GR Energy Services

Motorized Free Point Tool

The motorized free point tool determines the stuck point in pipe, tubing or a casing string.

When a drilling or workover string gets stuck in the well, the culprits are usually poor borehole conditions, wellbore fluid properties, formation characteristics or assembly problems. The first step in performing backoff operations is to accurately determine the location of the stuck pipe. The GR Motorized Free Point Tool produces real-time data that allows the operator to quickly choose the next best steps for recovering the stuck downhole assembly.

The Motorized Free Point Tool's controlled electronics protect against damage to gear and drive assemblies, and the tool has seven interchangeable anchoring systems for different applications. It also features a built-in casing collar locator, solid-state electronic motor control and full open/close sensors. The sensors pick up movements in the assembly associated with tension, compression or torque measurements, and convert them to an AC signal. This signal is processed at the surface by a separate Free Point Panel that provides control functionality to the tool.

Specifications	1 7/16 in. [37 mm]	1 9/16 in. [40 mm]
Vertical resolution	4.03 ft [1.23 m]	
Logging speed CCL	60 ft/min [18.3 m/min]	
Mud type / weight	No limitations	
Temperature rating	325°F [163°C]	
Pressure rating	15,000 psi [103 MPa]	18,000 psi [124 MPa]
Material	Nedox® coated steel	
OD	1.43 in. [36.5 mm]	1.56 in. [39.7 mm]
Length	8.32 ft [2.54 m]	
Weight	45 lbm [20 kg]	50 lbm [23 kg]
Fishing strength	22,000 lbf [98 kN]	
Min. pipe ID	1.77 in. [45 mm]	1.90 in. [48 mm]
Max pipe ID	11.27 in. [287 mm]	
Top connection	1 9/16-in. GO box	
Operating voltage and current Operating anchors Operating sensors	32 V DC @ 240 ±20 mA 40 V DC @ 200 ±10 mA	
Output signal (peak to peak)	1.0 V variable frequency	
Cable type	Single conductor	
Stretch-torque sensor	Magnetic flux gap	

Free Point Panel

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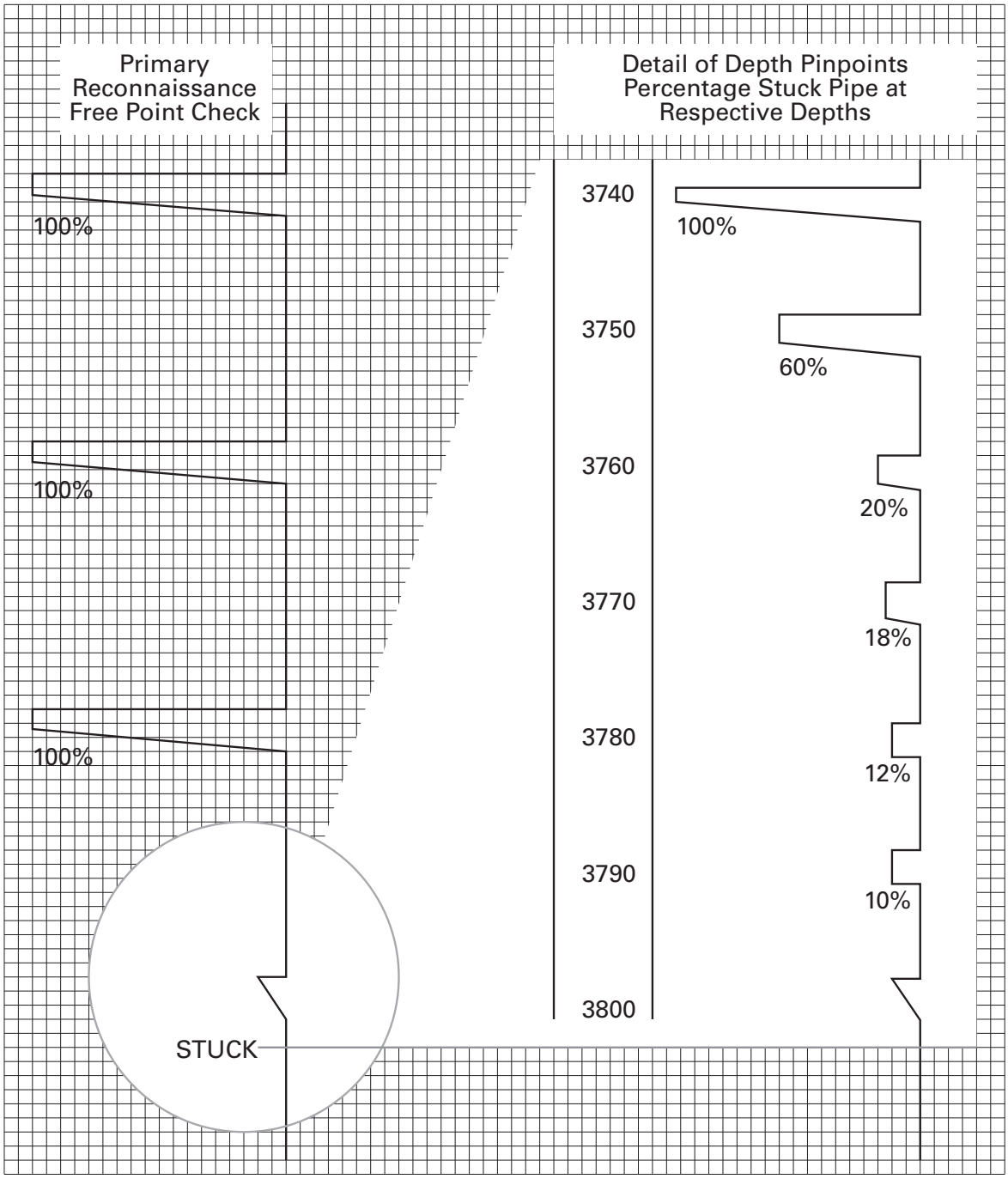

Stuck pipe can be determined by the Motorized Free Point Tool and illustrated so that the operator can determine the ideal depth to perform backoff operations. In this example, the ideal depth would be between 3,740 and 3,750 ft.

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