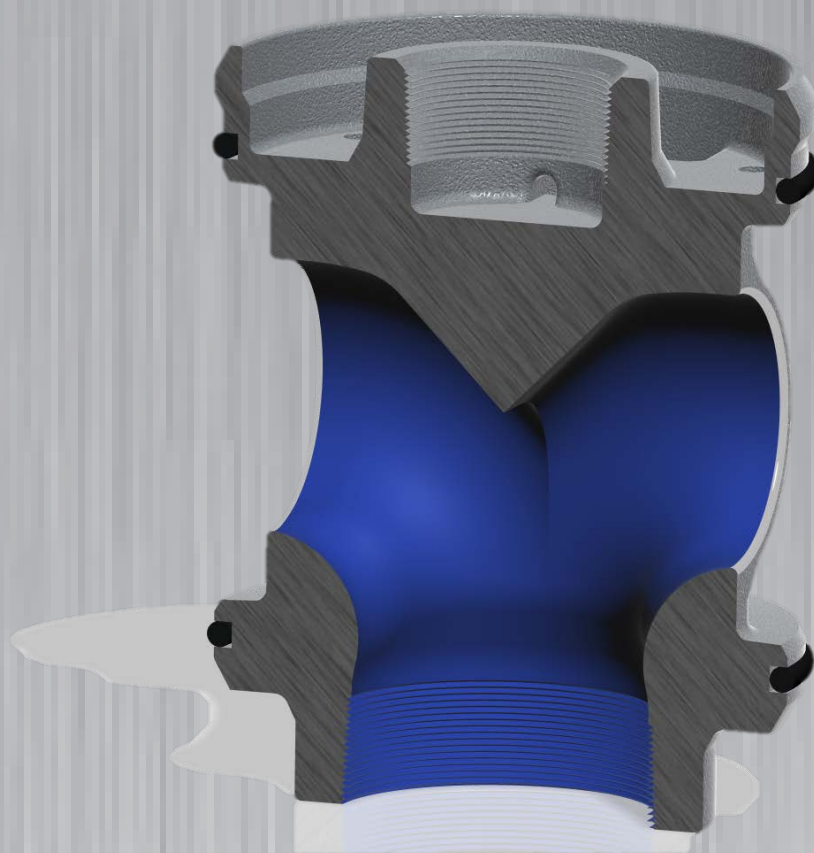




HIGH EFFICIENCY PITLESS SPOOL



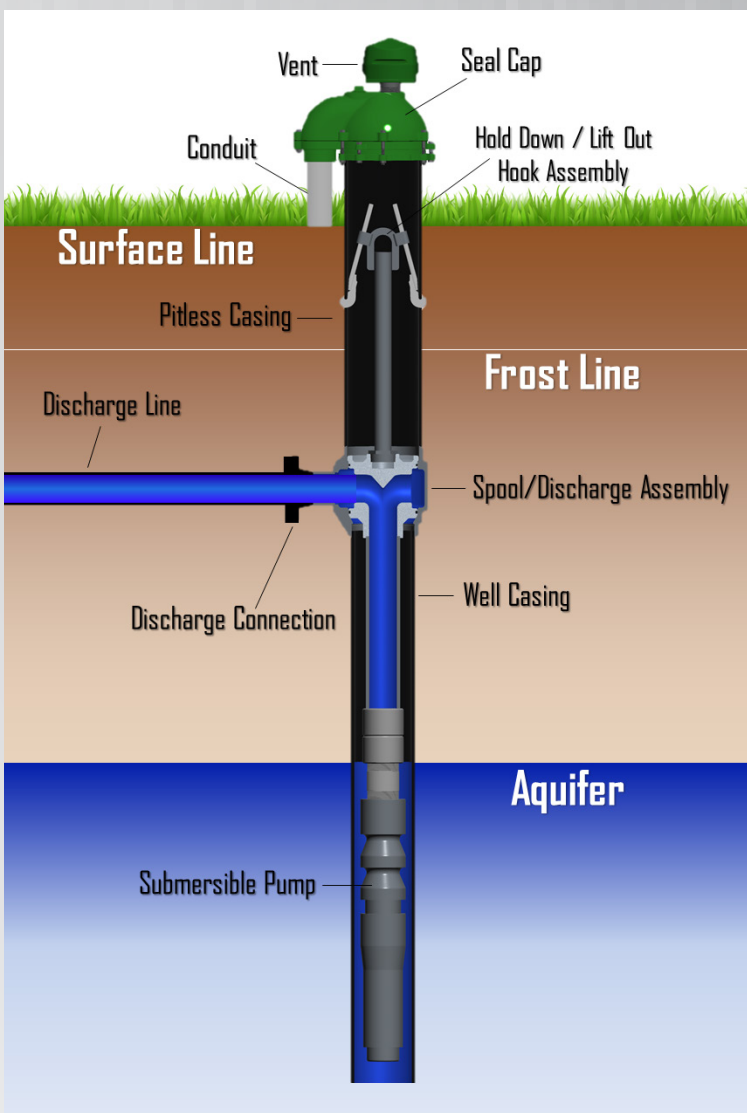
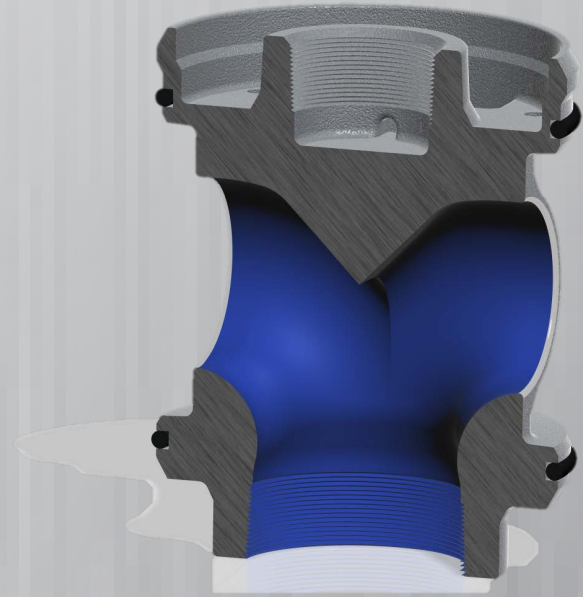
U.S. Patent No. 8,960,275



Made in the U. S. A.

The Monitor[®] High Efficiency Pitless Spool

Monitor is proud to unveil its new line of High Efficiency Pitless Spools, with each design integrating the patented Monitor Flow Divider (U.S. Patent No. 8,960,275). The Flow Divider design located within the spool efficiently directs water flow from a vertical to a horizontal direction, reducing pressure head loss and thereby increasing the energy efficiency of the Pitless Unit system.



The Monitor Pitless Unit

Monitor developed the first solution to eliminate the "well house" and "well pit" - the Pitless Unit. The pioneer design permits the discharge of groundwater below the frost line, and directly to the water treatment facility; preventing any form of surface contamination.

The Pitless Unit also allows the submersible pump to be removed without the disturbance of external piping in the well system.

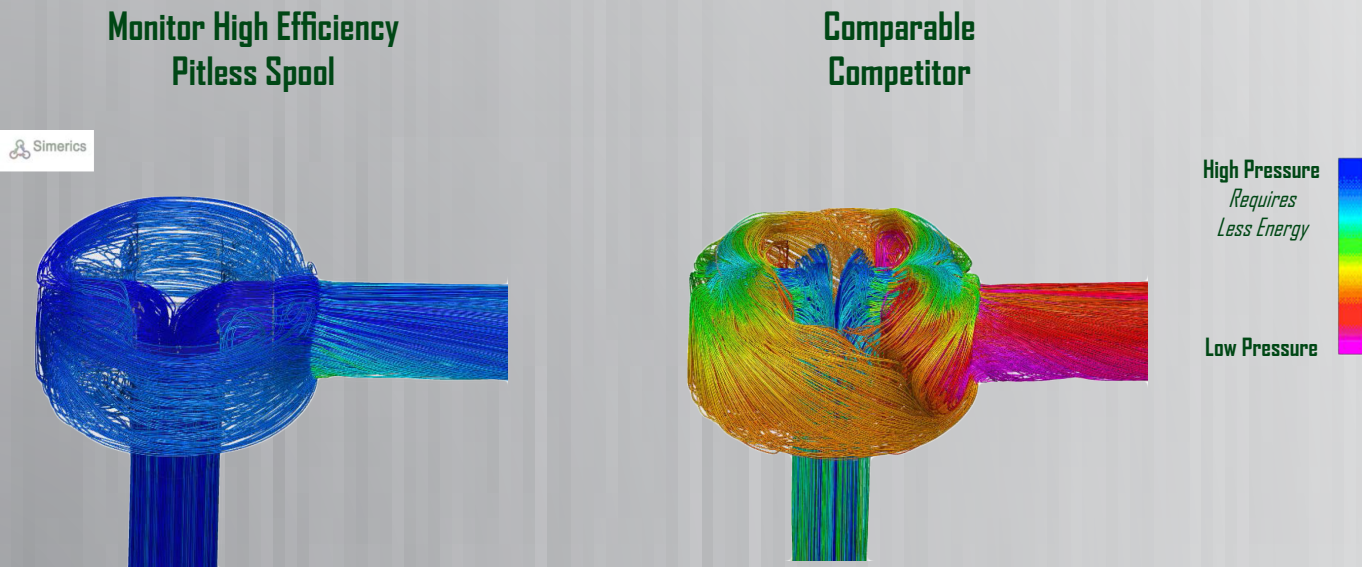
The Monitor Pitless Unit is an economical and safe solution for the supply of potable groundwater.

✓ Certified to NSF/ANSI 61 and 372

✓ Made in the U.S.A.

Comparison

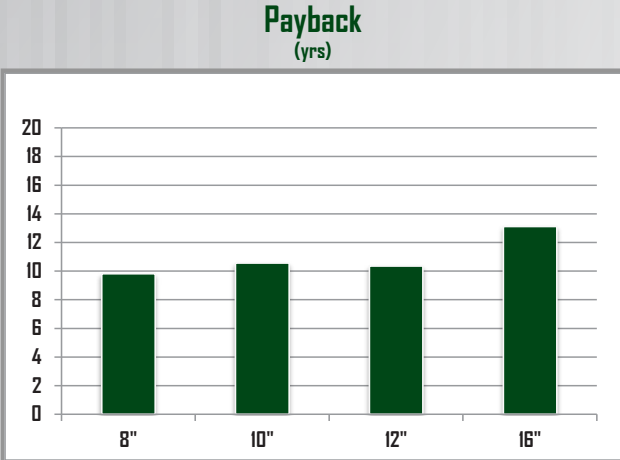
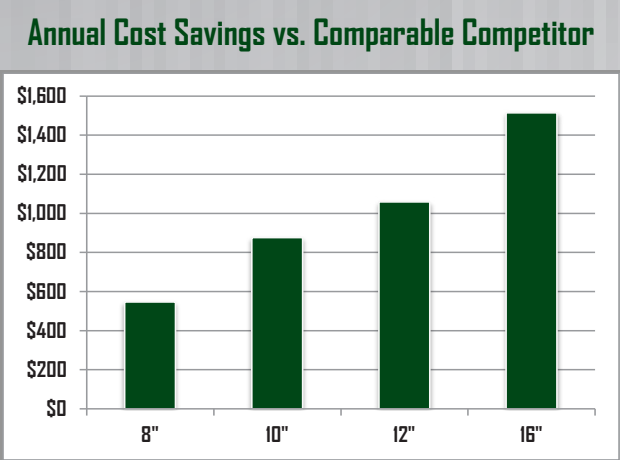
Pressure head loss through the Monitor High Efficiency Pitless Spool is significantly lower than a comparable competitor spool. PumpLinX[®], a 3-D Computational Fluid Dynamics (CFD) tool developed by Simerics, was used to virtually simulate the expected pressure head loss through both designs. Physical flow testing was performed to collect actual pressure head loss readings which successfully verified the accuracy of the PumpLinX simulations.



Below is an analysis which converts pressure head loss savings into estimated electrical cost savings. The annual cost savings of the Monitor High Efficiency Pitless Spool versus a comparable competitor spool was calculated. The annual cost savings is then divided by the list price of an original Monitor Pitless Unit to indicate how quickly the Monitor High Efficiency Pitless Spool will pay for itself.

Pitless Unit Size	Monitor Pitless Unit Estimated Cost*	Annual Costs Savings vs. Comparable Competitor	Payback (yrs)
8"	\$5,300	\$547	9.70
10"	\$9,200	\$876	10.50
12"	\$10,900	\$1,058	10.30
16"	\$20,100	\$1,514	13.28

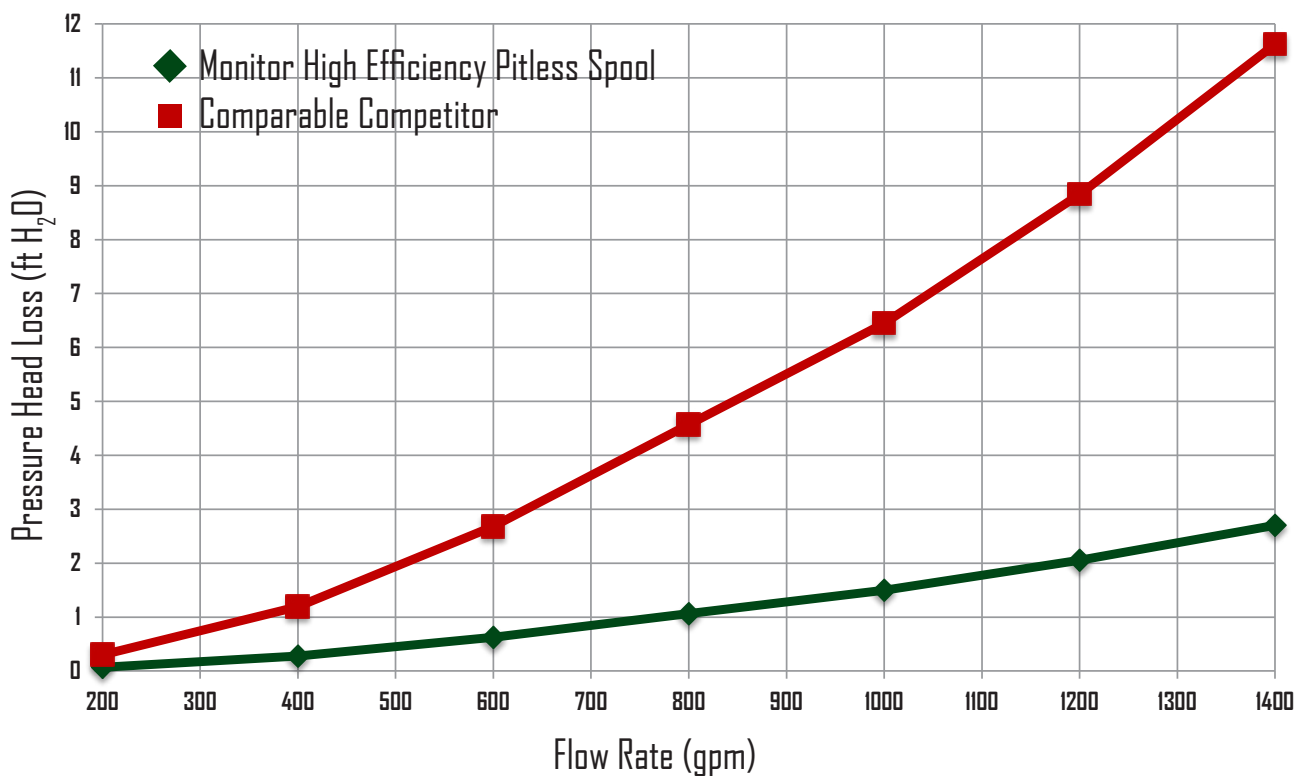
- Calculation Inputs
- 65% efficient submersible pump for 10", 12", 16" Pitless Units
- 60% for 8" Pitless Unit
 - 80% efficient motor
 - \$0.12 / kWh electricity cost
 - 16 hr pump operation / day
- or 5840 hr pump operation / yr
 - Pressure drop energy consumption is only through spool
 - Assumed "aligned orientation" on all spools
 - Pump data calculated using www.engineeringtoolbox.com
- *Monitor Pitless Unit estimated cost indicates estimated total cost for end user.



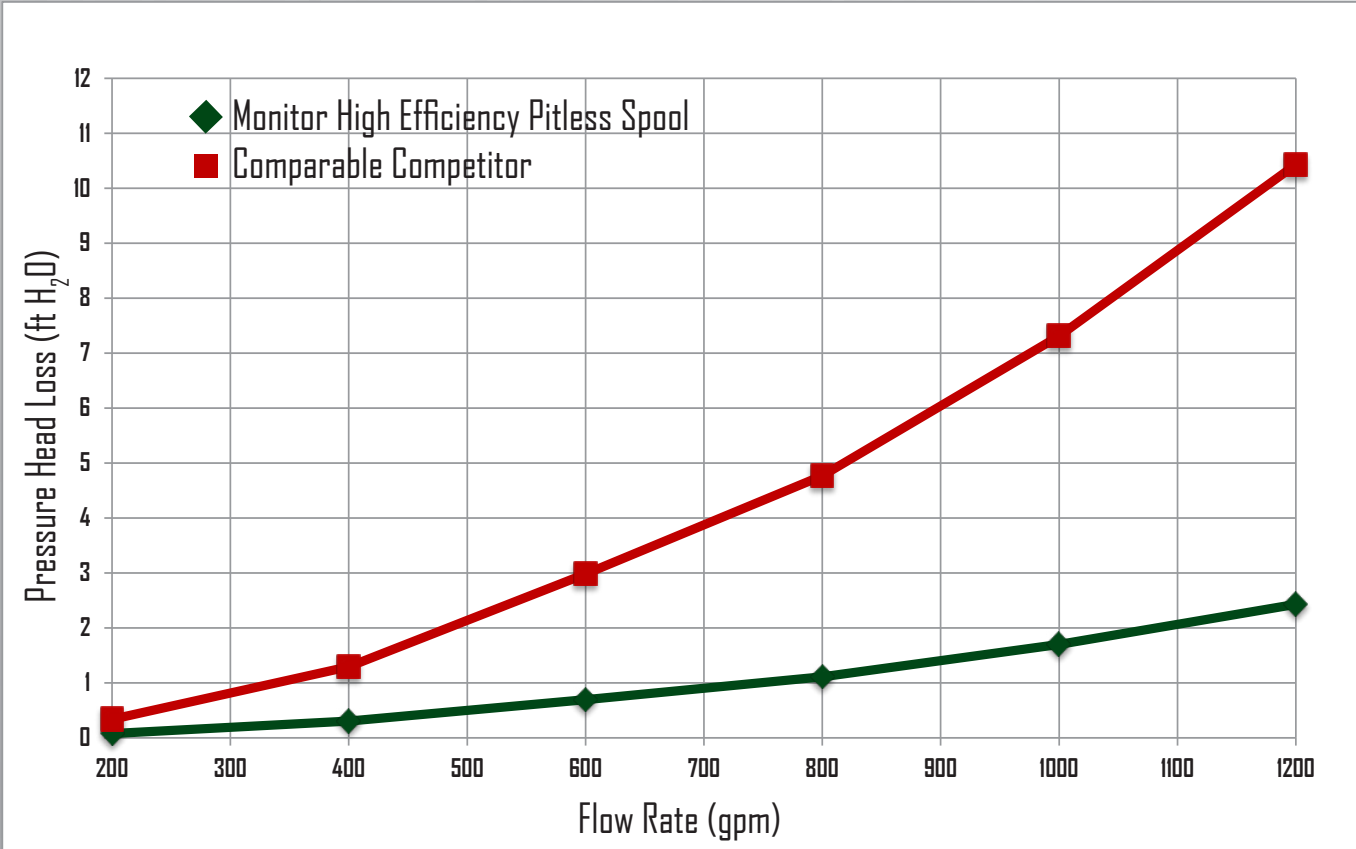
8" Pitless Spool Pressure Head Loss



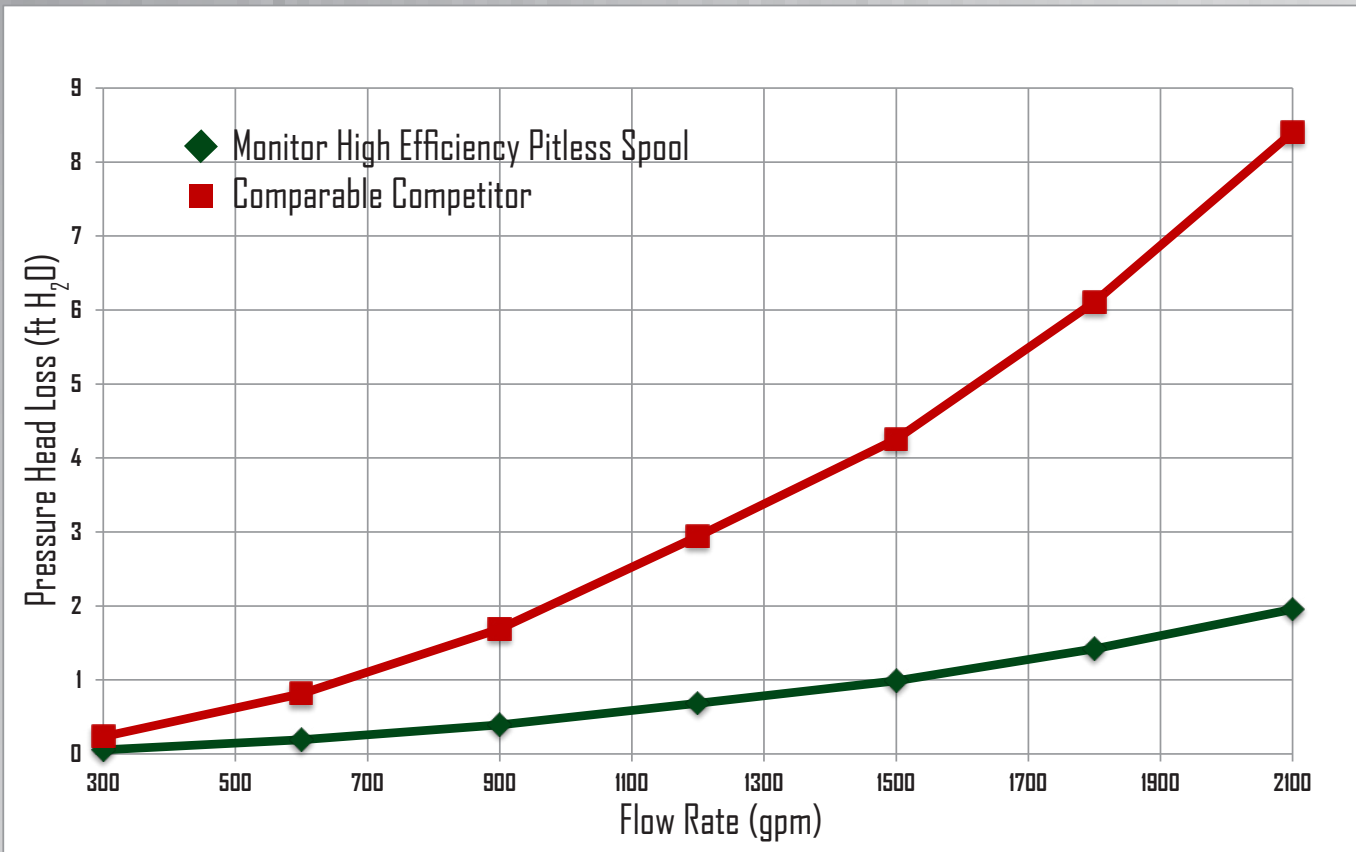
10" Pitless Spool Pressure Head Loss



12" Pitless Spool Pressure Head Loss

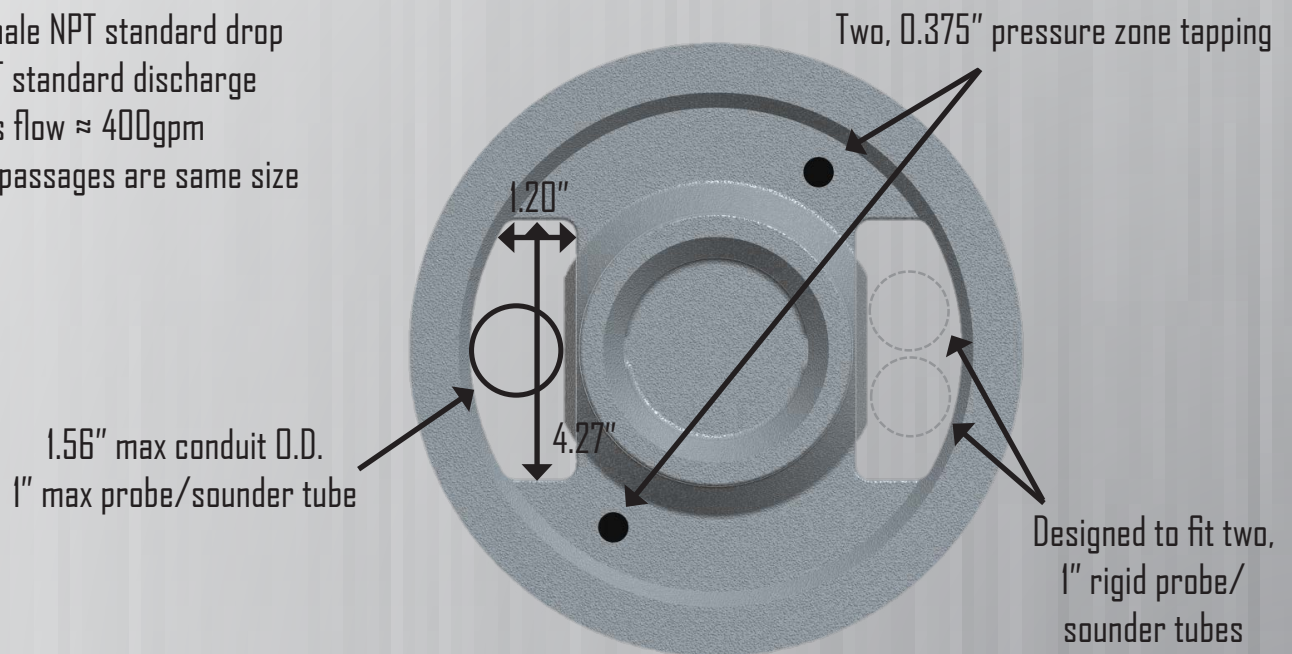


16" Pitless Spool Pressure Head Loss



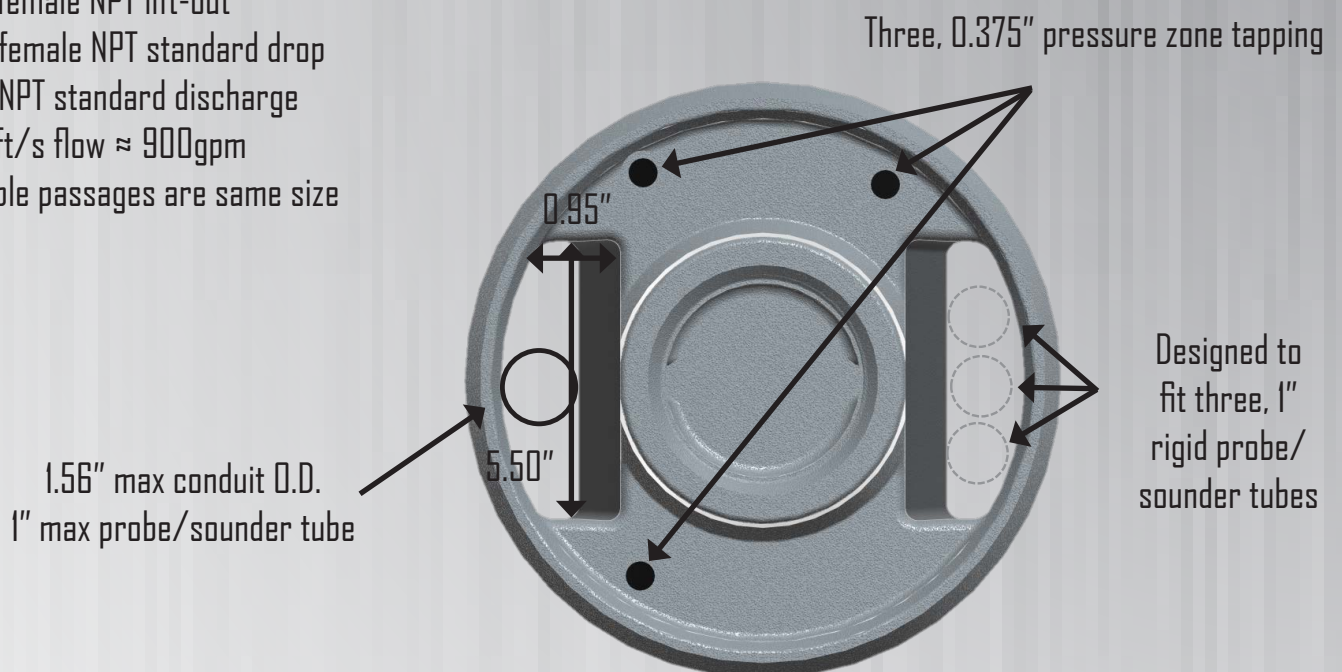
8" High Efficiency Pitless Spool

- 30,000 lb lift-out load rating
- 3" female NPT lift-out
- 4" female NPT standard drop
- 4" NPT standard discharge
- 10 ft/s flow \approx 400gpm
- Cable passages are same size



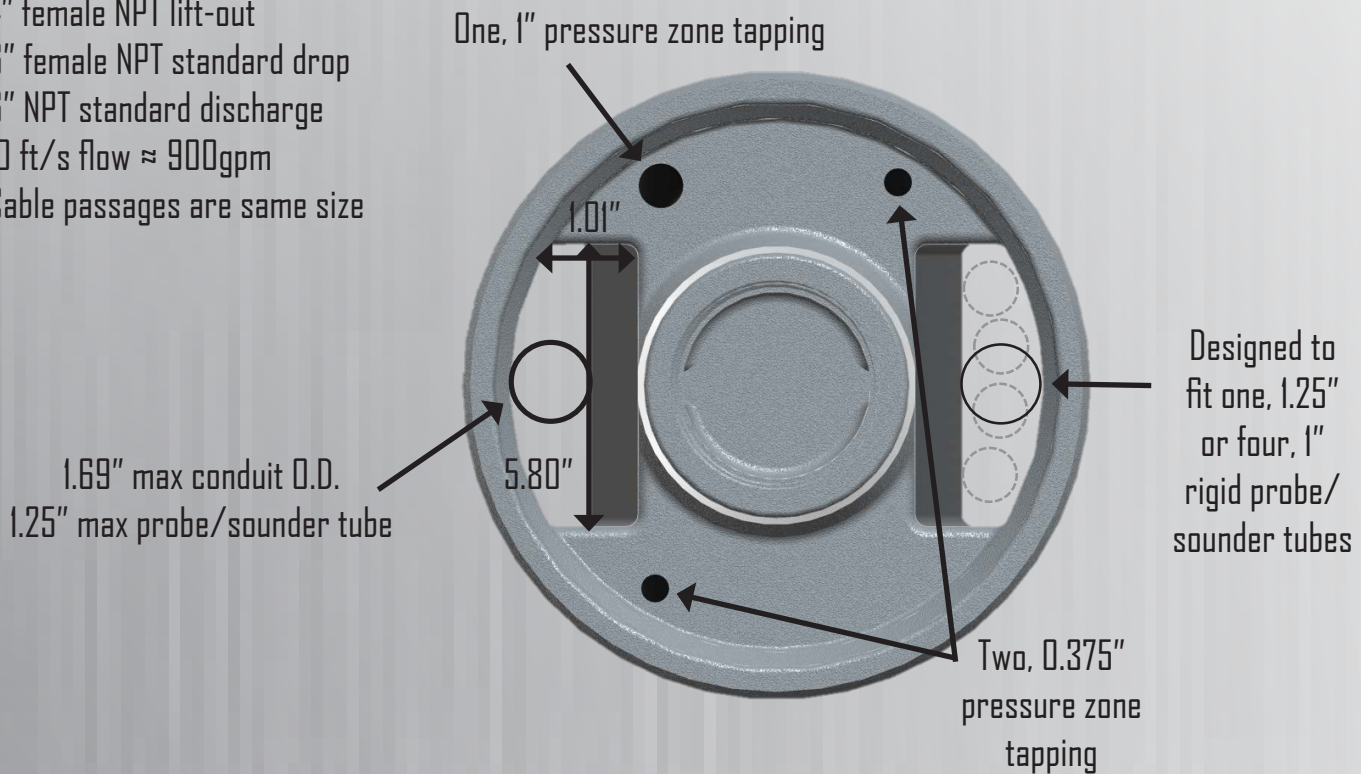
10" High Efficiency Pitless Spool

- 48,000 lb lift-out load rating
- 4" female NPT lift-out
- 6" female NPT standard drop
- 6" NPT standard discharge
- 10 ft/s flow \approx 900gpm
- Cable passages are same size



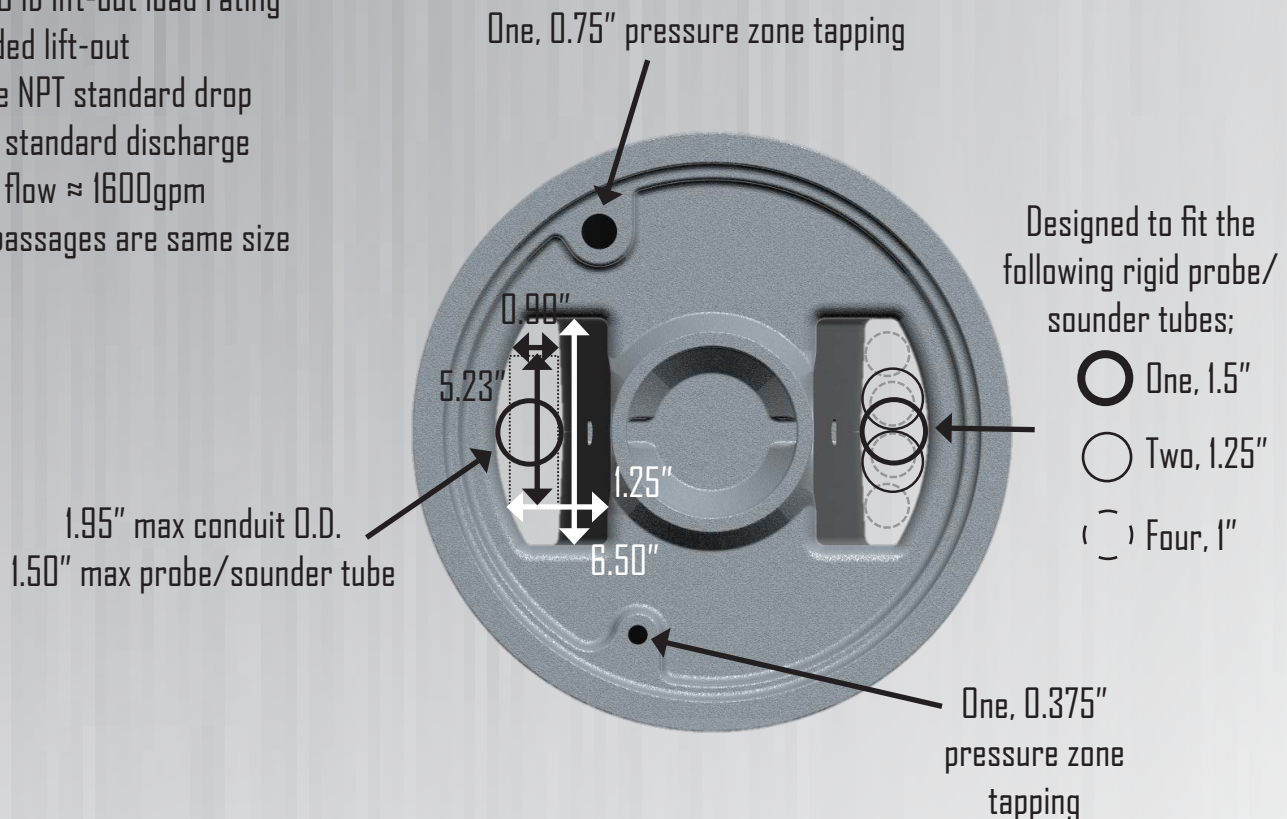
12" High Efficiency Pitless Spool

- 48,000 lb lift-out load rating
- 4" female NPT lift-out
- 6" female NPT standard drop
- 6" NPT standard discharge
- 10 ft/s flow \approx 900gpm
- Cable passages are same size



16" High Efficiency Pitless Spool

- 103,000 lb lift-out load rating
- 5" welded lift-out
- 8" male NPT standard drop
- 8" NPT standard discharge
- 10 ft/s flow \approx 1600gpm
- Cable passages are same size



WE KNOW GROUNDWATER



Baker Manufacturing Company, LLC. facilitates all manufacturing aspects associated with the fabrication of standard and custom Pitless Units. The process begins with pouring gray and ductile iron castings in our foundry and fabricating components using certified welders. The cast or fabricated components are then hot dip galvanized with lead free zinc and precisely machined using state of the art CNC equipment. Components are then assembled, painted, and packaged for shipment in Evansville, Wisconsin.

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BAKER®
WATER SYSTEMS DIVISION

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