)

Approx. Net Weight (Divider Valve Assembly)	
3 section divider	1 lb., 15 oz. (0.88 kg)
4 section divider	2 lbs., 5 oz. (1.04 kg)
5 section divider	2 lbs., 11 oz. (1.21 kg)
6 section divider	3 lbs., 1 oz. (1.38 kg)
7 section divider	3 lbs., 7 oz. (1.55 kg)
8 section divider	3 lbs. 13 oz. (1.72 kg)
9 section divider	4 lbs., 3 oz. (1.89 kg)

1000 DIVIDER VALVE ASSEMBLIES CONSIST OF AN INLET SECTION, SEVERAL VALVE SECTIONS (3-9) AND AN END SECTION

VALVE SIZE	DISCHARGE CU. IN (cc)		VALVE SECTIONS					
	TWIN OUTLET	SINGLE OUTLET	TWIN OUTLET			SINGLE OUTLET		
			STANDARD	W/CYCLE PIN	W/CYCLE PIN SW	STANDARD	W/CYCLE PIN	W/CYCLE PIN SW
05	.005 (.082)	.010 (.164)	1000-05AT	N/A	N/A	1000-05AS	N/A	N/A
10	.010 (.164)	.020 (.328)	1000-10AT	N/A	N/A	1000-10AS	N/A	N/A
15	.015 (.246)	.030 (.492)	1000-15AT	1000-157LT	1000-158LT	1000-15AS	1000-157LS	1000-158LS

NOTES:

- Above are supplied with 1/8" NPT threads, if 1/8" BSP threads are required add BSP after above part numbers.
Example: 1000-05ATBSP
- Above cycle pin and cycle switch numbers are for left side mounted pin/switch, if right side mounted pin or switch is required substitute R for L in part #. **Example:** 1000-157RT.

PART NUMBERS TO ORDER DIVIDER BLOCK COMPONENTS

DESCRIPTION	PART NO.
Inlet Section 1/8" NPT	1006-1
Inlet Section 1/8" BSP	1006-1BSP
End Block	1007-1
Gaskets (Order Separate)	1009

TORQUE SPECIFICATIONS

- Tie Rod Nuts 60-70 inch pounds
- Outlet Port Fitting 72-89 inch pounds
- Piston Enclosure Plugs 15 foot pounds

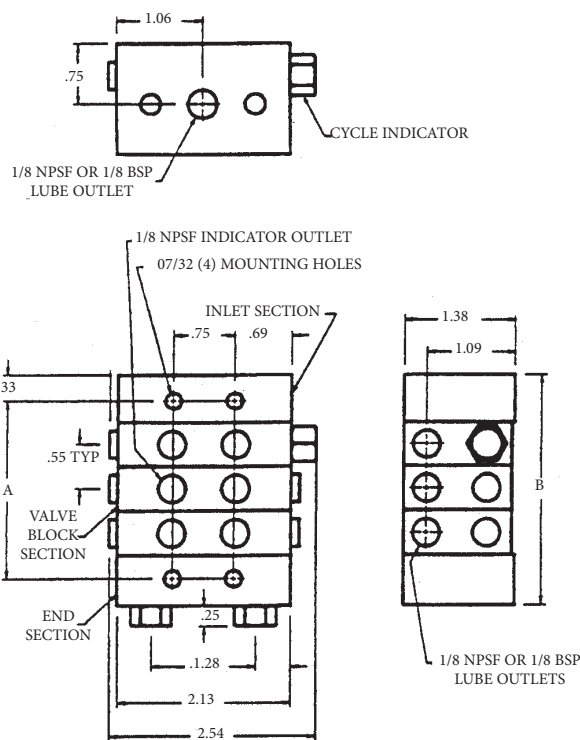
TIE ROD KITS*

Tie Rod Kit, 3 Valves	1017-3K
Tie Rod Kit, 4 Valves	1017-4K
Tie Rod Kit, 5 Valves	1017-5K
Tie Rod Kit, 6 Valves	1017-6K
Tie Rod Kit, 7 Valves	1017-7K
Tie Rod Kit, 8 Valves	1017-8K
Tie Rod Kit, 9 Valves	1017-9K

*(Kit includes 2 tie rods and 2 nuts)

Number of Valve Blocks	A Dimension (MM)	B Dimension (MM)
3	2.34 (59.4)	2.87 (73.1)
4	2.92 (74.2)	3.46 (87.9)
5	3.50 (89.0)	4.04 (102.6)
6	4.08 (103.7)	4.62 (117.4)
7	4.66 (118.5)	5.20 (132.2)
8	5.25 (133.3)	5.78 (147.0)
9	5.83 (148.1)	6.37 (161.8)

VALVE MANIFOLDS ASSEMBLIES



Dimensions in inches

DESCRIPTION

The Series 3000 progressive divider valve manifold distributes and proportions incoming oil or grease to bearing points.

A typical divider valve manifold consists of an inlet section, three to ten valves and an end section. One assembly can serve up to a maximum of 20 lubrication points.

Individual divider valve blocks have a discharge piston and built-in outlet check valves. Blocks are offered in six output sizes. The discharge capacity of a block is determined by varying the piston diameter in the valve block.

Twin valve blocks have two outlets located at each end of the assembly and supply rated discharge from each of the two outlets during one complete valve cycle.

Single outlet blocks have one end outlet plugged and supply twice the rated output to the open outlet.

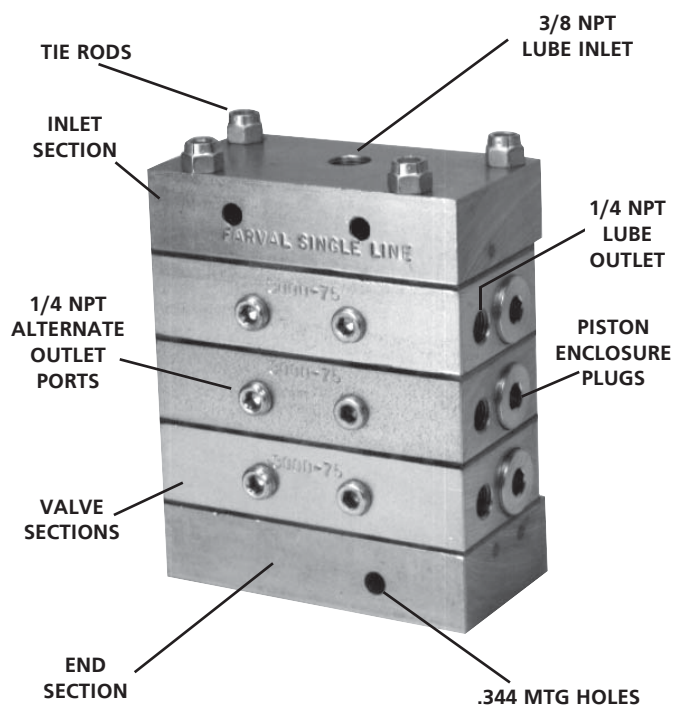
External crossporting of adjacent valves can be achieved with a crossporting kit to combine outputs.

PROGRESSIVE DIVIDER VALVE OPERATING SEQUENCE

Individual valve blocks operate in a “progressive” sequence. During operation, the piston must complete a full discharge cycle before another piston begins operation. As long as lubricant is supplied under pressure to the inlet section of the divider, valve blocks will continue to operate in a progressive manner.

When lubricant flow is interrupted to the inlet block, piston movement stops. When flow resumes, piston movement commences at the same point in the discharge cycle. Feed lines deliver lubricant from the valve block to individual lube points. Should a discharge line become blocked, it will stop all the valves operating.

Indicators are available to alert a blockage.



3000 SERIES SPECIFICATIONS

- **Maximum operating pressure:**
3000 psi (207 BAR)
- **Minimum operating pressure:**
300 psi (20 BAR)
- **Discharge per cycle:**
.025 (.41cc) - .300 (4.92cc)
- **Lubricants:**
Oil to NLGI #2 grease
- **Seals:**
Plated steel with bonded Viton® seals
- **Max. temperature:**
350°F (163°C)
- **Material:**
Steel (zinc plated)

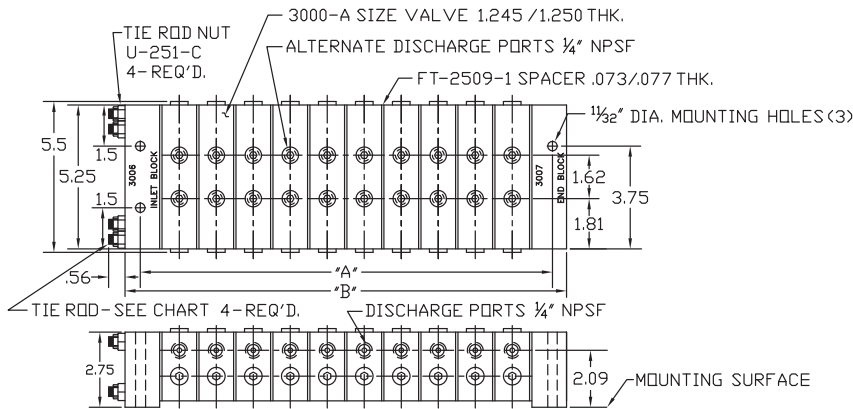
Approx. Net Weight (Divider Valve Assembly)		
3 section divider	22 lbs	9.98 kg
4 section divider	27 lbs	12.24 kg
5 section divider	32 lbs	14.52 kg
6 section divider	37 lbs	16.78 kg
7 section divider	42 lbs	19.05 kg
8 section divider	47 lbs	21.32 kg
9 section divider	52 lbs	23.57 kg
10 section divider	57 lbs	25.86 kg

3000 DIVIDER VALVE ASSEMBLIES CONSIST OF AN INLET SECTION, SEVERAL VALVE SECTIONS (3-10) AND AN END SECTION

VALVE SIZE	DISCHARGE CU. IN (cc)		VALVE SECTIONS					
	TWIN OUTLET	SINGLE OUTLET	TWIN OUTLET			SINGLE OUTLET		
			STANDARD	W/CYCLE PIN	W/CYCLE SW	STANDARD	W/CYCLE PIN	W/CYCLE SW
25	.025 (.41)	.050 (.82)	300025	N/A	N/A	300025X	N/A	N/A
50	.050 (.82)	.100 (1.64)	300050	3000507	3000508	300050X	3000507X	3000508X
75	.075 (1.23)	.150 (2.46)	300075	3000757	3000758	300075X	3000757X	3000758X
100	.100 (1.64)	.200 (3.28)	3000100	30001007	30001008	3000100X	30001007X	30001008X
125	.125 (2.05)	.250 (4.10)	3000125	30001257	30001258	3000125X	30001257X	30001258X
150	.150 (2.46)	.300 (4.92)	3000150	30001507	30001508	3000150X	30001507X	30001508X

INLET SECTION: 3006

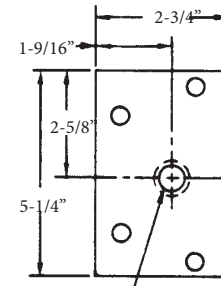
END SECTION: 3007



TORQUE SPECIFICATIONS

- Tie Rod Nuts 240 inch pounds
- Outlet Port Fitting 72-96 inch pounds
- Piston Enclosure Plugs 48 foot pounds

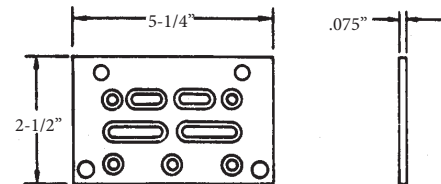
INLET (3006) AND END (3007) BLOCK DIMENSIONS



3000 VALVE MANIFOLD DIMENSIONS

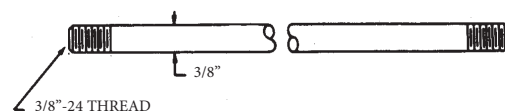
Number of Valves	Dimension A	Dimension B
3	5-7/16	6-9/16
4	6-3/4	7-7/8
5	8-1/16	9-3/16
6	9-7/16	10-9/16
7	10-3/4	11-7/8
8	12-1/16	13-3/16
9	13-3/8	14-1/2
10	14-11/16	15-13/16

GASKET (FT-2509-1) DIMENSIONS (Order Separate)



PLATED STEEL WITH BONDED VITON® SEALS

MANIFOLD TIE ROD FT-2517



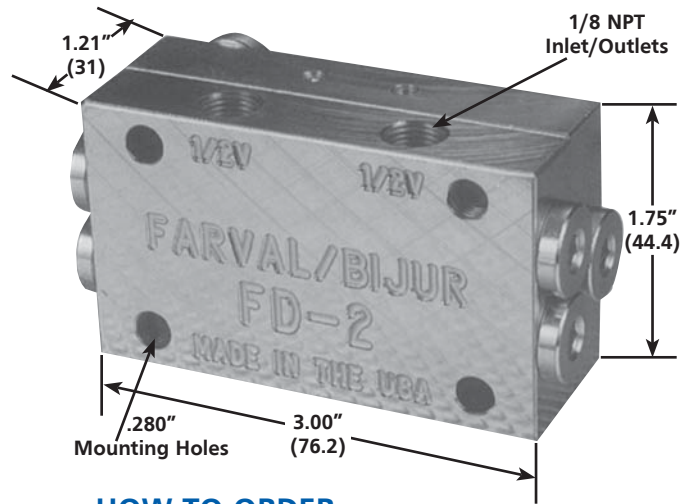
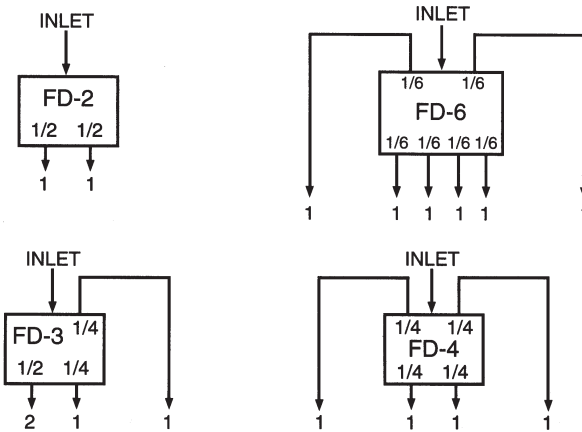
NOTE: Specify one locknut U-251C with each tie rod.

*Sold individually each assembly requires 4 tie rods

DESCRIPTION

FD valves are designed for use with series progressive oil and grease lubrication systems.

The FD divider valve distributes and proportions incoming oil or grease to bearing points.



HOW TO ORDER

Standard Model	With Cycle Indicator Pin (Right Side)	Number of Lube Outlets
FD-2	FDP-2	2
FD-3	FDP-3	3
FD-4	FDP-4	4
FD-6	—	6

CYCLE SWITCH AND BRACKET ARE AVAILABLE

Cycle Switch No. - 17324

Bracket Assembly No. - 33583

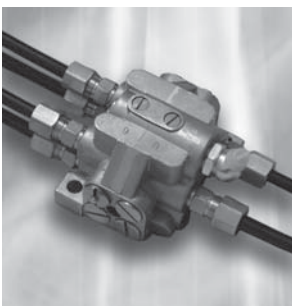
Note: To use High Pressure indicators with FD Divider Valves, a tee (Part No.'s U101A1 Nipple and U137A Tee) is required for each outlet. (See page 10 for indicators)

Refer to the following documents for more info:

+ Datasheet #32573: FD Series Divider

SPECIFICATIONS

- Maximum operating pressure:** 3000 psi (207 BAR)
- Lubricant:** Oil to NLGI #2 grease
- Seals:** Viton O-Rings
- Volume:** (Lubricant required to cycle divider valve once)
 - FD-2, FD-3, & FD-4: 0.080 in.³ (1.31 ccm)
 - FD-6: 0.060 in.³ (0.98 ccm)
- Material:** Steel (zinc plated)
- Max. Temperature:** 350°F (163°C)
- Net Weight:** 1 lb. 8 oz. (0.68 kg)



SureShot kit

Divider block for manual lubrication of multiple points.

For machinery applications with multiple lubrication points, you sometimes need a method to grease them from a centralized location with a manual grease gun.

The SureShot system delivers a positive measured shot of grease to each connected lubrication point through a single manually-fed grease fitting. Just mount the block in a convenient location and route the pre-filled tubing to each lubrication point. Then, walk up to the block and grease your entire machinery!

Included in a SureShot kit:

- Divider block (4, 6, 8, 10 or 12 outlets)
- Pre-filled tubing
- Hardware for installation (elbow, straight, 45- and 90-degree adapters)

Model Number	Description	Pre-filled tubing
SST4C	For 3 or 4 lubrication points	25'
SST6C	For 5 or 6 lubrication points	50'
SST8C	For 7 or 8 lubrication points	75'
SST10C	For 9 or 10 lubrication points	75'
SST12C	For 11 or 12 lubrication points	100'



Ordering Instructions

Completely assembled Single Line M2500G Modular valve manifolds can be ordered as follows:

First, select the manifold base assembly from the table. This assembly includes the inlet section, valve base sections, end section, tie rods, nuts and o-rings; the valve sections are installed on it. Each valve section and bypass section requires a base section, and every manifold must have at least 3 operating valve sections.

Next, specify the valves, bypass sections and accessories. Begin at the first section after the inlet and continue towards the end section. Separate each entry with a slash:

1 2 3 4
/_ _ _ , _ _ _ , _ _ _

1 - Valve/size (05, 10, 15, etc.)

2 - Outlets
• T - Twin
• S - single; no outlet
• SL - single outlet to left
• SR - single; outlet to right

3 - Optional accessories
• PP - pin -type pressure indicator** • CS - cycle switch*
• CIP - cycle indicator PIN • CP - crossport

*Specify which cycle switch model (See page13)

**Provide part number (See page10)

Add L or R to the above codes to specify the location of each accessory

4 - Other accessories (as required)

NOTE: Zone control valves are ordered as separate items as shown on pages 11 and 12. Omit the mounting style code. Other accessories such as electrical cables must also be ordered as separate items.

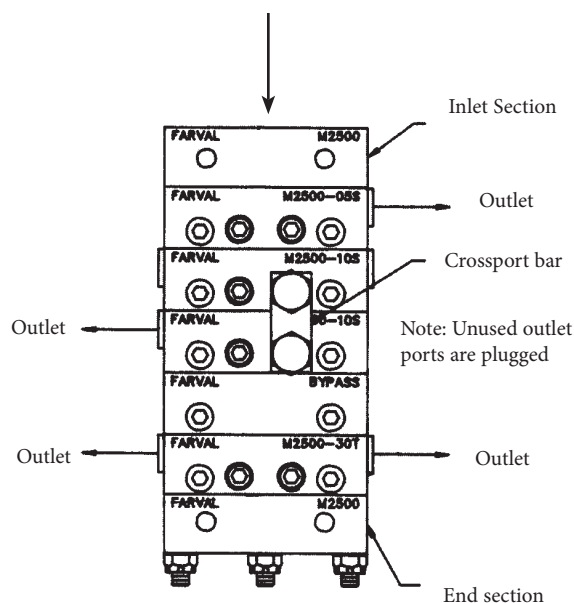
EXAMPLE: Ordering code for complete assembly.

The complete part number for an M2500G manifold with the following specifications would be:

M2500B5G/05SR/10S,CPR/10SL/BP/30T

5 section manifold, NPSF ports, standard inlet	= M2500B5G
05 single, outlet right, visual indicator to left	=05SR
10 single, no outlet, crossport to right	=10S,CPR
10 single, outlet left	=10SL
Bypass section	=BP
30 twin, outlets left and right	=30T

INLET TYPE	NUMBER OF SECTIONS	DISCHARGE PORTS		
		#4SAE	1/8-27 NPSF	1/8-28 BSPP
STANDARD	3	M2500A3G	M2500B3G	M2500C3G
	4	M2500A4G	M2500B4G	M2500C4G
	5	M2500A5G	M2500B5G	M2500C5G
	6	M2500A6G	M2500B6G	M2500C6G
	7	M2500A7G	M2500B7G	M2500C7G
	8	M2500A8G	M2500B8G	M2500C8G
	9	M2500A9G	M2500B9G	M2500C9G
	10	M2500A10G	M2500B10G	M2500C10G
ZONE-OIL MCZ2501 SERIES	3	M2500A3Z	M2500B3Z	M2500C3Z
	4	M2500A4Z	M2500B4Z	M2500C4Z
	5	M2500A5Z	M2500B5Z	M2500C5Z
	6	M2500A6Z	M2500B6Z	M2500C6Z
	7	M2500A7Z	M2500B7Z	M2500C7Z
	8	M2500A8Z	M2500B8Z	M2500C8Z
	9	M2500A9Z	M2500B9Z	M2500C9Z
	10	M2500A10Z	M2500B10Z	M2500C10Z
ZONE-GREASE MCZ2503 SERIES	3	M2500A3X	M2500B3X	M2500C3X
	4	M2500A4X	M2500B4X	M2500C4X
	5	M2500A5X	M2500B5X	M2500C5X
	6	M2500A6X	M2500B6X	M2500C6X
	7	M2500A7X	M2500B7X	M2500C7X
	8	M2500A8X	M2500B8X	M2500C8X
	9	M2500A9X	M2500B9X	M2500C9X
	10	M2500A10X	M2500B10X	M2500C10X



NOTE: For 1000/3000 series, replace **M2500BG** in the above example with **1001/3001**. Must have minimum of 3 working sections.

Provide basic sketch similar to above when ordering

CROSSPORT KIT

Crossport kit is installed in the alternate outlet port of adjacent valves to combine the outputs to feed a single lubrication point.

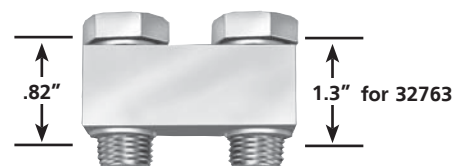
1000 Series

Model No. 32265-1 (BSP)

Model No. 32265-2 (NPT)

3000 Series

Model No. 32763

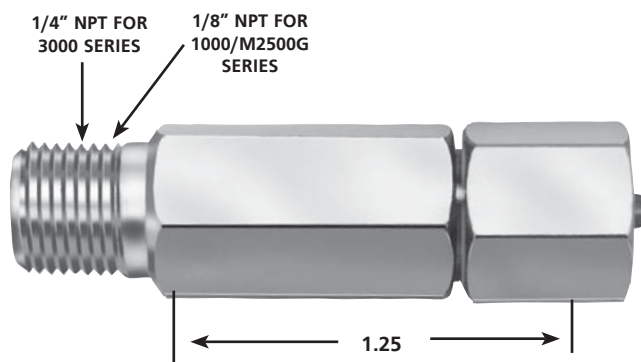


M2500G Series

Model No. 37083G

HIGH PRESSURE INDICATORS

These indicators are spring-loaded and can only be reset when system pressure decreases. The indicator's memory pin remains extended until manually reset. They are installed in the alternate outlet port.



NON-RELIEVING TYPE FOR 1000/M2500G SERIES

Part Number	Pressure Rating
20356	600 psi
203512	1200 psi
203516	1600 psi
203522	2200 psi

*RELIEVING TYPE FOR 1000/M2500G SERIES

Part Number	Pressure Rating
2135-10	1000 psi
2135-15	1500 psi
2135-20	2000 psi

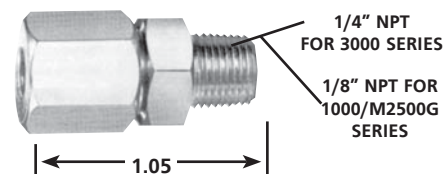
*These have small weep hole to relieve pressure

NON-RELIEVING TYPE FOR 3000 SERIES

Part Number	Pressure Rating
FT25353G	600
FT25353Y	1000
FT25353R	2000

RUPTURE DISC INDICATORS

These indicators burst at a selected pressure to automatically relieve excessive system pressure. They are installed in an alternate outlet port. All indicators are assembled with one rupture disc.



FOR 1000/M2500G SERIES

Part Number	Burst Pressure	Disc Color	Replacement Disc Kit*
1041-2YW	1450 psi	Yellow	FT15423YWK
1041-2RD	1750 psi	Red	FT15423RDK
1041-2PR	3250 psi	Purple	FT15423PRK

*discs are sold in packs of 10 pieces

FOR 3000 SERIES

Part Number	Burst Pressure	Disc Color	Replacement Disc
FT25413B	900	Black	FT15421BK
FT25413Y	1450	Yellow	FT15421Y
FT25413RD	1900	Red	FT15421RD

Above sold with 10 extra discs

ZONE CONTROL VALVES

Zone Control Valves are typically used to isolate certain sections on a machine to receive more/less frequent lube cycles.

STYLE:

- MCZ2501F series for oil systems operating up to 1500 psi
- MCZ2501A series for oil systems operating between 1500 and 3000 psi
- MCZ2503B series for all grease systems operating up to 3000 psi

INSTALLATION:

- In the inlet section of M2500G series manifold (see page 3 for zone inlets)
- As a stand alone component mounted in a remote location

ELECTRICAL

- 115 volts AC (50 or 60 hz)
- 24 volts DC
- Class H coils

CONNECTORS

- Standard 1/2 inch conduit with insulated 18 AWG leads
- Automotive 3 pin connector accepts Brad harrison Mini-Change or Crouse Hinds Mini-Line connectors. Conforms to ANSI B93.55M
- Hirschmann connector

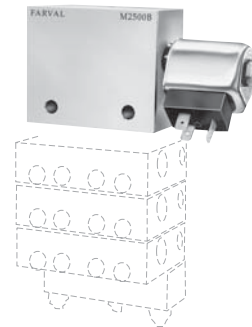
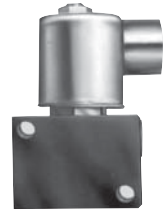
PORT TYPES

- Integral valves: #4 SAE, 1/4-18 NPSF or 1/4-19 BSPP on inlet
- Remote valves: #6 SAE or 1/4-18 NPTF on inlet and outlet

Remote-Grease
MCZ2503B



Remote-Oil



Hirschman
Connector

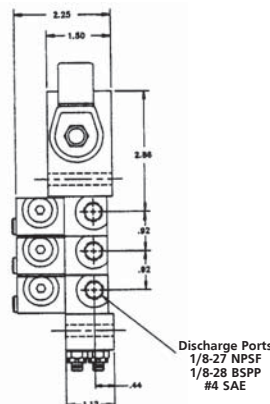
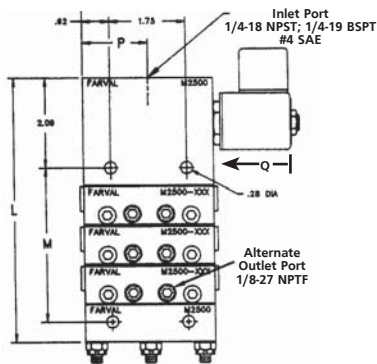
M2500G Integral
Oil or Grease

ELECTRICAL SPECIFICATIONS

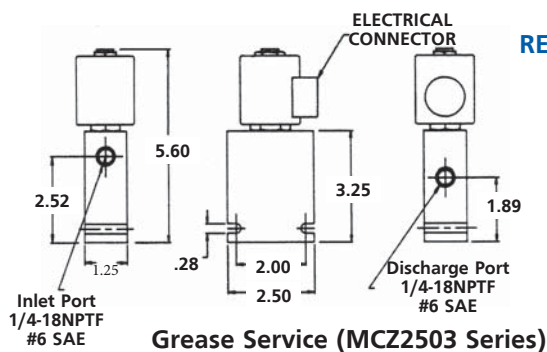
AMP Draw	MCZ2501F	MCZ2501A	MCZ2503B
115 AC	.21 amp	.21 amp	.17 amp
24V DC	.90 amp	.90 amp	.83 amp

Lubricant	P	Q
Oil Service (MCZ2501 Series)	1.50	1.82
Grease Service (MCZ2503 Series)	2.25	2.35

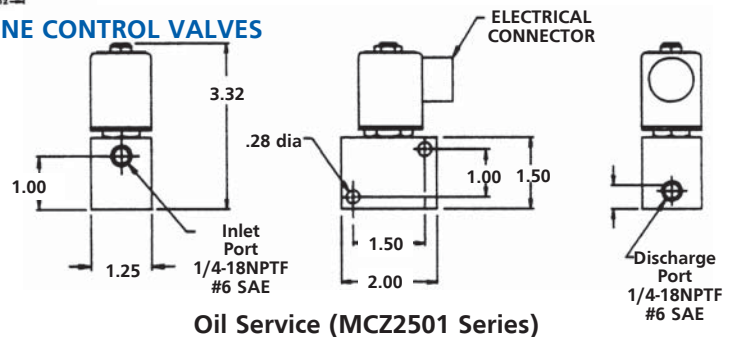
M2500G VALVE MANIFOLDS WITH INTEGRAL ZONE CONTROL



No. of Sections	M		L	
	Inch	MM	Inch	MM
3	3.58	91	7.03	179
4	4.50	114	7.95	202
5	5.42	138	8.97	228
6	6.34	161	9.80	249
7	7.27	185	10.72	272
8	8.19	208	11.64	296
9	9.11	231	12.56	319
10	10.03	255	13.48	342



REMOTE ZONE CONTROL VALVES



ZONE CONTROL VALVE SELECTION CHART

		1	2	3	4
For oil systems below 1500 psi:	*MCZ2501F	—	—	—	—
For oil systems above 1500 psi:	*MCZ2501A	—	—	—	—
For all grease systems:	*MCZ2503B	—	—	—	—

***Note:** Above are normally closed. If required, normally open can be supplied. Contact factory.

1. - Seal material: 00-nitrile V0-viton	2 - Electrical connector: DL-conduit HC-Hirschmann BH-Automotive	3. - Voltage: 11-115 VAC 50/60 hz 24-24 VDC	4 - Mounting and port style: (use this code for remote valves only, not for integral valves.) N - 1/4-18 NPTF inlet and discharge S - #6 SAE (3/8 OD tube) inlet and discharge
--	--	--	---

EXAMPLES:

- For an integral zone control in a 400 psi oil system, nitrile seals, an automotive connector, operating on 120 volt 60hz current, and with SAE ports, order **MCZ2501F00BH11** cartridge and **MCI2504ZA** zone inlet oil. (See page 3.)
- For a remote zone control in a grease system, nitrile seals, a Hirschmann connector, 24 volt DC current, and with NPTF ports, order **MCZ2503B00HC24N**.

ELECTRICAL ACCESSORIES FOR ZONE CONTROL VALVES AND CYCLE SWITCHES

CROUSE HINDS/BRAD HARRISON AUTOMOTIVE-TYPE ELECTRICAL CONNECTORS WITH MOLDED CABLE

These feature molded 3 pin automotive connectors and are used with cycle switches and type BH zone control valves. The 3-conductor cables are yellow PVC insulated STO rated at 10 amps and 300 volts. The plugs have NEMA 6P, IP68 protection.

MCC2505A - 6 feet
MCC2505B - 12 feet

Available with indicator lamps for 115 volt systems. **To be used with customer P.L.C. or DCS controllers only.**

MCC2506A - 6 feet
MCC2506B - 12 feet



MCC2505

M12 4-Pole ELECTRICAL CONNECTORS WITH CABLE

These connectors, made to M12 specifications, are used with the AC498-1 switches and 55105 lube point monitors.

76928-2863 - Straight, 10 meters long
76928-2833 - 90°, 10 meters long

HIRSCHMAN-TYPE ELECTRICAL CONNECTORS

These connectors, made to DIN 43650 specifications, are used with type HC zone control valves. They include all hardware including gaskets. They are rated at 250 VAC and 16 amperes.

MCC2509A: For MCZ2501 series control valves. DIN 43650 Form B 11 mm blades. 1.12" by .82".

MCC2510A: For MCZ2503 series zone control valves. DIN 43650 Form A. 1.08" square.



MCC2509A



MCC2510A

CYCLE INDICATORS / CYCLE SWITCHES

DESCRIPTION

Manifold cycle indicators provide a means of monitoring lube flow thru the system - a pin cycles in and out when lubricant is flowing. Movement of the pin is caused by the piston (the two are pinned together) so that when the piston, and thus the entire manifold, cycles once, the pin moves in and out once. The switches can be wired to warn of system trouble. They can feed electric pulses to a control device such as SS2200 or SC400 controller or customer PLC.

ELECTRICAL CYCLE SWITCHES

M2500G Series

MECHANICAL CYCLE SWITCHES

17324 Cycle Switch w/1/2-14 NPSM conduit connector

33583 Bracket (Required with switch)

(Order both parts separate)

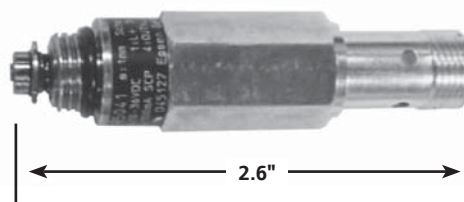
Couples to any M2500G metering valve having a cycle indicator pin and provides an electrical signal each time the divider valve operates. SPDT switch is rated 15 amps @ 125/250 VAC, .5amps @ 125VDC.



M2500G Series

AC498-1 w/4 pin micro connector M12 X 1 & LED light

Couples to any M2500G metering valve. Rated to 5000 PSI (350 BAR). Requires 10-36 VDC. To be used with the SC400 Controller or customer PLC only. (Refer to page 12 for cables)



M2500G Series

MCSA2503 w/automotive type 3 pin connector

Because they use a magnet to sense piston position, entry of contaminants into the system is prevented. These cycle switches may be installed in the end of M2500G valve size '15' and larger. The SPDT switch is rated at 250 VAC/28 VDC-5 Amps.



1000 Series

ELECTRICAL CYCLE SWITCHES:

(Sold only attached to 15 single or 15 twin Divider Valve Sections. See chart top of page 5.) Provides an electrical signal each time the divider valve operates. SPDT switch is rated 15 amps @ 125/250 VAC, .5 amps @ 125 VDC.

3000 Series

ELECTRICAL CYCLE SWITCHES:

FT15801C8 w/ 1/2-14 NPSM conduit connector

Couples to any 3000 metering valve having a cycle indicator pin and provides an electrical signal each time the divider valve operates. SPDT switch is rated 15 amps @ 125/250 VAC, .5 amps @ 125VDC.

Miscellaneous Pumps

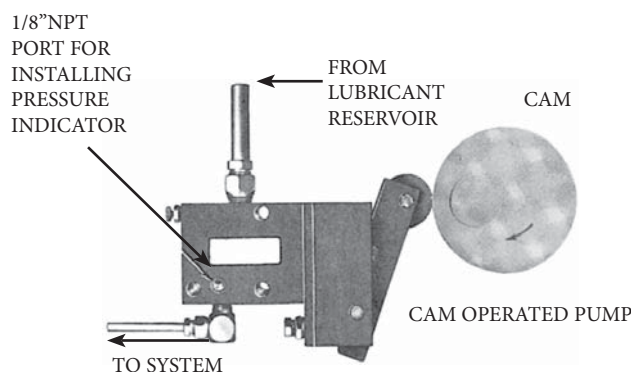
Mechanical pumps are driven through a connecting rod or cam by the machine being lubricated. A small quantity of lubricant (it can be either grease or oil) is delivered during each cycle as long as the machine is operating. Lube source can be either a reservoir or header line with a shut off valve, filter or strainer and pressure regulator between the header line and pump. 10 psi pressure at the pump is required for positive priming.

ORDERING INFORMATION

The components - pumps, reservoir, and pressure regulator - must be ordered separately. They are not sold as complete stations.

Warning: For safety of equipment and personnel, include one of the pressure indicators described. They provide relief for the system in case of line blockage.

DIRECT DRIVE PUMPS - MODEL TP2



Cam operated pumps can also be mounted on a way or slide and operated by a trip cam.

PUMP SPECIFICATIONS

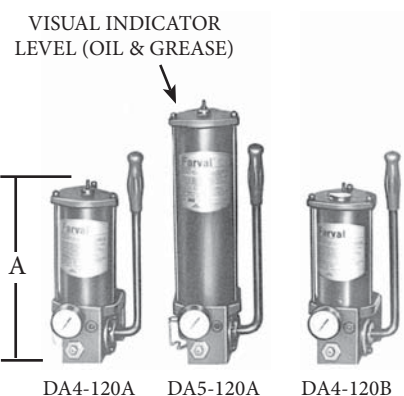
PUMP PART NO.	DISCHARGE PER STROKE CU. IN.		METHOD OF PUMP OPERATION	PUMP RETURN ACTION	PRESSURE RATIO @ SUGGESTED MINIMUM OPERATING PRESSURE	MAXIMUM OPERATING PRESSURE	MAXIMUM CYCLES PER MIN.			
	MINIMUM	MAXIMUM					AT MAX. DISCH. ADJUSTMENT		AT 50% MAX. DISCH. ADJUSTMENT	
							NLGI #1	NLGI #2	NLGI #1	NLGI #2
TP2C2	0	.095 (1.6cc)	Cam	Spring	11 Times Operating Force	As required	60	30	75	37

MANUAL PUMPING STATIONS

For bearings that require an application of lubricant infrequently, the manually-operated pumping unit is used, and may be located on the machine or at any convenient point nearby.

These units consist of a double-acting piston pump, reciprocated by a hand lever through a rack-and-gear segment. A quick-fill connection provides a convenient means of filling the reservoir, and an inlet filter screen gives added protection against the entry of dirt.

Where oil is employed, a float with oil level rod replaces the grease follower plate. Three sizes of reservoirs provide a supply of lubricant adequate for the number of bearings being lubricated.



Part Number	Type Lube	Reservoir Capacity	A (Max.)	Discharge Per Cycle*
DA4-120AC or DA4-102AC	Grease	4-1/2 lbs.	24.0	.45 cubic inches (7.44cc)
DA4-120BC or DA4-102BC	Oil	2-1/2 qts.	22.0	
DA5-120AC	Grease	8-1/4 lbs.	37.0	
DA6102BC	Oil	6-1/2 qts.	49.0	

*This is the volume discharged by one in and out operation of the hand lever.

Note

Series 120 pump is designed for single line lubricating systems and series 102 for jacking heavy loads.

Refer to the following documents for more info:

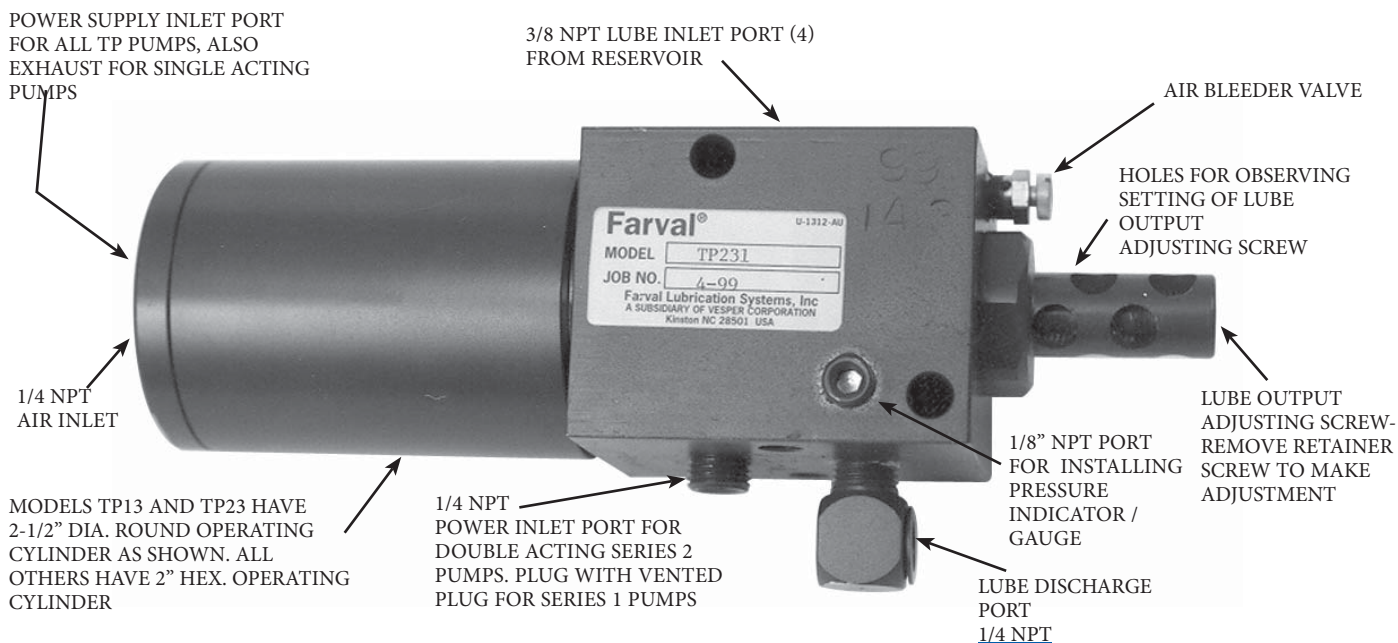
+ Datasheet #35518: DA Lubricator

APPLICATION

TP pumps are used on central pumping stations with T30 or T32 reservoirs; or in bulk oil installations without reservoirs. They are actuated by air or hydraulic power.

DESCRIPTION

The pumps meet a wide range of requirements as shown in the table below. The discharge capacities range from .015 to .170 cubic inches per stroke. These pumps offer a range of pressure ratios, and are available as single acting, spring return or double acting, power return.



PUMP SPECIFICATIONS

ORDER CODE LTR.	PUMP PART NO.	DISCHARGE CU. IN. PER STROKE (C.C.)		TYPE (1)	METHOD OF PUMP PISTON RETURN	PUMP PRES- SURE RATIO (2)	AIR OR HYDRAULIC INPUT PRESSURE (3)		MAXIMUM CYCLES PER MIN.			
		MINIMUM	MAXIMUM				AT MAX. DISCH. ADJUSTMENT		AT 50% MAX. DISCH. ADJUSTMENT			
							NLGI #1	NLGI #2	NLGI #1	NLGI #2		
C	TP121C	.015 (.25)	.068 (1.1)	Air	Spring	18:1	60 psi	200 psi	40	20	50	25
E	TP131C	.015 (.25)	.068 (1.1)	Air	Spring	50:1	30 psi	50 psi				
J	TP222C	.035 (.57)	.170 (2.8)	Hydraulic	Hydraulic	7:1	200 psi	500 psi				
K	TP231C	.035 (.57)	.170 (2.8)	Air	Spring	18:1	60 psi	200 psi				

- Listings in this column show our recommendations based on pump pressure ratios in relation to typical machine air and hydraulic power supply pressures. Hydraulic pressure must fall below 2 psi during relief cycle when using pumps for single acting (spring return) hydraulic service.
- Pressure ratios decrease at lower operating pressures - will increase slightly (up to 10%) at higher operating pressures.
- When using pump input pressures that generate pump output pressures over 3000 psi use either rupture disc indicator (Part No. 1041-2YN) in the pump port or relief type pressure indicator U-1980-1 in pump outlet line to prevent hazardous over pressurizing of lube system.
- Maximum lube inlet pressure is 15 psi.

Refer to the following documents for more info:

+ Datasheet #35609: TP Lubricator

Reservoirs - Models T30 and T32

APPLICATION

These reservoirs are used with the pumps described on page 16. When lubricating typical machine tools, they require 200 hours of system operation before refilling.

DESCRIPTION

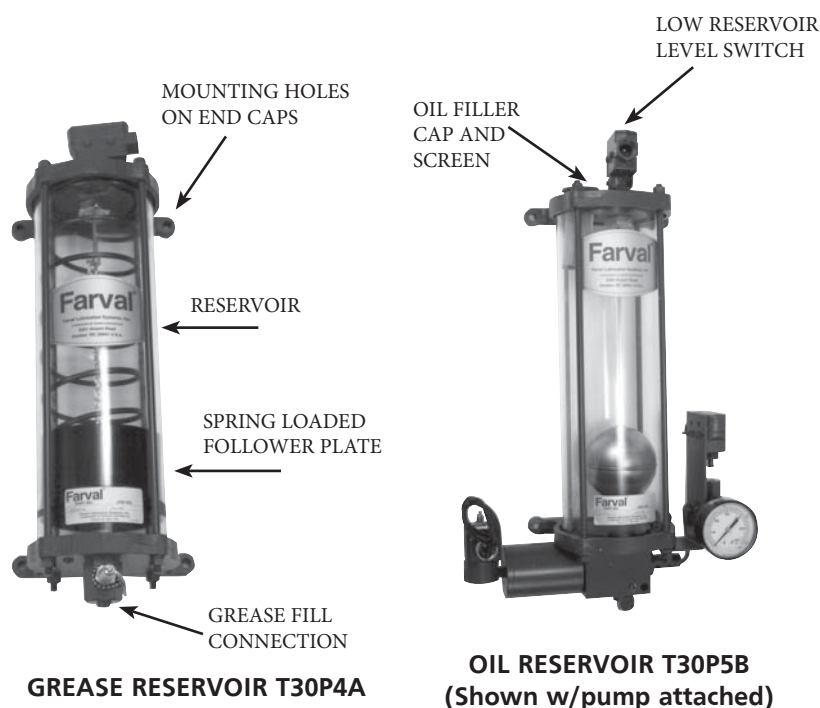
Typical oil and grease reservoirs are shown below and characteristics of the reservoirs are tabulated in the table. The low-level switch is single pole double throw with a UL rating of:

FOR MODELS T30 AND T32

10 amps at 125/250, or 3 amps at 480 volts A.C.

.5 amps at 125 volts D.C.

.25 amps at 250 volts D.C.



MODELS T30 and T32

REFERENCE LETTER	RESERVOIR PART NO.	LUBRICANT	CAPACITY	BODY	LUBRICANT LEVEL INDICATION
B	T30S5AC	GREASE	5 POUNDS	STEEL	LEVEL SWITCH, STEM
F	T30P5AC	GREASE	5 POUNDS	PLASTIC	LEVEL SWITCH, TRANSPARENT
G	T30P4BC	OIL	2.5 QUARTS	PLASTIC	TRANSPARENT
H	T30P5B	OIL	2 QUARTS	PLASTIC	LEVEL SWITCH, TRANSPARENT
R	T32P5AC	GREASE	10 POUNDS	PLASTIC	LEVEL SWITCH, TRANSPARENT
S	T32P4BC	OIL	6 QUARTS	PLASTIC	TRANSPARENT
T	T32P5B	OIL	5.5 QUARTS	PLASTIC	LEVEL SWITCH, TRANSPARENT

APPLICATION

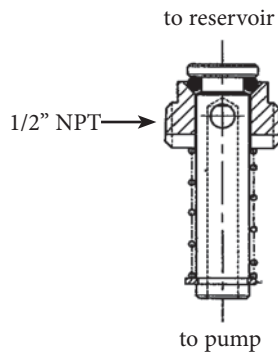
These stations lubricate machines having pneumatic or hydraulic power. All models use TP pumps and supply grease or oil.

DESCRIPTION

Complete pumping stations consist of various combinations of the reservoirs, pumps, etc., listed in the ordering code tables on this page.

Model #27744 Optional Reservoir/Pump Valve

Permits removal of pump without draining reservoir. Fits any T30 or T32 oil/grease reservoir.



NOTE: Must use 27749 Assembly Tool



TS30-TKEXA STATION WITH PUMP,
RESERVOIR AND ACCESSORIES

TYPICAL ORDERING CODE: TS30 STATIONS TS30-TKEXA

1ST LETTER	2ND LETTER	3RD LETTER	4TH LETTER	5TH LETTER
RESERVOIRS	PUMPS	PRESSURE INDICATOR	CONTROLLER	**SOLENOID VALVE
B-T30S 5A C F-T30P 5A C G-T30P 4B C H-T30P 5B R-T32P 5A C S-T32P 4B C T-T32P 5B	C-TP121 C E-TP131 C J-TP222 C K-TP231 C	A - 2135-15 HIGH PRESSURE INDICATOR FITTING SHIPPED LOOSE, NO PRESSURE GAUGE. C - T3010611-3000 P.S.I. GAUGE,TEE, 2135-15 HIGH PRESSURE INDICATOR E - T30-1043-1Y HIGH PRESSURE DISC INDICATOR & ELECTRICAL SWITCH W/U-902DB 3000 P.S.I. GAUGE	A - SS2200 W/MTG BRACKET PREWIRED *B - TIMER/SOLENOID COMBO X - NONE (ORDER SEPARATELY IF NEEDED) Z - SPECIAL VOLTAGE (SUPPLY COMPLETE DESCRIPTION SEPARATELY) W - SPECIAL-SPECIFY NUMBER AND GIVE FULL DESCRIPTION	A - U62912060 SOLENOID OPERATED AIR VALVE-3 WAY (110/120V-50/60 HZ) X - NONE Z - SPECIAL VALVE SPECIFY BY FULL PART NUMBER

*When this option is chosen, do not order solenoid valve separately. (24476 and 20311-3) See page 29

**These solenoid valves are normally used with single acting spring return pumps only (-1 series)

SureMatic Air-Operated (Single Stroke) Grease and Oil Pumps



General

The SureMatic Lubricator comprises a piston discharge pump actuated by air, controlled by an electric solenoid 3-way valve. Models are available to handle grease and oil.

Low level switch is standard on all models.

Application

Unit discharges lubricant on single action air powered forward stroke and actuates all divider valves connected to the single line centralized distribution network.

Refer to the following documents for more info:

+ Datasheet #35485: SureMatic Lubricator

Technical Data

All Models	Lubricator Reservoir Capacity	Oil 2.0, 3.5 and 5.0 liter / Grease 4, 7, and 10 pound
	Discharge Range	1.0-8.0cc (adjustable) / .060-.480 cubic inch
	Pressure Ratio/Lubricant Discharge/Inlet Air	18:1
	Max/Min Permissible Inlet Air Pressure	150/40 psi
	Maximum Stroke Rate (full stroke, 8cc)	Approximately 8 strokes/min.
	Maximum Ambient Temperature Range	0–180°F
	Materials	Aluminum pump; Buna N seals; acrylic reservoir

Specifications For Oil Pumps (150-8000SSU)

Model	Reservoir Capacity Liters	Air Inlet	Lube Outlet	Lubricant Oper. Press. Max.	Dimensions H x W x L (MM)
18137C	4 Pints (2 LT)	¼" NPTF(F)	¼" NPTF(F)	2700 psi* (186 BAR)*	14" x 6-3/8 x 10" (356 x 162 x 254)
18138C	7 Pints (3.5 LT)				18" x 6-3/8 x 10" (457 x 162 x 254)
18139C	10 Pints (5 LT)				23" x 6-3/8 x 10" (584 x 162 x 254)

Specifications For Grease Pumps (Up to NLGI #2)

Model	Reservoir Capacity Liters	Air Inlet	Lube Outlet	Lubricant Oper. Press. Max.	Dimensions H x W x L (MM)
18130-2.0C	4 LB (2 KG)	¼" NPTF(F)	¼" NPTF(F)	2700 psi* (186 BAR)*	14" x 6-3/8 x 10" (356 x 162 x 254)
18130-3.5C	7 LB (3.2 KG)				18" x 6-3/8 x 10" (457 x 162 x 254)
18132C	10 LB (4.6 KG)				23" x 6-3/8 x 10" (584 x 162 x 254)

*Max Lube Pressure @ 150 psi air pressure (10 bar)

NOTE: See page 29 for timers

General

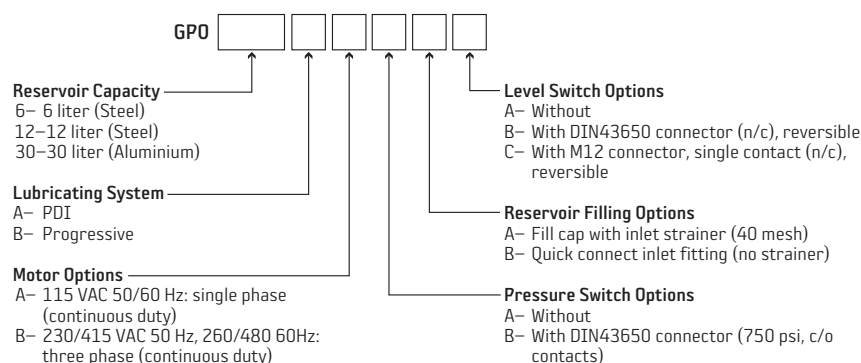
The GPO Lubricator is a motor-driven gear pump that is designed for use with single line centralized lubricating systems utilizing progressive distributors or injectors. Standard features include: liquid level indicator, pressure gauge and strainer filler cap. An adjustable pressure regulating oil bypass valve is standard on Progressive systems and a dump valve is standard on Positive Displacement Injector (PDI) systems. Programmable controllers are available to operate the lubricator.

Technical Data

Maximum Discharge Pressure	1000 psi (69 bar)
Operating Temperature Range	40°F to 105°F (5°C to 40°C)
Reservoir Capacities	6 liter, 12 liter, 30 liter
Discharge	275cc/min (Single Phase) 500cc/min (Three Phase)
Output Connection	1/4" NPT (left and right options)
Oil Viscosity	20-1500 cSt



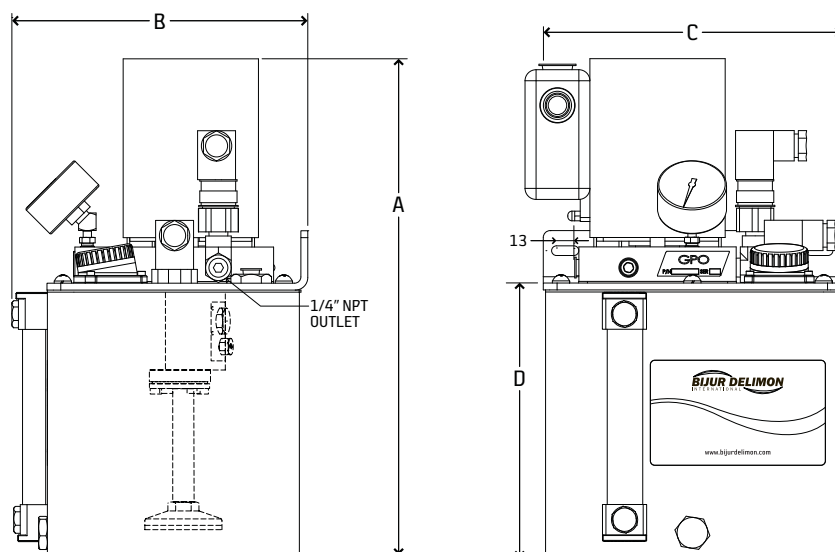
How to Order



Refer to the following documents for more info:

+ Datasheet #35641: GPO Lubricator

Dimensions



DIM	6 liter	12 liter	30 liter
A	360mm	318mm	468mm
B	215mm	260mm	340mm
C	229mm	370mm	490mm
D	200mm	156mm	291mm

Dynamis & Dynamis Maxx

General - Dynamis Lubricator

Dynamis Lubricators are electrically driven piston pumps designed for use with series progressive systems. These lubricators are fitted with two connected piston elements providing positive displacement output to series progressive divider valves. Dynamis Lubricators include an integral programmable pCo controller and low level switch. Operating voltages are 12 /24VDC & 115VAC.

Technical Data

Reservoir Capacity	4 liter (8 lb.)	
Grease	NLGI grade 000-2	
Relief Valve Setting	4350 psi (300 bar)	
Discharge/min.	2.60cc (0.15 cu. in.)	
Operating Voltage	12 or 24 VDC, 115VAC	
Outlet Connection	G1/4 (1/4BSPP)	
Electrical Connections	12VDC	DIN 43650 Form A for power supply M12x1, 8 pole for status signals
	24VDC	M12x1, 5 pole for power supply M12x1, 8 pole for status signals

How to Order

Name	Voltage	Reservoir Capacity	Options	Discharge	Part #
Dynamis Progressive Lubricator	12 VDC	4 liter (8 lb.)	300 bar	2.60cc/min	DYNMLA11DH10600
	24 VDC	4 liter (8 lb.)	300 bar	2.60cc/min	DYNMLA11DH20200
	115VAC	4 liter (8 lb.)	300 bar	2.60cc/min	DYNMLA33EH30800



Dynamis Progressive Lubricator.

Refer to the following documents for more info:

+ Datasheet #35710: Dynamis Lubricator

General - Dynamis Maxx Lubricator

Dynamis Maxx Lubricators are electrically driven piston pumps designed for use with series progressive systems. These lubricators can be fitted with up to three independent piston elements providing positive displacement output to series progressive divider valves. Dynamis Maxx Lubricators are available with an integral pCo programmable controller, low level switch and various reservoir capacities. Operating voltages are 24 VDC.

Technical Data

Reservoir Capacity	4 and 8 liter (8 and 16 lb.)	
Grease	NLGI grade 000-2	
Relief Valve Setting	4350 psi (300 bar)	
Discharge/min.	1.8cc (0.11 cu. in.) Per element/outlet	
Operating Voltage	24 VDC	
Outlet Connection	8MM Tube fitting (or G1/4 port)	
Electrical Connections	DIN 43650, 3 pole for power supply Units with internal control have M12x1, 8 pole for status & cable duct M20x1.5 for additional connections.	

How to Order

Name	Voltage	Reservoir Capacity	Options	Part #
Dynamis Maxx Progressive Lubricator	24 VDC	4 liter (8 lb.)	Low level switch	DYXMLA300P21100
			Low level switch & controller	DYXMLA300P20400
		8 liter (16 lb.)	Low level switch	DYXMLA300Q21100
			Low level switch & controller	DYXMLA300Q20400



Dynamis Maxx Progressive Lubricator.

Refer to the following documents for more info:

+ Datasheet #35687: Dynamis Maxx Lubricator

Multiport Pumps

GENERAL

Rugged, compact, electric, motor-driven pump, equipped with fixed output pumping elements to discharge grease and oil over a wide operating range. Low level switches are available on some models. Available in 12 & 24 VDC, 110 VAC 1PH and 220/380 VAC 3 PH.

Up to three independent feed lines can be used with the MultiPort pump.

The pump can be used with all single line progressive lubricating systems.

A selection of controller/monitors are available to operate MultiPort pumps (SS2200, SS2200DC, SM-C. See pages 28,29)

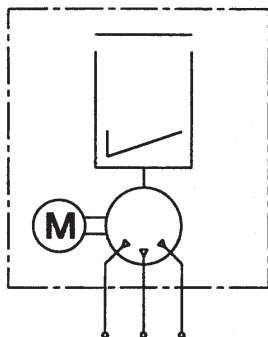
SPECIFICATIONS (ALL MODELS)

- Operating Temp. Range 0°F to 120°F (-18 to 49°C)
- Pumping Elements 1 to 3
- Output per Revolution 0.01 cu. in. (0.16cc)
- Max. Working Pressure 3600 psi Grease, 2900 psi Oil
- Oil Maximum 5000 SUS
- Grease Maximum NLGI No. 2
- Discharge Port 1/4-18 NPTF
- Grease Fill Connection Male filler fitting (quick disconnect)

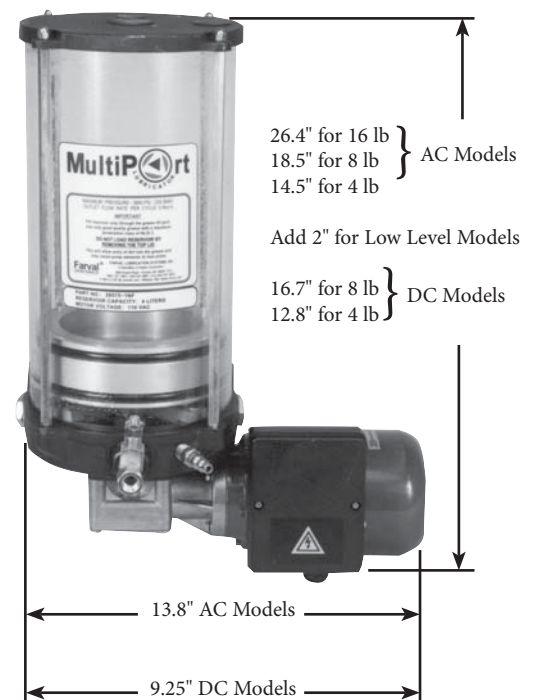
ELECTRIC MOTOR SPECS

VOLTAGE	H.P. RATING	FULL LOAD AMPS	PROTECTION
12 VDC	.068	4	IP44
24 VDC	.068	2	IP44
110 VAC	.08	1.83	IP55
*220/380 VAC	.08	.68	IP55

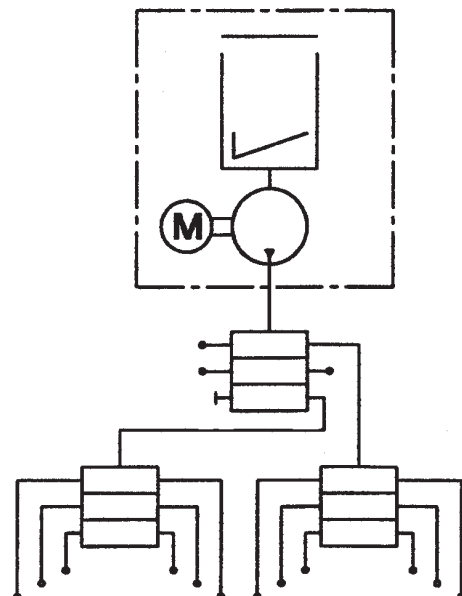
*Can be used up to 440VAC for intermittent use only.



MULTIPORT SYSTEM



Refer to the following documents for more info:
+ Datasheet #35693: Multiport Lubricator



MULTIPORT PROGRESSIVE DIVIDER SYSTEM

12 VDC GREASE MODELS

Operates at 40 RPM at 68°F, 1,000 psi backpressure.

4 lb. Plastic Reservoir.

DESCRIPTION	PART NO.
Single Outlet (center)	30785-1NF
Two Outlets (center and right)	30785-2NF
Three Outlets (all)	30785-3NF

4 lb. Plastic Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	31099-1NF
Two Outlets (center and right)	31099-2NF
Three Outlets (all)	31099-3NF

Note: 4 liter Oil reservoir - no low level is available Part # 51095-4E

24 VDC GREASE MODELS

Operates at 40 RPM at 68°F, 1,000 psi backpressure.

4 lb. Plastic Reservoir.

DESCRIPTION	PART NO.
Single Outlet (center)	28566-1NF
Two Outlets (center and right)	28566-2NF
Three Outlets (all)	28566-3NF

4 lb. Plastic Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	30787-1NF
Two Outlets (center and right)	30787-2NF
Three Outlets (all)	30787-3NF

8 lb. Plastic Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	31037-1NF
Two Outlets (center and right)	31037-2NF
Three Outlets (all)	31037-3NF

Note: 20lb plastic reservoir w/ low level is available. Part #51092E

24 VDC OIL MODELS

Operates at 40 RPM at 68°F, 1,000 psi backpressure.

2 liter Plastic Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	30787-1NFO

4 liter Plastic Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	31037-1NFO

110 VAC, 1 PHASE, 50/60 Hz GREASE MODELS

Operates at 32 RPM (60 Hz) at 68°F, 1,000 psi backpressure.

4 lb. Plastic Reservoir.

DESCRIPTION	PART NO.
Single Outlet (center)	28569-1NF
Two Outlets (center and right)	28569-2NF
Three Outlets (all)	28569-3NF

8 lb. Plastic Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	31801-1NF
Two Outlets (center and right)	31801-2NF
Three Outlets (all)	31801-3NF

NOTE: 4 lb plastic reservoir w/ low level is available - Part No. 41320-1NF**NOTE: 16 lb plastic reservoir w/ low level is available - Part No. 59827-1NF****110 VAC, 1 PHASE, 50/60 Hz OIL MODELS**

Operates at 32 RPM (60 Hz) at 68°F, 1,000 psi backpressure.

2 liter Plastic Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	41320-1NFO

4 liter Plastic Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	31801-1NFO

220/380 VAC, 3 PHASE, 50/60 Hz GREASE MODELS

Operates at 32 RPM (60Hz) at 68°F, 1,000 psi backpressure.

Can be used up to 440VAC for intermittent use only.

8 lb. Plastic Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	30559-1NF
Two Outlets (center and right)	30559-2NF
Three Outlets (all)	30559-3NF

16 lb. Metal Reservoir and low level switch.

DESCRIPTION	PART NO.
Single Outlet (center)	28730-1NF
Two Outlets (center and right)	28730-2NF
Three Outlets (all)	28730-3NF

NOTE: 4 lb plastic reservoir - no low level is available - Part No. 28570-1NF**220/380 VAC, 3 PHASE, 50/60 Hz OIL MODELS**

Operates at 32 RPM (60Hz) at 68°F, 1,000 psi backpressure.

Can be used up to 440VAC for intermittent use only.

4 liter Plastic Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	30559-1NFO

8 liter Steel Reservoir and low level switch

DESCRIPTION	PART NO.
Single Outlet (center)	28730-1NFO

55:1 Ratio High Pressure Air Operated Grease Drum Pumps



Model F306

Model F308

High pressure grease pumps handle all types of grease up to and including NLGI 2 directly from 35 lb., 120 lb. and 400 lb. grease containers.

Highly efficient double-action pump design assures even flow of fluid, low noise level and low air consumption. Built in exhaust mufflers, standard.

Max. air pressure 140 psi (10 Bar)
Min. air pressure..... 40 psi (3 Bar)
Avg. air consumption*..... 5 cu. ft./min. (150 L/min.)
Max. delivery*..... 40 cu. in./min. (650 cc/min.)

Low level switch kit for 120/400 lb drums

Model LC10243 - for 120 lb. drum

Model LC11036 - for 400 lb. drum

Notes:

- (1) Requires cover and follower plate - order separately.
- (2) Customer/user to provide 15/16" hole in cover.
- (3) Can be used with any style pump.

Model F306 For 120 lb. open top drum.

Includes the following:

- Model F302: 55:1 Ratio pump with cover mounting adapter.
- Model F1936: Deluxe drum cover for 120 lb. drum.
- * Model F903: Connecting hose installation hook-up kit.

Model F308 For 400 lb. open top drum.

Includes the following:

- Model F304: 55:1 Ratio pump with cover mounting adapter.
- Model F1938: Deluxe drum cover for 400 lb. drum.
- * Model F903: Connecting hose installation hook-up kit.

Model F335 (not shown) For 35 lb. pail.

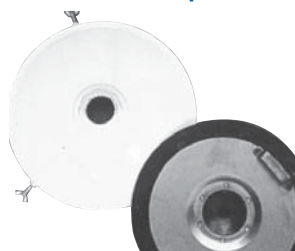
Includes the following:

- Model F300: 55:1 Ratio pump with cover mounting adapter.
- Model F1934: Deluxe cover for 35 lb. pail.
- * Model F903: Connecting hose installation hook-up kit.

NOTE: Order Follower Plate separately

* F903 consists of 2' air hose, 5' grease hose, 1/4" quick disconnect, high pressure swivel coupler.

Steel follower plates: rubber grommet and wiper



Model F962

Follower for 35 lb. pail.

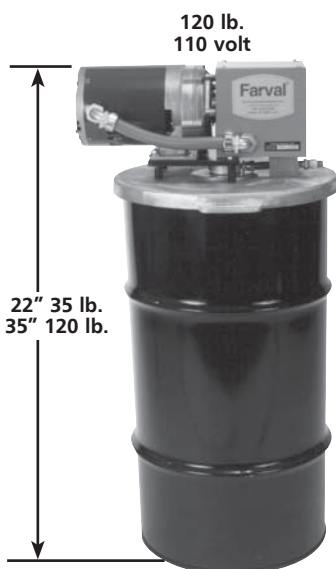
Model F964

Follower for 120 lb. drum.

Model F966

Follower for 400 lb. drum.

Electric Grease Drum Pumps



NOTE: Lube containers supplied by others.

DESCRIPTION

Farval's AC or DC electric barrel pumps will replace the air or hydraulic operated pumps now used for lube systems on mobile or stationary equipment. Installation is cleaner - no air or hydraulic lines to install. Simply wire into the machines 12, 24, or 110-volt supply. Pressure rated to 4000 psi. Will fit original refinery 35 and 120 lb. drums.

All models include drum cover, and follower plate.

ELECTRIC BARREL PUMP SPECIFICATIONS

Model Number	Voltage AC/DC	Container Size	Pressure Max PSI	Lube Flow Output/Minute	Amp Draw Normal	Amp Draw Spike
FEP312	12 VDC	35 lb pail	4000	14.5 cu. In	See Note 1	80 Amps
FEP322	12 VDC	120 lb drum		14.5 cu. In	See Note 1	80 Amps
FEP712C	24 VDC	35 lb pail		12.0 cu. In	See Note 2	40 Amps
FEP722C	24 VDC	120 lb drum		12.0 cu. In	See Note 2	40 Amps
FEP812	115/230VAC 50/60Hz	35 lb pail		10.3 cu. In	See Note 3	5 Amps
FEP822	115/230VAC 50/60Hz	120 lb drum		10.3 cu. In	See Note 3	5 Amps

- Notes: 1 12 VDC 15-20 amp draw @ free flow. 30-40 amp draw @ 3000 psi
2 24 VDC 10 amp draw @ free flow. 15-20 amp draw @ 3000 psi
3 120 VAC 5 amp draw @ free flow or 3000 psi
4 Lube Outlet port is 1/4" NPT (F)

Refer to the following documents for more info:
+ Datasheet #35975: Electric Drum Pumps

Air/oil systems deliver ultra efficient lubrication and cooling to heavy duty, high performance bearings operating in adverse conditions.

Customized air/oil stations and zone boxes deliver precise oil and air flow to bearings and gears for sustained peak performance.

Pump stations can be air operated or electric motor driven. A full line of controllers and monitoring packages are provided to control system performance.

INDUSTRIES AND APPLICATIONS INCLUDE:

STEEL - Spindles, Saws, Rolling Mills, Roller Tables, Levelers, Continuous Casters, Fan Bearings, Pinch & Shape Roll, Guides, Gears, Work Roll & Back Roll

PAPER - Chains, Gear Cases, Roll Additions, Dryers

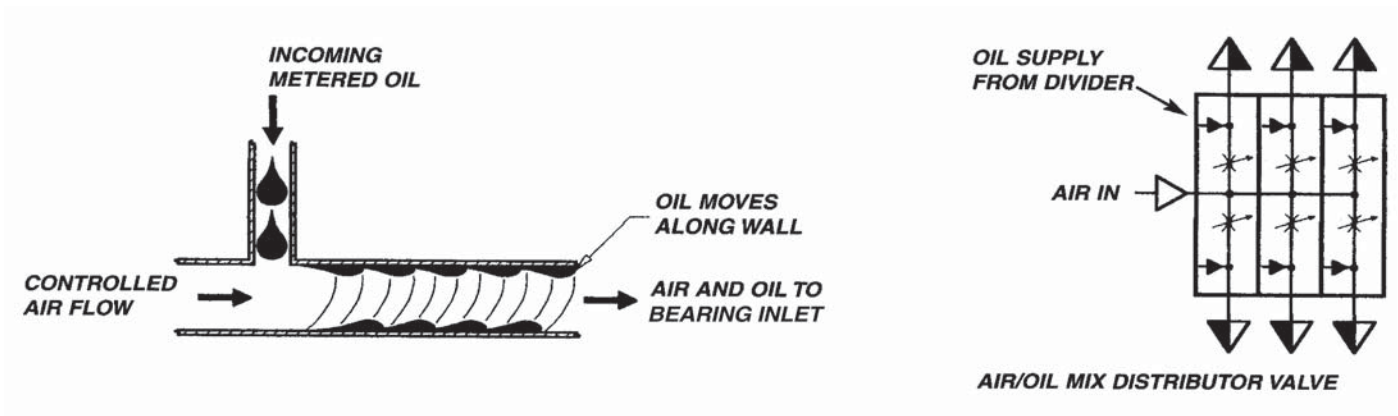
GENERAL - Any bearing that can benefit from air/oil pressurization or application

BASIC PRINCIPLE OF AIR/OIL LUBRICATION

The valves are mounted directly on top of the M2500G divider valves.

Oil is discharged from the alternate outlet ports on top of the M2500G valve assembly and enters the H2500 section. Compressed air enters the assembly through the center of the air/oil block, mixes with the oil and goes out the outlet port.

The oil is carried along the inside of the tube by the air flow, and when piped into a bearing the oil lubricates the bearing and air flow acts to prevent moisture and contamination from entering the bearing and assists in reducing bearing temperature.

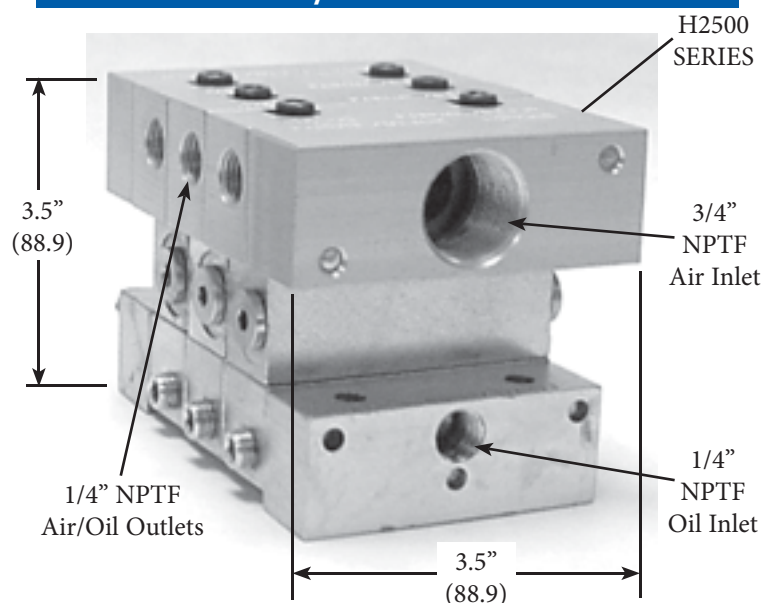


AIR/OIL VALVES

Features That Make the Difference

- Air/Oil mixing sections mount directly onto M2500G Series and most competitors modular divider assemblies.
- Ability to mount 1 to 8 air/oil valves on a divider assembly, serving from 1-16 air/oil lube points per assembly.
- Manifolds can dispense oil only or air/oil from different ports on the same divider assembly.
- Oil volume is supplied through standard discharge sections ranging from .005 to .080 cu. in. per discharge.

3 SECTION AIR/OIL VALVE ASSEMBLY



H2500 SPECIFICATIONS

Max Air Flow	20 SCFM
Max Air Pressure	100 PSI (7 BAR)
Seals	Viton
Material	Anodized Aluminum

H2500 ORDERING INFORMATION

Inlet	34134 & U1720120S
End	34136
Mixing Valve*	H2500B
Tie Rod (2 req'd)	MCR2505-3 thru 8
Nut (2 req'd)	U251A

Note: *Mixing Valve's include all seals, mounting screws, flush fit plugs, etc.

General

The 55105 Lube Point Monitor is an accurate oval gear mechanism that incorporates two magnets into one of the nylon oval gears. The body incorporates a reed switch which senses the magnet passing. Lubricant entering the 55105 causes the gears to rotate. Each single rotation of the oval gear equates to a displacement of 0.040 cu. in. (.65cc). The monitoring of the 55105 is done with any PLC. The feedback from the 55105 will assure that lubricant has reached the inlet of critical lubrication points.

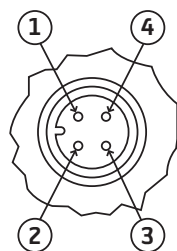
Application

The 55105 Lube Point Monitor is intended to be mounted at or near the lubrication point inlet. It can be used with any type of grease or oil system (Dualine/Progressive/PDI). Due to the nature of the internals, proper filtration is required to keep contaminants out of the monitor body.

Technical Data

Flow	0-2500cc/min.	
Maximum Pressure	10153 psi (700 bar)	
Accuracy	±3%	
Vibrations	20 g (10-20000 Hz)	
Life Time	10 ⁹ pulses	
Temperature	-4°F to 158°F (-20°C to 70°C)	
Connections	1/8” NPT	
Material	Aluminum	
Weight	0.186 kg	
Lubricant	ISO VG 32 Oil to NLGI Grade 2 Grease	
IP Enclosure Rating	IP-67	
Connection	4-pole M12 x 1 (male)	
Switch Rating	Maximum Voltage	0-24 VDC
	Maximum Current	0.20 amp

Wiring



PIN #	Description	Wire Color
1	Common	Brown
4	Signal	Black

See page 12 for cables.



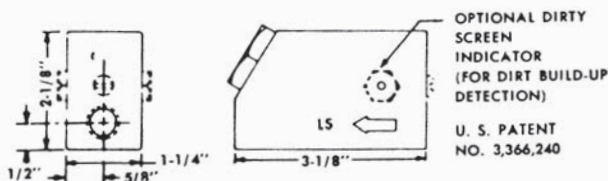
Lube Point Monitor (Part #55105)



Lube Point Monitor shown with bearing. (Bearing not included)

Refer to the following documents for more info:
+ Datasheet #35978: Lube Point Monitor

LS Strainers



DESCRIPTION

1. LS line strainers remove foreign particles from grease and oil lines in lubricating systems. Withstand up to 5000 psi working pressure non-shock.
2. Flow rate and ratio of open screen area to pipe diameter are:

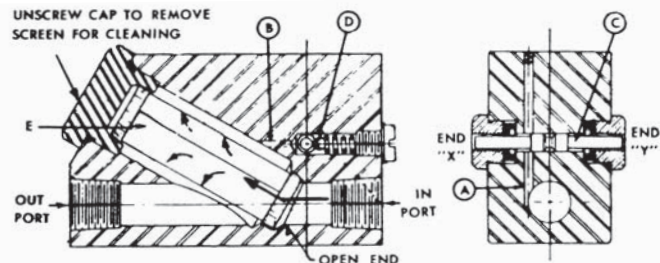
Size (NPT)	Flow Rate (GPM) *	Ratio of Open Screen Area/Pipe Dia.	
		Perforated Metal Screen Type (500 Micron)	Wire Mesh Screen Type (75 & 150 Micron)
1/4	2	6:1	7:1
3/8	5	3 1/2:1	4:1

*Based on 225 SSU oil at 100° F. and 20 ft./sec. velocity.

3. The dirty screen indicator option requires a differential pressure between 300 and 500 psi for activation.

REPLACEMENT SCREENS

Part No.	DESCRIPTION
LS-02-05-103	25 MICRON SCREEN (OIL ONLY UP TO 500 SSU)
LS-02-05-106	150 MICRON SCREEN (OIL ONLY UP TO 2000 SSU)
LS-02-05-120	500 MICRON SCREEN (OIL OVER 2000 SSU & ALL GREASE)



TYPICAL ORDERING CODE

LS - 02 2 03 5

*Basic Letter Identification	Pipe Tap Size	Dirty Screen Indicator Option	Dirty Screen (Usage at Minimum Operating Temperature)	**Micro Switch Option
*LS - "Line Strainer"	02 - 1/4" 03 - 3/8"	1 - without indicator 2 - with indicator	03 - 25 micron screen (oil only up to 500 SSU) 06 - 150 micron screen (oil only up to 2000 SSU) 20 - 500 micron screen (oil over 2000 SSU & all grease)	No Number - No micro switch 5 - micro switch

*This must appear in all orders for strainer assemblies.
**Micro Switch available ONLY with Dirty Screen Indicator (2 Option).

Example: LS-03-120 is the order code for a 3/8" P.T. Strainer without indicator and with a 500 micron screen.

MODEL SM-C DIRECT CURRENT VOLTAGE CONTROLLER

OPERATION

Various timed and Divider Valve Cycle count based models available with adjustable 'ON' and 'OFF' ranges to control pneumatic or electronic motor-driven lubrication systems. The controller has the ability to detect abnormal operating situations.

Unit has lapsed time feature. After power interruption, controller completes remaining time or cycles.

Low lubricant levels in lubricator switch can be monitored by controller.

A built-in LED display monitors preset program operation LED's display status of electrical inputs.

INSTALLATION

Mount the controller in a clean area with easy access for programming and visual checking. Mount controller on a flat surface, free of vibrations.

SPECIFICATIONS

- 12 and 24VDC models available
- Suitable for electric motor or solenoid (pneumatic pump)
- Can monitor Divider Valve cycle switch input and low level input
- Enclosure rating IP67
- Vibration 5G
- Ambient temperature -4°F to 110°F
- Alarm switch normally open, contact rating 30 watts maximum

CONTROLLER STATUS LED's

- Red Steady - Lubrication Cycle
- Yellow Steady - Alarm
- Green Steady - Power Supply On
- None Lit - No input power to controller



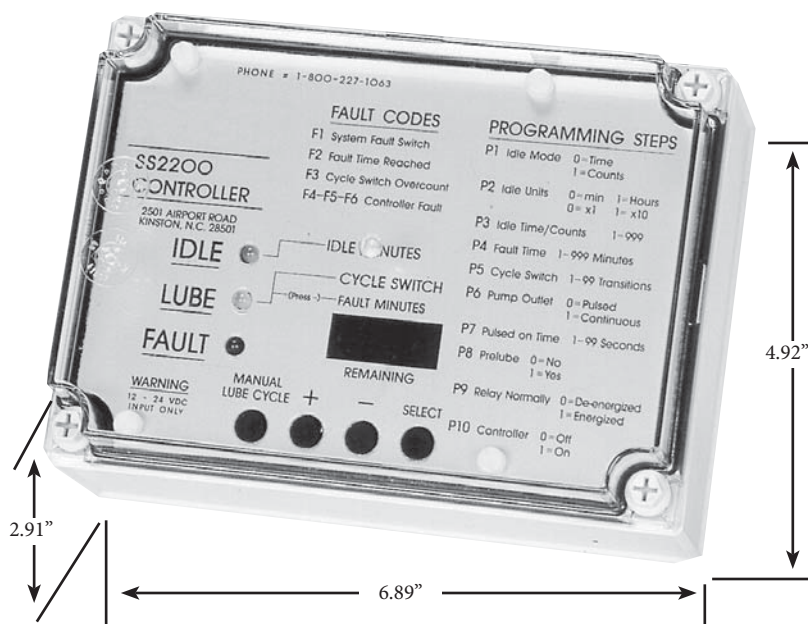
Refer to the following documents for more info:
+ Datasheet #32777: SMC Controller

PART NO.	OPERATING CHARACTERISTICS			POWER INPUT	PEAK CURRENT
33346-1	Count Based	'ON' Period (Divider Cycles)	0-9999 cycles	24 V DC	3 amps
		'OFF' Period	0-9999 minutes	±10%	
33346-3	Count Based	'ON' Period (Divider Cycles)	0-9999 cycles	12 V DC	5 amps
		'OFF' Period	0-9999 minutes	±10%	
33346-4	Time Based	'ON' Period	0-999 seconds	12 V DC	5 amps
		'OFF' Period	0-9999 minutes	±10%	

SS2200 CONTROLLER

- Simple three key programming
- Controls both single line and dualine lubrication systems
- Operates electric or air driven pumps
- Time or machine cycle based operation
- Programmable for remote fault indication and emergency machine shutdown
- LED indicators and numerical displays monitor system operation
- EEPROM permanently stores programming without battery backup

The SS2200 is a microprocessor-based programmable controller designed to operate Single line and Dualine central lubrication systems. The SS2200 is housed in a NEMA 4X polycarbonate enclosure with a transparent cover. Visible through the cover are LED indicators for Idle, Lube and Fault modes, and a three-digit numerical display used for programming and monitoring lube system operation.



SPECIFICATIONS

INPUT.....	115 VAC-50/60 Hz. Over voltage protected
OUTPUTS:	
Pump.....	Pulsed or Continuous, Form A, 115 VAC, 5 Amp. Inrush, 2 Amp. Continuous
Cycle Switch.....	12-16 VDC, 12-16 ma.DC
Fault Switches.....	12-16 VDC, 12-16 ma.DC
FAULT RELAY CONTACTS.....	2 Amp., 125 VAC
ENCLOSURE.....	NEMA 4X, Polycarbonate
AMBIENT TEMPERATURE.....	+20°F. to 120°F.
VIBRATION.....	1.5g
PERMANENT MEMORY.....	EEPROM (No Battery)

PROGRAMMING

IDLE TIME.....	1-999 Hours, 1-999 Minutes 1-999 or 10-9990 Machine Counts
CYCLE COMPLETION TIME ...	1-999 Minutes
CYCLE SWITCH COUNTS.....	1-99 Counts
PULSED OUTPUT ON-TIME ...	1-99 Seconds
PRELUBE ON POWER-UP.....	Yes/no
FAULT RELAY.....	Normally Energized/ Normally De-energized
CONTROLLER.....	On/Off

Refer to the following documents for more info:
+ Datasheet #24735 SS2200 Controller

TIMER AND SOLENOID VALVE FOR PNEUMATIC OPERATED PUMPS

General

A compact timer which mounts directly to a solenoid valve having DIN 43650 Form A electrical terminations.

Unit has four operating modes, with eight time ranges. Final time range settings are adjusted by potentiometers.

Two red light emitting diodes indicate power 'ON' and output energized (solenoid 'ON').

ORDER SEPARATE

TIMER - PART NO. 24476

SOLENOID VALVE - PART NO. 20311-3

110/120 50/60 Hz

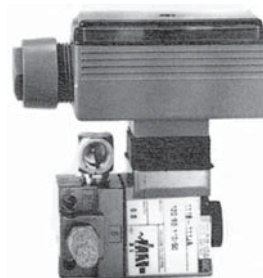
3-Way-2-position - normally closed

1/8" NPT Ports

150 psi Max

24476 TECHNICAL DATA

Supply voltage.....	110-230V, 50/60 Hz, (+ - 10%)
Power Consumption ...	1.0W maximum
Switching Load.....	I _{max} =0.5 A at supply voltage 110/230V, 50/60 Hz
Classification.....	Ip 65, air gaps and leakage paths according to VDE 0100
Body Material.....	Polyamide plastic
Working Temp. Range..	32°-130°F (0°-55°C)
Indicator.....	LED connected power supply LED energized load
Adjustment.....	Basic function and time range via DIP switch settings Precision time adjustment via potentiometer
Time Range.....	Adjustable from .5 seconds to 10 hours



Whatever your automatic lube requirement... We have the solution!



Series Progressive



Injectors



Dualine



Flowmeters



Oil Recovery Unit



SureFire-PDI



Refillable
Single Point

Let 80+ Years Of Experience Design Your Next Lube System

BDI has been a manufacturer of automatic lubricating systems for over 80 years. We offer a complete line of pumps, valves, controllers, and accessories. Our pump line includes manual, air, electric, and hydraulic actuated models. Our valve offering is the most comprehensive in the industry. We manufacture oil and grease Dualine valves, series progressive modular valves, and injectors. We also offer air/oil mixing modules, oil flow meters, and single point lubricators.

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