

RDT™ formation tester

Dual-port straddle section

FORMATION EVALUATION | FORMATION TESTING

Dual-port straddle section

Reservoir Description Tool (RDT™) formation tester

Dual-Port straddle section

A paradigm shift has occurred in medium to low-permeability environments using the Reservoir Description Tool (RDT™) formation tester combined with the Dual-Port Straddle Packer (SPS). In the past, dual packers were not considered the first choice for sampling in medium to low-permeability formations as the sample quality obtained was poor.

The RDT Dual-Port Straddle Section uses controllable screen ports positioned at the top and the bottom of the annular interval. This spacing allows for the interval to be drained to take full advantage of segregation in the annular volume and obtain clean samples. Producing true radial flow, the Dual-Port SPS is also the best choice for mini DST and microfrac operations.

Seamlessly combined with RDT tool

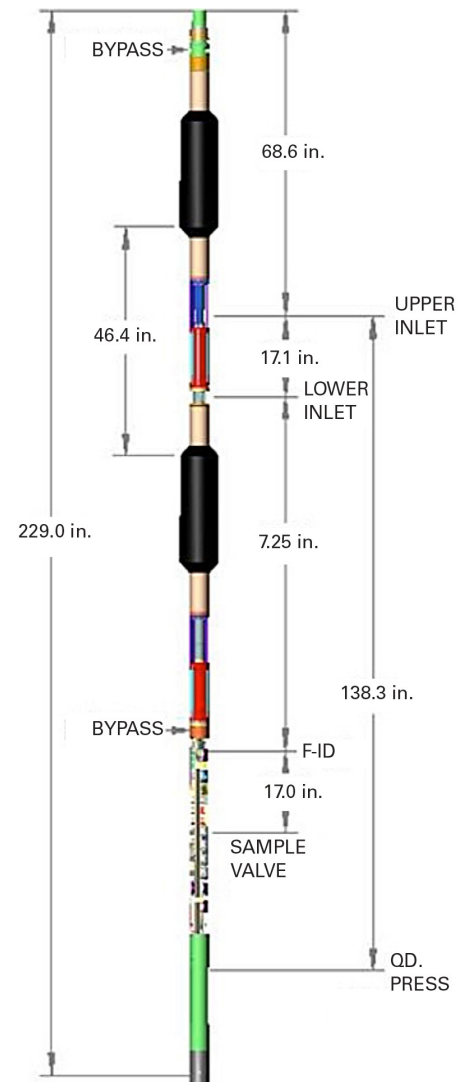
When flexibility and versatility is required, the RDT tool will collect in a single deployment formation pressure, fluid ID, and samples. The Dual-Port SPS is one of the many options that can be combined as part of the RDT tool string and the combination of probes. It can be designed to cover all your pressure and sampling needs in a single run.

Large flow area

The advantage of the Dual-Port SPS is the increased flow area which enables faster flow rates and the ability to sample in very low-permeability environments. Dual-Port SPS should be used to flow a low-permeability formation while minimizing the drop in formation pressure during sampling. With a standard 1-m and 3-m spacing with dual-port capability, the RDT straddle packer can straddle a desired interval and lower perm environments or fractured or laminated zones.

Dual-Port sampling

Dual-port sampling opens up a new opportunity for sampling with straddle packers. The control of the flow from the upper and lower annular interval enables the mud and contamination to be drained to the bottom of the interval and the upper port to sample the segregated fluid. In the case of immiscible fluids, such as oil or gas sampling in water-based mud where the heavier phase is the contamination, the ability to sample high-quality hydrocarbon samples is possible in a very short period of time. In many cases, sampling using the Dual-Port SPS is faster than any other method for premium quality samples.



In a miscible system, such as oil, in oil-based mud, the Dual-Port SPS advantage improves the sample quality in low-permeability environments as it separates the mud in the sump from the desired fluid and improves contamination significantly.

Focused flow intervals

Upper and lower sections of the borehole may be flowed sequentially or at the same time by full surface control of the port. Dual pump with industry-leading pump rates can flow from both the upper and lower interval on an isolated flow patch to generate a focused flow interval.

Flow Control Pump sections (FPS)

The total performance of a system is limited by the weakest link and collecting of clean fluid samples requires the best-in-class pump modules. The RDT flushing pumps are proven to be the most versatile with a full range of differential pressures and the highest horsepower and the fastest rates.

Mini DST and microfrac

The RDT Dual-Port SPS can perform using true radial flow-extended buildup for mini DST and microfrac operations. The Dual-Port SPS has a wide range of applications for more extensive test programs and opens up new design possibilities.

DIMENSIONS AND RATINGS

Max Temperature	350°F (177°C)
Max Pressure	20,000 psi (138 MPa)
Min OD*	4.75 in. (12.07 cm)
Length**	19.08 ft (5.82 m)
Weight	858 lb (389 kg)

* Tool OD Depending on Packer
 ** Length for Standard Configuration

BOREHOLE CONDITIONS

Borehole Fluids	Salt <input checked="" type="checkbox"/>	Fresh <input checked="" type="checkbox"/>	Oil <input checked="" type="checkbox"/>	Air <input checked="" type="checkbox"/>
Recommended Logging Speed	Stationary			
Tool Positioning	Centralized <input checked="" type="checkbox"/>			

HARDWARE CHARACTERISTICS

Inlet Ports	Upper/Lower (Screened and Controlled)
Inlet Spacing	17.1 in. (Standard) 88.0 in. (Optional Extenders)
Packer Spacing	46.4 in. (Standard) 117.3 in. (Optional Extenders)
Packer Hole Size	5 7/8 in. to 14 in. (14.9 cm to 35.6 cm) Packer Element Selection
Packer Hydraulic Fluid	Filter Mud

DATA SHEET

MEASUREMENT

Quartz Gauge Pressure Transducers

Accuracy	Resolution
+/- 0.02% full scale	0.01 psi (0.07 KPa)

Strain Gauge Pressure Transducers

Accuracy	Resolution
+/- 0.1% full scale	0.2 psi (1.4 KPa)

Fluid Resistivity

Accuracy	Resolution
10% full scale	0.02 ohm-m

Fluid Temp

Accuracy	Resolution
3% full scale	0.02°F

PHYSICAL STRENGTHS

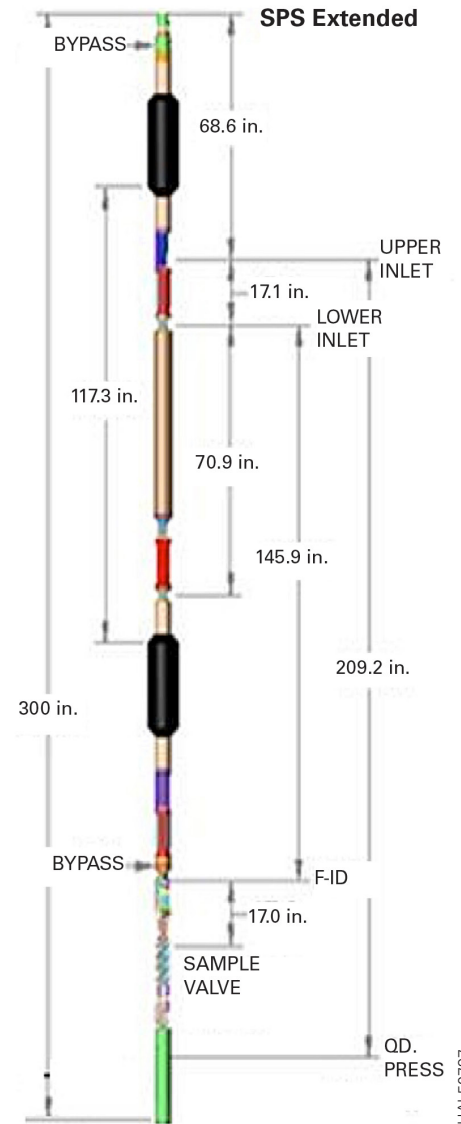
Hardware	Tool Joints
Tension	200,000 lb (90,719 kg)*
Compression	200,000 lb (90,719 kg)*
Torque	600 ft-lb (813 N-m)*

* Strengths apply to new tools at 70°F (21°C) and 0 psi.

SPS EXTENDED

Length*	25.0 ft (7.62 m)
SPS Spacer Length**	70.9 in. (1.8 cm)

* Tool Length with One Spacer
 ** Spacer Quantity is Unlimited



Dual-Port SPS available packer list

PACKER NAME	OD	MIN RUN OD	SUGGEST RUN OD	MAX TEMP	TARGET HOLE SIZE	MIN HOLE	MAX HOLE
	IN.	IN.	IN.	°F	IN.	IN.	IN.
5.06HT	5.06	5.30	5.450	350	6.00	5.7	7.25
5.06LT	5.06	5.30	5.7-6.5	250	6.00	6.0	7.25
5.50HT	5.50	6.0	6.5-7.0	350	7.875	6.0	8.0
5.50LT	5.50	6.0	6.5-7.0	250	7.875	6.0	8.0
6.19HT	6.19	6.69	7.0-7.5	350	8.50	7.0	9.0
6.19LT	6.19	6.69	7.0-7.5	250	8.50	7.0	9.0

Dual-Port SPS available packer list (continued)

PACKER NAME	OD	MIN RUN OD	SUGGEST RUN OD	MAX TEMP	TARGET HOLE SIZE	MIN HOLE	MAX HOLE
	IN.	IN.	IN.	°F	IN.	IN.	IN.
700HT	7.00	7.75	8.0-9.0	350	8.50	8.0	10.5
700LT	7.00	7.75	8.0-9.0	250	8.50	8.0	10.5
7x9HT	9.0	9.75	11.0-13.0	350	12.25	10	13.5
7x10LT	10.0	11.0	11.25-13.5	250	12.25	11.25	14.5
10HT	10.0	10.75	11.0-14	350	12.25	11	14.5

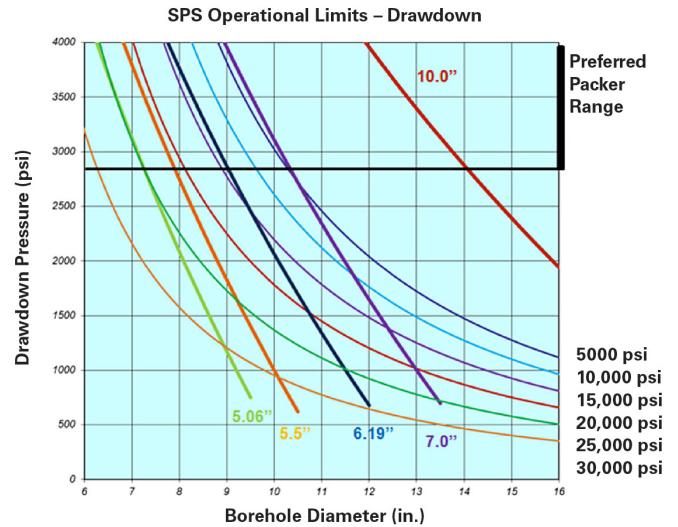
Hydrostatic pressure

HOLE SIZE	PACKER OD	PACKER LIMIT	5000	10000	15000	20000	25000	30000
IN.	IN.							
6	5.06	4324						3190
8½	6.19	3303			3154	2560	1965	1371
8½	7	4500	4343	3749	3154	2560	1965	1371
10⅝	9	3954	2718	2346	1974	1602	1230	858
12¼	9	2716	1953	1685	1418	1151	884	616
12¼	10	3670	1953	1685	1418	1151	884	616

Limit set at lowest value based on hydrostatic pressure

SPS standoffs selection according to packer size

PACKER SIZE	STANDOFFS REQUIRED
IN.	
5.06	None
6.19	7 in.
7.00	7.5 in.
9.00	10 in.
10.0	11 in.



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