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fluid and water technology

MOTOR DRIVEN
DIAPHRAGM DOSING PUMPS

FLUIDPRO
Dosing Systems

www.fluidprodosingsystems.com.au

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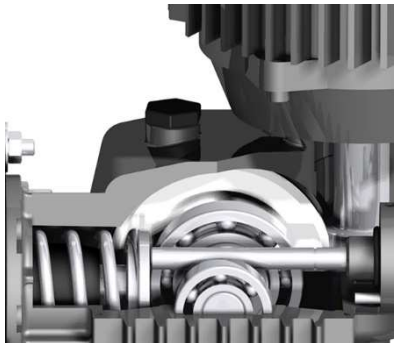
FWT MOTOR DRIVEN METERING PUMPS

⇒ **DIAPHRAGM** mechanical actuated motor driven metering pumps:
***D** series: flow rates from 18 to 1000 l/h with pressures up to 8 bar*

⇒ **Gearbox** in cast aluminium protected with Epoxy paint. The gearbox mechanism is operated by an eccentric cam, which provides a positive displacement delivery stroke, whilst the suction stroke is **spring** assisted.
⇒ **Adjustable capacity** from 0÷100% whilst in operation or at rest. Flow rate is adjusted by a micrometer knob which control stroke length (10:1 turndown ratio).
⇒ **Maximum suction lift** 4 metres (with water).
⇒ **Motor and gearbox** coupled by means of a **flexible motor coupling**, thus increasing transmission life.
*Each pump is individually tested, and all units are **CE certified***



MOTORS CHARACTERISTICS

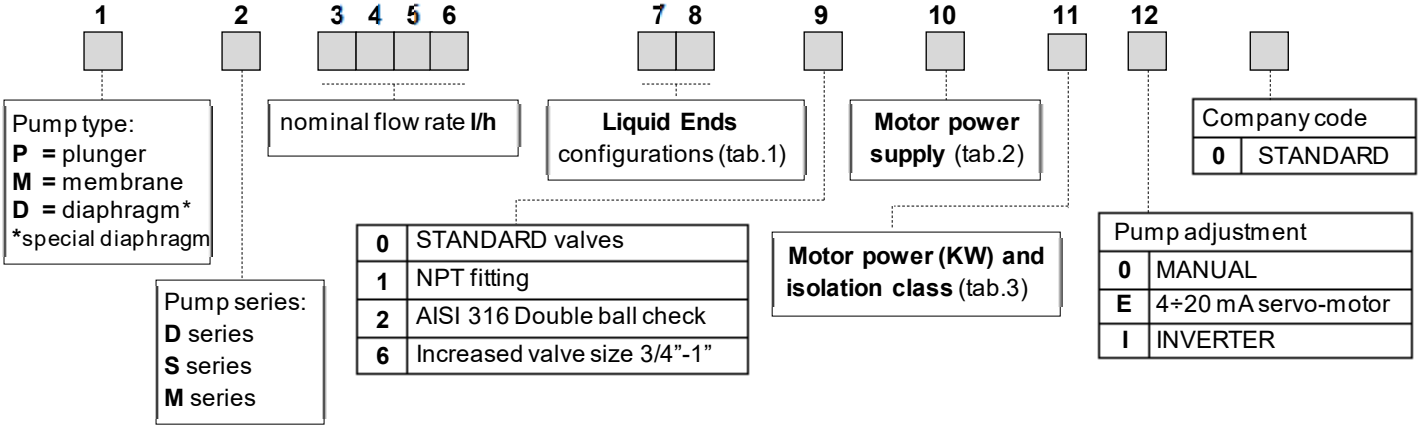
⇒ Standard **MULTI FREQUENCE/VOLTAGE**: 230-400Vac 50Hz • 275-480Vac 60Hz / 3phase
⇒ Conform with IP55 protection. Isolation class F, others available upon request
⇒ Motors are TEFC vertically mounted, B14 type, ~1400 rpm

Other power supply upon request:

• 230 Vac 1 phase 50 Hz or 230 Vac 60 Hz (*) • 110 Vac 1 phase 50 Hz or 60 Hz (*)

(*) **NOTE**: 60 Hz frequency, motor speed, stroke rates and flow rates increase approx. 20%.

MOTOR CODES	**POWER**	**MOTOR FLANGES** comply with IEC 60072 norms (for pumps without motors)
Code **1**	0,18 kW	Flange 63 IM B14
Code **0**	0,25 kW	Flange 71 IM B14
Code **6**	0,37 kW	Flange 71 IM B14
Code **7**	0,55 kW	Flange 80 IM B14
Code **9**	0,75 kW	Flange 80 IM B14



DIGITS 7-8 Tab.1: tables points out different configurations, as combinations of materials for head, gaskets and valves

MD SERIES DIAPHRAGM ACTUATED MOTOR DOSING PUMP

CONFIGURATION	Pump head	Diaphragm	Ball check	Valve case / Guide	Valve seat	Valve o-rings
CA	PP*	PTFE	Glass PYREX	PP	PVC	FPM
CI	PP*	PTFE	Glass PYREX	PP	PVC	EPDM
VT	PVDF	PTFE	PTFE	PVDF	PVDF	FPM
AA	AISI 316L	PTFE	AISI 316L	AISI 316L / PP	AISI 316L	FPM
AI	AISI 316L	PTFE	AISI 316L	AISI 316L / PP	AISI 316L	EPDM
B2	PP	PTFE	PTFE	PP	PCV	FPM
B3	PP	PTFE	AISI 316L	PP	AISI 316L	FPM
B5	PP	PTFE	HASTELLOY C-276	PP	INCOLOY 825	FPM
F5	PVDF	PTFE	HASTELLOY C-276	PVDF	PVDF	FPM
A3	AISI 316L	PTFE	AISI 316L	AISI 316L / PP	AISI 316L	PTFE

*** PP reinforced with glass fiber**

CONFIGURATION NOTES

B2 reccomended for Hidrochloric acid

B5 reccomended for Suphuric acid 96%÷98%

F5 reccomended for diluted Suphuric acid

A3 reccomended for Hydrogen peroxide, Acetic acid, Food industry

DIGITS 7-8 Tab.1: tables points out different configurations, as combinations of materials for head, gaskets and valves

DS - DM SERIES DIAPHRAGM ACTUATED MOTOR DOSING PUMP

CONFIGURATION	Pump head	Diaphragm	Ball check	Valve seat	Valve o-rings
CA (only DS)	PP	PTFE/NBR	CERAMIC	PVC	FPM
CI (only DS)	PP	PTFE/NBR	CERAMIC	PVC	EPDM
AA	AISI 316L	PTFE/NBR	AISI 316L	PVDF	NBR
AI	AISI 316L	PTFE/NBR	AISI 316L	PVDF	EPDM (Dutral®)
AP	AISI 316L	PTFE/NBR	AISI 316L	PVDF	FPM (Viton®)
BA	PVC	PTFE/NBR	CERAMIC	PVC	FPM
BD	PVC	PTFE/NBR	CERAMIC	PVC	NBR
BI	PVC	PTFE/NBR	CERAMIC	PVC	EPDM
SA	PVDF	PTFE/NBR	CERAMIC	PVDF	FPM
TA	PTFE	PTFE/NBR	CERAMIC	PVDF	FPM

DIGITS 10 Tab.2: POWER SUPPLY	
N	PUMP WITHOUT MOTOR
0	3 PHASE - 230/400 V 50Hz - 275/480V 60Hz
1	SINGLE PHASE - 230 Volt - 50 Hz
2	SINGLE PHASE - 110 Volt - 60 Hz
3	SINGLE PHASE - 110 Volt - 50 Hz
4	SINGLE PHASE - 220 Volt - 60 Hz
5	DIRECT CURRENT - 12 Volt
6	3 PHASE - 285/480 Volt - 60 Hz
7	3 PHASE - 575 Volt - 60 Hz
8	3 PHASE - 208 Volt - 60 Hz
9	3 PHASE - 660 Volt - 60 Hz

Example Code: PM 0256 AA 0 0 0 0 0

1st digit - P = Piston type

2nd digit - M = series

3rd / 4th / 5th / 6th digits - 0256 = Flow rate 256 l/h

7th / 8th digits - AA =standard AISI 316L configuration

9th digit - 0 = Standard Valves

10th digit - 0 = Standard power 230/400V-3ph-50 Hz

11th digit - 0 = Motor Power 0.25 kW

12th digit - 0 = Manual mode flow control

13th digit - 0 = Company internal code

DIGITS 11 Tab.3: MOTOR POWER-POLE-ISOLATION CLASS	
N	PUMP WITHOUT MOTOR
0	0.25 kW - 4 poles - IP55 - class F
1	0.18 kW - 4 poles - IP55 - class F
2	0.25 kW - 4 poles - tropicalized - IP 55 - class F
3	0.25 kW - 4 poles - IP55 - ATEX EEX (D) zone 1/21 IIB T4
4	0.25 kW - 6 poles - IP55 - class F
5	0.25 kW - 4 poles - IP55 - class F customized
6	0.37 kW - 4 poles - IP55 - class F
7	0.55 kW - 4 poles - IP55 - class F
8	0.30 kW - 4 poles - IP55 - class F (DC Motor)
9	0.75 kW - 4 poles - IP55 - class F
A	0.37 kW - 4 poles - tropicalized - IP 55 - class F
B	0.25 kW - 4 poles - IP55 - class F UL/CSA (USA)
C	0.55 kW - 4 poles - IP55 - ATEX EEX (D) zone 1/21 IIB T4
D	0.55 kW - 4 poles - tropicalized - IP 55 - class F
E	0.18 kW - 4 poles - IP55 - ATEX EEX (D) zone 1/21 IIB T4
F	0.18 kW - 4 poles - tropicalized - IP 55 - class F
G	0.18 kW - 4 poles - IP55 - class F - SERVOVENTILATED
J	0.25 kW - 4 poles - IP55 - class F - SERVOVENTILATED
K	0.55 kW - 4 poles - IP55 - class F - SERVOVENTILATED
L	0.37 kW - 4 poles - IP55 - class F - SERVOVENTILATED
M	0.75 kW - 4 poles - IP55 - class F - SERVOVENTILATED
N	0.75 kW - 4 poles - IP55 - ATEX EEX (D) zone 1/21 IIB T4
O	0.25 kW - 4 poles - IP65 - class F- SERVOVENTILATED

MD series is a mechanical actuated **diaphragm** motor driven metering pumps and features a small gearbox designed for small / medium flow rates, always keeping reliable performances.

Diaphragm type metering pumps are suitable when:

- ✓ Zero leakage is essential
- ✓ Pumped liquid contains solid particles

CONFIGURATION	Pump head	Diaphragm	Ball check / case / guide	Valve seat	Valve o-rings
CA	PP	PTFE	Glass PYREX / PP	PVC	FPM
AA	AISI 316L	PTFE	AISI 316L / PP	AISI 316L	FPM
VT	PVDF	PTFE	PTFE / PVDF	PVDF	FPM

Configuration CI - AI - VI *(EPDM gaskets and seals) / Other configurations available upon request*

MODEL		FLOW RATE (l/h) MAX	FLOW RATE (l/h) *MAX (60Hz)*	**MAX PRESSURE (barg)**	**STROKES / MIN**	Ø DIAPHRAGM (mm) STROKE LENGTH mm	SINGLE BALL CHECK VALVE **Ø** LIQUID PASSAGE	MOTOR POWER (kW) 3PH	MOTOR POWER (kW) *1PH*	*OPTIONAL POWER 3-PH (kW)*	MAXIMUM OPTIONAL PRESSURE (barg) 3-PH motor	**THREATED CONNECTIONS STANDARD**	*FLANGED CONNECCTIONS OPTIONAL (UNI / ANSI)*
MD	**0014**	14	*22*	8	34	**110 / 2**	5	0,18	*0,37*	*0,37*	/	3/8" BSPf	*DN15 / 1/2" 150 RF*
MD	**0030**	30	*45*	8	71		8,5						
MD	**0040**	50	*72*	8	106								
MD	**0065**	85	/	8	150								
MD	**0035**	35	*50*	8	34	**110 / 4**							
MD	**0075**	75	*105*	8	71								
MD	**0105**	105	*144*	8	106								
MD	**0150**	150	/	8	150								
MD	**0050**	50	*78*	8	34	**110 / 6**							
MD	**0110**	110	*152*	*8*	71								
MD	**0170**	170	*240*	*8*	106								
MD	**0250**	250	/	8	150								
MD	**0140**	140	*204*	5	34	**170 / 6**	17	0,37	*0,37*	*0,37*	8	1" BSPf	*DN 25 / 1 150 RF*
MD	**0300**	300	*396*	5	71								
MD	**0430**	430	*598*	5	106								
MD	**0670**	670	/	5	150								
MD	**0200**	200	*258*	5	34	**170 / 9**							
MD	**0450**	450	*606*	5	71								
MD	**0700**	700	*918*	4	106					/	/		
MD	**1000**	1000	/	3	150								

LIQUID END CONFIGURATIONS

CA (PP) ***AA (AISI)*** **VT (PVDF)**

Code configuration example: MD0035CA00100 features PP liquid ends, 0,18 kW motor, max flow 35 l/h against max 8 bar

MOTOR: MULTI FREQUENCY/VOLTAGE 230/400Vac,3 phase,50Hz • 275-480V/3 phase 60 Hz • Class F, IP 55, ~1400 rpm

USEFUL information for selecting dosing pumps: *Max flow rate, Max working pressure, viscosity, specific gravity (S.G.), temperature, area classification, suspended solids into chemical.*

EXTRA CONFIGURATIONS	Suitable for
B33	polymers, soda, lime milk, active carbons
B2 diaphragm 110 mm	hidrochloric acid
B56 diaphragm 110 mm	suphuric acid 96%÷98%
F5 diaphragm 110 mm	diluted suphuric acid
A3 diaphragm 110 mm	hydrogen peroxide, acetic acid, food industry

LIQUID ENDS EXTRA CONFIGURATION

CONFIGURATIONS	O-rings
AI – CI – VI	AI = AISI 316/EPDM – CI=PP/ EPDM – VI=PVDF/EPDM

MOTOR EXTRA CONFIGURATIONS DIAPHRAGM "MD" SERIES

Motor asynchronous 0,37 KW single phase 230Vac 50Hz 4 pole
Motor asynchronous 0,37 KW three phase 230÷400Vac 50Hz 4 pole for extra power
Motor asynchronous 0,55 KW three phase 230÷400Vac 50Hz 4 pole for extra power
Motor 0,37 KW three phase 400Vac servoventilated 230Vac suitable for inverter
Motor synchronous brushless 0,37 KW three phase 230÷400Vac 50Hz suitable for inverter
Motor EEX-D zone 2 explosion proof 0,37 KW three phase 230÷400Vac 50Hz

SERVOMOTOR ACTUATOR 4÷20mA

Servomotor actuator AVN321S **for MD pumps from 14÷450 l/h**
Servomotor actuator AVN234S **for MD pumps from 700 and 1000 l/h**
Option for PUMP ONLY

***MOTOR:** MULTI FREQUENCY/VOLTAGE 230/400Vac,3 phase,50Hz • 460V/3 phase 60 Hz ~1400 rpm

****MOTOR:** 230Vac, 1 PHASE,50Hz ~1400 rpm

MOTOR CODES	POWER	FLANGE	IP RATING	ISOLATION CLASS
Code **0**	0,18 Kw 4 pole	Flange 71- B14	IP 55	Class F
Code **1**	0,37 Kw 4 pole			

INVERTER 4÷20mA – PANEL RACK MOUNTING – IP20	
	Description
	INVERTER 230V-50Hz **IN** 1 phase 0,4kW - motors 0,18 / 0,25 / 0.37kW - **OUT** 3 phase
	INVERTER 230V-50Hz **IN** 1 phase - for motor 0,75 kW - **OUT** 3 phase
	We **strongly recommend** the use of servo-ventilated motor with inverter applications.

DS-DM series are a mechanical actuated **diaphragm** motor driven metering pumps designed for higher pressures, always keeping reliable performances.

Diaphragm type pumps are suitable when:

- Zero leakage is essential
- Pumped liquid containing solid particles

LIQUID ENDS CONFIGURATIONS

WETTED PARTS	AA	CA	BA DM series	*SA upon request*
Pump head	**AISI 316L**	**PP**	**PVC**	***PVDF***
Head connections	**AISI 316L**	**PVC**	**PVC**	***PVDF***
Diaphragm	**PTFE / NBR**	**PTFE / NBR**	**PTFE / NBR**	***PTFE / NBR***
Ball check valve	**AISI 316L**	**CERAMIC**	**CERAMIC**	***CERAMIC***
Valve o-rings	**NBR** *(available FPM)*	**FPM** *(available EPDM)*	**FPM** *(available EPDM)*	***FPM*** *(available EPDM)*
Valve seat	**PVDF**	**PVC**	**PVC**	***PVDF***

*Liquid ends configurations **CI - BI - AI - SI** feature EPDM gaskets and seals / Other configurations available upon request*

DS technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR AA *(AISI)*	Pressure BAR CA *(PP)* BA *(PVC)* SA *(PVDF)*	MOTOR POWER	Ø diaphragm	Stroke per minute		Stroke length	Valves type AA AI AP	Valves type CA CI BA SA	Connections	
	50Hz	*60Hz*	**50Hz**	**50Hz**			**50Hz**	60Hz					
DS0016	**16**	*19,2*	**14**	***14***	**0,18 kW**	50 mm	**60**	*72*	4 mm	A^2SV^3	P^4SV^3	1/2" $BSPm^1$	LIQUID END CONFIGURATIONS **CA (PP)** ***AA (AISI)*** **VT (PVDF)**
DS0033	**33**	*39,6*	**14**	***12***			**120**	*144*					
DS0030	**30**	*36*	**11**	***11***		67 mm	**60**	*72*					
DS0051	**51**	*61,2*	**11**	***11***			**120**	*144*					
DS0060	**60**	*72*	**11**	***10***			**120**	*144*					
DS0061	**61**	*73,2*	**7**	***6,5***		85 mm	**60**	*72*					
DS0084	**84**	*100,8*	**6**	**6**			**120**	*144*					
DS0123	**123**	*147*	**6**	***5***			**120**	*144*					

DM technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR AA *(AISI)*	Pressure BAR CA *(PP)* BA *(PVC)* SA *(PVDF)*	MOTOR POWER	Ø diaphragm	Stroke per minute		Stroke length	Valves type AA AI AP	Valves type CA CI BA SA	Connections	
	50Hz	*60Hz*	**50Hz**	**50Hz**			**50Hz**	60Hz					
DM0079	**79**	*94,8*	**12**	**10**	**0,25 kW**	**75 mm**	**60**	*72*	10 mm	A^2SV^3	P^4DV^5	3/4" $BSPm^1$	LIQUID END CONFIGURATIONS **CA (PP)** ***AA (AISI)***
DM0135	**135**	*162*	**10**	**10**			**103**	*122*					
DM0158	**158**	---	**8**	**8**			**120**	---					
DM0150	**150**	*180*	**7,5**	**7,5**		**95 mm**	**60**	*72*				1" $BSPm^1$	
DM0257	**257**	*308,4*	**6**	**6**			**103**	*122*					
DM0300	**300**	---	**5**	**5**			**120**	---					
DM0278	**278**	*333,6*	**3,5**	**3,5**		**115 mm**	**60**	*72*				1" $BSPm^1$	
DM0478	**478**	*573,6*	**2,5**	**2,5**			**103**	*122*					
DM0535	**535**	---	**2**	**2**			**120**	---					
DM0278	**278**	*333,6*	**4**	**4**	**0,37 kW**	**115 mm**	**60**	*72*	10 mm	A^2SV^3	P^4DV^5	1" $BSPm^1$	
DM0478	**478**	*573,6*	**3**	**3**			**103**	*122*					
DM0535	**535**	---	**2,5**	**2,5**			**120**	---					

- $BSPm^1$ = GAS male connections
- A^2 = AISI 316 ball check (AA configuration)
- SV^3 = single ball check valve
- P^4 = CERAMIC ball check (CA, BA and SA configurations)
- DV^5= double ball checks valve

AVAILABLE UPON REQUEST:

- **PULSATION DAMPNERS;**
- **SAFETY VALVES;**
- **RELIEF AND BACK PRESSURE VALVES**

FOOT VALVES – STRAINERS

FOOT VALVE/FILTER PP

FOOT VALVE/FILTER PP PVC

FOOT VALVE AISI

Part no.	Max flow	Connections	Configuration	Liquid Ends
SFT0030002	**125 l/h**	Ø 10 mm	**BA** (PVC)	**PP/PE** with strainer / o-ring and LIP **valve FPM**
SVA1000102	**125 l/h**	1/2" BSPm	**AA** (AISI 316L)	**AISI 316L** + oring **EPDM /** without strainer
AVA1000101	**125 l/h**	1/2" BSPm	**BA** (PVC)	**PVC** + oring **FPM /** with strainer
SVA1000202	**260 l/h**	3/4" BSPm	**AA** (AISI 316L)	**AISI 316L** + oring **EPDM /** without strainer
AVA1000201	**260 l/h**	3/4" BSPm	**BA** (PVC)	**PVC** + oring **FPM /** with strainer
SVA1000302	**510 l/h**	1 " BSPm	**AA** (AISI 316L)	**AISI 316L** + oring **EPDM /** without strainer
AVA1000301	**510 l/h**	1 " BSPm	**BA** (PVC)	**PVC** + oring **FPM /** with strainer
SVA1000402	**1050 l/h**	1 1/2" BSPm	**AA** (AISI 316L)	**AISI 316L** + oring **EPDM /** without strainer
AVA1000401	**1050 l/h**	1 1/2" BSPm	**BA** (PVC)	**PVC** + oring **FPM /** with strainer

INJECTION VALVES

Part no.	Max flow	Connections	Configuration	Liquid Ends SVA0030002 **125 l/h** Ø 10 mm
BA (PVC)				**PP/PVC** o-ring and LIP **valve FPM**
SVA0001504	**103 l/h**	1/2" BSPm	**BA** (PVC)	**PVC** / oring **FPM**
SVA0001501	**103 l/h**	1/2" BSPm	**AA** (AISI 316L)	**AISI 316L** / oring **FPM**
SVA0001604	**256 l/h**	3/4" BSPm	**BA** (PVC)	**PVC** / oring **FPM**
SVA0001601	**256 l/h**	3/4" BSPm	**AA** (AISI 316L)	**AISI 316L** / oring **FPM**
1166036	**400 l/h**	3/4" BSPm	**BA** (PVC)	**PVC**
1166035	**400 l/h**	3/4" BSPm	**AA** (AISI 316L)	**AISI 316L**
1166117	**1000 l/h**	1" BSPm	**BA** (PVC)	**PVC**
AVA0020002**	**256 l/h**	1/2" BSPm	**AA** (AISI 316L)	**AISI 316L**+ spring / oring **EPDM**
AVA0020102**	**504 l/h**	3/4" BSPm	**AA** (AISI 316L)	**AISI 316L**+ spring / oring **EPDM**
AVA0020202**	**1027 l/ h**	1" BSPm	**AA** (AISI 316L)	**AISI 316L**+ spring / oring **EPDM**

(*) Available seals EPDM, NBR / (**) Pring loaded injection valve AISI 316

ACCESSORY KIT UPON REQUEST

Part no.	Description
SCO0000101	**Installation kit for pumps PP/PVC 1/2" valve connection, with gearbox oil spare bottle** Comprised of: 8m 10x14 polyethylene hose; 2m 10x14 PVC hose; 2 of nipples with hose nuts; 2 of PVC female/female 1/2" coupling; PP filter and FPM injection valve; Max 5 bar
SCO0000103	**Installation kit for pumps AISI 1/2" valve connection, with gearbox oil spare bottle** Comprised of: 8m 10x14 polyethylene hose; 2m 10x14 PVC hose; 2 of nipples with hose nuts; 2 of PVC female/female 1/2" coupling; PP filter and FPM injection valve; Max 5 bar
KCO0000101	**Kit reduction fittings 3/4"GF-1/2"GM PP/PVC**
SCO0001401	**Installation kit* for pumps with 3/4" valve connection** Comprised of: 4 of nipples PP with seal and hose nut; 1 of foot valve PVC-FPM; 1 of injection valve PVC-FPM; gearbox oil spare bottle; Max 5 bar(*)
SCO0001501	**Installation kit* for pumps with 1" valve connection** Comprised of: 2 of nipples PP with seal and nut for hoses Ø25mm; 1 of foot valve PVC-FPM; 1 of injection valve PVC-FPM; gearbox oil spare bottle; Max 5 bar(*)

(*) hose clamps not included

PLEASE NOTE: for of motor dosing pumps spare parts inquiry, please refer to the following parameters when inquiring: Pump series: MD, PS, PM; Configuration liquid ends: AA or CA or BA or VT or SA; Part n°, piston or diaphragm diameter, Valves, connection size.