



Expert
Solutions
for Critical
Applications

MECHANICAL
7000 Z Series
Metering Pumps



Where Innovation Flows

www.neptune1.com

MECHANICAL DIAPHRAGM
METERING PUMP

MECHANICAL PUMP SOLUTIONS

Neptune[™] (Neptune Chemical Pump Company) is a premier manufacturer of chemical metering pumps, chemical feed systems, and chemical injection accessories. Neptune's mechanically actuated diaphragm pumps are designed for water, wastewater, agricultural and process applications.

Other Neptune products include make-down systems to prepare and activate liquid or dry polymers for injection into water and wastewater-treatment processes, plus a complete line of portable mixers.

Neptune Chemical Pump Company, Inc., located in North Wales, Pennsylvania, and is a member of the Pumps Solutions Group (PSG[®]), part of the Dover Corporation's Fluid Solution Division.

www.psgdover.com

MARKETS SERVED

Neptune provides chemical injection, chemical mixing and chemical dosing solutions for a vast array of industries requiring the accuracy, precision and quality only Neptune can deliver.



MUNICIPAL WATER
TREATMENT



AGRICULTURE
CHEMIGATION



POWER GEN



GAS
ODORIZATION



INDUSTRIAL



CHEMICAL
PROCESSING



MUNICIPAL WATER



CHEMICAL FEED



MINING



PROCESS



CHEMIGATION



FERTIGATION WATER

CHOOSE A RIGHT METERING PUMP

Identify the required capacity in terms of flow rate and discharge pressure. A metering pump should be sized so the maximum expected flow rate is 85% to 90% of the pump capacity. This provides additional capacity if needed by the process. The minimum capacity should never be less than 20% of the pump capacity to maintain accuracy.

Consider materials of construction. Selection must take into consideration corrosion, erosion or solvent action. Solvent-based chemicals may dissolve plastic-headed pumps. Consider the effect of erosion when handling abrasive slurries.

Neptune™ 7000Z Series metering pumps handle clear liquids with viscosities ranging from water-like to 2,500 cPs.

Neptune materials of construction for the Mechanical Series pumps:

MATERIAL	TEMPERATURE	PRESSURE
PVC	52°C (125°F)	Up to 12 bar (175 psi)
PVDF	65°C (149°F)	Up to 12 bar (175 psi)
SS 316	65°C (149°F)	up o 12 bar (175 psi)



NEPTUNE 7000 Z

PUMP WEIGHT & PACKAGING

PUMP MODEL CODE	NET WEIGHT (KG/LB)			GROSS WEIGHT (KG/LB)			PACKAGING (L x W x H) mm x mm x mm inch x inch x inch	
	PVC	PVDF	316SS	PVC	PVDF	316SS		
NPA0002~NPA0010	7.5 (16.5)	7.6 (16.7)	N/A	12.4 (27.3)	12.5 (27.6)	N/A	580 x 400 x 650 (22.83 x 15.75 x 25.59)	Carton Box
NPA0025~NPA0050	7.5 (16.5)	7.6 (16.7)	9.4 (20.7)	9.6 (21.2)	9.7 (21.4)	11.6 (25.6)		
NPA0090~NPA0175	8.3 (18.3)	8.3 (18.3)	10.1 (22.3)	10.4 (22.9)	10.5 (23.1)	12.4 (27.3)		
NPB0025~NPB0050	8.5 (18.7)	8.5 (18.7)	10.3 (22.7)	10.6 (23.1)	10.7 (23.6)	12.5 (27.6)		
NPB0090~NPB0500	9.8 (21.6)	9.8 (21.6)	12.4 (27.3)	12.3 (27.1)	12.4 (27.3)	14.5 (31.9)		
MP0750~MP0900	41.5 (91)	42.7 (94)	42.7 (94)	48.8 (107)	50 (110)	50 (110)		
MP1100~MP1700	54.7 (120)	N/A	54.2 (119)	62 (136)	N/A	61.5 (135)	1100 x 650 x 600 (43.31 x 25.59 x 23.62)	Wooden Box
MD2200~MD2800	41.5 (120)	N/A	102 (224)	127 (279)	N/A	126 (277)		
MT3300~MT4200	41.5 (120)	N/A	148.5 (327)	180 (396)	N/A	178.5 (393)		



MECHANICAL DIAPHRAGM Metering Pump

LIQUID END FEATURES

- Large flow range: 2L/h - 4200L/h (0.5 gph - 1109.6 gph)
- Liquid end materials: PVC, PVDF, 316SS
- Excellent to handle volatile chemicals
- Self-suction height: 9 M (30ft, optional)
- Mechanical double diaphragm rupture alarm (optional)
- Special valve seat to ensure leak-free while running or stopping
- Multiple special designs at liquid end: high viscosity (3500cPs), sludge, concentrated sulfide acid, sodium hypochlorite and etc.
- Self-clean check valve structure

POWER END FEATURES

- Adjustable eccentric structure, low pulse and smooth operation
- Multiple drive options with proper structure for customer special needs
- High strength worm and gear design, long life and high reliability
- Multiple motor options: IEC motor or NEMA motor
- Motor Options: Explosion proof, wash down duty, forced air-cooling and VFD

FLOW RATE ADJUSTMENTS

Manual adjustment: handle to adjust stroke length

- Full 0-100% flow rate adjustment while pump is running
- Minimum adjustment scale of 1/1000

Electrical stroke adjustment module: receiving and transmitting internal and external signals, adjustment per stroke length or flow rate

- Drive power: 220V-50Hz, single phase
- Input signal: 4-20mA, analog
- Output signal: 4-20mA/1-5V, analog

APPLICATIONS

- | | |
|--|---|
| <ul style="list-style-type: none"> • Agriculture • Chemical Feed • Chemical Processing • Chemigation • Fertigation • Gas Odorization | <ul style="list-style-type: none"> • Industrial • Mining • Municipal Water Treatment • Municipal Waste Water Treatment • Power Generation • Process |
|--|---|

CERTIFICATIONS & ASSOCIATIONS



7000 Z SERIES METERING PUMP CODE MECHANICAL DIAPHRAGM PUMPS

CODE STRUCTURE:

SERIES	CAPACITY	MATERIAL	CONNECTION	MOTOR	ADJUST	BASE	OPTION

Series:	CODE	DESCRIPTION	CODE	DESCRIPTION
	NPA	Model A mechanical diaphragm pump, flow rate 2~170L/h, pressure~12bar	MP	Model MPP mechanical diaphragm pump, flow rate 750~1700L/h, pressure~5bar
	NPB	Model B mechanical diaphragm pump, flow rate 2~500L/h, pressure~12bar	MD	Model MPD double-head mechanical diaphragm pump, flow rate 2200~2800L/h, pressure~4bar
	NPC	Model C mechanical diaphragm pump, flow rate 330~1800L/h, pressure~10bar	MT	Model MPT triple-head mechanical diaphragm pump, flow rate 3300~4200L/h, pressure~3.5bar

Capacity and Pressure:	CODE	0002	0005	0010	0025	0050	0090	0120	0170	0240	0330	0400	0500				
	NPA	Q	2.0	4.0	8.0	22	44	80	120	170							
	P	12bar				10bar	5bar	3.5bar									
	VISCOSITY LIMIT	700	700	250	700	250	700	250	250								
NPB	Q	2.25	4.5	9	25	50	85	115	170	235	315	400	500				
	P	12 bar			10bar			7bar			5bar						
	VISCOSITY LIMIT	700	700	250	700	250	700	700	250	250	250	100					
M*	CODE								0750	0900	1100	1400	1700	2200	2800	3300	4200
									MP			MD		MT			
	Q								750	900	1100	1400	1700	2200	2800	3300	4200
	P								5bar		4bar		3bar		3bar		
	VISCOSITY LIMIT								220	60	180	310	270	400	200	100	

(1) Flow rate Q (L/h) is the flow rate under Pmax with 50HZ motor; (2) Viscosity unit: cPs; the flow rate will decrease significantly when the viscosity exceeds the above range, please select higher viscosity limits.

Material:	CODE	DESCRIPTION	PUMP BODY	VALVE BODY	VALVE SEAT	VALVE BALL	DIAPHRAGM/SEAL RING/SPRING
	P	PVC LE	PVC	PVDF	PE	S-SiC	PTFE / VITON
	T	PVDF LE	PVDF	PVDF	PVDF	S-SiC	PTFE / PTFE
	S	316SS LE	316SS	316SS	316SS	316SS	PTFE / VITON
	F	SODIUM HYPOCHLORITE APP (PVC LE)	PVC	PVDF	PVDF	S-SiC	PTFE / PTFE
	V	POLYMER HIGH VISCOSITY APP (PVC LE)	PVC	PVDF	316SS	316SS	PTFE / VITON / 316SS
	X	FOR A SPECIAL MATERIAL, CONSULT US.					

Connection:	CODE	DESCRIPTION	PVC AND PVDF BODY			316SS BODY		
			0002~0050	0090~0500	0750~4200	NPA型号	NPB型号	MPP/D/T型号
	R	HOSE	1/2" X 3/8"	-----	-----	-----	-----	-----
	Q	CONNECTIONS	-----	DN15 RIGID TUBING	-----	-----	-----	-----
	F	NPT FEMALE THREAD	-----	-----	NPT 1-1/2"	NPT 1/2"	NPT 1/2"	-----
	M	NPT MALE THREAD	-----	-----	-----	-----	-----	NPT 1-1/2"
	X	CUSTOMIZED CONNECTION (SPECIFY IN CONTRACT)						

Motor:	CODE	DESCRIPTION	NPA	NPB	NPC	MP	MD	MT
	1	STANDARD MOTOR, 3PH-50HZ-380V, 4P(2P), TEFC STRUCTURE, IP55 PROTECTION, GRADE F INSULATION, B14 INSTALLATION	0.12kW	0.25kW	0.55kW	0.75kW	1.1kW	1.1kW
	2	NORMAL MOTOR RUN AT VF, 3PH-50HZ-380V, 4P(2P), TEFC STRUCTURE, IP55 PROTECTION, GRADE F INSULATION, B14 INSTALLATION	0.18kW	0.37kW	0.75kW	1.1kW	1.5kW	1.5kW
	X	CUSTOMIZED MOTOR SPECIFICATION (SPECIFY IN CONTRACT)						

Adjustment:	CODE	DESCRIPTION	NPA	NPB	NPC	MP	MD	MT
	M	MANUAL STROKE ADJUSTMENT, ACCURACY 1% FOR 0-100% (INCLUDED IN THE STANDARD CONFIGURATION MARKED AS Y)	Y	Y	Y	Y	Y	Y
	E	ELECTRICAL STROKE ADJUSTMENT, IP 56 PROTECTION, 4-20 MA INPUT CONTROL, 220V, ACCURACY 1% FOR 0-100%	N	OPTION	OPTION	OPTION	OPTION	OPTION
	X	CUSTOMIZED ADJUSTMENT METHOD (SPECIFY IN CONTRACT)						

Base:	CODE	DESCRIPTION	NPA	NPB	NPC	MP	MD	MT
	B	STANDARD BASE (INCLUDED IN THE STANDARD CONFIGURATION MARKED AS Y)	Y	N	N	Y	Y	Y
	N	WITHOUT BASE						
	X	CUSTOMIZED BASE (SPECIFY IN CONTRACT)						

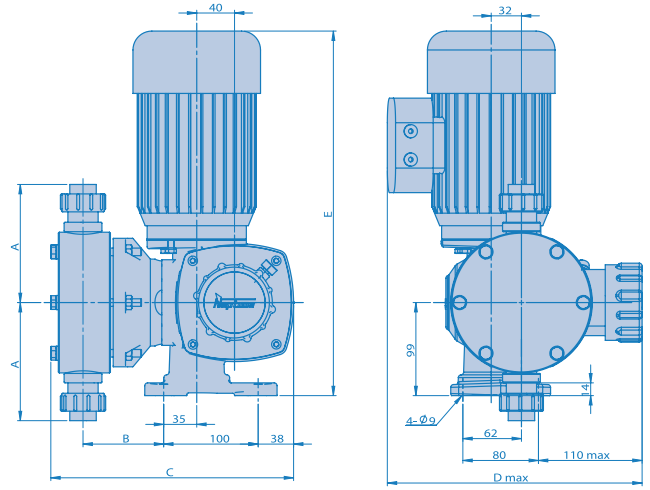
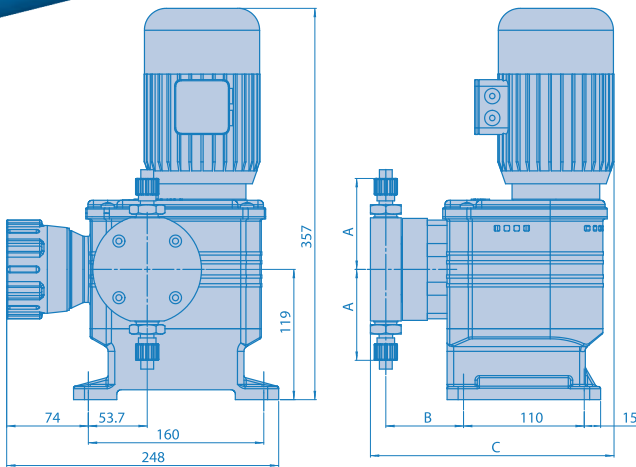
Options:	CODE	DESCRIPTION
	N	N/A
	D	DOUBLE DIAPHRAGM + DIAPHRAGM RUPTURE DETECTION
	H	HIGH SUCTION LIFT (2M~9M SUCTION HEIGHT)
	X	CUSTOMIZATION (SPECIFY IN CONTRACT)

Note: (1) Liquid Viscosity unit is cPs, the value is under 50HZ, if viscosity exceed or for 60HZ application, please refer to factory;
 (2) NPA0002 standard motor for variable frequency application should be 0.12kW;
 (3) Explosion proof motor is not available for NPA

7000 Z SERIES DIMENSIONS

NPA PROFILE AND DIMENSIONS

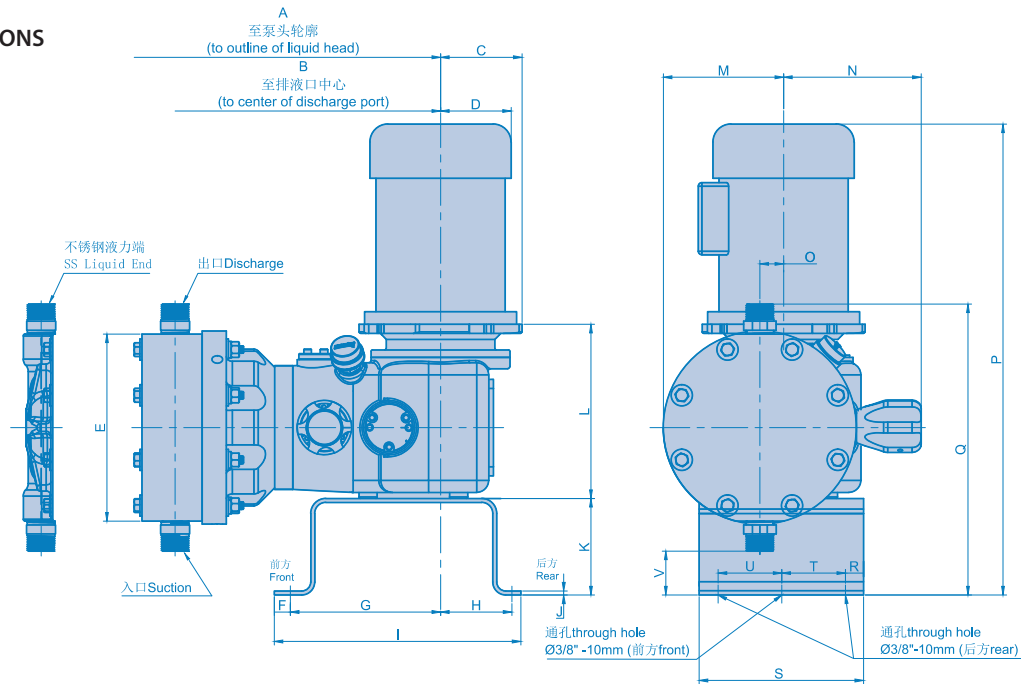
NPB PROFILE AND DIMENSIONS



MODEL	DIMENSIONS		LIQUID END	
	mm		PVC/PVDF	316SS
NPA0002	A		81(3.19")	102(4.02")
	B		90(3.54")	90(3.54")
~	C		225(8.86")	225(8.86")
NPA0050	A		127(5")	131(5.16")
	B		133(5.24")	133(5.24")
~	C		268(10.55")	268(10.55")

MODEL	DIMENSIONS		LIQUID END	
	mm		PVC/PVDF	316SS
NPB0025	A		81(3.19")	102(4.02")
	B		41(1.61")	41(1.61")
~	C		198(7.80")	198(7.80")
NPB0050	A		127(5")	131(5.16")
	B		85(3.35")	85(3.35")
~	C		297(11.69")	292(11.50")

MP PROFILE AND DIMENSIONS

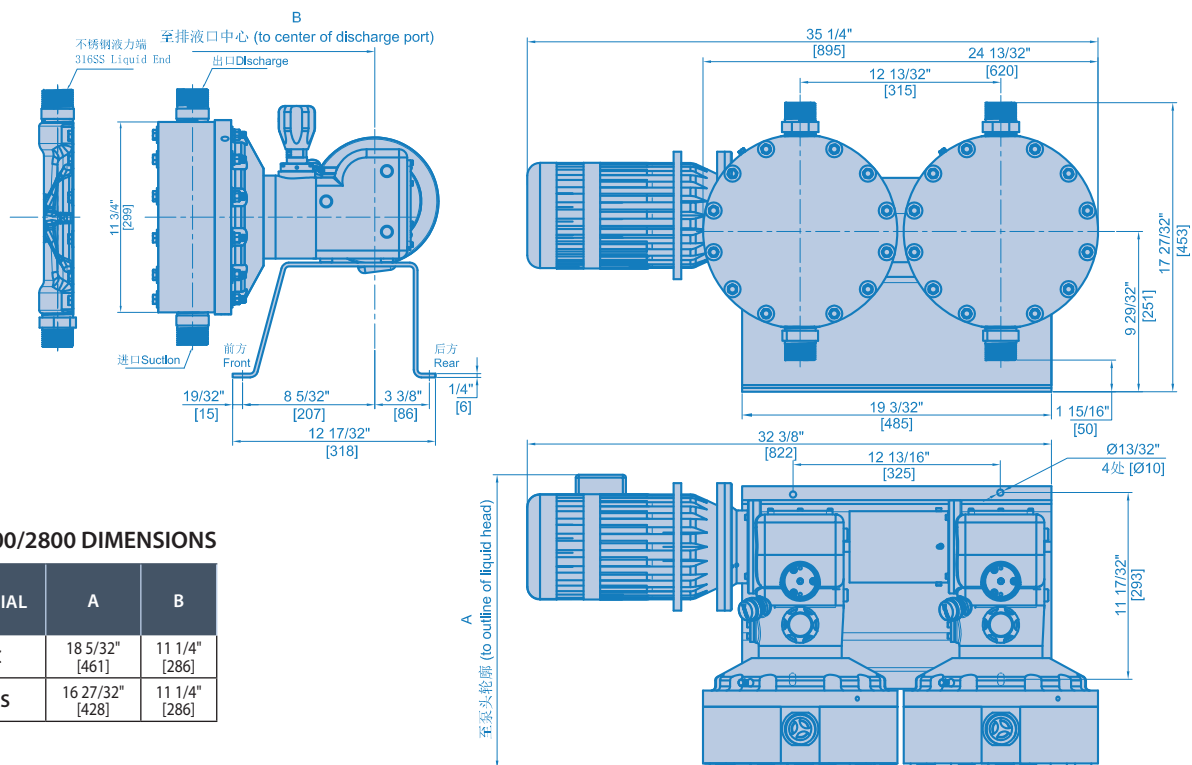


DIMENSIONS	MP 0750/0900			MP 1100/1400/1700	
	PVC	PVDF	316SS	PVC	316SS
A	336(13 7/32")	315(12 3/8")	348(13 11/16")	315(12 13/32")	
B	286(11 1/4")	286(11 1/4")	286(11 1/4")	286(11 1/4")	
C	100(3 15/16")			100(3 15/16")	
D	82(3 7/32")			82(3 7/32")	
E	248(9 3/4")			299(11 3/4")	
F	19(3/4")			19(3/4")	
G	190(7 1/2")			190(7 1/2")	
H	90(3 17/32")			90(3 7/32")	
I	308(12 1/8")			308(12 1/8")	
J	6(1/4")			6(1/4")	
K	151(5 31/32")			151(5 31/32")	

DIMENSIONS	MP 0750/0900			MP 1100/1400/1700	
	PVC	PVDF	316SS	PVC	316SS
L	193(7 19/32")			193(7 19/32")	
M	152(5 31/32")			177(6 31/32")	
N	145(5 11/16")			145(5 11/16")	
O	25(31/32")			25(31/32")	
P	595(23 13/32")			595(23 13/32")	
Q	403(15 27/32")			428(16 7/8")	
R	19(3/4")			19(3/4")	
S	173(6 13/16")			173(6 13/16")	
T	67(2 5/8")			67(2 5/8")	
U	67(2 5/8")			67(2 5/8")	
V	51(2")			25(31/32")	

7000 Z SERIES DIMENSIONS

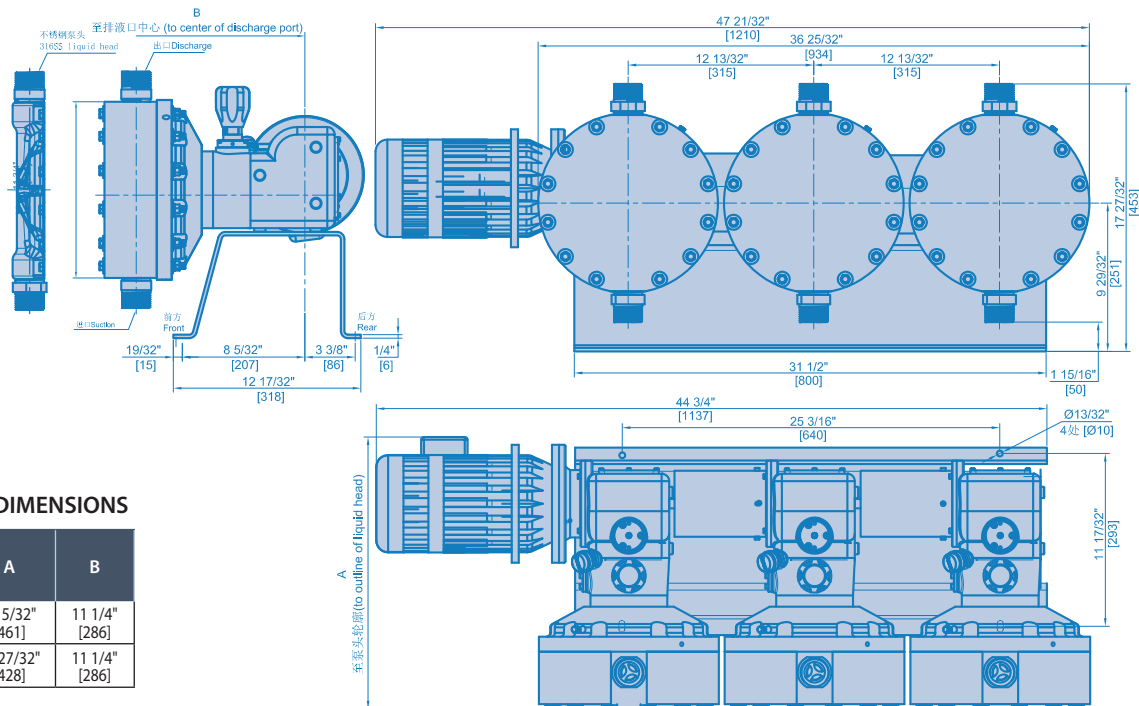
MD PROFILE AND DIMENSIONS



MD 2200/2800 DIMENSIONS

MATERIAL	A	B
PVC	18 5/32" [461]	11 1/4" [286]
316SS	16 27/32" [428]	11 1/4" [286]

MT PROFILE AND DIMENSIONS



MT 3300/4200 DIMENSIONS

MATERIAL	A	B
PVC	18 5/32" [461]	11 1/4" [286]
316SS	16 27/32" [428]	11 1/4" [286]



Where Innovation Flows

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