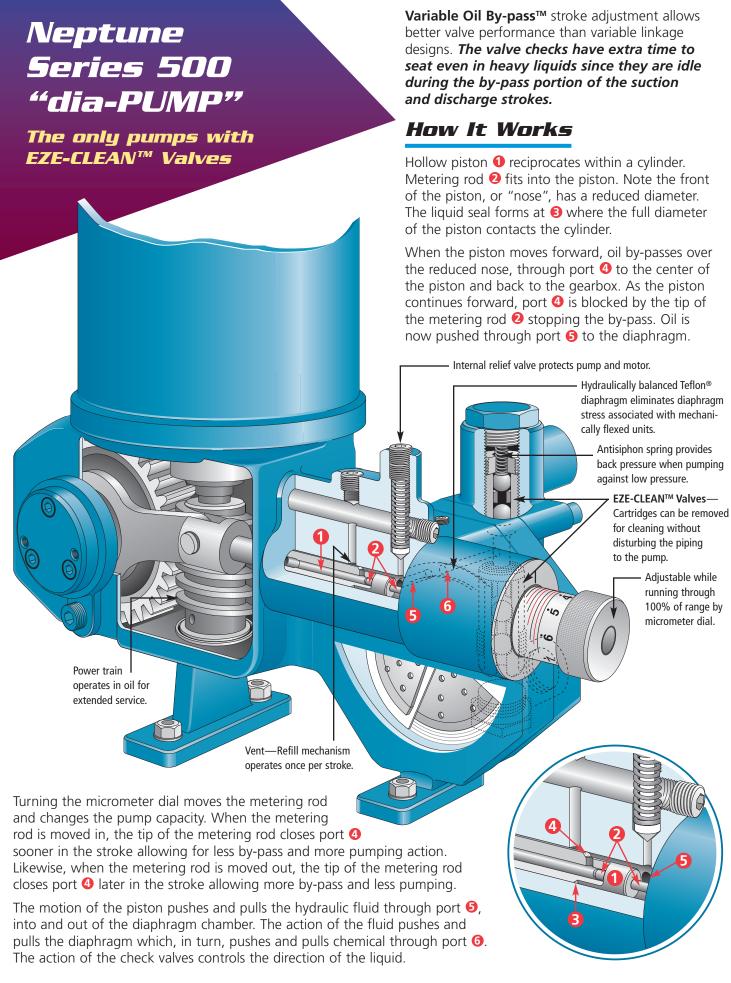
Series 500 "dia-PUMP"





Automatic Control and Other Features

SODIUM HYPOCHLORITE GAS BLEED

Special head designed with an automatic air release valve to vent gas accumulation from chemicals that off gas such as sodium hypochlorite. Refer to "AR" models found in Bulletin DP-500E.

CE Mark – IEC Motors

All pumps in this product bulletin are CE compliant and bear CE label when coupled to a motor bearing the CE mark.

In addition to integrally-mounted NEMA motors, the following integral or "canned" motor options are available in IEC configurations with CE mark:

0.25 KW (1/3 HP) – 1ph-50c-110/220VAC-TEFC IP54 1425 RPM

0.37 KW (1/2 HP) – 1ph-50c-110/220VAC-TEFC IP54 1425 RPM

0.37 KW (1/2 HP) – 3ph-50c-190-220/380-440VAC-TEFC IP54 1425 RPM

All pumps can be furnished with a metric flange adapter to accommodate a D71 motor from 0.25 KW through 0.55 KW. Pumps requiring 0.75 KW and larger can be furnished with a flange adapter for D80 motor.

ELECTRIC STROKE CONTROL

The flow rate of any Neptune "dia-PUMP" can be controlled automatically by a process instrument, or manually from a remote location, using the Electric Stroke Control to change stroke length.

The Neptune Electric Stroke
Control is a one-piece, self-contained
Electric Positioner mounted on
the pump (See Bulletin ESC



- 50/60 Hz, 110/220 V
- Explosion-proof (be certain to order proper motor for hazardous locations)
- Unit follows 4-20 mA or 1-5V signal
 - Adjustable ratio signal to stroke 1:2 or 2:1
 - Direct (forward) or indirect (reverse) response to changing signal
 - Manual override in event of instrument signal or power loss, a unique feature

Note: Can be added on only one head of duplex pumps.

VARIABLE SPEED CONTROL

The flow rate of any Neptune "dia-PUMP" can be controlled automatically by a process instrument using a variable speed drive to change pump stroke speed.

Optional motor flange adapter allows convenient mounting of any AC or DC variable speed motor control package.

Note: Select pump with stroking speed sufficiently high that, at minimum speed, pump operates at 15 spm minimum.

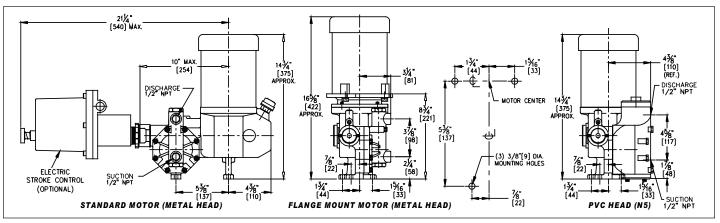


- Standard Motor—TEFC: 1/3HP-1ph-115VAC-60c-Totally Enclosed Fan-Cooled with built-in automatic thermal overload
- Ten turn micrometer dial calibrated in 1% increments.
- Bright color contrasted dial protected from corrosion by clear PVC covering.
- Stroke mechanism moves only when adjustment is made, eliminating wear.
- Piston is powered through complete stroke length at all capacity adjustments eliminating stress, wear and shock of lost motion designs.





Series 500-A "dia-PUMP" Dimensions Except Kynar® Models (Code N8)*



Dimensions are approximate. Specifications subject to change without notice.

*See Bulletin DP-500E for Kynar® (N8).

SERIES 500-A "dia-PUMP" SELECTION CHART

Standard Motor: 1/3HP-1ph-115VAC-60c-TEFC†

SIMPLEX ONLY

MODEL	CAPACITY AT 100 PSI (7 BAR) 60 HZ (50 HZ)		MATERIALS		IMUM SSURE	PISTON	STROKES PER	SHIPPING
NUMBER	GPH	LPH	OF CONSTRUCTION	PSI	BAR	DIAMETER INCHES (MM)	MINUTE AT 60 HZ (50 HZ)	WEIGHT LBS. (KG)***
500-A-N3 500-A-N4 500-A-N5	1.0 (0.8)	3.7 (3.1)	316SS C-20 PVC	1000 1000 150	70 70 11	0.500	37	60
510-E-N8	0.8 (0.7)	3.1 (2.5)	Kynar**	150	11	(12.70)	(31)	(27)
515-A-N3 515-A-N4 515-A-N5 515-E-N8	3.0 (2.5)	11.3 (9.4)	316SS C-20 PVC* Kynar**	1100 1100 400 150	77 77 28 11	0.500 (12.70)	117 (97)	60 (27)
520-A-N3 520-A-N4 520-A-N5 520-E-N8	2.0 (1.7)	7.5 (6.3)	316SS C-20 PVC Kynar**	700 700 400 150	49 49 28 11	0.687 (17.45)	37 (31)	60 (27)
522-A-N3 522-A-N4 522-A-N5 522-E-N8	4.0 (3.3)	15.1 (12.6)	316SS C-20 PVC* Kynar**	700 700 400 150	49 49 28 11	0.687 (17.45)	72 (60)	60 (27)
525-A-N3 525-A-N4 525-A-N5 525-E-N8	7.0 (5.8)	26.5 (22.0)	316SS C-20 PVC* Kynar**	900 900 400 150	63 63 28 11	0.687 (17.45)	117 (97)	60 (27)
530-A-N3 530-A-N4 530-A-N5 530-E-N8	5.5 (4.6)	20.8 (17.3)	316SS C-20 PVC Kynar**	350 350 300 150	25 25 21 11	1.062 (26.97)	37 (31)	60 (27)
532-A-N3 532-A-N4 532-A-N5 532-E-N8	11.0 (9.2)	41.6 (34.7)	316SS C-20 PVC Kynar**	350 350 300 150	25 25 21 11	1.062 (26.97)	72 (60)	60 (27)
535-A-N3 535-A-N4 535-A-N5 535-E-N8	18.0 (15.0)	68.1 (56.8)	316SS C-20 PVC Kynar**	350 350 300 150	25 25 21 11	1.062 (26.97)	117 (97)	60 (27)
547-S-N8 §	30.0 (25.0)	113.0 (94.2)	Kynar**	150	11	1.187 (30.15)	144 (120)	70 (32)

[†] See page 10 for motor options available. IEC metric motor adapter available.

PVC and Kynar® models, 125°F (52°C) maximum.

For Higher Capacities see page 8.

For Higher Capacities and Pressures request Bulletin DP-2000.

For Ultra-Low Capacity High Pressure Models request Bulletin LV.

For Viscous Chemicals and Slurries request Bulletin TP or VP.

For Economy Models request Bulletin DP-500E.

[§] Model 547 furnished with integral 1/2HP-1ph-115VAC-TEFC motor as standard.

^{*} For sodium hypochlorite service, refer to Bulletin DP-500E.

^{**} Kynar® models do not include Eze-Clean $^{\!\mathsf{TM}}$ valves.

^{**} See Bulletin DP-500E for dimensions.

^{***} Standard motor only. For flange mounted motor, add 20 lbs. (9 kg).

Neptune Series 500 "dia-PUMP"









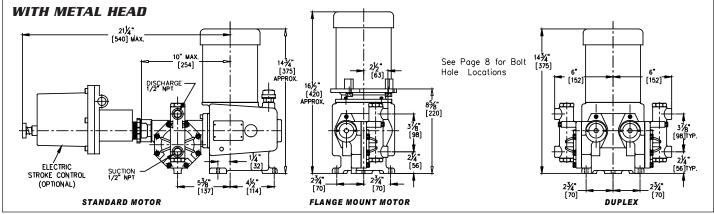
Features

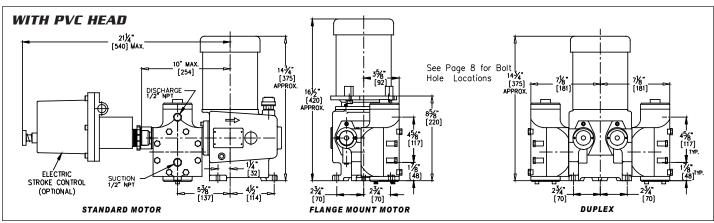
Series 500 has the same features as Series 500-A (see page 4) except these models can be duplexed.

Any duplex combination can be created using any models on pages 7 and 8, as long as both have the same stroking speed.

(Add 15 lbs. [6.8 kg] to shipping weight.)

Series 500 "dia-PUMP" Dimensions*





SERIES 500 "dia-PUMP" SELECTION CHART

Standard Motor: 1/3HP-1ph-115VAC-60c-TEFC†

DUPLEX AVAILABLE Change the letter "S" in the model number to the letter "D" to define a duplex pump with both heads the same. Any duplex combination can be created using any models on pages 7 and 8, as long as both have the same stroking speed.

MODEL	CAPACITY AT 100 PSI (7 BAR) 60 HZ (50 HZ)		MATERIALS OF	PRESSURE 1/4 HP (0.18 KW) OR 1/3 HP (0.25 KW) MOTOR		PRESSURE ½ HP (0.37 KW) MOTOR*		PISTON DIAMETER INCHES	STROKES PER MINUTE AT 60 HZ		SHIPPING WEIGHT
NUMBER	GPH	LPH	CONSTRUCTION	PSI	BAR	PSI	BAR	(MM)	(50 HZ)	STYLE	LBS. (KG)**
500-S-N3 500-S-N4 500-S-N5	0.8 (0.7)	3.0 (2.5)	316SS C-20 PVC	1000 1000 150	70 70 11	3000 N/A N/A	210 N/A N/A	0.500 (12.70)	37 (31)	Simplex	70 (32)
515-S-N3 515-S-N4 515-S-N5	3.0 (2.5)	11.3 (9.4)	316SS C-20 PVC	1100 1100 400	77 77 28	1800 N/A N/A	125 N/A N/A	0.500 (12.70)	117 (97)	Simplex	70 (32)
520-S-N3 520-S-N4 520-S-N5	2.0 (1.7)	7.5 (6.3)	316SS C-20 PVC	700 700 400	49 49 28	N/A	N/A	0.687 (17.45)	37 (31)	Simplex	70 (32)
522-S-N3 522-S-N4 522-S-N5	4.0 (3.3)	15.1 (12.6)	316SS C-20 PVC	700 700 400	49 49 28	N/A	N/A	0.687 (17.45)	72 (60)	Simplex	70 (32)
525-S-N3 525-S-N4 525-S-N5	7.0 (5.8)	26.5 (22.1)	316SS C-20 PVC	900 900 400	63 63 28	1500 1500 N/A	105 105 N/A	0.687 (17.45)	117 (97)	Simplex	70 (32)
530-S-N3 530-S-N4 530-S-N5	5.5 (4.6)	20.8 (17.3)	316SS C-20 PVC	350 350 300	25 25 21	N/A	N/A	1.062 (26.97)	37 (31)	Simplex	70 (32)
532-S-N3 532-S-N4 532-S-N5	11.0 (9.2)	41.6 (34.7)	316SS C-20 PVC	350 350 300	25 25 21	600 600 N/A	42 42 N/A	1.062 (26.97)	72 (60)	Simplex	70 (32)
535-S-N3 535-S-N4 535-S-N5	18.0 (15.0)	68.0 (56.7)	316SS C-20 PVC	350 350 300	25 25 21	600 600 N/A	42 42 N/A	1.062 (26.97)	117 (97)	Simplex	70 (32)
537-S-N3 537-S-N4 537-S-N5	22.0 (18.3)	83.0 (69.2)	316SS C-20 PVC	350 350 300	25 25 21	400 400 N/A	28 28 N/A	1.062 (26.97)	144 (120)	Simplex	70 (32)
547-S-N3† 547-S-N4† 547-S-N5† 547-S-N8†§	30.0 (25.0)	113.0 (94.2)	316SS C-20 PVC Kynar	200 200 200 150	14 14 14 11	350 350 300 N/A	25 25 21 N/A	1.187 (30.15)	144 (120)	Simplex	70 (32)

[†] Models 547 furnished with integral 1/2HP-1ph-115VAC-TEFC motor as standard. See page 10 for motor options available. IEC metric motor adapter available. § See page 6 for gearbox dimensions; see Bulletin DP-500E for Kynar® Liquid

Head detail. Kynar® models do not include Eze-Clean™ valves.

PVC and Kynar® models, 125°F (52°C) maximum.

For Higher Capacities see page 8.

For Higher Capacities and Pressures request Bulletin DP-2000.

For Ultra-Low Capacity High Pressure Models request Bulletin LV.

For Viscous Chemicals and Slurries request Bulletin TP or VP.

For Economy Models request Bulletin DP-500E.

^{*} Neptune recommends that ½ HP (0.37 KW) high pressure models be used only in flooded suction applications.

^{**} Standard motor only. For flange mounted motor, add 20 lbs. (9 kg).

Neptune Series 560 "dia-PUMP"





Features

Series 560 has the same features as Series 500-A (see page 4) except these

models can be duplexed. Any duplex combination can be created using any models on pages 7 and 8, as long as both have the same stroking speed. (Add 30 lbs. [13.6 kg] to shipping weight.)

SERIES 560 "dia-PUMP" SELECTION CHART

Standard Motor: 1/2HP-1ph-115VAC-60c-TEFC†

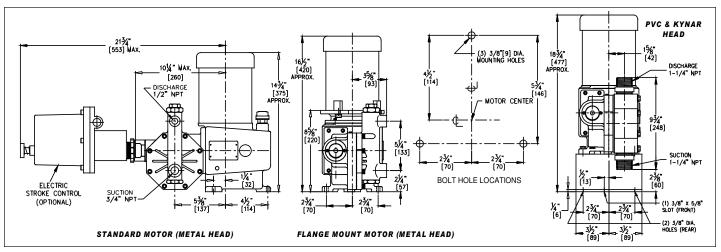
DUPLEX AVAILABLE Change the letter "S" in the model number to the letter "D" to define a duplex pump with both heads the same. Any duplex combination can be created using any models on pages 7 and 8, as long as both have the same stroking speed.

				STROKES										SHIP	
MODEL		(50 HZ)	MATERIALS OF	DIAM. INCHES	PER MIN. @ 60 HZ	⅓ HP (0	.25 KW)*	½ HP (0	.37 KW)*	¾ HP (0	.55 KW)*	1 HP (0	.75 KW)*		WT. LBS.
NUMBER	GPH	LPH	CONSTRUCTION	(MM)	(50 HZ)	PSI	BAR	PSI	BAR	PSI	BAR	PSI	BAR	STYLE	(KG)*
562-S-N3			316SS												
562-S-N4	40	151	C-20	2.0	72	100	7	175	12	250	18	350	25	Simplex	85
562-S-N5	(33.3)	(125.8)	PVC**	(50.80)	(60)	100	′	1/3	12	230	10	330	23	Simplex	(39)
562-S-N8			Kynar**												
565-S-N3			316SS												
565-S-N4	65	246	C-20	2.0	117	100	7	175	12	250	18	350	25	Simplex	85
565-S-N5	(54.2)	(205.0)	PVC**	(50.80)	(97)	100	′	1/5	12	250	10	350	25	Simplex	(39)
565-S-N8			Kynar**												
567-S-N3			316SS												
567-S-N4	80	302	C-20	2.0	144	100	7	175	12	250	18	250	2.5	Cinanday	85
567-S-N5	(66.7)	(251.7)	PVC**	(50.80)	(120)	100	/	175	12	250	18	350	25	Simplex	(39)
567-S-N8			Kynar**												

[†] For optional motors rated ½ HP (0.37 KW) and larger, add flange adapter option, plus end mount motor of choice. IEC metric motor adapter available.

For Higher Capacities & Pressures request Bulletin DP-2000. For Motor Options Available see page 10.

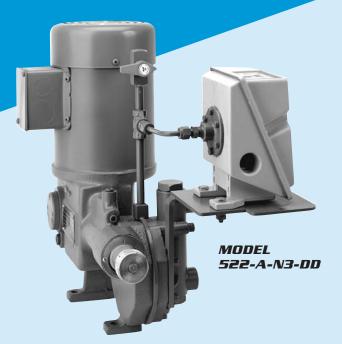
Series 560 "dia-PUMP" Dimensions*



^{*} Standard motor only. For flange mounted motor, add 20 lbs. (9 kg).

^{**} PVC and Kynar® models 150 psi (11 bar) Maximum; 125°F (52°C) Maximum. PVC and Kynar® models do not include Eze-Clean™ valves.

Double Diaphragm With Leak Detection



Neptune offers a double diaphragm leak detection option for applications where contamination of the process fluid by the pump hydraulic fluid cannot be tolerated or where diaphragm failure must be sensed immediately.

The Neptune double diaphragm design uses two "dry" coupled diaphragms. The area between the diaphragms is evacuated.

Hydraulic pumping action is transmitted from one diaphragm to the other without the use of any intermediate fluids.

The diaphragm condition is monitored by a pressure switch which can be wired to shut off the pump and/or sound a remote alarm. This design eliminates conductivity probes which could fail to detect the presence of oil or low conductivity liquids in the event of a diaphragm failure.

The double diaphragm option "DD" is available on all Neptune Series 500, Series 500-A or Series 560 "dia-PUMPS".

Contact the factory for full specifications and applications information.

PLANNING YOUR INSTALLATION

Do not oversize the pump. A metering pump should be sized so the maximum expected flow rate is 80% to 85% of the pump capacity. The minimum capacity should never be planned less than 10% of the pump nameplate rating.

For outdoor applications the pump motor should be sheltered from direct sunlight to prevent overheating. The pump will operate in freezing temperature provided it runs continuously and provided the liquid being pumped will not freeze.

Consider dust, which can ignite, as well as fumes or vapors when determining if a hazardous environment exists.

Always use a suction strainer 40–60 mesh to prevent foreign matter from clogging the check valves.

Provide suction and discharge isolation valves for maintenance. Select large port, quick opening valves.

Calibration Column—A suction draw down column is the most accurate and convenient method to measure pump performance. Relief Valve—The internal relief valve furnished with these pumps is to protect the pump. Provide an external relief valve to protect the system piping.

Back pressure valves are required when the system does not provide sufficient back pressure. Do not depend on a spring-loaded check valve when feeding from bulk tanks to a low-pressure application where the discharge is below the tank.

Pulsation dampener is used when long discharge runs (between the pump and injection point) need dampening to reduce water-hammer or pressure spikes caused by acceleration in the discharge line.

Suction Piping—Keep the piping as short as possible, minimizing bends, elbows and other restrictions. The safest rule of thumb is to use piping one size larger than the pump suction connection. Piping may be the same size as pump suction connection for slow speed pumps used with low viscosity chemical.

Feel free to contact the Neptune factory for application assistance.

For additional information, request Bulletin AB "Sizing and Selecting Metering Pumps" with complete information about planning and installation.

MATERIALS OF CONSTRUCTION

T .				
PART	CODE N3	CODE N4	CODE N5	CODE N8
Liquid Head	316SS	C-20	PVC*	Kynar
Diaphragm	Teflon®	Teflon®	Teflon®	Teflon®
Valve Body & Seat	316SS	C-20	PVC*	Kynar
Valve Checks	316SS	C-20	Glass**	Glass**
"O"-rings	Viton	Viton	Viton	N/A

^{*} PVC head pumps satisfactory for temperatures to 125°F (52°C).

ORDERING INFORMATION

When ordering, please include the following information:

- Description of liquid to be pumped. Include chemical name, concentration, viscosity, pH and temperature of solution.
- 2. Maximum, normal and minimum pump capacity required.
- 3. Discharge pressure required.
- 4. Suction conditions.
- 5. Motor characteristics required.







Low profile flange adapter is 2 inches (50.8 mm) shorter than the standard flange adapter.



NOTES

1. MOTORS:

Series 500 "dia-PUMPS" are supplied with an integrally mounted 1/3HP-1ph-60c-115VAC-TEFC motor as standard. This motor is provided with automatic thermal overload protection.

Pumps may be ordered, less motor, with flange adapter. Specify as follows:

Add Suffix "FALP" to model number to specify NEMA 56C motor adapter.

Add Suffix "FALP-D71" to specify adapter for D71 IEC motor adapter.

Add Suffix "FALP-D80" to specify adapter for D80 IEC motor adapter.

Stock motor options available as follows:

- A. Integrally Mounted 1/2HP-1ph-60c-115VAC-TEFC—Add Suffix "2" to model number. Integrally Mounted 1/2HP-3ph-60c-230/460VAC-TEFC—Add Suffix "3" to model number. Integrally Mounted 0.25 KW-1ph-50c-110/220VAC-TEFC—Add Suffix "251" to model number. Integrally Mounted 0.37 KW-1ph-50c-110/220VAC-TEFC—Add Suffix "371" to model number. Integrally Mounted 0.37 KW-3ph-50c-190-220/380-440VAC-TEFC—Add Suffix "373" to model number.
- B. Explosion-Proof Motors—Flange Mounted

(Class I, Groups C & D; Class II, Groups E, F & G Hazardous Locations) 1/3HP-1ph-60c-115/230VAC-Explosion-Proof—Add Suffix **"EX1"** to model number. 1/3HP-3ph-60c-230/460VAC-Explosion-Proof—Add Suffix **"EX3"** to model number.

- C. Totally Enclosed Fan-Cooled Motors—Flange Mounted 1/3HP-1ph-60c-115/230VAC-TEFC—Add Suffix **"TE1"** to model number. 1/3HP-3ph-60c-230/460VAC-TEFC—Add Suffix **"TE3"** to model number.
- D. Severe-Chemical Duty Motors—Flange Mounted

 1/3HP-1ph-60c-115/230VAC-TENV-Class F, 1.15 service factor—Add Suffix "SXT1" to model number.

 1/3HP-3ph-60c-230/460VAC-TENV-Class F, 1.15 service factor—Add Suffix "SXT3" to model number.

2. CAPACITY:

Capacity figures are listed at 100 psi (7 bar) discharge pressure, based on water using 1725 rpm (60 Hz) motor. Capacity will decrease by approximately 1.5% for each 100 psi (7 bar) increase in pressure.

A. IEC 50 Hz operation (1425 rpm) motor adapter.

3. ACCURACY:

Accuracy is $\pm 1\%$ of full scale over the range of 10% to 100% of capacity.

4. TEMPERATURE/VISCOSITY:

Contact factory for temperatures over 200°F (93°C) or viscosity greater than 1000 centipoise.

For additional information, request Bulletin AB "Sizing and Selecting Metering Pumps" with complete information about planning and installation.

^{**} Special materials available for services not compatible with glass.

Related Accessories by Neptune



Sample Coolers

Request Bulletin SC



By-Pass Feeders

With or without legs to 12 gallons (45.4 liters); 300 psi (21 bar) Request Bulletin BF



Corporation Stops & Quills

CPVC, Kynar, 316SS and Carpenter C20-Cb3 Request Bulletin CS



Packages

Two, three or four pumps pre-piped with choice of accessories. Corrosion resistant poly base. Containment available.

Request Bulletin NS



Injection Quill

CPVC, Kynar, 316SS and Carpenter C20-Cb3 Request Bulletin CS



30 Gal. Mini Tank

Use with any Neptune Hydraulic or Electronic Diaphragm Pump Request Bulletin FDP/CFS



Electronic Metering Pumps

100 to 250 VAC, 50/60 Hz Manual, milliamp or pulse controlled Request Bulletin PZ



Back Pressure Valves

PVC, 316SS and Alloy 20 standard. Can also be used as relief valves. Request Bulletin BP



A 31655

⋖ PVC



Calibration Columns

Standard sizes 100, 250, 500, 1,000 and 4,000 ml.

Request Bulletin CC



Pulsation **Dampeners**

PVC, polypropylene, 316SS and Alloy 20 bodies with Viton or EPDM bladders. Request Bulletin PD



PVC >



EZE-Grab Platforms

Molded polyethylene base provides elevated platform for use indoors or outdoors. Handles allow the pump to be moved easily.

Request Bulletin FDP/CFS



Other Quality Products by Neptune

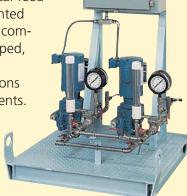


STANDARD SYSTEM

CHEMICAL FEED SYSTEMS

Neptune manufactures a complete selection of standard and custom chemical feed systems. Skid-mounted systems include all components, factory piped, wired and tested.

Flexible configurations to fit any requirements.



Neptune

CUSTOM A

CUSTOM SYSTEM

Built to your specifications or designed to meet your needs

Request Bulletin FDP/CFS



POLYMER BLEND & FEED

Neptune's Polymaster™ dilutes, mixes and thoroughly activates emulsion, dispersion and solution polymers including new high molecular weight products.

Request Bulletin PM



PORTABLE MIXERS

Neptune mixers have been designed, engineered and built to provide long life and trouble-free service in a wide variety of blending/mixing operations.

Request Portable Mixer Catalog



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