Electro-Mechanical Diaphragm Dosing Pumps User Manual

Safety Precautions

	Please read the entire manual carefully before installing and operating the device.
	Device installation and maintenance must be done by trained personnel only.
	Do not exceed the maximum working pressure indicated on the device.
	Do not operate the device without using a pressure relief valve.
	Before startup the device must be received air in the pump head and pipe.

1. Features

1.1 Description

Electro-Mechanical Diaphragm Metering Pumps move the diaphragm by helping circular motion that provided by electric motor, after it takes this motion convert it a linear motion with gear unit and camshaft. This movement can be changed with flow rate adjustment nut between 0% -100%. In this way, the pump can be adjusted according to user's needs.

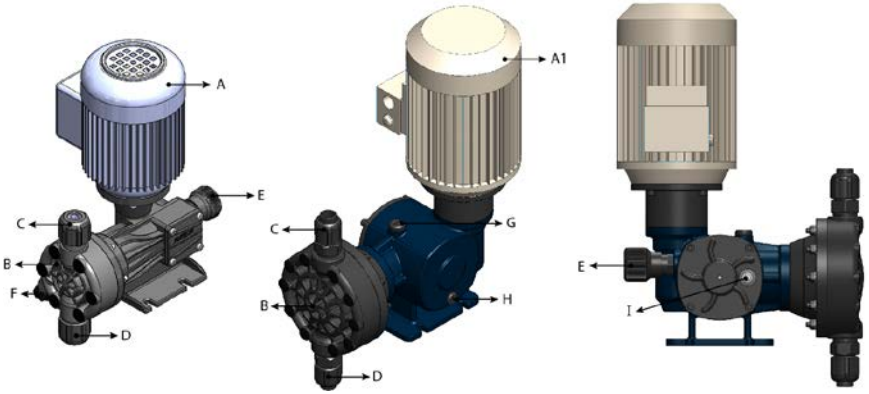


Figure 1_Genaral Overview

A:	0,09 KW 3P Motor	E:	Flow Rate Adjustment Nut
A1:	0,25 KW 3P Motor	F:	Take Air Line Gland
B:	Pump Head	G:	Air Vent Stopper
C:	Injection Line Gland	H:	Oil Drain Stopper
D:	Suction Line Gland	I:	Oil Level Indicator

1.2 Flow Rate Adjustment

1. Manuel Flow Rate Adjustment: It can be adjust with flow rate adjustment nut between 0% - 100% in linear while running or stopping.	
2. Flow Rate Adjustment with 4-20mA Signal Input Motor Driver:	Please refer to that used motor driver wiring and connection diagrams

1.2 Features

Metal Body Electromagnetic Dosing Pumps												
Pump Type	Ø mm Diaphragm	Strokes/ min		Capacity				Max Pressure	Stroke (mm)	kW	Connection	Weight
				L/1`		L/h						
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz					
EMD M50L/7B 380	110	40	55	0,90	1,20	50	70	7	5	0,25	3/8"	12 KG
EMD M100L/7B 380		80	100	1,70	2,00	100	120					
EMD M150L/7B 380		115	140	2,50	2,80	150	170					
EMD M200L/5B 380	120	80	100	3,30	3,60	200	220	5	10	0,37		14 KG
EMD M310L/5B 380		115	140	5,10	5,50	310	330					
EMD M420L/3B 380		115	140	7,00	7,30	420	440			0,55	3/4"	17 KG
EMD M630L/3B 380		115	140	10,5	10,60	630	640	3	15			

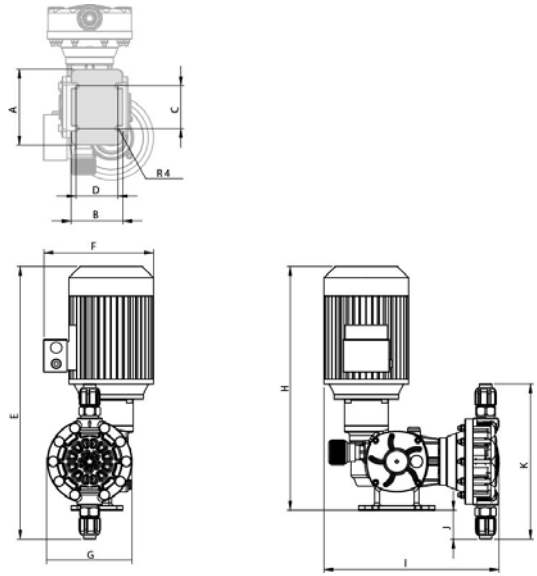
Plastic Body Electromagnetic Dosing Pumps												
Pump Type	Ø mm Diaphragm	Strokes/ min		Capacity				Max Pressure	Stroke (mm)	kW	Connection	Weight
				L/1`		L/h						
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz					
EMD P14L/5B 380	66	42	50	0,23	0,28	14	16,8	5Bar	4,75	0,09	1/2"	4,5Kg
EMD P32L/5B 380		85	102	0,53	0,64	32	38,4					
EMD P49L/5B 380		128	153	0,82	0,98	49	58,8					

Electro-mechanical diaphragm dosing pumps are manufactured according to the standards given in the table below, with the wetted parts (the surfaces in contact with the chemical) selected based on the user's requirements.

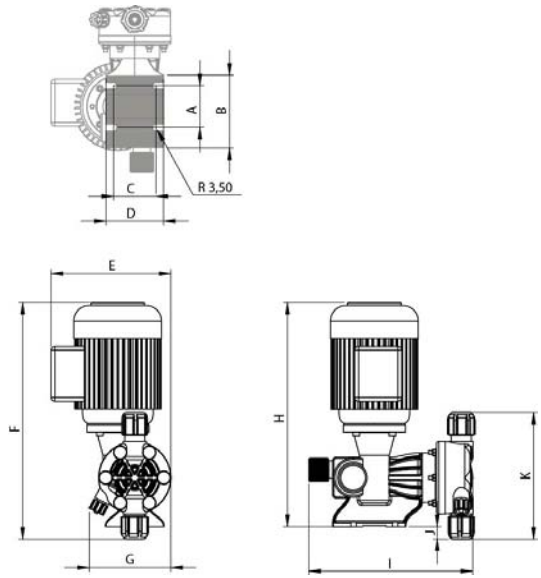
Pump selection must be made by the user according to the chemical used or the application area.

Some Standards for Electro-Mechanical Diaphragm Dosing Pumps			
Pump Head	**Ball**	**Ball Seat Components**	**Diaphragm**
PP/FRV	Seramik	PTFE	PTFE/NBR
PP/FRV	S.S. 316	S.S. 316	PTFE/NBR
S.S. 316	S.S. 316	S.S. 316	PTFE/NBR
PVDF	Ceramic	PTFE	PTFE/NBR

1.3 Dimensions



A:	125 mm
B:	85 mm
C:	70 mm
D:	69 mm
E:	448 mm
F:	180 mm
G:	139 mm
H:	400 mm
I:	287 mm
J:	47 mm
K:	255 mm



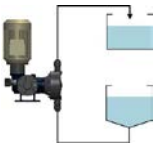
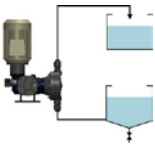
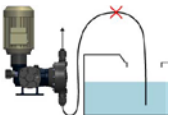
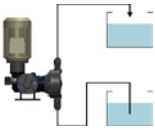
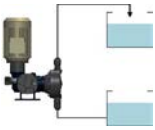
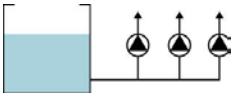
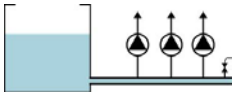
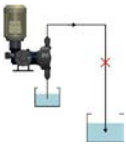
A:	53 mm
B:	93 mm
C:	54 mm
D:	73 mm
E:	152,5 mm
F:	300 mm
G:	104 mm
H:	285 mm
I:	209 mm
J:	16 mm
K:	161 mm

2. Installation

2.1 Installation Instructions

- The environment where the device works should be well ventilated and dry. If it will be used outdoor, must be isolated from direct sunlight and water. And it is better to get it into a protective shelter.
- The temperature of the environment where the device runs, should not exceed 40°C. And the chemical temperature must be lower than 45°C.
- In order to get easier usage and better maintenance there must be at least 50 cm clearance around the device.
- In order to do proper installation provide a flat, durable and stainless metal surface.

2.2 Connection Diagrams

Decriptions	FALSE	TRUE
Device suction can be blockage from accumulate dirt and sediments in the bottom of the tank.		
Suction line connected pipe can be breakage from the highest point.		
It is due to an irregular suction. Device should be connect most nearly distance		
The diameters of suction manifold of the pumps that are connected as parallel, must suitable according to total flow rate of the pumps.		
To a warehouse where located in the lower levels of the chemical tanks cannot be made directly a dosing. With siphon effect Chemical is drained to other tank.		
Without using injection line tool, there must not be direct chemical dosing to the line that has pressure.		

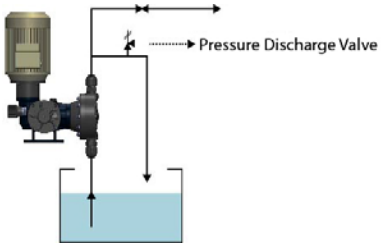
2.3 Pressure Discharge Valve Usage

A pressure discharge valve is required between dosing line and pump over injection line for Electro-Mechanical Diaphragm Metering Pump.

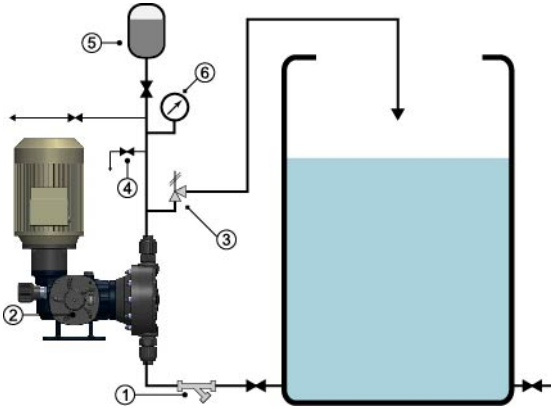
Pressure discharge valve protects your pump from extreme and sudden rise in pressure. Also protects from high pressure may occur due to congestion on the discharge line.

Pressure discharge valve connection is made as shown in the adjacent figure.

Pressure discharge valve setting, must not exceed the maximum pressure value of the pump.



2.4 General Installation



1. "Y" Filter
2. EMD Dosing Pump
3. Pressure Discharge Valve
4. Drain Valve
5. Pressure Compensating (Dampener)
6. Pressure Indicator

2.5 For Oil Filling

For EMD-M models oil must be checked from oil indicator with regular intervals. If the oil is below the desired level, oil supplementation is made. (*please refer to oil filling Figure_1 G, H and I)* In each 2000 hours work and 6 months period of pump oil should be replaced with the new one.

Using Suggested Oils

Brand	Type
ESSO	SPARTAN EP 320
MOBIL	MOBILGEAR 632
SHELL	OMALA OIL 320

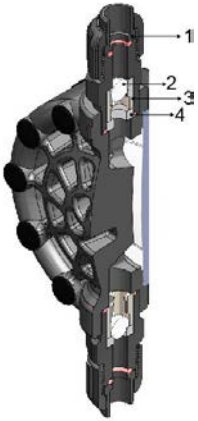
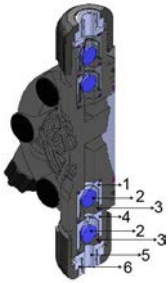
3. Usage

⚠	Please observe the following precautions before operating your device!

- Check the oil from the oil level indicator before running the EMD M models. Add the oil below the desired level.
- Please check the electric connections and motor rotation way. motor rotation way must be the same direction as the arrow shown on the pump.
- Please check the valves positions on the system. If the valves is closed please turn on.
- Please check the pump head group, suction - injection line groups and all pipes are suitable (should not any leak or blockage)
- In first use please run the device in %20 performance at 3-5 minutes. After that process turn on to gradual for max capacity.Then adjust the desired flow rate setpoint.
- Check the system pressure. System pressure must be lower than the device working pressure. If it is not suitable. Please don't use the pump.

4. Maintenance

⚠ All parts placements must be same with the figure below.

EMD-M Pump Head Group	EMD-P Pump Head Group
 1.Hose End 3/8 2.Ceramic Ball 3.Ball Housing5 4.Ball Housing 5 Adapter	 1.Ball Housing 4A 2.Ceramic Ball 3.Ball Housing 4A Adapter 4.Ball Housing 4B 5.8x12 Hose End 6.8x12 Hose Pressure Plate