

TorsionAL™ PROGRESSING CAVITY PUMP

Low Eccentricity and Robust Geometry for Trouble Wells

Do you have a well that experiences:

- Frequent coiling and flushing
- Rod and rod shear fatigue failures
- Frequent scrapped rotors due to base metal wear
- Rod/tubing contact wear above the pump
- Vibration loading failures
- Sudden torque spiking that results in seized rotors and flushes

Introducing the Lifting Solutions TorsionAL™ progressing cavity (PC) pump. Engineered with low-eccentricity and wide seal lines, this robust pump solves many issues related to high eccentricity pump models. The TorsionAL PC pump is available in 3 configurations: standard (TL), short stator (TS), TorsionAL-PivotAL (TP) pump combination.

Features and Benefits

- **Increase rotor pull success rate at lower, safer pulling loads**
In wells with frequent servicing due to coiling, flushing, or stuck-rotor issues, the TorsionAL PC pump pulls free more easily than conventional or CHOPS models.
- **Reduce rod string, tubing, and rotor failures**
The low-orbit diameter of the TorsionAL PC pump as well as its robust geometry minimizes fatigue loading and rod whip above the pump and minimizes contact wear between the rod and tubing.
- **Reduce stick-slip and stator bite**
The TorsionAL rotor's high stiffness minimizes torsional flex, which can alleviate stator bite and stick-slip causing torque spiking.
- **Improve seal life and rotor reuse**
Pressure and wear are more evenly distributed due to the rotors wide seal lines and increased surface area, which results in less severe fluid washing and yields a higher salvage rate for rotor re-chroming.
- **Alleviate vibrational loading problems**
The reduced eccentricity of the TorsionAL geometry results in reduced vibrational loading.

Large Seal Lines



**TorsionAL
PC Pump**



**Conventional
PC Pump**



LIFTING SOLUTIONS

Lifting Solutions Inc. provides product and service solutions that reduce lifting costs and lost production, better than anyone else in the industry.

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Applications

Lifting Solutions PivotAL™ rotor

Milled transition

- TL – The standard TorsionAL configuration has a standard cavity pressure rating and is designed for general purpose applications.
- TS – The short TorsionAL configuration is made up of a short stator (half the length of a TL) and a tight fitting rotor, enabling a high cavity pressure rating. It is designed for applications with problems achieving long run times due to rotor breaks and frequent rig-less activity, and is suitable for low-pressure production.
- TP – The TorsionAL-PivotAL configuration is made up of a TL stator and a PivotAL™ rotor and works by selectively operating the stator using active and inactive stator sections. The TP has the same pressure rating as the TL because the PivotAL rotor only seals half of the TL stator at a time. This configuration is designed for contact-wear applications and allows the operator the unique ability to restore pumping efficiency by lifting or replacing the rotor.

Specifications

Model	Configuration	Lift	Stator Length	Stator Tube OD in. (mm)	Standard Stator Connection in. (mm) [OD in. (mm)]	Optional Stator Connection in. (mm) [OD in. (mm)]	Rotor Drift Diameter in. (mm)	Standard Rotor Connection in. (mm) [OD in. (mm)]	Min. Tubing Size for Installation		3/4-in. Coilability in 3-1/2-in. EUE Tubing
									Drift in. (mm)	Orbit in. (mm)	
15	TL	700	90	3.5 (88.9)	2-7/8 (73.0) EUE Box [3.75 (95.3)]	3-1/2 (88.9) NUE Pin [4.18 (106.2)]	2.11 (53.6)	1 (25.4) API Pin [2.00 (50.8)]	2-7/8 (73.0) EUE	2-7/8 (73.0) EUE	Yes
		1400	180								
		1850	240								
	TS	900	90				2.12 (53.8)				
		1800	180								
		2400	240								
TP	900 x2	180	2.12 (53.8)								
	1200 x2	240									
30	TL	600	130	3.5 (88.9)	2-7/8 (73.0) EUE Box [3.75 (95.3)]	3-1/2 (88.9) NUE Pin [4.18 (106.2)]	2.11 (53.6)	1 (25.4) API Pin [2.00 (50.8)]	2-7/8 (73.0) EUE	2-7/8 (73.0) EUE	Yes
		1200	260								
		1500	325								
	TS	800	130				2.12 (53.8)				
		1600	260								
		2000	325								
TP	800 x2	260	2.12 (53.8)								
	1000 x2	325									
60	TL	600	192	3.75 (95.3)	3-1/2 (88.9) EUE Pin [4.18 (106.2)]	2-7/8 (73.0) EUE Box WEX [3.75 (95.3)]	2.27 (57.7)	1 (25.4) API Pin [2.00 (50.8)]	2-7/8 (73.0) EUE	3-1/2 (88.9) EUE	Coil Joint
		900	288								
		1200	384								
	TS	800	192				2.28 (57.9)				
		1200	288								
		1600	384								
TP	600 x2	288	2.28 (57.9)								
	800 x2	384									
120	TL	600	292	4.125 (104.8)	3-1/2 (88.9) EUE Box [4.13 (104.9)]	N/A	2.64 (67.1)	1 (25.4) API Pin [2.00 (50.8)]	3-1/2 (88.9) EUE	4-1/2 (114.3) EUE	NO
		900	393								
		1200	524								
	TS	800	262				2.65 (67.3)				
		1200	393								
		1600	524								
TP	600 x2	393	2.65 (67.3)								
	800 x2	524									