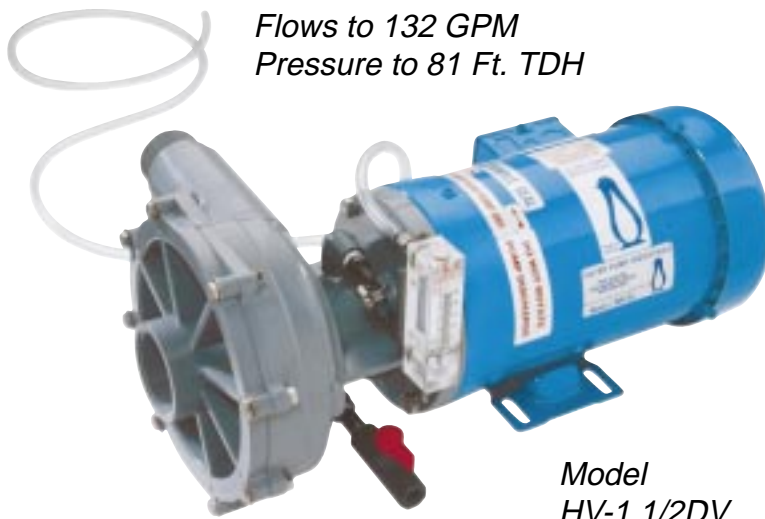


Series HV

CPVC Horizontal Centrifugal Pump



Flows to 132 GPM
Pressure to 81 Ft. TDH

Model
HV-1 1/2DV

Features:

- True Volute Design
- High Efficiency
- Energy Saving
- Higher Flow vs. Pressure
- No Metal Contact

Recommended Applications:

- Plating, Anodizing and Electropolishing
- Fume Scrubbing, Pollution Control and Evaporators
- Recirculation, Mixing, Agitating, Spray/Rinse and Filtering
- Water and Waste Treatment
- Photographic Processing and Developers
- PCB Manufacturing
- Chemical Processing

Penguin series HV horizontal end suction centrifugal pumps are designed to the latest hydraulic technology. A true volute design provides an energy saving pump because less horsepower (HP) is required. The HV series pump has a higher flow versus pressure, yet very smooth and quite operational. The volute design helps to reduce vibrations and shock losses, premature shaft fatigue and bearing failures, and radial thrust loads while prolonging mechanical seal life. The rear impeller vanes are designed to help assure proper lubrication of the mechanical seal cavity while balancing axial forces hydraulically.

Penguin series HV pumps are easy to assemble and disassemble. The pump bracket and half the volute are one piece. Constructed of CPVC, there is no metal contact with the solution being pumped. If the HV series pump should accidentally run dry excessively, usually the seal insert can be replaced in lieu of replacing the entire pump housing/motor bracket assembly, thus saving costly repair/replacement dollars.

Motor and Shaft

Totally enclosed fan cooled (TEFC) motors with extended one-piece rotor/shafts are standard on most models. All standard metallic shafts are sleeved in CPVC plastic for no metal contact while optional 316SS shafts without plastic sleeves are readily available from stock upon request. Single phase motors are wired 115V and supplied with a cord and three-prong plug. Three phase motors are shipped unwired.

Elastomers

Ethylene propylene (EPR) is the standard elastomer for o-rings and seal components. Optional viton is readily available.

Seals

Single Mechanical (External)

Standard single mechanical seals are type 21, general pur-

pose, that rotate with the shaft against a stationary mating face. The liquid being pumped acts as a seal lubricant, therefore, it is imperative that the seal be assured of positive flow of liquid at all times. Standard materials of construction are carbon/high purity ceramic/EPR. Options include viton elastomers and siliconized carbide seal faces. **Pump inlet pressures are limited to 10 psi maximum for external seals.**

Double Mechanical (External)

Standard double mechanical seals employed are essentially two single mechanical seals placed back to back with a common spring between them and water flush assembly, which includes flow meter, flow valve, and hose. The required 3-5 gph (gallons per hour) water should be set to maintain an internal seal chamber pressure 2-4 psi higher than the minimum operating pressure of the pump. Standard seal materials of construction are carbon/high purity ceramic/EPR, front and rear. Options include viton elastomers and siliconized carbide seal faces. Double seals are generally recommended for elevated temperatures, electroless plating baths, crystalline solutions, highly corrosive applications, and for abrasive solutions with a high percentage of solids present. Double seals allow the pump to run dry for a limited time period without damage provided the water flush is on prior to pump start-up.

Single Diplo (Internal)

The Diplo seal has no metallic spring and can be used in highly corrosive applications or where contaminants may clog conventional designs. These internal seals can also handle higher suction pressures than external seals upward to 60 psi maximum, while also allowing the pump to run dry for a short time period without excessive damage. Standard seal materials of construction are carbon/high purity ceramic/viton elastomer.

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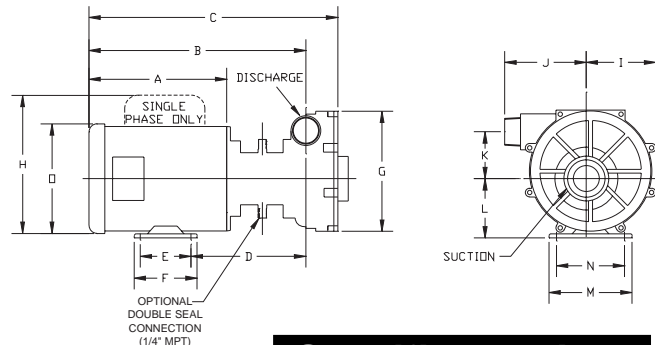
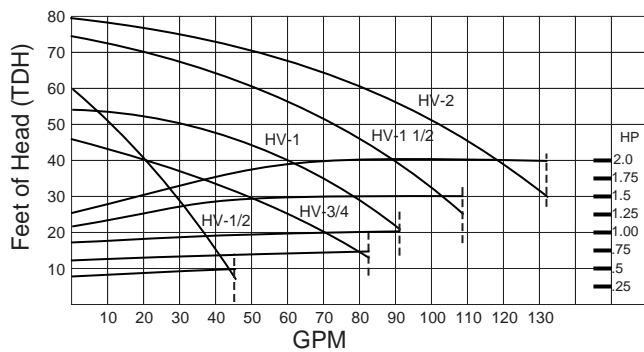
Specifications

| Pump | | | | | Motor | | | | | Dimensions | | | | |
|----------|----------------|---------------|------------|------------|-------|------|-------------|-------|-------|-------------|----|-----|-----|----|
| Model | Max Flow (gpm) | Max Head (ft) | Suction | Discharge | HP | RPM | Volts | Hertz | Phase | Amps | Ht | Wth | Lth | Wt |
| HV-1/2 | 45 | 59 | 1 1/2" FPT | 1" MPT | 3/4 | 3450 | 115/230 | 60 | 1 | 10.0/5.0 | 11 | 11 | 26 | 38 |
| | | | | | 1/2 | | 208-230/460 | 50-60 | 3 | 1.9-1.8/0.9 | | | | 43 |
| HV-3/4 | 82 | 46 | 2" FPT | 1 1/2" MPT | 3/4 | | 115/230 | 60 | 1 | 10.0/5.0 | | | | 44 |
| | | | | | 1 | | 208-230/460 | 50-60 | 3 | 2.7-2.6/1.3 | | | | 46 |
| HV-1 | 91 | 54 | 2" FPT | 1 1/2" MPT | 1 | | 115/230 | 60 | 1 | 12/6 | | | | 46 |
| | | | | | 1 1/2 | | 208-230/460 | 50-60 | 3 | 3.3-3.2/1.6 | | | | |
| HV-1 1/2 | 109 | 74 | 2" FPT | 1 1/2" MPT | 1 1/2 | | 115/230 | 60 | 1 | 15/7.5 | | | | 48 |
| | | | | | | | | 50-60 | 3 | 17.8/8.9 | | | | |
| HV-2 | 132 | 80 | 2" FPT | 1 1/2" MPT | 2 | | 208-230/460 | 50-60 | 3 | 4.8-4.6/2.3 | | | | 48 |
| | | | | | | | | 50-60 | 3 | 6.0-5.8/2.9 | | | | |

Dimensions

| Model | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|----------|-------|--------|--------|-------|---|---|---|-------|-------|-------|-------|-------|-------|-------|---|
| HV-1/2 | 8 3/4 | 13 3/4 | 16 1/2 | | | | | 8 1/4 | | 4 5/8 | | | | | |
| HV-3/4 | 9 1/4 | 14 1/4 | 17 | | | | | 9 | 4 1/2 | 5 3/8 | 3 1/8 | 3 1/2 | 6 1/2 | 4 7/8 | 7 |
| HV-1 | | | | 7 5/8 | 3 | 4 | 8 | | | | | | | | |
| HV-1 1/2 | 9 3/4 | 14 3/4 | 17 1/2 | | | | | | | | | | | | |
| HV-2 | | | | | | | | | | | | | | | |

Performance



Specific Gravity Increased HP

| Model | Motor HP | Specific Gravity |
|----------|----------|------------------|
| HV-1/2 | 1/2 HP | 1.0 |
| | 3/4 HP | 1.1-1.5 |
| | 1 HP | 1.5-2.0 |
| HV-3/4 | 3/4 HP | 1.0 |
| | 1 HP | 1.1-1.3 |
| | 1 1/2 HP | 1.4-2.0 |
| HV-1 | 1 HP | 1.0 |
| | 1 1/2 HP | 1.1-1.5 |
| | 2 HP | 1.5-2.0 |
| HV-1 1/2 | 1 1/2 HP | 1.0 |
| | 2 HP | 1.1-1.3 |
| | 3 HP | 1.3-2.0 |
| HV-2 | 2 HP | 1.0 |
| | 3 HP | 1.1-1.5 |

Nomenclature

| HV | 1/2 | S | E | 3/4 |
|--------------------------|-----------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Horizontal Diffuser Pump | Horsepower | No. of Stages | Seal Material | Optional increased horsepower |
| | 1/2 = 1/2 3/4 = 3/4 1 = 1 1 1/2 = 1 1/2 2 = 2 | S = single mechanical N = single diplo D = double | E = ethylene/propylene carbon/ceramic V = viton carbon/ceramic S = viton silicon carbide/silicon carbide | 3/4 = 3/4 1 = 1 1 1/2 = 1 1/2 2 = 2 3 = 3 |

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PENGUIN  **FILTER PUMP INDUSTRIES**