



MECHANICAL DIAPHRAGM METERING PUMPS

The OBL MB series are mechanical diaphragm pumps with spring return mechanism, eccentric shaft and thrust ring. They combine the working characteristics of a plunger pump with the sealing advantages of a diaphragm pump.

Thanks to the quality and simple-design of the diaphragm, these pumps are easy-handling.



GENERAL FEATURES

- Diaphragm, economic, robust, compact metering pump.
- The mechanical diaphragm works, both giving the swept volume, acting basically as plunger, and as separator between crank gear and the handled fluid.
- Easy and minimum maintenance required, thanks to the reduced number of components.
- The OBL's unique (patented) mechanical diaphragm design ensures linearity between flow rate and percentage of stroke. The flow rate is virtually unaffected by the working pressure variations.
- Leak-free pump, due to OBL's stress-proof diaphragm.
- High working safety:
 - No external moving parts.
 - Leak-free operations.
- Max suction lift **1,5 m.w.c.** (see operating manual).



Flow rates:

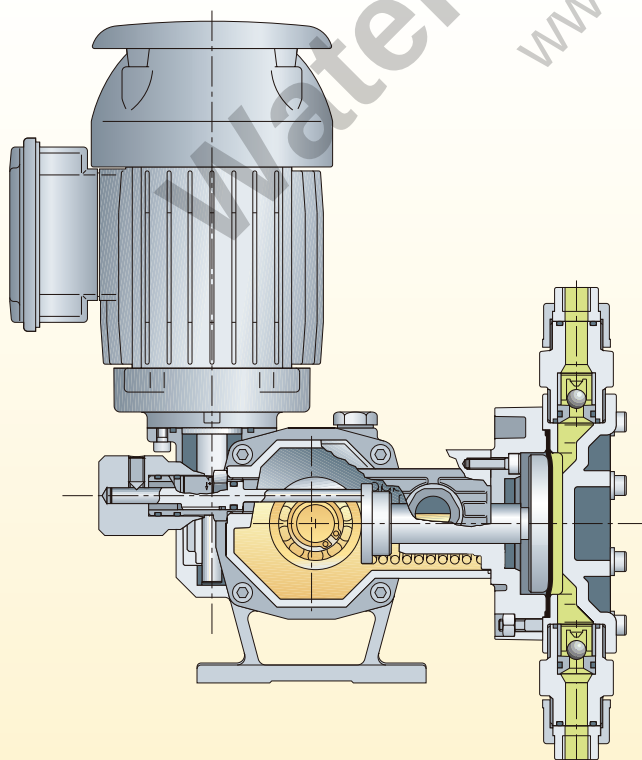
• **155 L/h**

Strokes:

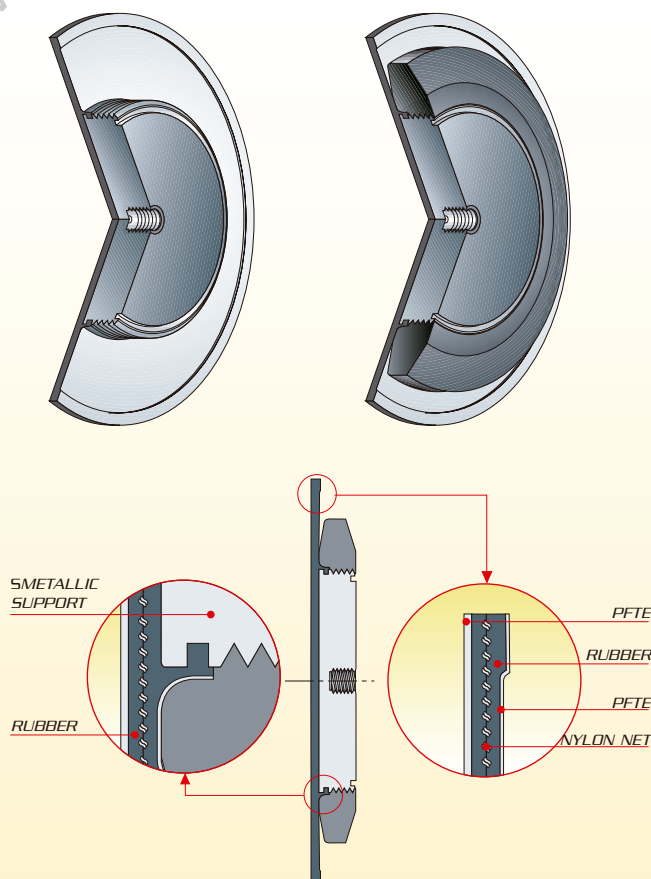
• **2 mm. 4 mm.**



SECTIONAL VIEW



DIAPHRAGM SECTIONAL VIEW





TECHNICAL DATA

50 Hz

TYPE	STROKES / 1"	MAX FLOW RATE l/h	MAX PRESS. BAR		CONNECTIONS			
			3PH	1PH	THREADED		FLANGED	
					PP	A	PP	A
MB11	36	11	12	12	3/8" g.f. - BSPF		DN15	
MB16	50	16	12	12	3/8" g.f. - BSPF		DN15	
MB23	70	23	12	12	3/8" g.f. - BSPF		DN15	
MB31	95	31	8	8	3/8" g.f. - BSPF		DN15	
MB37	115	37	8	8	3/8" g.f. - BSPF		DN15	
MB50	155	50	8	8	3/8" g.f. - BSPF		DN15	
MB35	36	35	6	6	3/8" g.f. - BSPF		DN15	
MB49	50	49	6	6	3/8" g.f. - BSPF		DN15	
MB75	70	75	6	6	3/8" g.f. - BSPF		DN15	
MB101	95	101	6	6	3/8" g.f. - BSPF		DN15	
MB120	115	120	6	6	3/8" g.f. - BSPF	1" g.f.	DN15	
MB155	155	155	6	6	3/8" g.f. - BSPF	1" g.f.	DN15	

60 Hz

MB9	30	9	12	12	3/8" g.f. - BSPF		DN15	
MB14	43	14	12	12	3/8" g.f. - BSPF		DN15	
MB28	84	28	12	12	3/8" g.f. - BSPF		DN15	
MB36	114	36	8	8	3/8" g.f. - BSPF		DN15	
MB45	138	45	8	8	3/8" g.f. - BSPF		DN15	
MB42	43	42	6	6	3/8" g.f. - BSPF		DN15	
MB58	60	58	6	6	3/8" g.f. - BSPF		DN15	
MB90	84	90	6	6	3/8" g.f. - BSPF		DN15	
MB121	115	121	6	6	3/8" g.f. - BSPF	1" g.f.	DN15	
MB145	138	145	6	6	3/8" g.f. - BSPF	1" g.f.	DN15	



MODEL NUMBER

KEY TO SYMBOLS

PUMP MODEL	
FLOW RATE l/h	
PP	PP CONSTRUCTION
A	AISI-316L CONSTRUCTION
PP11	PP CONSTRUCTION+AISI-316L VALVE AND SEAT
PP32	PP CONSTRUCTION + HASTELLOY C VALVE - INCOLOY 825 SEAT
Z	OBL 4÷20 mA ELECTRIC ACTUATOR
W	3÷15 PSI PNEUMATIC ACTUATOR
F	UNI-DIN FLANGED CONNECTIONS
FA	ANSI FLANGED CONNECTIONS

MB | 37 | PP | F | Z

AISI 316L MB metering pumps with electric actuators Z.



FlowRate:

- 11÷50 L/h (Stroke 2mm.)
- 35÷155 L/h (Stroke 4mm.)

Motors:

- Threephase special 0,20 kW
- 4 Poles - IP55 - I.C.L.F - SI - IEC 34-1

Δ - 230 V - 50 Hz
 λ - 400 V - 50 Hz
 Δ - 220÷290 V - 60 Hz
 λ - 380÷500 V - 60 Hz

- Singlephase special 0,24 kW
- 4 Poles - IP55 - I.C.L.F - SI - IEC 34-1

220÷240 V - 50 Hz
 110÷115 V - 50 Hz
 220÷230 V - 60 Hz
 110÷115 V - 60 Hz

Pump:

- Single unit only

Adjustment:

- 0-10 scale micrometer knob.

Materials:

- Aluminium casing
- Glass reinforced PP pump head AISI 316L

Weight:

- 10÷25 Kgs



CONTROL SYSTEM

- **Manual:** With 0-10 scale micrometer knob.
- **Electric:** Via OBL designed Z type electrical actuator.
- **Pneumatic:** By means of a 3÷15 PSI, type W, pneumatic actuator



STANDARD MANUAL ADJUSTMENT

- Adjustment via 0-10 scale micrometer knob.



ELECTRIC ACTUATOR

- Capacity automatic adjustment according to:
 - 4÷20 mA
 - 0÷20 mA
 - 20÷4 mA
 - 0÷10 V.
- Pulses:
 - 0,2÷2 Hz
 - 1,5÷30 Hz
- RS 485 communication protocol

Z

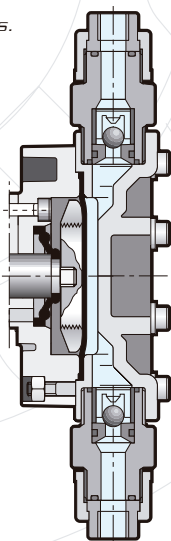


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PUMP HEADS

PP

PP heads.
"PP" execution.
Threaded
connections.

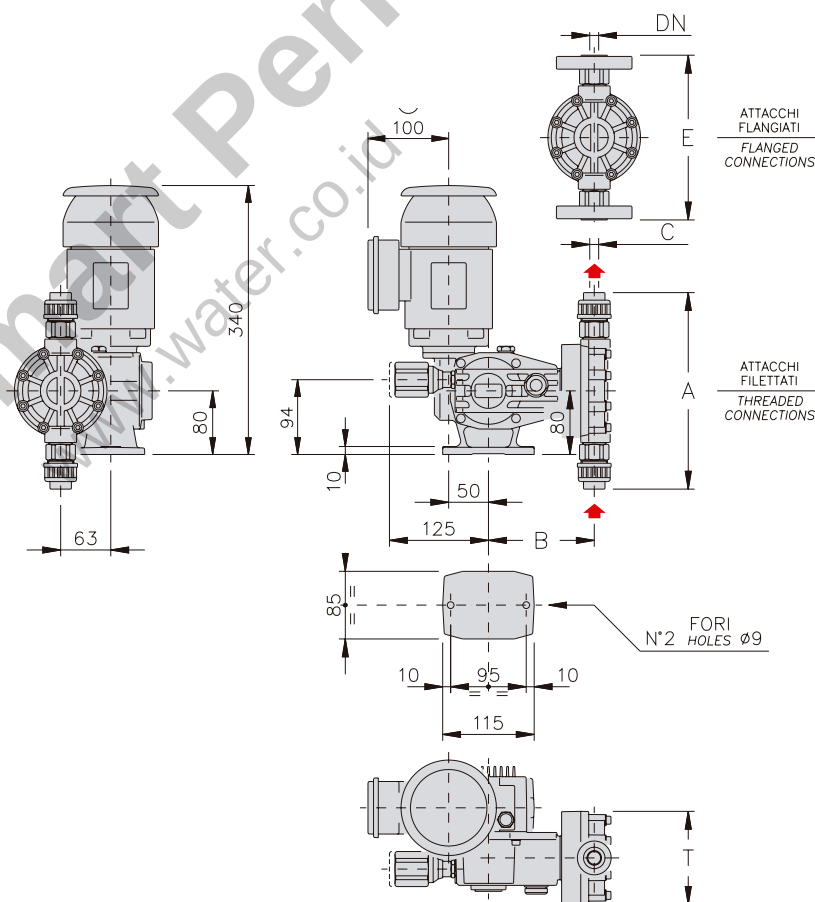


- Single valve ball.
- Suction and discharge connections both threaded and flanged (on demand).
- Max. suction lift 1.5 m.w.c. (see operating manual).
- Max. temperature of dosed chemical: 45 °C.

MATERIALS OF CONSTRUCTION

PARTS	PP	PP11	PP32	A
LIQUID END	PP	PP	PP	AISI 316L
VALVE GUIDE	PP	PP	PP	PP
VALVE SEAT	PVC	AISI 316L	INCOLOY 825	AISI 316L
VALVE	PYREX	AISI 316L	HASTELLOY C-276	AISI 316L
VALVE SEAL	VITON (FPM)	VITON (FPM)	VITON (FPM)	VITON (FPM)
VALVE HOUSING	PP	PP	PP	AISI 316L
DIAPHRAGM	TEFLON (PTFE)	TEFLON (PTFE)	TEFLON (PTFE)	TEFLON (PTFE)

OVERALL DIMENSIONS



CONSTRUCTION CHARACTERISTICS

- Glass reinforced PP pump head support ensures chemical compatibility with any dosed liquid.
- Leak-free diaphragm pump head.
- Smooth and linear adjustment, either stationary or running, by means of micrometer knob.
- $\pm 2\%$ accuracy within 10 to 100% of the nominal flow rate.

- MB series diaphragm metering pump with PP pump head.



TYPE		AISI 316 L						PP						DN	
50Hz	60Hz	A	B	C g.f.	E	T Ø		A	B	C g.f.	E	T Ø		UNI	ANSI
MB11	MB9	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB16	MB14	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB23		166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB31	MB28	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB37	MB36	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB50	MB45	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	
MB35	MB42	181	132	3/8" g.f. BSPF	195	129		251	133	3/8" g.f. BSPF	215	133	15	1/2"	
MB49	MB58	181	132	3/8" g.f. BSPF	195	129		251	133	3/8" g.f. BSPF	215	133	15	1/2"	
MB75	MB90	181	132	3/8" g.f. BSPF	195	129		251	133	3/8" g.f. BSPF	215	133	15	1/2"	
MB101		181	132	3/8" g.f. BSPF	195	129		251	133	3/8" g.f. BSPF	215	133	15	1/2"	
MB120	MB121	200	133.5	1/2" g.f. BSPF	200	129		251	133	3/8" g.f. BSPF	215	133	15	1/2"	
MB155	MB145	166	132.5	3/8" g.f. BSPF	180	114		237	133	3/8" g.f. BSPF	201	117	15	1/2"	



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