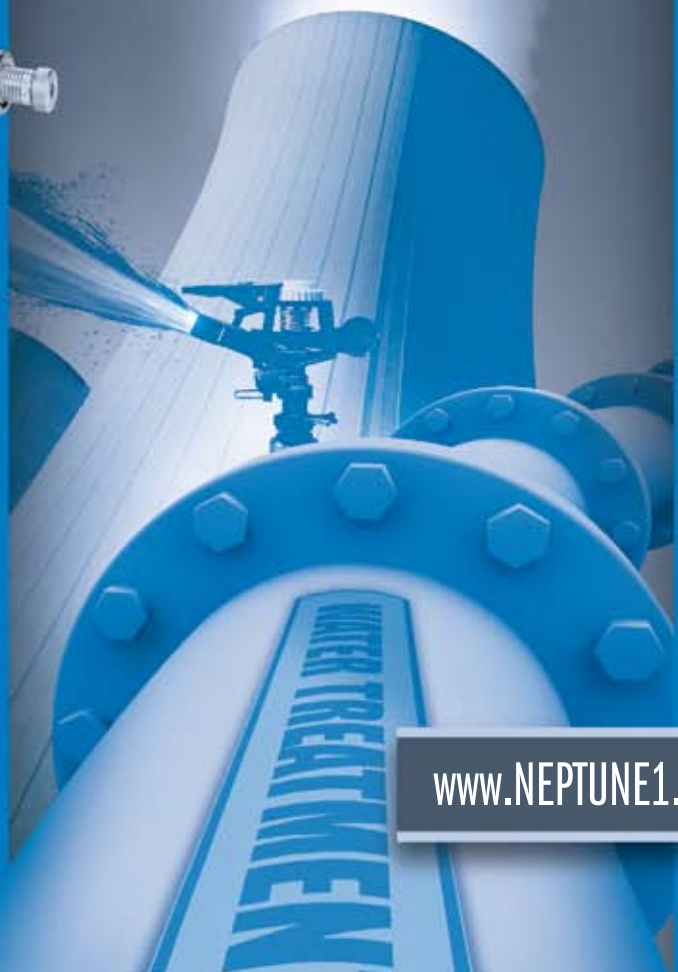




METERING PUMPS

PORTABLE MIXERS  
(Gear Driven & Direct Drive)

POLYMER BLEND SYSTEMS  
(Fluid Dynamics)



[www.NEPTUNE1.COM](http://www.NEPTUNE1.COM)



SERVING  
YOUR NEEDS  
SINCE  
**1961**

ISO 9001 CERTIFIED



**Neptune**<sup>™</sup>  
A DOVER COMPANY

Neptune<sup>™</sup> is a premier manufacturer of chemical metering pumps, chemical feed systems and chemical injection accessories. Neptune's hydraulic and mechanical diaphragm metering pumps are well known for injecting chemicals into boilers and cooling towers, and in water and waste water treatment applications. Major applications also include power generation, oil and gas exploration, petrochemical, and irrigation markets.

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

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





500 SERIES



600/6000 SERIES



7000 SERIES



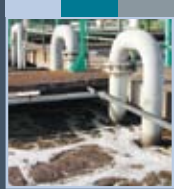
PZ SERIES



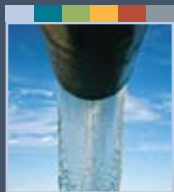
MIXERS



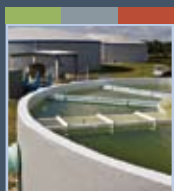
POLYMASTER



INDUSTRIAL WATER TREATMENT



MUNICIPAL WATER TREATMENT



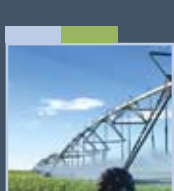
MUNICIPAL WASTE-WATER TREATMENT



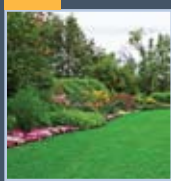
CHEMIGATION



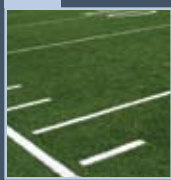
FERTIGATION



AGRICULTURE



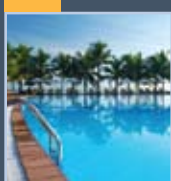
ORNAMENTAL



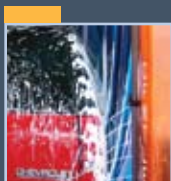
SPORTS TURF



GOLF COURSE



POOL/SPA CHEMICAL DOSING



TRUCK & CAR WASH



AIR POLLUTION CONTROL



CHEMICAL FEED



CHEMICAL PROCESSING



PETRO CHEMICAL



POWER GEN



BOILER TREATMENT



OIL & GAS PRODUCTION



MINING



PROCESS



DRUM MIXING



GAS ODORIZATION



PULP & PAPER



FLASH / BATCH MIXING

# INDUSTRIES SERVED

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





## 500 SERIES HYDRAULIC DIAPHRAGM METERING PUMPS

### FEATURES

- Innovative designs for precision and long term reliability
- Valve cartridges are double ball check design and can be removed without disturbing piping<sup>1</sup>
- Variable oil by-pass stroke adjustment
- Capacity adjustable by micrometer dial while pump is running or stopped
- Bright color contrasted dial protected from corrosion by clear PVC covering
- Motor driven for precise injection
- Optional: Automatic stroke control adjustment and speed adjustment
- Optional: Double diaphragm leak detection available in most models

### TECHNICAL DATA

- Liquid end materials: 316SS, PVC, PVDF, or Alloy 20
- Motor Data: Integral motors standard, D-flange (IEC) and (NEMA) C-frame mountings are available
- Motor Options: Explosion proof, wash down duty, VFD

### PERFORMANCE DATA

- Capacity/Flow @ 60Hz: 0.02 gph (0.076 lph) thru 80 gph (300 lph)  
Duplex Head: to 160 gph (600 lph)
- Capacity/Flow @ 50Hz: 0.016 gph (0.0631 lph) thru 66 gph (250 lph)  
Duplex Head: to 132 gph (500 lph)
- Max. pressure: 3,000 psi (207 bar)

### CERTIFICATIONS & ASSOCIATIONS



<sup>1</sup> Not available in 560 series with plastic heads or 500E pumps; single ball check designs only.





## 600/6000 SERIES HYDRAULIC DIAPHRAGM METERING PUMPS

### FEATURES

- Innovative designs for precision and long term reliability
- Valves can be removed without disturbing piping<sup>2</sup>
- Variable oil by-pass stroke adjustment
- Capacity adjustable by micrometer dial while pump is running or stopped
- Bright color contrasted dial protected from corrosion by clear PVC coating
- Motor driven for precise injection
- *Optional: Automatic stroke control adjustment and speed adjustment*
- *Optional: Double diaphragm leak detection available in most models*

### TECHNICAL DATA

- Liquid end materials: 316SS, PVC, PVDF, or Alloy 20
- Motor Data: D-flange (IEC) and (NEMA) C-frame mountings available
- Motor Options: Explosion proof, wash down duty, VFD

### PERFORMANCE DATA

- Capacity/Flow @ 60Hz: 0.7 gph (2.7 lph) thru 240 gph (900 lph)
- Capacity/Flow @ 50Hz: 0.6 gph (2.2 lph) thru 197 gph (750 lph)
- Max. pressure: 4,000 psi (276 bar)

### CERTIFICATIONS & ASSOCIATIONS



<sup>2</sup> Not available in PVC or Kynar head configurations.



# 7000 SERIES



## 7000 SERIES MECHANICAL ACTUATED DIAPHRAGM METERING PUMPS

### FEATURES

- Self-priming
- Superior performance when pumping chemicals that off gas
- Suction lift exceeding 20ft. (6m)
- Easily handles viscosities in excess of 5,000 CPS
- Capacity adjustable by micrometer dial while pump is running or stopped

### TECHNICAL DATA

- Liquid end materials: 316SS, PVC, PVDF, or Alloy 20
- Motor Data: Integrally mounted<sup>3</sup>, D-flange (IEC) and (NEMA) C-frame mountings available
- Motor Options: Explosion proof, wash down duty, VFD

### PERFORMANCE DATA

- Capacity/Flow @ 60Hz: 0.6 gph (2.3 lph) thru 300 gph (1,140 lph)
- Capacity/Flow @ 50Hz: 0.5 gph (1.9 lph) thru 246 gph (935 lph)
- Max. pressure: 150 psi (10 bar)

### CERTIFICATIONS & ASSOCIATIONS



<sup>3</sup> On 7000 only, not 7100 or 7200 Series.



## PZ SERIES ELECTRONIC METERING PUMPS

### FEATURES

- Leading Pulse metering pump design
- Operates on any single phase voltage from 94 VAC to 264 VAC
- Manual stroke length adjustment<sup>4</sup>
- Digital Setting options can set stroke speed, discharge volume, or by percentage
- Timer and batch functions built in<sup>5</sup>
- 1 to 300 spm (max) speed allows wide turndown range

### TECHNICAL DATA

- PVC, acrylic, stainless steel and PVDF models available
- Manual, 4-20 mA or pulse input controlled
- Models for high viscosity available
- Automatic degassing valve for chemicals that “off” gas
- External interlock available (remote start, level switch, reset)

### PERFORMANCE DATA

- Capacity/Flow: 0.01 gph (0.04 lph) thru 20.6 gph (78 lph)
- Pressures to 220 psi (15 bar)

### CERTIFICATIONS & ASSOCIATIONS



<sup>4</sup> Only on PZi4, PZi8 & PZiG.

<sup>5</sup> Only on PZi8 & PZiG.







## GEAR & DIRECT DRIVE MIXERS

### FEATURES

- Designed for long life and trouble-free service
- Helical gear drive – no clutches
- Grease lubricated gears mean no oil leakage
- Flange, Angle Riser, Cup, Clamp, and Bung mounts available
- Vibration-absorbing pad standard
- Air motor options
- Laboratory grade mixers available
- Mixers available for tank volumes up to 5000 gallons (19,000 liters)
- Optional coatings such as rubber, PVC, or PTFE
- Superior flow coefficients and power consumption characteristics

### TECHNICAL DATA

- 316SS propellers and shafts
- Adjustable entry utilizing indexed ball-and-socket design on some models
- Motor Data: TEFC D-flange (IEC) and (NEMA) C-frame mountings available
- Motor Options: Explosion proof, wash down duty, VFD

### PERFORMANCE DATA

- Horsepower: .05 hp (.04 kw) to 5 hp (3.74 kw)
- Mixing liquids with viscosities to 32,000 CPS
- Gear Drive: @ 60Hz: 350 rpm (50Hz: 288 rpm)
- Direct Drive @ 60Hz: 1750 rpm (50Hz: 1425 rpm)

### CERTIFICATIONS & ASSOCIATIONS







**POLYMASTER SERIES  
POLYMER BLEND & FEED SYSTEMS**

**FEATURES**

- State-of-the-art polymer activation and blending
- Incorporates patented motorized Gatlin mixer
- Prepares polymer solutions from 0.1 to 2.0% concentration
- Dilutes, mixes, and thoroughly activates emulsion, dispersion, and solution polymers including new high molecular weight products
- Large liquid and dry polymer blending units available
- Easy to operate and maintain

**TECHNICAL DATA**

- All electrical controls and flow indicators on front panel
- Automatic units adjust polymer pump flow rate by pacing the speed of the polymer pump via an external 4-20mA signal

**PERFORMANCE DATA**

- Capacity/Flow: 60 gph (227 lph) thru 3,000 gph (11,400 lph)-activated polymer solution
- Min. water pressure required: 25 psi (1.7 bar)
- Max. operating pressure: 100 psi (6.9 bar)

**CERTIFICATIONS & ASSOCIATIONS**



Neptune offers the finest accessories in the industry to compliment its premier chemical injection pumps and complete your chemical injection system needs.

# ACCESSORIES



## INJECTION QUILLS

Used to inject chemicals pumped by metering pumps into the turbulent flow zone of high pressure water or steam lines.

### FEATURES

- Operating pressures to 3,000 psi (207 bar)
- Spring loaded check valve
- Available in 316SS, PVC, PVDF, Alloy 20
- Sizes: 1/2" and 3/4" NPT



## CORPORATION STOPS

Used for injecting chemicals pumped into tanks, mains, cooling towers and process systems providing more rapid uniform dispersion of injected chemical. Corporation Stop allows injection quill to be inserted or removed without having to drain or shut down the system.

### FEATURES

- Operating pressures to 150 psi (10 bar)
- Available in a wide range of materials
- Lever operated stop eliminates the need for a wrench
- Protection chain prevents withdrawal before Corporation Stop is closed
- Available in 316SS, PVC, PVDF, Alloy 20
- Sizes: 1/2" thru 1" NPT or AWWA



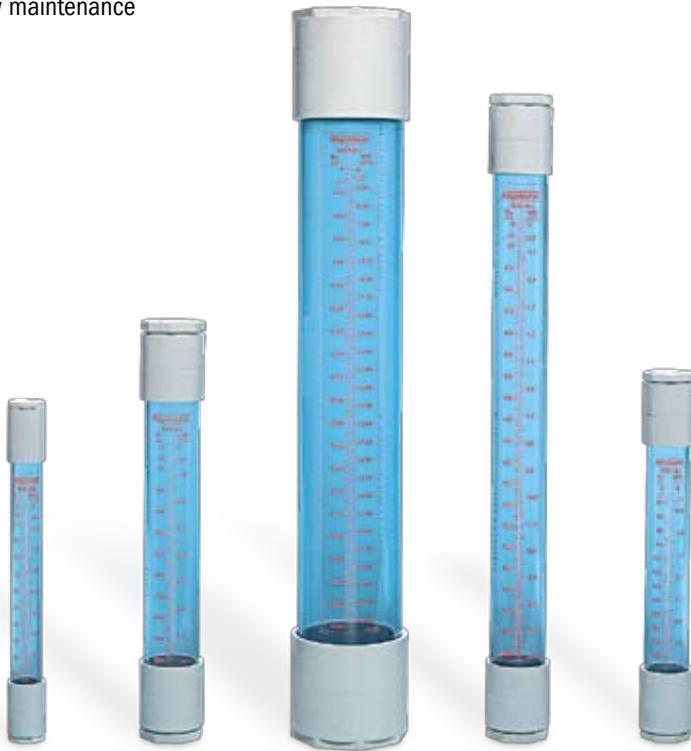


## BACK PRESSURE VALVE AND PRESSURE RELIEF VALVES

Ensure the set pressure is maintained at the pump outlet port (discharge) to assure accurate metering and prevent siphoning. Back Pressure Valves are a required accessory when pumping to a low pressure injection point below the tank level or when pumping from a bulk tank with a high head pressure. Relief Valves protect the piping and system from overpressure to ensure safety and maximize Mean Time Between Repair (MTBR).

### FEATURES

- Available in 316SS, PVC, PVDF, Alloy 20
- PTFE diaphragm
- Field adjustable
- Low maintenance



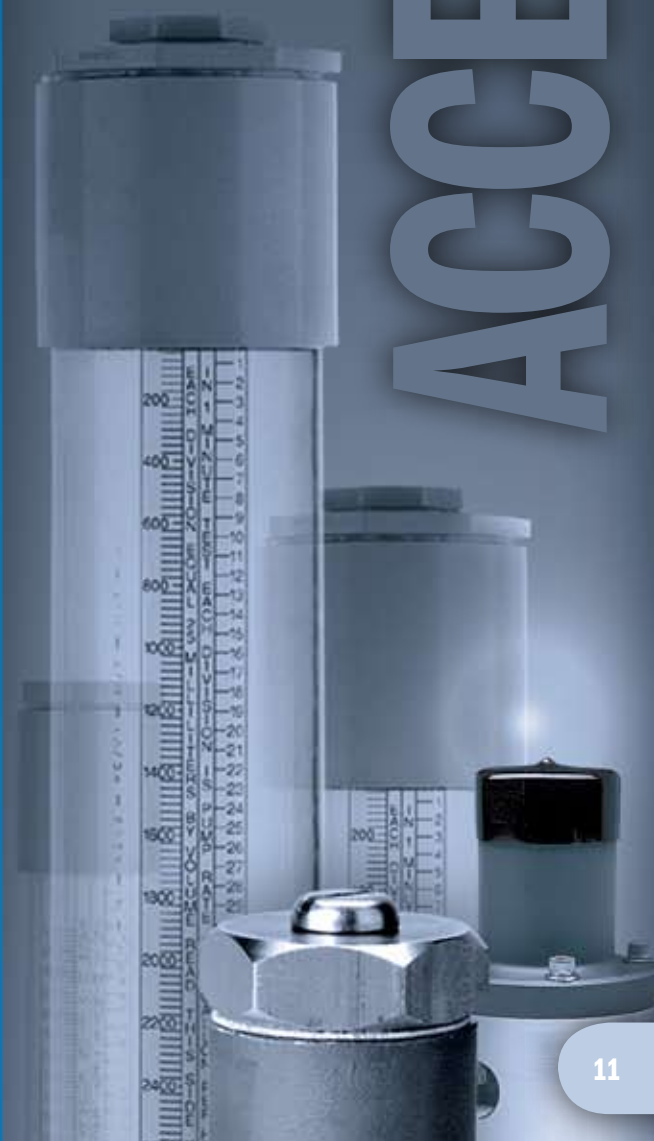
## CALIBRATION COLUMNS

Provide a fast, easy and economical means of checking the flow rate of your chemical metering pump.

### FEATURES

- Rugged PVC construction with slip on top caps for top filling and easy cleaning
- Shielded glass models available for acids and strong chemicals
- Calibration scales are protected from harsh chemical by Mylar lamination
- Capacity: 100 ml thru 4000 ml (dual scales)

# ACCESSORIES



## SAMPLE COOLERS

Cool hot water or steam samples for easy handling and effective sample collection. The Neptune Sample Cooler is suitable for use on hot water, saturated steam, or superheated steam services.

### FEATURES

- Available in all 316SS or carbon steel shell with 316SS tubing
- Rugged all-welded construction
- Design pressures available:
  - 3500 psi (241 bar) at 750°F (399 C)
  - 1500 psi (103 bar) at 600°F (316 C)



## PULSATION DAMPENERS

Installed on the discharge side of positive displacement pumps to remove the pulsating flow caused by the reciprocating action of the pump and ensure a smooth and laminar flow, eliminate pipe vibration and protect in-line instrumentation.

### FEATURES

- Lightweight, compact design
- Equipped with pressure gauge and charging valve
- Easy in-line maintenance
- Pressure ratings to 1000 psi (69 bar) with 4:1 safety margin
- Extensive range of materials available





## CHEMICAL FEED SYSTEMS

Offer complete packaged chemical feed systems with or without containment. Neptune Containment Feed Systems are complete turn-key solutions to all your chemical feed needs, both large and small.

Neptune also offers a complete line of chemical feeders including Bypass and Filter Feeders for Boiler Treatment, Bromine Feeders for Cooling Tower Treatment and Glycol Feeders for Chilled & Hot Water Loops.

### FEATURES

- Provides complete, packaged chemical feed system
- Efficiently contains chemical leaks or spills
- Allows total reclamation of any spilled chemical
- Improves housekeeping and maintenance
- Easy access to pumps
- Containment tank volume is 115% of feed tank volume
- Options:
  - Nimble Skid, Portable Mini-Tank Feeders, Eze Grab Pump Platforms, Economy Feed Systems, Closed Containment Systems



## CUSTOM CHEMICAL FEED SYSTEMS

Neptune Chemical Pump Company offers custom chemical feed systems made to your requirements. Who better to design and engineer your custom chemical feed systems than the manufacturer of all the major components including pumps, tanks, and mixers; as well as the minor components, including: relief valves, calibration columns, corporation stops and injection quills. Neptune can also provide control panels to meet your needs. Neptune is a UL 508 certified control panel shop. Neptune truly offers single source responsibility for the entire chemical feed system.

SERVING  
YOUR NEEDS  
SINCE

1974

ISO 9001 CERTIFIED



A Division of  
Neptune Chemical Pump Company

Incorporated in 1974, Fluid Dynamics™ was an active participant in the design and construction of wastewater treatment plants. A principal owner was also a representative of a popular mechanical polymer blending system but recognized the maintenance and performance problems of this type of system. It was with this experience and knowledge in plant design and polymer systems that Fluid Dynamics shifted its focus to polymer blending technology.

The dynaBLEND™ began in a way many products do, a few creative people with some ingenious ideas. The result was a revolutionary new non-mechanical polymer blending system. Following extensive research and collaboration with leading polymer scientists, Fluid Dynamics refined and patented the dynaBLEND™ polymer blending technology in 1985. Over 25 years and thousands of installations later, Fluid Dynamics stands as one of the premier polymer equipment companies in the world and is staffed with some of the leading polymer equipment engineers in the US. Our technical staff is specifically dedicated to the development and application of polymer equipment. Though attempts have been made to imitate the dynaBLEND™ system. Initial skepticism has turned into praise from all aspects of the industry, from engineers to end users.

Fluid Dynamics was purchased by and became a subsidiary of Neptune Chemical Pump Co., Inc. in 2004. Fluid Dynamics went on to purchase SemblexPolymax™ liquid and dry polymer preparation systems from Severn Trent Services in 2005.



## INDUSTRIES SERVED

Since inception, our company's entire focus has been on the development and application of polymer blending technology. Fluid Dynamics developed the high energy, non-mechanical dry and liquid polymer activation and blending technology for clarification, filter aid, thickening, and dewatering. Today, with the most experienced technical staff in the industry and the highest performing technology available, Fluid Dynamics has established itself as the premier polymer equipment company.



WATER & WASTE TREATMENT

- Sludge thickening and dewatering
- Phosphorous removal
- Enhanced settling
- Coagulation and flocculation
- Filter aids



AGRICULTURE

- Beef, Pork, Poultry
  - Thickening & dewatering in on-site treatment plants
- Vegetable
  - Dewatering of mud from vegetable washing / water recovery/re-use



INDUSTRIAL APPLICATIONS

- Oil & Gas
  - Polymer flooding for enhanced oil recovery
  - Refinery oil water separation (DAF)
  - Dewatering of drilling muds
- Mining
  - Tailings settling
  - Ore concentration



### miniBLEND™ LIQUID POLYMER BLENDING SYSTEM

The miniBLEND™ is a perfect choice for chemical OEM's, mobile sludge dewatering and budget conscious customers. Complicated and costly controls have been eliminated while maintaining the features that make the dynaBLEND™ liquid feeder the most reliable feeder in the industry; the patented hydrodynamic mixing chamber and easy to access polymer check valve.

#### FEATURES

- Lightweight and portable
- Manual or automatic pump speed control
- Choice of diaphragm, peristaltic or remote mounted neat polymer metering pump
- 304 stainless steel frame and mixing chamber
- Reliable, non-mechanical mixing chamber
- Lowest operating cost, most reliable polymer feeders in the industry

#### TECHNICAL DATA

- Dimensions: 18" D (457mm) x 24" W (610mm) x 40" H (1016mm)
- Weight: 100 lbs. (45 kg.)
- Power requirement: 120 VAC, 5-Amp (0.6 kW)

#### PERFORMANCE DATA

- Operating Pressure: 100 psi maximum (6.9 bar)
- Dilution Water 6 to 12,000 gph (23 to 45,420 lph)
- Polymer .02 to 10 gph (.08 to 38 lph)



## dynaBLEND™ LIQUID POLYMER BLENDING SYSTEM

The dynaBLEND™ liquid feeder is the most reliable feeder in the industry. The patented hydrodynamic mixing chamber and easy to access polymer check valve are just a sample of the industry leading features. Knowing the facts behind polymer blending is the first step in understanding the numerous benefits of the dynaBLEND™ technology. Over the years, the spectrum of polymers available has widened and today there are more difficult-to-blend polymers than ever before. This is especially important because some polymer blending systems work well on simple-to-blend polymers, but fail at effectively activating the difficult polymers.

### FEATURES

- Rugged components for harsh/extreme environments
- Diaphragm, Progressive Cavity or Peristaltic metering pump options
- Lightweight portable packages available

### PERFORMANCE DATA

- Dilution Water 12 to 21,000 gph (45 to 79,494 lph)
- Polymer .02 to 300 gph (.08 to 1136 lph)

### CERTIFICATIONS & ASSOCIATIONS



dynaBLEND™





## dynaBLEND™ DRY POLYMER PREPARATION SYSTEM

Compact, high performance dry polymer preparation systems. The dynaBLEND™ technology utilizes a negative pressure conveyance system to transport and disperse the dry polymer prior to wetting.

### FEATURES

- Vacuum induced, non-mechanical polymer conveyance
- Wetting technology reduces plugging

### TECHNICAL DATA

- Polymer transfer distance up to 20' (from the volumetric feeder to the mix tank)

### PERFORMANCE DATA

- 180-gallon stacked tank system
- Up to 12 lb./hr. dry polymer

### CERTIFICATIONS & ASSOCIATIONS



dynaJET™



## dynaJET™ DRY POWDER PREPARATION SYSTEM

The dynaJET™ technology is a high performance dry polymer preparation system that utilizes a blower-assisted conveyance system to transport and disperse the dry polymer prior to wetting.

### FEATURES

- Blower induced pneumatic conveyance
- Non-mechanical wetting
- Provides reliable plug-free wetting of dry water and wastewater treatment chemicals

### TECHNICAL DATA

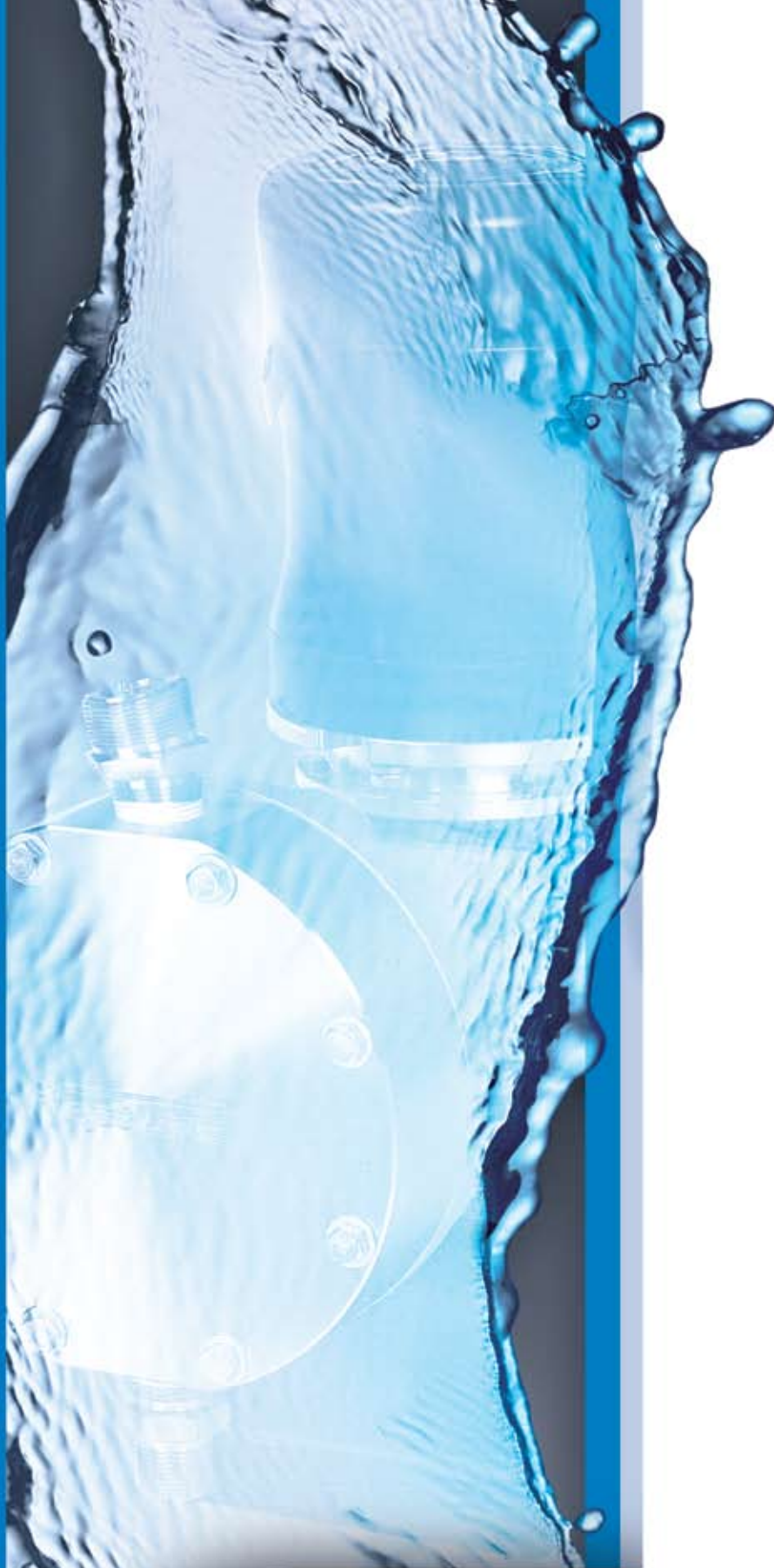
- Stacked Tanks to 750 gallons
- Side + Side tanks to 30,000 gallons
- Polymer transfer distance beyond 20' (from the volumetric feeder to the mix tank)

### PERFORMANCE DATA

- Systems rated from 12 to 1,000 pounds per hour of dry polymer

### CERTIFICATIONS & ASSOCIATIONS





**Neptune**<sup>™</sup>  
A **DOVER** COMPANY

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