

A COMPLETE
SOLUTION FOR
INDUSTRIAL NEEDS



MINING INDUSTRY

**Enhance Operational Efficiency,
Safety and Equipment Longevity**

with our state-of-the-art Automatic Lubrication Systems



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About our Company

Welcome to MachFox, your trusted partner in the realm of Industrial Hydraulics and Industrial Automatic Lubrication Systems. Founded on the principles of engineering excellence and customer satisfaction, we specialize in delivering high-quality, reliable solutions designed to enhance the performance, longevity and productivity of industrial machinery across various sectors.

Backed by industry leaders with distinguished and vast experience in varied industries, our team of skilled engineers and technicians brings expertise in designing and developing customized solutions that meet the unique needs of our customers. From design and manufacturing to installation and support, we ensure that every product we deliver is of the highest quality and performance.

Our Mission: Our mission is to provide pioneering solutions geared towards augmenting the efficiency, productivity and reliability of industrial machinery across diverse sectors. We strive to innovate continuously, ensuring that our solutions contribute to the smooth and efficient operation of your machinery and equipment.

Quality and Innovation: Quality is the heart of everything we do at MachFox. Our state-of-the-art manufacturing facilities and strict quality control processes ensure that every product meets the highest standards. We are also committed to innovation, continuously investing in research and development to bring the latest technological advancements to our customers.

Customer Focus: We believe in building lasting relationships with our customers by providing exceptional service and support. Our team of experienced engineers and technical experts works closely with customers to understand their unique needs and deliver tailor-made solutions that drive operational excellence.



Your Partner in Industrial Hydraulics & Automatic Lubrication Systems

Our Products and Solutions:

Automatic Lubrication Systems: Our solutions are designed to keep your machinery up and running smoothly, reducing downtime and maintenance costs while extending the life-cycle of your equipment.

Areas of Applications:

Our Automatic Lubrication Systems are designed and customized to meet the specific need of the customers. Our lubrication systems help enhance equipment performance and reliability, reduce downtime, and improve safety. Here are some key industrial areas and applications that we cater to:

- Steel and Metal Processing
- Cement
- Mining
- Construction and Off-highway
- Railway
- Pulp and Paper
- Wind Energy
- Agriculture
- Trucking fleets

Hydraulics: From simple hydraulic components to complex integrated systems, we offer a wide range of products tailored to meet the needs of various industries including Metals, Cement, Mining, Railways, Construction, Wind & Others.

Advantages of Automatic Lubrication Systems:

- Increased equipment lifespan
- Reduced downtime
- Enhanced efficiency
- Improved safety
- Consistent and precise lubrication
- Advanced monitoring and control
- Environmental benefits
- Reduced manual intervention
- Customization and flexibility



Offering a Complete Solution for your Industrial Needs

Optimizing Equipment Performance and Reliability in Toughest Mining Environments

For costly mining equipment to operate efficiently, it must be protected from extreme environments. In order to increase equipment longevity and lower maintenance, and safety risks, automatic lubrication systems are essential. Our solution will help maximize the productivity and uptime of your equipment with a consistent supply of lubricant at the right time and in the right quantity. Easy-to-install retrofit designs and customized enclosure systems with plug - and - play installation are both available. Our spray systems monitor the air flow to the nozzles as well as the lubrication level to ensure the right quantity of lubricant is sprayed as needed.



Applications



Drilling



Wheel loader



Stacker reclaimer



Excavator



Shovel



Motor grader



Dump truck



Screening



Rock breaker



Stone crusher



Concrete pump



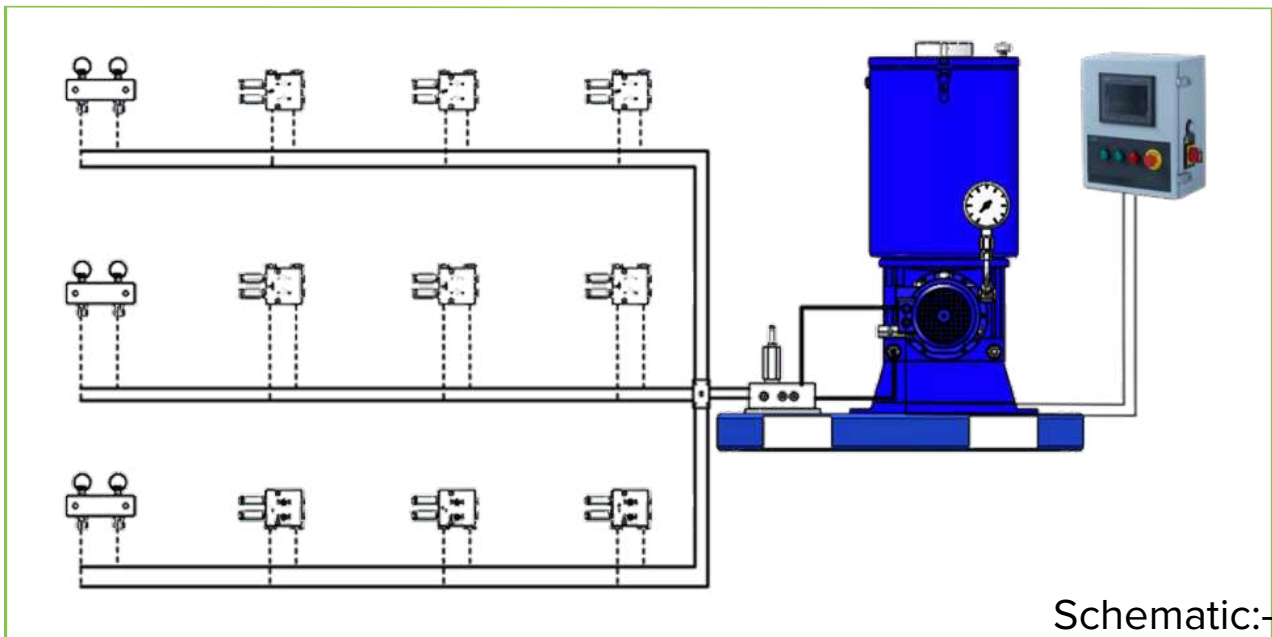
Concrete thickner



Lubrication Systems

Dual-line Systems

Dual-line systems can be used on large systems with dispersed lubrication points that require varying lubrication quantities. These systems utilize two main lines that are supplied alternately with lubricant from a high-pressure pump via a change-over valve at up to 400 bar (5801 psi).



Branch lines, along the main lines, are connected with dual-line metering devices to supply a large volume of lubricant to the lubrication points. Within large dual-line systems, end-of-line pressure switches are used to control and monitor the system. These flexible systems are simple to design and can be extended or reduced easily by installing additional metering devices or by removing them. A redesign of the system is not required. Dual line metering devices can be combined with downstream progressive metering devices to increase the total number of lubrication points receiving small lubricant amounts, offers dual-line systems that can dispense a precise, metered amount of lubricant up to 2000

lubrication points over long distances up to 120 m (131 yd) and more, depending on case values. Even if one pair of outlets becomes blocked inside one metering device, Dual-line systems provide sufficient lubrication for the rest of the system's lubrication points. Lubricant volume can be metered individually for each pair of outlets and can be monitored visually or electrically. The function principle of the dual-line systems consists of two half-cycles. In the first half-cycle, the lubricant is pumped into the main line (A) and the main line (B) is connected to the relief line.





The lubricant, which is conducted by the change-over valve, is supplied to the metering devices. The pistons of the metering devices are moved into their adjusted end positions, thus dispensing an exact, metered quantity of grease.

Once all metering devices have dispensed their lubricant to the consumption point, the system is hydraulically closed, which causes the pressure in main line (A) to rise until to the preset pressure at the end-of-line pressure switch (mounted in the main lines prior the last metering device) is

reached. This pressure switch then signals an electric pulse to the control unit, which turns the pump off and signals the change-over valve to relieve main line (A), and the pause time starts. At this stage, half of the lubrication points in the system have been lubricated.

In the second half-cycle, main line (B) is pressurized, and the cycle continues as before.



Dual Line Pump:



Model	:	DLP
Lubricant Output	:	4, 8, 14 & 24LPH
Operating Pressure	:	400 Bar max.
Reservoir capacity	:	30,50 & 100 ltrs with Low & High-Level switch
Drive type	:	Flange Geared Motor
Power supply - Motor	:	415V AC $\pm 10\%$, 50Hz $\pm 5\%$, 3 phase
Power Rating - Motor	:	0.37 kW/ 0.55kW/ 1.1 kW
Motor Enclosure - Motor	:	IP-55 Class Protection
Motor Insulation - Motor	:	Class-F
Make of motor	:	Siemens/ABB

Change Over Valve:



Model No.	:	ECV
Type	:	Motorized
Flow capacity	:	65 Liters/Hour. Max
Operating pressure	:	0-400 bar max.
Thread connection	:	$\frac{3}{4}$ " BSP
Make	:	24V DC

Dual Line Distributor:



ModelNo.	:	DLD
Monitoring	:	Indicator pin & proximity switch
Inlet connection	:	$\frac{3}{8}$ " BSP (Female)
Outlet connection	:	$\frac{1}{4}$ " BSP (Female)
Lubrication Output / outlet	:	0.2 to 2.3 cc/stroke adjustable
Operating pressure range	:	35 - 400 bar
MOC	:	Carbon Steel
No. of Outlets	:	From 2 to 8

Refilling Pump:



Model No.	:	PRP / ERP
Mode of operation	:	Pneumatic / Electric
Ratio	:	50:1
Maximum Output	:	1.3 ltr/min
Minimum air pressure	:	2 bar
Maximum air pressure	:	10 bar
Connection Threads	:	$\frac{1}{4}$ " NPTF
Pressure primer	:	Single post & Twin post are available
Media	:	Up to NLGI 2



Progressive Lubrication Systems

The progressive lubrication system comprises a feed pump and progressive distributors, whereby, the distributor is equipped with a circulation control. In addition, there are the necessary pipelines, threaded pipe fittings and fastening components. Pressure indicator in the inlet of the respective progressive distributor are additionally helpful for function control.

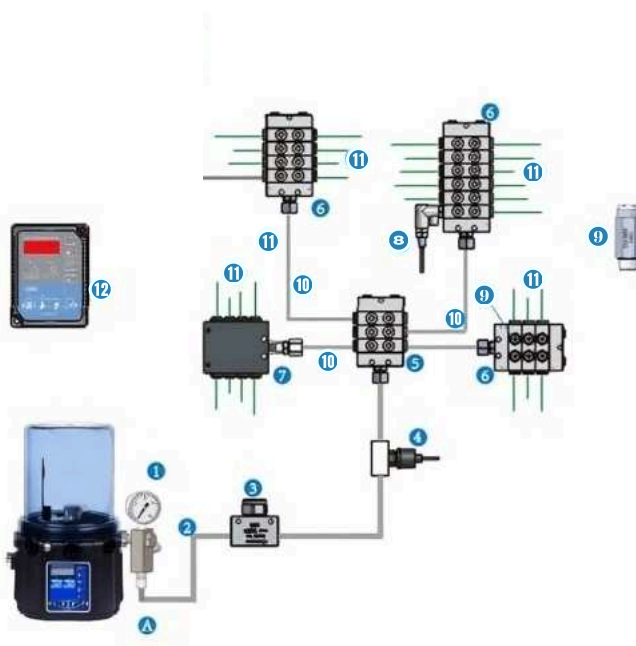
The lubrication pump should be assembled on an easily accessible position of the machine, so that uncomplicated refilling of the container is possible. The progressive distributor should be assembled as close to the lubrication points as possible.

The line system must be designed such that it can take maximum pump pressure, preferably steel pipes are laid. If mobile lubrication points are to be lubricated, high pressure hoses of appropriate dimension must be used.

The length of the high-pressure hoses should be kept as short as possible, as these expand under pressure and can intake appropriate

lubricant quantity. Timely secure feeding of the lubricant is thus no longer guaranteed. Moreover, like for air inclusions, quick pressure suppression, which may affect the lubricant adversely, is prevented. Only lubrication lines, i.e. lines directly leading from the distributor to the lubrication point, can be laid in a polyamide pipe, if it is ensured that the permissible operating pressure of the pipe shall not be exceeded.

It is recommended to select the cross sections of the pipeline according to the length of the pipes so that only a little operating pressure (less than 80 bar) is required. Slow action pumps are beneficial. Higher pressure changes the lubricants adversely, hence possibly low operating pressure must be selected in the pneumatic pumps. The pumping pressure can also be reduced through a throttle in the air line.



A - Lubrication pump

- 1 - Outlet relief valve elements
- 2 - Main line
- 3 - Filter
- 4 - Pressure switch
- 5 - Progressive distributor (1st generation)
- 6 - Progressive distributor (2nd generation)
- 7 - Progressive distributor (2nd generation)
- 8 - Functional control
- 9 - Fault monitoring
- 10 - Pipes and hoses
- 11 - Line to the lubrication point
- 12 - Controller



MLP Pump:

MLP pump is a piston pump predisposed to operate with a maximum of five pumping units. Its design is particularly suitable for progressive systems or single-line systems which enables five independent line lubrication at the same time. Output can be combined and increase displacement with special materials, to achieve excellent anti-shock ability. Special design of pump makes it easy to observe the oil level, prevent UV radiation and prevent oil deterioration, with low liquid level alarm and flashing buzzer. Also, can choose the type of output.

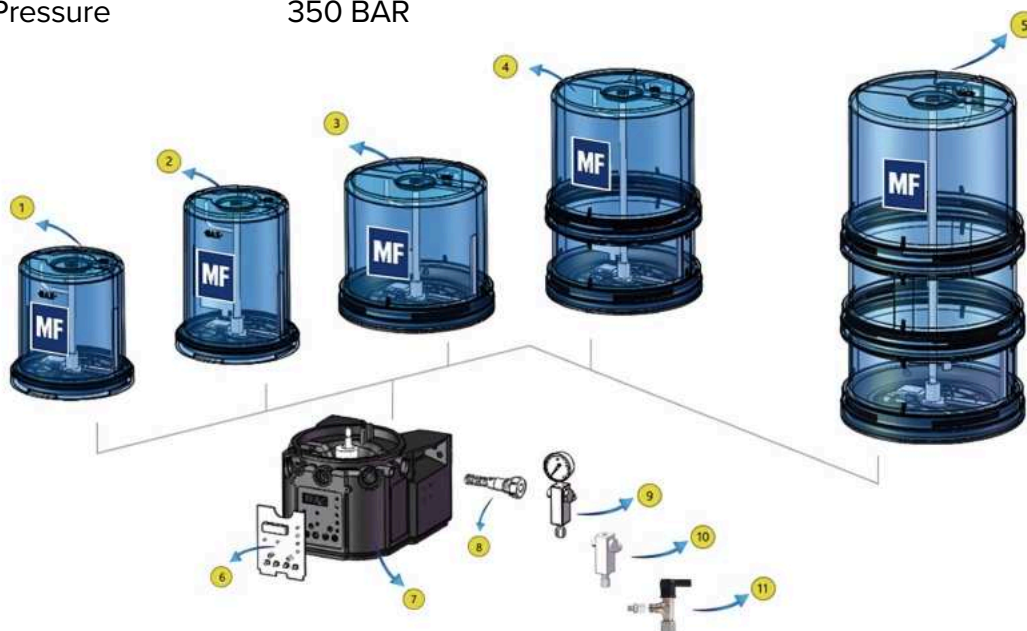
Standard: Can be managed by an external PLC. Since it does not come with an internal control unit, this is the most economical solution for lubricating your systems.

Automatic: With integrated control system, which can be set up local running time. Equipped with local operation and alarm light, alarm with buzzer, provide low level and pulse alarm, which can be combined with the monitor of distribution units into a perfect operating system.



Technical Characteristics:

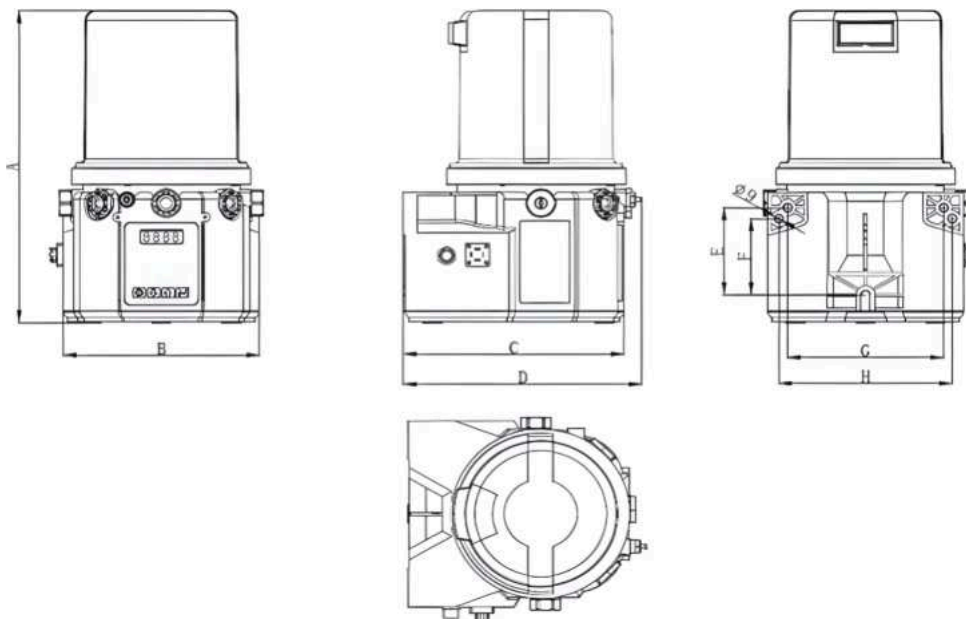
Pump Model	MLP Series
No. of Outlets	5
Supply Voltage	12V AC/DC & 24V AC/DC are available
Reservoir Capacity	2, 4, 6, 8 LTR
Rated Flow	2, 3, 4 ML / Stroke
Lubricants	OIL, NLGI 000, NLGI 00, NLGI 0, NLGI 1 & NLGI 2
Operating Temperature	-40 to +90 DEG C
Outlet Connection	G 1/4"
Maximum Pressure	350 BAR



No.	Part
1	2L Pump Tank
2	4L Pump Tank
3	6L Pump Tank
4	8L Pump Tank
5	12L Pump Tank
6	Control Panel

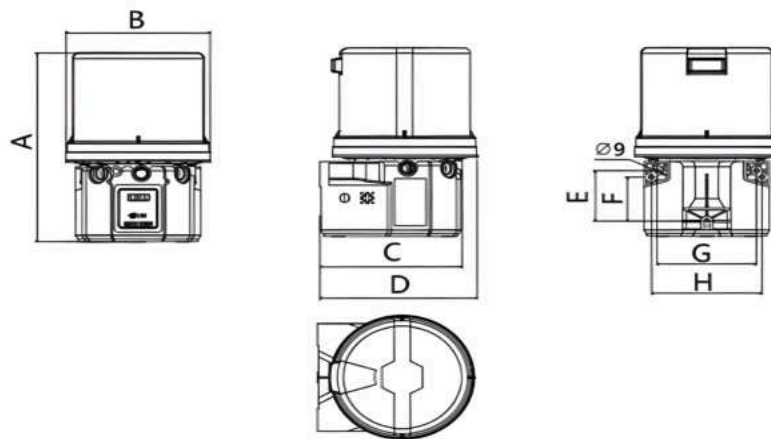
No.	Part
7	Pump Base
8	PLUS Pumping Element
9	Pump Outlet Assembly (with pressure gauge)
10	Pump Outlet Assembly (without pressure gauge)
11	With Relief Valve

2L & 4L Dimensions (mm)



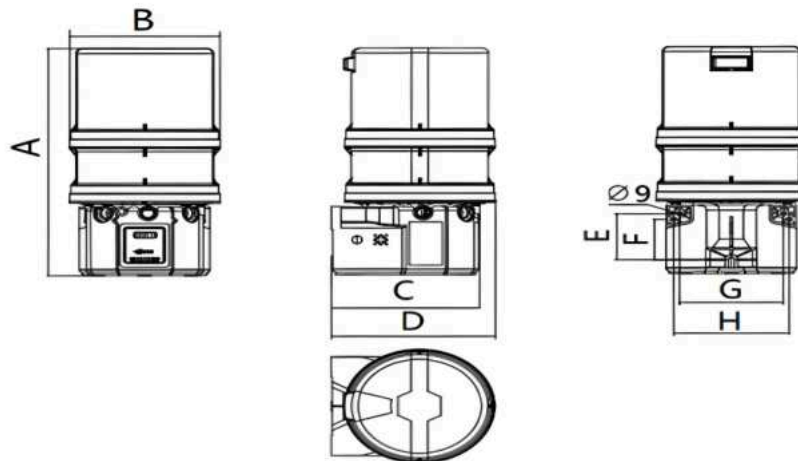
Reservoirs	A	B	C	D	E	F	G	H
2L	338	204	229.5	248	95.5	83.5	162.5	180
4L	378	204	229.5	248	95.5	83.5	162.5	180

6L Dimensions (mm)



Reservoirs	A	B	C	D	E	F	G	H
6L	358	235	231.5	256.5	95.5	83.5	162.5	180


8L & 12L Dimensions (mm)



Reservoirs	A	B	C	D	E	F	G	H
8L	471	235	231.5	256.5	95.5	83.5	162.5	180.5
12L	585	235	231.5	256.5	95.5	83.5	162.5	180.5

Control System

1. Clear panel
2. Programs that can be designed
3. Password protected
4. Sound alarm
5. Low level alarm
6. Accept proximity switch Excellent
7. Shock resistance
8. Pre lubrication button
9. IP65


Press and hold the "↑+↓" keys at the same time to enter the setting mode, Press  to enter page browsing.

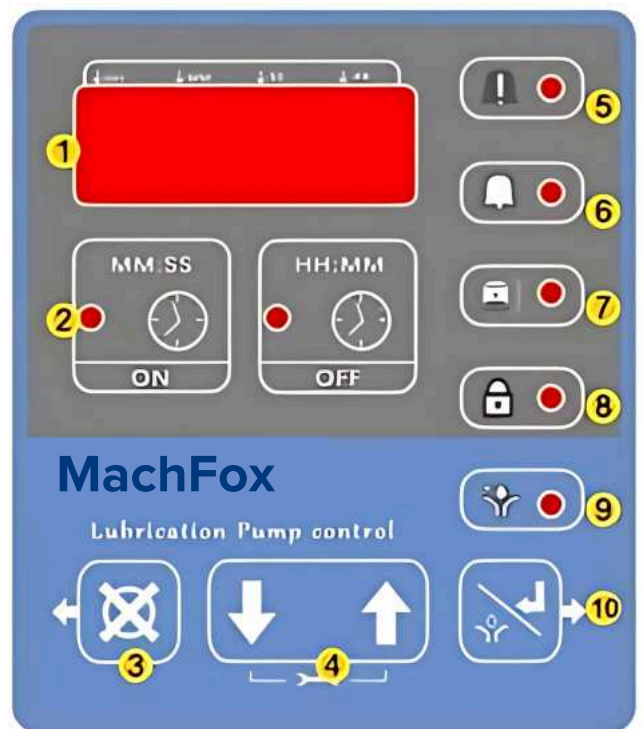
Set run time

The LED adjacent to the ON part of the clock lights up, indicating that you are setting the boot time parameters, you can press "↑or↓" to adjust the time.

Set shutdown time

The LED adjacent to the OFF section clock lights up to indicate that you are setting the shutdown time parameter. Press "↑ or ↓" to adjust the time.

Press  to start running



1. Easy to read LED display
2. Legible On/Off Instructions
3. Reset Function
4. Easy to use navigation keys
5. Alarm system of lube system shutdown
6. Warning signal prior to lube system shutdown
7. Low level indication
8. Access to the control device is password protected
9. Pre-lube capability
10. Manually run/confirm



Progressive Distributor

The DSP is a single block progressive divider valve that is ideal for applications where space is limited. It is available in 6,8,10,12,18,20 and 22 outlet versions, each with an output of 0.2 cm³ per cycle.

The single output of the dosing device may be combined with the one located adjacent by eliminating the special fitting and applying a plug. An outlet can also be merged with the sequential outlet on the block by removing the special outlet fitting and installing a plug.

Visual or electronic monitoring can be achieved simply by removing a plug and installing a visual or electronic add-on device as shown below.

The spools in a progressive metering valve operate sequentially partitioning equally across the outlets, the grease being pumped into the metering block inlet. In the event of a blocked lubrication point all the spools will stop, thereby allowing the user to monitor the entire system with a single monitoring device. The grease pumped inside of the block is distributed by the piston dispensers of the progressive dosing device equally among the different outputs. In case a single output becomes blocked, the pistons stop their activity allowing for the control of the entire system by means of a single device for this purpose.

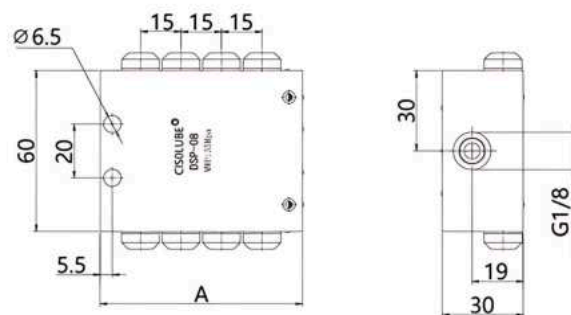


Technical Characteristics:

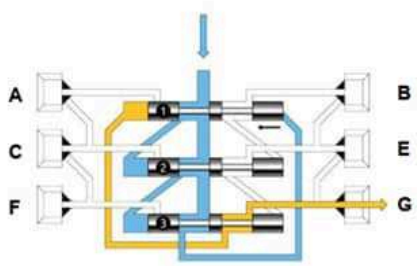
Distributor Model	PLP Series
Lubricants	OIL, NLGI 000, NLGI 00, NLGI 0, NLGI 1 AND NLGI 2
Discharge	0.2CC/CYCLE
Operating Temperature	-40 to +90 DEG. C
Inlet Connection	G 1/8"
Outlet Connection	M10X1
No. of Outlets	From 6 TO 22
Operating Pressure	From 15 TO 300 BAR

Dimensions

Outlets	A/mm
6	60
8	75
10	90
12	105
14	120
16	135
18	150
20	165

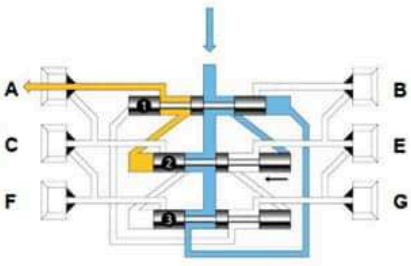


Features & General Description



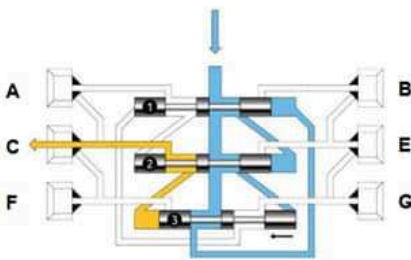
1

Lubricant flow pressure (blue) moves piston 1 to the left allowing lubricant discharge (yellow) from G.



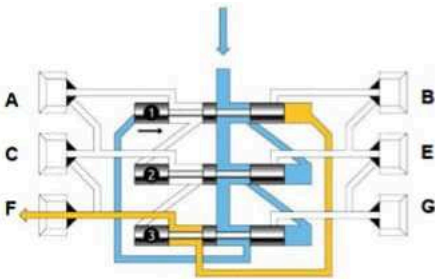
2

When piston 1 reaches its limit, lubricant flow pressure (blue) operates on piston 2. Lubricant volume (yellow) discharge from A.



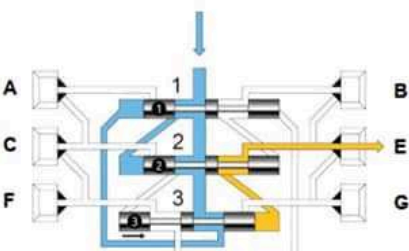
3

When piston 2 reaches its limit, lubricant flow pressure (blue) operates on piston 3. Lubricant volume (yellow) discharge from C.



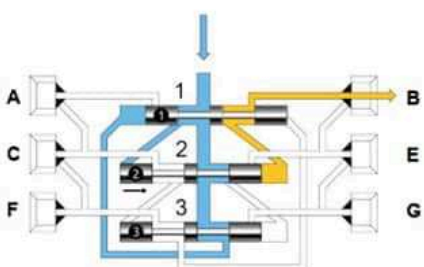
4

When piston 3 reaches its limit, lubricant flow pressure (blue) operates on piston 1. Lubricant volume (yellow) discharge from F.



5

When piston 1 reaches its limit, lubricant flow pressure (blue) operates on piston 2. Lubricant volume (yellow) discharge from E.



6

When piston 2 reaches its limit, lubricant flow pressure (blue) operates on piston 3. Lubricant volume (yellow) discharge from B. The system is ready for new cycle.



Segmental Distributor

A typical VB distribution valve consists of a “first piece”, a “tail piece” and 3 to 8 working pieces. Can provide 3 to 16 lubrication points of lubrication, VB distribution valve working piece, a variety of specifications of displacement for selection. The double outlet working piece (after the specification value of the working piece, the T represents the double outlet) has two oil outlets, which can be set as the side or upper output; the single outlet (after the specification value of the working piece, the S represents the single outlet) has one oil outlet, which can be at either end of the working piece, and the other end needs to be blocked. Note: that the double outlet working piece should not block any outlet, otherwise it will affect the normal operation.

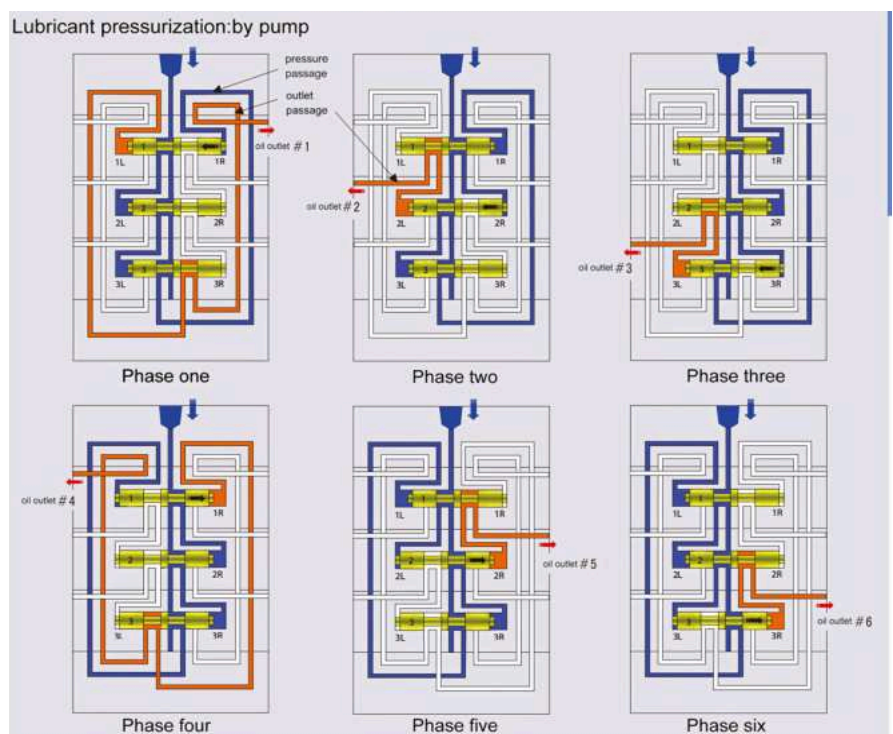


Magnetic and electronic proximity switch cycle indicators can be easily configured to provide positive protection for successful lubrication.

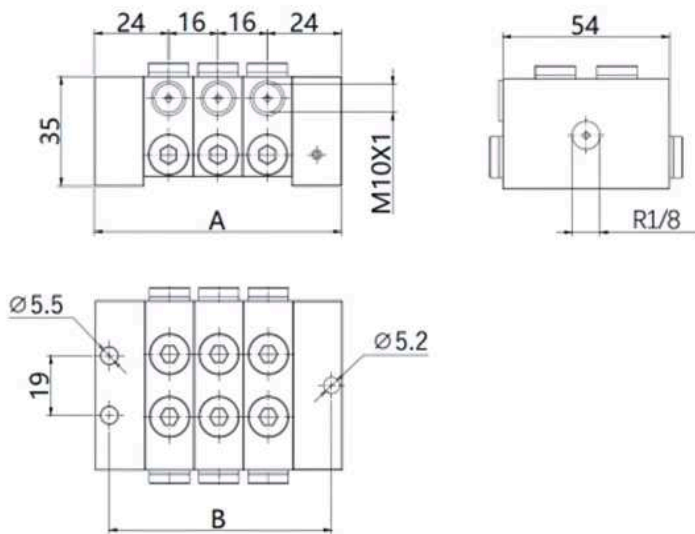
Technical Characteristics:

Distributor Model	SEG Series
Lubricants	OIL, NLGI 000, NLGI 00, NLGI 0, NLGI 1 AND NLGI 2
Discharge	0.08 TO 0.32 CC/CYCLE
Operating Temperature	-40 to +110 DEG C
Inlet Connection	G 1/8”
Outlet Connection	M10X1
No. of Outlets	From 6 to 20
Operating Pressure	From 15 to 250 BAR

Structure & Working Principle



Dimensions



Number of work	A(mm)	B(mm)
3	80	72
4	96	88
5	112	104
6	128	120
7	144	136
8	160	152
9	176	168
10	192	184

Note: A & B in the above table are theoretical values, which may errors with real objects due to influence of the cumulative assembly errors of distributors.

Single Line Lubrication Systems

The pump sucks the lubricant from the container. The lubricant reaches the main line, distributor, strips and the dosing valves through the relief valve. For every pressure build-up controlled by the pressure control valve, the dosing valves deliver the lubricant to the lubrication point via the lubrication line.

In an automatically operated system, the pressure build-up is controlled by a max. pressure switch and the electronics. The pump is switched off after the pressure build-up and again switched-on after the end of the cycle time. Pressure build-up from the unit up to the farthest metering valve requires a specific time depending upon the length of the line and flowability of the lubricant.

A level control monitors the constant level of the lubricant in the container. By stopping the

pump, The entire system is relieved using the relief valve at 1 bar. This is important for the function of the dosing valve and can be controlled via a min. pressure switch. First, determine the lubrication point, lubrication requirements, lubrication, and interval time. When determining the lubrication point requirements, it is best to meet the principle of small dose, short cycle. At the same time, the unloading time of the main road and the unloading time of the flowing grease must be considered, because of the temperature and the long pipeline, which leads to extra time. The main line and the dosing valve are laid such that self-venting is possible, On the main line end and higher points of the system, dosing valves must be arranged with outlets on the top. There must be no air inclusions.





A - Lubrication pump

- 1 - Relief valve elements
- 2 - Pressure gauge
- 3 - Pipelines
- 4 - Filter
- 5 - Tea branching pieces
- 6 - Pipe clamps
- 7 - Four branching pieces
- 8 - Volumetric distributor
- 9 - Check device (pressure switch)
- 10 - Brush for smearing oil
- 11 - Line to the lubrication point
- 12 - Controller

Single Line Pump:

Model	:EDP / HDP Series
Type	:Hydraulic/electric/pneumatic operated
Lubricant container capacity	:27 Kg / 60 Kg
Lubricant container type	: Metallic
Lubricant output/outlet	:114 cc/min
Operating hydraulic pressure	:21-31 bar
Pressure rating	:300 bar
Hydraulic oil inlet port	:SAE 4
Hydraulic pressure max	:207 bar



Timer - Progressive / Single Line:

Model	: MF-002
Input Voltage	: 18 -30 VDC
Output Voltage	: 24VDC
Run Time	: 1-99min (in step of 1min)
Push Time	: 1- 999min (in step of 1min)
Supervisory Time	: 1-99min (in step of 1min)
Class of Protection	: IP 65
Memory	: Provided. Memory lapses on switching off the Input power
Types of Connection:	: Automobile, Nylon



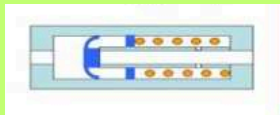
Metering Valves for Single Line Lubrication Systems

Characteristics

- Pressurized ratio valve for single line lubrication system
- Standard material: Alloy steel
- Operating temperature: $-30 \sim +70$ °Celsius
- Reliable & efficient
- Operating pressure >1.5 MPa
- Back Pressure < 0.5 MPa
- Measured accurately
- Stable performance
- Dual - seal Leak tightness

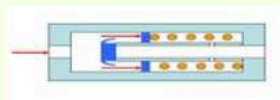


Working Principle:



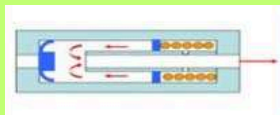
Position 1:

Initial position. Main line is ventilated. Return valve in the initial position.



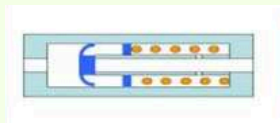
Position 2:

Dosing through pulse initiated. Return valve in the restacking position. Fill lubricant.



Position 3:

Dosing. Return valve encircle the main line. Spring force of the seal doses the lubricant.



Position 4:

Back to the initial position.

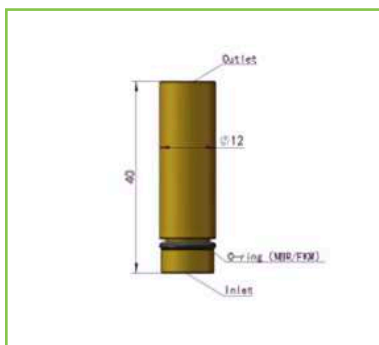


Single Line Lubrication Metering Valve



MV Metering dispensers:

- Material : Brass
- Output : 0.06/0.1/0.2/0.3/0.4/0.5ml
- Pressure : Max 80 bar
- Operating Pressure : 30 - 40 bar
- Lubricants : NLGI 000 00 0



33V Metering dispensers:

- Material : Brass
- Output : 0.06/0.1/0.2ml
- Pressure : Max 80 bar
- Operating Pressure : 30 - 40 bar
- Lubricants : NLGI 000 00 0



T86 Metering dispensers:

- Material : Alluminium
- Output : 0.03/0.06/0.1/0.16ml
- Pressure : Max 80 bar
- Operating Pressure : 30 - 40 bar
- Lubricants : NLGI 000 00 0



MV Metering dispensers:

- Material : Brass
- Output : 0.06/0.1/0.2/0.3/0.4/0.5ml
- Pressure : Max 80 bar
- Operating Pressure : 30 - 40 bar
- Lubricants : NLGI 000 00 0





VL-32 Injector Valves:

- Material : Carbon Steel
- Output : 0.016 - 0.131ml adjustable
- Pressure : Max 240 bar
- Operating Pressure : 83 - 240 bar
- Lubricants : NLGI 000-2



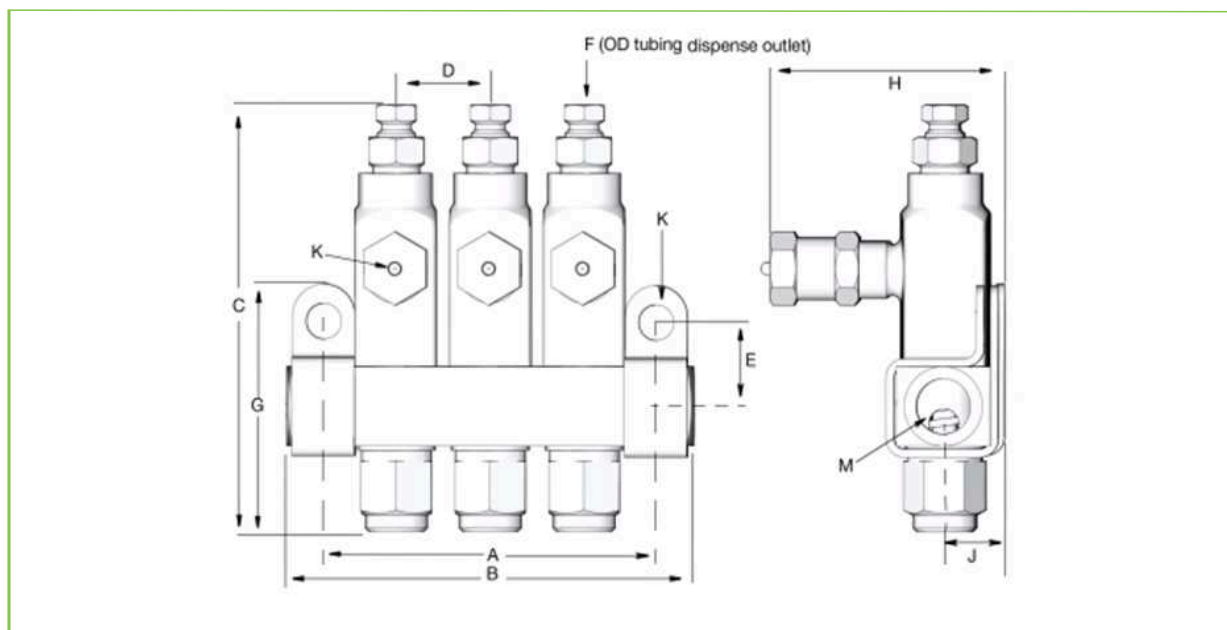
VL-1 Injector Valves:

- Material : Carbon Steel
- Output : 0.131 - 1.31ml adjustable
- Pressure : Max 240 bar
- Operating Pressure : 127 - 240 bar
- Lubricants : NLGI 000-2



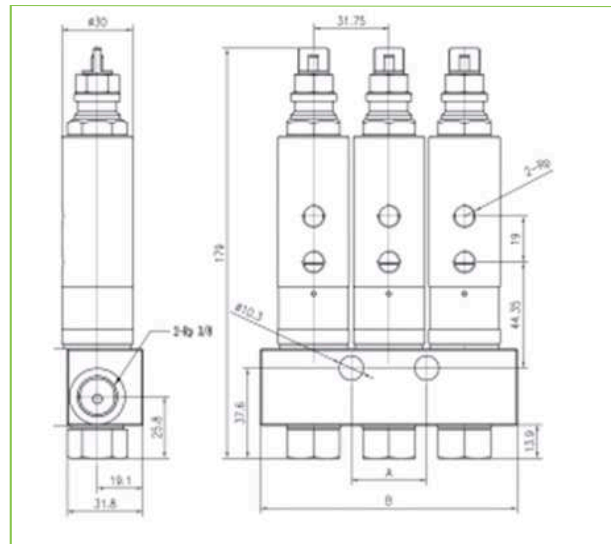
VMN Injector Valves:

- Material : Carbon Steel
- Output : 0.1ml, 0.2ml, 0.4ml
- Pressure : Max 80 bar
- Operating Pressure : 20 - 80 bar
- Lubricants : Fluid grease of NLGI 000 00



INJECTOR	A/ mm	B/ mm	C/ mm	D/ mm	E/mm	F	G/ mm	H/ mm	J/mm	K/mm	M/ mm
1 point manifold	28.9	44.4	79.4	N/A	17.3	6mm O.D. tube	47.75	48.77	11.68	7.11	1/4 NPT (F)
2 point manifold	48.26	63.5	79.4	19	17.3		47.75	48.77	11.68	7.11	1/4 NPT (F)
3 point manifold	67.06	82.5	79.4	19	17.3		47.75	48.77	11.68	7.11	1/4 NPT (F)
4 point manifold	86.11	101.6	79.4	19	17.3		47.75	48.77	11.68	7.11	1/4 NPT (F)

Dimensions:



INJECTOR	A/mm	B/mm	Outlet	Inlet
1 point manifold	-	63.5	1/8 NPFT (F)	3/8 NPFT (F)
2 point manifold	-	76.4	1/8 NPFT (F)	3/8 NPFT (F)
3 point manifold	31.8	108.2	1/8 NPFT (F)	3/8 NPFT (F)
4 point manifold	63.6	140	1/8 NPFT (F)	3/8 NPFT (F)
5 point manifold	95.4	171.8	1/8 NPFT (F)	3/8 NPFT (F)
6 point manifold	127.2	203.6	1/8 NPFT (F)	3/8 NPFT (F)

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HEAD OFFICE & MANUFACTURING
MachFox Hydraulics and Lubrication Systems Pvt. Ltd.
7A, Sector 24, Ballabhgarh, Faridabad,
Haryana 121005 – India

MANUFACTURING AND R&D CENTRE
MachFox Hydraulics and Lubrication Systems Pvt. Ltd.
307/308, 5th Main Road, 4th Phase, Peenya Industrial
Area, Bengaluru Karnataka 560058 – India



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