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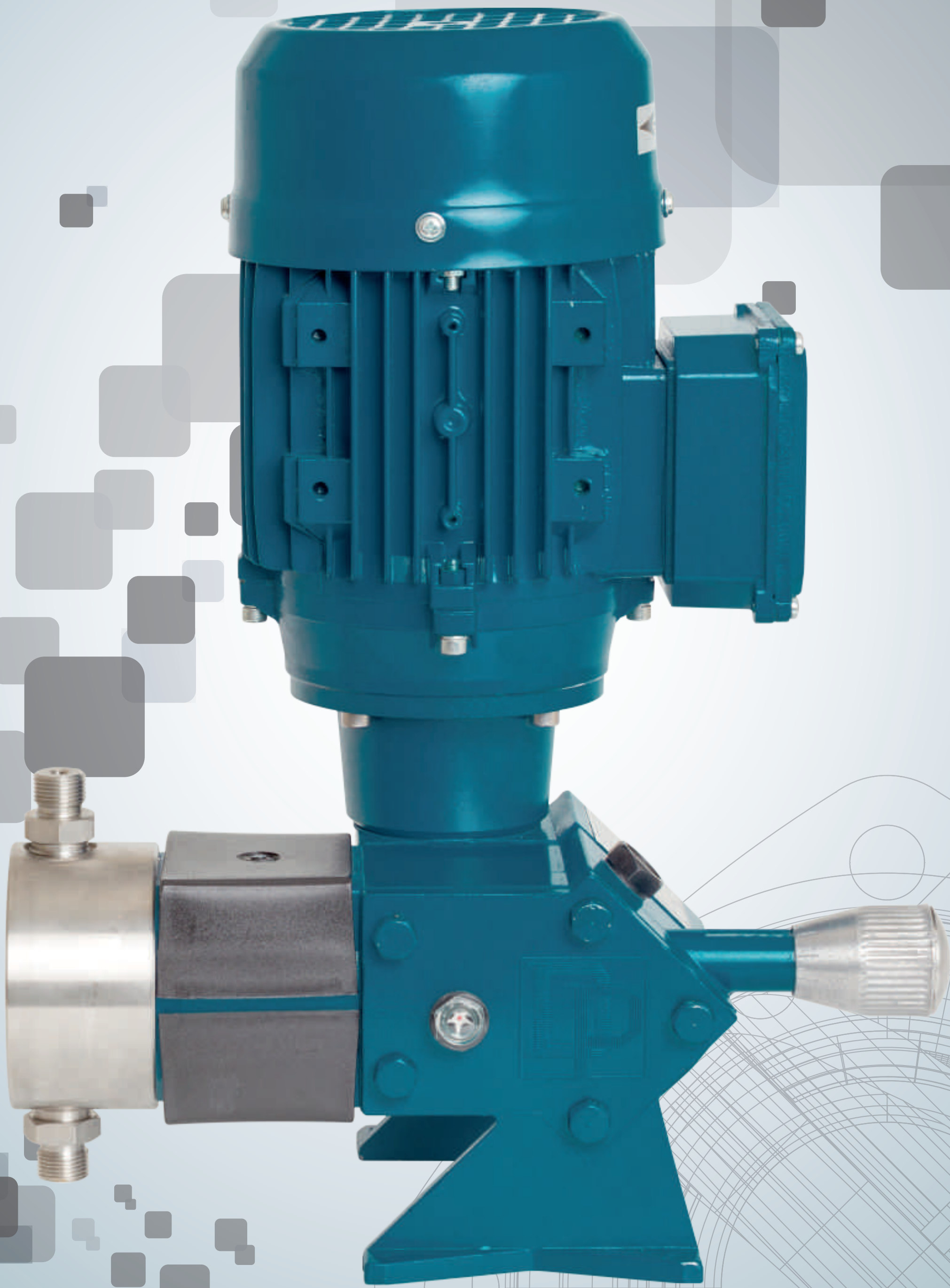
ACCESORIES



DOSING PUMPS

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Hydrodynamic design

The electric dosing pumps are alternate movement pumps. Their flow rate is determined by the alternate movements of the piston, activated by an eccentric or by a crank-shaft rod system. For this alternating movement to be generated on the head when suctioning and discharging, a set of valves is installed that prevent the return of the fluid, making the flow rate intermittent and allowing the frequency to be determined by the number of piston strokes. The valves are spherical and closed by gravity.

Theoretical flow rate

The theoretical flow rate is equal to the volume of the fluid displaced by the piston, multiplied by the number of times the piston moves during the time unit.

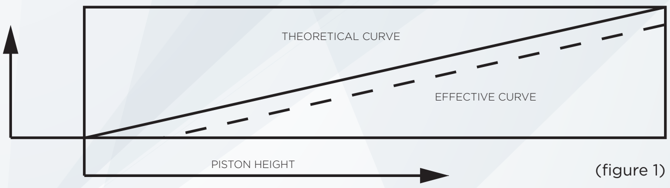
$$Q = \frac{S \times C \times Cl \times 60}{1000}$$

So the graphic representation of the flow rate depends on the piston height and will be a straight, diagonal line.

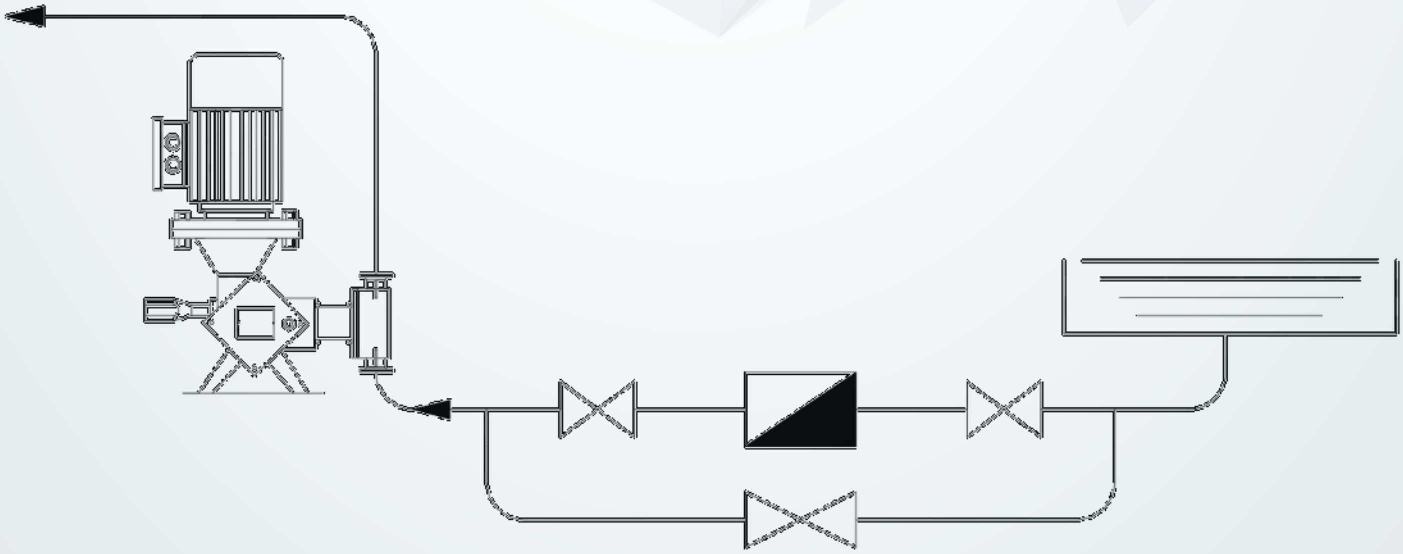
Q = theoretical flow rate
S = piston cross-section in cm2 C = piston height in cm2
Cl = piston movement per minute 60 = ratio hours/minutes 1000 = ratio cm3 - dm3 (from cubic centimetres to cubic decimetres)

Effective flow rate

The effective flow rate is less than the theoretical flow rate due to the infiltration of the fluid through the valves.
The ratio between the theoretical flow rate and the effective flow rate determines the volumetric output of the pump, which may vary from 90% to 98%.
That output varies, depending on:
The pump size, the head type (piston or membrane), the fluid that is pumped, the fluid density and the pressure exerted, among others. (FIGURE 1).



(figure 1)



Operation

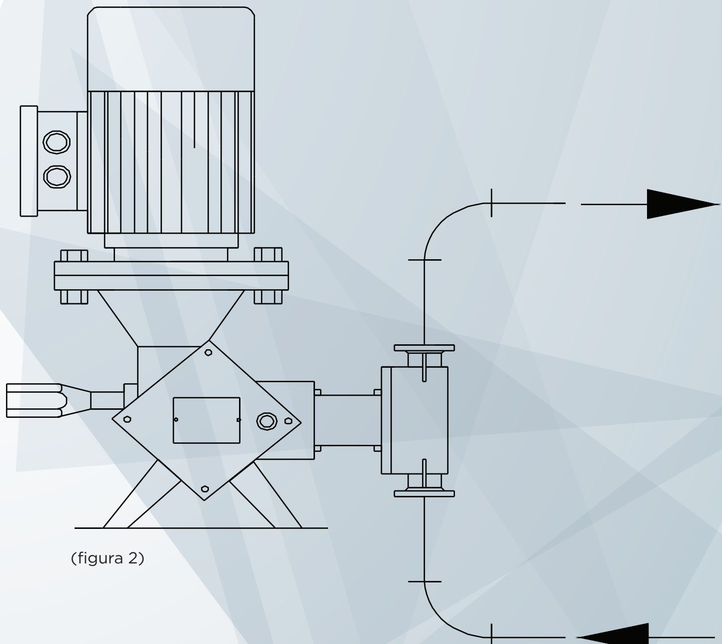
1. SUCTION PHASE:
During this phase, the piston makes that valve close in the discharge position (due to its weight and the eventual pressure of the fluid), while it opens in the suction position due to the positive pressure generated during the suction phase. The fluid enters the chamber of the head and its volume is equal to that of the piston cylinder capacity.

2. COMPRESSION PHASE:
During that phase, the piston makes the valve close in the suction position (as in the above case, due to its weight and the pressure exerted by the fluid); at the same time, the valve opens in the discharge position (due to the pressure of the fluid during the compression phase). The fluid leaves the chamber of the head and enters the discharge pipe, and its volume is equal to that of the piston cylinder capacity.

Correct installation

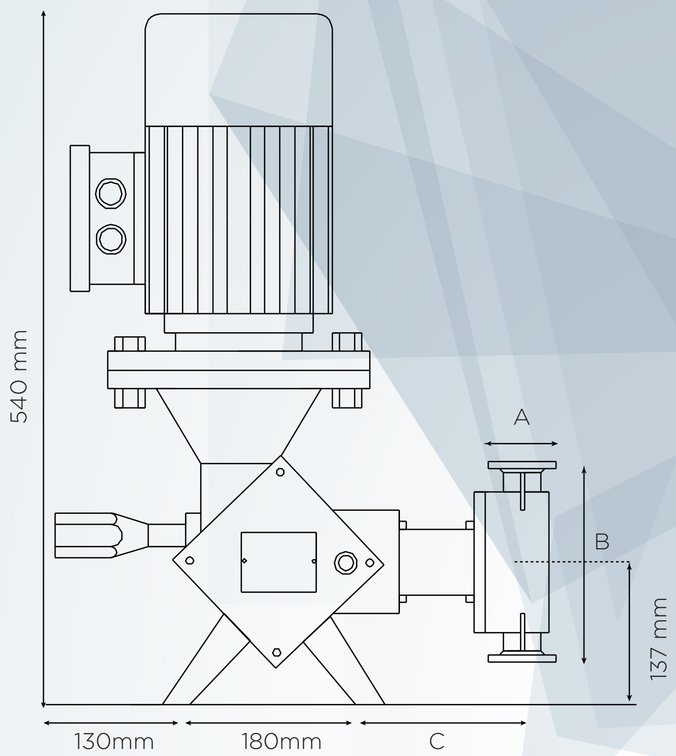
1. The pipes must have the right diameter (above all, in the part where the suction takes place), and in the case of dense fluids, it is advisable to at least have a diameter greater than that of the pump nozzle.
The average speed of the fluid in the pipes must not exceed 0.7m/sec, for fluids with a viscosity of no more than 100 cp.

2. The distance between the pump and the tank with the fluid to be pumped must be as short as possible, with no sharps angles or bends, etc.. (FIGURE 2).

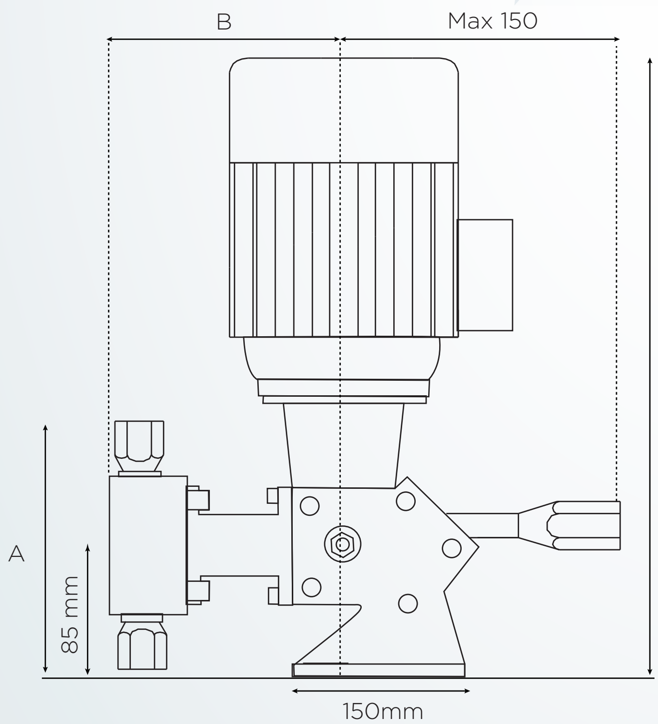


(figura 2)

Dimensions



Model	Pump head	A	B	C
		mm		
M 25 - 35	48	95	165	180
M 25 -35	64	115	215	180
M 25 -35	89	150	275	185



Model	Pump head	0.1		0.3	
		A	B	A	B
		mm		mm	
M 15	25	130	120	160	120
M 15	38	130	125	185	140
M 15	48	140	150	190	150
M 15	64	185	115	215	145

Model	Pump head	0.1		0.3	
		A	B	A	B
		mm		mm	
M 18	54	225	150	215	145

Spécifications techniques

Modelo	Stroke per 1´	Max. Flow l/h	Max. pressure 01 bar	Nozzle 01	Max. pressure 03 bar	Nozzle 03
M 15 - 25	60	26	30	3/8* Gm	10	3/8* Gf
M 15 - 25	120	52	30	3/8* Gm	10	3/8* Gf
M 15 - 38	60	61	13	1/2* Gm	10	1/2" Gf
M 15 - 38	120	122	13	1/2* Gm	10	1/2" Gf
M 15 - 48	60	96	8	1/2* Gm	8	1/2" Gf
M 15 - 48	120	192	8	1/2* Gm	8	1/2" Gf
M 15 - 54	60	123	6	3/4* Gf		
M 15 - 54	120	246	6	3/4* Gf		
M 15 - 64	60	172	6	3/4* Gm		
M 15 - 64	120	347	6	3/4* Gm		
M 18 - 54	60	148	6	3/4* Gf	6	3/4" Gf
M 18 - 54	120	246	6	3/4* Gf	6	3/4" Gf
M 25 - 64	60	289	9	DN25		
M 25 - 64	120	578	9	DN25		
M 25 - 89	60	559	6	DN40		
M 25 - 89	120	1118	6	DN40		
M 35 - 25	60	62	30 (60)**	1/2 * Gm		
M 35 - 25	120	124	30 (60)**	1/2 * Gm		
M 35 - 38	60	135	28	DN15		
M 35 - 38	120	270	28	DN15		
M 35 - 48	60	228	17	DN15		
M 35 - 48	120	456	17	DN15		
M 35 - 64	60	405	9	DN25		
M 35 - 64	120	810	9	DN25		
M 35 - 89	60	783	6	DN40		
M 35 - 89	120	1566	6	DN40		

**Max. pressure value admitted for non-standard pumps. The pumps are supplied with a three-phase 0.35 and 0.5 cv motor. V220/380 50 Hz IP 54 Form B14.

Disassembly

Nº	Description	Material 0.1	Material 0.3
1	Pump head	AISI 316	Ceramic
2	Piston	AISI 317	AISI 317
3	Valve	AISI 318	AISI 318
4	Seating	AISI 319	AISI 319
5	Piston seal	Viton	Viton

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WHEN WATER COUNTS

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