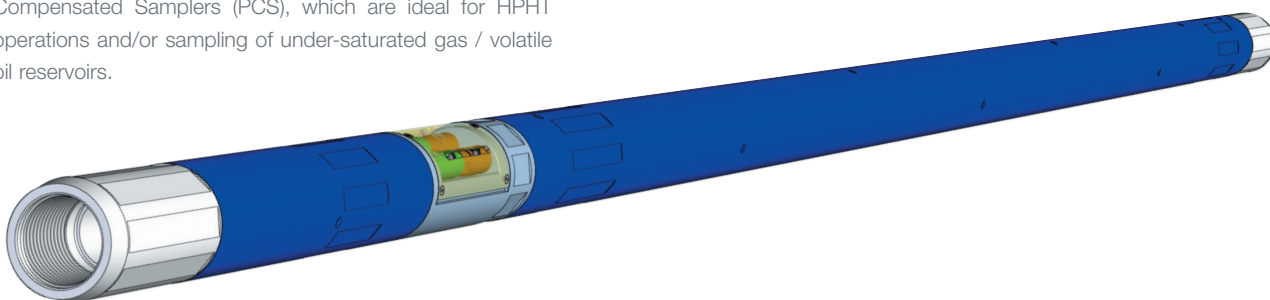


SmartCarrier 20K bottomhole sampler carrier

Expro's Petrotech SmartCarrier is a unique tool for Bottom Hole Sampling of HPHT wells. The 20K tubing conveyed carrier can provide 4 x 540cc (2.16 litres) of single phase reservoir samples. It may also be equipped with quartz memory gauges to measure down hole pressure and temperature.

The carrier is custom made for the Non-corrosive Pressure Compensated Samplers (PCS), which are ideal for HPHT operations and/or sampling of under-saturated gas / volatile oil reservoirs.



Features:

High Pressure & High Temperature

The working pressure and temperature of the SmartCarrier is 20.000 psi @ 350°F (full differential).

Triggering functions

The SmartCarrier provides individual triggering of each sampler by use of rupture discs or acoustic telemetry system.

Non-corrosive

The SmartCarrier and PCS samplers provide service in the most hostile well environments with extreme H₂S levels.

Positive displacement operation

A slow positive displacement of the floating pistons ensure no pressure differential across the sample entry ports.

Single-phase

The PCS tool will allow use of high N₂ charge pressures for single-phase sampling of high shrinkage reservoir fluids.

Full bore

The carrier ID is full bore 2 1/4" with a maximum eccentric offset of less than 1".

Flexibility

The SmartCarrier can also be run in single mode version with 2 each bottomhole samplers (instead of 4 each). Tool length is then approx. 7m.

Integrated bottomhole sampling service

Custom designed transport basket including all necessary equipment such as SmartCarrier tool assembly, four PCS samplers, transfer bench, lifting and handling equipment, pressurized N₂ and hand tools. DNV 2.7-1 certified.

Benefits:

Can be operated in extreme wells with high pressure and temperature without compromising the safety.

Activation by individual rupture discs allows the operator to choose the exact time of sampling, and each sampler may be activated individually.

The non-reactive material makes the tool excellent for trace element sampling and sampling in highly corrosive hydrocarbon fluids containing CO₂, H₂S and brines. The material of the tool provides insignificant loss of H₂S from the sample.

With no requirement for re-establishing single-phase at surface sample transfer is performed rapidly and without jeopardizing the integrity of the sample.

No wire-line operations are necessary to collect high quality samples.

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SmartCarrier basket - custom designed transport basket including all necessary equipment.

Technical Specifications:

Sample capacity	2.16 litres (4 x 540cc) single phase
Full-bore ID	2"
OD	5"
Main internal bore offset	23 mm
Max Temperature	177°C / 350°F
All fluid exposed parts according to	NACE MR-175 / ISO 15156 (2003)
Max differential pressure-internal	20,000 psi @ 350°F
Max differential pressure-external	15,000 psi @ 350°F
Design specification	ASME Sect. VIII Div. 3 / API 5C3
Tensile rating	325,000 lbf @ 177°C and 0 psi
Make up length	12.3 m
Total Weight	800 kg
End connections (both ends)	Hydril 4.5" 26.5" lb/ft Type 533 (box)
Optional: P&T Quartz Gauges	2 each 1.25" OD