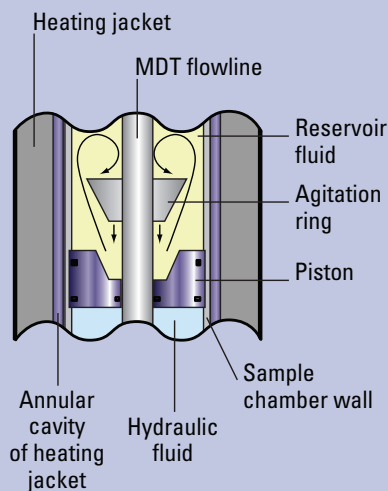


Openhole MDT Sample Transfer Equipment

Custom designed heating and agitation system for restoration and pressurized transfer of MDT samples

Sample transfer in process (top). Section view of 1 gal MDT sample chamber during sample agitation (bottom).



The Oilphase-DBR* MDT* Modular Formation Dynamics Tester Sample Transfer Equipment (MSTE) is used to safely recombine the liquid and gas phases of hydrocarbon samples retrieved from an open hole with the MDT 1.0 or 2.75 gal sample chambers. The MDT chamber is fitted to the MSTE where it is repressurized, heated, and agitated to restore the sample to reservoir conditions prior to sample transfer or subsampling.

The electronically controlled heating jacket provides even, indirect heating through a liquid filled annulus. The sample chamber is heated to transfer temperature in less than an hour and the temperature is controlled at ± 1 degC [1.8 degF]. The transfer unit, which has a working pressure of up to 207 MPa [30,000 psi], is equipped with dedicated high pressure hoses suitable for all transfer fluids and a validation manifold for measuring bubblepoint pressure of the hydrocarbon sample at either ambient or reservoir temperature or both.

Use of MSTE improves the quality and safety of the sample reconditioning and transfer process while saving time and money.

Applications

- Heating MDT tool sample fluid
- Sample recombination, agitation, and restoration
- Wellsite sample transfer

Benefits

- Improved wellsite safety during sample transfer
- Reduced time and rig costs
- Provides safe transfer of large volume samples for transport

Features

- Controlled and even heating of the sample chamber
- Electronically controlled heating jacket
- Agitation frame that securely locks large volume chambers into place for safe operation
- Handles either 1 or 2.75 gal sample chambers
- Allows inversion of chambers to transfer at pressure and temperature
- Agitation ring that mixes sample during rocking

Technical Specifications

Heating Jacket	1 gal	2.75 gal
Length	0.911 m [3 ft]	1.93 m [6.33 ft]
Weight	48 kg [106 lbm]	72.5 kg [160 lbm]
Max. OD	0.21 m [8 in]	0.21 m [8 in]
Power	2 kW, 110 V—8 A	4 kW, 110 V—16 A
Suitable for 4.75-in OD and 5-in OD MDT sample chambers		

Agitation Frame

Length	1.525 m [5 ft]
Width	1.040 m [3.41 ft]
Weight, boxed	153 kg [337 lbm]
Material	Stainless steel
Height, 1 gal vertical	2.335 m [7.66 ft]
Height, 2.75 gal vertical	2.326 m [7.63 ft]

Transfer

Length	0.8 m [2.65 ft]
Width	0.65 m [2.13 ft]
Height, shipping	0.55 m [1.8 ft]
Weight	80 kg [176 lbm]
Working pressure	Up to 207 MPa [30,000 psi]
Material	Stainless steel
Recommended air supply	55 scf/min at 150 psi
