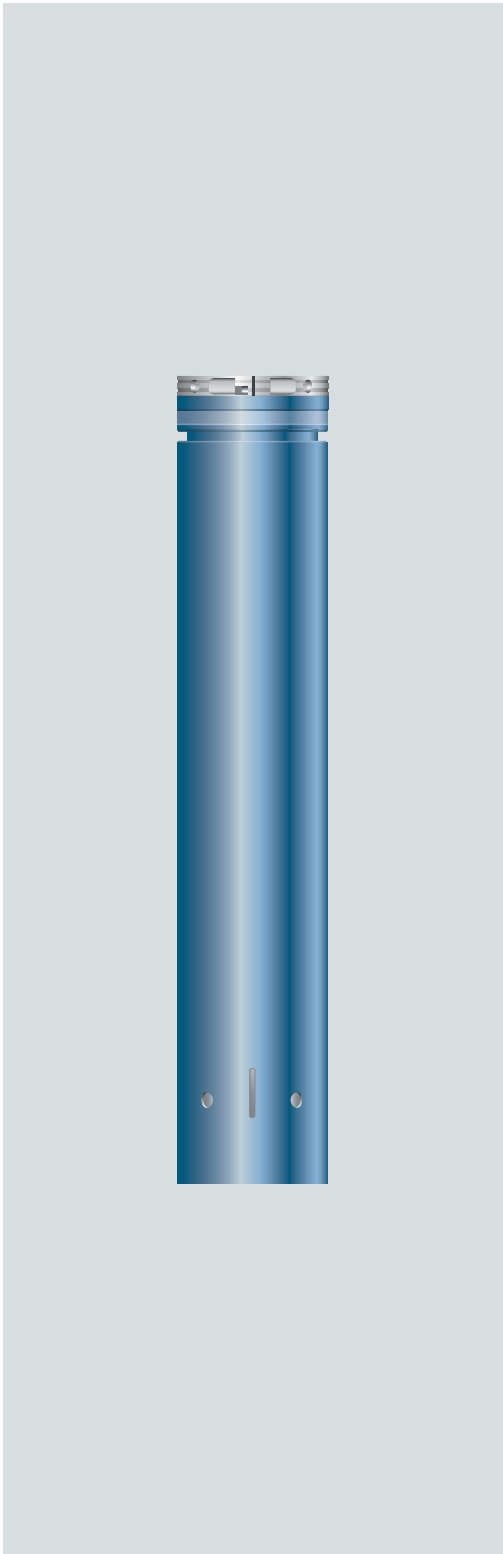


GPIT General Purpose Inclinometry Tool

Schlumberger



The GPIT* General-Purpose Inclinometry Tool provides inclinometer measurements. Tool orientation is defined by three parameters: tool deviation, tool azimuth, and relative bearing. The GPIT tool uses both a three-axis inclinometer and a three-axis magnetometer to make measurements for determining these parameters.

The basic principle of downhole inclinometer measurements is to define accurately the tool system axis with respect to the Earth's gravity (G) and magnetic field (F). Because both vectors are well defined within the Earth system, a relation can be established between the tool and Earth systems. The magnetometer determines F_x , F_y , and F_z , and the inclinometer determines A_x , A_y , and A_z for the acceleration due to G . The MAXIS* Multitask Acquisition and Imaging System computes deviation, azimuth, and relative bearing from these values.

When the GPIT tool is used in an open wellbore, the tools above and below it must have nonmagnetic housings. In cased hole the tool can be used only for deviation and relative bearing measurements.

Applications

- Borehole azimuth
- Borehole deviation
- Borehole relative bearing
- Tool azimuth information
- Deviation and direction of uncased wellbores for plotting
- Direction and orientation measurements for various dipmeters
- Orientation of USI* UltraSonic Imager tool images with respect to the wellbore

Measurement Specifications

	GPIT Tool
Output	Borehole azimuth, deviation and relative bearing, tool azimuth
Logging speed	3,600 ft/hr [1,097 m/h]
Range of measurement	0 to 360°
Vertical resolution	6 in. [15.24 cm]
Accuracy	Azimuth: ±2° Deviation: ±2°
Depth of investigation	Not applicable
Mud type or weight limitations	None
Combinability	Combinable with most services, anywhere in the logging string (tools immediately above and below must have nonmagnetic housings)
Special applications	H ₂ S service

Mechanical Specifications

	GPIT Tool
Temperature rating	350°F [177°C]
Pressure rating	20,000 psi [138 MPa]
Borehole size—min.	4 $\frac{5}{8}$ in. [11.75 cm]
Borehole size—max.	No limit
Outer diameter	3.625 in. [9.21 cm]
Length	4 ft [1.22 m]
Weight	55 lbm [25 kg]
Tension	50,000 lbf [222,410 N]
Compression	16,700 lbf [74,280 N]

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