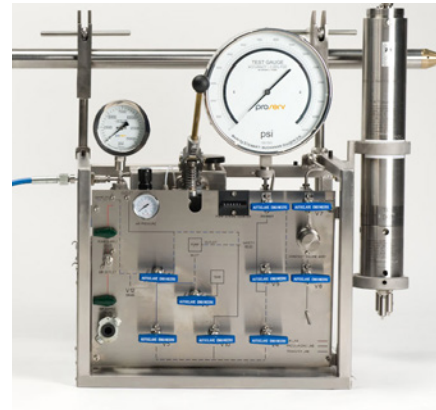


| Downhole Sampling





Proserv specialises in downhole sampling, and to accurately evaluate and appraise a reservoir, high quality fluid samples are captured in the field and transported to a laboratory where chemical composition and physical properties can be measured and determined. This process needs careful management throughout to ensure sample integrity, operator safety and legal compliance.

Downhole Sampling Rental Equipment

Proserv holds an extensive fleet of rental equipment for the oil and gas sampling industry. During periods of high sampling activity, special sampling projects or perhaps when cylinders or equipment are outwith serviceable operation, Proserv can offer downhole sampling rental equipment on a per day basis. Equipment can be mobilised from facilities around the world.

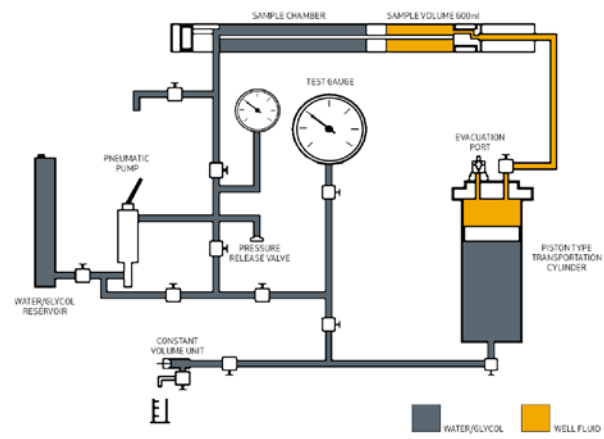
Field Services

Proserv has extended our downhole sampling services to provide customers with sampling engineers to operate samplers in the field if required. Engineers can be mobilised from various locations worldwide and our clients benefit from the superior level of professionalism, technical ability and performance provided.

Training

Training packages can be provided on the operation and servicing of the Proserv downhole sampling equipment, either at a Proserv location or at the customers facility if required. Comprehensive training schools have been developed to ensure sampling engineers have the correct technical and practical skills to ensure successful operation of our equipment.

Our engineering expertise, high quality manufacturing and proven track record help safeguard valuable samples.



PDS & SPS Sampling Systems

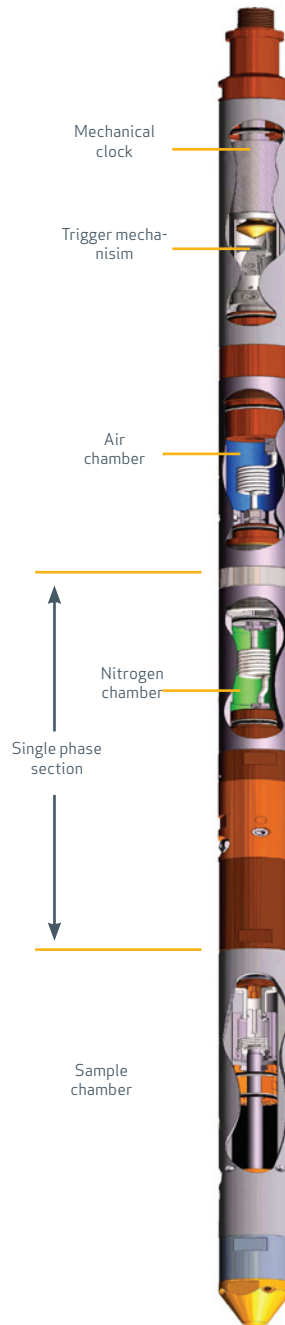
The Proserv positive displacement sampler (PDS) allows for the capture of representative down hole reservoir fluid samples. The sampler can also be utilised to take single phase samples (SPS) and maintain them at a pressure above reservoir conditions, for analysis back at the laboratory. Samples, when analysed, provide data vital for the economic and technical evaluation of the reservoir.

Sampler conveyance is run on slickline, wireline, coil tubing or pipe and is operated via traditional mechanical clock or third party acoustic triggers when run as part of drill stem test (DST) string.

For transportation of samples, a range of cylinders (700 ml as standard) can be supplied with pressure ratings of 10,000 and 15,000 psi. Our cylinders are supplied with transportation boxes for shipment complete with European, United States DOT & Canadian TC certification where applicable.

Features and Benefits:

- Controlled sampling by positive displacement
- Mercury free sample transfer
- Sample can be retrieved and transferred in single phase
- Available in Inconel for hostile environments
- Positive locking and operation indicator
- Proven design with many years of successful operation
- Fast sample transfer
- Multiple samplers can be run simultaneously
- Sample validation on site
- Fast re-dress of sampler
- Non reactive coating available to minimise H₂S losses



Operation Parameters	
Sample volume	600 ml
Maximum working pressure	15,000 psi at 180 °C (356 °F)
Length PDS	12'1" (3,680 mm); SPS 16'7" (5,054 mm)
Weight PDS	61.6 lb (28 kg); SPS: 74.8 lb (34 kg)
Outside diameter	1 11/16" (43 mm)
Material	17-4 PH stainless steel (AISI 630) aluminium bronze CA 104

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Rev 004