

PowerShift Downhole Adjustable Motor

Save a trip ► Save a bit ►
Save a fixed bend motor

As part of our Vector™ drilling motors family, the PowerShift™ downhole adjustable motor saves time and money by reducing the number of trips, allowing operational flexibility to place the required motor bend setting in each well section, and increase ROP by optimizing critical drilling parameters. This revolutionary motor builds from NOV's SelectShift™ patented technology allowing for rapid adjustment of the motor bend setting higher or lower in real-time while downhole. The technology is highly effective at combining sections such as vertical to curve, curve to lateral, and VCL applications, as well as a dedicated curve. The ability to utilize a lower degree bend setting downhole allows for broader and improved operating parameters such as higher drill string rotation with the lower bend setting in the vertical or lateral sections, thereby extending bit life and increasing ROP.

The Depth-Activated feature of the PowerShift motor enables the bend setting to be changed higher or lower one time at a specific depth or MD of the wellbore, thus allowing the tool to behave like two fixed bend motors in the hole. The motor allows one bend angle to start the run and a second bend angle to finish the section; the tool then stays locked in the second bend setting for the remainder of the run. In addition, the PowerShift downhole adjustable motor provides industry-leading torque output capability with 100% flow to the drill bit. PowerShift can be used in applications with hole temperatures up to 330°F. This motor can be run on NOV's most powerful 5-1/2" ERT™ and 7-1/4" ERT power sections and offers our strongest driveline technology.

Technical Data		
Size	5.5 in.	7.25 in.
Power Section speeds	.46 to .82 RPG	.08 to .33 RPG
Motor stabilizer size	Slick or 1/4 in. UG up to .5 in. UG	
Bit to bend	57.5 in.	61.5 in.
Max Flow	450 GPM	800 GPM
WOB @ 100 RPM	60,000 lbs	115,000 lbs
Bottom connection	3.5 REG, NC35, NC40	4.5 REG, 6.625 REG
Bend Settings available*	1.0° up to 2.30°	1.25° up to 2.38°
Hole Sizes	6.25, 6.50, 6.75	8.5, 8.75, 9.875



Features

- Downhole adjustment of the motor bend angle in real-time
- Allows for one bend shift downhole
- Available in two configurations (Low-to-High Bend assembly and a High-to-Low Bend assembly)
 - Two bend setting options within each configuration
- Permanent pressure signal mechanism with no bypass ~175-300 psi
- High torque/high differential pressure design
- Depth-Activated mechanism for shifting
- Robust all-mechanical design
- Optimized for high flow rates
- Option available for Air Drilling applications

Benefits

- Significant time and money savings: Like having 2 fixed bend motors in the hole during the run without the need to trip to change the bend setting
- Significantly lowers rotary torque and WOB needed in the low bend
- Improves ROP
 - Increased rotary RPMs/bit RPM in the low bend
 - Less side loading of the bit in low bend aids ROP by drilling a more in-gage hole and extends bit life
 - Low bend extends well reach, improves hole cleaning, and lowers drag with the ability to turn more rotary RPM in the lateral
- Bend setting angle is simple to shift, and quickly adjusts via RPM changes and flowrate changes
 - Provides build rates up to 16-18° per 100 feet
 - Motor is locked permanently in the second bend setting once activated
 - High bend allows increased build rates when faster correction is needed in the curve & tangent sections
 - Bend setting confirmation via permanent pressure signal on surface
- Useful in open hole sidetracking operations
- Dedicated Curve Bailout options
- Vertical to Curve and Curve to Lateral Applications



Learn more about
PowerShift



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