



# ***Double Disc Pump Comparison and FAQs***

***A Guide For Consulting Engineers,  
Operators and Pump Distributors***

***Compare Wastecorp Sludge Pro® Double Disc Pump  
Vs. Penn Valley® Pump***

***V. 09/17***

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Get double disc pump info at <http://www.wastecorp.com/disc-pumps.html>

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Features	Wastecorp Sludge Pro®	Penn Valley Pump Co. Technology
<b>Technology</b>	<ul style="list-style-type: none"> <li>Positive displacement reciprocating diaphragm pump per ANSI/HI standards</li> </ul>	<ul style="list-style-type: none"> <li>Positive displacement reciprocating diaphragm pump per ANSI/HI standards</li> </ul>
<b>Principle of Operation</b>	<ul style="list-style-type: none"> <li>Positive displacement pump using reciprocating motion and check valves to displace liquid from suction to discharge side of pump</li> </ul>	<ul style="list-style-type: none"> <li>Positive displacement pump using reciprocating motion and check valves to displace liquid from suction to discharge side of pump</li> </ul>
<b>Solids Handling Capability</b>	<ul style="list-style-type: none"> <li>3" pump passes 1½" spherical solids</li> <li>4" pump passes 1 ¾" spherical solids</li> <li>Suction and discharge flow path are of equal sizes</li> </ul>	<ul style="list-style-type: none"> <li>3" pump passes only ¾" spherical solids</li> <li>4" pump only passes 1" spherical solids</li> <li>Suction flow path diameter is larger on suction and smaller on discharge. This may result in higher likelihood of blockages</li> </ul>
<b>Disc</b>	<ul style="list-style-type: none"> <li>Manufactured of ductile iron that acts as the pumping element in conjunction with the check valves</li> <li>Disc has Lifetime warranty</li> <li>Discs never contact the pump body</li> </ul>	<ul style="list-style-type: none"> <li>Disc manufactured of elastomeric components that act as the pumping element as well the check valves</li> <li>Discs are wear item and have limited warranty</li> <li>Discs directly compress on pump body and debris, which can prevent sealing and cause disc deformation</li> </ul>
<b>Check Valves</b>	<ul style="list-style-type: none"> <li>Polyurethane ball checks encased in rugged cast iron valve chamber.</li> </ul>	<ul style="list-style-type: none"> <li>Rubber check valve encased between two pump bodies. Very difficult and labor intensive to access</li> <li>A third separate inlet check valve is also required to aid in priming</li> </ul>
<b>Trunnion</b>	<ul style="list-style-type: none"> <li>Sealing device that flexes with the mechanical reciprocating motion to seal liquid within pump body</li> </ul>	<ul style="list-style-type: none"> <li>Sealing device that flexes with the mechanical reciprocating motion to seal liquid within pump body</li> </ul>
<b>Pumping Action</b>	<ul style="list-style-type: none"> <li>Reciprocating pumping with extended stroke length operating at low speed. Stroke length and speeds are directly proportional in positive displacement pumps</li> <li>Low operating speeds (below 110RPM) provide less load on drive components and extended life on trunnion and disc by millions of cycles.</li> <li>All reciprocating pumps create pulsing flows and use pulsation dampeners to reduce pulsation</li> </ul>	<ul style="list-style-type: none"> <li>Short stroke length requires very high speeds to achieve same flow rate</li> <li>Check valves and trunnion have to work up to 5 times faster at higher speeds to obtain same flow</li> <li>Operating speeds up to 500RPM which can cause faster wear of components</li> <li>All reciprocating pumps create pulsing flows and use pulsation dampeners to reduce pulsation</li> </ul>
<b>Power Drive Arrangement</b>	<ul style="list-style-type: none"> <li>Standard mechanical gear reducer direct drive coupled to pump main shaft</li> <li>Superior torque ratings over belt and pulley systems</li> <li>Pump shaft connected by flexible coupling assembly to drive arrangement</li> <li>Coupling aids to handle any shock loads and prevent backlash and noise</li> </ul>	<ul style="list-style-type: none"> <li>Standard antiquated belt and pulley technology</li> <li>Belts tend to slip at higher torque ratings</li> <li>Pump shaft connected by taper bushing to drive arrangement</li> <li>Pump/drive arrangement take brunt of any shock loads and backlash</li> <li>Offers gear reducer direct drive as an option</li> </ul>
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>Coupling provides easy access to drive pedestal assembly for replacement of trunnions and disc (one process)</li> <li>No need to crawl under pump to maintain trunnions or discs</li> <li>Easy access to check valves through quick-opening valve covers.</li> </ul>	<ul style="list-style-type: none"> <li>Check valves and suction trunnion only accessed from below pump</li> <li>Drive pedestal must be removed from belt drive system to replace discharge trunnion</li> <li>To replace the internal clack valve, the suction elbow must be disconnected from pump housing</li> </ul>
<b>Base Frame</b>	<ul style="list-style-type: none"> <li>Heavy-duty fabricated steel channel with supporting pedestal feet for direct mounting to floor (optional 304SS foot base)</li> </ul>	<ul style="list-style-type: none"> <li>304SS lightweight tube frame with pedestal feet</li> </ul>
<b>Installations</b>	<ul style="list-style-type: none"> <li>Wastecorp has been manufacturing reciprocating positive displacement pumps for over 24 years</li> <li>References available for Sludge Pro pumps upon request.</li> </ul>	<ul style="list-style-type: none"> <li>???</li> </ul>
<b>Manufacturing Capability</b>	<ul style="list-style-type: none"> <li>ISO 9001 and ISO 14001 certified facility.</li> <li>Made in North America</li> </ul>	<ul style="list-style-type: none"> <li>No ISO quality control certification</li> <li>Made in ???</li> </ul>
<b>Warranty</b>	<ul style="list-style-type: none"> <li>Two (2) Years (Lifetime on Discs)</li> </ul>	<ul style="list-style-type: none"> <li>Two (2) Years (limited warranty on check valves)</li> </ul>
<b>Spare Parts</b>	<ul style="list-style-type: none"> <li>Large inventory of parts kept in stock for next day delivery</li> <li>Spare Parts kept in inventory in select local Counties, Cities, States and Provinces</li> </ul>	<ul style="list-style-type: none"> <li>???</li> </ul>

### ***About Wastecorp Pumps?***

Wastecorp is an ISO 9001 and ISO 14001 certified pump manufacturer with decades of positive displacement pump experience in the municipal and industrial sectors. Wastecorp's North American based manufacturing facilities make a diverse range of high quality pumps primarily used for wastewater fluid transfer applications. The company specializes in sewage pump and wastewater pump manufacturing. This includes multiple products for municipal/industrial applications. Information about Sludge Pro Double Disc Pumps can be found at <http://www.wastecorp.com/disc-pumps.html>

### ***What is a Double Disc Pump?***

Wastecorp, Penn Valley and others are categorized as a reciprocating positive displacement mechanical diaphragm pump as defined by the American National Standards Institute/Hydraulic Institute Standards, who is the recognized global authority of pump guidelines and standards.

Wastecorp uses this terminology to distinguish the large disc used in the Sludge Pro's patented pump design. The disc is the main element that transfers the liquid in conjunction with the check valves. The trunnion is the flexible seal that ensures a leak free design. The robust design has an excellent track record of long term durability and trunnions are engineered to last millions of cycles.

### ***Penn Valley Pump (PVP) IS NOT A DOUBLE DISC PUMP***

The Penn Valley pump is a diaphragm pump. Penn Valley has acknowledged this in their patent # US 7,559,753 B2, where they reference application # GB 2013287A Diaphragm pump as the basis of construction. Also Penn Valley's registrations with the trademark office also reference diaphragm pumps.

### ***Penn Valley Pump Co. Track Record of False Advertising***

Penn Valley's track record of false advertising and willful trademark misconduct, claiming exclusive rights to the "double disc pump" name, has been a breach of USPTO regulations. The United States Patent and Trademark office has denied Penn Valley's applications on multiple occasions and warned them on their misuse of the ® symbol. See: USPTO Excerpt of Double Disc Pump Application No. 86194044.

So why does Penn Valley keep referring to their diaphragm pump as a double disc pump? Over the years, Penn Valley has used questionable marketing terms such as "Free Diaphragm Technology" to describe their pump. Many have asked "what does free diaphragm even mean?"

Simply put, Penn Valley has tried to stifle competition in the double disc diaphragm marketplace. Penn Valley has even gone so far as to threaten Wastecorp with a lawsuit in an unsuccessful attempt to stop them from using the "Double Disc Pump" name. To date, Wastecorp's legal counsel continues to monitor Penn Valley's conduct.

### ***Are Parts for Sludge Pro Double Disc Pumps Available Within 24 hours?***

Yes. Wastecorp can send parts for your double disc pump for delivery within 24 hours in most areas of the United States and Canada. In select areas, Sludge Pro parts are stocked in the State/Province or county that the pumps are located in.

### ***Are Double Disc Pumps Maintenance Free?***

While double disc pumps require no regular maintenance, all mechanical equipment requires some maintenance in their life. Double disc pumps are no different. Periodic replacement of the trunnion, disc and other components may be required.

### ***Is The Sludge Pro Double Disc Pump Design Patented?***

Yes. Wastecorp's double disc pump design is patented.

### ***Is "Double Disc Pump" a Trademark?***

No. The United States Patent and Trademark office on multiple occasions has denied Penn Valley Pump Company's application to trademark the term double disc pump and ruled that double disc pump is a generic term in the marketplace (term of art) used in the pump industry.

### ***Is There an Online Video Showing The Differences Between Penn Valley and Sludge Pro?*** Yes. visit: [https://www.youtube.com/watch?v=kDyt6\\_u1sKc](https://www.youtube.com/watch?v=kDyt6_u1sKc)

### ***Links/Further Reading/Videos***

Video (EN): The difference between Penn Valley Pump Co. and Sludge Pro Double Disc Pumps:

[https://www.youtube.com/watch?v=kDyt6\\_u1sKc](https://www.youtube.com/watch?v=kDyt6_u1sKc)

Video (EN): Sludge Pro Double Disc Pump at WEFTEC <https://www.youtube.com/watch?v=A0LSTNPySFc>

Video (EN): Sludge Pro Double Disc Pump engineering features: <https://www.youtube.com/watch?v=vH2KNLrf6eo>

Patent: Penn Valley Pump Company patent reference: [GB 2013287A](#)

United States Patent and Trademark Office refusal to grant Penn Valley Pump Co. registration of the term double disc pump:

<https://www.wastecorp.com/disc-pumps/USPTO-App-86194044%20Excerpt.pdf>