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Core Lab



Viscometer 3-1000 Low Temperature Datasheet

Reservoir Fluid Analysis-PVT\Viscosity



Viscometer 3-1000 Low Temperature



General Features

In order to study gas viscosity under low temperature, ST designed the Viscometer 3-1000 LT. The gas viscometer is refrigerated in an oil bath to avoid complex mechanical assembly.

Specifications	
Working Pressure	1000 bar (15 000 psi)
Chamber Volume	3 cc
Temperature Range	-40 to 200 °C
Temperature Stability	0.05°C
Range Viscosity	0.01 MPa to 10 Pa
Flow	0.01 to 40 cc/h
Delta P Accuracy	0.0001 MPa

The bath is equipped with cooling compressor, heating resistance and circulating pump.

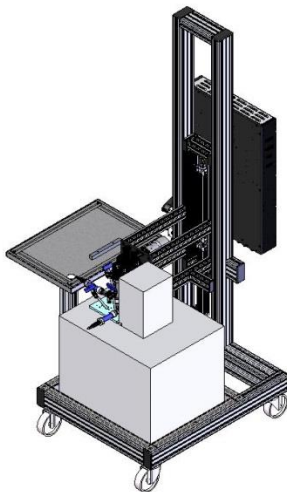
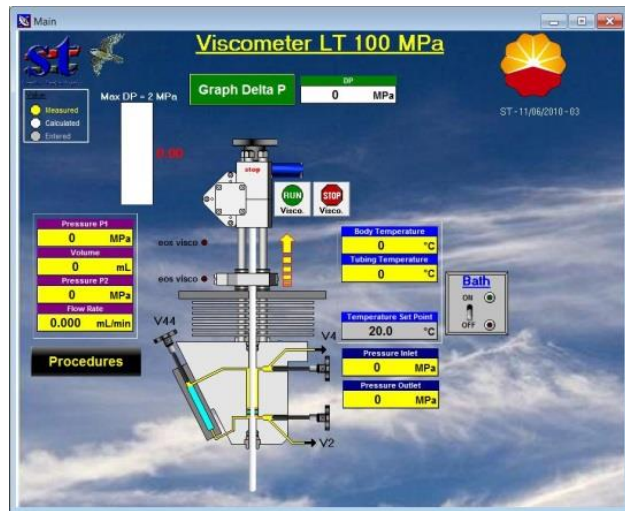


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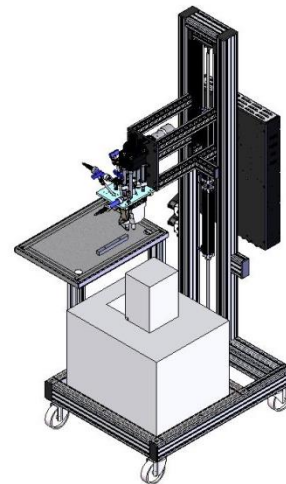
To get quickly a stable Delta P, the chamber volume needs to be as small as possible due to the compressibility of the gas. In our case we need 3 min to stabilize the sample in a chamber volume of 3 ml. Two types of gaskets need to be used: silicone gaskets for -40°C to +100°C, and Viton gaskets for 0°C to +200°C.

The viscometer is equipped with three pneumatic high pressure valves. It's also equipped with two pressure sensors with stability better than 1 mbar (10-4 MPa).

Capillary Tube Viscometer	
0.01 to 2 cp	Inside Ø 0.04 mm
0.1 to 20 cp	Inside Ø 0.08 mm
2 to 300 cp	Inside Ø 0.18 mm
80 to 10 000 cp	Inside Ø 0.5 mm



Low Position



High Position