



Modular Lube[®]

Automated Lubrication Systems



“We install Lincoln Modular Lube systems to protect our equipment and ensure the performance our customers demand.”

Ryan Riske, Weatherford Compression Company, Corpus Christi, Texas

People, Capabilities and Systems to Save Money and Increase Productivity



We're the largest and most successful company in our field because we continually satisfy our customers with the world's best lubrication and pumping systems. For almost 90 years, companies have relied on our technical and quality leadership, our world-class manufacturing and customer service, and our vast network of distributors and support facilities.

Lincoln develops new products and systems at research and development facilities in the U.S., Germany and India that provide global and regional application solutions.

We have solutions for large processing plants, automotive manufacturing, pulp and paper mills, and food and beverage facilities. Virtually every industrial professional involved in operations and maintenance can benefit from Lincoln systems.

On the road or in the field, Lincoln protects heavy equipment used in mining, construction, agriculture and over-the-road trucking. The world's leading manufacturers offer our systems as standard equipment or factory options.

Lincoln builds precision metal components, state-of-the-art electronic controls, and the industry's top-performing pump systems. Our quality systems in the United States and Germany are ISO 9001 registered.

With five technical support centers on three continents, and a network of system houses and distributors supported by regional sales and service offices, our customers can always draw on our worldwide resources.

To make sure your investment results in significant savings, Lincoln developed a unique program called BearingSaver®. You not only get a complete audit of your facility, you also receive an analysis of your return on investment.



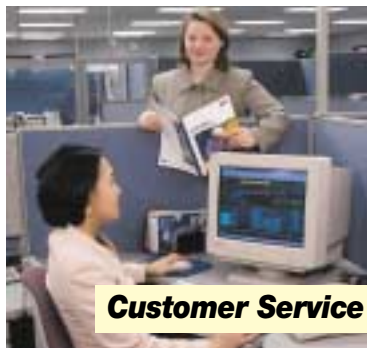
Industrial Solutions



Worldwide Support



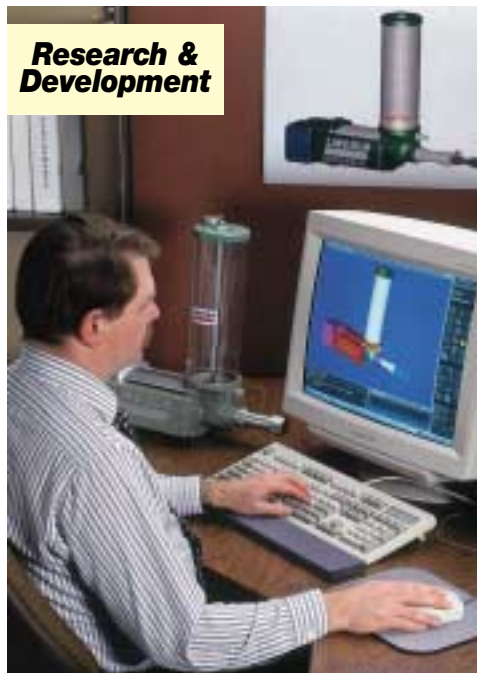
Quality Manufacturing



Customer Service



BearingSaver®



Research & Development



Mobile Equipment

Modular Lube® Lubrication Systems

Introduction to Modular Lube



Built-in design options

When new technology calls for design alterations, the system designer can add or delete lubrication points without disturbing existing piping.

It's an economical system

Lincoln's Modular Lube single-line progressive system requires less piping and lower tubing costs at installation—and costs less to maintain or change when the need arises.

Patented by-pass block

This unique feature enables design engineers to extend any Lincoln Modular Lube system simply by removing the by-pass block and replacing it with a metering valve. When new machine accessories are added, Modular Lube stands ready to service any bearing point requirements.

Central Signaling

If a malfunction should occur due to a broken air line, low lubricant level, high pressure or line blockage, Lincoln's Modular Lube automatic lube system controls can be configured to signal the operator with a visual or audible alarm, and interlock contacts activate a machine shut-down circuit.

Plug-in concept

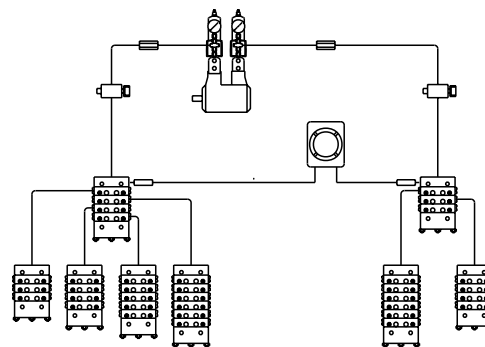
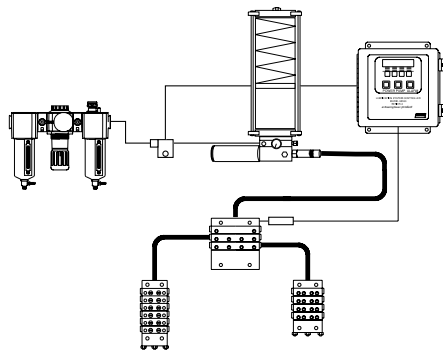
The Lincoln modular concept allows faster and easier changing of metering valve sizes. Modular pumps, reservoirs and timers make up a compact easy-to-mount lube system, simplifying the work of system designers and maintenance engineers.

Versatile interchangeable components

Divider valves, pumps reservoirs and controls can be used to tailor a Lincoln Modular Lube system to suit individual needs and/or requirements. Inventory costs are reduced to a minimum by purchasing modular components.

You're assured of positive stall

If a lubricating line plugs, any progressive lube system should shut down entirely -- that's what it's designed to do. However, when a feed line becomes plugged on some systems, system pressure can cause lubrication to gradually slip by a valve piston, allowing the system to resume functioning -- with one or more lubricating lines out of operation. Machinery bearings could run dry with disastrous results. Modular Lube has the closest piston-to-valve tolerances in the industry, virtually assuring you a positive stall every time.



UV, MM, XL Series

Designed for standard industrial applications. UV, MM, XL Modular Lube systems are fully automatic, centralized lubrication systems for use on all types of industrial machinery.

Type UV, MM and XL are available in several divider valve sizes and outputs, and provides maximum flexibility in application. This is the most versatile of the Modular Lube systems. It can be installed on all machine tools (metal-cutting, metal forming), foundry machinery, wood-working and wood processing equipment, printing machinery, mining equipment and material handling machinery.

MC Series

Designed for gas engine and compressor lubrication systems. MC series systems are designed for the gas transmission industry and are available with Viton seals. The divider valves are compatible with either synthetic or petroleum-based lubricants depending upon the type of gasket plate installed. High-pressure capability to overcome back pressure with CSA-approved monitoring components available.

Modular Lube® Lubrication Systems

Introduction to Modular Lube



Modular Lube Divider Valves

Lincoln divider valve assemblies are comprised of three or more metering valves mounted to a segmented baseplate. The metering valves are available with single or twin outlets and may be externally singled or cross-ported. Extremely close tolerances between piston and valve body allow metering valves to deliver precise volumes of lubricant at high operating pressures.

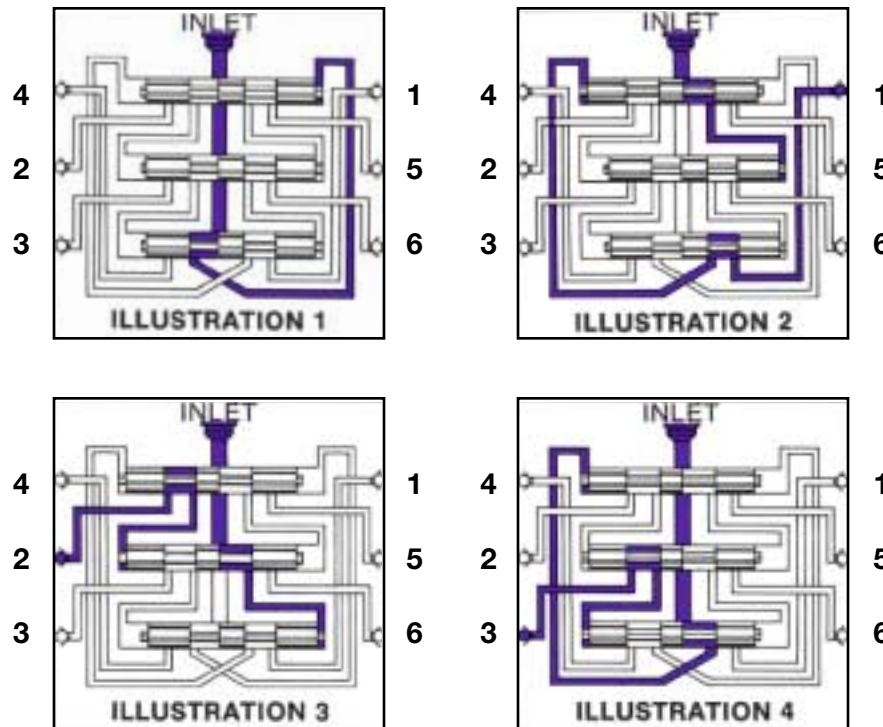


Illustration 1

The inlet passageway is connected to all piston chambers at all times with only one piston free to move at any one time. With all the pistons at the far right, lubricant from the inlet flows against the right end of piston 1 (top).

Illustration 2

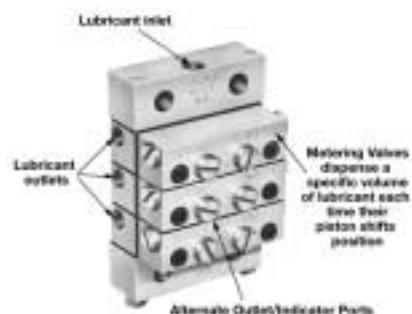
Lubricant flow shifts piston 1 from right to left, dispensing lube from outlet 1. The shifting piston 1 directs the lubricant flow against the right side of piston 2 (center).

Illustration 3

Lubricant flow shifts piston 2 from right to left, dispensing lube through valve ports of piston 1 and through outlet 2. The shift of piston 2 directs lubricant flow against the right side of piston 3.

Illustration 4

Lubricant flow shifts piston 3 (bottom) from right to left, dispensing lube through the valve ports of piston 2 and through outlet 3. The shift of piston 3 directs lubricant through a connecting passage to the left side of piston 1. Lubricant flow against the left side of piston 1 begins the second half-cycle, which shifts pistons from left to right, dispensing lubricant through outlets 4, 5 and 6 of the divider valve.



Applications

Lincoln Modular Lube systems are popular in metal cutting and machining applications and for lubricating large compressors and other equipment in the oil and gas market.

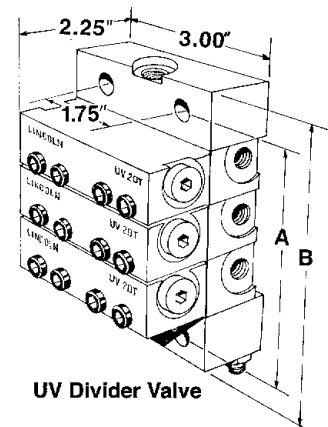
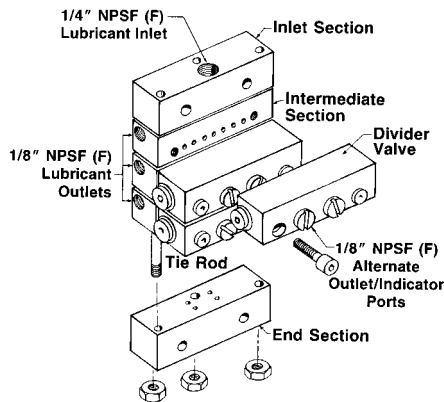
Many machine makers specify that Modular Lube be installed right at their factory. Customers who have purchased machines without automatic lubrication can have Modular Lube systems retro-fitted in the field.

Modular Lube® Lubrication Systems

Divider Valves



UV Divider Valves



UV Divider Valves are designed to meter oil or grease in automatic or manual systems installed on all types of industrial machinery. Segmented baseplate assembly contains all inlet and outlet connections. Alternate outlet ports are located on the face of the divider valve which may be used for installation of performance indicators.

Specifications:

Max. Lube Points/ Assembly	Max. Oper. Press. psig / bar	Inlet Section		Intermediate Section		Performance Indicator Port*	Material of Construction	Seal Construction
		Model	Thread	Model	Thread			
16	3500 / 240	87918	1/4" NPSF(F)	87919	1/8" NPSF(F)	1/8" NPSF(F)	Zinc plated steel	Buna-N
		87952	7/16"-20 SAE	87950	7/16"-20 SAE			
		87953	1/4"-19 BSPP	87951	1/8"-28 BSPP			

* Can also be used as an alternate outlet port.

UV Baseplate and Tie Rod Specifications:

Max. No. of Outlets	No. of Divider Valves	End Section	Tie Rod*	Dimensions			
				A		B	
				in.	mm	in.	mm
6	3	87920	250290	3.58	90.9	4.52	114.8
8	4		250291	4.5	114.3	5.44	138.2
10	5		250292	5.42	137.7	6.36	161.5
12	6		250293	6.34	161.0	7.28	184.9
14	7		250294	7.27	184.6	8.20	208.3
16	8		250295	8.19	208.0	9.13	231.9

* Each tie rod model number includes three tie rods and three fastening nuts.

Note: Use 68645 closure plug (1/8" NPT) to plug non-working outlets.

UV Divider Valve Specifications:

Single Outlet				
Designation	Model Number		Lubricant Output per Outlet	
	Standard Model	W/Right Side Cycle Indicator*		
			cu. in.	cc
05S	882051	—	.010	.164
10S	882101	—	.020	.328
15S	882151	—	.030	.492
20S	882201	882203	.040	.656
25S	882251	882253	.050	.820
30S	882301	882303	.060	.983
35S	882351	882353	.070	1.147
40S	882401	882403	.080	1.311

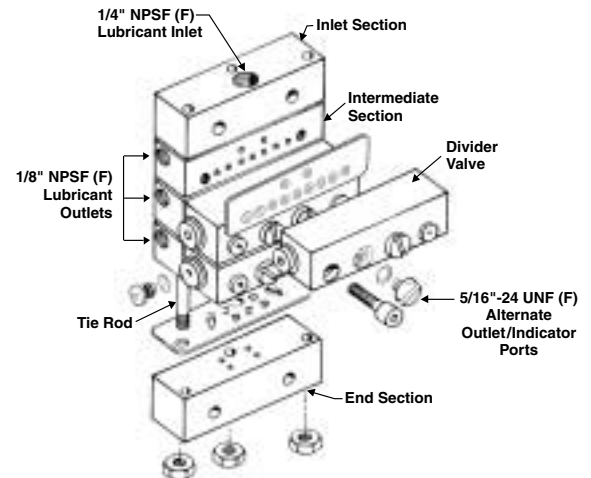
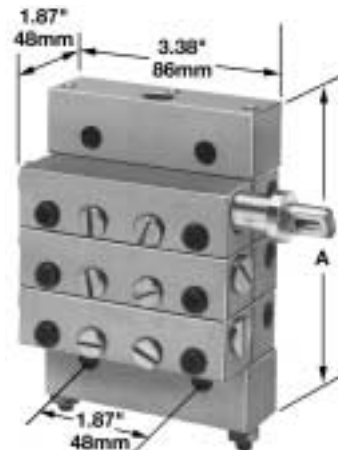
* Cycle indicator can be moved to left side.

Twin Outlet				
Designation	Model Number		Lubricant Output per Outlet	
	Standard	W/Right Side Cycle Indicator*		
			cu. in.	cc
05T	882052	—	.005	.082
10T	882102	—	.010	.164
15T	882152	—	.015	.246
20T	882202	882204	.020	.328
25T	882252	882254	.025	.410
30T	882302	882304	.030	.492
35T	882352	882354	.035	.574
40T	882402	882404	.040	.656

* Cycle indicator can be moved to left side.

Model 882000 UV Bypass Block Optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and Buna-N seals.

MC Divider Valves



MC Divider Valves are designed to dispense either petroleum based or synthetic lubricants in gas engine and compressor lubrication systems. Baseplate components are available with a Viton gasket plate for petroleum based or synthetic lubricants.

Segmented baseplate assembly contains all inlet and outlet connections. Alternate outlet ports are located on the face of the divider valve which may be used for installation of performance indicators.

Specifications:

Maximum Lube Points/ Assembly	Maximum Operating Press. psig / bar	Lube Inlet	Lube Outlet	Performance Indicator Port	Material of Construction	Seal Construction
16	6000 / 410	1/4" NPTF(F)	1/8" NPSF(F)	5/16" - 24 UNF	Zinc plated steel	Viton

* Can also be used as an alternate outlet port.

MC Baseplate and Tie Rod Specifications:

Maximum Number of Outlets	Number of Divider Valves	Inlet Section	End Section	Tie Rod	Intermediate Section (Qty)	Dimensions	
						A	
						in.	mm
6	3	87912	87913	236640	87914 (3)	5.09	129
8	4			236641	87914 (4)	6.00	152
10	5			236642	87914 (5)	6.91	176
12	6			236643	87914 (6)	7.81	198
14	7			236644	87914 (7)	8.72	221
16	8			236645	87914 (8)	9.63	245.

Note: Use 68645 closure plug (1/8" NPT) to plug non-working outlets.

MC Divider Valve Specifications:

Designation	Single Outlet		Lubricant Output per Outlet	
	Model Number			
	Standard Model	W/Right Side Cycle Indicator*	cu. in.	cc
06S	874061	—	.012	.196
09S	874091	—	.018	.295
12S	874121	874123	.024	.393
18S	874181	874183	.036	.590
24S	874241	874243	.048	.787

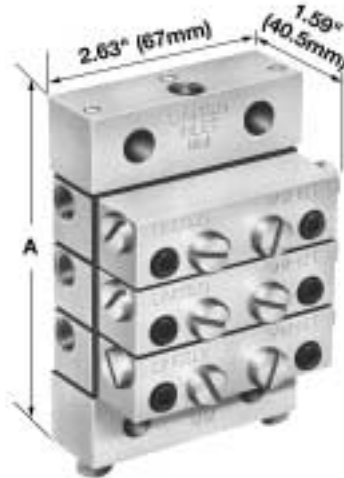
* Cycle indicator pin can be moved to left side.

Designation	Twin Outlet		Lubricant Output per Outlet	
	Model Number			
	Standard	W/Right Side Cycle Indicator*	cu. in.	cc
06T	874062	—	.006	.098
09T	874092	—	.009	.147
12T	874122	874124	.012	.197
18T	874182	874184	.018	.295
24T	874242	874244	.024	.393

* Cycle indicator can be moved to left side.

Model 874000 MC Bypass Block Optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and Viton gasket plate.

MM Divider Valves



MM Divider Valves are designed to meter oil or grease in automatic or manual systems installed on all types of industrial machinery. Physically smaller than the UV series, MM divider valve assemblies are used in complete MM systems or as secondary assemblies with UV and XL divider valves.

Segmented baseplate assembly contains all inlet and outlet connections. Alternate outlet ports are located on the face of the divider valve which may be used for installation of performance indicators.

Specifications:

Maximum Lube Points/ Assembly	Maximum Operating Press. psig / bar	Lube Inlet	Lube Outlet	Performance Indicator Port*	Material of Construction	Seal Construction
16	2500 / 170	1/8" NPTF(F)	1/8" NPTF(F)	5/16" - 24 UNF	Zinc plated steel	Buna-N

* Can also be used as an alternate outlet port.

MM Baseplate and Tie Rod Specifications:

Maximum Number of Outlets	Number of Divider Valves*	Inlet Section (Qty. req'd.)	End Section (Qty. req'd.)	Tie Rod (Qty. req'd.)	Intermediate Section (Qty. req'd.)	Dimensions	
						A	
						in.	mm
6	3	87906 (1)	87908 (1)	236646 (3)	87907 (3)	4.47	114
8	4			236647 (3)	87907 (4)	5.25	133
10	5			236648 (3)	87907 (5)	6.03	153
12	6			236649 (3)	87907 (6)	6.81	173
14	7			236650 (3)	87907 (7)	7.59	193
16	8			236651 (3)	87907 (8)	8.38	213

* Use No. 68645 closure plug (1/8" NPT) to plug non-working outlets.

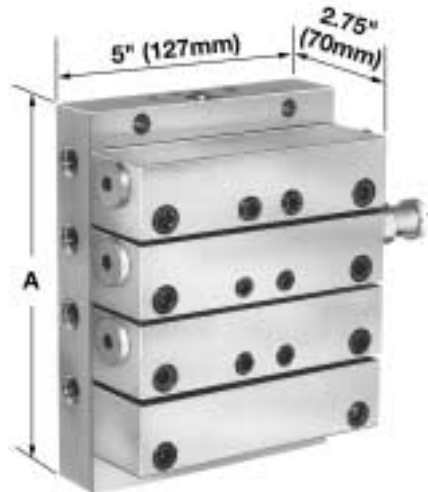
MM Divider Valve Specifications:

Designation	Single Outlet				
	Standard Model	Cycle Indicator Model		Lubricant Output per Outlet	
		Left	Right	cc	
				cu. in.	cc
5S	871051	—	—	.010	.164
10S	871101	—	—	.020	.328
15S	871151	871155	871153	.030	.492

Designation	Twin Outlet				
	Basic Model	Cycle Indicator Model		Lubricant Output per Outlet	
		Left	Right	cc	
				cu. in.	cc
5T	871052	—	—	.005	.082
10T	871102	—	—	.010	.164
15T	871152	871156	871154	.015	.246

Model 871000 Bypass Block Optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and Buna-N Gasket plate.

XL Divider Valves



XL Divider Valves are designed to meter large volumes of oil or grease in manual or automatic lubrication systems for all types of industrial machinery. These units can be used in complete XL systems or integrated as a primary divider valve assembly in systems using UV or MM divider valves as secondaries.

Solid one piece baseplate contains all inlet and outlet connections. Convenient front located ports on the divider valve are provided for installation of any desired performance indicators.

Specifications:

Maximum Lube Points/ Assembly	Maximum Operating Press. psig / bar	Lube Inlet	Lube Outlet	Performance Indicator Port*	Material of Construction	Seal Construction
12	2500 / 172	3/8" NPTF(F)	1/4" NPTF(F)	1/8" NPTF(F)	Zinc plated steel	Buna-N

* Can also be used as an alternate outlet port.

XL Baseplate Specifications:

Model No.	Maximum Number of Outlets	No. of Divider Valves*	Dimensions	
			A	
			in.	mm
87030-3	6	3	5.34	136
87030-4	8	4	6.69	170
87030-6	12	6	9.38	238

* Use No. 67359 closure plug (1/4" NPT) to plug non-working outlets.

XL Divider Valve Specifications:

Single Outlet				
Designation	Standard Model	With Right Side Cycle Indicator	Total Lubricant Output	
			cu. in.	cc
30S	87026-03S	—	.060	.983
50S	87026-05S	—	.100	1.64
80S	87026-08S	—	.160	2.62
100S	87026-10S	—	.200	3.28
120S	87026-12S	87066-12S	.240	3.93
150S	87026-15S	87066-15S	.300	4.92

Twin Outlet				
Designation	Standard Model	With Right Side Cycle Indicator	Total Lubricant Output	
			cu. in.	cc
30T	87026-03T	—	.030	.492
50T	87026-05T	—	.050	.820
80T	87026-08T	—	.080	1.31
100T	87026-10T	—	.100	1.64
120T	87026-12T	87066-12T	.120	1.97
150T	87026-15T	87066-15T	.150	2.46

Model 87028 XL Bypass Block Optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and Buna-N O-ring seals.



Pin Type Performance Indicators

High pressure ruptures internal disc and extends indicator.

UV, XL Model	Pressure Rating		Disc Color	Replacement Disc Model (10/pkg)	Connector
	psig	bar			
87930	1450	99	Yellow	69813-10	1/8" NPTF(M)
87931	1750	119	Red	69813-12	
87932	2650	180	Pink	250311	
87933	3250	221	Purple	250312	

Note: O-rings are Viton



Atmospheric Type Performance Indicators

High pressure ruptures disc, pressure and lubricant vents to the atmosphere.

UV, XL Model	Pressure Rating		Disc Color	Replacement Disc Model (10/pkg)	Connector
	psig	bar			
87934	1450	99	Yellow	69813-10	1/8" NPTF(M)
87935	1750	119	Red	69813-12	
87936	3250	221	Purple	250312	
87937	3700	252	Yel/Nat	250313	



Reset Type Performance Indicators

High pressure extends indicator. Reset the indicator after pressure is relieved.

UV, XL Model	Pressure Rating		Connector
	psig	bar	
87938	500	34	1/8" NPTF(M)
87939	1000	68	
87940	1500	102	
87941	2000	136	
87942	3000	204	

Note: O-rings are Viton



Adapter

Adapter connects UV, XL style performance indicators to MC, MM style divider valves and old style ML. Includes Viton o-ring.

Model	Threads
87915	5/16" -24 Male x 1/8" NPTF(F)



Pin Type Performance Indicators

High pressure ruptures internal disc and extends indicator.

MM, MC Model	Pressure Rating		Disc Color	Replacement Disc Model (10/pkg)	Connector
	psig	bar			
87895	1450	100	Yellow	69813-10	5/16"-24 Male
87896	1750	120	Red	69813-12	
87897	2050	140	Orange	69813-14	
87898	2350	160	Aluminum	69813-16	
87899	3250	220	Purple	69813-22	

Note: O-rings are Viton



Atmospheric Type Performance Indicators

High pressure ruptures disc, pressure and lubricant vents to the atmosphere.

MM, MC Model	Pressure Rating		Disc Color	Replacement Disc Model (10/pkg)	Connector
	psig	bar			
87890	1450	100	Yellow	69813-10	5/16"-24 Male
87891	2050	140	Orange	69813-14	
87892	3250	220	Purple	69813-22	
87893	3700	250	Yellow	69813-10	



Reset Type Performance Indicators

High pressure extends indicator. Reset the indicator after pressure is relieved.

Model	Pressure Rating		Spring/Tag Color	Connector
	psig	bar		
87885	1000	70	Green	5/16"-24 Male
87886	1500	100	Yellow	
87887	2000	135	Red	
87888	2500	170	Orange	
87889	3000	200	Blue	

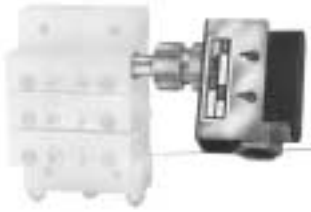
Note: O-rings are Viton



Adapter

Adapter connects UV, XL style performance indicators to MC, MM style divider valves and old style ML. Includes Viton o-ring.

Model	Threads
87915	5/16" -24 Male x 1/8" NPTF(F)



Cycle Switch

Cycle Switch attaches to valve with cycle indicator pin, sends electrical signal to controller.

Model	Switch Type	Switch Capacity	Conduit Connector
87070	SPDT	15 Amps @ 125/250 VAC 0.5 Amps @ 125 VDC	½" - 14 NPSM



Cycle Counter

Cycle Counter attaches to valve with cycle indicator pin, counts and records cycles.

Model	Maximum Counts
87828	99,999



Proximity Switch

Proximity Switch is a magnetic reed switch that attaches to divider valve for use in hazardous environments.

Model	Block Style	Switch Type	Switch Capacity	CSA Certification	Conduit Connector
85651	UV	SPST	10 Watts 200 VDC 0.5 Amp	Class I, Group A, B, C & D Class II, Group E, F & G Hazardous Locations	½" NPT(F)
87617	MC				
87618	XL Size 03 thru 12				



External Singling/Cross Port Kit

External Cross Port Kit connects alternate outlet ports to combine the volume of two divider valves through a single outlet.

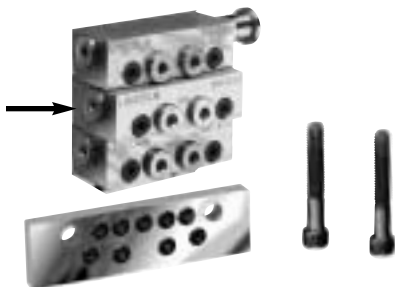
Model	Block Type	Application/Usage
87905	MC	Single and Crossport
87903	MM	Single and Crossport
87823	XL	Crossport
87824	XL	Singling



Balancing Valve

Model 87865 Balancing Valve is used when back pressure differential between divider valve outlets exceeds 1000 psi (68 bar).

Model	Pressure Adjustment				Inlet/Outlet	Seal Material
	Min		Max			
	psig	bar	psig	bar		
87865	250	17	6000	408	½" NPTF(F)	Viton



UV Cross Port Plates

Connect internal ports to combine the volume of two divider valves through a single outlet.

Model	Description
87944	Cross Port Right
87945	Cross Port Left
87946	Cross Port Both

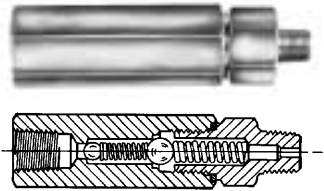


Mounting Bracket

Model 250286 (UV) and Model 360675 (MC, MM) Mounting Brackets—mount divider valve assembly off the face of vertical surfaces. Use two brackets per divider valve assembly.

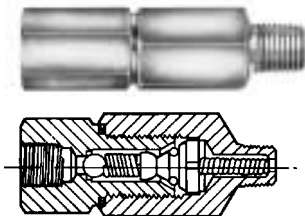
Check Valves

Check valves maintain prime in feed lines and check back pressure from pressurized lubrication points.



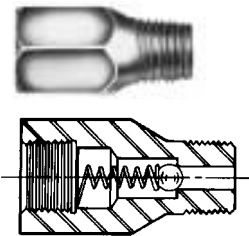
Double Ball, Straight

Model	Pressure		Inlet	Outlet	Hex Material	Hex Inlet-in.	Hex Outlet-in.	Length in./mm
	Max	Opening						
880511	8000	145	1/4"	1/4"	Carbon Steel	13/16"	3/4"	3.72/94.5
880518-9	psig	psig	NPTF(F)	NPTF(M)	316 S.S.			3.75/95.3
880517	550	10	1/8"	1/8"	Carbon Steel			3.31
880519-9	bar	bar	NPTF(F)	NPTF(M)	316 S.S.			84.1
880015-9	5000	80	9/16-18	7/16-20	Stainless Steel	3/4"		2.75/70
	psig	psig	UNF	UNF				
	340	6						
	bar	bar						



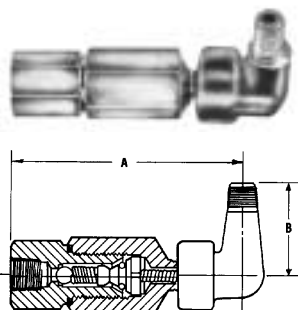
Ball & Poppet, Straight

Model	Pressure		Inlet	Outlet	Hex Material	Hex Inlet-in.	Hex Outlet-in.	Length in. / mm
	Max	Opening						
880513	2000	50	1/8"	1/8"	Carbon Steel	3/4"	13/16"	2.75
	psig	psig	NPTF(F)	NPTF(M)				70.0
880514	140	3.5	1/4"	1/4"				3.06
	bar	bar	NPTF(F)	NPTF(M)				77.7



Ball Type, Straight

Model	Pressure		Inlet	Outlet	Hex Material	Hex in.	Length in. / mm
	Max	Opening					
87817	7500 psig	20-70 psig	1/4" NPTF(M)	1/4" NPSF(F)	Carbon Steel	11/16"	1.38/35.1
87818	500 bar	1.5-5 bar	1/8" NPTF(M)	1/8" NPTF(F)		9/16"	1.19/30.2
130021-3	6000 psig	31-70 psig	1/8" NPTF(F)	1/8" NPTF(M)		1/2"	1.06/27.0
	400 bar	2-5 bar					



Ball & Poppet, 90°

Model	Pressure		Inlet	Outlet	Hex Material	Hex Inlet in.	Hex Outlet in.	Dimensions in. / mm	
	Max	Opening						A	B
880515	2000psig	50 psig	1/8"	1/8"	Carbon Steel	3/4"	13/16"	3.38	1.25
	140 bar	3.5 bar	NPTF(F)	NPTF(M)				86	31.8

Modular Lube® Lubrication Systems

Installation Components



Lubricant flows through Supply Lines between the pump and divider valves, then through Feed Lines between the divider valve and the bearing. Tubing and/or pipe sizes are determined after considering both the length of the line and the specific lubricant intended for use in the system.

Your Lincoln representative can assist you in the proper selection of supply and feed line material to optimize your application.

Listed below is a simplified outline of the installation components offered. For a complete listing of products, please refer to the Installation Components catalog.

TUBING

Hydraulic, Steel, Stainless Steel and Nylon

Single and Multiple Tube Clamps

Heavy Duty, Standard Duty, Threaded Sleeve and Snap-On Coupler Tube Fittings

Quicklinc® Tubing Adapter

Zerk-Lock™ Grease Fitting Adapters

Non-Metallic

PIPING

Seamless

Continuous Welded

Forged Fittings

Malleable Iron Fittings

316 Stainless Steel Pipe and Fittings

Stainless Steel Fittings

Galvanized Pipe, Threaded Plug and Fittings

ACCESSORIES

Supply, Feed and Bulk Feed Line Hose

Air Hose

Kits for Hose Repair

Heavy-Duty Air Line Quick Disconnects

AIR CONTROL AND ACCESSORIES

Manual Shut-Off Valves

Pressure Gauges

Lubricant Filters and Strainers

AIRCARE™ AIR PREPARATION SYSTEMS

Modular Air Line Filters, Regulators and Lubricators

Integrated/Modular Filter/Regulator with Gauge

Modular Air Line Combination Units

High Capacity Air Line Filters, Regulators and Lubricators

High Capacity Air Line Combination Units

Miniature Air Line Components—Air Line Filter, Regulator and Lubricator

Miniature Air Line Combination Units

Modular Air Line Equipment Accessories:

Lockout Valve, Quick Clamp, Quick Clamp Wall Mounting Bracket, Porting Block, Quick Mount Pipe Adaptors, Manifold Block, Pressure Switch, Panel Nut, Wall Mount Bracket, Tamper Resistant Cover & Seal Wire

Air Line Equipment Accessories:

Wall Mount Bracket, High Capacity; Mounting Bracket and Nut, Miniature; Pressure Gauges

PIPE FITTINGS

Reducing Bushings

Nipples

Couplings

Reducing Couplings

Street Ells

Tees

Crosses

Adapter Unions

Elbows

Pipe Fitting Adapters

Supply Line Swivels

Feed Line Swivels

Anchor and Junction Blocks

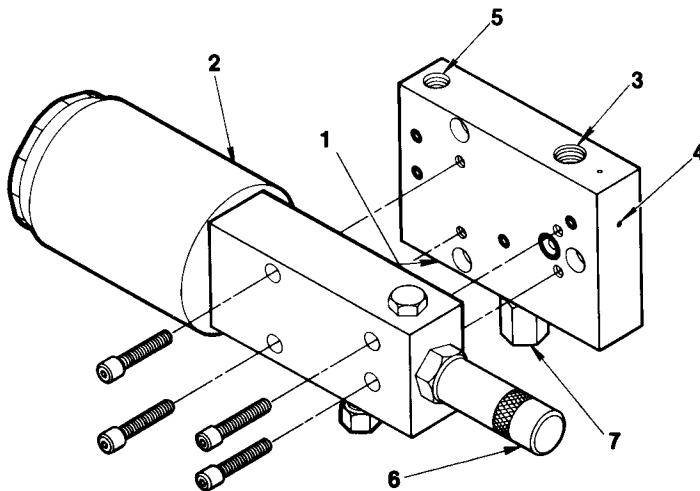
Modular Pumps

Lincoln's modular pumps are designed to efficiently supply either grease or oil in automatic systems using divider valve metering devices. Air, hydraulic and mechanically operated units are available. These units are then matched with an appropriate intermediate baseplate, and an appropriate reservoir to make up a pump assembly.

If required, the reservoir can be remote mounted for ease of filling, utilizing a machine mounted baseplate and pump.

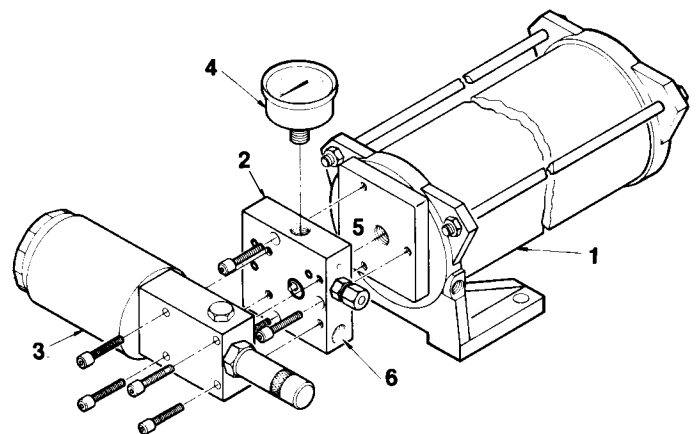
Baseplates contain all of the inlet and outlet connections for the pump and lube system. Intermediate baseplates mounted between the pump and reservoir allow for quick pump removal without disturbing any existing piping. Removal of the pump does not require draining of the reservoir due to an integral check-valve in the baseplate.

All modular reservoirs are compatible with all pumps, offering extreme flexibility in system design.



1. Base Plate
2. Pump Body
3. Lubricant Inlet
4. Bleed or Test Screw
5. Air inlet for both Single Acting and Double Acting Pumps
6. Adjustment Screw Assembly
7. Lubricant Outlet

PUMP & RESERVOIR



1. Cylindrical Oil Reservoir
2. Intermediate Base Plate
3. Modular Automation Pump
4. Pressure Gauge
5. Lubricant Inlet
6. Lubricant Outlet

Modular Lube® Lubrication Systems

Air Operated Modular Pumps



Model 87200

Model:	87200		
Ratio:	25:1		
Displacement:	Min.	.025 cu. in.	.410 cc
	Max.	.100 cu. in.	1.639 cc
Air Pressure:	Min.	65 psig	4.5 bar
	Max.	150 psig	10 bar
Dimensions (HxWxL):	2.75" x 9.88" x 2.75"	69.8 x 250.9 x 69.8 mm	
Cylinder Type:	Single acting, spring return		
Air Valve Requirement:	3-Way		

Model 87216

Model:	87216		
Ratio:	50:1		
Displacement:	Min.	.010 cu. in.	.164 cc
	Max.	.050 cu. in.	.820 cc
Air Pressure:	Min.	35 psig	2.5 bar
	Max.	150 psig	10 bar
Dimensions (HxWxL):	2.75" x 9.88" x 2.75"	69.8 x 250.9 x 69.8 mm	
Cylinder Type:	Single acting, spring return		
Air Valve Requirement:	3-Way		



Model 130179

Model:	130179		
Ratio:	25:1		
Displacement:	Min.	.25 cu. in.	1.0 cc
	Max.	1.0 cu. in.	16.39 cc
Air Pressure:	Min.	65 psig	4.5 bar
	Max.	150 psig	10 bar
Dimensions (HxWxL):	5.50" x 15.38" x 4.50"	139.7 x 290.6 x 114.3 mm	
Cylinder Type:	Single acting, spring return		
Air Valve Requirement:	3-Way		

Notes:

Model 87200, 87216, 130280 pumps do not have valved pistons. Use Modular Lube reservoirs only.
Model 130179 pump with valved piston uses Modular Lube reservoir or pressurized (max. 2000 psig/140 bar) lube supply.
 All pumps include Viton o-rings for standard or synthetic lubricant.

Modular Lube® Lubrication Systems

Mechanically Operated Modular Pumps



Model 87235

Model:	87235		
Displacement:	Min.	.020 cu. in.	.328 cc
	Max.	.050 cu. in.	.820 cc
Actuator Type:	Roller		

Note:
For 87235, an approx. force of 110 lbs. is required to generate 1,000 PSI lube pressure.



Model 87243

Model:	87243		
Displacement:	Min.	.005 cu. in.	.082 cc
	Max.	.015 cu. in.	.246 cc
Actuator Type:	Arm		

Note:
For 87243, a 4" height on the rod w/6 lbs. of force will generate approx. 1,000 PSI lube pressure.

Hydraulic Operated Modular Pumps



Model 87202

Model:	87202		
Ratio:	7:1		
Displacement:	Min.	.025 cu. in.	.100 cc
	Max.	.10 cu. in.	1.639 cc
Hydraulic Pressure:	Min.	275 psig	20 bar
	Max.	2000 psig	138 bar
Dimensions (HxWxL):	2.13" x 9.50"x 1.88"	54.1 x 241.3 x 47.7 mm	
Cylinder Type:	Double acting		
Directional Valve Requirement:	4-Way		

Model 87220

Model:	87220		
Ratio:	6:1		
Displacement:	Min.	.025 cu. in.	.100 cc
	Max.	.10 cu. in.	1.639 cc
Hydraulic Pressure:	Min.	275 psig	20 bar
	Max.	2000 psig	138 bar
Dimensions (HxWxL):	2.13" x 11.75"x 1.88"	54.1 x 298.5 x 47.7 mm	
Cylinder Type:	Single acting, spring return		
Directional Valve Requirement:	3-Way		

Notes:
Pumps include Viton o-rings for standard or synthetic lubricants.
Pumps do not have valved pistons. Use Modular Lube reservoirs only.



Modular Pump Baseplates

Mount pump directly to a modular reservoir with intermediate baseplate.
Use machine mounted baseplates with remote reservoirs.

Model	Descrip.	Use with Pump Model	Air/ Hydraulic Inlet	Lube Inlet	Lube Outlet	Dimensions - in. / mm			Atmos. Indicator psi / bar
						Height	Width	Depth	
87218	Intermediate	87200, 87202,	1/8" NPTF(F)	—	1/4" NPTF(F)	3.25 82.6	3.25 82.6	1.00 25.4	1450 99
87204	Machine Mount	87216, 87220	1/4" NPTF(F)	3.19 78.7		4.69 119.1			
87234		87235, 87243	N/A	3.00 76.2		3.25 82.6			
130095		130179	1/4" NPTF(F)	4.00 101.6		4.50 114.3	150 38.1		

Note:

Baseplates include Viton o-rings for standard or synthetic lubricants.



Modular Reservoirs for Oil Systems

Model	Type		Capacity				Material	Dimensions - in. / mm		
	Style	Outlet	Gal.	Liter	cu. in.	cc		Height	Width	Depth
87400	Cylindrical	1/2" NPTF(F)	.625	2.4	144	2350	Acrylic	15.69 399	6.00 152.6	5.31 135.0
87413			1.25	4.7	289	4750		17.69 450	7.31	7.47
87414			1.875	7.1	433	7100		25.19 640.8	186.0	189.7
87417	Tank	3/8" NPTF(F)	5	18.9	1155	18900	Steel	10.12 257.4	17.50 445.2	12.56 319.0
87418			3	11.3	693	11350			13.50 343.4	11.56 294.1
87419			1.5	5.7	346	5675			10.50 267.1	7.56 192.3

Note:

All reservoirs will accept 87218 Intermediate Baseplates.



Modular Reservoirs for Grease Systems

Model	Capacity				Material	Dimensions - in. / mm		
	lbs.	Kg.	cu. in.	cc		Height	Width	Depth
87406	10	4.54	300	4900	Acrylic	17.69 450	7.31 186.0	7.47 189.7
87407	5	2.27	150	2450		15.69 399	6 152.6	5.94 150.9
87416	15	6.82	450	7350		25.19 640.8	7.31 186.0	7.47 189.7
87421*	10	4.54	300	4900	17.69 450	7.31 186.0		7.41 188.2
87423*	15	6.82	450	7350	25.19 640.8			

* Includes visual level indicator rod.

Note:

All reservoirs accept Model 87218 Intermediate Baseplates. Reservoirs include standard 1/2" NPTF(F) outlet.



Low-Level Switches

Low level switches for modular design reservoirs.

Model	Use with Reservoir #	Switch Type	Electrical Rating
84235	87417, 87418, 87419	SPDT	7 Amps 125/250 VAC
84250	84700		
84251	87413		
84252	87414		
84466	87420, 87421, 87423	SPDT	15 Amps 125/250 VAC
87852	874102, 87403, 87406, 87407, 87416		



Low-Level Switch Assembly Kits for pneumatic and electric reciprocating pumps with self-contained reservoirs.

Model	Use with Pump Model	Switch Type	Electrical Rating
83671	87240, 87228	SPDT	15 Amps; 125, 250, 480 VAC .5 Amp 125 VDC .25 Amp 250 VDC
83696	87239		



High Pressure Switch

High pressure switch signals blockage and returns pump output to reservoir.

Model	Pressure Rating - psig / bar	Switch Type	Electrical Rating
87851	1450 / 99	SPDT	15 Amps, 125/250 VAC



Model 87212

Model:	87212		
Type:	Hydraulic		
Ratio:	5:1		
Hydraulic Pressure:	Min.	200 psi	14 bar
	Max.	1000 psi	68 bar
Lubricant Output/Cycle:	Min.	.010 cu. in.	.164 cc
	Max.	.060 cu. in.	.983 cc
Cylinder Type:	Double acting		
Directional Valve Requirements:	4-Way		

Model 87214

Model:	87214		
Type:	Air		
Ratio:	18:1		
Air Pressure:	Min.	60 psi	4 bar
	Max.	200 psi	14 bar
Lubricant Output/Cycle:	Min.	.010 cu. in.	.164 cc
	Max.	.060 cu. in.	.983 cc
Cylinder Type:	Single acting		
Directional Valve Requirements:	3-Way		

Note:
Pumps include Buna-N o-rings.

Modular LP Style Reservoirs

Mount directly to LP pumps. Includes 3000 psig (200 bar) gauge and 900 psig (60 bar) atmospheric indicator. Transparent, polycarbonate construction.



Model	Lubricant Type	Capacity					Air Hydraulic	Lube Outlet	Dimensions - in. / mm		
		lb/pint	kg	liter	cu. in.	cc			Height	Width	Depth
87402	Grease	3 lb	1.36	—	90	1475	1/8"	1/8"	13.375	6.78	7.06
87403		5 lb	2.27	—	150	2450			340.0		
87404	Oil	3 pint	—	1.42	86	1420	NPSM(F)	NPSM(F)	10.312	172.2	179.6
87405		5 pint	—	2.36	144	2365			262.3		



Model 87240 Air-Operated Reciprocating Pump

Model:	87240	
Lubricant Type:	Grease	
Lubricant/Air Ratio:	40:1	
Output/Min. @ 100 psig Air:	12 cu. in.	197 cc
Reservoir Capacity:*	12 lbs.	5.45 kg
	360 cu. in.	5900 cc
Air Inlet:	1/8" NPT(F)	
Lube Outlet:	1/4" NPT(F)	
Dimensions (HxWxD):	20.5" x 9" x 16.25"	521.3 x 229 x 413 mm

* Transparent Acrylic Reservoir

Model 87239 Air-Operated Reciprocating Pump

Model:	87239	
Lubricant Type:	Oil	
Lubricant/Air Ratio:	40:1	
Output/Min. @ 100 psig Air:	12 cu. in.	197 cc
Reservoir Capacity: *	15 pints	7.1 liter
	433 cu. in.	7100 cc
Air Inlet:	1/8" NPT(F)	
Lube Outlet:	1/4" NPT(F)	
Dimensions (HxWxD):	20.5" x 9" x 16.25"	521.3 x 229 x 413 mm

* Transparent Acrylic Reservoir

Note:

Both models require a 3-way air valve.

Atmospheric Indicator Pressure: Model 87240—2650 psi/180 bar
Model 87239—1450 psi/98 bar



Model 87228 Electric-Operated Reciprocating Pump

Model:	87228	
Lubricant Type:	Grease	
Electrical Requirement:	220/440, 60 Hz 3 ph	
Output/Minute:	18 cu. in.	295 cc
Reservoir Capacity: *	12 lbs	5.45 kg
	360 cu. in.	5900 cc
Lube Outlet:	1/4" NPT(F)	
Dimensions (HxWxD):	25.38" x 9.94" x 18.06"	645 x 253 x 459 mm
Relief Valve:	3700 psig	238 bar

* Transparent Acrylic Reservoir



FlowMaster Rotary-Driven Hydraulic Pump

Supply Inlet Hydraulic Pressure, Maximum:	3000 psig	200 bar
Operating Inlet Hydraulic Pressure:	300 to 420 psig	20 to 32 bar
Hydraulic Inlet Flow:	Up to 7 gpm	28 l/min
Pump Ratio with Manifold:	9:1 at low inlet pressure (300 to 350 psi/20 to 25 bar) and low inlet flow (below 2 gpm/7 lpm) pump ratio approaches 11:1 ratio at higher inlet pressure and flow	
Operating Temperature:	-20° to +150°F	-10° to +65°C
Operating Voltage:	24 VDC	
Hydraulic Inlet Port:	3/8" NPTF	
Tank Return Port:	3/8" NPTF	
Pump Outlets:	1/4" NPTF	
Maximum Hydraulic Fluid Temperature:	130°F	55°C
Weight:	36 lbs	16kg

Available Models

Model 85482

Pump for 400 lb. drum (55 gallon)
Dimensions: A: 34"/864mm B: 43.81"/1113mm

Model 85480

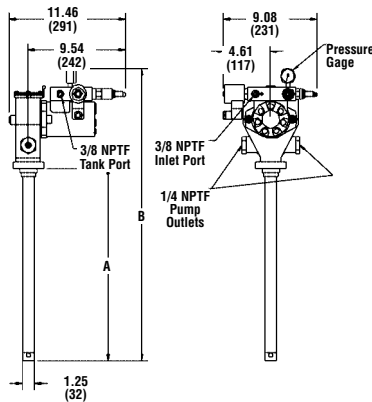
Pump for 120 lb. drum (18 gallon)
Dimensions: A: 27.50"/699mm B: 37.31"/948mm

Model 85481

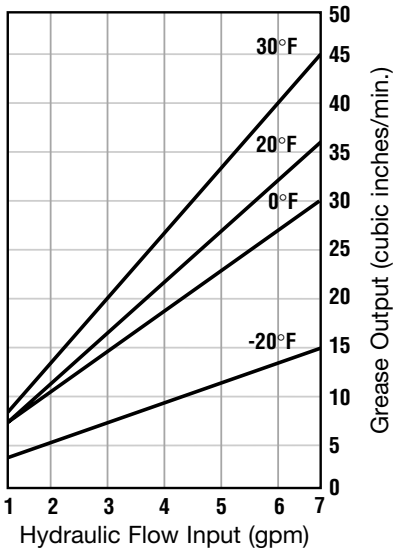
Pump for 60 lb. canister (8 gallon)
Dimensions: A: 19"/483mm B: 28.81"/732mm

Model 85483

Pump for 35 lb. pail (5 gallon)
Dimensions: A: 13.69"/348mm B: 23.50"/597mm

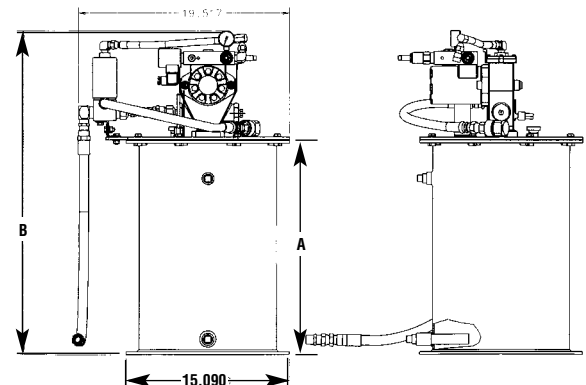


Grease Output vs. Hydraulic Input
1,000 psi back pressure and NLGI #2 grease



Model 85491

60 lb. drum pump assembly with low level and follower plate for Modular Lube
Dimensions: A: 19.90"/505mm B: 29.70"/743mm





MCLP Pumps

For natural gas engine/compressor lubrication systems.

Model 130201BCC

MCLP Pump complete with pump heads.

Model:	130201BCC	
Type Drive:	Rotary	
Shaft Description:	Left hand end, long shaft	
Gear Ratio:	2:1	
Decimal Gear Ratio:	.5	
Cam:	Single lobe	
Pump Heads: (Model 130335)	10 mm (2 each)	
Performance Indicator:	7300 psig	500 bar



Model 130200DEE

MCLP Pumps without pump heads.

Model:	130200DEE	
Type Drive:	Rotary	
Shaft Description:	Left hand end	
Gear Ratio:	4:1	
Decimal Gear Ratio:	.250	
Cam:	Single lobe	
Pump Heads (Max of 2):	Order separately	
Performance Indicator:	Dependent on pump head	

Model 130200GEE

Model:	130200GEE	
Type Drive:	Rotary	
Shaft Description:	Left hand end	
Gear Ratio:	8:1	
Decimal Gear Ratio:	.125	
Cam:	Single lobe	
Pump Heads (Max of 2):	Order separately	
Performance Indicator:	Dependent on pump head	

Model 130200KEE

Model:	130200KEE	
Type Drive:	Rotary	
Shaft Description:	Left hand end	
Gear Ratio:	21.5:1	
Decimal Gear Ratio:	.047	
Cam:	Single lobe	
Pump Heads (Max of 2):	Order separately	
Performance Indicator:	Dependent on pump head	



Model 130253KEE

Model:	130253KEE
Type Drive:	Rotary
Shaft Description:	Right hand end, long shaft
Gear Ratio:	21.5:1
Decimal Gear Ratio:	.047
Cam:	Single lobe
Pump Heads (Max of 2):	Order separately
Performance Indicator:	Dependent on pump head

Model 130300GEE

Model:	130300GEE
Type Drive:	Rotary
Shaft Description:	Right hand end
Gear Ratio:	8:1
Decimal Gear Ratio:	.125
Cam:	Single lobe
Pump Heads (Max of 2):	Order separately
Performance Indicator:	Dependent on pump head

Model 130300KEE

Model:	130300KEE
Type Drive:	Rotary
Shaft Description:	Right hand end
Gear Ratio:	21.5:1
Decimal Gear Ratio:	.047
Cam:	Single lobe
Pump Heads (Max of 2):	Order separately
Performance Indicator:	Dependent on pump head



Model 130150LEE

Model:	130150LEE
Type Drive:	Ratchet
Shaft Description:	Right hand end, clockwise rotation
Gear Ratio:	1:2
Decimal Gear Ratio:	2
Cam:	Single lobe
Pump Heads (Max of 2):	Order separately
Performance Indicator:	Dependent on pump head

Model 130500GEE

Model:	130500GEE
Type Drive:	Right angle rotary
Shaft Description:	Left hand end, long shaft
Gear Ratio:	8:1
Decimal Gear Ratio:	.125
Cam:	Single lobe
Pump Heads (Max of 2):	Order separately
Performance Indicator:	Dependent on pump head

Notes:

1. Recommended camshaft speed (RPM) for all pumps is: 12 to 75 rpm.
 2. MCLP output (per pump) = Input speed x decimal ratio x pump output factor* = pints per day
- * See MCLP pump head chart for pump output factor



MCLP Pump Heads

Model	Piston Diameter	Max. Working Pressure psig/bar	Pump Output Factor		Max. Inlet Pressure psig/bar	Pump Inlet	Pump Outlet	Performance Indicator psi/bar
			Min 1 Turn	Max 5 Turns				
130332	7mm	8000/544	.10	.852	50	3/8"	1/4"	5500/374
130335	10mm	3500/238	.213	1.491	3.4	NPTF(F)	NPTF(F)	3250/221



Flow Restrictor

Flow restrictor for LP Pumps with high air or hydraulic supply pressure.

Model	For Pressure Exceeding - psig / bar		Connections
	Pneumatic	Hydraulic	
15104	100 / 6.8	500 / 34	1/8" NPTF(F) x 1/8" NPTF(M)



MCLP Pump Inlet Filters

Model	Pump Heads Served	Filter Size	Inlet	Max. Inlet Pressure psig / bar
130067	2	10 Micron	1" NPTF(F)	50 / 3.4
130078	1			



Filler Pump

Manual pump for system purging and troubleshooting.

Model	Max. Pressure Gauge Reading psig / bar	Reservoir Capacity	Outlet Adapters
130117	3000 / 204	16 oz.	5/16" - 24 UNF(M), 7/16" - 20 UNF(M), 1/8" NPTF(M), 1/4" NPTF(M)



No-Flow Valves

MCL pump no-flow valves shut down engine or signal fault if oil flow is interrupted.

Model	Signal Type	Max. Operating Pressure psig / bar	Oil Viscosity Range	Inlet/Outlet		Air Supply	Electrical Rating	3rd Party Approvals
				Air	Oil			
87862	Pneum.	6000 408	60 SSU- 3000 SSU	1/8"	1/4"	150 psi max	—	—
87601	Electric			NPTF(F)	NPTF(F)			

Notes:

1. Minimum flow rate .060 cu. in./minute with time delay setting of 90 seconds.
2. Includes Viton oil seals.



Flow Meter

Flow meter measures and records oil flow to the system.

Model	Register	Oil Inlet/Outlet	Max. Pressure Rating psig / bar
87806	200 counts per pint	¼" NPT(F)	6000 / 408



MCLP Cycle Monitors

MCLP Cycle Monitors monitor and record oil flow volume delivered to lube points and signal fault if flow stops or diminishes significantly.

Model	System(s) Monitored	Electrical Power Requirements	Max. Display Record pints	Alarm Time		3rd Party Approvals
				Min.	Max.	
87610	1	115 VAC, 50-60 Hz	999,999	37.5 Sec.	10 Min.	CSA Class I, Group D Class II, Group E, F & G
87611	2	24 VDC				





Model 55i Lubricator Pump

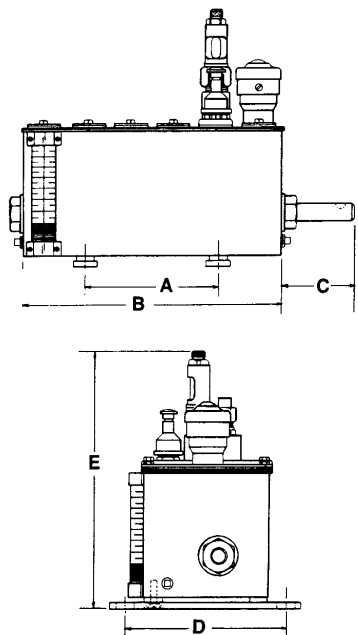
Universal lubricator pump fits most major manufacturers' lubricator boxes. One piece pump body eliminates leak points.

Model	Type	Piston Dia. in. / mm	Inlet	Sight Glass	Max. Operating Pressure psi / bar	Max. Oil Viscosity (SUS)	Max. Output Per Stroke Drops (in ³ / cc)
880550	Vacuum	1/4" / 6.4	Suction	Yes	6000 / 400	8000 540	9 (.0184 / .302)
880560	Feed	3/8" / 9.5	Tube		3500 / 240		21 (.0415 / .680)
880551	Press. Inlet	1/4" / 6.4	1/8" NPTM		6000 / 400		9 (.0184 / .302)
880561	(Manifold) Feed	3/8" / 9.5			3500 / 240		21 (.0415 / .680)
880552	Direct Feed	1/4" / 6.4	1/8" NPTF	No	6000 / 400	9 (.0184 / .302)	

Notes: Standard Viton seals.

Sight glass is Polysulfone – check for compatibility with synthetic oils.

See Pump to Point Lubricator Accessories page for armored site glass kit (model 250176).



End Rotary Drive Lubricators

Internal Gear and Ratchet

Drive Data: Type—End rotary with internal gear and ratchet. **37.5:1 ratio.**

Rotation— Either clockwise or counterclockwise.

Power Source— Machine drive; not recommended for motor drive.

Maximum Input Speed 700 RPM.

Note: Number following dash in the part number indicates quantity of pumps included.

Model	Reservoir Capacity	Max. No. of Pumps	Drive Location	Service Sheet Number
800037-1,2,3,4	4 pint / 1.9L	5	RH	M2-26
800028-3,4	4 pint / 1.9L	5	LH	M2-43
800131-5	8 Pint / 3.8L	7	RH	M2-25
800019-5	8 Pint / 3.8L	7	LH	M2-40
*800015-3	4 Pint / 1.9L	4	RH	M2-6
*800051-5	8 Pint / 3.8L	6	RH	M2-7

Model	Dimensions—in. / mm					Shaft Dia.
	A	B	C	D	E	
800037-1,2,3,4	5 1/2 / 140	10 5/8 / 270	3 / 76	6 9/16 / 167	10 3/8 / 264	5/8 / 16
800028-3,4						
800131-5	8 3/4 / 222	14 1/8 / 359	11 3/16 / 284	NA	10 1/8 / 257	
800019-5						
*800015-3	NA	12 7/16 / 316	11 3/16 / 284	NA	10 1/8 / 257	
*800051-5		15 15/16 / 405				

* Special drive shaft and direct compressor mount.

End Rotary Drive Lubricators

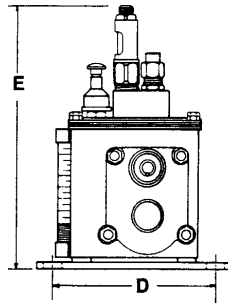
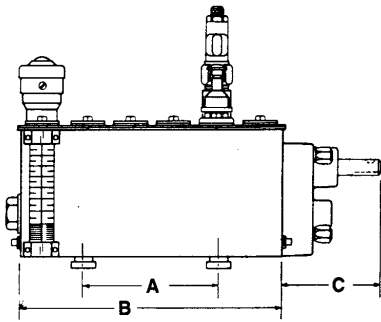
Spur Gear

Drive Data: Type—End rotary with spur gear. **112.5:1 ratio.**

Rotation— Either clockwise or counterclockwise.

Power Source— Machine drive; not recommended for motor drive.

Note: Number following dash in the part number indicates quantity of pumps included.



Model	Reservoir Capacity	Max. No. of Pumps	Drive Location	Service Sheet Number
800066-2,3	4 pint / 1.9L	5	RH	M2-20
800143-3,4	4 pint / 1.9L	5	LH	M2-136
800289-4,5,6	8 Pint / 3.8L	7	RH	M3-21

Model	Dimensions—in. / mm					Shaft Dia.
	A	B	C	D	E	
800066-2,3	5½ / 140	10⅝ / 270	4 / 102	6⅞ / 167	10¾ / 273	⅝ / 16
800143-3,4						
800289-4,5,6	8¾ / 222	14⅞ / 359				



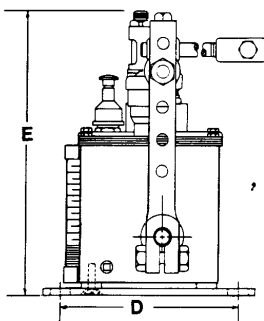
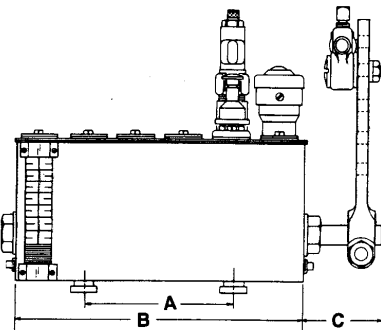
Internal Ratchet Drive Lubricators

Drive Data: Type—Internal 75 tooth ratchet gear.

Rotation—See chart for power stroke direction.

Power Source— Machine drive.

Note: Number following dash in the part number indicates quantity of pumps included.



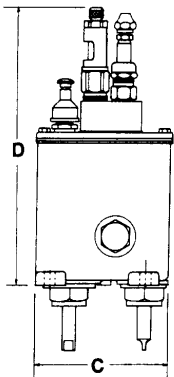
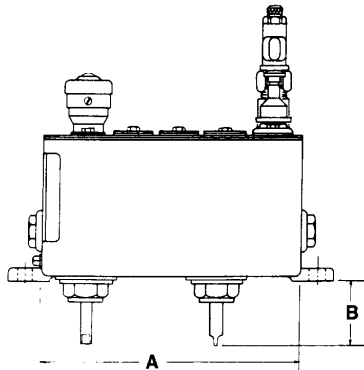
Model	Reservoir Capacity	Max. No. of Pumps	Drive Location	Power Stroke	Service Sheet Number
800065-1	2 pint / .95L	2	LH	CW	M3-31
800376-2	3 pint / 1.4L	3	RH	CW	M3-31
800118-2,3	4 Pint / 1.9L	5	RH	CW	M2-164
800100-2	4 Pint / 1.9L	5	LH	CW	M3-31
800031-3,5	8 Pint / 3.8L	5	RH	CW	M3-31
Oscillating Drive 120° Stroke					
800070-3	4 Pint / 1.9L	5	RH	CCW	M2-116

Model	Dimensions—in. / mm					Shaft Dia.
	A	B	C	D	E	
800065-1	¾ / 95	5⅞ / 137	3 / 76	6⅞ / 167	10½ / 269	⅝ / 16
800376-2	5½ / 140	7⅞ / 181			10¾ / 273	
800118-2,3	5½ / 140	10⅝ / 270			10⅞ / 264	
800100-2	5½ / 140	10⅝ / 270			10¾ / 273	
800031-3,5	8¾ / 222	14⅞ / 359			10¾ / 273	
Oscillating Drive 120° Stroke						
800070-3	5½ / 140	10⅝ / 270	5¼ / 133	6⅞ / 167	10⅞ / 264	⅝ / 16

Right Hand Bottom Vertical Drive Lubricators

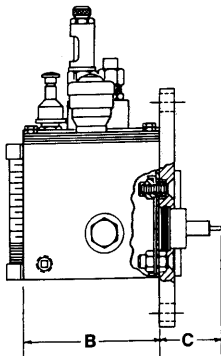
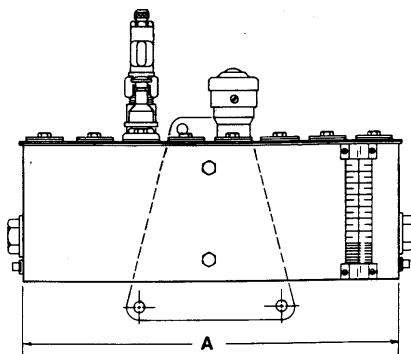
Filter Drive

Note: Number following dash in the part number indicates quantity of pumps included.



Model	Reservoir Capacity	Max. No. of Pumps	Ratio	Service Sheet Number
800192-3	4 pint / 1.9L	3	30:1	M2-37
800090-4	8 pint / 3.8L	4		M2-179

Model	Dimensions—in. / m				Shaft Dia.
	A	B	C	D	
800192-3	9 ³ / ₄ / 248	2 / 51	5 / 127	10 ³ / ₄ / 273	1/2 / 13
800090-4	13 ³ / ₈ / 340	2 ¹ / ₂ / 63.5			



Rear Rotary Drive Lubricators

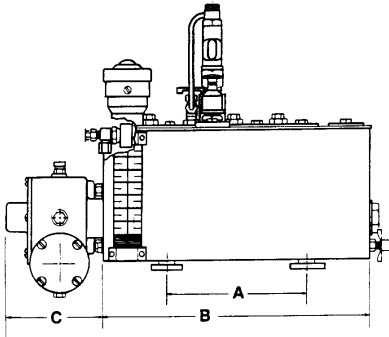
Note: Number following dash in the part number indicates quantity of pumps included.

Model	Reservoir Capacity	Max. No. of Pumps	Drive Location	Ratio	Service Sheet Number
800698-0,1	2 pint / .95L	1	RH	56:1	M2-151
800469-1,2	3 pint / 1.4L	2	LH	80:1	M2-48
800062-4	4 Pint / 1.9L	4	Center	250:1	M2-49
800621-4	8 Pint / 3.8L	6	LH	60:1	M2-42
800784-2	8 Pint / 3.8L	6	LH	137.5:1	M3-18

Model	Dimensions—in. / mm			Shaft Dia.
	A	B	C	
800698-0,1	6 ³ / ₁₆ / 157	5 ³ / ₁₆ / 132	2 ¹ / ₂ / 63.5	1/2 / 13
800469-1,2	7 ¹ / ₈ / 181	5 ³ / ₁₆ / 132	2 ⁹ / ₃₂ / 71	5/8 / 16
800062-4	10 ⁵ / ₈ / 270	5 ³ / ₁₆ / 132	1 ⁷ / ₈ / 48	5/8 / 16
800621-4	14 ¹ / ₈ / 359	5 ¹ / ₈ / 130	2 / 51	1/2 / 13
800784-2	14 ¹ / ₈ / 359	5 ³ / ₁₆ / 132	2 ¹ / ₄ / 57	1/2 / 13

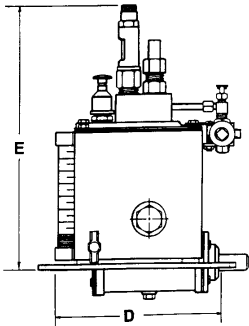
Left Hand Rear Gearhead Drive Lubricators

Note: Number following dash in the part number indicates quantity of pumps included.



Model	Reservoir Capacity	Max. No. of Pumps	Ratio	Service Sheet Number
800059-1,2	4 pint / 1.9L	5	60:1	M2-19

Model	Dimensions—in. / mm					Shaft Dia.
	A	B	C	D	E	
800059-1,2	5½ / 140	10⅝ / 270	3¼ / 97	6⅞ / 167	10⅞ / 276	⅝ / 16



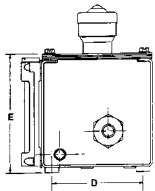
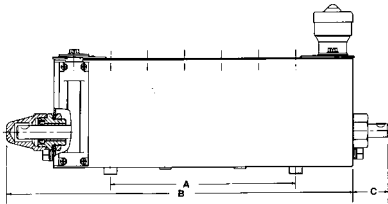
End Rotary Drive Tandem Lubricators

Drive Data: Type—End rotary all gear.

Rotation— Either clockwise or counterclockwise.

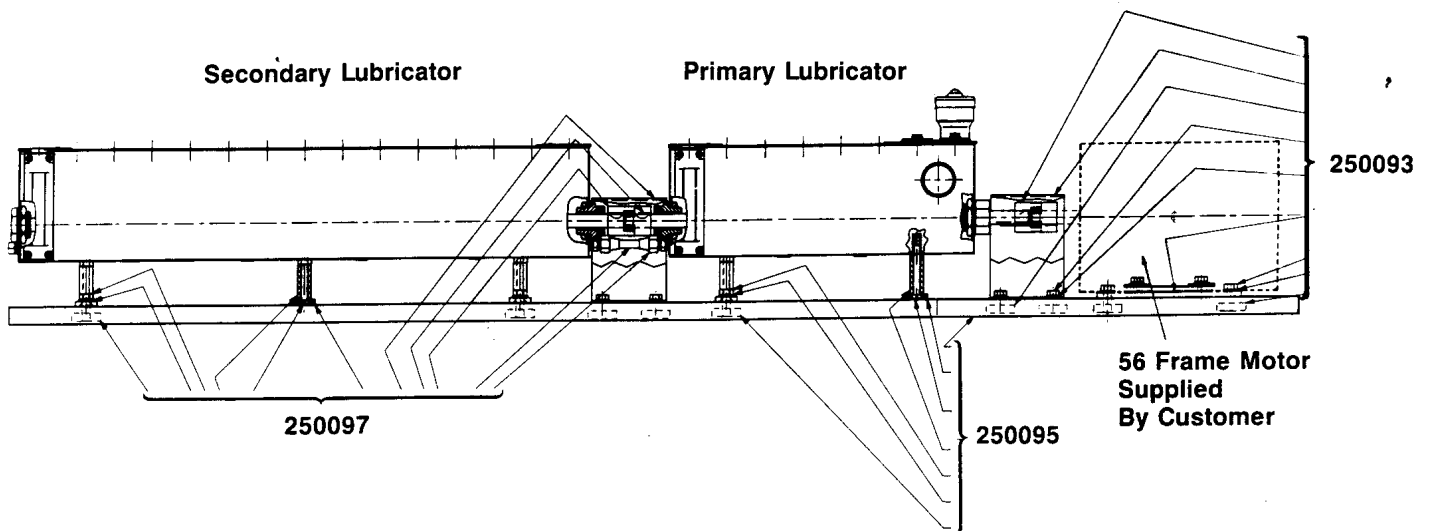
Power Source— Machine drive; also suitable for motor drive.

Note: Pumps and slot covers must be purchased separately.



Model	Reservoir Capacity	Max. No. of Pumps	Drive Location	Ratio	Service Sheet Number
820400	8 pint / 3.8L	7	RH	1:1	M2-217
835400		6		100:1	M2-218
847400				300:1	
842400				400:1	
820300	4 Pint / 1.9L	15		1:1	M2-217
820600	16 Pint / 7.6L				

Model	Dimensions—in. / mm					Shaft Dia.
	A	B	C	D	E	
820400	8¾ / 222	16⅝ / 414	1⅜ / 44	4¼ / 108	5⅞ / 138	⅝ / 16
835400			2⅝ / 67			
847400						
842400						
820300	5½ / 140	11 / 279	1⅜ / 44			
820600	20 / 508	26¾ / 679				



Model 250095 Tandem Lubricator Mounting Kit

Includes two mounting rails and the hardware necessary to attach an 8 pint primary lubricator. The rails provide for the addition of a secondary lubricator and an electric driving motor.

Model 250093 Motor Mounting Kit

Recommended if an electric motor is used. The primary lubricator may also be driven by other suitable inputs such as direct connection, chains, belts, or gear reducer. The primary lubricator contains the drive reduction, if any.

May be used with 835400, 842400 and 847400 lubricators only. Not intended for use with 820400 lubricators in the primary lubricator position.

Model 250097 Secondary Lubricator Mounting Kit

Used when a secondary lubricator is added to the primary lubricator assembly. The secondary lubricator incorporates a direct connecting cam shaft, (no drive reduction) which is coupled to the primary lubricator.

The secondary lubricator may be of 4, 8 or 16 pint capacity. No more than one secondary lubricator should be driven by the primary lubricator unit.

Note: See service sheet M3-40 for additional information.

Model 250176 Armored Sight Glass Kit

With pyrex sight tube.



Model 880555 Lube Sentry

Monitors camshaft rotation and reservoir level.

Model 880556 Lube Sentry

Same as Model 880555 except suction tube is 1/2" shorter.



Model 880496 Oil Level Regulator

Automatically fills lubricator reservoir.

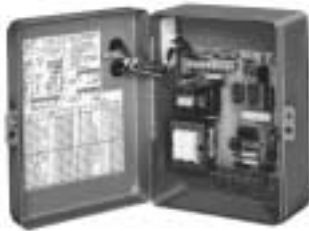
Model 880463* Lubricator Flow Switch

Monitors Model 55i lubricant flow.

Model 880466* Lubrication Flow Switch

Same as Model 880463 except includes terminal for series wiring.

*Use with non-conductive fluids only. Lubricator must be properly grounded.



Model 84501 Program Timer—Solid State

Designed to control the lubrication cycle frequency of air operated single stroke pumps. Timer turns pump on/off at programmed intervals via a 3-way or 4-way air solenoid valve (not included) installed in the air line to pump.

Off Time (Cycle Time)		On Time (Pumping Time)		Power Requirements	Approvals	Switch Capacity
Min	Max	Min	Max			
20 Sec.	24 Hrs.	10 Sec.	1 Min. 24 Sec.	120/230 VAC 50/60 Hz	UL, CSA	120 VAC, 5 Amps 230 VAC, 1.5 Amps



Built-In Program Options				Enclosure			Ambient Operating Temperature Range		
3 Hr. Program Memory		Prelube Function		Rating	Dimensions-in./mm			Minimum	Maximum
Yes	No	Yes	No		Height	Width	Depth		
Yes	No	Yes	No	NEMA #1	8 ³ / ₄ 210	6 ¹³ / ₁₆ 173	4 ¹⁵ / ₁₆ 125	0°F -18°C	130°F 54°C

Note:

Refer to Technical Manual for a full explanation of available program options.



Model 84511 Economy Timer for Single Stroke Pumps

Uses a timing motor, cam and Micro-Switch to turn pump off and on. NEMA 1 enclosure, UL and CSA listed. Switch capacity 10 amps non-inductive.

Off Time (Cycle Time)		On Time (Pumping Time)		Power Requirements	Approvals	Switch Capacity
Min	Max	Min	Max			
5 Min.	1 Hr.	30 Sec.	90 Sec.	120 VAC, 60 Hz	UL, CSA	10 Amps

Note: Off-time selectable in 5 minute intervals.

Enclosure			
Rating	Dimensions - in. / mm		
	Height	Width	Depth
NEMA 1	5 / 127	3 ¹ / ₄ / 82.5	3 ¹ / ₂ / 89



Model 84015 Timer—12-24V DC

Solid-state microprocessor-based controller for automated lubrication systems on mobile equipment or where AC power is not available. Rugged construction with liquid and dust-tight enclosure. Includes manual push button for remote initiation of a lube cycle.

Off Time** (Cycle Time)		Fixed On Time (Pumping Time)	Power Requirements	Switch Capacity
Min.	Max.			
2.5 Min.	80 Min.	75 Sec.	10-30 VDC 25 MA*	5 Amps

* Less load.

** Available selections are 2.5, 5, 10, 20, 40 or 80 minutes.

Rating	Enclosure			Ambient Operating Temperature Range	
	Dimensions-in. / mm			Minimum	Maximum
	Height	Width	Depth		
NEMA 12	5¼ / 133	3⅜ / 79	3 / 76	0°F / -18°C	131°F / 55°C



Model 85530 Lubrication System Controller

Controls lubrication frequency, master divider valve cycle and monitors supply line pressure. The LCD displays operating status.

Lube Cycle				Max. Count Rate*	Pumping Time Before Alarm	
Timer Mode Off Time		Counter Mode Off Counts			Min.	Max.
Min.	Max.	Min.	Max.			
1 Minute	9,900 Minutes	1 Count	99,000 Counts	30/Sec. @ 50% Duty Cycle	1 Minute	99 Minutes

* Minimum duration of count signal is 33 milliseconds.

Power Requirements (less load)		Pump, Solenoid, or Alarm Capacity	Ambient Temperature Range	Enclosure			
Voltage	Current			Rating	Dimensions-in. / mm		
		Height	Width		Depth		
120 VAC, 50/60 Hz	85 MA	360 VA	32° to 122°F -0° to +50° C	NEMA 12	9½ 241	8⅝ 227	4⅞ 105
230 VAC, 50/60 HZ	45 MA						
24 VDC	250 MA	5 Amps					

Notes: Model 85530 is CSA/NRTL approved.



Model 85500 System Sentry II

The ultimate automated lubrication system controller/monitor now features greater monitoring accuracy with less sensitivity to lubricant flow rates, feed line length, or bearing back pressure. System Sentry II is always on the job, making sure that every lube point is lubricated when it's supposed to be.

- Solid-state controller with LCD status display and 16-button keypad for system programming
- Controls up to two pumps with as many as two lube zones per pump
- Fully programmable monitoring and alarm functions
- Be set up to monitor every lube point for lubricant flow during each lubrication event
- Easy to understand prompts reported by simple English language messages in real time

Some functions require optional accessories. See chart on page 35. Use a maximum of 48 sensors and three accessory Sensor Boards (order separately— 16 sensors per board) to monitor lube points. For more than 48 sensors, use Model 85510 Satellite plus additional Sensor Boards for a maximum of 1536 lube points.

Lube Cycle				Max. Count Rate*	Pumping Time Before Alarm		Net Wt.
Timer Mode Off Time		Counter Mode Off Counts			Min.	Max.	
Min.	Max.	Min.	Max.				
1 Second	9,900 Minutes	1 Count	99,000 Counts	30/Sec. @ 50% Duty Cycle	1 Second	99 Minutes	18 lbs. 8.1 kg

* Minimum duration of count signal is 33 milliseconds.

Power Requirements (less load)		Pump, Solenoid, or Alarm Capacity	Ambient Temperature Range	Enclosure Rating	Enclosure Dimensions-in. / mm		
Voltage	Current				Height	Width	Depth
120 VAC, 50/60 Hz	250 MA*	360 VA	32° to 122°F 0° to 50° C	NEMA 12	11 241	14 227	4 7/8 105
230 VAC, 50/60 HZ	125 MA*						
24 VDC	600 MA*	5 Amps					

Note: Model 85500 is CSA/NRTL approved.

* No external load, no sensors.

Model 85510 Satellite Monitor

Add-on unit to be used with Model 85500 System Sentry II when monitoring more than 48 lube points. Includes one 250365 Sensor Board capable of monitoring up to 16 lubrication points. Accepts up to two more optional Sensor Boards.

Has external power-on light and jack for four contact modular phone cord to connect Satellite to System Sentry II and additional Satellite units in “daisy chain” configuration. Maximum length of four contact flat phone cord is 4000 feet. Same size and appearance as Model 85500, except without keypad and display.



Input Voltage	Current Consumption (48 Sensors)	Controller Temp.	Net Weight	Dimensions-in. / mm			
				Enclosure	H	W	D
120 VAC, 50/60 Hz	400 MA @ 120 VAC	0° to 130° F -18° to 54° C	18 lbs. 8.1 kg	NEMA 12	11 241	14 227	4 7/8 105
230 VAC, 50/60 HZ	200 MA @ 230 VDC						
24 VDC	1.5 AMP @ 24 VDC						

Note: Model 85510 is CSA/NRTL approved.

Model 243100 Sensor Wire

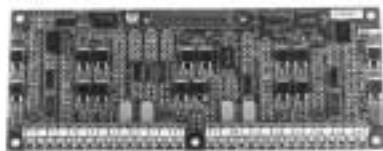
100 foot (30.5 meters) coil of 2 conductor 22 gauge wire for connecting sensors to monitor. Maximum length of wire between sensor and monitor is 500 feet (152 meters).



Model 247333 Pressure Transducer

Pressure Transducer signals actual system pressure via LCD display of System Sentry II. Comes with 72 inch (1.8m) shielded 24-gauge connecting wire. Maximum length of wire between transducer and monitor is 30 (9.1m) feet.

Range	Accuracy	Proof	Pressure Connection	Ambient Temp.	Input	Voltage Output	Offset	Enclosure
0 to 4000 psi 276 bar	±1%	7500 psig 517 bar	¼" NPT Male Thread	-20° to 180° F -29° to 82° C	10 to 30 VDC	1-6 VDC	1 VDC	NEMA 4X Rating 300 Series Stainless Steel



Model 250365 Sensor Board

Plug-in accessory board used with Model 85500 and Model 85510 that allows the attachment of up to 16 lube flow sensors. (Model 85500 comes without boards installed and can hold up to a total of three. Model 85510 comes with one board installed and can hold up to two more for a total of three.)

Sensor Assemblies

Sensor assemblies consist of a check body and lube sensor with attached 30' cable. Cables are epoxy potted into the sensors for a watertight seal. Sensors have a 3/8" pipe thread for conduit connection and a Viton o-ring seal. Check bodies terminate in a 1/8" NPTF male thread for attachment to a bearing or other lubricant inlet. Maximum working pressure 6,000 psi (414 bar). Maximum wire run from sensor to monitor is 500 feet (152m).



Model	Description	Construction	Lubricant Temp. Range	Min. Flow Per Event	Min. Interval Between Lube Flow Event
250400	Straight Sensor Assembly	Brass Sensor & Plated Steel Check Body	32° to 145° F 0° to 63° C	.004 cu. in./,066 cc @ 32°F /0°C to 125°F/52°C	30 Seconds
250490	90° Sensor Assembly				
250500	Straight Sensor Assembly	Sensor & Check Body	.008 cu. in./,131 cc @ 126°F to 145°F (53°C to 63°C)		
250590	90° Sensor Assembly	316 Stainless Steel			



Use this guide to select accessories for Model 85500 System Sentry II

Function	Pressure Switch #69630	Sensor Board #250365	Sensors Note 2	Sensor Wire #243100 (100') Note 3	Satellite Monitor #85510 Note 4
Lube Controller 1 Pump, 1 Zone Note 1	Optional 1	—	—	—	—
Lube Controller, 1 Pump, Up to 3 Zones	Optional 1	—	—	—	—
Lube Controller, 2 Pumps, 1 Zone Per Pump	Optional 1	—	—	—	—
Lube Controller, 2 Pumps, Up to 2 Zones Per Pump	Optional 1	—	—	—	—
Lube Point Monitoring ≤ 48 Points	—	Required 1 per each 16 Sensors	Required 1 per Lube Point	Required Quantity As Needed	—
Lube Point Monitoring > 48 ≤ 1536 Points	—	Required 1 per each 16 Sensors	Required 1 per Lube Point	Required Quantity As Needed	Required Quantity As Needed

Note 1: Controller may be operated without a pressure switch. Pressure switch may be used to monitor supply line pressure.

Note 2: Sensors include 30' (9.1m) cable pigtail. Select brass/plated steel or stainless steel sensors in straight or 90° configuration as required.

Note 3: Maximum distance between monitor and sensor is 500' (152 meters).

Note 4: Satellite monitor includes one 250365 sensor board and accepts two additional boards (optional) for connection of up to 48 sensors per satellite. Maximum 31 satellites per system.



Electric Solenoid Operated Air Valves

Model	Type	Electrical Characteristics			Air Inlet/Outlet	Ambient Temperature Range	Cv Factor	Max. Pressure psi / bar	Conduit Connection
		Power Requirements	Inrush Current Amps	Holding Current Amps					
350244	4-Way	110 VAC, 50 Hz 120 VAC, 60 Hz 8.4 VA	.11	.07	1/4" NPTF(F)	0° to 120°F -18° to 49°C	1.2	150 10.3	1/2" NPS(F)
350245		220 VAC, 50 Hz 240 VAC, 60 Hz 8.4 VA	.055	.035					
350241	3-Way	110 VAC, 50 Hz 120 VAC, 60 Hz 8.4 VA	.11	.07	1/8" NPTF(F)	0° to 140°F -18° to 60°C	1.8	150 10.3	N/A
350242		220 VAC, 50 Hz 240 VAC, 60 Hz 8.4 VA	.055	.035					
350282		12 VDC 6 Watts	N/A	N/A					
350283		24 VDC 6 Watts	N/A	N/A					
68586	2-Way	120V, 60 Hz 12 VA	.2	.1	3/8" NPT(F)		2.4		1/2" NPT(F)



Model 83354 Signal Monitor

Designed to provide visual and audible indication of system operation and failure. Utilizes signal from system controller. Includes model 69606 Alarm Horn mounted on enclosure door.

Power Requirement	Indicator Lamps			Audible Alarm	Dimensions - in / mm		
	Power On	Lube System On	System Failure		Height	Width	Depth
115 VAC 50/60 Hz 35 VA	Green	Amber	Red	69606 Horn (included)	10 254	8 203	6 152

Model 69606 Alarm Horn

Use with controllers or System Alarm Model 84360 for audible failure signal.

Model	Power Requirement
69606	120 VAC, 50/60 Hz, 15 VA

Note: Lamps and horn are U.L. listed.

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