

1-11/16" 9:10 Lobe 5.3 Stage Metal to metal power section



Metal Rotor

Metal Stator

- No rubber, no reline
- Life expectancy between 500-1000 hours
- High corrosion resistance for compatability with oil-based muds, acids, nitrogen, solvents and high chloride fluids
- Power section surface hardened for increased longevity
- In-house engineering, production, quality- and performance control

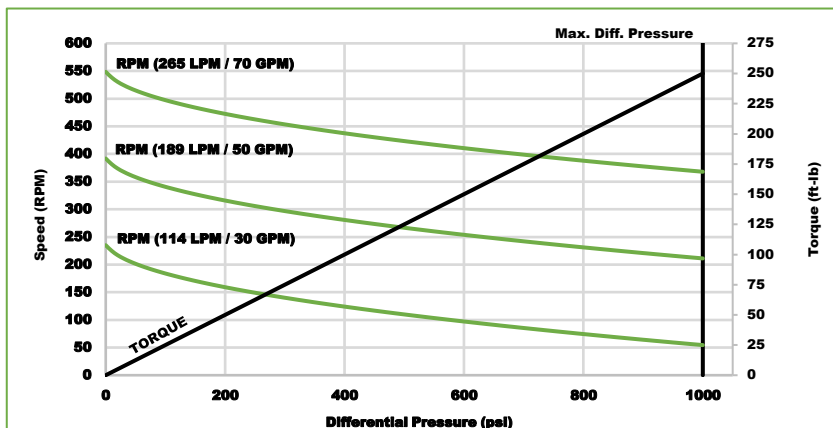


Full-Metal-Power
— POWER SECTIONS, PUMPS AND AGITATORS —

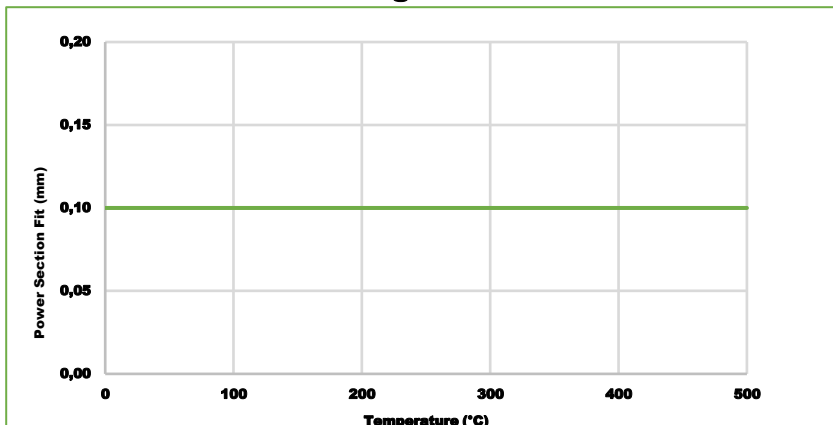
**Proprietary technology
for maximum performance**

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Performance Curve*



Power Section Fit Change



Performance Specifications*

	Metric	Imperial
Flow range	114-265 LPM	30-70 GPM
Max. operating temperature	500°C	932°F
Revolutions per unit volume	2,07 RPL	7,84 RPG
No load speed	235-548 RPM	
Maximum differential pressure	69 Bar	1000 PSI
Maximum torque	339 Nm	250 ft-lb
Motor power	12 Kw	17 HP

* Performance data is for reference only and is subject to change.

Rotor Specifications**

	Metric	Imperial
Total length	1744mm	68,6in
Profile length	1594mm	62,7in
Head length	150mm	5,9in
Rotor eccentricity	1,5mm	0,06in
Major diameter	29,1mm	1,15in
Minor diameter	23,3mm	0,92in
Head diameter	32,0mm	1,26in
Material	34CrAlNi7-10 (1.8550)	
Weight	7,3 kg	16,1 lbs

Stator Specifications**

	Metric	Imperial
Total length	2000mm	78,7in
Profile length	1594mm	62,7in
Stator outer diameter	42,9mm	1,69in
Major diameter	32,0mm	1,26in
Minor diameter	26,2mm	1,03in
Material	34CrAlNi7-10 (1.8550)	
Weight	11,9 kg	26,3 lbs

** Custom lengths and materials are available upon request.

Full-Metal-Power section Thru Tubing operational guidelines

Configuration (lobes/stages)	Motor OD (mm/in)	Power section no load displacement (RPL/RPG)	Material type	Common pumped fluids	Nitrogen	Suspended solids compatibility**	BHT temperature range (°C/°F)
9:10 - 6.2 Stage	43mm (1.69in)	2,71 RPL (10.24 RPG)	34CrAlNi7-10 (1.8550)	Water, brine, diesel, solvents, HCL (5-15%)*	Maximum 75% of total volume	Maximum 1%	500°C (932°F)
7:8 - 5.7 Stage	54mm (2.13in)	1,44 RPL (5.44 RPG)	34CrAlNi7-10 (1.8550)	Water, brine, diesel, solvents, HCL (5-15%)*	Maximum 75% of total volume	Maximum 1%	500°C (932°F)
9:10 - 4.0 Stage	73mm (2.88in)	0,58 RPL (2.20 RPG)	34CrAlNi7-10 (1.8550)	Water, brine, diesel, solvents, HCL (5-15%)*	Maximum 75% of total volume	Maximum 1%	500°C (932°F)
9:10 5.2 Stage	79mm (3.13in)	0,58 RPL (2.20 RPG)	34CrAlNi7-10 (1.8550)	Water, brine, diesel, solvents, HCL (5-15%)*	Maximum 75% of total volume	Maximum 1%	500°C (932°F)

* Acid will cause damage to rotor and stator reducing overall longevity and performance.

** Full-Metal-Power sections are susceptible to damage due to abrasives in the drilling medium. Longevity and performance may be affected.

Nitrogen

Although the power sections are capable of running 100% nitrogen or gaseous medium, it is recommended to only run 75% of total volume to lubricate the entire motor assembly.

Motor life

Motor life is affected by Abrasives such as sand content. For best motor performance and life, we recommend the motor be serviced after each use. Stator reuse should be determined by a bore scope examination, measurement, Dyno and the drilling conditions the power section has been exposed to.

Hydrogen Sulfide (H2S)

The materials used to manufacture the Full-Metal-Power sections are typically acceptable in a H2S environment for the exposure times seen by a thru tubing motor.

It is always best to use proper practices when running a motor in a well containing H2S. These may include but not be limited to keeping pH between 7.4 and 8.0, minimizing exposure of tools to H2S environments below 175°F (80°C) and running an oxygen scavenger/corrosion inhibitor as a component of the mud system. We also recommend a complete motor disassembly after each exposure to an H2S environment. This disassembly should include thread inspection and inspection for cracks.