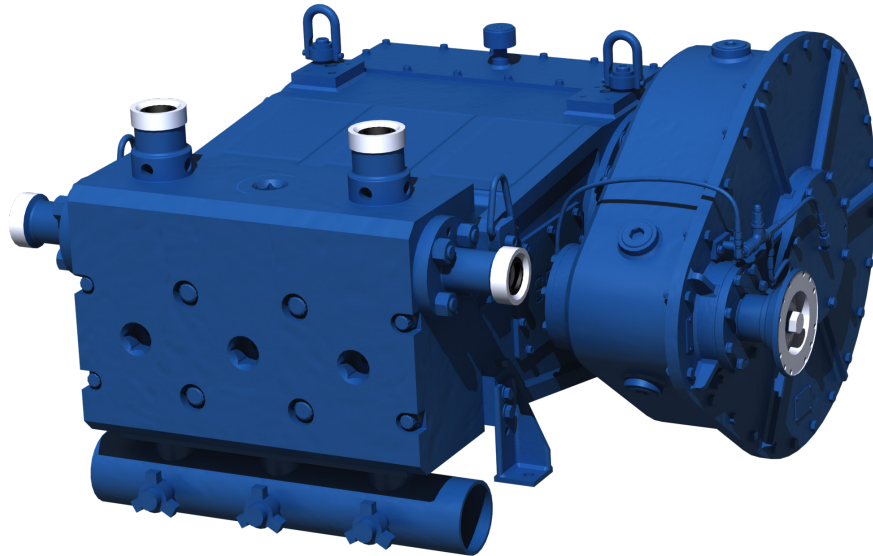


SPM® TWS 600S Heavy Duty (HD) Pump

SPM™ Oil & Gas

A Caterpillar Company



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

Pump Performance Operating Range

Maximum brake horsepower input	600 BHP
Maximum rod load capacity	106,029 LBf
Stroke length	6 in
Gear ratio	4.610:1
Approximate length	50 in
Approximate width	53 in
Approximate height	24 in
Approximate weight (dry, without suction manifold)	4,600 lb

Note: Pump dimensions and weight are approximate. For full detailed drawings, please contact SPM Oil & Gas.

This product is covered by one or more patents, including U.S. Patent No. 8,707,853.

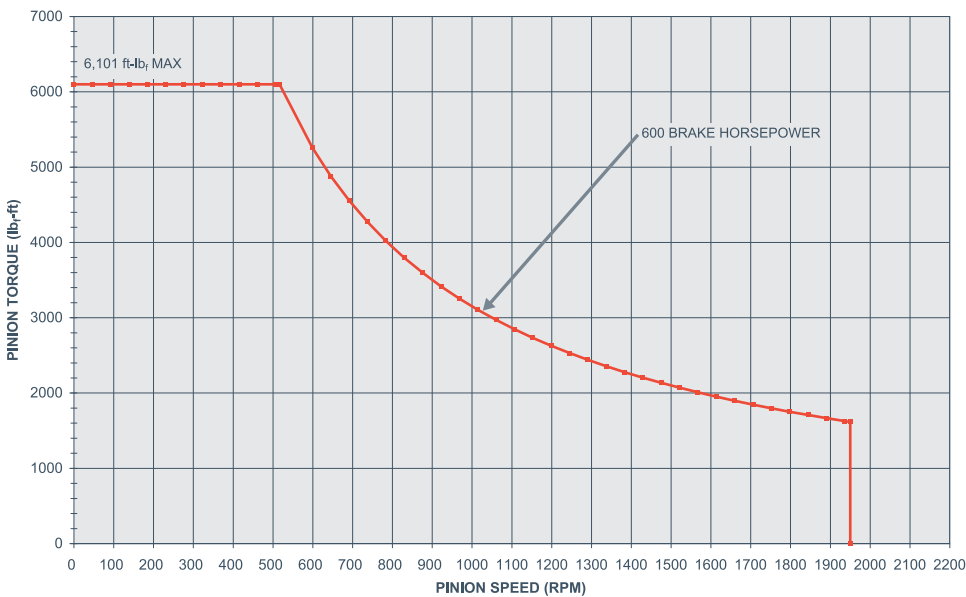
SPM® TWS 600S HD Pump Performance Chart ^{1,2}

Plunger Diameter IN (MM)	Displace Per Rev Gal/Rev (Liter/Rev)	Displacement at Pump Strokes per Minute/Pinion RPM											
		50	231	100	461	112	516	200	922	350	1614	488	2250
		GPM (LPM)	PSI (KG/SQ CM)	GPM (LPM)	PSI (KG/SQ CM)	GPM (LPM)	PSI (KG/SQ CM)	GPM (LPM)	PSI (KG/SQ CM)	GPM (LPM)	PSI (KG/SQ CM)	GPM (LPM)	PSI (KG/SQ CM)
2½ (63.5)	0.38 (1.4)	19 (72)	21600 (1522)	38 (145)	21600 (1522)	43 (162)	21599 (1522)	76 (290)	12099 (853)	134 (507)	6914 (487)	187 (707)	4959 (349)
2¾ (69.9)	0.46 (1.8)	23 (88)	17851 (1258)	46 (175)	17851 (1258)	52 (196)	17851 (1258)	93 (350)	9999 (705)	162 (613)	5714 (403)	226 (855)	4098 (289)
3 (76.2)	0.55 (2.1)	28 (104)	15000 (1057)	55 (208)	15000 (1057)	62 (234)	15000 (1057)	110 (417)	8402 (592)	193 (730)	4801 (338)	269 (1017)	3443 (243)
3½ (88.9)	0.75 (2.8)	37 (142)	11020 (777)	75 (284)	11020 (777)	84 (318)	11020 (777)	150 (568)	6173 (435)	262 (993)	3527 (249)	366 (1385)	2530 (178)
4 (101.6)	0.98 (3.7)	49 (185)	8438 (595)	98 (371)	8438 (595)	110 (415)	8437 (595)	196 (741)	4726 (333)	343 (1297)	2701 (190)	478 (1809)	1937 (136)
4½ (114.3)	1.24 (4.7)	62 (235)	6667 (470)	124 (469)	6667 (470)	139 (526)	6666 (470)	248 (938)	3734 (263)	434 (1642)	2134 (150)	605 (2289)	1530 (108)
Input Power: BHP (KW)		268 (200)		536 (400)		600 (448)		600 (448)		600 (448)		600 (448)	

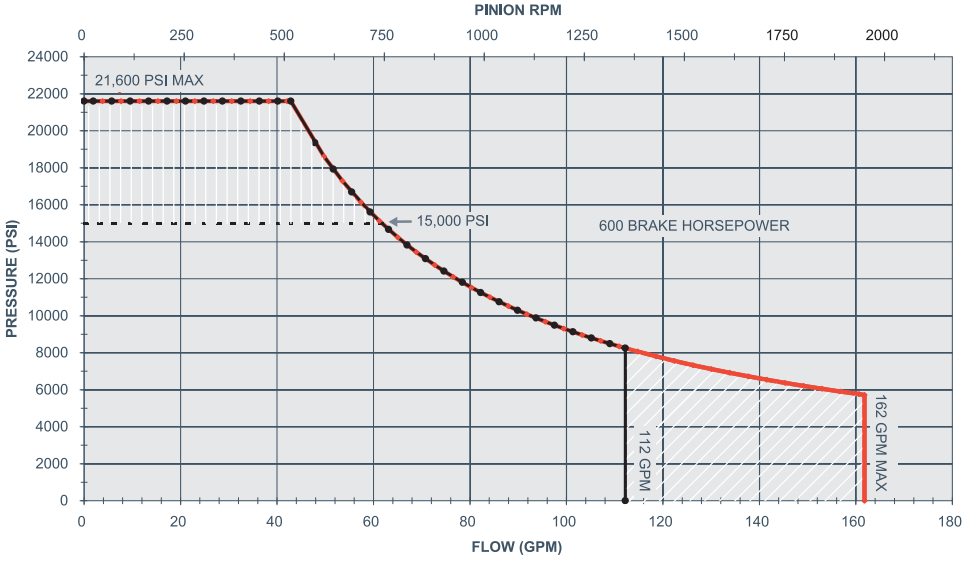
¹ Based on 90% ME and 100% VE—Intermittent Service Only.

² Pumps with pressures in excess of 15,000 psi require special gauge and discharge flanges. Contact SPM Engineering for information.

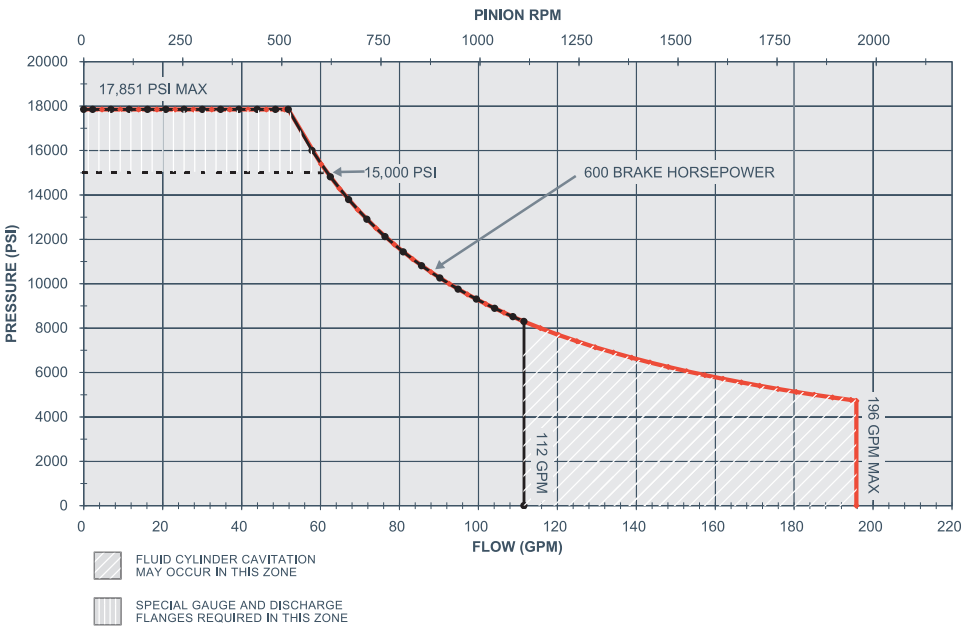
**SPM® TWS 600S HD Pump
Brake Horsepower Curve**



SPM® TWS 600S HD Pump
2.50" Plunger Horsepower Curve

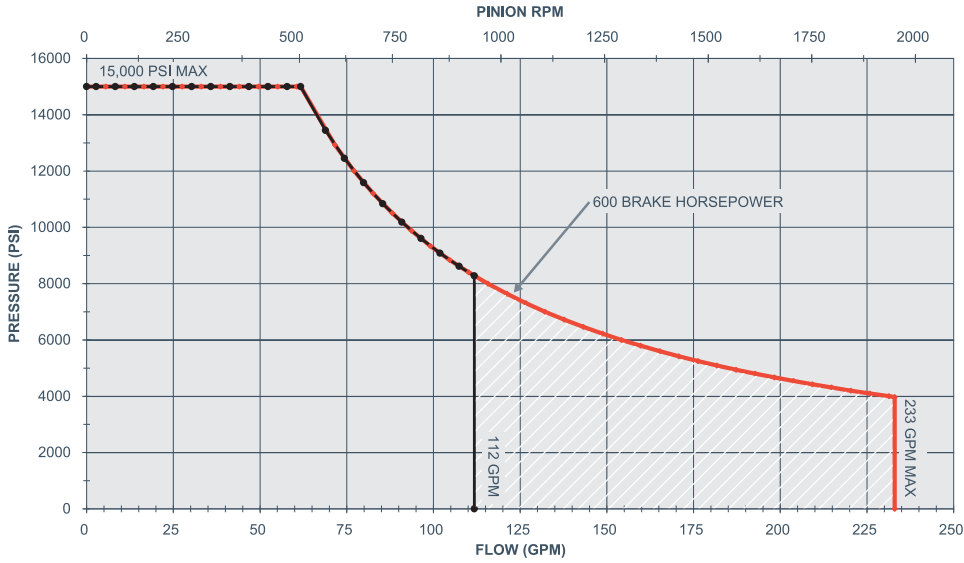


SPM® TWS 600S HD Pump
2.75" Plunger Horsepower Curve

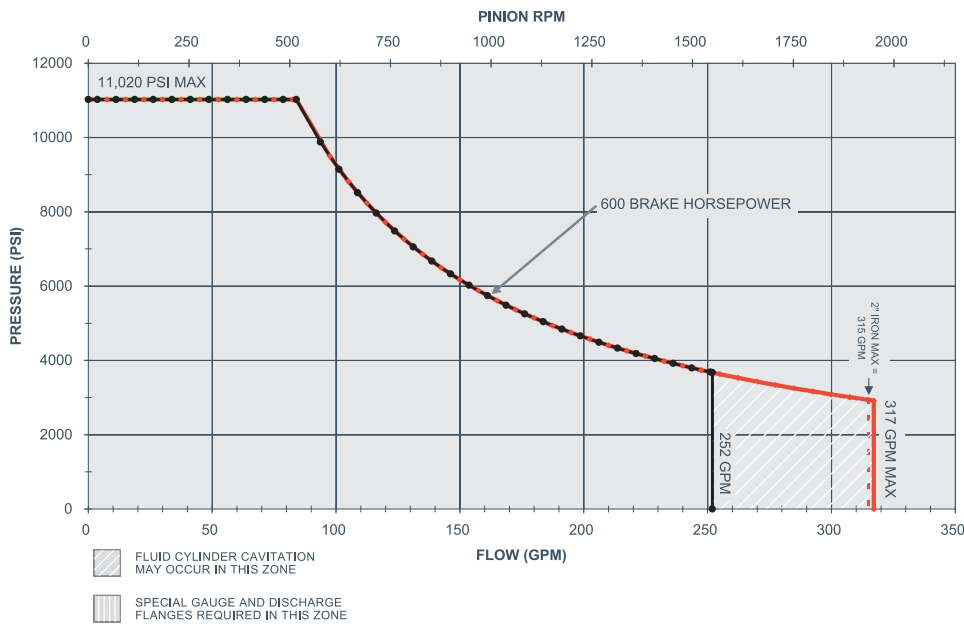


- FLUID CYLINDER CAVITATION MAY OCCUR IN THIS ZONE
- SPECIAL GAUGE AND DISCHARGE FLANGES REQUIRED IN THIS ZONE

SPM® TWS 600S HD Pump
3.0" Plunger Horsepower Curve



SPM® TWS 600S HD Pump
3.5" Plunger Horsepower Curve



- FLUID CYLINDER CAVITATION MAY OCCUR IN THIS ZONE
- SPECIAL GAUGE AND DISCHARGE FLANGES REQUIRED IN THIS ZONE

SPM Oil & Gas
 601 Weir Way
 Fort Worth, TX 76108
 USA

T +1 800 342 7458
 F +1 817 977 2508

www.spmoilandgas.com