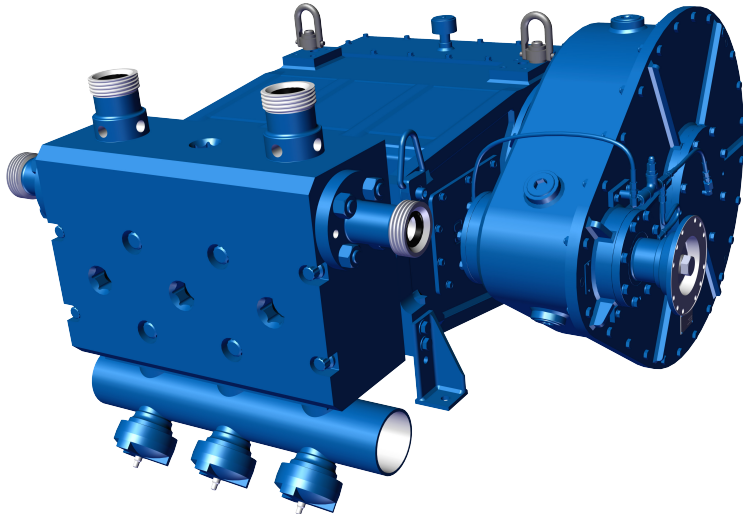


# SPM® TWS 600S HD Well Service Pump



Oil & Gas



The SPM® TWS 600S HD pump is specifically engineered to reduce downtime due to maintenance while improving rod load and high pressure capabilities. The heavy duty design is built with quick and practical maintenance in mind, while supplying 6% higher rod load at pressures of 15,000 psi utilizing a 3-inch plunger and 20,000 psi utilizing a 2.5-inch plunger. The SPM® TWS 600S HD pump is designed to eliminate contamination from pumping media into the power end, extending pump component life. Retrofit kits are available for customers currently operating SPM® TWS 600S pumps. Customers are able to update their units to the latest technology without the capital investment of a completely new unit.

## Design Features and Benefits

- Increased rod load by 6%\* to achieve 15 ksi rating with a 3-inch plunger or 20 ksi with a 2.5-inch plunger
- Eliminated fluid end proppant contamination potential in the power end greatly increasing power end seal life
- Removed 10 lbs (7%)\* of reciprocating weight per cylinder while maintaining or improving design safety factors
- Improved lubrication through the use of a ported crankshaft and ventilated shell bearings
- Reduced maintenance time by not having to remove the diaphragm seal in order to remove the packing nut
- Contamination of the power end is also reduced\* as the power end remains sealed during fluid end maintenance
- Knuckle bearing connecting rod design provides 7% more surface area for improved load transfer\*
- Technology can be retrofitted into existing pumps without modification

\* Compared to the conventional SPM® TWS 600S pump

## Applications: Cementing, acidizing, gravel packing, snubbing

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Maximum Brake Horsepower Input ..... | 600 BHP (447 kW)                |
| Maximum Rod Load Capacity .....      | 106,029lb <sub>f</sub> (472 kg) |
| Stroke Length.....                   | 6" (152.4 mm)                   |
| Gear Ratio.....                      | 4.610:1                         |
| Approximate Length.....              | 50" (1,270 mm)                  |
| Approximate Width.....               | 53" (1,346 mm)                  |
| Approximate Height .....             | 24" (610 mm)                    |
| Approximate Weight (Dry) .....       | 4,600 lb (2,086 kg)             |

**Note:** Pump dimensions and weights are approximate. For full detailed drawings, please contact Weir.

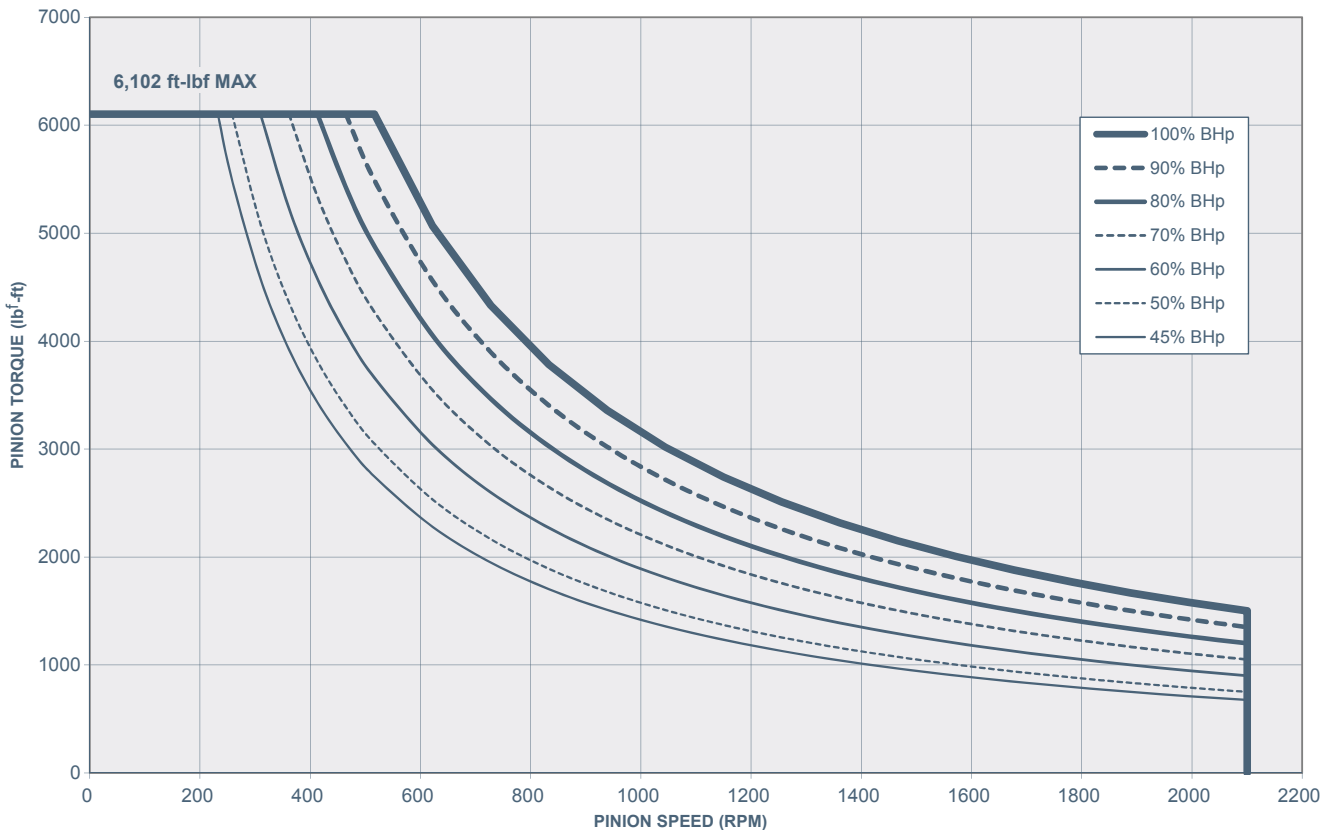
## TWS 600S & TWS 600S HD Pump—Performance Chart<sup>1,2</sup>

| Plunger Diameter<br>in<br>(mm) | Displace<br>Per Rev<br>gal/rev<br>(liter/rev) | Displacement at Pump Strokes per Minute/Pinion RPM |                     |                     |                     |                     |                     |                     |                      |                     |                      |                     |                      |
|--------------------------------|---|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|
|                                |   | 50<br>gpm<br>(lpm)                                 | 231<br>psi<br>(Mpa) | 112<br>gpm<br>(lpm) | 516<br>psi<br>(Mpa) | 198<br>gpm<br>(lpm) | 912<br>psi<br>(Mpa) | 284<br>gpm<br>(lpm) | 1308<br>psi<br>(Mpa) | 370<br>gpm<br>(lpm) | 1704<br>psi<br>(Mpa) | 456<br>gpm<br>(lpm) | 2100<br>psi<br>(Mpa) |
| 2 ½<br>(63.5)                  | 0.38<br>(1.4)                                 | 19<br>(72)   | 21600<br>(149)      | 43<br>(163)         | 21600<br>(149)      | 76<br>(278)         | 12227<br>(84)       | 109<br>(411)        | 8527<br>(59)         | 141<br>(535)        | 6546<br>(45)         | 174<br>(659)        | 5312<br>(37)         |
| 2 ¾<br>(69.9)                  | 0.46<br>(1.8)                                 | 23<br>(88)   | 17851<br>(123)      | 52<br>(196)         | 17851<br>(123)      | 92<br>(347)         | 10105<br>(70)       | 219<br>(829)        | 7047<br>(49)         | 171<br>(648)        | 5410<br>(37)         | 211<br>(798)        | 4390<br>(30)         |
| 3<br>(76.2)                    | 0.55<br>(2.1)                                 | 28<br>(104)  | 15000<br>(103)      | 62<br>(234)         | 15000<br>(103)      | 109<br>(413)        | 8491<br>(59)        | 131<br>(497)        | 5921<br>(41)         | 204<br>(771)        | 4546<br>(31)         | 251<br>(950)        | 3689<br>(25)         |
| 3 ½<br>(76.2)                  | 0.75<br>(2.8)                                 | 37<br>(142)  | 11020<br>(76)       | 84<br>(318)         | 11020<br>(76)       | 148<br>(562)        | 6238<br>(43)        | 156<br>(592)        | 4350<br>(30)         | 277<br>(1049)       | 3340<br>(23)         | 342<br>(1293)       | 2710<br>(19)         |
| 4<br>(101.96)                  | 0.98<br>(3.7)                                 | 49<br>(185)  | 8438<br>(58)        | 110<br>(415)        | 8438<br>(58)        | 194<br>(733)        | 4776<br>(33)        | 278<br>(1052)       | 3331<br>(23)         | 362<br>(1370)       | 2557<br>(18)         | 446<br>(1688)       | 2075<br>(14)         |
| 4 ½<br>(114.3)                 | 1.24<br>(4.7)                                 | 62<br>(235)  | 6667<br>(46)        | 139<br>(525)        | 6667<br>(46)        | 245<br>(928)        | 3774<br>(26)        | 352<br>(1331)       | 2632<br>(18)         | 458<br>(1734)       | 2020<br>(14)         | 565<br>(2137)       | 1639<br>(11)         |
| Input Power: BHP (kW)          |   | 268 (200)  |                     | 600 (447)           |                     | 600 (447)           |                     | 600 (447)           |                      | 600 (447)           |                      | 600 (447)           |                      |

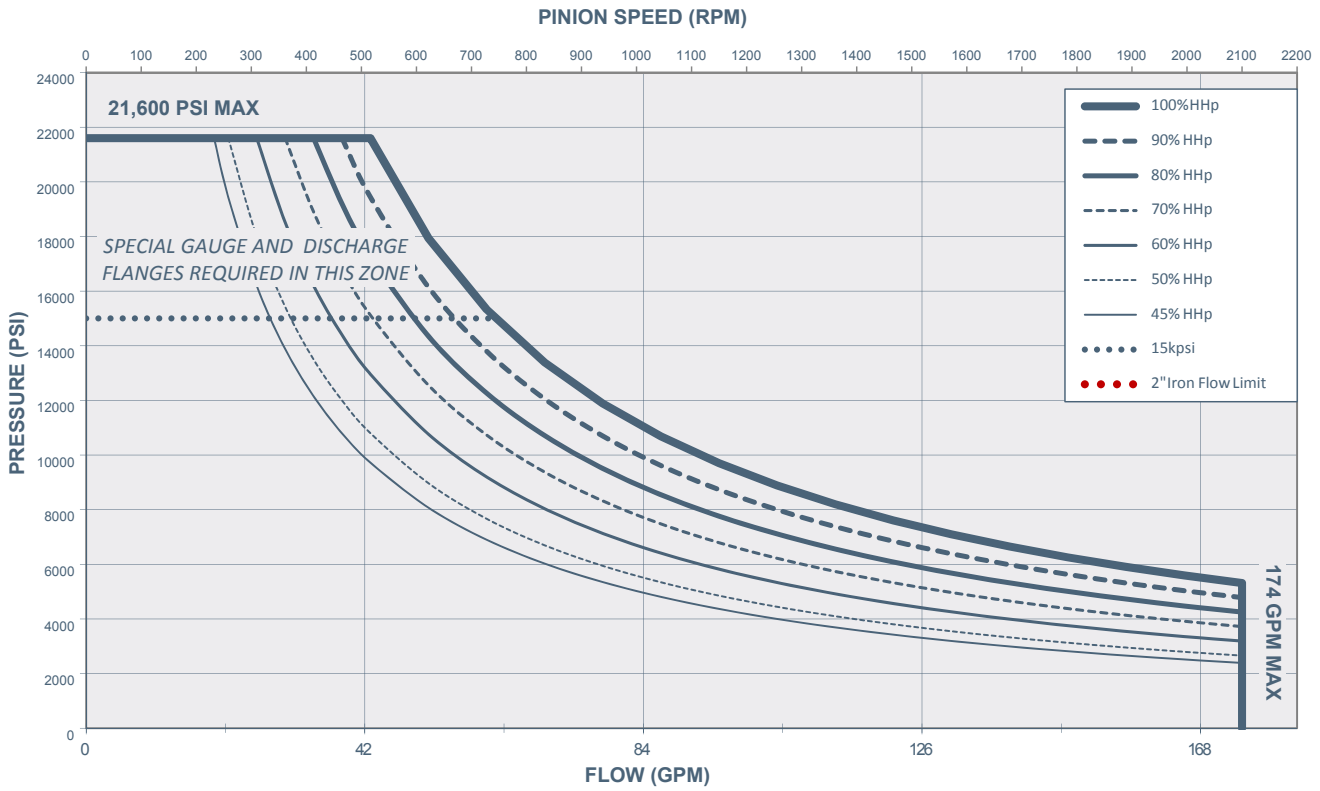
<sup>1</sup> Based on 90% ME and 100% VE—Intermittent Service Only.

<sup>2</sup> Pumps operating in excess of 15,000 psil require special gauge and discharge flanges. Contact SPM Engineering for information.

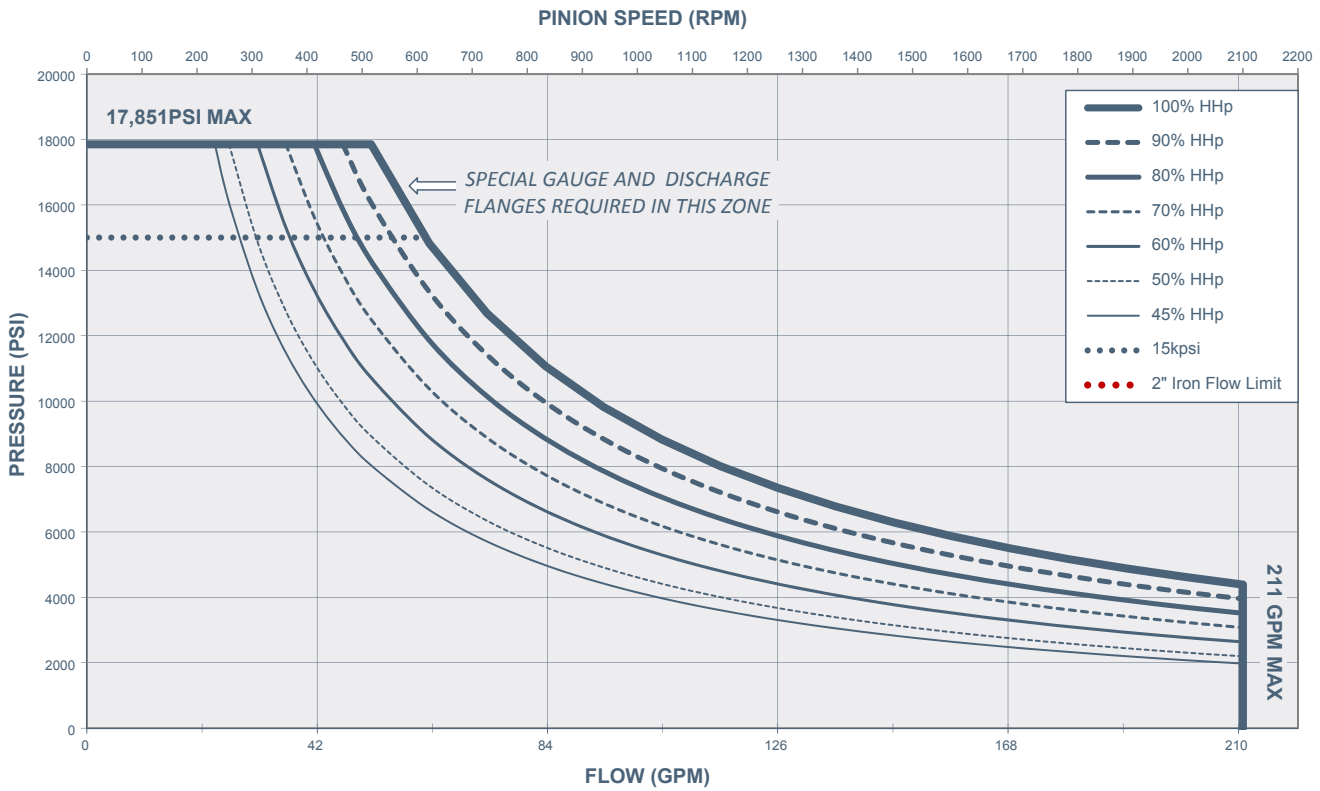
### SPM® TWS 600S Pinion Torque Curve



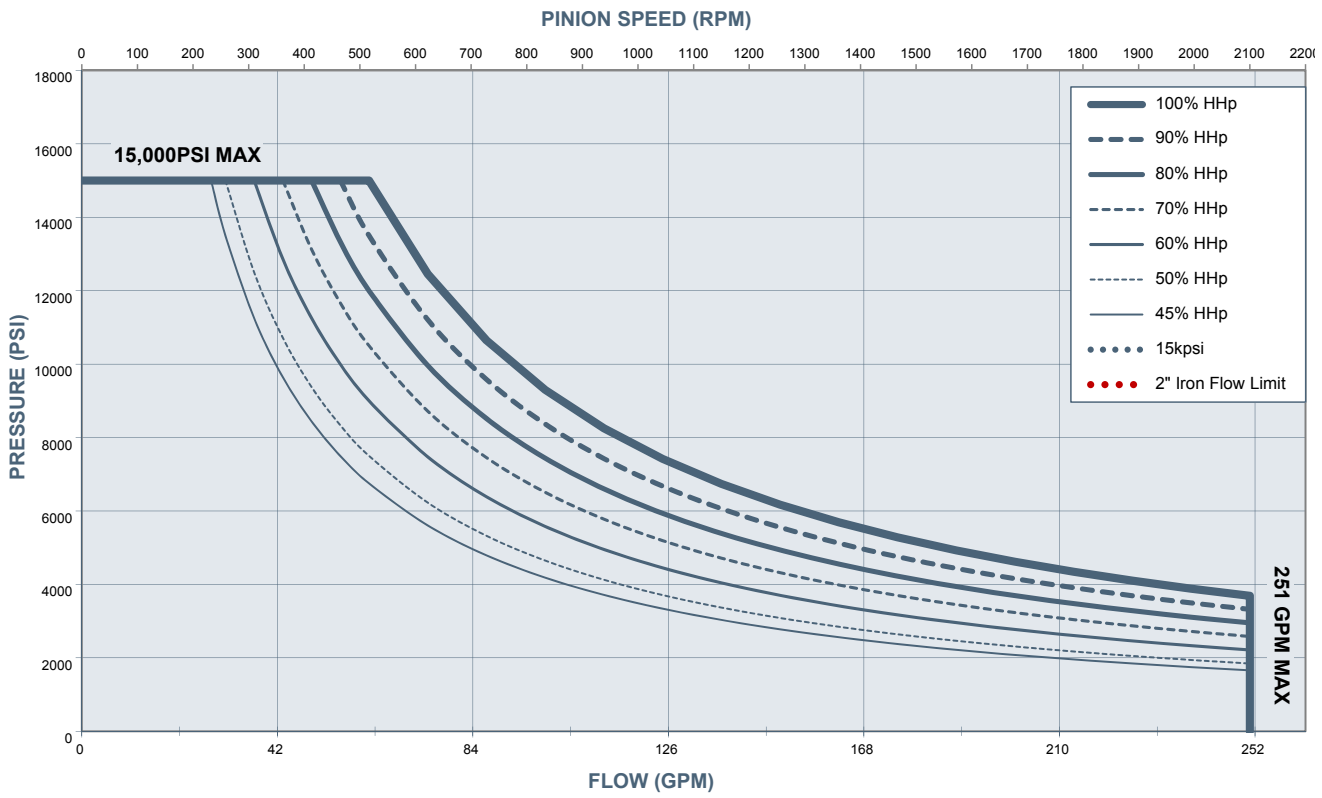
**SPM® TWS 600S & TWS 600S HD 2.50" Plunger Horsepower Curve**



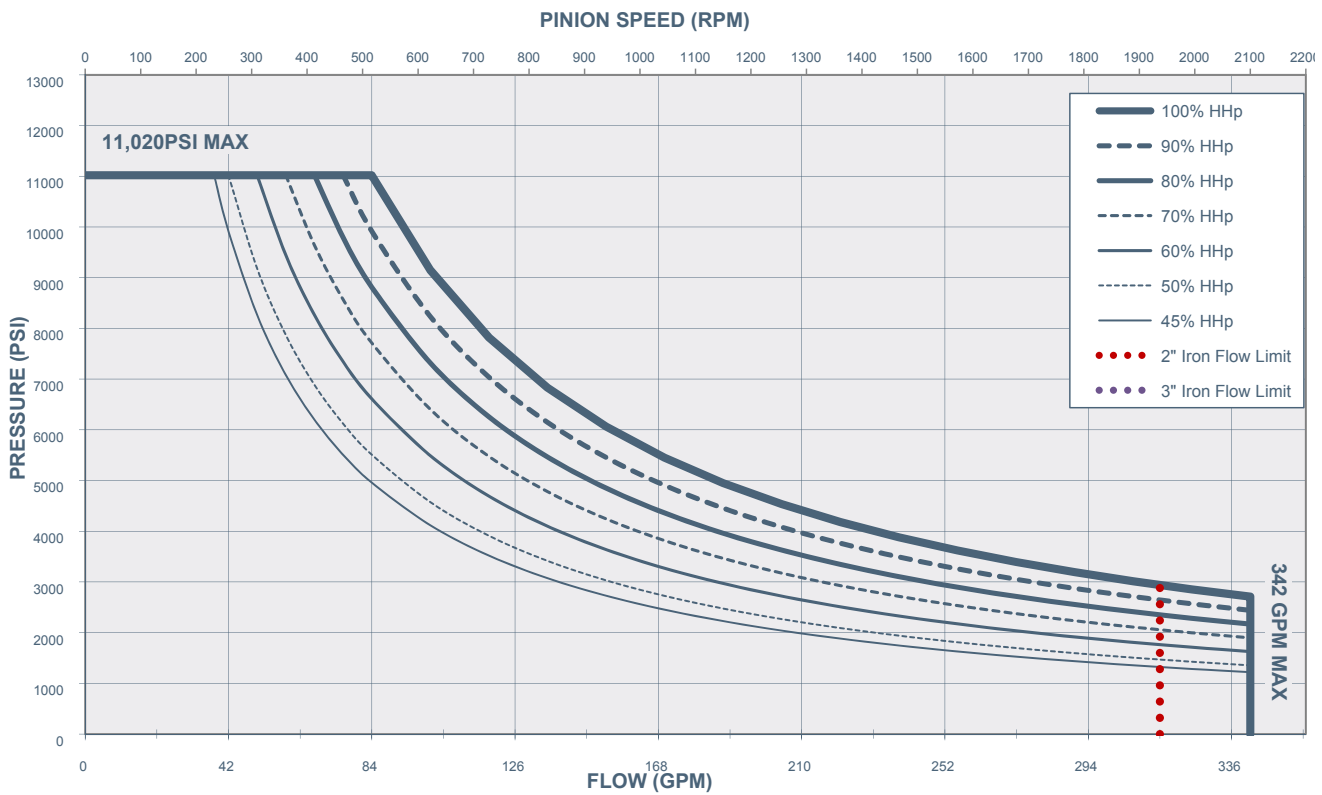
**SPM® TWS 600S & TWS 600S HD 2.75" Plunger Horsepower Curve**



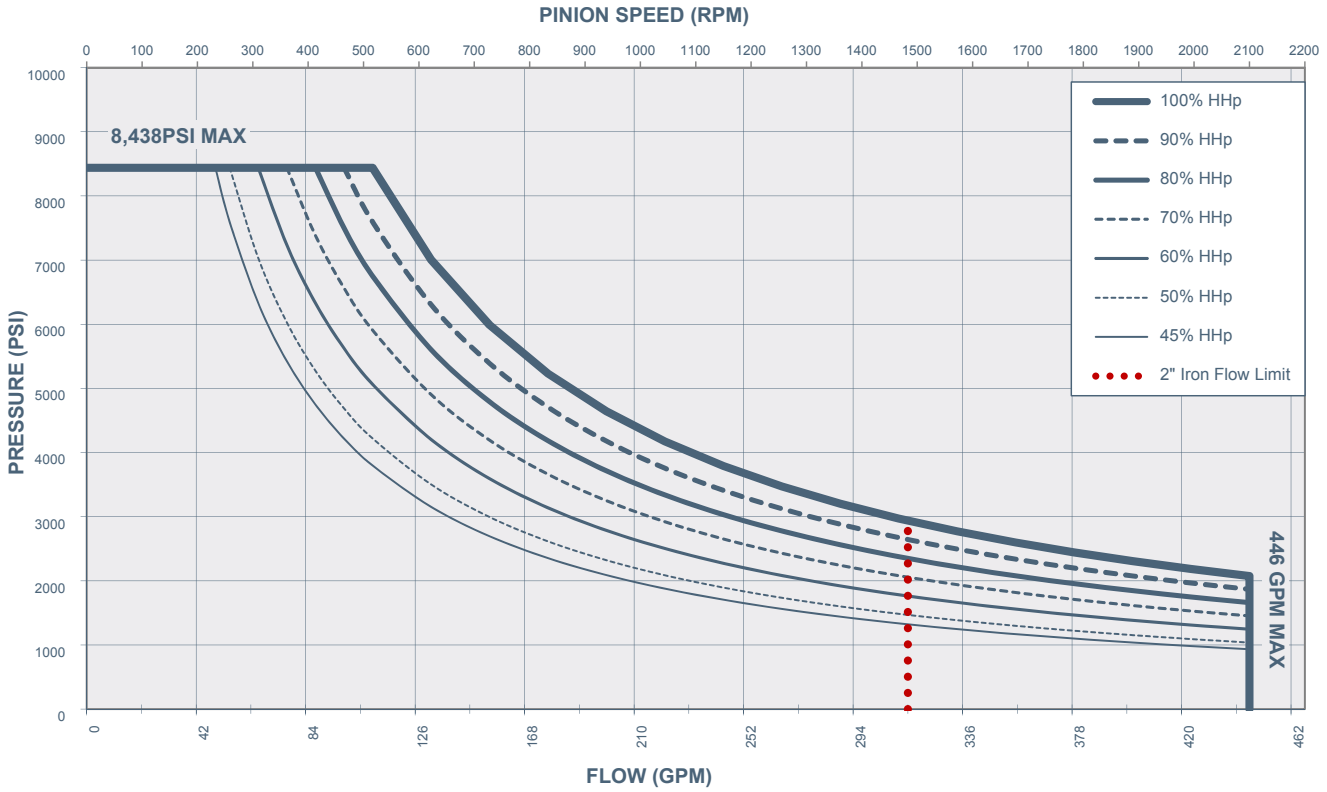
### SPM® TWS 600S & TWS 600S HD 3.00" Plunger Horsepower Curve



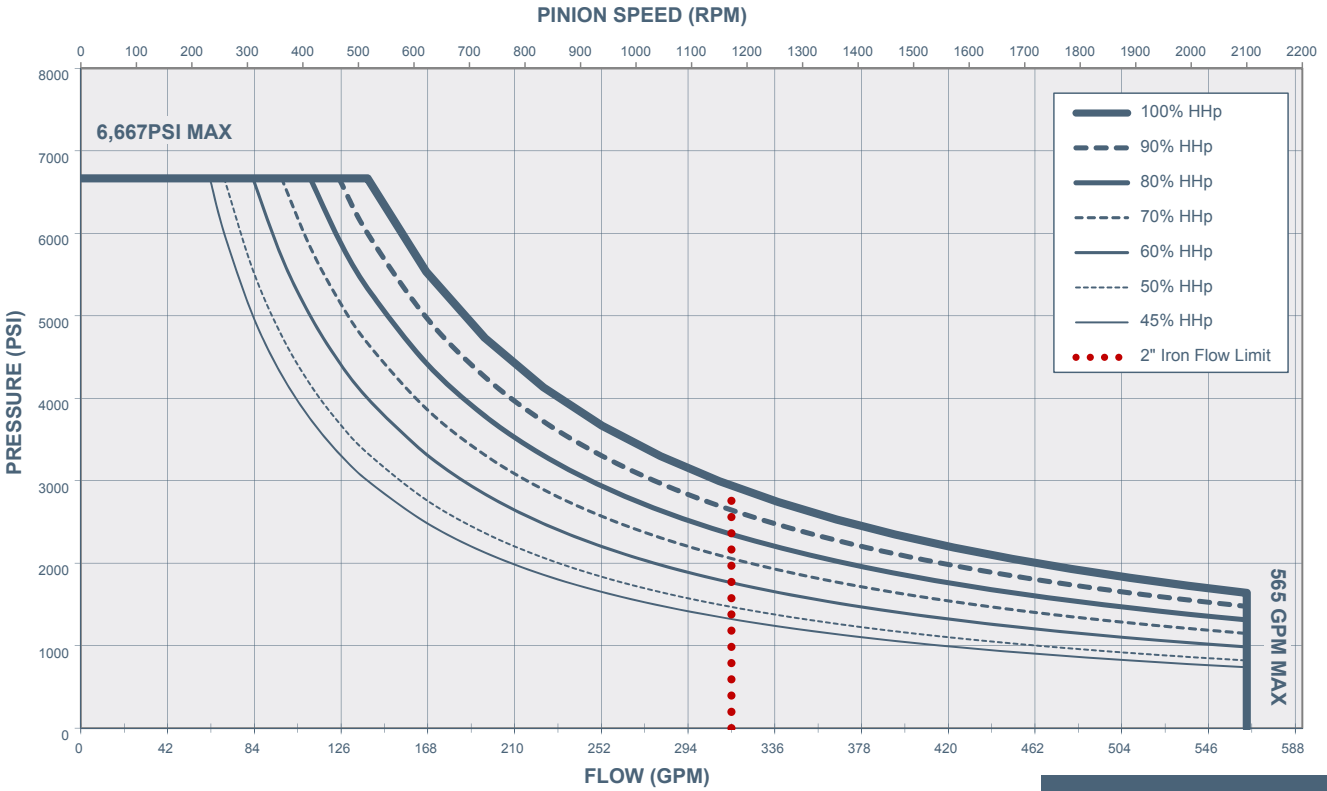
### SPM® TWS 600S & TWS 600S HD 3.50" Plunger Horsepower Curve



**SPM® TWS 600S & TWS 600S HD 4.00" Plunger Horsepower Curve**



**SPM® TWS 600S & TWS 600S HD 4.50" Plunger Horsepower Curve**



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