



Series MP7100

Bulletin DP-7100-18

Effective: **March 2018**

Replaces: **February 2017**

Purpose

The Neptune Series MP7100 is a mechanically actuated diaphragm metering pump engineered from the ground up to be more robust and durable than similar mechanical diaphragm pump designs. The MP7100 pump incorporates the ruggedness of a hydraulic diaphragm metering pump, eliminates the need for intermediate fluid or hydraulic oil to actuate the diaphragm and reduces the potential for gearbox oil to contaminate the process. The result is a pump design that provides reliable and accurate dosing of a wide range of mild to aggressive chemicals, including those used in industrial and municipal water and wastewater treatment, chemical processing and agriculture.

The MP7100's finned gearbox dissipates the heat created during normal operation more readily than other designs. The straight-through flow design of the MP7100 liquid end and the elimination of the contour plate result in improved flow characteristics, making the pump well-suited for pumping difficult chemicals such as viscous fluids, shear-sensitive fluids and fluids with suspended solids.

Benefits

- Heavy-duty, corrosion-resistant, aluminum gearbox
- Gears operate in an oil bath for longer life
- Finned gearbox design dissipates heat more efficiently than other designs
- Rugged bronze gears are quiet-running and provide long service life
- Oversize check valves improve performance and minimize friction losses
- Short stroke length reduces diaphragm stress and promotes longer diaphragm life
- Superior performance when pumping chemicals such as sodium hypochlorite, which can off-gas
- Suction-lift exceeding 20 ft. (6m) on water-like chemicals

For higher pressures,
request Bulletin DP-1100
and Bulletin DP-2000.



CERTIFICATIONS & ASSOCIATIONS:



Neptune Series MP7100

Mechanically Actuated Diaphragm Metering Pumps

Features

- Capacities to 275 gph (1041 lph)
- Operating pressures to 235 psi (16 bar)
- 10:1 turndown via micrometer-type knob with high-contrast, easy-to-read scale
- Repeatable metering accuracy is $\pm 2\%$ of full scale (at constant hydraulic conditions)
- Rugged, PTFE-faced, pre-formed composite diaphragm with steel insert assures volumetric accuracy throughout the capacity range
- Pump capacity can be easily adjusted while pump is running

MODEL MP7150-2N3



MODEL MP7130-3N5

- Lockable micrometer knob prevents drift
- Optional automatic speed control with variable frequency or SCR drive
- All models include standard NEMA 56C or an optional IEC motor adapter

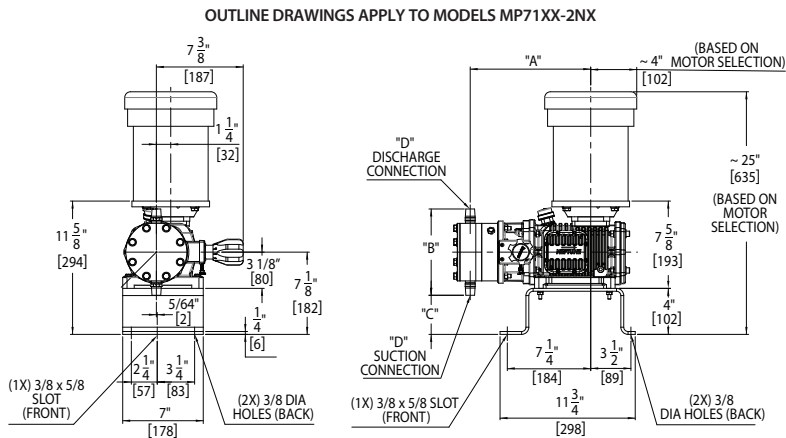
Selection Chart

Model	Liquid End Construction	Capacity/Pressure/Horsepower					Strokes Per Minute	Stroke Length	Diaphragm Diameter	Shipping Weight Lbs.
		50 PSI (3.5 BAR)	75 PSI (5.25 BAR)	100 PSI (7 BAR)	150 PSI (11 BAR)	235 PSI (16 BAR)				
MP7100-2N3	316SS	9 GPH (34 LPH)	9 GPH (34 LPH)	9 GPH (34 LPH)	9 GPH (34 LPH)	9 GPH (34 LPH)	37	.197 inch (5mm)	3.9 inch (99mm)	90
MP7100-2N5	PVC	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7100-2N8	Kynar	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7130-2N3	316SS	15 GPH (57 LPH)	15 GPH (57 LPH)	15 GPH (57 LPH)	14 GPH (53 LPH)	14 GPH (53 LPH)	58	.197 inch (5mm)	3.9 inch (99mm)	90
MP7130-2N5	PVC	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7130-2N8	Kynar	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7120-2N3	316SS	19 GPH (72 LPH)	19 GPH (72 LPH)	18 GPH (68 LPH)	18 GPH (68 LPH)	17 GPH (64 LPH)	72	.197 inch (5mm)	3.9 inch (99mm)	90
MP7120-2N5	PVC	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7120-2N8	Kynar	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7150-2N3	316SS	30 GPH (114 LPH)	30 GPH (114 LPH)	29 GPH (110 LPH)	29 GPH (110 LPH)	27 GPH (102 LPH)	117	.197 inch (5mm)	3.9 inch (99mm)	90
MP7150-2N5	PVC	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7150-2N8	Kynar	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7180-2N3	316SS	47 GPH (178 LPH)	46 GPH (174 LPH)	44 GPH (167 LPH)	44 GPH (167 LPH)	41 GPH (155 LPH)	176	.197 inch (5mm)	3.9 inch (99mm)	90
MP7180-2N5	PVC	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7180-2N8	Kynar	1/3 HP	1/3 HP	1/3 HP	1/3 HP	1/3 HP				90
MP7130-3N3	316SS	44 GPH (167 LPH)	42 GPH (159 LPH)	42 GPH (159 LPH)	39 GPH (148 LPH)	n/a	58	.236 inch (6mm)	5.7 inch (145mm)	175
MP7130-3N5	PVC	1/2 HP	1/2 HP	1/2 HP	3/4 HP	n/a				150
MP7130-3N8	Kynar	1/2 HP	1/2 HP	1/2 HP	3/4 HP	n/a				150
MP7120-3N3	316SS	54 GPH (204 LPH)	53 GPH (201 LPH)	52 GPH (197 LPH)	49 GPH (185 LPH)	n/a	72	.236 inch (6mm)	5.7 inch (145mm)	175
MP7120-3N5	PVC	1/2 HP	1/2 HP	3/4 HP	1 HP	n/a				150
MP7120-3N8	Kynar	1/2 HP	1/2 HP	3/4 HP	1 HP	n/a				150
MP7150-3N3	316SS	84 GPH (318 LPH)	82 GPH (310 LPH)	80 GPH (303 LPH)	75 GPH (284 LPH)	n/a	117	.236 inch (6mm)	5.7 inch (145mm)	175
MP7150-3N5	PVC	1/2 HP	3/4 HP	3/4 HP	1 HP	n/a				150
MP7150-3N8	Kynar	1/2 HP	3/4 HP	3/4 HP	1 HP	n/a				150
MP7180-3N3	316SS	126 GPH (477 LPH)	123 GPH (466 LPH)	120 GPH (454 LPH)	112 GPH (424 LPH)	n/a	176	.236 inch (6mm)	5.7 inch (145mm)	175
MP7180-3N5	PVC	1/2 HP	3/4 HP	1 HP	1-1/2 HP	n/a				150
MP7180-3N8	Kynar	1/2 HP	3/4 HP	1 HP	1-1/2 HP	n/a				150
MP7130-4N3	316SS	94 GPH (356 LPH)	92 GPH (348 LPH)	91 GPH (344 LPH)	n/a	n/a	58	.236 inch (6mm)	8.1 inch (205mm)	200
MP7130-4N5	PVC	1/2 HP	3/4 HP	1 HP	n/a	n/a				165
MP7130-4N8	Kynar	1/2 HP	3/4 HP	1 HP	n/a	n/a				165
MP7120-4N3	316SS	117 GPH (443 LPH)	115 GPH (435 LPH)	113 GPH (428 LPH)	n/a	n/a	72	.236 inch (6mm)	8.1 inch (205mm)	200
MP7120-4N5	PVC	3/4 HP	1 HP	1-1/2 HP	n/a	n/a				165
MP7120-4N8	Kynar	3/4 HP	1 HP	1-1/2 HP	n/a	n/a				165
MP7150-4N3	316SS	190 GPH (719 LPH)	186 GPH (704 LPH)	183 GPH (693 LPH)	n/a	n/a	117	.236 inch (6mm)	8.1 inch (205mm)	200
MP7150-4N5	PVC	3/4 HP	1 HP	1-1/2 HP*	n/a	n/a				165
MP7150-4N8	Kynar	3/4 HP	1 HP	1-1/2 HP*	n/a	n/a				165
MP7180-4N3	316SS	286 GPH (1083 LPH)	280 GPH (1060 LPH)	276 GPH (1045 LPH)	n/a	n/a	176	.236 inch (6mm)	8.1 inch (205mm)	200
MP7180-4N5	PVC	1-1/2 HP	1-1/2 HP*	2 HP*	n/a	n/a				165
MP7180-4N8	Kynar	1-1/2 HP	1-1/2 HP*	2 HP*	n/a	n/a				165

Select the next larger motor hp for VFD or SCR applications.

*3-Phase Motors

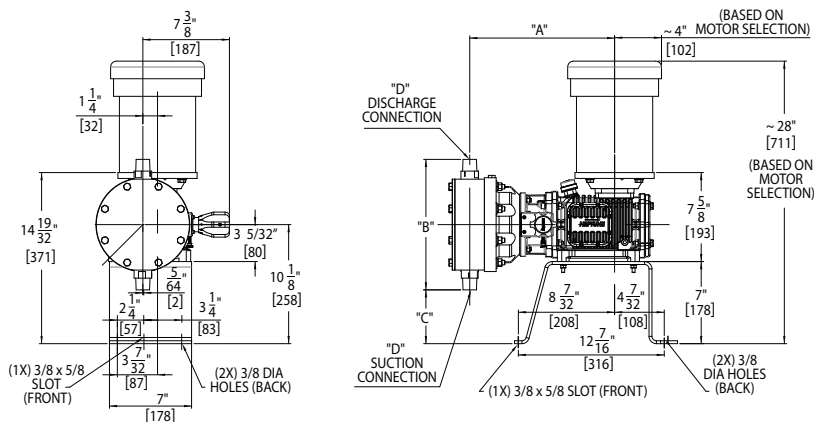
MP71XX-2NX Models



PUMPS MP71XX-2NX MODELS ON PUMP BASE P/N 001415

MP71XX-3NX, MP71XX-4NX Models

PUMPS MP71XX-3NX, MP71XX-4NX MODELS ON PUMP BASE P/N 004852



PUMPS MP71XX-3NX, MP71XX-4NX MODELS ON PUMP BASE P/N 004852

DIMENSIONS FOR PUMP OUTLINE DRAWINGS

Models	"A"		"B"		"C"		MNPT Thread "D" Connection Suction & Discharge
HEAD	PVC, PVDF	SS	PVC, PVDF	SS	PVC, PVDF	SS	
MP71XX-2NX	10-1/2"	10"	7-1/2"	7-1/2"	4-3/8"	4-3/8"	1/2" NPT
MP71XX-3NX	12-3/8"	12-3/8"	11-1/8"	11-3/4"	4-9/16"	4-1/4"	1" NPT
MP71XX-4NX	12-5/8"	12-1/2"	13-3/8"	13-7/8"	3-5/16"	3-7/32"	1-1/2" NPT

Materials of Construction

Material Code	Pump Head	Check Valve Body	Check Valve Ball	Valve O-Ring	Diaphragm
N3	316SS	316SS	316SS	None	PTFE
N5	PVC*	PVC*	Ceramic	Viton®	PTFE
N8	PVDF**	PVDF**	Ceramic	Viton	PTFE

* PVC Heads are suitable for temperatures to 125°F (50°C)

** PVDF Heads are suitable for temperatures to 200°F (93°C)

Valve O-ring is used on the -3NX & -4NX plastic pump heads only

Valve O-ring is not used on the -2NX pump heads

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Application Information

1. External Relief Valve

An external relief valve is always required to protect the pump from the damage caused by over-pressurization of the discharge line during operation.

2. Pulsation Dampener

Use of a pulsation dampener is required if the discharge pipe is more than 10 ft. (3 m) long for the 71XX model and the discharge pressure is more than 25 psi (1.75 bar).

3. Recommended Pipe Diameter and Length

	Pump Models		
	MP71XX-2NX	MP71XX-3NX	MP71XX-4NX
Suction Pipe Diameter	3/4" (19.1 mm)	1-1/2" (38.1 mm)	2" (50.8 mm)
Maximum Lift	20' (6 m)	20' (6 m)	16' (4.9 m)
Discharge Pipe Diameter	1/2" (12.7 mm)	1" (25.4 mm)	1-1/2" (38.1 mm)
Minimum Orifice At Injection Point	1/2" (12.7 mm)	1" (25.4 mm)	1-1/2" (38.1 mm)

4. Use only Full Port Valves

in suction and discharge lines.

Accessories and Options

Relief Valves

An external relief valve is always required to protect the Series MP7100 pump from damage caused by over-pressurization of the discharge line during operation. Neptune offers adjustable relief valves in various sizes and materials of construction to meet any application requirement.

Available in PVC, PVDF, 316SS and Alloy 20 standard.

[Request Bulletin RV](#)

Back Pressure Valves

An adjustable back pressure valve provides anti-syphon protection in pump installations where the suction pressure is higher than the discharge pressure. The spring-loaded valve generates a constant back pressure that also assures accurate metering when the Series MP7100 pump is injecting chemical into low discharge pressure. Neptune offers back pressure valves in various sizes and material of construction to meet any application requirement.

Available in PVC, PVDF, 316SS and Alloy 20 standard.

[Request Bulletin BP](#)

Leak Detection

The Series MP7100 pump can be supplied with an optional diaphragm leak detector, which senses the early stages of diaphragm failure. The system consists of an electro-optic sensor mounted in the pump head behind the process diaphragm and a relay installed in a NEMA 4X enclosure. The leak detector can be wired to provide remote indication of diaphragm failure, shut down the pump and/or sound an alarm.

Pulsation Dampeners

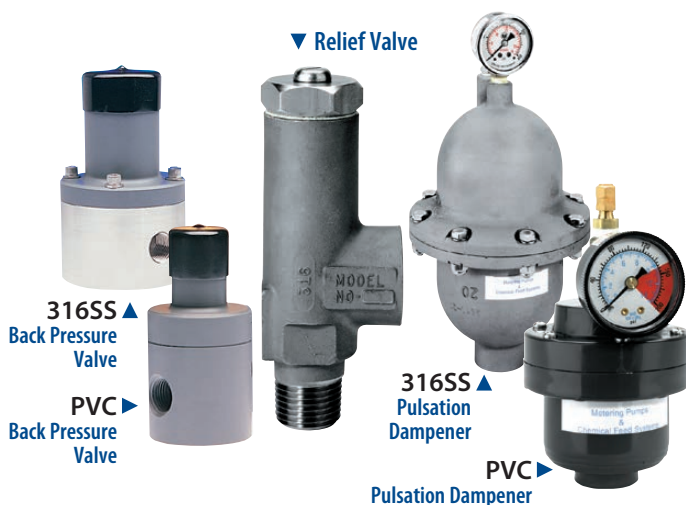
A pulsation dampener installed in the discharge of the Series MP7100 pump will smooth the pulsating flow typical of a reciprocating pump. A properly sized pulsation dampener can improve pump performance and reduce stress to the piping system and accessories. A pulsation dampener is required if the discharge pipe is more than 10 ft. (3 m) long and the discharge pressure is more than 25 psi (1.75 bar).

Available in PVC, polypropylene, 316SS and Alloy 20 bodies with Viton, EPDM or PTFE bladders.

[Request Bulletin PD](#)

Spare Parts Kit

The Series MP7100 Spare Parts Kit contains the liquid-end parts most susceptible to wear during a year of normal use. To keep the pump in good working order, Neptune recommends having a kit readily available.



Pump Head Size	Neptune Pump Model	Pump Head Material	Spare Parts Kit No.
2NX	MP7100 / MP7130 / MP7120 / MP7150 / MP7180	316SS	005178
	MP7100 / MP7130 / MP7120 / MP7150 / MP7180	PVC	005179
	MP7100 / MP7130 / MP7120 / MP7150 / MP7180	PVDF	005180
3NX	MP7130 / MP7120 / MP7150 / MP7180	316SS	005181
	MP7130 / MP7120 / MP7150 / MP7180	PVC	005182
	MP7130 / MP7120 / MP7150 / MP7180	PVDF	005183
4NX	MP7130 / MP7120 / MP7150 / MP7180	316SS	005184
	MP7130 / MP7120 / MP7150 / MP7180	PVC	005185
	MP7130 / MP7120 / MP7150 / MP7180	PVDF	005186

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