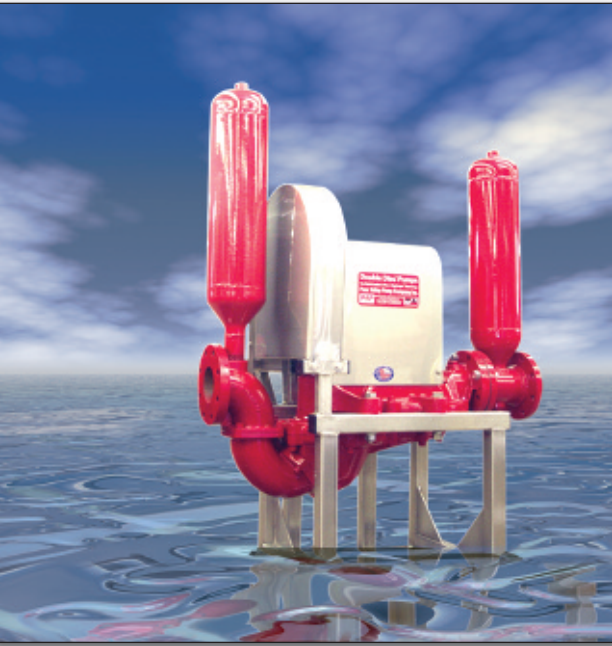


# Double Disc™ Pumps

The Ultimate in Positive Displacement  
Pumps for the Municipal, Industrial,  
Chemical and Food Processing Industries







## The Operating Principle Behind the Double Disc™ Pump

**T**he Double Disc™ pump combines the performance features of a positive displacement pump and the principle of "Induced Flow" to provide superior versatility in fluids handling. Based on a "Free Diaphragm™" technology, the pump utilizes a unique principle of operation where the discs perform the duties of both diaphragm and valve, providing a double acting, non clogging, pumping action.

Through an arrangement of connecting rods and a camshaft, a reciprocating action of the discs is created, forming a large cavity between the discs. This cavity is filled and exhausted in a continuous flow.

The large valve like discs mean that solids and rags can be handled without loss of pumping action. The valve like discs have large seating areas that provide for low internal velocities, extending the pump wear life on abrasive sludges and slurries.

The fluid chamber is sealed with flexible trunnions which eliminates packings, mechanical seals, and requires no flushing water or other forms of lubrication. The large diameter discs are proven to handle large solids, rags, plastics, etc., that would cause other pumps to fail.

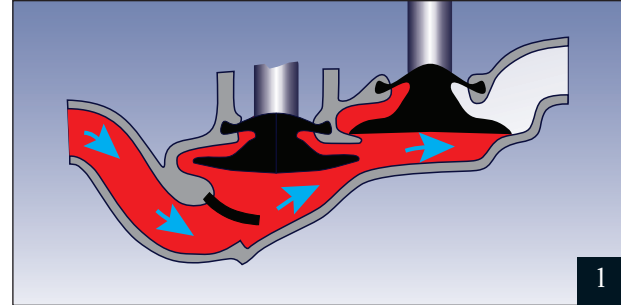


Figure 1. The suction disc (left) is lifted from its seat creating a vacuum. The cavity between the discs is filled during the reciprocating motion of the suction disc. The discharge disc is sealed.

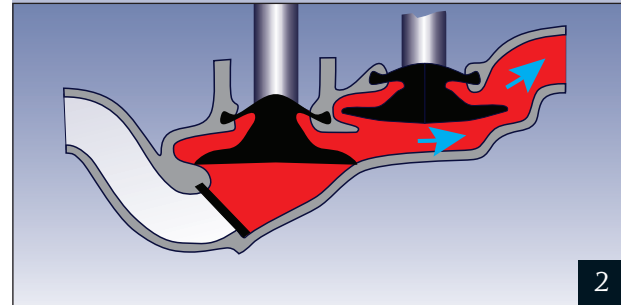


Figure 2. The reciprocating action then causes the suction disc (left) to seat and create a seal in the flow path and a downward motion of the discharge disc (left) forces the discharge.

Powerful Pumps  
Primed **for**  
Performance

Connecting Rod Bearings (2)

Pedestal Bearings (4)

Drive Shaft

Eccentric Cams (2)

Discharge Connecting Rod

Suction Connecting Rod

Modular Aluminum Pedestal (2)

Trunnions (2)

Reinforced Universal Disc (2)

Discharge Port

Hinged Housing Design Allows  
Discs to be Replaced without  
Disturbing Piping

Full Port Rigid Clack Valve

Two Piece Swan  
Neck for Quick  
Inspection and  
Clean Out

Suction Port

Flow Direction

5



## Pump Features

- Flow Rates from 2 - 1400 GPM
- Maintain-In-Place Design
- Only 5 wetted parts
- Flow through construction
- Runs dry without damage
- 100% Manufactured in U. S.
- Passes up to 2-inch solids and line size semi-solids (depending on model)
- Wide range of materials of construction
- Corrosion and abrasion resistant
- Sealless design-no packings or mechanical seals, no seal flush water required
- No check valves, no fouling problems
- See individual pump data sheets for specific technical information



## Municipal Applications

- Thickened Sludge
- Scum Transfer
- Sampling
- Primary Sludge
- Belt Filter Press Feed
- Digested Sludge
- Centrifuge Feed
- Waste Activated Sludge
- Lime Slurry
- Lime/Alum Sludge
- Rotary Press Feed
- Screw Press Feed
- Truck Loading



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## Industrial Applications

- Passified Chemical Sludge
- Waste Oil Sludge
- Fiberboard Filter
- Raw Latex
- Clay Slurries
- Chicken Process Waste Materials
- Paper Pulp Transfer
- Drilling Mud
- Food Waste Slurries
- Polymer Transfer (shear sensitive)
- Holding Tank Transfer
- Coal Slurry
- Hog Fat
- Chemical Filler Materials
- Chocolate Waste Product Transfer
- Portable Trash/Cleanup
- Potato Waste



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Figure 3. Belt Press Feed – Florida

Figure 4. Thickened Sludge Transfer – Texas

Figure 5. Belt Press Feed – Texas

Figure 6. Primary Sludge – Pennsylvania

Figure 7. Centrifuge Feed – Pennsylvania

Figure 8. Belt Press Feed – Massachusetts

Figure 9. Digested Sludge Transfer – Pennsylvania



## Maintenance & Operating Costs

The Double Disc pump does not rely on close tolerances within the pumping chamber to generate flow. This design advantage eliminates the wear and high maintenance costs associated with other positive displacement pump designs. With no mechanical seals or packing glands and sealed for life bearings the pump requires no routine maintenance.

When parts replacement is required, our patented Maintain-in-Place housing design allows the inexpensive wetted parts to be replaced without dismantling the piping. The integral hinged housing design provides easy access for housing removal leading to decreased labor costs and minimal downtime.

## Our Maintain-In-Place System Provides Fast & Easy Disassembly/ Reassembly

Complexity adds costs! In fact, you may not be repairing your pumps in house but sending them out for repair given the complexity and labor hours required. The Double Disc pump, with the patented Maintain-in-Place hinged housing design, reduces the complexity and allows the pump to be rebuilt in-situ without disturbing the piping. With only 5 wetted components and a gasket set, the pump can quickly be placed back into service.

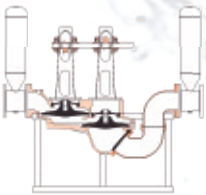


Figure 10. Assembled unit with suction and discharge pulsation dampeners.

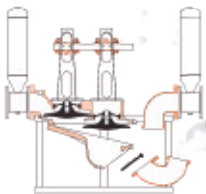


Figure 11. Removal of lower swan neck and suction housing. Suction housing hinged to intermediate housing allowing easy removal.

## Sales & Service

Penn Valley Pump Company, Inc. has an extensive distributor and manufacturer's representative sales force located throughout the United States and Canada. Each one is factory qualified to provide excellent service and support.

In addition to this localized service we offer a variety of customer oriented programs to ensure your satisfaction with our product:

- Trial purchase program
- Demonstration program
- Rebuild/Exchange program
- Portable and Trailer mounted units
- All spare parts available for same day shipment
- Custom configurations to fit existing installations



Figure 12. Suction disc removed after removal of suction housing. Easy access given clearance under frame.

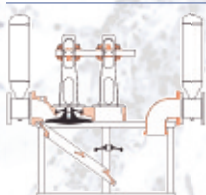


Figure 13. Removal of intermediate housing for access to suction trunnion and discharge disc. Housing is hinged to discharge housing allowing for easy removal.



Figure 14. Removal of discharge disc after removal of intermediate housing.

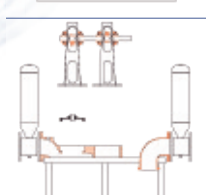


Figure 15. Removal of drive assembly to replace discharge trunnion.

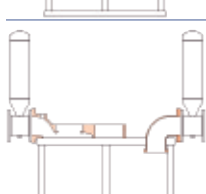


Figure 16. Removal of components leaves discharge housing in the frame while suction and discharge piping have not been disturbed.



Figure 17. Final assembly of a Model 4DDSX30 pedestal.



Figure 18. Precision body castings awaiting assembly.



Figure 19. New Model 6DDSX76 Double Disc Pumps assembled, inspected and awaiting shipment.





Figure 20. Penn Valley Pump Company headquarters located in Warrington, Pennsylvania.



Figure 20. Assembly of a Model 6DDSX76 pedestal bearing and drive shaft.

## About Penn Valley Pump Company, Inc.

**P**enn Valley Pump Company, Inc. has been developing, manufacturing and marketing the Double Disc pump for the municipal, industrial and chemical industries since 1980. Through continuous research and development we have created a range of positive displacement solids handling pumps that provide unmatched durability, reliability and performance compared with other positive displacement pump styles.

With thousands of units installed and operating in the United States alone, the Double Disc pump is considered by many to be the premier product for feeding and transferring tough to handle sludges and slurries. We have achieved this level of acceptability by utilizing our extensive experience in the hydraulic and mechanical aspects of pumping installations to properly apply our equipment where it is best suited.

When you purchase a Double Disc pump you buy our long term commitment. We size a unit specifically for your application, selected by engineers with over 45 years combined experience in designing, engineering, manufacturing and applying this exciting technology.

Contact us today and let Penn Valley show you how the Double Disc range of pumps can meet your pumping needs.

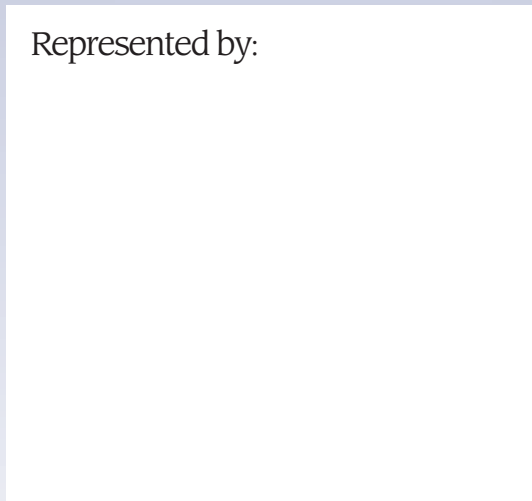
Let Us Pump Your Sludge. Then You Be the Judge.

**Put our pump to the test. There's no cost to you. Take the PVP Challenge and prove it to yourself.**

We are so confident in our pumps' ability to reduce your overall maintenance and labor costs that we will let you take one for a test drive... for FREE. You provide the application and we'll provide the unit. It's that simple!



Represented by:



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