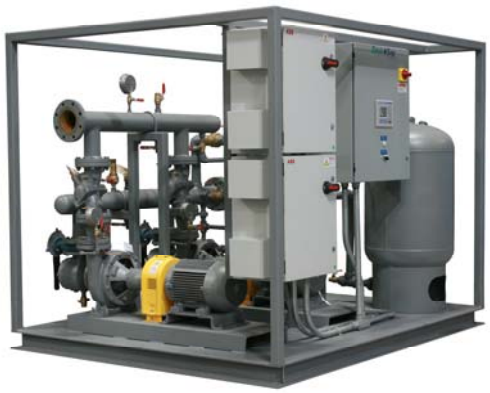
Model # PPS-VC

Variable Speed Packaged Pumping System

for Closed Systems



c UL us LISTED PACKAGED PUMPING SYSTEMS

c UL us LISTED INDUSTRIAL CONTROL PANELS

Unfired Pressure Vessels

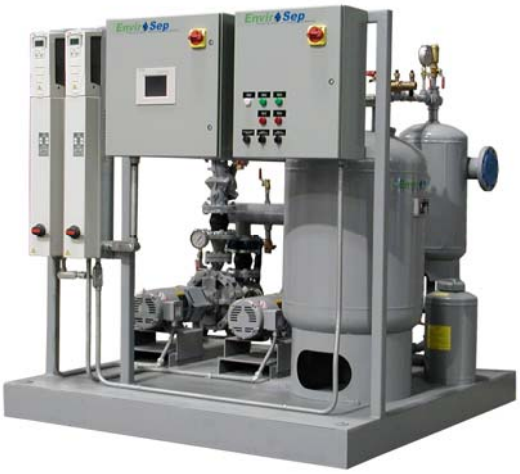
Pressure Piping

TYPICAL SPECIFICATIONS	
System Configuration	Closed Circuit (any qty. of Pumps)
Fluid Temperature	50 to 240 deg F (Other Ranges Available)
Standard System Flow Rate	5 to 3000 GPM
Standard Power	460 V (Other Voltages Available)
Dimensions	Based Upon Customer Requirements
Working Pressure	100 to 600 psig (6.8 to 40 barg)
Working Temperature	< 240 deg F (< 116 deg C)

EnviroSep PPS-VC, Variable Speed Packaged Pumping System for Closed Systems is a UL-Listed, variable speed, factory manufactured and fully tested system used in fluid handling systems which are configured in closed circuits. The ***Model PPS-VC*** provides significant ***power savings*** by automatically controlling the speed of the pump(s) based on the actual system demand. Transmitters signal the ***PPS-VC*** System Controller which controls a ***Variable Frequency Drive*** for each pump to the appropriate speed. The ***Model PPS-VC*** may be configured for pumping a variety of fluids at a controlled flow rate in any industrial or commercial application. Process fluid enters a common, System Header and by use of centrifugal pumps is delivered at a controlled flow rate to a common, System Discharge Header. Air-free, fluid flow is controlled by use of a manually adjusted flow control valve. Also, the ***PPS-VC*** allows for system thermal expansion based on the system volume. A UL-Listed, Industrial Control Panel with single-point power connection is pre-wired to all electrical sources. Each unit is custom-engineered to meet specific system requirements. The ***Model PPS-VC*** speeds installation and start-up of fluid handling systems which provides significant savings to contractors, engineers, and facility owners.

Standard Features:

- **UL Listing of Complete Package and Control Panel**
- **Base-mounted, End-suction Pumps**
- **Differential Pressure Gauges**
- **Vortex Air Separator, *with Auto Air Vent***
- **Bladder Expansion Tank**
- **Triple Duty Valves & Suction Diffusers**
- **UL Listed NEMA 12 Industrial Variable Speed System Controller**
- **Variable Frequency Drives**
- **Make-up Water Assembly, *with Safety Relief Valve***
- **PLC-based System Controller, *if required***



Options:

- **Internet Connectivity for Remote System Monitoring**
- **Interface for Facility Management System**
- **Auto Pump Staging with PLC Controls**
- **NEMA 3R/4/4X/7/9 Rating**
- **Seismic or Vibration Isolators**
- **Combination Air & Dirt Separator**
- **ANSI or API Process Pumps**
- **Split-coupled Vertical Inline Pumps**
- **Chemical Bypass Feeder**
- **Flexible Pump Connectors**
- **Panel Mounted Gauges**
- **Specific Performance Criteria (Upon Request)**

National Board

Process Piping & Power Piping

P. O. Box 857 Georgetown, SC 29442 ● Phone: 843-546-7400 Fax: 843-546-7407

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Model # PPS-VC

Model PPS-VC
Packaged Pumping System Order Form

Specify the following parameters:

I. System Flow Rate = _____ GPM

II. System Differential Pressure Required = _____ psid

III. System Inlet Pressure = _____ psig

IV. System Temperature (Min/Max) =_____°F

V. System Fluid =_____ Type

VI. System Electrical = _____V _____ Hz

VII. System Volume = _____ Gal.

Note: Fluid medium assumed to be water, unless otherwise specified.

SYSTEM OPTIONS

Stand-by Pump

Variable Frequency Drive
w/ Manual Bypass
w/ Automatic Bypass

Pump Suction Diffuser

Vertical In-line Pump

Split-coupled Vertical In-line Pump

Closed-coupled end-suction Centrifugal Pump

Horizontal Split Case Pump

Multistaged Centrifugal Pump

Auto standby pump start on lead pump failure

Auto Pump Alternation

Remote start connection

System drain valves

Flexible Pump Connectors

Vibration Isolation

Panel-mounted Differential Pressure Gauges

Pump Run-time Hour Meter

Outdoor-use Rating

Outdoor Cabinet

System Inlet/Outlet Isolation Valves

System Flow Switch

Differential Pressure Switch across Pump suction/ discharge

Regardless of system size, temperature, pressure, fluid medium, or space requirements, ***EnviroSep*** can provide solutions to all specialized needs.

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Model #
PPS-VC

Typical Specifications for PPS-VC

Furnish and install one *EnviroSep* Model PPS-VC- [A] - [B] - [C] - [D] Packaged Pumping System with the system capacity to pump _____ GPM of _____ (fluid) from_____psig to _____psig. .

KEY:
[A] = Model # (GPM)
[B] = # of pumps (1,2,3,etc.)
[C] = Parallel (P) or Stand-by (S) pump designation
[D] = Manual (M) or Automatic (A) alternation for multiple pumps

GENERAL - This package shall be factory assembled with pump(s), fabricated steel frame, interconnection piping (welded per ASME Section IX certified welders), UL-listed Industrial Control Panel factory wired for single-point field connection per NEC.

PUMPS-Pump(s) shall be single, end-suction type with radically split, top center-line discharge, self-venting casing. Pump construction shall be cast iron, bronze fitted and shall be fitted with a long-life, product lubricated, drip tight mechanical seal, with O-ring seat retainer. Impeller shaft to be 416SS fitted with a SS shaft sleeve and be supported by two heavy duty ball bearings. The design shall allow back pull out servicing, enabling the complete rotating assembly to be removed without disturbing casing piping connections. The pump shall be mounted on a rigid, single base plate and by flexible with guard to the motor. Seal shall be rated for continuous duty at 270^{0}F, motor shall be open drip proof, NEMA MG-1 with 1.15 service factor

TRIPLE DUTY VALVE- System shall include, on the discharge of each pump, a combination valve incorporating three functions in one body: tight shut-off, spring closure type silent non-slam check, and flow measured/throttling. Valve body shall be ductile icon with two ¼" NPT connections on each side of the valve seat. The valve disc shall be bronze plug disc type with high impact engineered resin seat to ensure tight shut-off and silent check valve operation. Valve stem shall be SS with flat surfaces provided for adjustment with open end wrench.

AIR REMOVAL EQUIPMENT- System shall include one tangential air separator with internal stainless steel collector tube. Connections to be flanged with a rating of 150 psig. System shall be equipped with ¾" Pressure Relief Valve, ¾" Pressure Regulating Valve, ASME Compression / Expansion Tank (sized by or provide system volume and temperature difference), and tank fitting, sight glass, and tank drain connections to tank

SUCTION DIFFUSER- System shall include, on the suction of each pump a suction diffuser with cast iron body, outlet guide vanes and removable SS strainer.

CONTROL PANEL - System shall include one (1) UL - Listed, NEMA 12, Industrial Control Panel with single-point power connection, pre-wired to all electrical components. Panel shall have thru-the-door fused disconnect; magnetic circuit breaker supplementary motor protector with fast-closing contacts; Siemens S7-300 or Allen Bradley ControLogix Programmable Logic Controller with Color Touch Screen; Ethernet or Dial-up Modem for Remote Access; UPS Control Power Back-up; control transformer; Automatic Alternator (if required). Operation of each pump shall be Hand-Off-Auto with external connection to terminal blocks. When standby pump(s) are used, the standby pump(s) shall manually/automatically (customer specified) start on primary pump failure. All internal wiring shall be placed in conduit.

VARIABLE FREQUENCY DRIVE – Variable Frequency Drive shall be variable torque AC inverter enclosed in NEMA 1 or 12 enclosure. Standard features shall include circuit breaker disconnect, Hand-Off-Auto selector switch, manual potentiometer (speed pot), door-mounted keypad, run relay contacts, fault relay contacts, and top/bottom conduit entry. Drive bypass shall be provided as standard with Drive-Off-Bypass selector switch. Class 20 overloads are included.

MANUFACTURER - Shall assume system liability, and performance guarantee and warranty all equipment on system for 12 months after initial start-up.

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