



Geo-Vista

Slim Hostile Logging System (HostileLog)

PI Data Acquisition System (PIDAS)

Telemetry & Gamma Ray-Slim Hostile
(TGT-SH)

Orientation Tool-Slim Hostile (ORT-SH)

Compensated Neutron Tool-Slim Hostile
(CNT-SH)

Litho-Density Logging Tool-Slim Hostile
(ZDT-SH)

Acoustic Tool-Slim Hostile (ACT-SH)

Four Arms Caliper-Slim Hostile (FAC-SH)

Dual Lateralog Tool-Slim Hostile (DLT-SH)

Micro Spherical Focused Laterolog

Tool-Slim Hostile (MSF-SH)

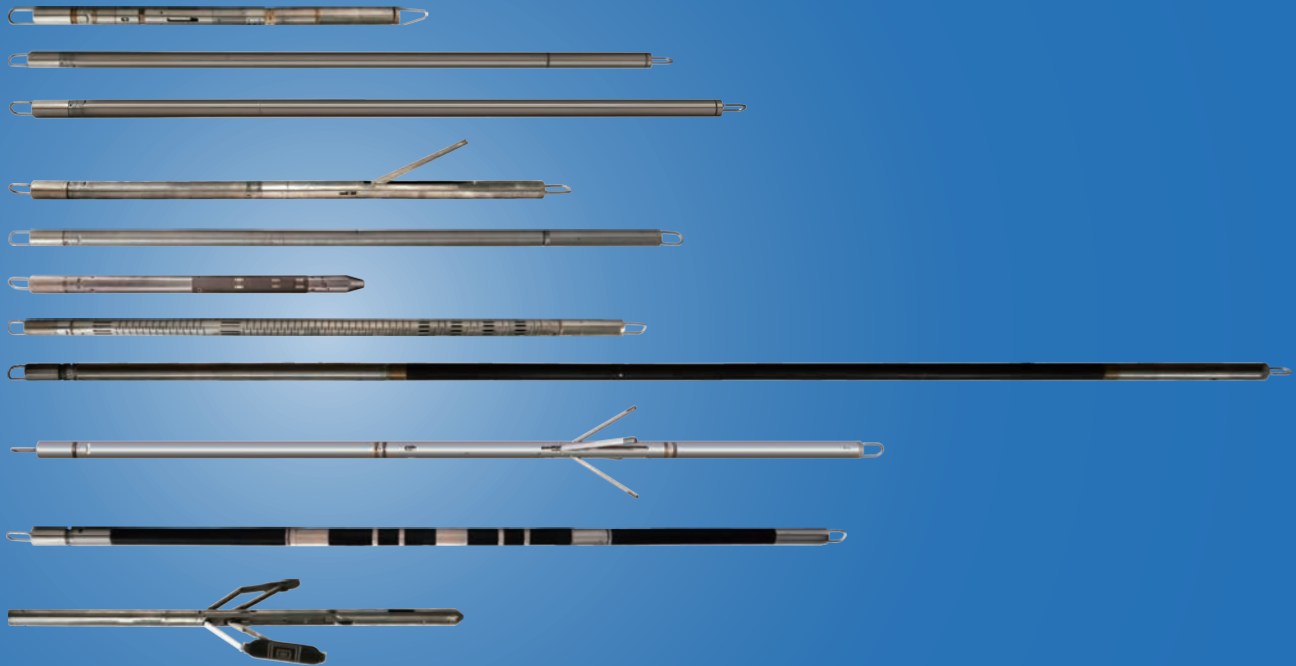
Array Induction Tool-Slim Hostile (AIT-SH)

Temperature/Tension/Mud Resistivity

Tool-Slim Hostile (TTR-SH)

Motor Push Sub-Slim Hostile (MPS-SH)

Pipe Conveyed Logging Tool-H (PCL-H)



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Applications

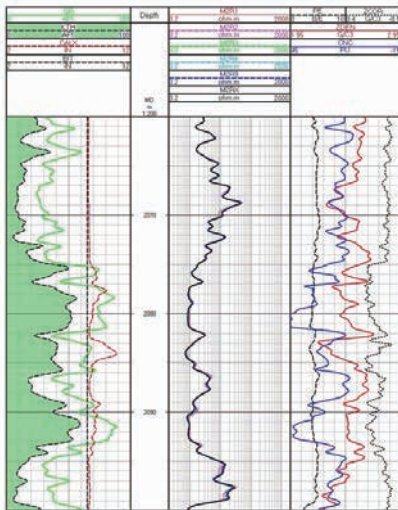
- Formation evaluation and lithology identification: slim boreholes, high pressure and high temperature wells, extended-reach wells, re-entry wells.
- Pipe Conveyed Logging Tool-H (PCL-H)
- High temperature and high pressure (HPHT) formation evaluation method in slim hole well.

Benefits

- Reduce operating costs by improving reliability, combinability and quick rig operation.

Features

- The IDP-SH (96 mm) can be used in a 4.5 in. borehole. The stable spectrum measurement combines as one of the grand slam logging.



Introduction

HostileLog is used in logging under high temperature, high pressure, small borehole and harsh environments.

These serials tools have high temperature sensors and corrosion-resistant components thus can be operating at high temperature and high pressure conditions 430°F (220°C), 25000 psi (172.4 MPa) / 30,000 psi (207 MPa) (Advanced) for 8 hours. Without flask, HostileLog can continuously work at 350 °F (177°C) temperature for more than 36 hours and provide high-quality logging data with PIDAS data acquisition system.

HostileLog can be combined with Pipe Conveyed Logging Tool-H (PCL-H) system for horizontal well operations.

General Specifications

Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa) / 30,000 psi (206.9 MPa)
Diameter	Advanced 2.875 in. (73 mm) / 3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Maximum Logging Speed	18 m/min

* ZDT-SH/IDP-SH has limitation with 400°F (200°C) rating.

* Continuously long time work with no flask under the temperature of 350°F (175°C).

DOWNHOLE TOOLS

- Telemetry & Gamma Ray-Slim Hostile (TGT-SH)
- Orientation Tool-Slim Hostile (ORT-SH)
- Compensated Neutron Tool-Slim Hostile (CNT-SH)
- Litho-Density Logging Tool-Slim Hostile (ZDT-SH)
- Acoustic Tool-Slim Hostile (ACT-SH)
- Four Arms Caliper-Slim Hostile (FAC-SH)
- Dual Lateralog Tool-Slim Hostile (DLT-SH)
- Micro Spherical Focused Laterolog Tool-Slim Hostile (MSF-SH)
- Array Induction Tool-Slim Hostile (AIT-SH)

OPTIONAL TOOLS

- Telemetry & Spectrolog Tool-Slim Hostile (TST-SH)
- Inline Density Logging Pusher (IDP-SH)

AUXILIARY TOOLS

- Temperature/Tension/Mud Resistivity Tool-Slim Hostile (TTR-SH)
- Casing Collar Locator-Slim Hostile (CCL-SH)
- Cablehead-Slim (CHS)
- Flex Joint Sub-Slim Hostile (FJS-SH)
- Swivel Sub-Slim Hostile (SWS-SH)
- Motor Push Sub-Slim Hostile (MPS-SH)
- Pressure Isolation Sub-Slim Hostile (PIS-SH)
- Mass Isolator Sub-Slim Hostile (MIS-SH)
- Insulation Sub-Slim Hostile (ISS-SH)
- Four-Arms Centralizer Sub-Slim Hostile (FCS-SH)
- Decentralizer Sub-Slim Hostile (DCS-SH)
- Pipe Conveyed Logging Tool-H (PCL-H)

Features

- The system records the data including the original signal of the instrument, calibrated engineering value and the processed data. Because the original signal of the instrument is recorded, the logging data could be reprocessed by different parameters if required.
- All of the calibration value and verification value could be displayed by the operator, therefore, it is easy to confirm: the value of the super-value will flash, causing the operator's attention.
- Repeated curves can be real-time displayed on the main logging curves to verify the repeatability of the curves.
- Real-time plotting of cross-plot graphs allows the operator to verify the correctness of the logging response which is based on the expected model.
- Real-time environmental correction eliminates the subjective assessment of the operator's quality control process.
- Real-time similarity correction verifies the integrity of the acoustic waveform data.
- Using personnel safety and data protection systems.
- Reduces wellsite operating time and ensure system reliability by using advanced computer technology and redundant design simplify data acquisition and processing.

* Telemetry :




MGTS
SGTS
RGTS

Wireline Perforating Panel (WPP)

Features

- Wide voltage input (100 Vac-240 Vac)
- With safety switch
- PFC power supply is up to 150 V, and perforating and coring power supply adopts the mode of external DC power supply
- The polarity of perforating and coring voltage is adjustable

Introduction

The  PI Data Acquisition System ( PIDAS) is designed for data acquisition and processing in combination with Open-hole and Cased Hole tool. This  PIDAS is based on portable notebook as a host and remote transmission system with high-speed data communication.



Specifications

Physical Dimensions & Weights

Height	29.13 in. (740 mm)
Depth	29.33 in. (745 mm)
Width	27.56 in. (700 mm)
Shipping Weight	160.9 lbs. (73 kg)

Environmental Characteristics

Operating Temperature	0°C~+50°C
Storage Temperature	-20°C~+75°C
Relative Humidity	< 95%
Vibration (3D)	3 g 10-60 Hz (When not working)
Shock (3D)	3 g 10-60 Hz (When not working)
System Power Supply	85-265 Vac, 43 Hz-70 Hz
Downhole Instrument Power Supply	
AC Power	0-720 Vac, 2 A, 1440 W
	0-1440 Vac, 1 A, 1440 W
DC Power	0-1000 Vdc, 2 A, 2000 W

System Composition

Portable surface logging system is divided into: data acquisition system, power supply system and other major parts. The functions of each part is as follows:


1. Surface Data Acquisition System: the computer is the core, controlled by several loaded software, to complete a variety of logging operations. Such as the processing, recording, display, quality control and fast processing and interpretation of logging data on the wellsite. Including: PC, Wireline Acquisition Panel (WAP).
2. Power Supply System provides power to the surface system and downhole equipment. Currently, logging power supply system usually use vehicle generators or wellsite power.
3. Hoist Display Unit (HDU) is the display unit for the Surface System. Equipped with a color LCD touch screen display, the unit provides a continuous display of depth information. In addition, HDU also displays other variables monitored and provides a visual and audible alarm when any of these variables are outside a preset range.

Features

- Used for a variety of downhole instruments for openhole and cased hole with different modules.
 - PI Data Acquisition System (PIDAS)
 - Post-processing & presentation management (FileView)
 - PI Wireline Formation Sampling and Testing System (PIWST)
 - PI Formation Coring Software (PIWST-FCT)
 - PI Mechanical Sidewall Coring Software (PIWST-MSD)
 - PI Reservoir Characterization Tester Software (PIWST-RCT)
 - PI Formation Test, Fluid Analysis, Pump-Thru Software (PIWST-FFP)
 - PI Production and Engineering Logging System (PIPES)
 - PI Down Hole Camera Software (PIPES-DHC)
 - PI Free Point Indicator Software (PIPES-FPI)
 - PI Mechanical Downhole Cutter (PIPES-MDC)
 - PI Rotary Magnet Ranging Software (PIPES-RMR)
 - PI Gyroscope Orientation Software (PIPES-GOT)
 - PI Downhole Casing & Tubing Tractor Software (PIPES-CTT)
 - PI Downhole Hydraulic Tractor Software (PIPES-DHT)
 - PI MFI Logging System (PIPES-MFI)
 - PI Memory Acquisition and Processing Software (PIPES-MAP)
 - PI Vertical Seismic Profile System (PIVSP)
 - Microseismic monitoring data processing and interpretation software (MMDPI)
 - PI Logging While Drilling System (PILWD)
 - PI Rotary Steerable Software
 - PI LWD Data Presentation Software
 - PI LWD Remote Monitoring Software
- Using multi-window to display nuclear logging equipment which is obtained by the spectrum, acoustic and imaging instruments. These windows can be controlled by the user, in order to display the original data or the processed data, so that, the operator can control the quality of the real-time logging data.
- Provides Multi-tasking and distributed processing at the wellsite, improving log data integrity and wellsite efficiency.


PIDAS Software Introduction

The PIDASView software contains two parts:  PIDAS software and FileView software. Each part can run independently.

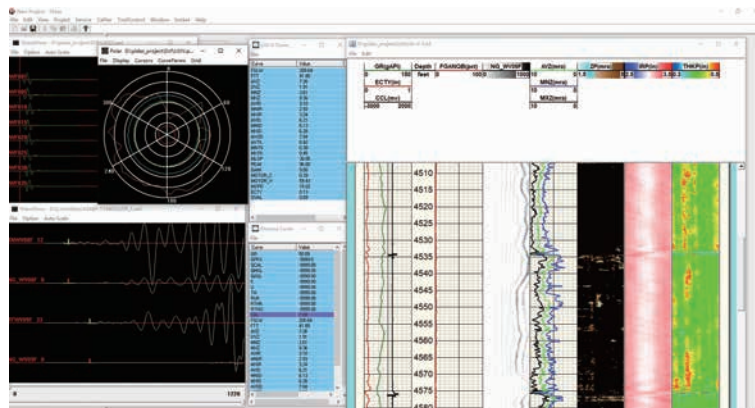
The  PIDAS software is a control acquisition processing system based on WINDOWS with multi-task & multi-user, and using a large number of modern image processing technology.

The control acquisition processing system is used to acquire and process various signals of the downhole logging instrument detector and to control other functions of the downhole instrument and converts the acquired signals to engineering values and provides the logging data required by the user.

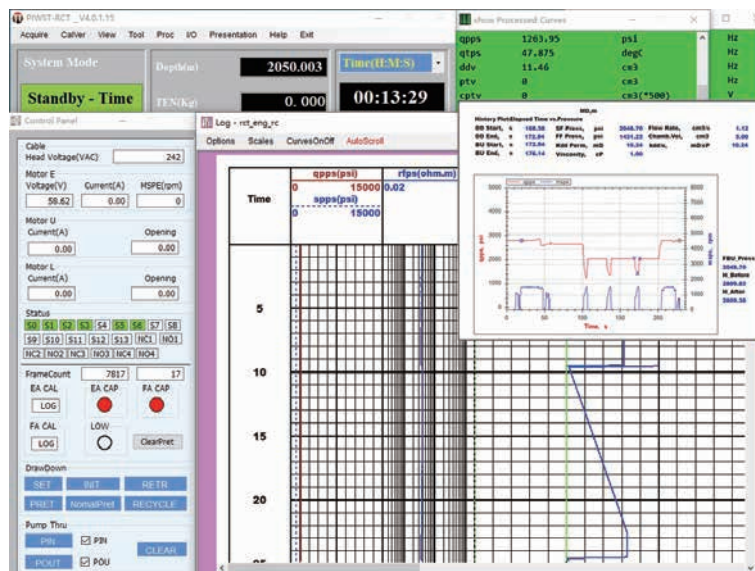
By equipment array, imaging and large information, real-time logging data acquisition, control and processing achieve multi-parameter acquisition and multi-task time-sharing processing.

 PIDAS software can be used for a variety of downhole instruments for openhole and cased hole with different modules.

The FileView is a post-processing and presentation software. It can support the basic functions, such as the heading, toolstring, well sketch, calibration, parameters, log plot, data convert, etc. Also, it can provide the data analysis and processing, 2D, 3D, cross plot, compose plot, etc. advanced functions.



USI-G/CBL/VDL service by PI Data Acquisition System module

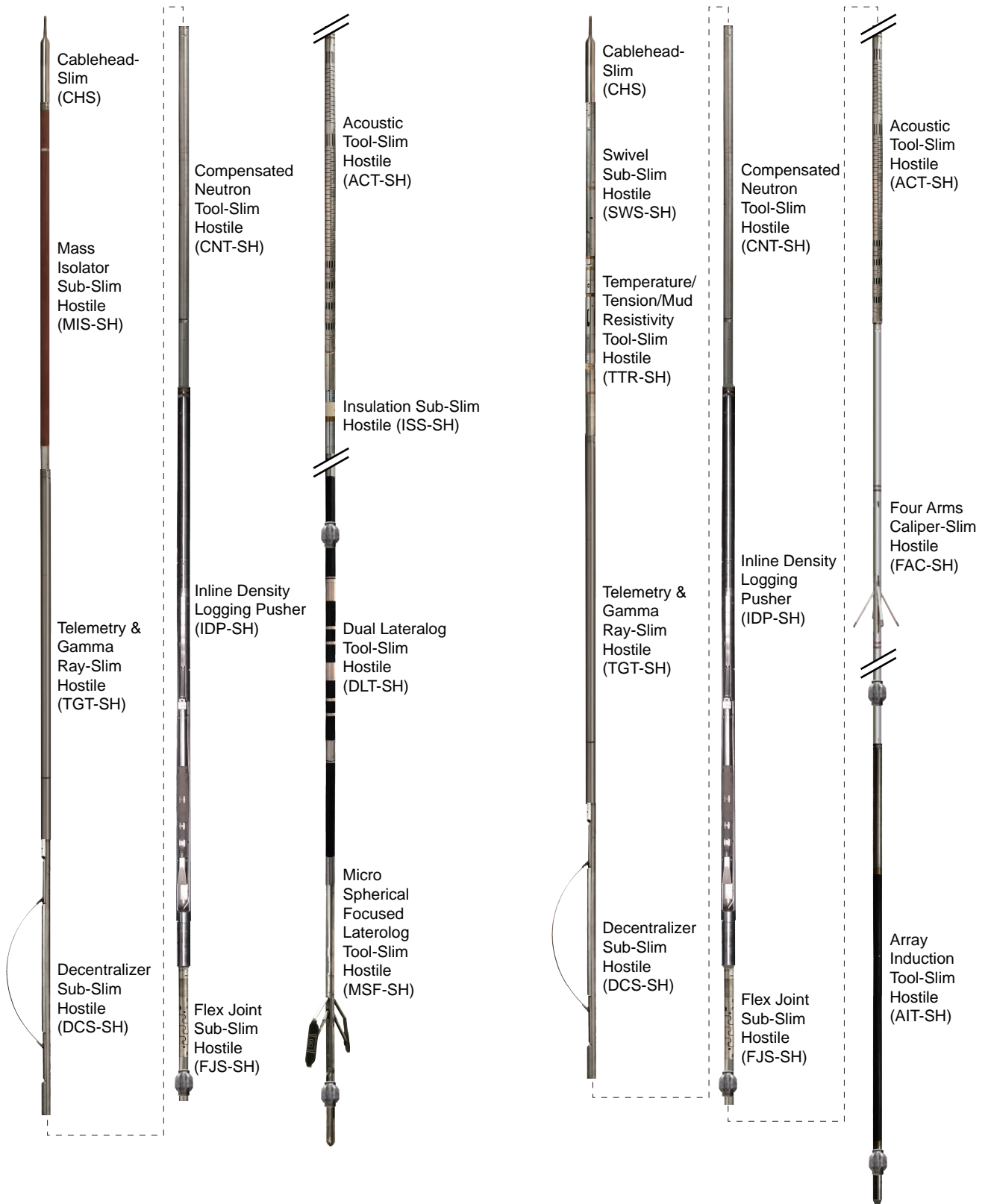


Pressure Test and Sampling service by PI Reservoir Characterization Tester Software PIWST-RCT module



Slim Hostile Logging System (HostileLog) Combinability

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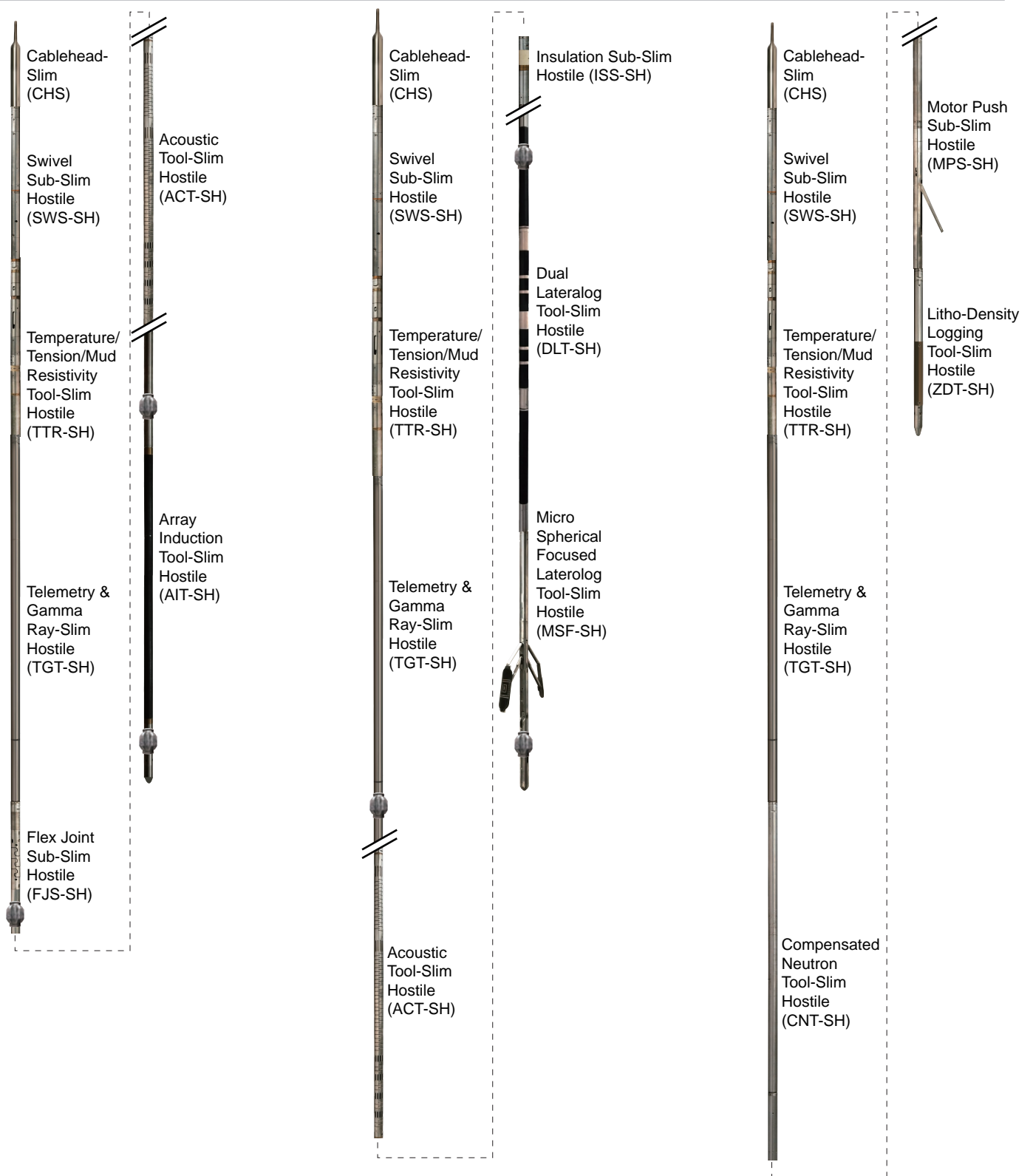


Some examples of possible tool combinations



Slim Hostile Logging System (HostileLog) *Geo-Vista* Combinability

Geo-Vista



Some examples of possible tool combinations

Features

- Equipped with a safety switch to ensure safe operation.
- Power supply to GR and CCL instruments, the voltage is up to 160 Vdc.
- Adjust the polarity of the power supply
- Both hands must be used simultaneously for perforation and coring to ensure the safety of the operation.
- Using an external DC power supply, the perforation voltage and current no limited by this panel.
- With BYPASS mode, connected with any system.
- Perforation and coring functions, no more panels required.
- Provide a powerless CCL visual indication and signal conditioning

Introduction

Wireline Perforating Panel (WPP) is used for Perforating Control, Coring Control, PFC (Perforating Formation Correlation) power supply for Gamma Ray and CCL, Powerless CCL. It is the first panel connected to the cable drums, and suitable for 7-Conductor and Mono-conductor cable.



Specifications

Physical Specifications

Length	17.7.00 in. (45 cm)
Width	19 in. (48.26 cm)
Height	5.3 in. (13.35 cm)
Weight	22.05 lbs. (10 kg)

Electrical Parameters

AC Input	100-265 Vac / 47-63 Hz
PFC Output Voltage	0-160 Vdc

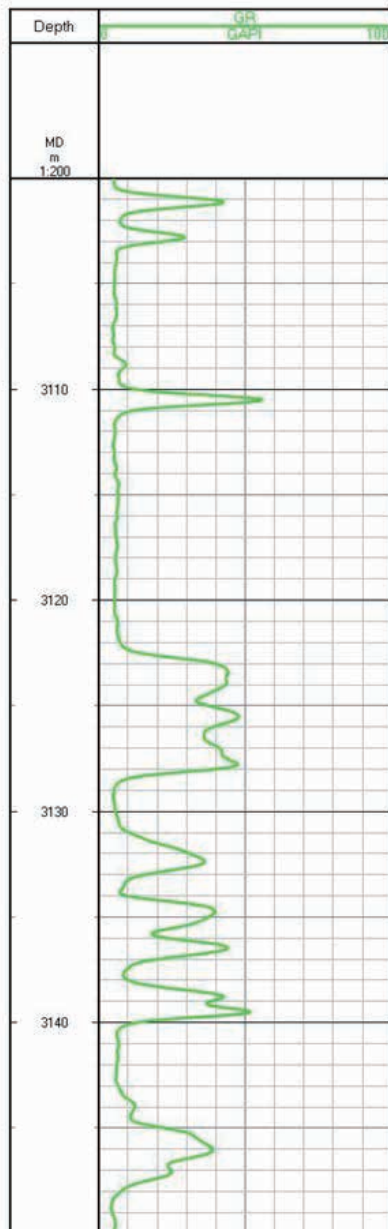
Environmental Specifications

Operating Temperature Range	32°F (0°C) to 104°F (+40°C)
Storage Temperature Range	-4°F (-20°C) to 158°F (+70°C)
Maximum Humidity	95%



Applications

- Depth correction
- Data control
- Lithology identification
- Measuring bed thickness



Introduction

This tool is the downhole telemetry interface tool. The primary function of the TGT-SH is communicating surface system and down hole toolstrings. The secondary function is to acquire data from several sensors located in its electronic cartridge and outside of it including natural gamma-ray, temperature / tension / mud resistivity from TTR.

Specifications

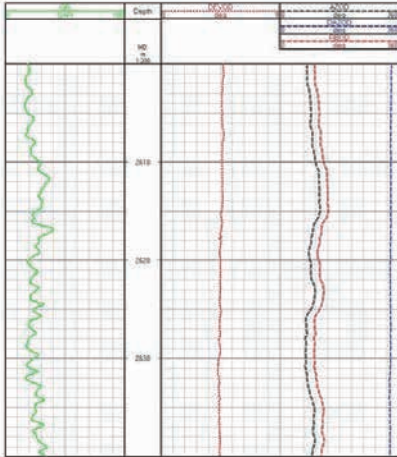
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	30,000 psi (206.9 MPa) Advanced
Tool Diameter	2.875 in. (73 mm)
	3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up Length	9 ft.-0.12 in. (2.75 m)
Shipping Length	10 ft.-3.08 in. (3.13 m)
Weight	75.85 lbs. (34.4 kg)
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	100,000 lbs.
Maximum Logging Speed	200 ft./min (60 m/min)
Gamma Ray Energy Range	0.06 to 3.5 MeV
Accuracy	GR: ±3% of measured value (accuracy compares measured values with true values)
Measure Point	1 ft.-1.7 in. (448 mm) from bottom of sub
Power Requirements:	
Operating Voltage & Current	180 Vac, 55 mA
Wireline Requirements	7-Conductor Cable





Applications

- Continuously establishes the position of the toolstring



Introduction

This tool is a general-purpose borehole orientation logging device. It continuously establishes the position of the tool string with respect to vertical and magnetic north. It acquires digital signals of three orthogonal accelerometers, three orthogonal magnetometers, and temperature, which comprises the sensor package.

Specifications

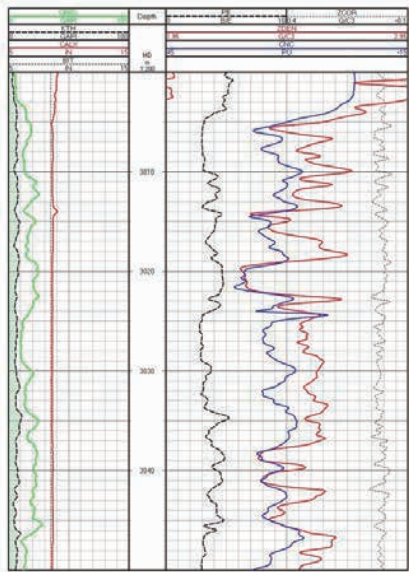
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	30,000 psi (206.9 MPa) Advanced
Length	9.97 ft. (3.04 m)
Weight	100 lbs. (45 kg)
Diameter	2.875 in. (73 mm)
	3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Logging Speed	125 ft./min (38 m/min)
Data Transmission	MGTS
Sensor Accuracy	
Azimuth	± 1.5 degrees
Deviation	± 0.25 degrees
Drift Azimuth	± 1.5 degrees
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	100,000 lbs.





Applications

- Indicate formation porosity in open or cased boreholes.
- Dividing reservoir.
- Distinguish gas reservoir.



Introduction

The CNT-SH measures the hydrogen index of downhole formations. The measurements are converted to porosity values, which in combination with density tool measurements provide an indication of lithology and gas in zones of interest.

The CNT-SH contains a radioactive source that bombards the formation with fast neutrons. Detectors count the slowed neutrons deflected back to the tool. CNT-SH uses two thermal detectors to produce a borehole-compensated thermal neutron measurement.

Specifications

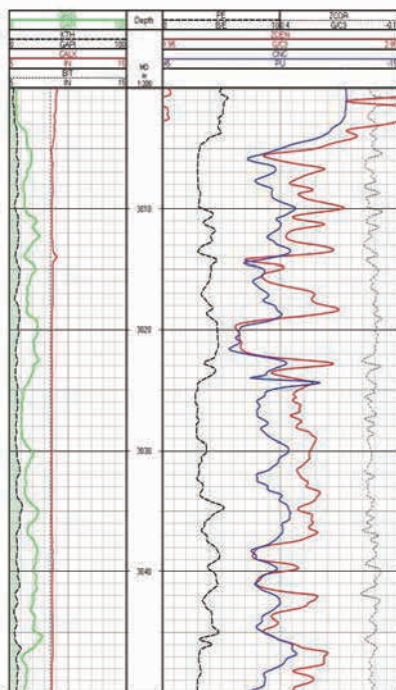
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	* Radioactive source 30,000 psi
	30,000 psi (206.9 MPa) Advanced
	* Radioactive source 35,000 psi
Tool Diameter	2.875 in. (73 mm)
	3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (89 mm)
Maximum Hole Diameter	12 in. (305 mm) (limited by decentralizer)
Make-up Length	8.0 ft.-9.0 in. (2.67 m)
Shipping Length	9 ft.-11.96 in. (3.05 m)
Weight	106.26 lbs. (48.2 kg)
Maximum Logging Speed	60 ft./min (18 m/min)
Typical Logging Speed	30 ft./min (9 m/min)
Measuring Range	-3 to 70 Limestone Porosity Units (p.u.)
* Accuracy	± 0.5 p.u. below 7 p.u. porosity
	± 7% of recorded value above 7 p.u. porosity
* Repeatability	±1.5 p.u. @ 15% Limestone porosity
Depth of Investigation	12 in. (304.8 mm)
Vertical Resolution	28 in. (711.2 mm) given proper formation contrast above and below zone of interest
Measure Point	
Short Spacing	1 ft.-10.23 in. (564.7 mm)
Long Spacing	2 ft.-2.97 in. (685.2 mm)
	(both measurements are from the bottom of tool)
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	44,500 lbs.
Wireline Requirements	7-Conductor Cable
Operating Voltage and Current at Cablehead	180 Vac @ 30 mA approx
Detector or Sensor Type	He-3 tube
Source Type	Am 241-Be 9
Source Strength	18 Curies - 4.5 MeV





Applications

- Porosity determination
- Lithology analysis and identification of minerals
- Gas detection
- Hydrocarbon density determination
- Shaly sand interpretation
- Rock mechanical properties calculations



Introduction

The ZDT-SH measures formation density, photoelectric factor (a lithology indicator), borehole diameter with MPS. The density data are used to calculate porosity and determine the lithology.

The ZDT-SH has a gamma ray source and two detectors. Magnetics shielding and high-speed electronics ensure excellent measurement stability. It records the full-pulse-height gamma ray spectra from both detectors.

Specifications

Maximum Temperature:	400°F (200°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	* Radioactive source 30,000 psi
Tool Diameter	2.875 in. (73 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	11.0 in. (280 mm)
Make-up Length	18 ft.-2.75 in. (5.56 m)
ZDT-SH EA	7 ft.-3.48 in. (2.22 m)
ZDT-SH MA	4 ft.-6.64 in. (1.39 m)
Weight	153 lbs. (69.3 kg)
ZDT-SH EA	56 lbs. (25.4 kg)
ZDT-SH MA	96.78 lbs. (43.9 kg)
Maximum Logging Speed:	60 ft./min (18 m/min)
Recommended Logging Speed	<30 ft./min (9 m/min)
Measuring Range	1.3-3.0 g/cc
Repeatability:	
Den	±0.015 gm/cc (from 2 to 3 gm/cc)
Pe	±0.2 B/e (absence of mudcake)
Absolute Accuracy:	
Den	±0.025 gm/cc (2.0 to 3.0 gm/cc)
Pe	±0.3 B/e (1.3 to 6.0 B/e)
Depth of Investigation (50%)	8.0 in. (203.2 mm)
Vertical Resolution	5.5 in. (14 cm) given proper formation contrast above and below Zone of interest
Measure Point:	
Short Spacing	1 ft.-2.38 in. (365.4 mm)
Long Spacing	1 ft.-5.72 in. (450.2 mm)
Wireline Requirements	7-Conductor Cable
Line Utilization:	
Motoring	1 & 4 CT to 2,3,5,6 CT (with MPS)
AC power	1 & 4
Signal	Modes 2 & 5 (Cablehead 2,3,5 & 6)
Operating Voltage & Current	180 Vac @ 120 mA at cablehead
Motoring Current	110 Vdc @ 40 mA (minimum)(with MPS)
Detector or Sensor Type	Scintillation
Source Type	Cs 137
Source Strength	2.5 Curies
Maximum Tensile Force	28,000 lbs.
Maximum Compression Force	26,500 lbs.





Applications

- Powerful push for decentralization
- Allow super combo connection with Slim Hostile Logging tools
- Strong and improve safety operation
- Can put the radioactive tools on the upper position and weak strength tools on the lower position.

Introduction

IDP-SH is working for super Combo Fullset logging, its density measurement pad is from ZDT-SH, the measurement of formation density and photoelectric factor are same like ZDT-SH. With IDP-SH connected on the tool string, it can push itself to make the pad touch the borehole and there is no need use MPS, also when we use IDP-SH connected to the Fullset tool string, the sonic and laterolog or induction tools can be connected below the tool string and make the super Combo Fullset logging more safe.

Specifications

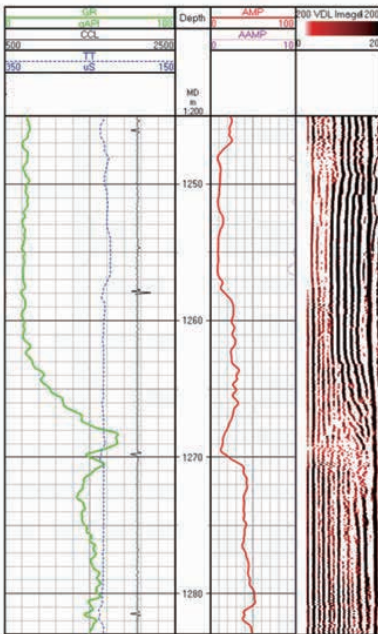
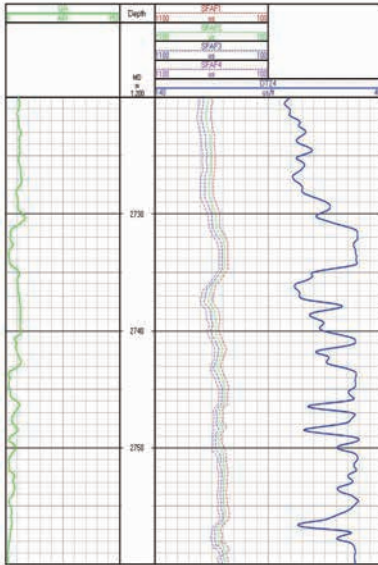
Maximum Temperature	400°F (200°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	3.78 in. (96 mm)
Minimum Hole Diameter	4.5 in. (114.3 mm)
Maximum Hole Diameter	17.5 in. (444.5 mm)
Make-up Length	10.8 ft. (3.3 m)
Shipping Length	12.4 ft. (3.8 m)
Weight	335 lbs. (152 kg)
Caliper	4.5 in.-17 in.
H2S Qualified	Yes
Maximum Tensile Force	100,000 lbs. (45,360 kg) with pad retracted
Maximum Compressional Force	44,500 lbs. (20,185 kg)





Applications

- Compressional slowness Δt
- Cement Bond Logging (CBL) and Variable density logging (VDL)



Introduction

ACT-SH primary application for this service is measurement of compressional Δt . This tool was developed to provide high quality compressional Δt measurement with minimal operations investment in a relatively small physical tool package.

The ACT-SH-EA is compatible and simultaneously acquires up to 4 waveforms from 4 receivers. The ACT-SH-PA & MA is the portion of the Digital Acoustilog sonde which excites, receives and routes the acoustic signatures recovered by the tool.

Specifications

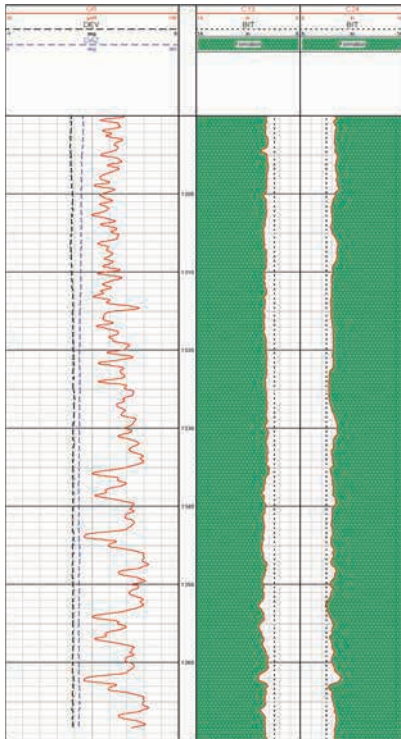
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa) 30,000 psi (206.9 MPa) Advanced
Tool Diameter	2.875 in. (73 mm) 3.125 in. (79 mm) Advanced
Minimum Hole Size	3.5 in. (88.9 mm)
Maximum Hole Size	12.0 in. (305 mm)
Make up Length	ACT-SH-EA 6 ft.-0.8 in. (1.85 m) ACT-SH-PA 6 ft.-9.5 in. (2.07 m) ACT-SH-MA 8 ft.-11.3 in. (2.73 m)
Total Weight	ACT-SH-EA 66.8 lbs. (30.3 kg), Estimated ACT-SH PA & MA 175.7 lbs. (79.7 kg)
Logging Speed	60 ft./min (18 m/min) max.
Absolute Accuracy	+/- 0.5 microseconds
Repeatability	+/- 1%
Vertical Resolution	0.5 ft. (15.24 cm) Basic measurement
Power Requirements	180 Vac @ 120 mA
ACT-SH-EA & ACT-SH-PA	Maximum Tensile Force 100,000 lbs. Maximum Compressional Force 100,000 lbs.
ACT-SH-MA	Maximum Tensile Force 12,000 lbs. Maximum Compressional Force 3,000 lbs.
Modes:	
Command	mode 2
Data	Mode 5 or Mode 7
Transducer Type	
Receiver(s)	
Type	Piezoelectric (monopole)
Bandwidth	Wideband (1-25 kHz)
Number	4
Spacing	6.0 in. (152 mm)
Offset	3.0 ft. (914 mm) min. 6.5 ft. (1.98 m) max.
Transmitter(s)	
Type	Piezoelectric (monopole)
Bandwidth	Broadband (2-18 kHz)
Number	2
Spacing	2 ft. (0.6 m)
Wireline Requirements	7-Conductor Cable





Applications

- Calculate the amount of cement
- Caliper Measurement
- Borehole geometry

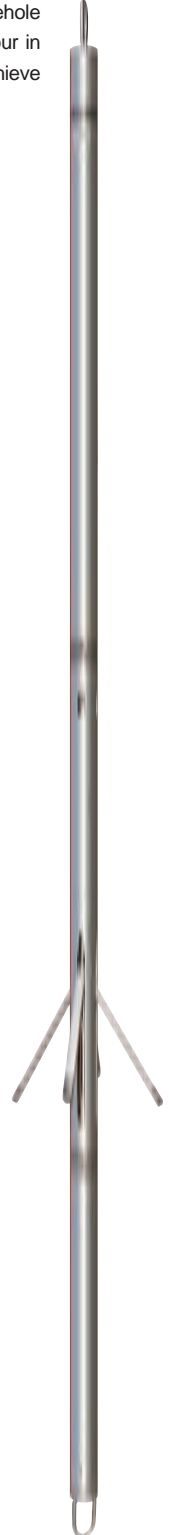


Introduction

Four independent arm caliper meter, is the engineering logging and logging data borehole environment correction essential tool. Four arm are respectively connected with four independent potentiometer, and the relative two points series get a diameter data, achieve accurate measure of hole diameter functions.

Specifications

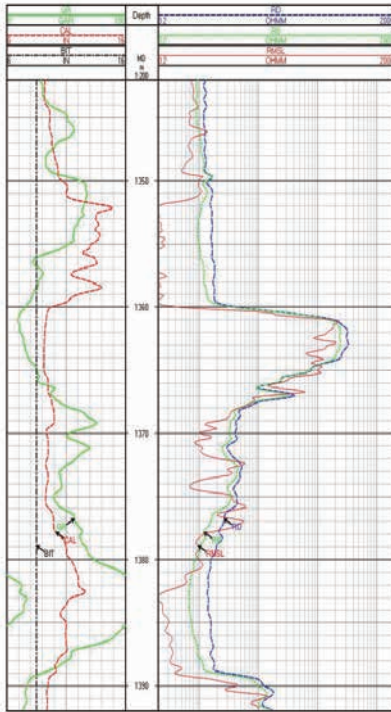
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	2.875 in. (73 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	21 in. (533.4 mm)
Make-up Length	11 ft.-1.98 in. (3.40 m)
Shipping Length	12 ft.-6.43 in. (3.82 m)
Weight	30.9 kg
Caliper Accuracy	The accuracy of the diameter from 3.5 to 21 in. is 2%
Working Voltage:	180 Vac
Motor power Supply:	110 Vdc @ 40 mA
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	8,000 lbs.





Applications

- Rt determination in conductive mud.
- Evaluate the water saturation.



Introduction

The DLT-SH tool measures formation resistivity and is designed primarily for use in boreholes filled with highly conductive drilling fluids. DLT-SH provides two resistivity measurements: a Shallow reading to investigate the formation near the borehole and a Deep reading to measure farther out where the formation is less disturbed by drilling fluids. These two readings are used to estimate the amount of hydrocarbon in a formation and the ease of recovering that hydrocarbon.

Specifications

Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa) 30,000 psi (206.9 MPa) Advanced
Tool Diameter	2.875 in. (73 mm) 3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up Length: (Electronics & Mandrel only)	22 ft.-1.37 in. (6.74 m)
EA	10 ft.-2.84 in. (3.12 m)
MA	11 ft.-10.73 in. (3.63 m)
Shipping Length:	
Electronics	11 ft.-5.8 in. (3.5 m)
Mandrel	13 ft.-1.68 in. (4.01 m)
Weight:	
Electronics	118.6 lbs. (53.8 kg)
Mandrel	129.8 lbs. (58.9 kg)
Maximum Tensile Force	42,000 lbs.
Maximum Compressive Force	7,400 lbs.
Detector or Sensor Type	Electrode Array (Mandrel & Instrument Housings)
Maximum Logging Speed	60 ft./min (18.3 m/min)
Measurement Range	0.2 to 40,000 ohm-m
Mud Type/Range	Water based mud 0.015 ohm-m to 3.0 ohm-m
Accuracy	from 0.2 to 2000 ohm-m Greater of ±5% or 0.06 S-m; from >2000 to 40000 ohm-m Greater of ±5% or 0.025 S-m
Stability (at Max. Temp.)	5% of computed readings (with tool calibrated for internal CAL, ZERO after achieving and maintaining the maximum temperature)
Vertical Resolution	2 ft. (0.61 m), given proper formation contrasts above and below zone of interest
Radius of Investigation	Deep Standard Return Mode 55 in. (1.397 m) Shallow Standard 18 in. (0.457 m)
Measure Point	6 ft.-0.83 in. (1.85m) above matching point of black block of DLT-S.
Power Requirements	180 Vac/90 mA-120 mA
Wireline Requirements	7-Conductor Cable



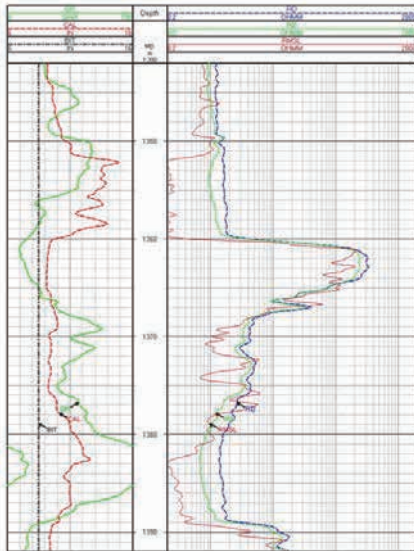


Micro Spherical Focused Laterolog Tool -Slim Hostile (MSF-SH)

Geo-Vista

Applications

- Measure the flushed zone resistivity
- Combination with dual laterolog tool, got deep, medium and shallow resistivity curve.
- Provide a basis for formation evaluation



Introduction

Micro Spherical Focused Laterolog Tool-Slim Hostile (MSF-SH) is applicable to medium-deep well logging with water-based mud (fresh water or brine), sand shale or limestone. In combination with dual laterolog, MSF-SH can effectively judge the oil, gas and water-bearing properties of formations.

MSF-SH measures more accurate flush zone resistivity (Rxo) with less mud cake and formation resistivity affect.

Specifications

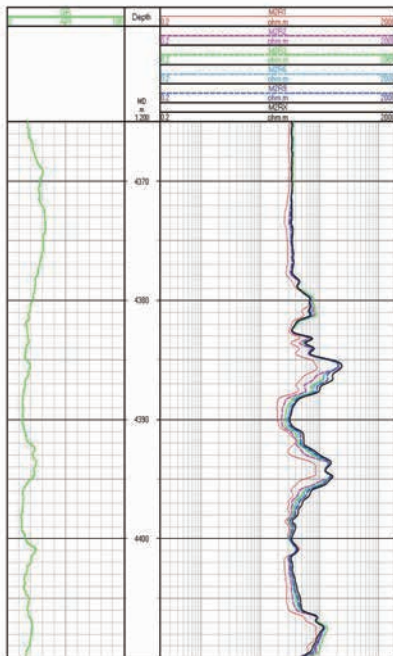
Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	2.875 in. (73 mm)
	3.625 in. (92 mm) at pad
Minimum Hole Diameter	4 in. (101.6 mm)
Maximum Hole Diameter	16 in. (406 mm)
Make-up length	14 ft.-1.45 in. (4.30 m)
MSF-SH-EA	7 ft.-5.93 in. (2.28 m)
MSF-SH-MA	6 ft.-7.54 in. (2.02 m)
Shipping length:	
MSF-SH-EA	8 ft.-8.88 in. (2.66 m)
MSF-SH-MA	7 ft.-1.84 in. (2.18 m)
Weight:	
MSF-SH-EA	92.6 lbs. (42 kg)
MSF-SH-MA	94.4 lbs. (42.8 kg)
Maximum Logging Speed	60 ft./min (18 m/min)
Operating Voltage & Current:	180 Vac/35-40 mA at cablehead
Rxo record range	0.2~2000 ohm·m
Rxo measuring accuracy:	±1% with the range of 0.2 ohm·m-2 ohm·m ±5% within the range of 2 ohm·m-200 ohm·m ±10% or 5 mS/m within the range of 200 ohm·m-1000 ohm·m
Caliper range	4 in.~16.54 in. (101 mm-420 mm)
Caliper accuracy	± 5% within the range of 101 mm-420 mm
Vertical resolution	200 mm
Depth of investigation	3.94 in.~5.9 in. (100 mm~150 mm)
Stability	≤10% drift within continuous four working hours of the tool
Detector or Sensor Type	Pad





Applications

- Reservoir delineation
- Determination of Rt
- Determination of Sw
- Hydrocarbon identification and imaging
- Determination of movable hydrocarbons
- Invasion profiling
- Thin-bed analysis



Introduction

The AIT-SH uses multi-spacing and multi-frequency measurements to acquire a complete set of data from the formations surrounding the borehole. The multi-spacing measurements allow improved conductivity measurements in complex environments. The short-spacing measurements (as short as 6 in. spacing) allow improved correction for borehole, rugosity and invasion effects. The long-spacing measurements (up to 94 in. spacing) are useful in deep invasion situations. AIT-SH allows us to characterize invasion profiles, even in oil-based mud.

Specifications

Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	30,000 psi (206.9 MPa) Advanced
Tool Diameter	2.875 in. (73 mm) Advanced
	3.125 in. (79 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	20.0 in. (508 mm)
Make-up Length (s)	
Transmit Electronics	6 ft.-7.37 in. (2.02 m.)
Mandrel	18 ft.-10.38 in. (5.75 m.)
Electronics	7 ft.-1.94 in. (2.18 m.)
Total	32 ft.-7.69 in. (9.95 m.)
Weight(s)	
Transmit Electronics	79.80 lbs. (36.2 kg)
Mandrel	192.90 lbs. (87.5 kg)
Electronics	86.20 lbs. (39.1 kg)
Logging Speed(S)	
Recommended	30 ft./min
Maximum	60 ft./min at 4 samples per ft. 100 ft./min at 2 samples per ft
Focused Conductivities	
Apparent Vertical Resolution	1, 2, 4 ft.
Depth(s) of Investigation	10, 20, 30, 60, 90, 120 in.
Measurement Range	0.1 to 2,000 ohm-m
Measurement Accuracy (homogenous formation)	
60, 90, 120 in. depth of investigation	±1 mS/m, ±2% of reading
30 in. depth of investigation	±2 mS/m, ±2% of reading
20 in. depth of investigation	±4 mS/m, ±2% of reading
10 in. depth of investigation	±10 mS/m, ±2% of reading
Sample Rate (S)	4 samples per ft. (recommended) 2 samples per ft. (high speed)
Power Requirements:	
Operating Voltage & Current	180 Vac, <200 mA
Maximum Tensile Force	50,000 lbs. (22686.8 kgf)
Maximum Compressive Force	5200 lbs. (in 14-in. hole)(2359.4 kgf) 6080 lbs. (in 12 1/4-in. hole)(2758.7 kgf) 10240 lbs. (in 8-in. hole)(4646.2 kgf)
SENSORS	7 balanced 3-coil arrays, spacings 6-94 in.
Data Transmission	MGTS
MODES	
Command	Mode 2
Data	Mappable: Modes 5 or 7
CALIBRATION ENVIRONMENT	10 ft. off ground 30 ft. from metallic materials



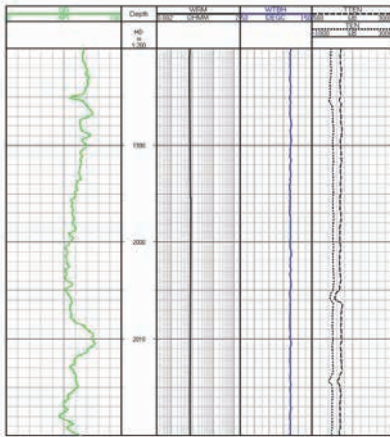


Temperature/Tension/Mud Resistivity Tool-Slim Hostile (TTR-SH)

Geo-Vista

Applications

- Depth correction
- Detect and measure borehole temperature, mud resistivity (Rm) and external cablehead tension and compression forces at the top of the tool string



Introduction

The TTR-SH is a sub containing three types of transducers for measurement of cablehead tension/compression force, borehole temperature, and mud resistivity.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	30,000 psi (206.9 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Make-up Length	5 ft.-1.3 in. (1.56 m)
Shipping Length	6 ft.-4.28 in. (1.94 m)
Weight	45.2 lbs. (20.5 kg)
Maximum Logging Speed	100 ft./min (30 m/min)
Measurement Range	
Cablehead Tension	0 to 12,000 lbs. Tension
Cablehead Compression	0 to 10,000 lbs. Compression
Borehole Temperature	32°F to 450°F (0°C to 230°C)
Mud Resistivity	0.01 ohm·m to 10 ohm·m
Absolute Accuracy	
Cablehead Tension	± 800 lbs. Tension ± 5% *
Cablehead Compression	± 800 lbs. Compression ± 5% *
Differential Cablehead Tension	± 100 lbs. Tension
Cablehead Tension	± 100 lbs. Compression
Borehole Temperature	± 4°F ± 5% (2°C ± 5%)
Mud Resistivity	0.01 ohm·m ± 5%
Repeatability	
Cablehead tension	± 100 lbs. Tension
Cablehead Compression	± 100 lbs. Compression
Borehole Temperature	± 2°C
Mud Resistivity	± 0.01 ohm·m
Wireline Requirements	7-Conductor Cable
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	18,000 lbs.



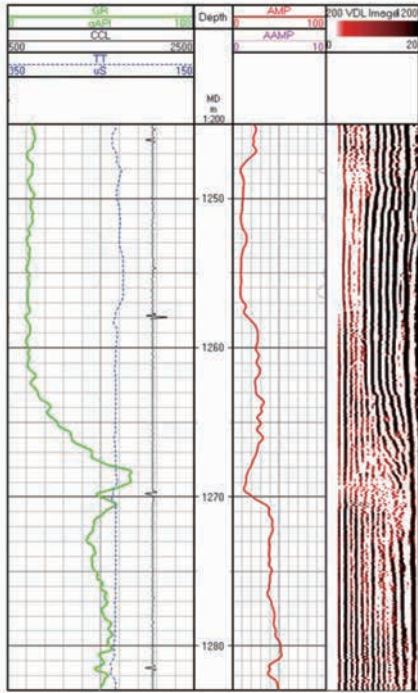


Casing Collar Locator-Slim Hostile (CCL-SH)

Geo-Vista

Applications

- Depth Control
- Location of casing damage



Introduction

The CCL-SH measurement is based upon the principle that a changing magnetic flux within the tool sensor coil generates a voltage across the terminals of that sensor coil. The CCL signals indicate collars or joints characteristics in cased hole or metal pieces in openhole.



Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	30,000 psi (206.9 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up length	1 ft.-10.42 in. (0.57 m)
Shipping length	3 ft.-1.38 in. (0.95 m)
Weight	25.05 lbs. (11.36 kg)
Source Type	Magnets
Sensor Type	Coil
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	100,000 lbs.

Applications

- It is used to connect 7-conductor cable and downhole tool string in logging construction

Introduction

It is used to connect 7-conductor cable and downhole toolstring in logging construction. It has the advantages of small type, easy connection in operation, simple maintenance and safe use, high efficiency and low cost.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	30,000 psi (206.9 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up Length	2 ft.-1.32 in. (0.64 m)
Shipping Length	3 ft.-4.27 in. (1.02 m)
Weight	27.1 lbs. (12.3 kg)
Maximum Tensile Force	100,000 lbs.





Applications

- Increase the tool strings bending flexibility in the deviation well and horizontal well

Introduction

The FJS-SH is a downhole tool for an irregular well (with a non-straight line) in an open hole, which allows the bend to be produced in any direction, allowing the tools to be moved up and down freely in the well.

The FJS-SH is mounted in the middle of the tool string or the appropriate position.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	29,000 psi (200 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Make-up Length	4 ft.-0.23 in. (1.23 m)
Shipping Length	5 ft.-3.19 in. (1.61 m)
Weight	54.5 lbs. (24.7 kg)
Maximum Deflection Angel	10°
Maximum Tensile Force	30,000 lbs.
Maximum Compressive Force	5000 lbs.



Applications

- Avoid cable twisting and loosening
- Avoid the tool rotation when the cable is rotating, and enhance the reliability.
- Reduce the risk of cable head and tool string tripping when long tool strings connect.

Introduction

The Swivel Assembly allows different portions of the tool string to rotate independently. It allows unrestricted 360° rotation by means of an internal slip-ring assembly.

A swivel isolates an tool from the normal torque induced as the spiral-wound wireline is lowered into and pulled out of the well. This torque causes the tool string to rotate slowly-typically one or two rotations per 100 ft. (30 m) of depth for a seasoned line. Typically, this rotation does not cause any problems.

Specifications

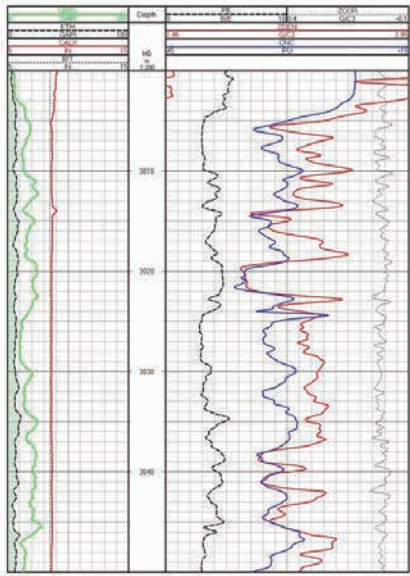
Maximum Temperature	430°F (220°C)
Maximum Pressure	29,000 psi (200 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Make-up length	4 ft.-2.64 in. (1.29 m)
Shipping length	5 ft.-5.62 in. (1.67 m)
Weight	59.3 lbs. (26.9 kg)
Number of Conductors	10
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	50,000 lbs.





Applications

- Decentralizer
- Borehole geometry



Introduction

The motor push sub is a decentralizer for use with litho-density logging tool mandrel, it make the density measurement accuracy and measure the borehole caliper.

Specifications

Maximum Temperature	430°F (220°C) 8 hours
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	2.875 in. (73 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	11 in. (280 mm)
Make-up Length	6 ft.-6.35 in. (1.99 m)
Shipping Length	7 ft.-9.31 in. (2.37 m)
Weight	88.2 lbs. (40 kg)
Maximum Tensile Force	49,000 lbs.
Maximum Compressive Force	8,000 lbs.
Motor Current	110 Vdc @ 40 mA
Absolute Accuracy	± 0.30 in. (7.6 mm)
	from 6.0 to 11.0 in. (152.4 to 280 mm)
Caliper Range	2.75 in. to 11 in. (70 mm to 280 mm)





Applications

- Conjunction with the tool which require pressure isolation to prevent leakage.

Introduction

Pressure Isolation Sub-Slim Hostile (PIS-SH) is metal substructure with layer of fiberglass insulation material, it has few parts, easy to assemble, and typically located in the upper and lower ends of important tools to prevent leakage. this service is optional.

Specifications

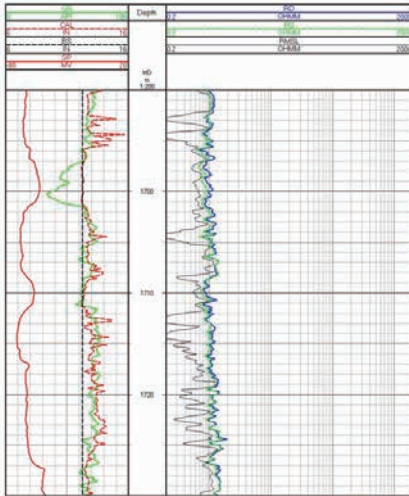
Maximum Temperature	430°F (220°C)
Maximum Pressure	29,000 psi (200 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Weight	36.8 lbs. (16.7 kg)
Make-up length	1 ft.-10.68 in. (0.58 m)
Shipping length	3 ft.-1.60 in. (0.96 m)
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	100,000 lbs.





Applications

- Provide the necessary 24 ft. length of electrical isolation required by deep laterologs to separate the wireline armor from the logging tool string housings.
- Use as an SP sub and remote electrode.



Introduction

The MIS-SH is designed as a substitute for long cablehead on deep laterolog jobs. It has a standard 31-Pin connector and 9 feedthru wires. The pressure housing is comprised of a fiberglass substructure with an outer layer of rubber coating. The MIS-S should typically be located in the tool string below the cablehead.

Two MIS-SH are combined together to provide the necessary 24 ft. length of electrical isolation between the wireline armor of tool string housings, as required for the deep laterologs. The middle field joint of the assembled MIS-SH's serves as an SP sub and remote

Specifications

Maximum Temperature	400°F (200°C)	SP electrode
Maximum Pressure	30,000 psi (206.9 MPa)	
Tool Diameter	2.75 in. (70 mm)	
Make-up Length	12 ft.-8.64 in. (3.88 m)	
Shipping Length w/Thread Protectors	14 ft.-1.08 in. (4.29 m)	
Tool Weight	62 lbs. (68.3 kg)	
Wire Requirements	7-Conductor Cable	
Operating Position	Any	
Hole Deviation	Vertical to Horizontal	
Maximum Borehole Curvature	10 degree/100 ft.	
Maximum Tensile Force	31,000 lbs.	
Maximum Compressive Force		
8 in. diameter borehole	9,500 lbs.	
12 in. diameter borehole	6,000 lbs.	
Isolation	>5 Meg Ohms-500 Vdc (at rated temperature)	





Applications

- Limit the length of the reflow electrode

Introduction

The ISS-SH is designed to meet field demand for a high mechanical strength mass isolator to be used in conventional and pipe conveyed logging applications. The pressure housing is comprised of a metal substructure with an outer layer of fiberglass insulation material. Electrical mass isolation occurs in a specially designed bottom sub. The ISS-SH should typically be located in the tool string upper the Dual Lateralog Tool-Slim Electronics and below the Micro Spherical Focused Laterolog Tool-Slim electronics.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	29,000 psi (200 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up length	1 ft.-8.76 in. (0.53 m)
Shipping length	3 ft.-1.2 in. (0.95 m)
Weight	30.42 lbs. (13.8 kg)
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	50,000 lbs.





Four-Arms Centralizer Sub-Slim Hostile (FCS-SH)

Geo-Vista

Applications

- Use to conjunction with the tool which require centralization in the borehole

Introduction

The FCS-SH is an inline centralizer. The device is optional, but is intended to be run in conjunction with tool which require centralization in the borehole.

The FCS-SH consists of a central mandrel with integral upper tool joint, four Bow Spring Arms with replaceable wear plates, adjustable tension springs, and a Lower Sub.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	29,000 psi (200 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	12 in. (304.8 mm)
Make-up Length	5 ft.-1.26 in. (1.56 m)
Shipping Length	6 ft.-4.22 in. (1.94 m)
Weight	55.2 lbs. (25 kg)
Maximum Tensile Force	8,000 lbs.
Maximum Compressive Force	50,000 lbs.





Applications

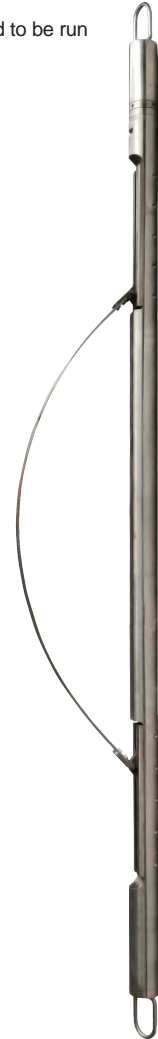
- Use to conjunction with the tool which require decentralization in the borehole

Introduction

The DCS-SH is inline decentralizer. The device is optional, but is intended to be run in conjunction with tool which require decentralization in the borehole.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	30,000 psi (206.9 MPa)
Tool Diameter	2.75 in. (70 mm)
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up Length	6 ft.-10.08 in. (2.09 m)
Shipping Length	8 ft.-1.05 in. (2.47 m)
Weight	112.2 lbs. (50.9 kg)
Maximum Tensile Force	49,000 lbs.
Maximum Compressive Force	44,500 lbs.





Applications

- Conveyed downhole tools in high deviated, horizontal or hostile well by tubing or drilling pipe.
- High temperature, high pressure, high conductivity mud and high voltage.
- Simply structure and design for easy operation at wellsite.
- No need vacuum pump and circulation system.



Introduction

Pipe Conveyed Logging Tool is used to convey logging tools under deviation and horizontal well conditions, such as high temperature, high pressure, high conductivity mud of downhole to achieve the docking cable and instruments. PCL-H can remain unchanged in the conventional logging projects. The premise and guarantee the quality of measurement tasks to complete, it can be coring, repeat formation test, dip logging, perforating and so on. Using this system can not only measured by conventional logging the best information, but can also be micro-resistivity scanning operations. During the logging operation, can measure all standard measurements, with significant economic benefits.

Specifications

Maximum Temperature 400°F (200°C)
 Maximum Pressure 25000 psi (172.4 MPa)
 Plug Diameter 1.5 in. (38 mm)
 Contact Resistance <0.1 ohm
 Insulation Resistance >200 M ohm
 Max. Latch Deviation 90°
 Docking Locking Power 1000 lbs.-1200 lbs.



7-conductor Quick Change Assembly (PCL-H-QC)
 Tool Diameter 3.54 in. (90 mm)
 Shipping Length 3 ft.-7.44 in. (1.1 m)
 Weight 46.2 lbs. (21 kg)

7-conductor Socket Assembly (PCL-H-SA)
 Tool Diameter 1.57 in. (40 mm)
 Shipping Length 6.12 in. (0.15 m)
 Weight 1.1 lbs. (0.5 kg)

Pump-down Head Assembly (PCL-H-PH)
 Tool Diameter 2.01 in. (51 mm)
 Shipping Length 3 ft.-10.56 in. (1.18 m)
 Weight 16.06 lbs. (7.3 kg)

Support Sleeve (PCL-H-SS)	2.875 in. TBG	5 in. (NC 50)
Tool Diameter	3.95 in. (101 mm)	6.5 in. (165 mm)
Shipping Length	4 ft.-10.68 in. (1.49 m)	5 ft.-3.24 in. (1.61 m)
Weight	149.6 lbs. (68 kg)	182.6 lbs. (83 kg)

Side Entry Sub (PCL-H-SE)	3.5 in. (NC 38)	5 in. (NC 50)
Tool Diameter	5 in. (127 mm)	6.5 in. (165 mm)
Shipping Length	4 ft.-2.4 in. (1.28 m)	4 ft.-5.28 in. (1.35 m)
Weight	195.8 lbs. (89 kg)	321.2 lbs. (146 kg)

Offset Sub (PCL-H-OS)
 Tool Diameter 4.41 in. (112 mm)
 Shipping Length 3 ft.-2.28 in. (0.97 m)
 Weight 63.8 lbs. (29 kg)

Cross Offset Sub (Cross Decentralizer) (PCL-H-XO)
 Tool Diameter 5.51 in. (140 mm)
 Shipping Length 5 ft.-1.08 in. (1.55 m)
 Weight 129.8 lbs. (59 kg)

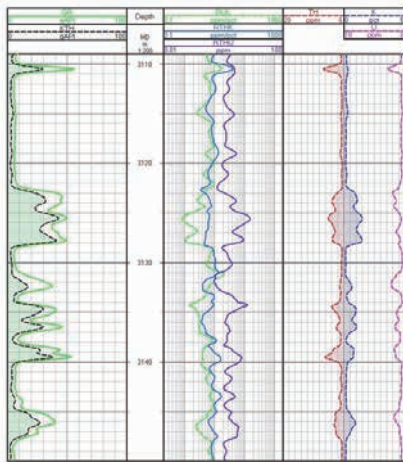
Sinker Bar (PCL-H-SB)
 Tool Diameter 1.69 in. (43 mm)
 Shipping Length 5 ft.-6.96 in. (1.70 m)
 Weight 26.4 lbs. (12 kg)

Cross Offset Sub (For Slimhole) (PCL-H-XS)
 Tool Diameter 4.69 in. (119 mm)
 Shipping Length 5 ft.-1.08 in. (1.55 m)
 Weight 121.25 lbs. (55 kg)



Applications

- Data control
- Lithology identification
- Measuring bed thickness



Introduction

TST-SH is a downhole telemetry and signal transmission tool, the main function is to be a relay for transmission channels and create a data transmission telemetry bus. TST-SH also obtain data from multiple sensors located inside and outside, including natural gamma ray, energy spectrum data and downhole temperature/tension/mud resistivity data from TTR-SH.

Specifications

Maximum Temperature	430°F (220°C) 1 hours
Maximum Pressure	25,000 psi (172.4 MPa)
	30,000 psi (206.9 MPa) Advanced
Tool Diameter	2.875 in. (73 mm)
	3.125 in. (79 mm) Advanced
Minimum Hole Diameter	3.5 in. (88.9 mm)
Maximum Hole Diameter	16 in. (406.4 mm)
Make-up Length	9 ft.-0.12 in. (2.75 m)
Shipping Length	10 ft.-3.08 in. (3.13 m)
Weight	75.85 lbs. (34.4 kg)
Maximum Tensile Force	100,000 lbs.
Maximum Compressive Force	100,000 lbs.
Logging Speed	13 ft./min (4 m/min)
Gamma Ray Energy Range	0.06 to 3.5 MeV
Spectralog:	
Measuring Range	0.04 to 3.5 MeV
Maximum Measureable	Gamma Ray 2500 API
Quantity	Potassium 100 percent
	Uranium 250 ppm
	Thorium 700 ppm
Accuracy	GR: ±3% of measured value
	K, U, & Th: ±4% of measured value
	(accuracy compares measured values with true values)
Precision for standard shale	K: 2 ± 0.26 percent
	U: 6 ± 0.88 ppm
	Th: 12 ± 1.78 ppm
Number of Energy Channels	256
Measure Point	1 ft.-7.2 in. (490 mm) from bottom of sub
Power Requirements:	
Operating Voltage & Current	180 Vac, 55 mA
Wireline Requirements	7-Conductor Cable





Double Knuckle Joint-Slim Hostile (DKJ-SH)

Geo-Vista

Applications

- Provide a nominal 10 angular off-set while the adjacent tool are positioned against the sidewall

Introduction

The DKJ-SH is a compact universal ball joint with a limited degree of movement. It is used to add flexibility to the tool string. The device is optional.

Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	2.75 in. (70 mm)
Make-up Length	61.28 in. (1.56 m)
Shipping Length	77.7 in. (1.97 m)
Weight	75 lbs. (34 kg)
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	20,000 lbs.
Maximum Deflection Angel	10°Nominal per knuckle joint





Single Knuckle Joint-Slim Hostile (SKJ-SH)

Geo-Vista

Applications

- Provide a nominal 10 angular off-set while the adjacent tool are positionaed against the bore hole wall

Introduction

The SKJ-SH is a compact universal ball joint with a limited degree of movement. It is used to add flexibility to the tool string. The device is optional.

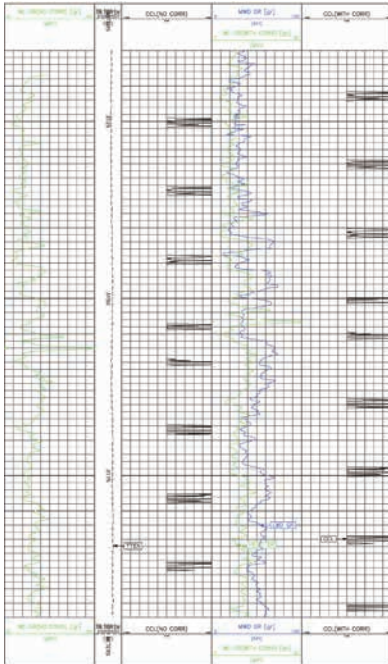
Specifications

Maximum Temperature	430°F (220°C)
Maximum Pressure	25,000 psi (172.4 MPa)
Tool Diameter	2.75 in. (70 mm)
Make-up Length	3 ft.-1.63 in. (0.96 m)
Shipping Length	4 ft.-6.05 in. (1.37 m)
Weight	50.7 lbs. (23 kg)
Maximum Tensile Force	50,000 lbs.
Maximum Compressive Force	20,000 lbs.
Maximum Deflection Angel	10°Nominal per knuckle joint



Applications

- Depth measurement by CCL and Gamma Ray for perforating operation



Introduction

The SGR-1 is used with wire line perforating guns when very accurate depth control is required. The Gamma/CCL tool is physically attached to the top of a perforating gun after taking the measurement of distance from the ccl to the Gamma Ray measure point and the distance to the top shot in the gun. The assembly is then run into the well. After proper depth has been verified, the Gamma/Gun assembly is positioned opposite the zone to be perforated, and the gun may be fired with the Gamma Ray tool still on the line. Safety is achieved by normally powering the tool on a positive current and then switching to a negative current to fire the gun. A special safety firing circuit prevents the gun from being fired with the Positive polarity current. Different models of the tool may feature either a Scintillation detector or a Geiger Mueller detector with a special shock mounting designed to withstand the blast and shock of the perforator.

Specifications

Maximum Temperature	350°F (175°C) for 20 hours
Maximum Pressure	18,000 Psi (124 MPa)
Tool Diameter	1.69 in. (43 mm)
Minimum Hole Diameter	2.5 in. (63.5 mm)
Make-up Length	7 ft.-9.94 in. (2.386 m)
Shipping Length	8 ft.-9.75 in. (2.686 m)
Weight	42 lbs. (19.1 kg)
Recommended Logging Speed	20 ft./min (6 m/min)
Maximum Logging Speed	30 ft./min (9 m/min)
Curves Recorded	Gamma Ray/
Sensitivity Approximately	1.3 counts/API unit
Operating Voltage / Current	85 Vdc at 45 mA at cable head
Detector Type	0.84 in. X 6 in. Scintillation
Cable Type	Single Conductor
Accuracy	Uncalibrated correlation device only
Stability	+/-15% of count rate over full temperature range
Shock	>1000 g
Depth of Investigation	12.0 in. (304.8 mm) estimated for a 7.88 in. (200.2 mm) water-filled borehole
Vertical Resolution	8.00 in. (203.2mm) given proper formation contrast
Measure Point (GR)	18 in. (457.2 mm) from bottom sub
Measure Point (CCL)	60 in. (1524 mm) from bottom sub
Line Utilization	GR & CCL: 1 & Armor
H2S Qualified	No
Measure Point:	
Shock Sub Bottom to	
GR Detector Center	2 ft.-11.92 in. (0.912 m)
Shock Sub Bottom to	
CCL Coil Center	6 ft.-6.72 in. (2.000 m)
GR Detector Center to	
CCL Coil Center	3 ft.-6.84 in. (1.088 m)



Pipe Conveyed Logging Tool-B (PCL-B)

The Pipe Conveyed Logging Tool-B (PCL-B) is used to provide assurance that the logging tools will be able to successfully survey the intended interval of the wellbore.



Pipe Conveyed Logging Tool-H (PCL-H)

Pipe convey logging system used in horizontal wells and the difficulty logging equipment, which can at high temperature, high pressure, high conductivity mud media of downhole to achieve the docking cable and instruments, the system can remain unchanged in the conventional logging projects. The premise and guarantee the quality of measurement tasks to complete, it can be coring, repeat formation test, dip logging, perforating and so on. Using this system can not only measured by conventional logging the best information, but can also be micro-resistivity scanning operations. In the course of a logging operation, can measure all standard measurements, with significant economic benefits.



Advantages of Logging While Fishing (LWF)

- Get logging data under bad borehole situation during the fishing operation.
- Conventional operation on the wellsite like PCL (Pipe Conveyed Logging).
- Only need side-entry sub, torpedo & fishing equipment.
- Saves logging data after fishing operation.
- Provides a different logging choice under bad borehole situation.
- Saves drilling time.



Depth Measurement

We provide Coiled Tubing Logging (CTL) service. And manufacture adaptor from GVT cablehead and coiled tubing. It can help us connect GVT downhole tool with coiled tubing.

Also, we supply the depth measurement equipment for coiled tubing.





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