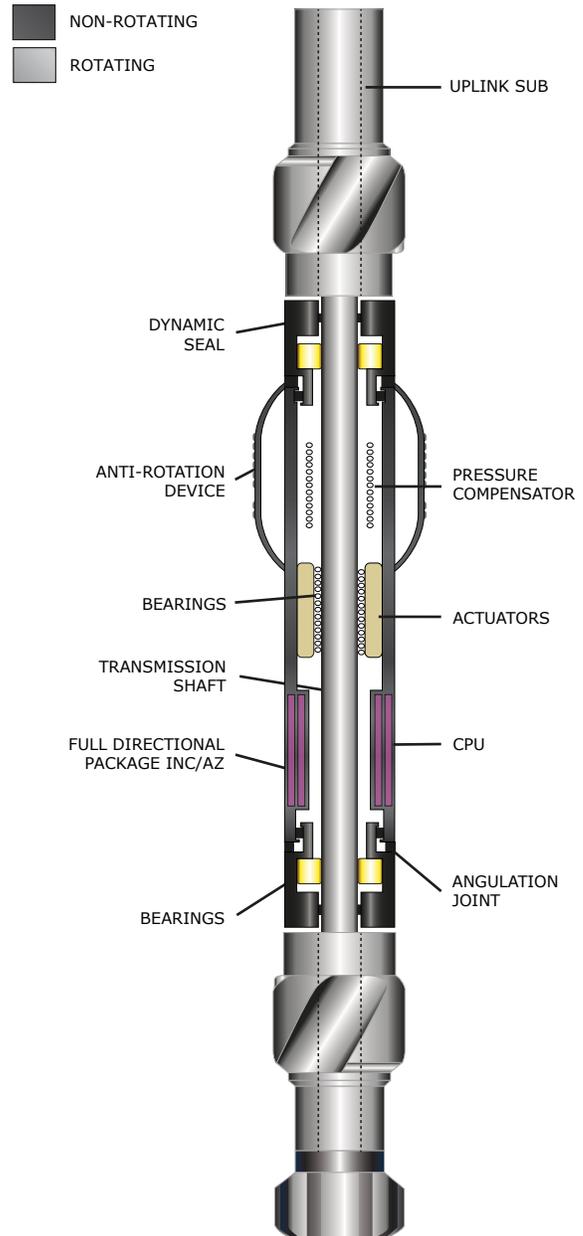


Features

- » **Closed-loop, fully automated inclination & azimuth directional control**
 - Minimal surface input needed to achieve and maintain course
 - Allows for low inclination directional control
 - Manual override control available
- » **Non-Mag Construction**
 - Allows for a full directional sensor array placed near the bit (inc/azi)
- » **Point-the-Bit**
 - 3 point geometry set up between the bit, NBS and Well-Guide upper stabilizer
 - Gives smooth borehole with low tortuosity
 - Bit drills on its front face, with no side cutting action required
 - Independent of formation
 - Low side forces are generated
- » **Versatility**
 - Wide range of bit types can be used
 - Standard operation can be used independent of MWD provider
 - Capable of drilling any directional profile – Vertical, “S” Well, Curve, Horizontal, 3-D Profile
- » **Rotating Stabilizers**
 - Minimizing stuck pipe situations
- » **Normal drilling parameters can be used**
 - No limit on mud pressure, sand content, or LCM
 - No pressure drop required to operate tool allows for optimized bit hydraulics
- » **Compatible with all types of drilling fluids**
- » **Re-programmable downhole**
 - 12 minutes of varying RPM sequences re-program Well-Guide’s Inc/Azi targets
- » **Uplink Sub Connects to MWD**
 - Connects to MWD for realtime surface communication

Operating Principle

- » Well-Guide takes a survey every 90 seconds using its own directional sensor package, and automatically calculates the correct toolface required to achieve its programmed course
- » This toolface is achieved by hydraulically deflecting the central rotating shaft to point the bit
- » The tool is initially programmed with a target course (inclination & azimuth) on surface and can be re-programmed downhole by using a series of fast and slow drillstring rotations (no pressure variance required)
- » Tool surveys, downhole temperatures, vibrations and tool operating parameters are logged and can be downloaded on the surface



Specifications 10" Well-Guide Series 10-300

Dimensions

Borehole Sizes (Bit only)	12 1/4" to 17 1/2"
Length	31 ft/9.5m
Tool OD	10"
Bore of central shaft (no restriction)	2 13/16"
Upper Connection	6 3/4" API Reg box
Lower Connection	6 3/4" API Reg box
Tool weight (hole size)	2.5 t/5,621 lb (12 3/4") 2.8 t/6,172 lb (14 3/4") 3.0 t/6,613 lb (17 1/2")

Drilling Parameters

Maximum RPM	150 RPM
Maximum Downhole Torque	30,000 lbft/41,000Nm
Maximum indicated WOB	70,000 lb/31,000daN
Maximum Overpull	1,000,000 lb/44,400daN
Maximum Downhole Temperature	150°C/302°F
Maximum Downhole Pressure	20,000 psi/138MPa
Maximum Mud Flow	1200 GPM
Downlink rotary speeds	High 100 RPM Low 50 RPM

Performance

Maximum dogleg	3.0°/100ft
Battery life	400 hrs
Make-up Torque Upper/Lower	6 3/4" API Reg box 42,677 lbft/57,862 Nm