

Well Construction

Cementing Technologies

HD Top-Drive Swivel

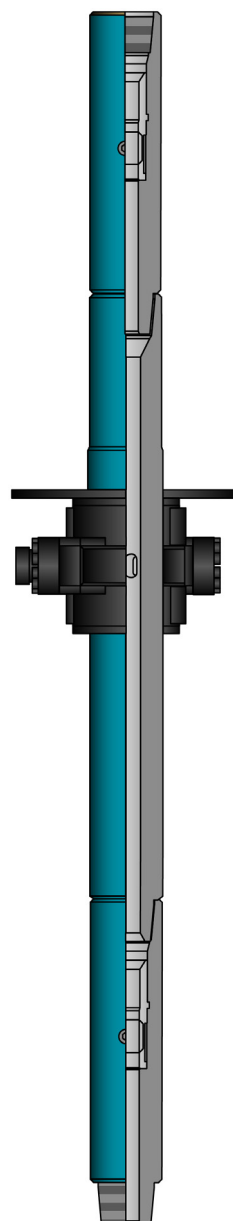
Expro's HD Top Drive Swivel permits work string rotation and reciprocation during high-pressure completion and circulating fluid displacements. The advanced seal and bearing configuration facilitates pump pressures and flow rates in excess of conventional top drive swivels, ensuring consistent, turbulent flow for optimal wellbore cleaning.

Features and Benefits

- High-pressure swivel facilitates rotation while pumping high-rate completion/circulating fluids
- Redundant seals allow for prolonged rotation times over conventional side-entry swivels
- Two side port inlets available with 2" or 3" WECO connections
- No welded connections on pressure- or tensile-bearing components
- Upper and lower isolation valves provide high-pressure isolation of the HD swivel mandrel
- Drill pipe handling pups allow tool to be quickly and easily rigged-up/rigged-down to minimize additional rig time
- Completion, remedial, and/or repair work can be completed with minimal trips into the derrick, reducing rig time and improving safety
- Extended rotation times allow for high-volume, long-duration displacement operations
- Multiple pumping operations can be performed without breaking flow lines, saving rig time
- Protects the top drive from corrosive or abrasive flow during circulation while rotating
- Upper and lower isolation valves provide well control, improving safety
- Adaptable to essentially any deepwater high-pressure, rotating displacement application

Applications

- Displacing well with completion fluid; reverse circulation operations
- Remedial squeeze operations – settings packers (BST Cement Retainers, Retrievable Packers, etc.) without sending service personnel repeatedly above the rig floor
- Changing Top Drive swivel seals / packing while continuing to rotate with the rotary, prevents need to POOH to perform repairs
- Allows for rigs with dynamic positioning to rotate without stopping cementing or displacement operations
- Setting balanced cement plugs for P&A and T&A operations



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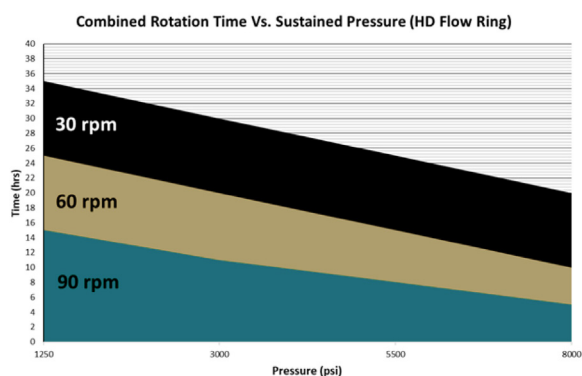
HD Top-Drive Swivel

Specifications - 6-5/8" HD Top Drive Swivel

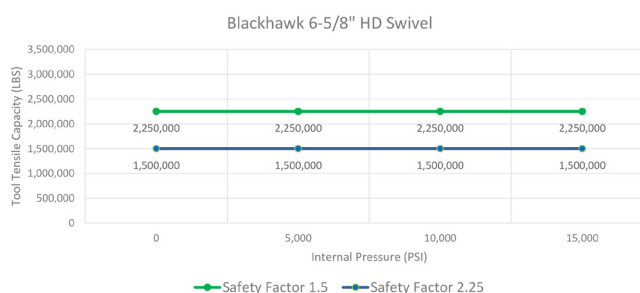
Maximum hookload	See performance envelope
Maximum working pressure	15,000 psi
Maximum rotating pressure	Application specific ¹ .
Torque-thru tool rating	100,000 ft-lbs
Maximum pump rates	35 bpm through top drive
	15 bpm through 2" 1502
	20 bpm through 3" 1502
Complete tool weight	2,852 lbs
Connections	6-5/8" API FH, 8.50" OD, 4.25" ID, 145ksi

Notes:

- Hookload ratings do not include drill pipe connections handling pups or full-open isolation valves.
- Expro recommends using a 1.5 SF for maximum working hookload unless reviewed and approved by Expro's engineering and operations.
- Expro's 6-5/8" HD Top Drive Swivel has been proof tested to 3,375,000 lbf.



Performance envelope with internal pressure



1. Maximum rotating pressure is a performance specification based on anticipated RPM, duration, and fluid properties. Expro will determine application-specific maximum rotating pressure ratings utilizing these parameters upon request.