

Transfer Equipment for MDT Tester Samples

Custom-designed heating and agitation system for restoration and pressurized transfer of samples collected with the MDT tester

APPLICATIONS

- MDT* modular formation dynamics tester sample fluid heating
- Sample recombination, agitation, and restoration
- Wellsite sample transfer

BENEFITS

- Improved wellsite safety during sample transfer
- Reduced time and rig costs
- Greater safety for the transfer of large-volume samples for transport
- Improved quality of sample restoration and transfer process

FEATURES

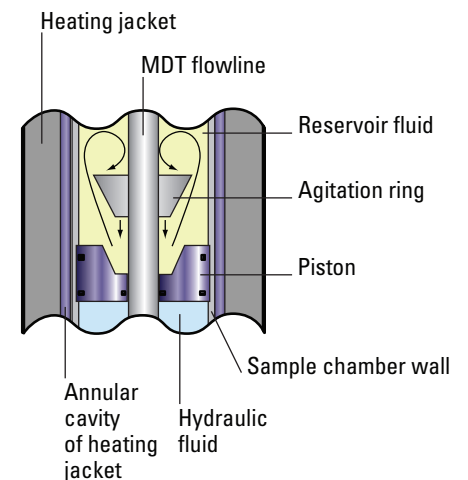
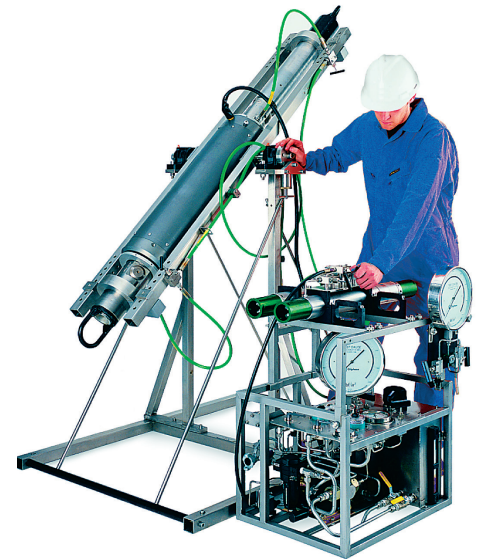
- Electronically controlled heating jacket for sample chamber
- Secure agitation frame for large-volume chambers
- 250-cm³, 450-cm³, 1-galUS, and 2.75-galUS sample chamber capacities
- Inversion chamber for transfer at pressure and temperature
- Sample-mixing agitation ring

Transfer equipment for samples collected by the MDT tester is used to safely recombine the liquid and gas phases of hydrocarbon samples retrieved from an open hole with the 250-cm³, 450-cm³, 1-galUS, or 2.75-galUS sample chambers. The sample chamber of the MDT tester is fitted to the transfer equipment, 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 one hour, and the temperature is controlled to ± 1.8 degF [± 1 degC].

The transfer unit, which has a working pressure of up to 30,000 psi [207 MPa], is equipped with dedicated high-pressure hoses suitable for all transfer fluids. A validation manifold is used to measure bubblepoint pressure of the hydrocarbon sample at ambient temperature, reservoir temperature, or both.

Use of the sample transfer equipment for MDT tester operations improves the quality and safety of the sample restoration and transfer process while saving time and money.



Sample transfer in process (top). Section view of 1-galUS sample chamber of the MDT tester during sample agitation (bottom).

Transfer Equipment for MDT Tester Samples

Heating Jacket Specifications[†]

	1-galUS Sample Chamber	2.75-galUS Sample Chamber	250-cm ³ Sample Chamber	450-cm ³ Sample Chamber
Length, ft [m]	3 [0.911]	6.33 [1.93]	1.3 [0.4]	2 [0.61]
Weight, lbm [kg]	106 [48]	160 [72.5]	48 [22]	79 [36]
Max. OD, in [cm]	8 [21]	8 [21]	5 [13]	5 [13]
Power	2 kW (110 V, 8 A)	4 kW (110 V, 16 A)	309 W (110 V, 16 A)	309 W (110 V, 16 A)

[†] Heating jackets for 1-galUS and 2.75-galUS sample volumes are suitable for 4.75-in-OD and 5-in-OD sample chambers.

Agitation Frame Specifications[†]

Max. length (sample chamber in horizontal position)	5 [1.525]
Width, ft [m]	3.41 [1.040]
Weight, boxed, lbm [kg]	337 [153]
Material	Stainless steel
Max. height (sample chamber in vertical position)	7.66 [2.335]

[†] Agitation frame for use with 1- and 2.75-galUS chambers only; 250-cm³ and 450-cm³ sample chambers are restored to pressure and temperature and transferred while mounted in a cradle on the sample transfer equipment.

Transfer Unit Specifications

Length, ft [m]	2.65 [0.8]
Width, ft [m]	2.13 [0.65]
Height, shipping, ft [m]	1.8 [0.55]
Weight, lbm [kg]	176 [80]
Working pressure, psi [MPa]	20,000 [138]
Material	Stainless steel
Recommended air supply	55 scf/min at 150 psi

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