F.M series

DIRECT
DIAPHRAGM
METERING PUMPS

DOSEURO®



Doseuro with a technical expertise gained from many years experience in the chemical dosing field, and a commercial understanding, sensitivity to the requirements of customers, responsive to customers' demands.

Continuous research are the fundamental reasons of Doseuro's success, confirmed by the worldwide acceptance of our pumps.

TECHNICAL CHARACTERISTICS

- Adjustable capacity from 0-l00% whilst in operation or at rest.
- The movement of the diaphragm is based on a precise reciprocating gearbox which provides for exact volumetric displacement.
- Exact diaphragm movement is achieved, thereby providing accurate stroke reproduction. With the design of mechanism, a linear capacity is achieved, at all stroke settings.
- The gearbox mechanism is operated by an eccentric cam, which provides for a positive displacement delivery stroke, whilst the suction stroke is spring assisted. Vertically mounted motors are fitted to the 0.09 Kw metering pump and the gearbox.
- Both single and three phase motors can be fitted to suit site requirements.
- The gearbox provides for wormwheel reduction system with all bearings fully supported within the grease lubrication.

CHARACTERISTICS DATA

Four sizes of gearbox are available offering stroke movements from 0-5 mm.

Maximum suction lift 2 metres.

Operating temperatures on standard motors minimum 0° C - maximum 50°C.

METERING PUMPHEADS

The pumphead is connected to the gaerbox by means of a spacer assembly.

The pumpheads have a mechanically actuated diaphragm.

Double valve ball assemblies are available which have been designed for easy inspection and accessability.

FITTINGS

Every metering pump come complete with accessories, to improve operation and accuracy of the metering pump.

- Injection valve
- M 1,5 suction pipe
- M 1,5 delivery pipe
- Filter



FM

Direct diaphragm type

Mechanical diaphragm pumps: executions

	PARTS			
EXECUT.	PUMP HEAD	VALVE (ball)	VALVE SEATS	DIAPHRAGM
11	AISI 316	AISI 316	AISI 316	PTFE/NBR
12	PP	PYREX	PVC	PTFE/NBR
13	PVC	PYREX	PVC	PTFE/NBR
17	PP	AISI 316	PP	PTFE/NBR

PP = *Polypropylene* S.S. 316 = *Stainless steel 316*

Glossary and numbering-system to identify pumps type

FM	50	50 / D	11	DV
1st group	2nd group	3rd group	4th group	5th group	6th group
"FM" series mechanical diaphragm dosing pump	*stroke length*	*diaphragm diameter in mm*	*reduction ratio group (nr. of piston strokes/min): F (1/24) B (1/12)*	*materials in touch with the fluid*	*not standard - special code*

in case of pumps supplied without motor add: WO/M

FM 050-30



Pump type		Reducer ratio (*1) Strokes number /1'		Capacity (*2) L/1'		L/h		Max Press. Kg/cm2		Connections (*4)		Motor	ø mm Diaphr.	Stroke mm	Net Weights (*5) Kg	
	(*1)	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	SS 316	PVC	SS 316	PVC			Length	SS 316	PVC
FM-050-30	H	41	50	0,075	0,090	4,5	5,4	10		1/2" G.m.		kW 0.09 - 3 Ph ~1400 rpm or kW 0.09 - 1 Ph ~1400 rpm	30	5	5,5	4,5
	F	58	70	0,116	0,140	7	8,4									
	D	82	98	0,158	0,190	9,5	11,4									
	B	116		0,233		14										

Note: G.m. = Cylindrical, male; 1 liter = 0,264 gallon; 1 Kg/cm2 = 14,223 PSI

(*1) Piston's number of strokes during 1 minute with 4 pole motor
- H = Reducer ratio 1 : 34 = 41 strokes at 50 Hz / 49 strokes at 60 Hz
- F = Reducer ratio 1 : 24 = 58 strokes at 50 Hz / 70 strokes at 60 Hz
- D = Reducer ratio 1 : 17 = 82 strokes at 50 Hz / 98 strokes at 60 Hz
- B = Reducer ratio 1 : 12 = 116 strokes at 50 Hz

(*2) The indicated capacity value is subject to changes due to the working pressure, the dosed liquid, the viscosity.

(*4) If requested, different range of connections are available.

(*5) The weight is approximate and is the value of the pump fitted with a totally enclosed fan-cooled outdoor motor.

(6) The pumps are equipped with accessories.

(7) The motors are epoxy coated RAL 7030.

FM 050-50



Pump type		Reducer ratio (*1) Strokes number /1		Capacity (*2) L/1'		L/h		Max Press. (*3) Kg/cm2		Connections (*4)		Motor	ø mm Diaphr.	Stroke mm	Net Weights (*5) Kg	
	(*1)	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	SS 316	PVC	SS 316	PVC			Length	SS 316	PVC
FM-050-50	H	41	50	0,283	0,340	17	20,4	5		1/2" G.m.		kW 0.09 - 3 Ph ~1400 rpm or kW 0.09 - 1 Ph ~1400 rpm	50	5	5,5	4,5
	F	58	70	0,383	0,460	23	27,6									
	D	82	98	0,566	0,680	34	40,8									
	B	116		0,783		47										

Note: G.m. = Cylindrical, male; 1 liter = 0,264 gallon; 1 Kg/cm2 = 14,223 PSI

(*1) Piston's number of strokes during 1 minute with 4 pole motor
H = Reducer ratio 1 : 34 = 41 strokes at 50 Hz / 49 strokes at 60 Hz
F = Reducer ratio 1 : 24 = 58 strokes at 50 Hz / 70 strokes at 60 Hz
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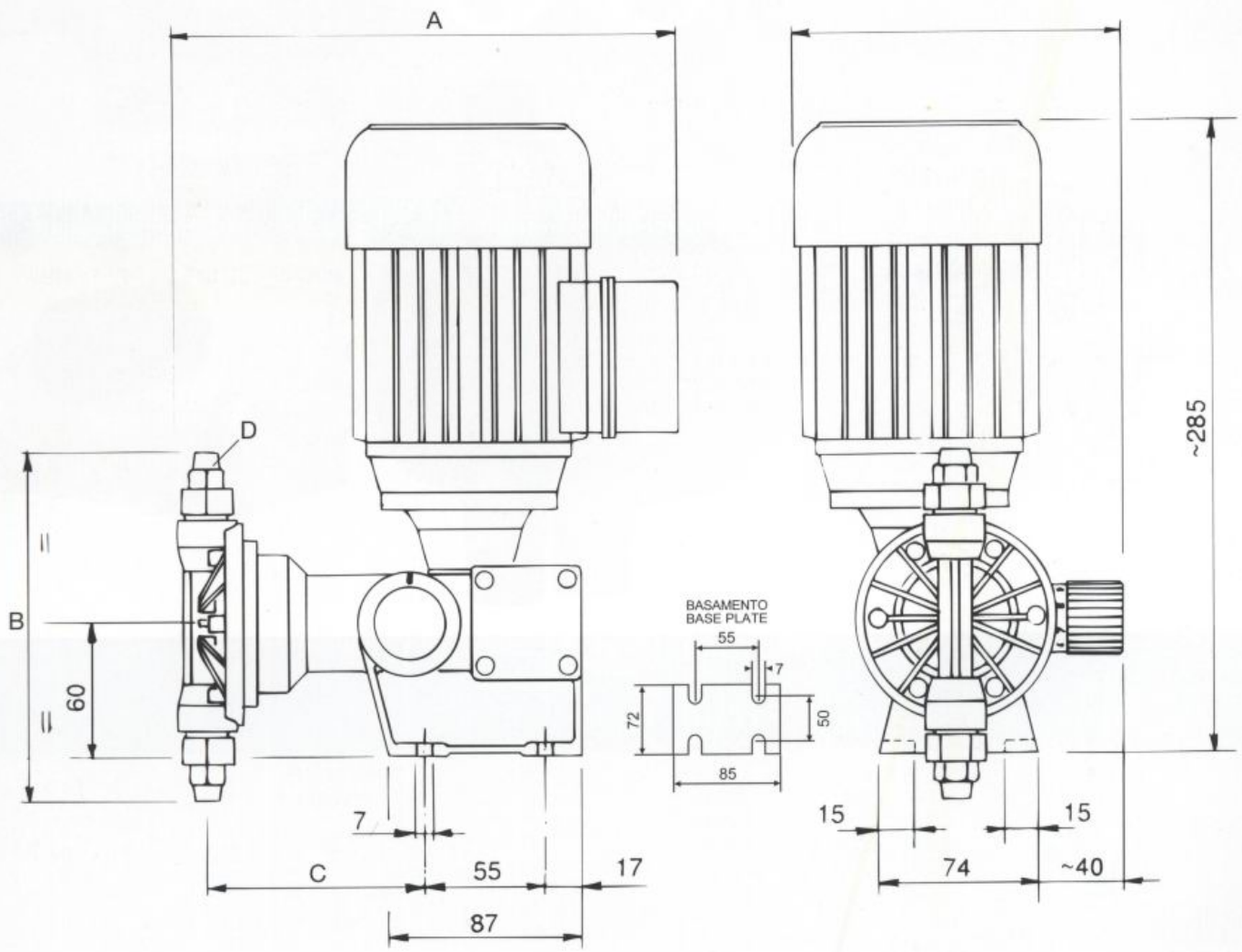
(*4) If requested, different range of connections are available.

(*5) The weight is approximate and is the value of the pump fitted with a totally enclosed fan-cooled outdoor motor.

(6) The pumps are equipped.

(7) The motors are epoxy coated RAL 7030.

Dimensions (mm)



	Execution 11				Execution 12				Execution 13			
	A	B	C	D - valv.	A	B	C	D - valv.	A	B	C	D - valv.
FM 050-30	255	128	125	1/2" G.m.-AB3	–	–	–	–	256	129	125	1/2" G.m.-AB3
FM 050-50	220	142	100	1/2" G.m.-AB5	220	152	100	1/2" G.m.-AB5	225	152	103	1/2" G.m.-AB5
FM 050-50	220	135	100	1/2" G.m.-AB8	–	–	–	–	230	199	105	1/2" G.m.-AB8

Dimensions in millimeters

Dimensions and configurations may be changed without prior notice for the purpose of product improvement.

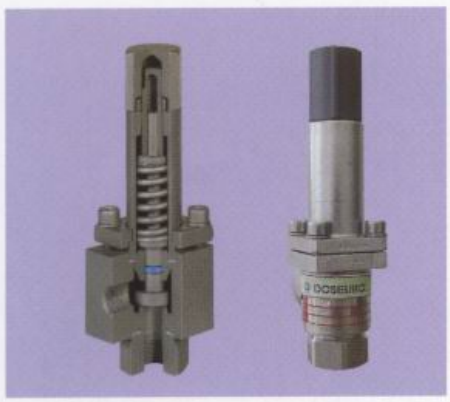
Fittings



Relief valves and back pressure valves

Type	*Pump capacity*	*Connections*	*Body material*	*Diaphragm*
VSC-6	90 l/h	1/2" G.F.	PVC or S.S. 316	PTFE / NBR
VSC-10	230 l/h	1/2" G.F.		
VSC-14	420 l/h	3/4" G.F.		
VSC-22	1000 l/h	1"G.F.		

** Relief valve setting pressure: 3÷10 kg/cm^2 (44÷145 psi)*
Back pressure valve setting pressure: 1÷3 kg/cm^2 (15÷44 psi)
G.F. = Cylindrical, Female



Safety relief valve

Type	*Pump capacity*	*Connections*	*Body material*	*Diaphragm*
TS-10	200 l/h	3/8" o 1/2" G.F.	PVC or S.S. 316	PTFE / NBR
TS-13	400 l/h	1/2" G.F.		
TS-21	1000 l/h	1" G.F.		

** S.S. 316 Relief Safety valve setting pressure: max 40 kg/cm2 (588 psi)*
PVC Relief Safety valve setting pressure: max 10 kg/cm2 (145 psi)
For higher setting pressures consult our technical dept.
G.F. = cylindrical, female



Membrane hydropneumatic accumulators HST type

Type: HSTX
Body in S.S.316, composed of two parts assembled together by means of a special housing that, under dynamic pressures, tends to close itself. Diaphragms to suit the chemicals in use. Built accordingly to the ASME VIII° Div. 1 rules.

Type:HSTPVC
Body in PVC, composed of two parts assembled together by means of a special housing that, under dynamic pressures, tends to close itself.
Maximum temperature: + 50 °C. Diaphragms to suit the chemicals in use.



FM-1.0-2001

Our product range also includes:

- Piston metering pumps "A" series;
- Hydraulic diaphragm dosing pumps "B", "BR" and "E" series;
- Mechanical diaphragm dosing pumps "D" series;
- Polyelectrolyte automatic preparation plants "HA" and "HB" series;
- Polypropylene protected high speed mixers;
- High and slow speed mixers with worm-gear or coaxial reducer.

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