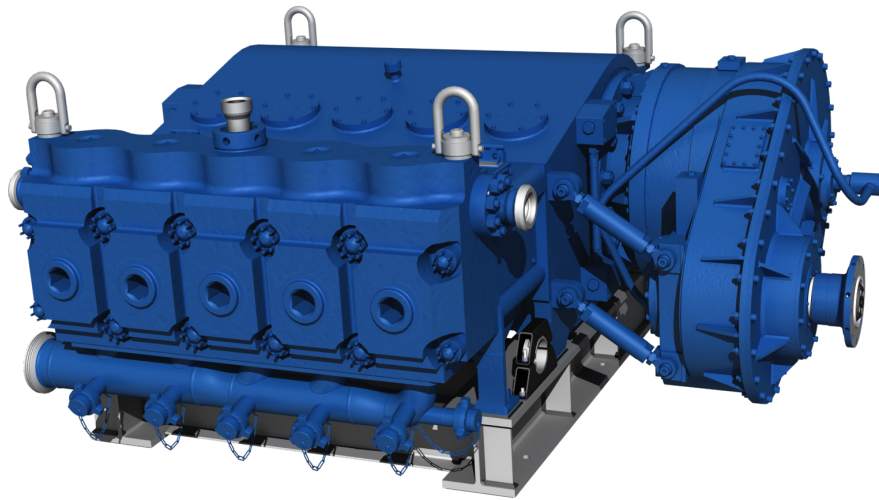


SPM® QEM 3000 Frac Pump

Redefining continuous duty

SPM™ Oil & Gas

A Caterpillar Company



The SPM® QEM 3000 Frac Pump from SPM Oil & Gas answers the industry's demand for longer hours of operation and increasing rod load. This specially designed pump allows continuous duty pressure pumping operation at 275,000 lbf rod load 100% of the time.

Enhanced structural rigidity through an engineered skid and forged segmented frame plates is designed to significantly extend component life, while a special dual lubrication system with on board filtration is designed to optimize the flow of oil and enhance the delivery of clean lubricant to prevent premature failure and reduce nonproductive downtime.

Designed to offer extended hours of operation, all pump assets are synchronized so that major overhaul service levels can be accomplished at the same time. The SPM® QEM 3000 Pump is designed to keep more of your assets on location, reducing downtime, lowering total cost of ownership, and improving your bottom line.

Design Features

The SPM® QEM 3000 Frac Pump is designed to deliver reliable performance in the long-term, with reduced downtime and a longer life.

- Structural rigidity in the frame provides more stability to increase pump life and lower maintenance
- Dual line system provides the right amount of pressure and flow for each pump component and provides excellent lube flow in cold starts. On Board Filtration reduces lubricant contamination to optimize pump performance
- The SPM® QEM 3000 Pump utilizes the largest frac pump bearing on the market to increase component life and better align it with maintenance intervals of the engine and transmission
- The gearbox is capable of withstanding continuous duty operations at 275,000 lbf rod load with minimal maintenance
- Validated through a thirteen million cycle test at the SPM Oil & Gas Research and Development Center, this durable pump is designed to offer synchronized maintenance schedules with the engine and transmission to decrease downtime and reduce total cost of ownership
- Patented geometry of SPM® Duralast® Fluid End lowers cross bore stresses by 30% or more, and corrosion-resistant stainless steel delivers up to 5x the life compared to conventional SPM® Fluid Ends*

* When compared with conventional SPM® fluid ends that do not feature SPM® Duralast® technology.

Pump Performance Operating Range

Rated maximum brake horsepower	3,000 bhp
Maximum rod load	275,000 LBf
Stroke length	8 in
Gear ratio	6.963:1
Approximate length	87 in
Approximate width	116 in
Approximate height	54 in
Approximate weight (dry)	25,775 lb

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

SPM® QEM 3000 Frac Pump Performance Data with 3" and 4" Flow Iron^{1,2}

Plunger Diameter IN (MM)	Displace Per Rev Gal/Rev (Liter/Rev)	Displacement at Pump Strokes per Minute/Pinion RPM											
		97.2	677	120	836	160	1114	200	1393	240	1671	281	1958
		GPM (LPM)	PSI (MPa)	GPM (LPM)	PSI (MPa)	GPM (LPM)	PSI (MPa)	GPM (LPM)	PSI (MPa)	GPM (LPM)	PSI (MPa)	GPM (LPM)	PSI (MPa)
3¾ (95.3)	1.91 (7.2)	186 (704)	24895 (172)	230 (869)	20165 (139)	306 (1158)	15124 (104)	382 (1448)	12099 (83)	459 (1737)	10082 (70)	537 (2034)	8611 (59)
4 (101.6)	2.18 (8.2)	212 (801)	21880 (151)	261 (988)	17723 (122)	348 (1318)	13292 (92)	435 (1647)	10634 (73)	522 (1977)	8861 (61)	612 (2315)	7568 (52)
4½ (114.3)	2.75 (10.4)	268 (1013)	17288 (119)	330 (1251)	14003 (97)	441 (1668)	10502 (72)	551 (2085)	8402 (58)	661 (2502)	7002 (48)	774 (2931)	5980 (41)
5 (127)	3.40 (12.9)	330 (1251)	14003 (97)	408 (1544)	11343 (78)	544 (2059)	8507 (59)	680 (2574)	6806 (47)	816 (3089)	5671 (39)	955 (3617)	4844 (33)
Input Power: BHP (KW)		3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)	3000 (2238)

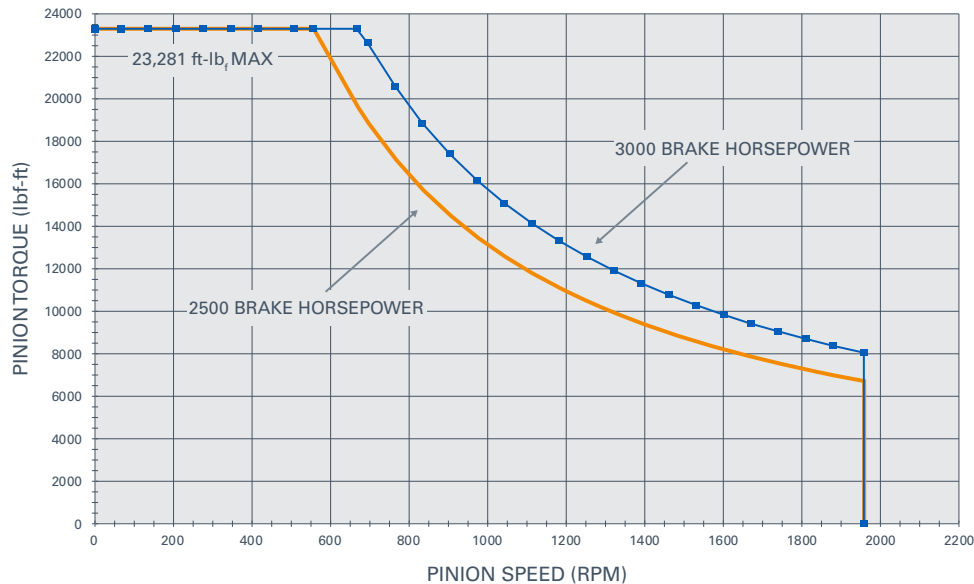
¹ Based on 90% ME and 100% VE – Continuous Duty. Pump rated to 15,000 PSI max due to discharge flanges.

² Pumps with pressures in excess of 15,000 PSI require special gauge and discharge flanges, unless otherwise specified pumps are rated at 15,000 PSI max, 5" at 14,006 PSI. Contact SPM Oil & Gas Engineering for information.

Flow velocity exceeds 42 FPS. It is not recommended to go over the max GPM. The max GPM in this case is 778 for 3" flow iron

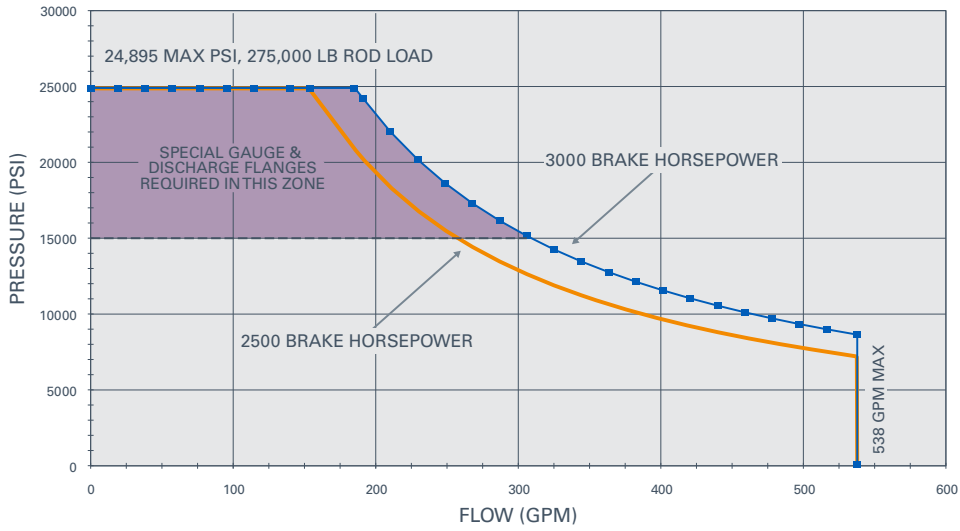
Increase in rate of valve wear due to suction valve velocities in excess of 12 FPS and fluid end and failure due to cavitation corrosion pitting. 12 FPS is approx 314 GPM in fluid ends with 4.5" and 5" plungers and 269 GPM in fluid ends with 3-3/4" and 4" plungers.

**SPM® QEM 3000 Frac Pump
Break Horsepower Curve**



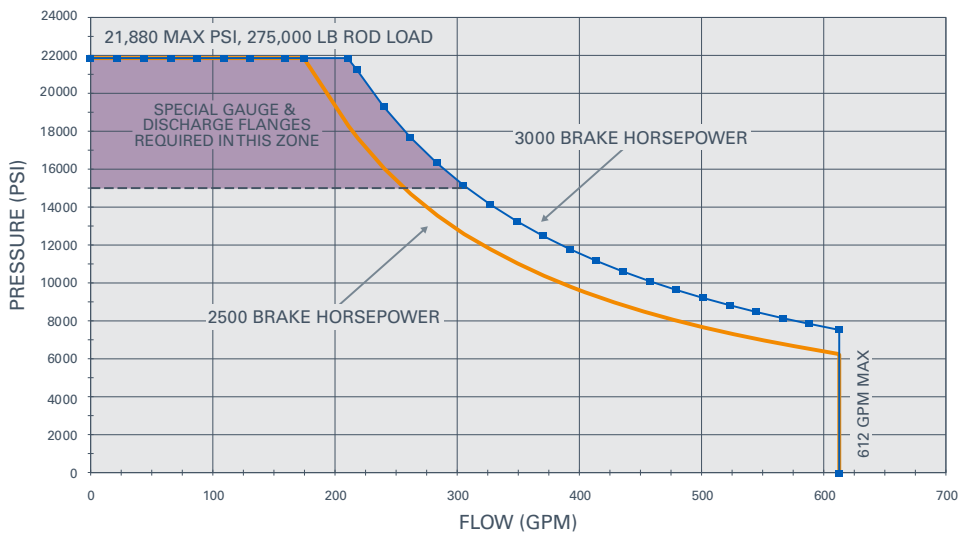
SPM® QEM 3000 Frac Pump

3.75" Plunger Horsepower Curve & Duty Cycle

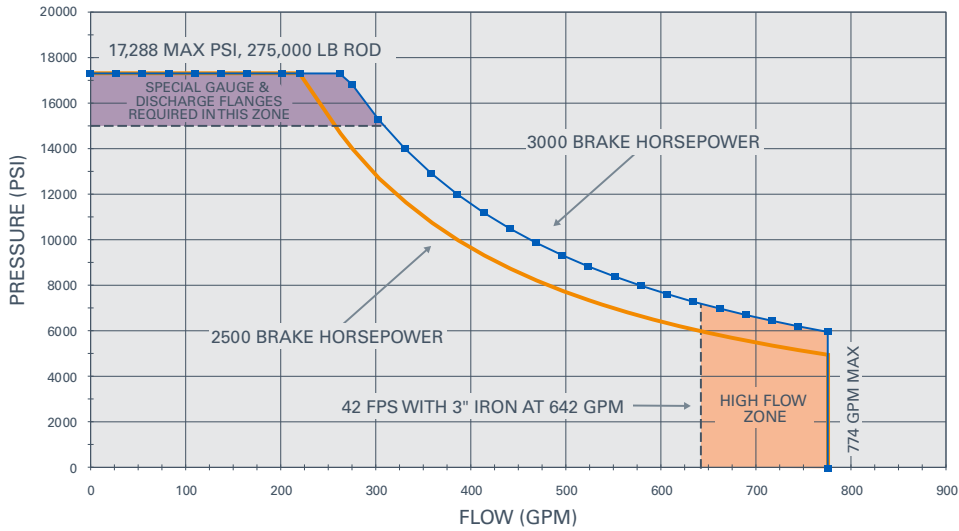


SPM® QEM 3000 Frac Pump

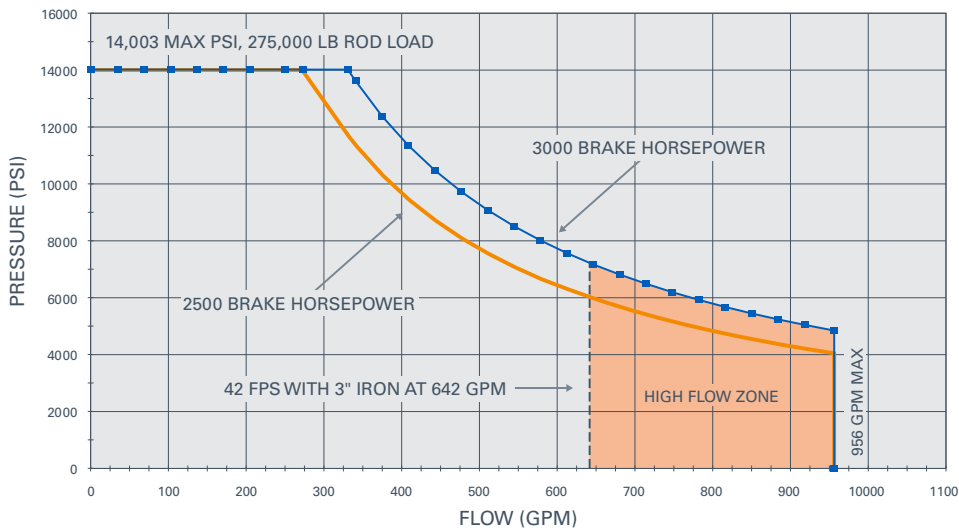
4" Plunger Horsepower Curve & Duty Cycle



SPM® QEM 3000 Frac Pump
4.5" Plunger Horsepower Curve & Duty Cycle



SPM® QEM 3000 Frac Pump
5" Plunger Horsepower Curve & Duty Cycle



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