Density of Semi-Solid Bituminous Materials

ASTM D70 - IP 190 - ISO 3838 - JIS K2265 - DIN 52 004

Item	Unit	TC16
TC16 230V	50-60Hz	**00T0671**
TC16 115V	60Hz	**00T0861**
Power	[kW]	1.5
Range	°C / °F	Ambient .. 250 / Ambient .. 482
Reading		°C or °F
Setting ±	[°]	0.1
Stability ±	[°K]	0.02
Heating	[kW]	1.4
Bath volume	[L]	16
Bath	[mm]	Maximum nine pycnometers
Bath depth	[mm]	220
Length	[mm]	455
Width	[mm]	295
Height	[mm]	440
Materials		Used inside bath: stainless steel 304
CE		Conforms to CE regulation

⊕ **Stainless steel bath**
⊕ **Cooling coil**
⊕ **Bath drain**
⊕ **Easy to operate**
⊕ **Position for nine pycnometers**

General
This test method covers the determination of the relative density and density of semi-solid bituminous materials, asphalt cements, and soft tar pitches by use of a pycnometer. The sample is placed in a calibrated pycnometer. The pycnometer and sample are weighed, then the remaining volume is filled with water. The filled pycnometer is brought to the test temperature, and weighed. The density of the sample is calculated from its mass and the mass of water displaced by the sample in the filled pycnometer. The bath has place for nine pycnometers.

The temperature range is from ambient +5°C to 250°C. On the TC16 a ridge is mounted to support the adjustable brackets for pycnometers. These brackets can be used for Hubbard or Gay-Lussac pycnometers. Each bracket can accommodate three pycnometers. Maximum three brackets can be placed in one TC16. Either a bracket for Hubbard or for Gay-Lussac pycnometers needs to be bought depending which type of pycnometer will be used. In order to work @ 15°C or @ 25°C an external TLC15-5 circulator needs to be connected. Please see the table on page two for further information.

Accuracy
The insulation of the bath and electronic design result in a very stable working temperature of ± 0.02°C. The set point can be set in steps of 0.1°C in the range of 0°C up to 250°C (-148..482°F). The accuracy on the display is displayed in 0.1°C. However the controller has an internal accuracy of 0.01°C.

Temperature readout
Standard available in °C, on request in °F.

Pump
When not used for density measurement, the pump can be used to circulate the bath content to an external application.
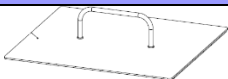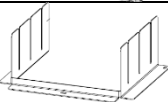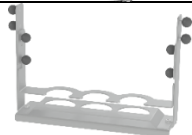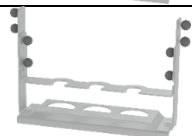
Safety
The bath conforms to CE regulation. It is further equipped with a mechanical resettable safety thermostat.

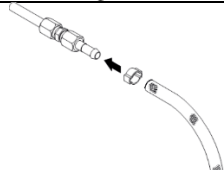### Necessary accessories and accessories
Please see the table on the next page.

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	Necessary accessories	
Part Number	**Picture**	**Description**
13T8049		TC16 cover for ASTM D70/IP 189
13T8050		Ridge for D70 brackets
13T8052		Bracket for three Gay-Lussac pycnometers (one piece)
13T8051		Bracket for three Hubbard pycnometers (one piece)

	Accessories	
Part Number	**Picture**	**Description**
31T0030		Pycnometer Gay-Lussac
31T0031		Pycnometer Hubbard
00T0565 (230V/50Hz) 00T0567 (230V/60Hz) 00T0570 (115V/60Hz)		TLC15-5 external cooling circulator to measure the density @ 25°C, 20°C or 15°C (below or near ambient temperature).
12T1075		Tubing with connectors and clamps to be used between a TLC15 and a TC16.