



MechLOK™ Drill Pipe Swivel

MECHANICALLY LOCKABLE. FOR ERD WELL LINER INSTALLATIONS.

The MechLOK™ Drill Pipe Swivel can be run on any string where potential problems exist in reaching Target Depth due to frictional issues, typically in long, horizontal extended reach drilling (ERD) wells.

A drill-string deployed swivel tool, our MechLOK™ Swivel facilitates the rotation of the drill pipe above the liner in an ERD well, reducing drag, redistributing friction and mitigating helical buckling of the work-string. It also increases the available weight to push completions and liners to Target Depth in ERD wells.

THE BENEFITS

- Reduces the need for heavy-weight drill pipe or collars
- Protects items from potentially harmful torque
- Immediate locking enables mechanical release of setting tools when required
- No drop ball, no hydraulic concerns
- Ensures completions or liners get to TD
- Maximises ROI

	MechLOK™ Drill Pipe Swivel	Hydraulic Swivel - Single Shot	Mechanical Swivel - Left Hand Lock
Is the tool designed to push liners to TD in ERD wells by rotating the upper drill string only?	✓	✓	✓
Can the tool be selectively locked from swivelling to the right, the left, in tension or compression?	✓	✓	✗
Can the tool be locked to the right without setting the hanger or packer and without dropping a ball or dart?	✓	✗	✗
When un-locked does the tool swivel to the left as well as to the right?	✓	✓	✗
Could the tool accidentally lock to the right when sufficient drill string pressure is applied?	✗	✓	✗
Can the locking feature to the right be demonstrated on the rig, or reset on the rig without redressing the tool?	✓	✗	✗

Question	Answer
Why is a drill pipe swivel required?	To reduce frictional drag in drill pipe strings whilst pushing liners to TD in ERD wells
Where would a drill pipe swivel be placed in the string?	In the base of the drill pipe string above the liner, but DCT will do Torque and Drag Modelling to confirm
How fast can the MechLOK™ DPS be rotated?	Up to 65rpm, although fast rotation is not necessary
How much weight can be pushed on the MechLOK™ DPS whilst rotating?	Up to 125,000lbs at the tool
Do you need to rotate all the time whilst running a drill pipe swivel?	No, rotation is only necessary once surface weight is low due to drag in the well
Can you pump through the ID of the of the MechLOK™ DPS?	Yes, there is a clear passage through the tool to pump through and it is suitable for the passage of balls and darts
How fast can you pump through the MechLOK™ DPS, how much internal pressure can it hold?	There is no flow rate limit compared to the drill string and up to 5000psi internal pressure allowed
How much tension can you pull through the MechLOK™ DPS?	Up to 900,000lbs at the tool
How long can you push and rotate on the MechLOK™ DPS?	Up to 50 hours at 50rpm
Why does a drill pipe swivel need to be lockable?	Mainly to allow mechanical secondary release of liner hanger or packer running tool systems
Will any torque or rotation be applied through the MechLOK™ DPS when in swivel mode?	No, the multiple bearings in the tool prevent torque or rotation being applied through the tool
How does the MechLOK™ DPS lock?	The MechLOK™ DPS locks by rotating 25 right hand rotations with tension at the tool.
Is the MechLOK™ DPS a multifunction too, can it be locked and un-locked repeatedly?	No, the first generation of MechLOK™ DPS is a single shot tool. Multi activation tools are rarely needed
How does the MechLOK™ DPS affect the shear pinning or hydraulic setting of the liner hanger or packer that are run below it?	The MechLOK™ DPS does not affect the shear pinning or hydraulic setting of the liner hanger or packer at all because it is locked 100% mechanically

Question	Answer
Can the MechLOK™ DPS be left un-locked, and if so what would be the benefit of this?	Yes, the MechLOK™ DPS can be left un-locked. Upper string rotation may assist in hole cleaning for example
Can the MechLOK™ DPS be locked without setting the liner hanger or packer, and if so what would be the benefit of this?	Yes, the MechLOK™ DPS can be locked mechanically at any time without setting the liner hanger or packer. This would allow emergency release of the running tools with setting the liner hanger or packer
What sizes of MechLOK™ DPS are available?	Currently the MechLOK™ DPS is available to run in a 5", 5.1/2" or 5.7/8" Drill Pipe string or combination of and in 9.5/8" casing or above sizes
How will you know you are in tension and ready to turn to the right in ERD wells?	There is +/-12" of stroke in the tool that may be seen whilst picking up. Torque and Drag modelling will assist. Picking up in increments whilst attempting to rotate will assist, swivelling will occur until tension is achieved
How will you know the 25 turns to the right have occurred at the tool when in extreme wells, we cannot afford any rotation below the swivel?	Counting the turns once the rotation torque breaks over, and setting the torque limiter will prevent rotation below
What is the back up if you do your 25 turns to the right at the tool and you do not see an increase in torque showing the tool has locked?	Repeat the locking sequence with a little more tension and additional rotations until the tool does lock
A large service company study showed backward rotation while running in hole under tension, should I be worried about this?	No, it is extremely unlikely that 25 right hand turns can be seen by the MechLOK™ DPS due to well tortuosity whilst in tension. When the tool is in compression swivelling occurs so rotations and torque cannot build up
Is the tool sensitive to high solid content mud ?	No, the tool design is not sensitive to high solids content mud certainly no more so than liner hangers or packers and their running tools

Deep Casing Tools

51 York Street, Aberdeen AB11 5DP, United Kingdom

E: sales@deepcasingtools.com T: +44 (0)1224 572070

LinkedIn: Deep Casing Tools Twitter: @DeepCasingTools

www.deepcasingtools.com

