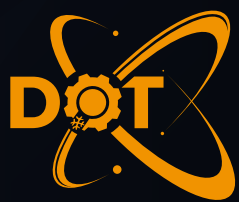




# VHAGAR

THERMAL SHOCK  
CHAMBERS

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# THERMAL SHOCK CHAMBER

Thermal Shock Chamber is an equipment in subjecting products to a thermal shock test. Thermal Shock Environmental Chambers have a product carrier basket that automatically transports a product under test between separately controlled temperature zones. With built-in viewing windows, users can easily observe the product as it's transferred between different temperature zones. Thermal Shock Chambers come in a variety of performance configurations to meet specific testing needs and includes the intuitive DOT Controller.

We have two types of thermal shock, a dynamic one having two chambers, one hot and one cold, with the basket that transports the device between the two treated areas and a static one having three distinct chambers, the test area and the hot and cold chamber. In this case the thermal shock occurs by modulating the opening of dedicated dampers which allow the DUT to be hit with cold or hot air without any movement of the specimen. This type is necessary when the DUT must be connected electrically or hydraulically.



## BASIC CONFIGURATION

- Control by touchscreen 10" "DOT" with adjustable arm support
- 1 Portholes 50mm (left side on 3 chamber, top side on 2 chambers)
- Bottom plate reinforcement design, the maximum designed load-bearing capacity of the bottom plate is 100kg
- Observation window on the door (size depends on design), with lighting Multi-layer vacuum glass window with electronic defogging film to heat and sweat
- 8 auxiliaries digital output
- 2, height adjustable, single layer load-bearing  $\geq 30\text{KG}$
- Air condenser
- Internal light
- Min/max digital thermostat with independent probe
- Ethernet port
- Mobile casters and positioning foot cups are installed at the bottom of the equipment to facilitate equipment relocation and positioning

# FEATURES FOR VHAGAR TWO CHAMBERS

- Dynamics with high texture appearance, the body adopts an arc shape, and the surface is treated with baking paint;
- The door double insulation sealing gasket can effectively isolate internal temperature leaks;
- The refrigeration system adopts Copeland or Bitzer compressors;
- The controller adopts a 10" LCD touchscreen which can display the measured value, set value and time at the same time;
- The controller has multi-segment program, so the change, temperature can be controlled quickly and smoothly;
- The bottom of the chamber is equipped with a movable pulley and a positioning footrest, easy to move and place
- The equipment is divided into two parts: high -temperature area and low-temperature area. The test product is placed in the basket. When the basket is impacted, the test product is moved into the high-temperature or low-temperature area for balance impact. The test product is dynamic;
- The impact method uses the air duct switching method to introduce the temperature into the test area for cold and thermal shock tests;
- During high-temperature shock or low-temperature shock, the maximum time can reach 999H, and the maximum cycle period can reach 9999 times;
- The system can be used for automatic cycle engines or manual selective impact;



## OPTIONS

- Air-Cooled Condenser
- Customization
- Electrical Disconnect
- GN<sub>2</sub> or Dry Air Purge
- Interior Lights
- LN<sub>2</sub> or CO<sub>2</sub> Boost
- Quiet Package
- Shelves
- Traveling Port
- Water condenser
- Light column
- Independent min/max double safety
- Variable ventilation speed drive in the cold cabine (ESS mode)
- Additional product sensor regulation (mobile)
- Cable guide
- Supervision
- Notched cabinet passage
- Windows

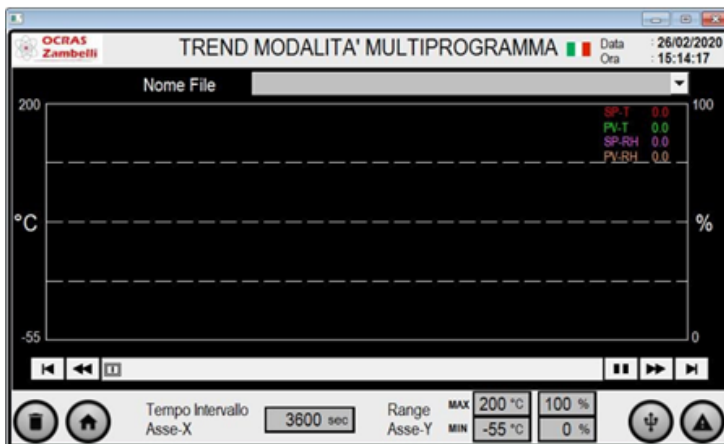
# FEATURES FOR VHAGAR THREE CHAMBERS

- The equipment are divided into three parts: high-temperature area, low-temperature area, and test area. The test product is placed in the test area, and the temperature of the high-temperature area or low-temperature area is charged into the test area during impact, and the test product is static;
- Using a touch-sensitive graphic control interface, easy to operate the barrel;
- The impact method uses the air duct switching method to introduce the temperature into the test area for cold and thermal shock tests;
- During high-temperature shock or low-temperature shock, the maximum time can reach 999H, and the maximum cycle period can reach 9999 times;
- The system can be used for automatic cycle engine or manual selective impact and can set two or three-zone imp- act and cold and hot punch start;
- The cooling adopts a cascade refrigeration system, which has a rapid cooling effect, and the cooling method is water-cooled;



## NEW HMI 10 INCH ON BOARD DISPLAY

- All functions available on the on board panel
- The same software on any device

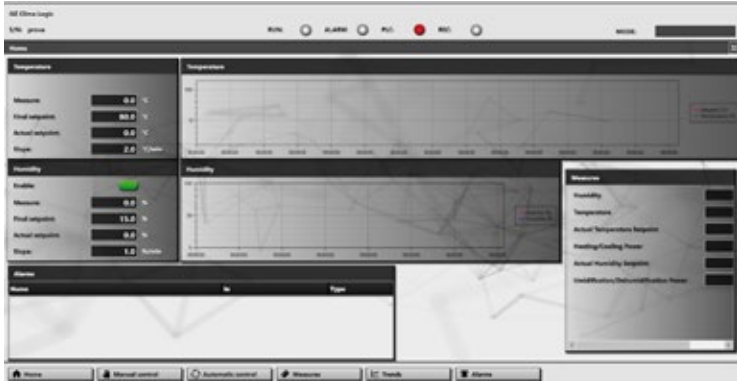


## CLIMALOGIC® AN INTELLIGENT CONTROL SYSTEM READY FOR THE FUTURE

- Thanks to their hyper-connectivity, DOT test chambers can match current and future needs related to the new demands of the Industrial Internet of Things and Industry 4.0 for integrated, interconnected and communicating machines.
- Clarity, consistency and efficiency of use.
- The interface consists of a powerful software accessible from the 10 inch on board display and from remote devices (PC, tablet, smartphone) through the App Easy Access.
- The chamber is equipped with a PLC (Programmable Logic Controller) for managing all the chamber's functions and safety interlocks.

# DYDRUS SOFTWARE

Dydrus is the Supervision and Management system operating on desktop device. The operator interface can also be remotely accessed via customer's LAN connections.



## Main features Dydrus software

- Ethernet connection to the chamber
- Visualization and graphical analysis of measures and recordings
- Synoptic graphs of the entire system
- Multilanguage support.
- High configurability of chamber parameters
- Unlimited possibilities of measures recording
- Program and Manual mode of chamber operation
- Delayed start of a program
- Archive manager for an easy access to the stored recordings
- Test program editor
- Ability to store 500 cycles of 20 segments each with the ability to concatenate them up to a maximum of 8 and then be able to reach 160 segments; you can set the total repetitions of the cycle or make it repeat endlessly
- Ability to change setpoint values or segment times even during the cycle without stopping the machine
- Upload, edit, export, and delete existing cycles and recordings
- Graphical and numerical profile's parameters data entry
- Graphic functions (Graphic viewer)
- Live data update of measures on the charts
- Graphic charts or numeric table representation views on the monitor
- Graphic cursor for in-chart data measurements and evaluations
- Calculation of Measure Slopes and reports generation
- Export function to convert the Dydrus log file into ASCII format (usable in Excel or other applications)

## OUR ENVIRONMENTAL COMMITMENT

The current European Regulation issued on November 2023 repeals the previous CE517/14. New guidelines will require to use HFCs with GWP  $\geq 150$  in the coming years.

### What's GWP? = Global Warming Potential

- The GWP index measures the relative warming effects of greenhouse gases compared to CO<sub>2</sub>. Gases with higher GWPs have a comparatively higher warming potential.
- All HFCs, even the new ones, fail to meet these requirements: at the moment there's no such thing as a "perfect refrigerant".
- As the environmental risk only appears during a leak, we decided to design our equipment using the best available technology. The target is to reduce failure risk to zero with the help of our qualified maintenance staff. We aim to achieve high values of COP with lower consumption of CO<sub>2</sub>.
- In the refrigeration system of our **Vhagar** series we use high-end hermetic compressors Scroll type branded Copeland or Bitzer.
- Scroll compressors are valued for their high energy efficiency, low level of vibration and noise and reduced number of moving parts; all these features contribute to lower maintenance costs.

**FOLLOW US  
TO LINKEDIN**



# TECHNICAL PARAMETERS VHAGAR THERMAL SHOCK 2 CHAMBERS

	Model	Vhagar 42 (A~c)	Vhagar 80 (A~C)	Vhagar 150 (A~C)	Vhagar 200 (A~C)	Vhagar 300 (A~C)
Useful capacity (l)		42	80	150	200	300
Internal Dimension (mm)	Width	400	500	600	600	970
	Height	350	400	500	600	460
	Depth	300	400	500	550	670
External Dimension (mm)	Width	1100	1200	1300	1300	1880
	Height	1930	2060	2390	2570	2070
	Depth	1450	1550	1670	1700	2600
Temperature Range	-75°C +200°C (A:-45°C, B:-55°C, C:-75°C)					
Heating time (Heat Storage Area)	RT~200°C About 35 min					
Cooling time (Cold Storage Area)	RT~-70°C About 55 min					
Temperature Recovery Time/Conversion Time	≤5min / ≤10sec					
Control Accuracy Temperature Stability	±0.5°C; ±2.5°C					
Inner and Outer Materials	The external box is the SUS 304 stainless steel surface strips, and the inner box is SUS 304 mirror stainless steel					
System	P.I.D + S.S.R + Microcomputer balance temperature control system					
Insulation Materials	High temperature resistant high-density polyurethane rigid foam and rock wool insulation materials					
Cooling System	Semi-hermetic two-stage compressor (Water-cooled) / fully-hermetic two-stage compressor (Air-cooled)					
Controller	DOT 10" Touch panel with "CliMaLogic"® software					
Compressor	Copeland or Bitzer compressor					
Power	400V ±10%/50Hz/3 + N + G					
Weight		500 kg	700 kg	900 kg	1100 kg	1400 kg

# TECHNICAL PARAMETERS VHAGAR THERMAL SHOCK 3 CHAMBERS

	Model	Vhagar 42 (A~c)	Vhagar 80 (A~C)	Vhagar 100 (A~C)	Vhagar 150 (A~C)	Vhagar 300 (A~C)	Vhagar 450 (A~C)
Useful capacity (l)		42	80	150	200	300	300
Internal Dimension (mm)	Width	400	500	600	600	970	970
	Height	350	400	500	600	460	460
	Depth	300	400	500	550	670	670
External Dimension (mm)	Width	1400	1500	1300	1300	1880	1880
	Height	1850	1930	2390	2570	2070	2070
	Depth	1450	1530	1670	1700	2600	2600
Temperature Range	-75°C +200°C (A:-45°C, B:-55°C, C:-75°C)						
Heating time (Heat Storage Area)	RT~200°C About 35 min						
Cooling time (Cold Storage Area)	RT~-70°C About 55 min						
Temperature Recovery Time/Conversion Time	≤5min / ≤10sec						
Control Accuracy Temperature Stability	±0.5°C; ±2.5°C						
Inner and Outer Materials	The external box is the SUS 304 stainless steel surface strips, and the inner box is SUS 304 mirror stainless steel						
System	P.I.D + S.S.R + Microcomputer balance temperature control system						
Insulation Materials	High temperature resistant high-density polyurethane rigid foam and rock wool insulation materials						
Cooling System	Semi-hermetic two-stage compressor (Water-cooled) / fully-hermetic two-stage compressor (Air-cooled)						
Controller	DOT 10" Touch panel with "CliMaLogic"® software						
Compressor	Copeland or Bitzer compressor						
Power	400V ±10%/50Hz/3 + N + G						
Weight		700 kg	900 kg	1100 kg	1200 kg	1400 kg	1900 kg