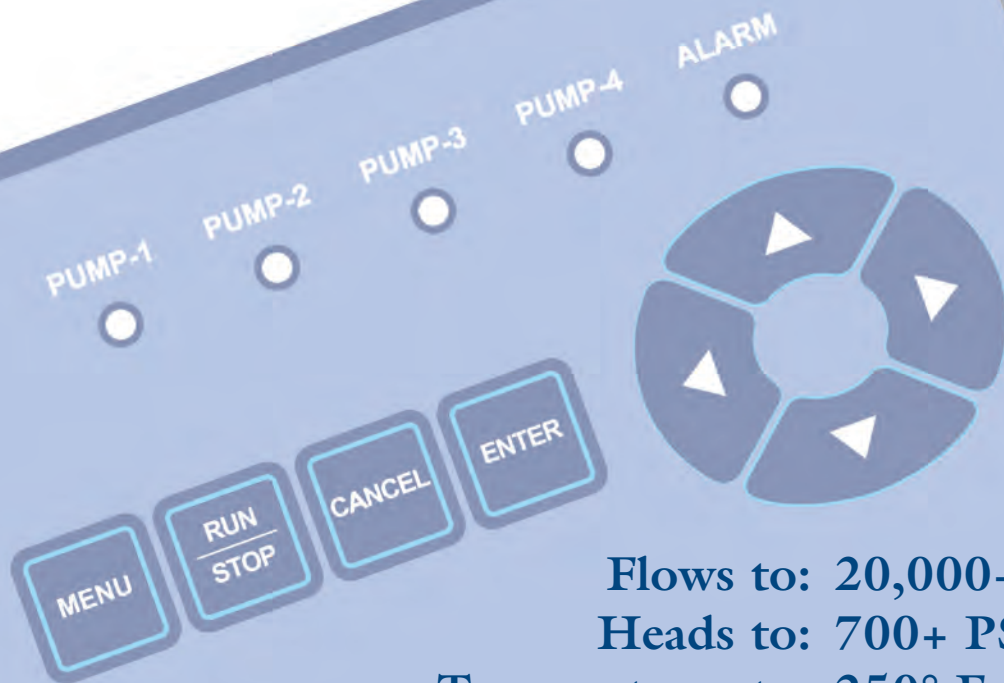




# AMERICAN-MARSH PUMPS

*"DURABILITY BY DESIGN SINCE 1873"*

## 1000 Series Neptune Booster Systems



Flows to: 20,000+ GPM

Heads to: 700+ PSI

Temperatures to: 250° F



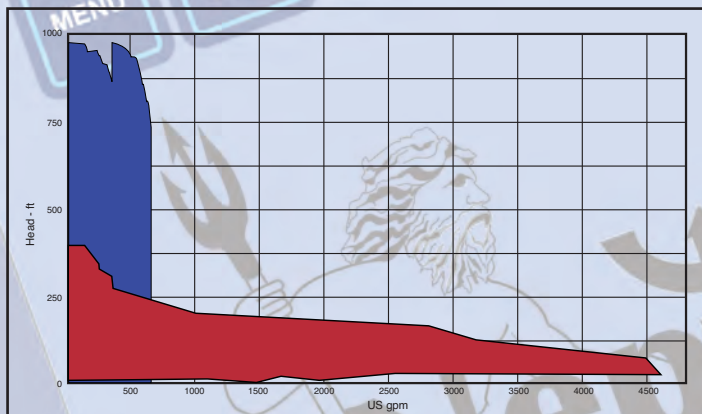
## 140 Years of Pump Manufacturing

American-Marsh Pumps, one of the oldest pump lines in America, are pump products steeped in heritage. Since 1873, the American-Marsh line of pumps has withstood the test of time. During the last 140 years, over 100 varieties of pumps have been designed and built. From steam pumps to centrifugal pumps, American-Marsh pumps have been built to meet the ever changing requirements of society. Over the last century through continuous product development, more American-Marsh models have been retired than most other pump manufacturers have ever produced. Hundreds of thousands of pumps have been made, all designed for longevity, allowing many of them to continue servicing customers over 50 years.

All of our pumps have three superior characteristics; Design, Performance, and Durability. Our engineering department, which includes an in-house pattern shop, designs each pump so that installation and maintenance is easy. Our performances are engineered to meet or beat the competition in each category. For 140

years, American-Marsh Pumps products have provided cost effective solutions by building pumps to last. Durability by design is always the most cost effective solution. From engineering and design to final assembly, experienced people control each step of the manufacturing process with quality control inspections performed at each step. All pumps shafts are heat straightened. All impellers are computer balanced. Pump testing is done in our new state of the art test facility. All of these factors ensure you receive consistent quality product every time.

American-Marsh Pumps has provided quality pump products for over 140 years. At American-Marsh Pumps, we know that long life and superior performance are the keys to satisfied customers. By understanding your needs, we can design products that meet those needs. Our product family reflects years of customer input, product upgrades, redesign and new product development, all focused on meeting and exceeding your expectations.







## Specifications

### 1000 Series Neptune Booster Systems

**Complete Assembly:** The Neptune Booster Systems are completely assembled, wired and tested to the highest American-Marsh Pumps standards. All manifold and controls are factory set up for quick installation in the field. The compact design of the Neptune Booster Systems allow for easy installation through standard doorways already existing in many structures. Depending on system configuration Neptune Systems fit through doorways from 30" through 48" widths.

**Pump Types:** Neptune Booster Systems from American-Marsh Pumps can incorporate nearly any pump type offered today. From gear & end suction pumps through split case, self-primer & vertical turbine pumps systems can be engineered to meet your requirements. The diversity of pump types gives the Neptune Booster System increased flexibility. Mixing of sizes and pump types on the same skid system are easily incorporated into the current Neptune offering. This diverse hydraulic offering allows for Neptune Booster Systems to have capacities beyond 20,000+ gallons per minute and pressures above 700+ pounds per square inch.

**Pressure Sensing Control Panel:** The unique heart of the Neptune Booster System comes from a highly engineered, solid state PLC at the center of operations. The American-Marsh Controls Division has engineered programming that exceeds industry requirements utilizing pressure-sensing logic to correctly operate the system. The lead pump will energize once the system pressure drops below the entered set point. If the lead pump continues to operate and the system pressure remains below the entered set point (beyond the end user entered lead time) the lag pump energizes. Both pumps will run for an entered (and end user changeable) amount of time after which they will sequentially shut down. When demand increases again, the pumps function in a similar manner but with alternation programming enabled reducing wear on the pumping assemblies. The alternation programming scheme spreads pump wear across all pump assemblies allowing for longer pump operation and more run time between pump maintenance.

The Neptune Booster System includes the following features standard:

- Simplex, duplex, triplex or quadplex operation
- Complete lead-lag pump operation
- Automatic pump alternation
- Power on light
- Hand-Off-Auto (HOA) switches for all pumps
- Easily adjustable discharge setpoints
- Continuous suction and discharge measurement
- High pressure shutdown
- Adjustable low pressure shutdown
- Pump hour meter/cycle counter for each pump assembly
- General alarm auxiliary contact
- Enclosure
- Constant speed – NEMA 4 (outdoor)
- Variable speed – NEMA 3R (outdoor)
- U.L. 508A Listed panel

The Neptune Booster System can be supplied in a constant speed or variable speed variant. In the variable speed option, all drives are integral to the Neptune panel and communicate directly through the customized PLC interface.

Also integral to the Neptune Booster System are two pressure transducers, one for suction manifold pressure and one for discharge manifold pressure. These pressure transducers measure pump system parameters and allow the end user to adjust the system accordingly. These two pressure transducers have a 4-20 milliamp output and

directly communicate with the PLC for proper system operation.

The entire interior of the panel is electrically safe has no exposed contacts or exposed conductors. This is a standard safety feature designed to protect the end user. Neptune panels can be used in a variety of voltages to allow for installation anywhere in the world.

**Neptune Interactive Display (NID):** Standard in the Neptune Booster System is a panel mounted multi-line display interface. This interface allows for all set point adjustments, lead-lag timing adjustment as well as any additional custom programming adjustments. The advantage to this type of interface is that all adjustments can be made without opening the panel, subjecting the user to potential electrical shock. This specifiable feature adds an additional level of safety to the overall system. The Neptune Interactive Display is standard on constant speed systems.

Variable speed Neptune Booster Systems feature a backlit VFDC-4000 controller with weatherproof cover. This controller has a PID interface and provides pump alternation based on runtime and pumping cycles. System logic monitors VFD faults and all menu options are password protected to stop unauthorized changes to system operations. Drives in the NID are manufactured by Mitsubishi, a world recognized manufacturer of drive technology. Individual pump circuit breakers are standard providing a high level of protection for the end-user.

**Pressure Reducing Valves (PRV):** In constant speed Neptune Booster Systems pressure reducing valves automatically reduce higher pressures to a constant downstream pressure regardless of changing flow rates or overall system pressures. Pilot controls are integral on the PRVs and can be easily adjusted based on system conditions. Return flow from system variations is prevented due to an internal, non-slam check valve. On systems that utilize variable frequency drives the PRV is not needed and only a non-slam check valve is used.

**Manifolds:** The suction and discharge manifolds are constructed out of 304 stainless steel pipe standard. Options for galvanized steel, 316 stainless steel and all copper manifolds are available upon request. All manifolds utilize the American-Marsh Pumps CPS groove style fittings and couplings for quick and easy assembly of the manifold assembly. The CPS fittings and couplings are UL Listed and FM Approved for pressures up to 400 PSI, ratings that far exceed the overall pressure rating of the Neptune Booster System.

**Butterfly Valves:** Each pump in the Neptune Booster System has a suction and discharge butterfly isolation valve. These valves are used to isolate an individual pump for service while still allowing the system to operate correctly.

**Groutable Steel Base:** Each Neptune Booster System comes standard with a bent channel steel base. The base assembly has integral grout holes present to allow for proper installation in the field. On systems that are highly engineered and larger in size I-beam style base assemblies will be used. All base assemblies incorporate adequate anchor bolt locations to allow for proper and stable installation in the field.

**Hydro-Pneumatic Pressure Tank:** Hydro-pneumatic pressure tanks can be supplied upon request. This tank assembly is designed to maintain system pressure during periods of low demand. This tank assembly can be mounted on the same common skid as the Neptune Booster System, mounted off skid but in the same room as the skid system or can be mounted remotely based on field requirements.

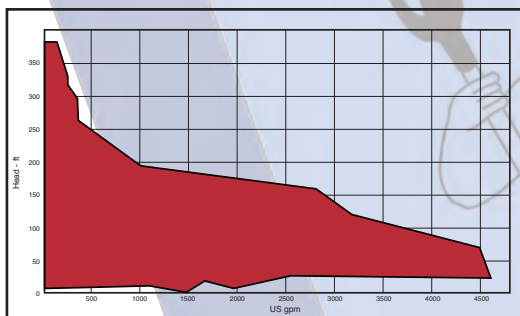
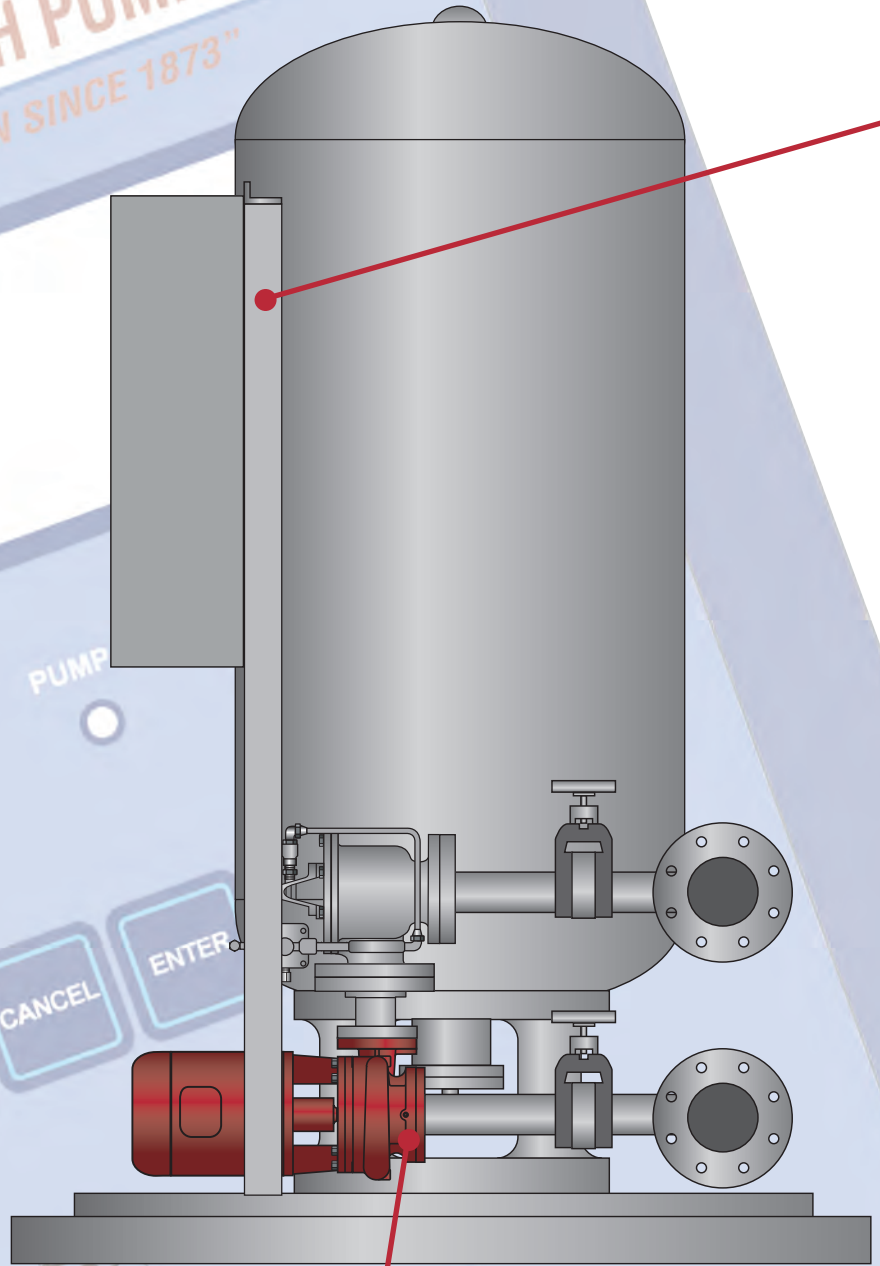
# Model 1000

## Engineered Duplex Pump Package

Sizes: 1/2" to 12+ "  
Flows: 20,000+ GPM  
Heads: 700+ PSI  
Temp: 250° F

### Services:

-  Aerospace
-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  OEM
-  Oil & Gas
-  Petro-Chemical
-  Pharmaceutical
-  Semiconductor
-  Water & Wastewater

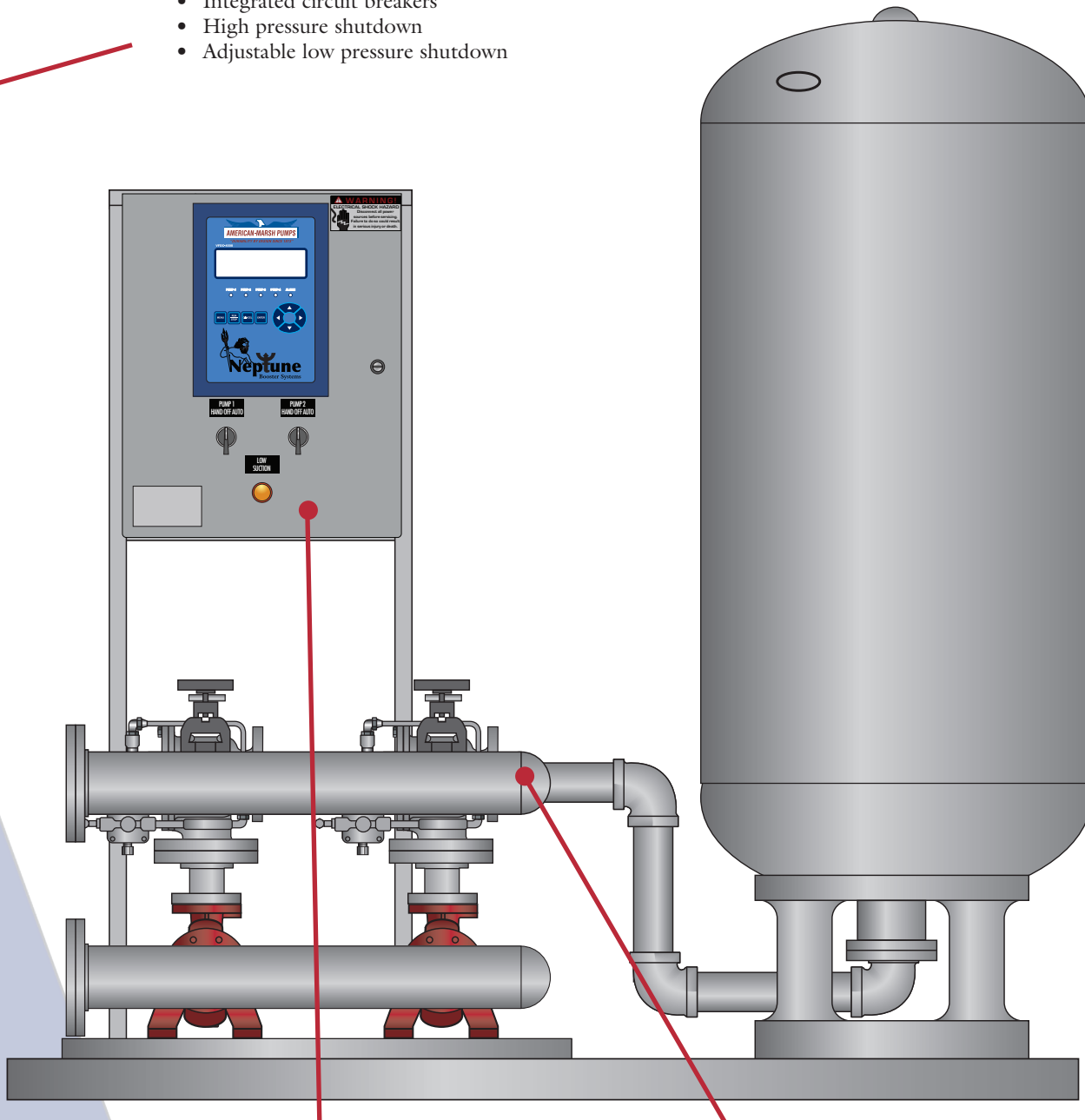


### Pump Offerings

- Wide variety of pump types available
- Large hydraulic offering
- Simplex, duplex, triplex & quadplex arrangements available
- Optional metallurgies allows for a wide diversity in pumping fluids

## Control Package

- Constant or Variable Speed
- Simplex, duplex, triplex or quadplex operation
- Complete lead-lag pump operation
- Automatic pump alternation
- Power on light
- Hand-Off-Auto (HOA) switches for all pumps
- Easily adjustable discharge setpoints
- Continuous suction and discharge measurement
- Integrated circuit breakers
- High pressure shutdown
- Adjustable low pressure shutdown
- Pump hour meter/cycle counter for each pump assembly
- General alarm auxiliary contact
- Enclosure:
  - Constant speed – NEMA 4 (outdoor)
  - Variable speed – NEMA 3R (outdoor)
- U.L. 508A Listed panel



## Neptune Interactive Display (NID)

- Multi-line display interface
- Displays set point adjustments
- Lead-Lag time adjustments
- Variable speed systems feature:
  - A backlit VFDC-4000 controller
  - PID interface
  - Alternation based on pump runtime and cycles
  - Monitors VFD faults automatically
  - Mitsubishi drives are standard
  - Individual pump circuit breakers for enhanced protection

## Manifold Packages

- Feature 304 stainless steel or copper construction
- Grooved couplings allow for clean, weld-free construction
- Quick assembly and disassembly when maintenance is required
- Rated to pressures well beyond system ratings
- Constant speed systems have integral pressure reducing valve located in discharge manifold package



# Model 1000

## Engineered Triplex Pump Package

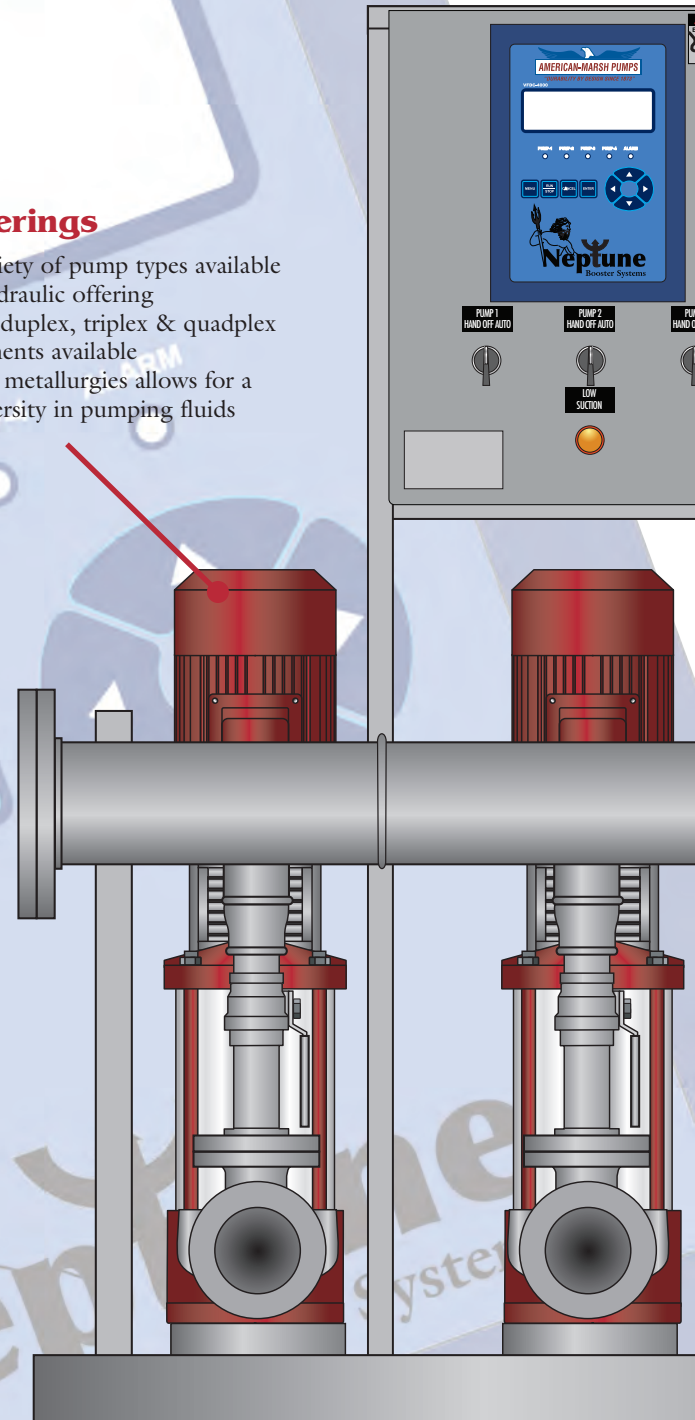
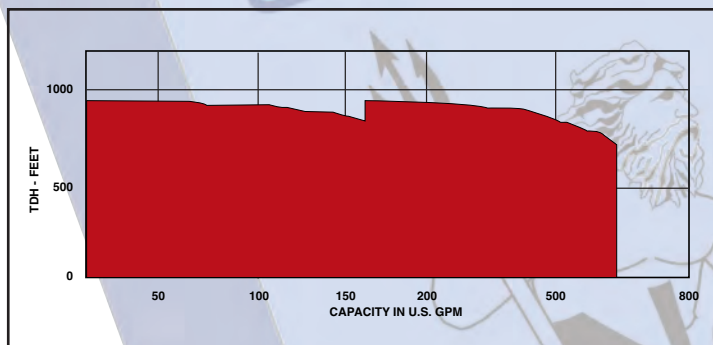
Sizes: 1/2" to 12+"  
Flows: 20,000+ GPM  
Heads: 700+ PSI  
Temp: 250° F

### Services:

-  Aerospace
-  Agriculture & Irrigation
-  Building Trades
-  Chemical
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  OEM
-  Oil & Gas
-  Petro-Chemical
-  Pharmaceutical
-  Semiconductor
-  Water & Wastewater

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## Neptune Interactive Display (NID)

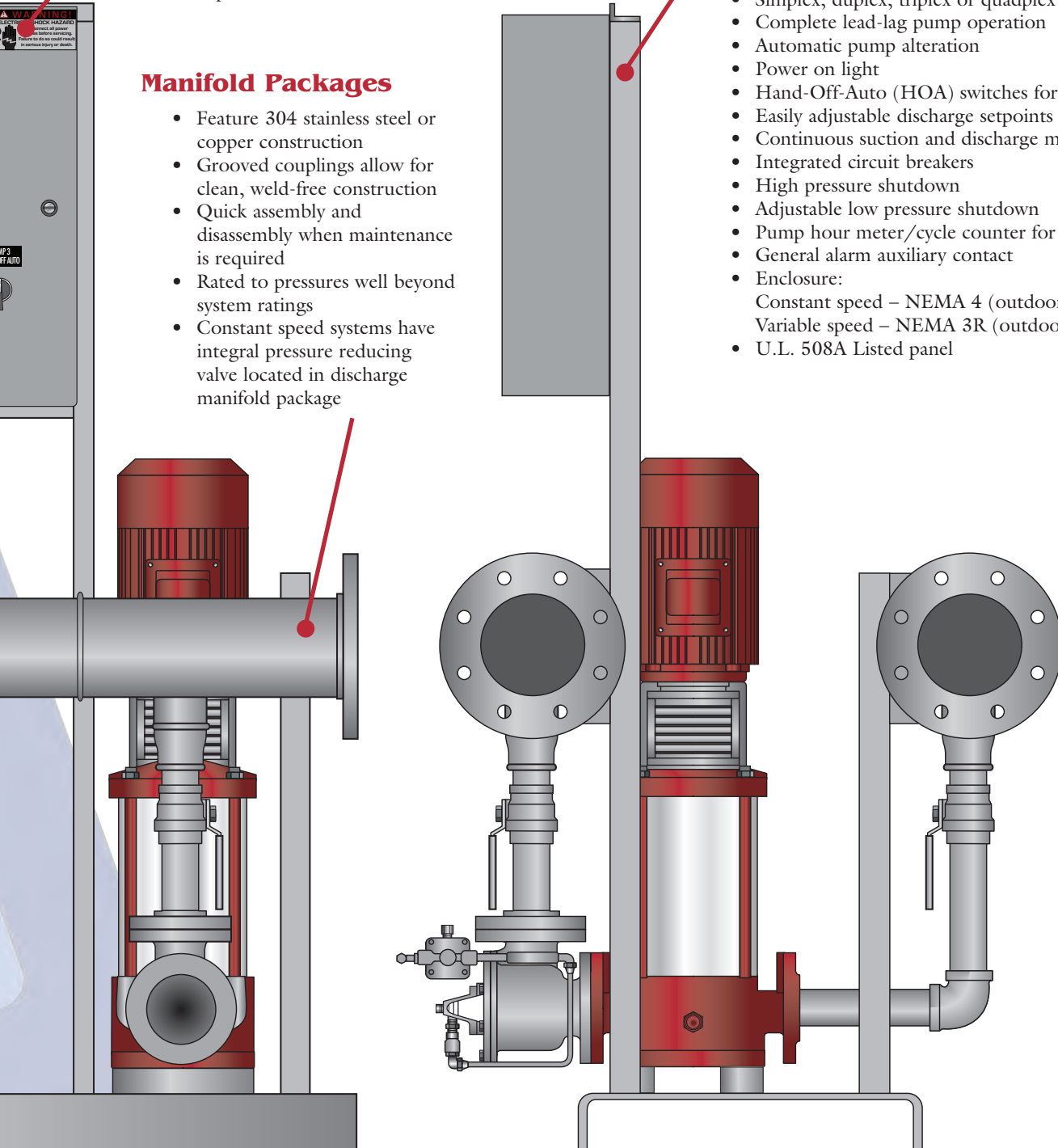
- Multi-line display interface
- Displays set point adjustments
- Lead-Lag time adjustments
- Variable speed systems feature:
  - A backlit VFDC-4000 controller
  - PID interface
  - Alternation based on pump runtime and cycles
  - Monitors VFD faults automatically
  - Mitsubishi drives are standard
  - Individual pump circuit breakers for enhanced protection

## Manifold Packages

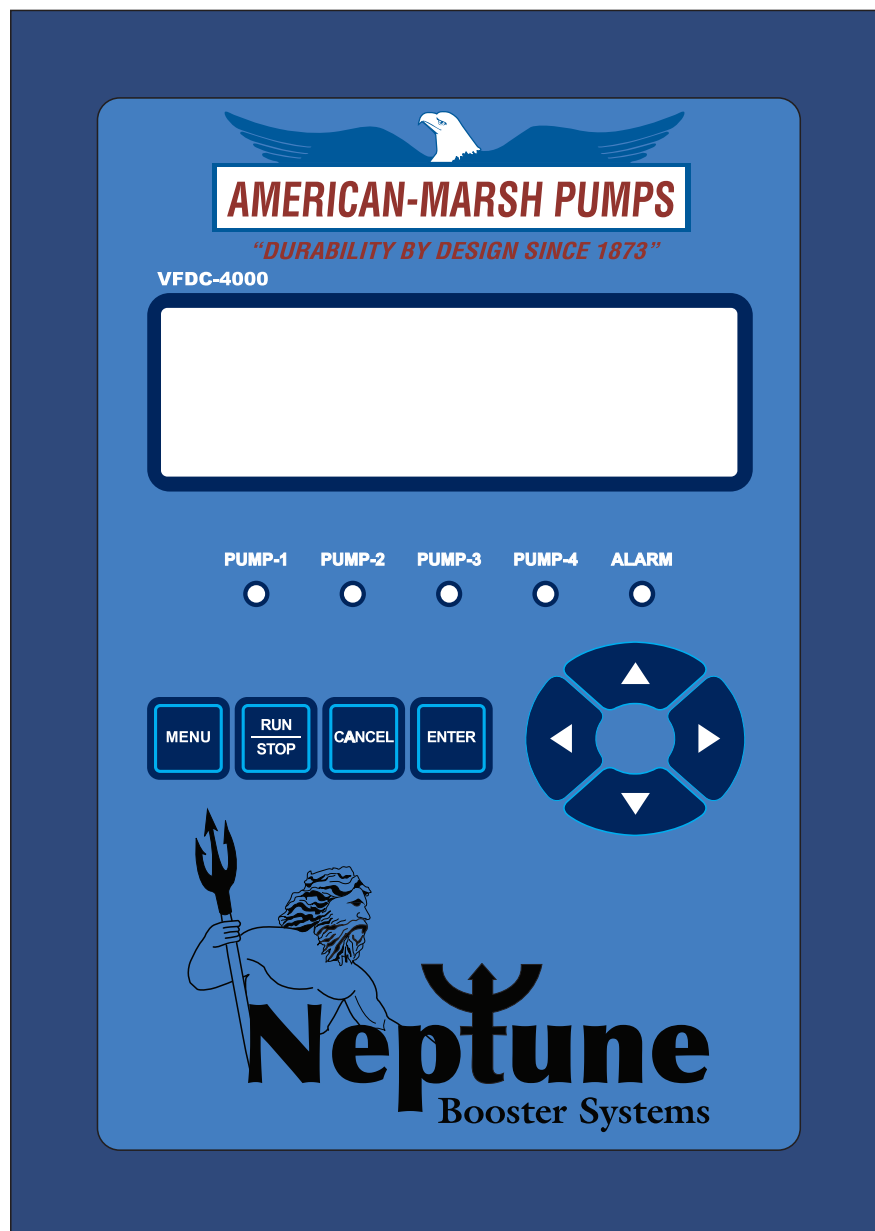
- Feature 304 stainless steel or copper construction
- Grooved couplings allow for clean, weld-free construction
- Quick assembly and disassembly when maintenance is required
- Rated to pressures well beyond system ratings
- Constant speed systems have integral pressure reducing valve located in discharge manifold package

## Control Package

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- Pump hour meter/cycle counter for each pump assembly
- General alarm auxiliary contact
- Enclosure:
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  - Variable speed – NEMA 3R (outdoor)
- U.L. 508A Listed panel



Our long tradition of quality pump manufacturing began in 1873 making us one of the first pump manufacturers in this country. **American-Marsh Pumps** provides the user dependability and durability. Durability by design is always the most cost effective solution.



#### OTHER PUMP PRODUCTS

##### SPLIT CASE

To 32+" Discharge  
30,000+ GPM, 550'

##### VERTICAL TURBINE

To 42+" Bowl  
85,000+ GPM, 2500+'

##### MULTI-STAGE

To 8" Discharge  
2500 GPM, 2500+'

##### SELF PRIMER

To 12" Discharge  
6400 GPM, 200'

##### VERTICAL SUMP

To 12" Discharge  
9800 GPM, 985'

##### American-Marsh Pumps

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FX: (901)860-2323

##### Distribution/Service Centers:

**Nebraska:** 113 South Lincoln Avenue, Hastings, NE 68901 (800)408-7167  
**California:** 3269 East North Building D, Fresno, CA 93725 (800)288-7167  
**Florida:** 2805 Badger Road, Lakeland, FL 33811 (800)444-7167  
**Louisiana:** 1626 Walker Road, Scott, LA 70583 (800)506-7167  
[www.american-marsh.com](http://www.american-marsh.com)