

# Chemical Feed Solutions for Agriculture

PRODUCT BROCHURE



Where Innovation Flows

# The Experts in Closed-Containment Systems



Only Neptune offers you the original, patented closed containment system. An investment in a Neptune closed containment system means that your chemigation system will not become obsolete when regulations require containment, as is the case now in a number of states. With a Neptune closed containment system, you protect your investment in your chemigation equipment and operate in an environmentally responsible manner.

## Containment Chemigation Injection Systems

The Neptune closed containment system was designed for application of herbicides, fungicides, insecticides and other strong chemicals that require dilution and mixing. This modern, completely assembled unit addresses concerns about protecting the environment, including ease of housekeeping and spill containment when handling powerful chemicals. A chemical tank, sloped for complete drainage and ease of cleaning, is fitted into a double-walled containment base. A cover encloses and protects the pump, piping and electrical controls.



### FEATURES

- Completely assembled including mixer, valves, strainer, piping, wiring, controls and 12' (3.7 m) power cord
- Polyethylene units are chemical resistant
- Double-wall injection line returns chemical to containment if discharge line ruptures
- Double-wall containment vessel
- Cover excludes rainwater and debris from the containment and allows 100% recapture of uncontaminated product in case of piping leaks or discharge line rupture
- Plugged drain allows recovery of spilled chemical
- Use with simplex or duplex pump
- Through-the-wall double-threaded fitting allows piping of a second chemical from an external tank to the second head of a duplex pump. Also allows connection of an external flush water source or filling tank from bottom.
- Mixer has 316SS shaft and dual propellers
- Calibration cylinder



### ORDERING INFORMATION

(ORDER PUMP SEPARATELY)

MODEL	DESCRIPTION
CIS-60	Complete Containment Chemigation Injection System including 60-gal. tank, mixer, piping, calibration tube and 460VAC controls*
CIS-90	Complete Containment Chemigation Injection System including 90-gal. tank, mixer, piping, calibration tube and 460VAC controls*

\*12 VDC and 115 VAC units available.

◀ Closed Containment Feed System Model CIS-90

# Fertilizer and Chemigation Pumps

INNOVATIVE DESIGN · QUALITY WORKMANSHIP · LONG-TERM RELIABILITY

Neptune has manufactured reliable metering pumps for over 60 years.

## 500 Series Hydraulic Metering Pumps

Bi-Directional Motor option eliminates the need to set rotation when moving between pivots – pump runs in either rotation.

## Chemigation Pumps

- VS-Pumps: Designed for thick fluids to 5,000 cPs and light slurries
- Large internal porting with a large, single-ball, suction check valve
- PTFE diaphragm and FKM O-rings withstand most chemicals
- All 316SS wetted metal parts

## Neptune Series VS Diaphragm Pumps

PUMPS FOR VISCOUS FLUIDS TO 5,000 cPs AND LIGHT SLURRIES.  
INTEGRAL MOTOR: 1/2 HP-3PH-230/460VAC-60HZ-TEFC<sup>1</sup>

MODEL	CAPACITY GPH AT 150 PSI	PISTON DIAMETER (INCHES)	STROKES PER MINUTE
522-VS-N3T	4.0	0.687	72
525-VS-N3T	7.0	0.687	117
527-VS-N3T	8.6	0.687	144
532-VS-N3T	11.0	1.062	72
535-VS-N3T	18.0	1.062	117
547-VS-N3T <sup>2</sup>	30.0	1.062	144

<sup>1</sup> See Motor Options

<sup>2</sup> 547-SE-AG available for non-viscous fluids

## Fertilizer Pumps

EZE-CLEAN™ Valves: Cartridges are removable without disturbing piping

- PTFE diaphragm and FKM O-rings withstand most chemicals
- All 316SS wetted metal parts

## Neptune Series 500 Diaphragm Pumps

- S-Series Pumps for Higher Capacities

INTEGRAL MOTOR: 1/2 HP-3PH-230/460VAC-60-TEFC\*

MODEL	CAPACITY GPH AT 150 PSI	PISTON DIAMETER (INCHES)	STROKES PER MINUTE	STYLE
547-S-AG	29	1.187	144	Simplex
565-S-N3T	65	2.0	117	Simplex
567-S-AG	80	2.0	144	Simplex
568-S-N3T	94	2.0	176	Simplex

\* See Motor Options

Model  
535-VS-AG-FALP-12  
(12-volt motor)



Model  
567-D-AG DUPLEX  
(duplex motor)



Model  
568-S-N3T  
(flange-mounted motor)



Model  
547-SE-N3T

- Duplex: Combine any two models with same stroking speed
- 3-Year Warranty

## MATERIALS OF CONSTRUCTION

INTEGRAL MOTOR	AG-1/2HP-3PH-230/460VAC-60HZ-TEFC
56c frame	N3T-Models 522 to 535 1/3HP-3ph-230/460VAC-60Hz-TEFC
56c frame	N3T-Models 547 to 568 1/2HP-3ph-230/460VAC-60Hz-TEFC
56c frame	FALP-1250-1/2HP-12VDC-TEFC-TENV or FALP-12 for 1/3HP

# Pumps for Drip Irrigation

## PZ Series Electronic Metering Pumps

**AUTOMATIC CONTROL PW AND PZI4 MODELS** allow automatic adjustment of speed from 1 to 300 strokes per minute. PW model allows an additional stroke length adjustment 50 to 100 percent (600 to 1 total turndown). PZI4 model allows an additional stroke length adjustment 20 to 100 percent (1,500 to 1 total turndown)

**PWM AND PZI4 MODELS** accept analog (4-20 mA DC) input to automatically adjust speed. In addition, these models include analog shift function, proportional band control.

**PWP AND PZI4 MODELS** offer pulse signal frequency division and multiplication. PWP models frequency division 1/1 to 1/999 or multiplication 1 to 999. PZI4 models pulse signal frequency division 1/1 to 1/9,999 or multiplication 1 to 9,999.

### AUTOMATIC MODELS INCLUDE:

- External interlock for level switch, remote start, etc.
- Operational display shows speed or operational status

### MATERIALS OF CONSTRUCTION

MATERIAL CODE	HEAD	SEALS	DIAPHRAGM	CHECKS
CL	Acrylic	FKM	PTFE	Ceramic
FTCT	PVDF	PTFE	PTFE	Ceramic
VFC	PVC	FKM	PTFE	Ceramic



### ALL MODELS:

- 300 SPM operation ensures uniform chemical distribution even at low feed rates
- Chemical delivery is constant at any single phase voltage from 94 to 264 VAC, 50/60 Hz and is unaffected by voltage fluctuations
- Waterproof and UV resistant – IP 65

### ACCESSORIES INCLUDED WITH EACH PUMP

- Foot valve strainer, back pressure check valve with injection quill, 4' (1.2 m) suction tubing, 10' (3 m) discharge tubing, 3' (1 m) air release tubing, power cord and 3-prong plug
- Automatic models include signal cable with multi-pin connector

MAXIMUM FEED RATE			MAX PRESSURE PSI	MATERIAL CODE		DISCHARGE TUBE <sup>1</sup>	SHIPPING WT. (lbs.)	MANUAL CONTROL MODEL	AUTOMATIC CONTROL MODEL
GPD	GPH	(ML/M)							
<b>SODIUM HYPOCHLORITE – DEGASSING HEAD (PURGES GAS AUTOMATICALLY, PREVENTS AIR BINDING)</b>									
11.4	0.48	30	140	CL	 AR PZ TYPE	3/8" PE	7	ARPZ-31	PW-31-CL <sup>2</sup>
22.8	0.95	60	115	CL		3/8" PE	7	ARPZ-61	PW-61-CL <sup>2</sup>
38.0	1.60	100	60	CL		3/8" PE	7	ARPZ-12	PW-12-CL <sup>2</sup>
<b>ACIDS – PVDF HEAD (PVDF)</b>									
11.4	0.48	30	140	FTC	 PZ TYPE (FTCT)	3/8" FEP	7	PZ-31-FTCT	PW-31-FTCT <sup>2</sup>
22.8	0.9	60	115	FTC		3/8" FEP	7	PZ-61-FTCT	PW-61-FTCT <sup>2</sup>
38.0	1.60	100	60	FTC		3/8" FEP	7 ( )	PZ-12-FTCT	PW-12-FTCT <sup>2</sup>
137.0	5.70	360	45	FTC		18mm FEP	14	PZD-32-FTCT	PZI4-32-FTCT
205.0	8.50	540	30	FTC		18mm FEP	14	PZD-52-FTCT	PZI4-52-FTCT
<b>GENERAL CHEMICALS – PVC HEAD</b>									
11.4	0.48	30	140	VTCF	 PZ TYPE (VTCF) PZD TYPE (VTCF)	3/8" PE	7	PZ-31-VTCF	PW-31-VTCF <sup>2</sup>
22.8	0.9	60	115	VTCF		3/8" PE	7	PZ-61-VTCF	PW-61-VTCF <sup>2</sup>
38.0	1.60	100	60	VTCF		3/8" PE	7	PZ-12-VTCF	PW-12-VTCF <sup>2</sup>
137.0	5.70	360	115	VTCF		18mm PVC	14	PZD-32-VTCF	PZI4-32-VTCF
205.0	8.50	540	60	VTCF		18mm PVC	14	PZD-52-VTCF	PZI4-32-VTCF

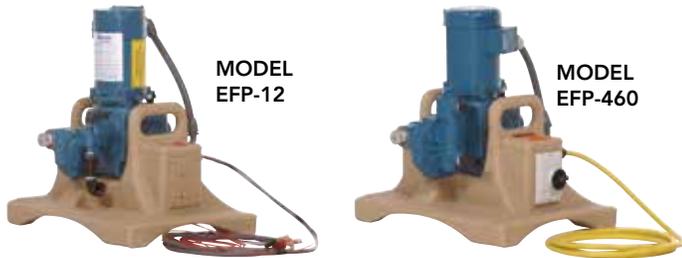
<sup>1</sup> 3/8" Tube is 3/8" O.D. x 1/4" I.D.; 18mm Tube is 18mm O.D. x 12mm I.D.

<sup>2</sup> 3/8" Use model PWM for 4-20MA control or PWP for pulse control

# EZE-Grab

## FERTILIZER PUMP PLATFORMS

A one-piece molded polyethylene platform with handles allows easy handling of fertilizer pumps. Unit integrates pump controls and wiring for complete portability.



### FEATURES

- Strong, lightweight polyethylene base (order pump separately)
- Resistant to corrosion
- Electrical controls for 3-phase, 460 VAC motors are standard; 12 VDC and 115 VAC are available as options
- Manual motor starters provided for AC units include adjustable overload protection
- 12 VDC units include solenoid to automatically disconnect motor from battery when system shuts down
- 12' (3.7 m) power cord

### OPTIONAL ACCESSORIES INCLUDE:

- Suction Assembly
- Discharge Assembly
- Injectors
- Discharge Bleeder Assembly

# "E" Liminator

## CHEMIGATION SYSTEMS

Model CIS-30 combines a Neptune Series 500 hydraulic diaphragm pump with a lightweight, portable, 30-gallon (113.6 L) tank and accessories to offer the "E" Liminator chemigation system.

### THE "E" LIMINATOR ELIMINATES:

- Yield-robbing pests from your fields
- High cost of other application methods
- Waiting for commercial applicators
- Soil compaction and crop damage
- Skips and overlaps by using your center pivot as a spray boom
- Handling cumbersome injection systems when small-volume applications are required

## ORDERING INFORMATION

MODEL	DESCRIPTION
EFP-1	EZE-Grab Fertilizer Platform* – No Controls
EFP-460	EZE-Grab Fertilizer Platform* w/460 VAC Manual Motor Starter
EFP-12	EZE-Grab Fertilizer Platform* w/12 VDC Solenoid Cutoff
ESA-75	3/4" Suction Assembly, 12' long**
ESA-100	1" Suction Assembly, 12' long**
EDA-50	1/2" Discharge Assembly, 12' long
EDA-50C	EDA-50 with Double Wall
EDA-75	3/4" Discharge Assembly, 12' long
EDB-50	Discharge Bleeder Assembly

\* Includes: Suction & Discharge Hose Barb Fitting  
 \*\* See chart below

### MAXIMUM SUCTION LINE LENGTH

CAUTION: MUST USE NON-COLLAPSING TYPE HOSE

GPH	TUBE I.D.			
	1/2"	3/4"	1"	1-1/2"
18GPH	6'	10'	15'	N.A.
30GPH	N.A.	10'	15'	N.A.
40GPH	N.A.	6'	10'	15'
65GPH	N.A.	5'	8'	12'
80GPH	N.A.	N.A.	6'	10'



Fully assembled with pump, tank, piping valves and strainer.

**MODEL CIS-30**  
with 500-E Series  
Pump and Controls

**MODEL CIS-30**  
with 500-VS Series  
Pump and Controls

### EACH CIS-30 "E" LIMINATOR INCLUDES:

- 30-gallon (113.6 L) calibrated tank
- Molded base with four molded handles for portability
- Pump and mixer motor starting switches with overload for motor control, 3 phase, 460 VAC
- Calibration column marked in ounces and milliliters
- Fully assembled with pump, tank, piping valves and strainer
- Order pump separately
  - Use VS Series for heavier suspensions or high viscosity chemicals



## Discharge Assembly

### FEATURES & BENEFITS

- Double-wall construction
- Inner tube is 3/8" (9.5 mm) polyethylene with pressure fittings at each end
- The outer covering is nylon-reinforced PVC tubing sealed only at the discharge end. The outer covering provides abrasion resistance. The outer tube will trap any leakage from the inner tube, returning the liquid to the containment unit
- Injection connection provided with self-sealing quick disconnect coupler
- Optional injection quills available in 316SS or GFPP

## Suction Assembly

### FEATURES & BENEFITS

- Completely piped suction with glass-reinforced polypropylene fittings offers UV and chemical resistance
- A glass-reinforced polypropylene "Y" strainer
- Single-union polypropylene ball valves are provided for:
  - Pump/Tank Isolation
  - Calibration Column Isolation
  - Auxiliary Feed/Drain Connection
- Calibration tube carries dual markings to allow measuring a feed rate in millimeters and ounces and remaining tank contents in gallons
- Auxiliary connection with valve allows pumping unused chemicals directly from the tank to a transportation container



## Injection Quills

### FEATURES & BENEFITS

Injection quills allow chemicals to be injected into the turbulent flow near the center of the line, providing more uniform dispersion.

The Disk Type Check and Seat are located at the tip of the quill to allow constant flushing.

- Provides back pressure to insure metering accuracy
- Prevents back flow
- Prevents bleed through when water pressure is low or line is drained
- Prevents siphoning when metering pumps are off and line is flowing

Mounts directly to a coupling in the sidewall of lines 6" (152 mm) and larger. For smaller lines, the quill may be mounted to a coupling attached to a nipple of the required length to hold the tip of the quill near the center of the line.

PART	LINE CONN. NPT	INLET CONN. NPT	FLOW* GPH	BODY MATERIAL	CHECK MATERIAL	SPRING MATERIAL	MAX. PRESSURE	MAX. TEMP
PPQ50	3/4"	1/4"	50	PP**	FKM	316SS	150psi	120°
SSQ75	3/4"	1/2"	200	SS	FKM	316SS	150psi	150°
SSQ100	1"	3/4"	300	SS	FKM	316SS	150psi	150°

\* At 50 psi differential

\*\* Glass-Filled Polypropylene





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