



**Freezing and Thawing
Test Chambers in Water**



ENVIRONMENTAL

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Freezing and Thawing Test Chambers in Water



PRODUCT MODEL

TMT-9800	Freezing and Thawing Chamber, Freezing / Thawing in Water - 250 Liters
TMT-9802	Freezing and Thawing Chamber, Freezing / Thawing in Water - 500 Liters

STANDARDS

Standards	EN 1338, 1339, 1340, 1367-6, 12371, 13748-2 TS EN 12371, TS 699
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INFORMATION

Manufacturer	TESTMAK INS.LAB.MAK.SAN.VE TİC. PAZ. İTH. İHR. LTD. STİ
Country of Origin	TURKEY
Product Name	Freezing and Thawing Chamber, Freezing / Thawing in Water

Freezing and Thawing Test Chambers in Water

DESCRIPTION

The TESTMAK Freezing and Thawing Test Chambers in Water can perform TS EN 12371 and TS 699 freezing and thawing tests within the temperature and time ranges specified in the standard. Processes are performed in full automatic steps and looping occurs from the combination of steps. The cycle number can be set to 1- 250 or infinite repeat. When the device reaches the end of the set cycle, it automatically stops all operations. If it is required to stay at a specified temperature at the end of the cycle, this can be done by adding it before the program starts.

In the water dissolving step, the moment of water intake, the time of waiting in water, the moment of water discharge can be defined as parameters, each of which is a different step. The cabin is equipped with a top cover and piston. The water intake tank is independent. In computer-controlled models the water level of the container can be seen on the computer screen of the device. Can connect to the computer. Software is provided with the machine. The inner and outer parts of the device are made of 304 quality stainless steel. On the inside of the cabin there are 2 shelves which can be placed on top of each other. There is an automatic closing door at 45 degrees on the device. There are two temperature probes in the usage area of the device. One of the temperature probes is stationary and the other is mobile.

There are two screens on the control panel that show the temperature for two probes in the boiler. These probes can be viewed on separate screens for each on the computer and control panel. Probes are made of water resistant and stainless steel. The place where the sensor of the mobile probes and the cable are connected is resistant to breakage. The temperature measurement accuracy of the probes and indicators used in the instrument is ± 0.1 ° C. The inside temperature of the cabin can be adjusted between -25 ° C and $+ 45$ ° C. There is air circulation in the device. When the power is restored after power interruption, the device can continue from the place where it was tested. Non-harmful gas is used in the cooling system. The gas and insulation material used in the cooling system does not contain CFC.

Temperature

Control of temperature is done by the Delta PLC Touch Screen, high tech PID temperature and humidity control, developed by Testmak.

Temperature Precision (in the interior of the chamber, at 5 cm from walls, floor and top)

In Time : $\leq \pm 0,5^{\circ}$ C

In Space: $\leq \pm 1,0^{\circ}$ C

Temperature Sensors

One (1) PT 100 Class A, located in air treatment tunnel

Heating

By tubular stainless steel electric heaters located in the air treatment tunnel

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Cooling

By airtight mechanical compressor group Secop brand (low noise, high efficiency) with enforced ventilation and without use of CFC's.



Installation Requirements

To assure a correct functioning of the equipment, the following installation conditions are required:

Installation site

The place should be easily accessible, according to equipment dimensions and weight. It should have good air circulation and a room temperature between 10° and 26°C. The floor should be levelled and a minimum distance of 50 cm from the walls of other equipment must be kept.

Electrical supply

All Testmak 250 to 500 Liters climatic chambers are: 220-240 V 50/60Hz.

Nominal current will vary from 16 Amp up to 150 Amp per phase, depending on model and required performance.

Humidification circuit and demineralized water (for Clima models)

The humidification circuit works exclusively with distilled or demineralized water. For this circuit, a water admission pressure of 1 to 6 bares and conductivity of $\leq 5\mu$ Siemens is required.

Water circuit for cooling condenser (Standard for -25°C)

A cold water circuit is required for the cold system condenser. Technical characteristics:

Water flow: 0,5 to 3 liters/hour maximum

Intake pressure: 3 to 6 bares

Water entry and exit pipe: 1"

Differential pressure between entry and exit: $> 2,5$ bares

Maximum temperature of water entry: 26°C

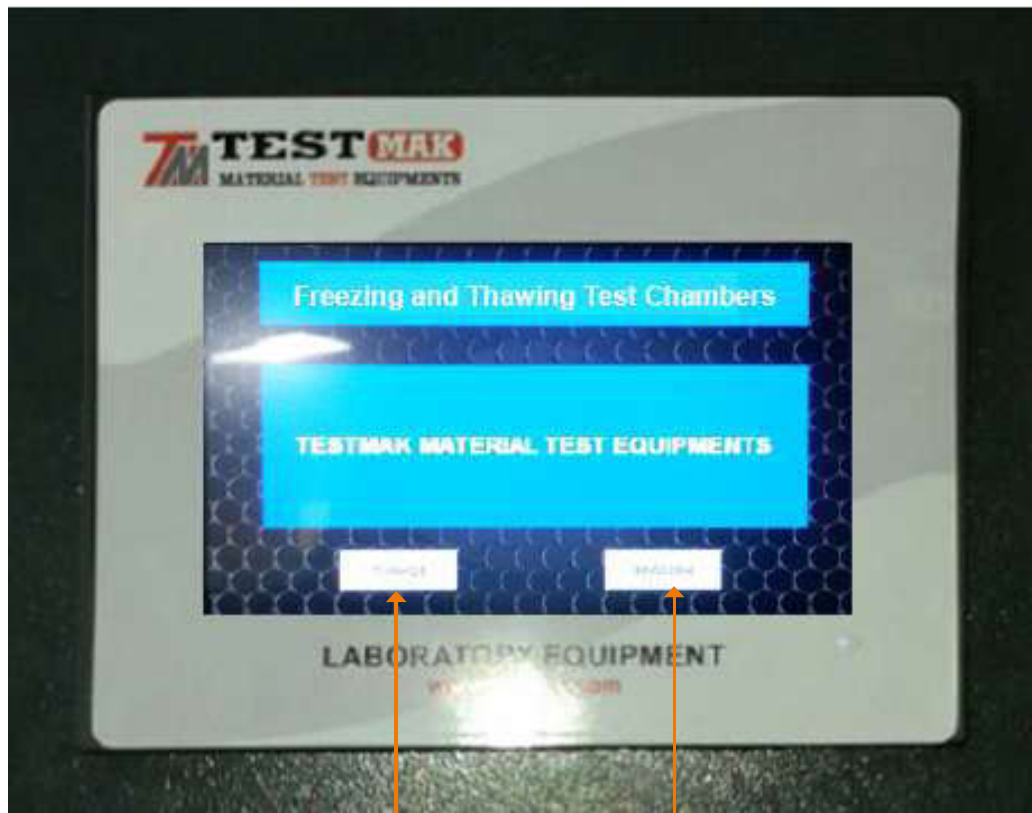
Adequate temperature of water entry: 18°C.

Drain

At floor level and near the equipment. The draining of the humidification and cooling systems water is done by gravity. For a correct draining there should be a minimum inclination of 10° in a descending trajectory from the chambers draining pipe until the sewage system.

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CONTROL PANEL

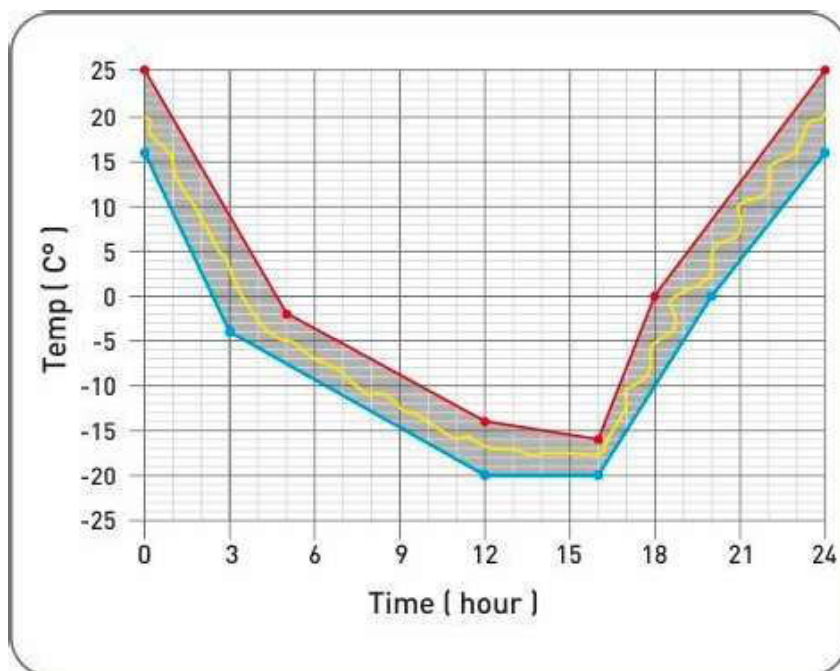
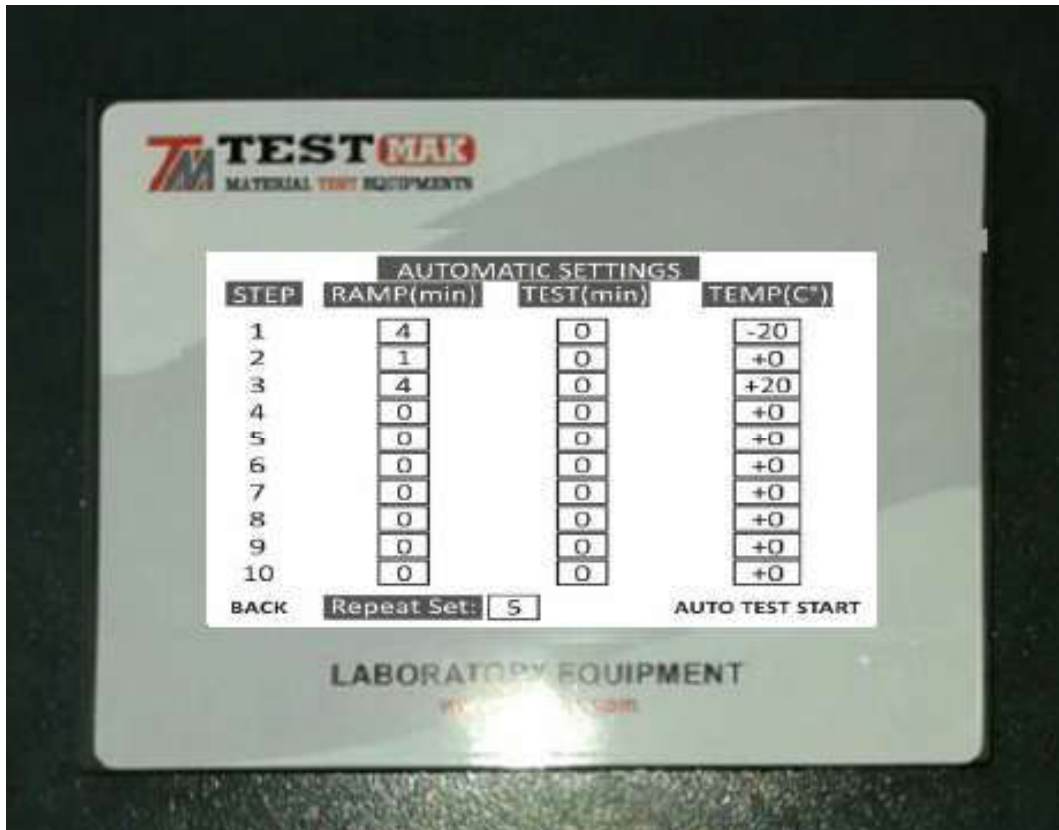


LANGUAGE SELECTION

1. Turkish Language

2. English Language

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Freezing and Thawing Test Chambers in Water

TECHNICAL SPECIFICATIONS

Product Code	TMT-9800	TMT-9802
Capacity	250 Liter	500 Liter
Storage Tank	480x1260x460 mm	600x1400x600 mm
Dimensions	600x1900x600 mm	720x2040x740 mm
Power	1500 W	2000 W



TM TEST MAK
MATERIAL TEST EQUIPMENTS

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