



Expert
Solutions
for Critical
Applications

MECHANICAL
7000 Z Series
Metering Pumps



Where Innovation Flows

neptune1.com

MECHANICAL DIAPHRAGM
METERING PUMP





MECHANICAL PUMP SOLUTIONS

Neptune™ Chemical Pump Company is a premier manufacturer of chemical metering pumps, chemical feed systems, and chemical injection accessories. Neptune's hydraulic diaphragm metering pumps are well-known for injecting chemicals into boilers and cooling towers, and in water and waste and water treatment Applications. Major markets include power generation, oil and gas exploration, petrochemical, and irrigation.

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 Grand Terrace, California, and is member of 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



POWER GEN



GAS
ODORIZATION



INDUSTRIAL



CHEMICAL
PROCESSING



MUNICIPAL WATER



CHEMICAL FEED



MINING



PROCESS



CHEMICAL
INJECTION



FERTILIZATION

CHOOSE THE 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. Abrasive slurries can cause erosion or degradation of materials.

Neptune™ 7000Z Series metering pumps handle clear liquids with viscosities ranging from water-like to 3,500 cPs.

Neptune materials of construction for the Mechanical Series pumps:

MATERIAL	TEMPERATURE	PRESSURE
PVC	52°C (125F)	Up to 12 bar (175 psi)
PVDF	65°C (149F)	Up to 12 bar (175 psi)
SS 316	65°C (149F)	Up to 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		
NPAG0002~NPAG0010	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
NPAG0025~NPAG0050	7.5 (16.5)	7.6 (16.7)	9.4 (20.7)	9.6 (21.2)	9.7 (21.4)	11.6 (25.6)		
NPAG0090~NPAG0175	8.3 (18.3)	8.3 (18.3)	10.1 (22.3)	10.4 (22.9)	10.5 (23.1)	12.4 (27.3)		
NPBG0025~NPBG0050	8.5 (18.7)	8.5 (18.7)	10.3 (22.7)	10.6 (23.1)	10.7 (23.6)	12.5 (27.6)		
NPBG0090~NPBG0500	9.8 (21.6)	9.8 (21.6)	12.4 (27.3)	12.3 (27.1)	12.4 (27.3)	14.5 (31.9)	580 x 400 x 650 (22.83 x 15.75 x 25.59)	Carton Box
NPCG0300~NPCG0400	31.8 (63.6)	31.8 (63.6)	35.3 (77.6)	36.3 (79.8)	36.3 (79.8)	40 (88)		
NPCG0500~NPCG0700	33.5 (73.7)	33.5 (73.7)	38.6 (84.9)	38 (83.6)	38 (83.6)	45.6 (100.3)		
NPCG1000~NPCG1800	36.8 (80.9)	36.8 (80.9)	45.8 (100.7)	41.3 (90.86)	41.3 (90.86)	50.6 (111.4)		



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 for handling volatile chemicals
- Self-suction height: up to 9 M (30ft)
- Mechanical double diaphragm rupture alarm (optional)
- Special valve seat to ensure leak-free operation 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

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

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

CERTIFICATIONS & ASSOCIATIONS



7000 Z SERIES MECHANICAL DIAPHRAGM PUMPS

Code

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Series

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Flow Rate

Material

□
Connection

 Moto

Adjustment

 Baseplate

Option

Series	CODE	DESCRIPTION	CODE	DESCRIPTION
	NPA	Neptune A Series MAD Pump, Q:2~170L/h, P:~12bar	NPD	Neptune D Series MAD Pump, Q:2200~2800L/h, P:~4bar ⁽¹⁾
	NPB	Neptune B Series MAD Pump, Q:25~500L/h, P:~12bar	NPT	Neptune T Series MAD Pump, Q:3300~4200L/h, P:~4bar ⁽¹⁾
	NPC	Neptune C Series MAD Pump, Q:330~1800L/h, P:~10bar		

Flow rate (L/h)	CODE	0002	0005	0010	0025	0050	0090	0120	0170	0240	0330	0400	0500	0600	0700	1000	1200	1400	1800	2200	2800	3300	4200	
Pressure	NPA	Q(50HZ)	2	4	8	22	44	80	120	170														
		Q(60HZ)	2.4	4.8	9.6	26.4	52.8	96	144	204														
		Pmax	12bar				10bar		5bar		3.5bar													
	Viscosity (cps)/50HZ	700	700	250	700	250	700	250	250															
	Viscosity (cps)/60HZ	700	600	120	600	120	600	120	120															
	NPB	Q(50HZ)				25	50	85	115	170	235	315	400	500										
		Q(60HZ)				30	60	100	140	200	280	370	480	520										
		Pmax				10bar		7bar		5bar														
	Viscosity (cps)/50HZ				700	250	700	700	250	250	250	250	100											
	Viscosity (cps)/60HZ				600	120	600	600	120	120	120	120	80											
NPC	Q(50HZ)										330	415	445	550	660	1000	1200	1400	1750					
	Q(60HZ)										395	495	534	660	792	1200	1440	1680	-					
	Pmax										10bar		7bar		5bar	4bar				NPD	NPT			
	Viscosity (cps)/50HZ										220	100	220	100	100	220	100	100	100					
	Viscosity (cps)/60HZ										100	80	100	80	80	100	80	80	-					

Material	CODE	DESCRIPTION	LE MATERIAL	CV BODY	CV SEAT	BALL	DIAPHRAGM, SEAL, 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	Chloros Application(PVC LE) ⁽¹⁾	PVC	PVDF	PVDF	S-SiC	PTFE / PTFE
	V	High Viscosity (PVC LE) ⁽¹⁾	PVC	PVDF	316SS	316SS	PTFE / VITON / 316SS
	X	Any special requirements, please contact factory					

Connection	CODE	DESCRIPTION	NPA/B0002~0050			NPA/B0080~0500			NPC0330~0400			NPC0500~0700			NPC1000~1200 NPD2200&NPT3300			NPC1400~1800 NPD2800&NPT4200		
			PVC	PVDF	316L	PVC	PVDF	316L	PVC	PVDF	316L	PVC	PVDF	316L	PVC	PVDF	316L	PVC	PVDF	316L
R	Soft Tube	1/2" X3/8"	1/2" X3/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Q	Hard Tube Connector	-	-	-	DN15	-	-	DN15	-	-	-	-	-	-	-	-	-	-	-	
F	NPT F			1/2"F	-	1/2"F	1/2"F	-	1/2"F	1/2"F	1"F	1"F	-	Suc: 1 1/2"F Dis 1"F	-	Suc: 1 1/2"F Dis 1 1/2"F	-			
N	NPT M	3/8" M		-	1/2" M		-	1/2" M		-	1" M			Suc: 1 1/2" M Dis 1" M			Suc: 1 1/2" M Dis 1" M			
X	Any special requirements, please contact factory																			

Motor	CODE	DESCRIPTION	NPA	NPB	NPC (0330~1000)	NPC (1200~1800)	NPD	NPT
	1	IEC Motor, 2P/4P, 3ph-50HZ-220/380V, IP55/F/TEFC	0.12kW	0.25kW	0.55kW	0.75kW	1.1kW	1.5kW
	2	IEC Motor for variable frequency Application(20~50HZ), 2P/4P, 3ph-50HZ-220/380V, IP55/F/TEFC	0.18kW	0.37kW	0.75kW	0.75kW	-	-
	3	For future use						
	4	For future use						
	5	IEC Inverter motor, 4P, 3ph-50/60HZ-220/380V, IP55/F/TEFC	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	6	IEC Explosion-Proof Motor, 4P, 3ph-50/60HZ-220/380V, IP55/F/TEFC/dIIBT4	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	7	IEC Motor Flange, Without motor	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	8	NEMA 56 C Motor Flange, Without motor	-	1/3hp	1hp	1hp	2hp	2hp
	A	IEC Motor, 2P/4P, 3ph-50/60HZ-230/460V, IP55/F/TEFC	0.12kW	-	-	-	-	-
	B	IEC Motor for variable frequency Application(20~50/60HZ), 2P/4P, 3ph-50/60HZ-230/460V, IP55/F/TEFC	0.18kW	-	-	-	-	-
	C	NEMA Motor, 4P, 3ph-50/60HZ-230/460V, NEMA3/TEFC	-	1/3hp	1hp	1hp	2hp	2hp
	D	IEC Motor, 2P/4P, 3ph-50/60HZ-220/380V, IP55/F/TEFC	0.12kW	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	E	IEC Motor for variable frequency Application(20~50/60HZ), 2P/4P, 3ph-50/60HZ-220/380V, IP55/F/TEFC	0.18kW	-	-	-	-	-
	F	IEC Single Phase Motor, 2P/4P, 1ph-50/60HZ-110/220V, IP55/F/TEFC	0.12kW	0.25kW	0.55kW	0.75kW	2hp	2hp
	G	NEMA Inverter Motor, 4P, 3ph-60HZ-230/460V, NEMA3/IC411	-	1/3hp	1hp	1hp	2hp	2hp
	H	IEC Inverter Motor, 4P, 3ph-50HZ-220/380V, IP55/F/IC416	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	I	NEMA Ex-proof motor, 4P, 3ph-50/60HZ-230/460V/DIVISION 1, CLASS I GROUP C&D	-	1/3hp	1hp	1hp	2hp	2hp
	J	IEC Ex-proof motor, 4P, 3ph-50/60HZ-220/380V, IP55/F/TEFC/dIIBT4	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	K	IEC Ex-proof motor, single phase, 1ph-50/60HZ-110/220V, IP55/F/TEFC/dIIBT4	-	0.25kW	0.55kW	0.75kW	1.1kw	1.5kW
	L	NEMA Single Phase Motor, NEMA56C, 4P, 1ph-50/60HZ-110/220V, NEMA3/TEFC	-	1/3hp	1hp	1hp	2hp	2hp
	X	Any special requirements, please contact factory						

Adjustment	CODE	DESCRIPTION	NPA	NPB	NPC	NPD	NPT
	M	Manual adjusting, Adjustment accuracy is 1% from 0 to 100%	Y	Y	Y	Y	Y
	E	ECC Adjusting, IP65, 4-20mA, 220VAC-1Ph, Accuracy is 1% from 0 to 100% ⁽¹⁾	N	Option	Option	Option	Option
	X	Any special requirements, please contact factory					

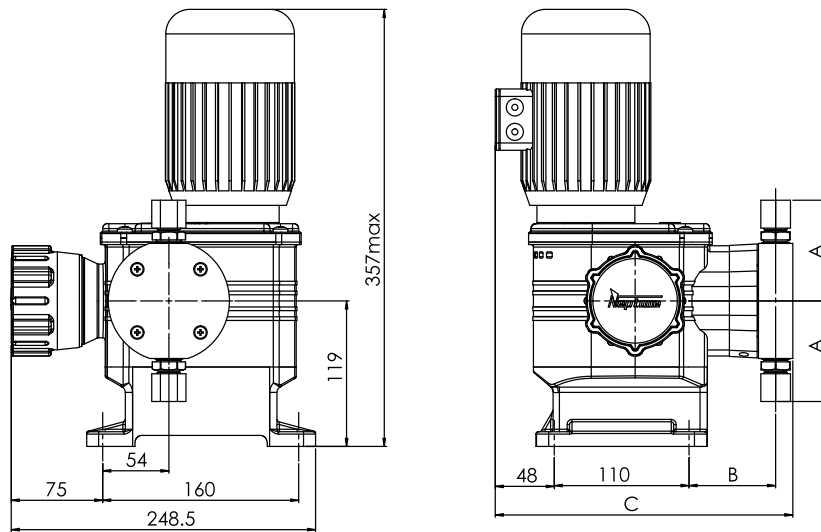
Baseplate	CODE	DESCRIPTION	NPA	NPB	NPC	NPD	NPT
	B	Standard Baseplate, Y means standard pump has baseplate	Y	-	-	Y	Y
	N	No baseplate	-	Y	Y	-	-
	X	Any special requirements, please contact factory					

Option	CODE	DESCRIPTION
	N	None
	D	Double Diaphragm + Diaphragm fracture detection ⁽¹⁾
	H	High Suction height application(2-9m) ⁽¹⁾
	X	Any special requirements, please contact factory

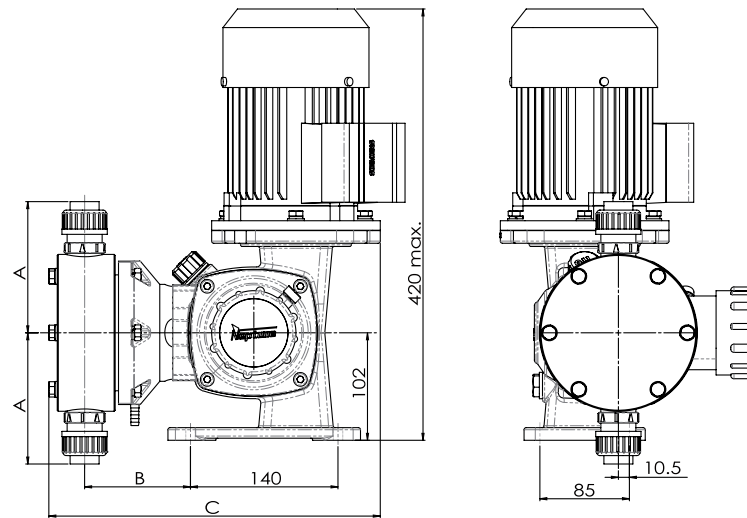
(1) Non standard products are not listed in the standard price list, please consult factory if need.

(2) NPD/NPT (i.e. in grey font) the options are not currently available.

NPAG PROFILE AND DIMENSIONS



NPBG PROFILE AND DIMENSIONS

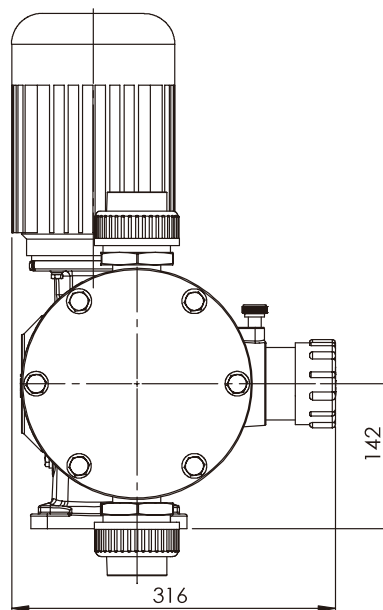
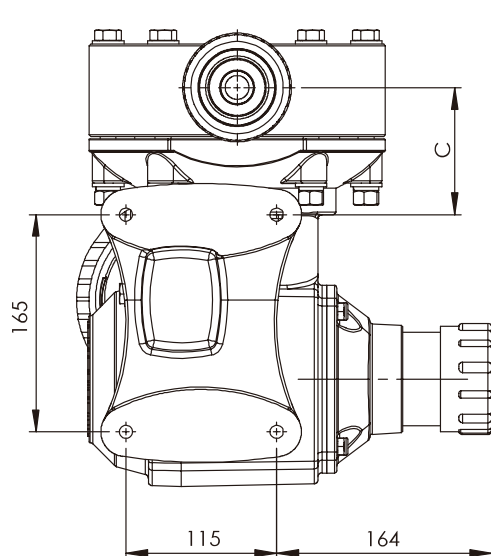


NPAG/PNBG Dimensions

MODEL	SIZE	LIQUID END			MODEL	SIZE	LIQUID END		
	mm	PVC/PVDF NPT Male	PVC/PVDF Other	316SS		mm	PVC/PVDF NPT Male	PVC/PVDF Other	316SS
NPAG0002 ~ NPAG0050	A	75	81	102	NPBG0025 ~ NPBG0050	A	75	81	102
	B	90	90	90		B	54	54	54
	C	225	225	225		C	216	216	216
NPAG0090 ~ NPAG0170	A	146	127	131	NPBG0090 ~ NPBG0500	A	146	127	131
	B	133	133	133		B	98	98	98
	C	268	268	268		C	315	315	310

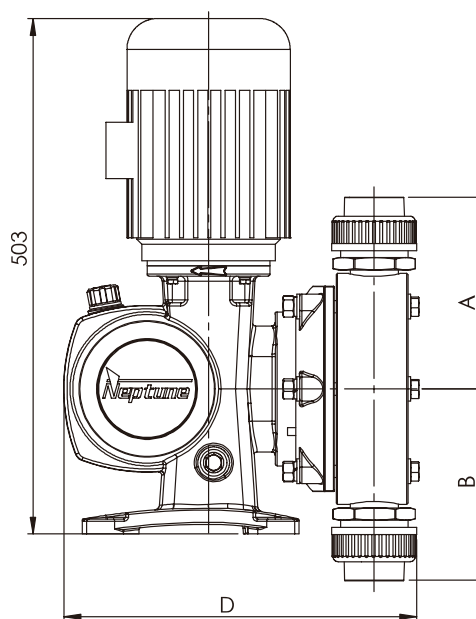
7000 Z SERIES DIMENSIONS

NPCG PROFILE AND DIMENSIONS



NPCG Dimensions

MODEL	SIZE	LIQUID END	
	mm	PVC/PVDF NPT Male	316SS
NPCG0330 ~ NPCG0400	A	125	130
	B	125	130
	C	56	56
	D	290	290
NPCG0500 ~ NPCG0700	A	143	170
	B	143	170
	C	75	79
	D	327	324
NPCG1000 ~ NPCG1200	A	181	209
	B	181	220
	C	96	96
	D	346	346
NPCG1400	A	187	220
	B	187	220
	C	96	96
	D	346	346
NPCG1800	A	210	229
	B	210	229
	C	96	101
	D	346	346





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