Cincinnati Sub-Zero



# VTS/DTS-Series
# Thermal Shock Chambers





**ISO-9001**
CERTIFIED

**Pre-Engineered Performance**

# Chamber Specifications

Looking for product reliability? Cincinnati Sub-Zero's Air-to-Air Vertical Thermal Shock and Double Duty Thermal Shock chambers are capable of producing optimum stress levels for detecting latent product flaws by stimulating defects at the lowest level of assembly, ***before*** they reach the customer. The return on investment in both actual savings and customer confidence adds greatly to the value of electronic assemblies screened in a Cincinnati Sub-Zero thermal shock system.

Our unique chamber designs pay particular attention to air flow, passing equal volumes of high velocity conditioned air over the products, resulting in rapid product temperature changes. The thermal stresses induced precipitate hidden manufacturing defects in electronic sub-assemblies and other components by the expansion and contraction of critical parts.

## Carriage Transfer

A double-acting air cylinder smoothly moves the carriage transfer. Normally closed solenoids are utilized to freeze the carriage if there is a loss of electrical power or air supply pressure, or if the door is opened. And, to insure long life, the air cylinder is not exposed to temperature extremes.

## Standard Accessories & Features

- ☑ CSZ Programmable Controller (up to five event relays)
- ☑ Digital Display Temperature Limit & Alarm
- ☑ Interior Light (hot chamber)
- ☑ Window (hot chamber)
- ☑ DUT Guaranteed Soak
- ☑ Refrigeration High Temperature Protection
- ☑ Compressor Time-Out System
- ☑ Zero Ozone Depletion Refrigerants
- ☑ Door Safety Interlock
- ☑ Welded Steel Frame Construction
- ☑ Brushed Stainless Steel Interior
- ☑ High Velocity Air Flow
- ☑ Carriage Transfer Mechanism

## Optional Accessories

- ☑ Selection of Programmable Controllers
- ☑ Additional 10 ft. Console Umbilical
- ☑ IEEE-488 Computer Interface
- ☑ Running Time Meter
- ☑ Chart Recorders
- ☑ Travelling Cable Ports
- ☑ Compressed Air Supply, Self-Contained
- ☑ Main Power Disconnect
- ☑ LN2 Boost Cooling
- ☑ Dry Air Purge System
- ☑ MIL-STD 810D, 202, 883 Air Distribution Baffle including Upstream/Downstream Sensors with Selector Switches

## Custom Capabilities

- ☑ Explosion-Proof Chambers
- ☑ Custom-Size Chambers
- ☑ Custom Application Chambers
- ☑ Ultra High Temperatures
- ☑ Ultra Low Temperatures
- ☑ Compliance to all Wiring Standards
- ☑ Custom Control Interface
- ☑ Mil-Standard 810C and 810D
- ☑ CE Approval

| Model No. | Product Carrier Size W x D x H (IN) | Exterior Dimensions W x D x H (IN) |
|---|---|---|
| VTS-1.5 | 14 x 14 x 12 | 55 x 63 x 82 |
| VTS-2.6 | 14 x 25 x 12 | 89 x 73 x 74 |
| VTS-3.3 | 18 x 18 x 18 | 93 x 71 x 78 |
| VTS-9 | 25 x 25 x 25 | 118 x 99 x 96 |
| DTS-16-22-22 | 30 x 30 x 30 | 200 x 83 x 94 |
| DTS-27-30-30 | 36 x 36 x 36 | 160 x 80 x 100 |

Note: Addition of certain options will effect exterior dimensions.

# Specifications - Here's what the VTS/DTS-Series can do...

| Thermal Shock Model No. | Maximum Transfer Basket Loading (LBS) | Maximum Load Mechanical Refrigeration Only (LBS)* | Temperature Range °C | |
|---|---|---|---|---|
| | | | Cold/Hot Chamber | Hot Chamber |
| VTS-1.5-5-5 | 25 | 7.5 | -75º to +190º | +70º to +210º |
| VTS-2.6-6-6 | 50 | 8 | -75º to +190º | +70º to +210º |
| VTS-2.6-705-705 | 50 | 14 | -75º to +190º | +70º to +210º |
| VTS-3.3-6-6 | 50 | 8 | -75º to +190º | +70º to +210º |
| VTS-3.3-705-705 | 50 | 14 | -75º to +190º | +70º to +210º |
| VTS-9-15-15 | 190 | 30 | -75º to +190º | +70º to +210º |
| VTS-9-27-27 | 190 | 60 | -75º to +190º | +70º to +210º |
| DTS-16-22-22 | 200 | 40 Lbs. ea. | -75º to +190º | +70º to +210º |
| DTS-27-30-30 | 200 | 70 Lbs. ea. | -75º to +190º | +70º to +210º |

Notes:
* Based on MIL STD 883C, Method 1010.7, and test condition C (stated in lbs. of integrated circuits or printed circuit boards with specific heat of 0.35 BTU/lb. ºF). Chambers can also be utilized for MIL STD 883C, Method 1010.5, test conditions A,B,C,D, & F with less product load.

Performance may vary due to physical product differences and mounting configurations.

| Thermal Shock Model No. | Hot Chamber Heater Wattage (KW) | Cold Chamber Heater Wattage (KW) | Approximate Air Flow (CFM) | | Cooling (GPM) Water Required | | Recommended Minimum Service | |
|---|---|---|---|---|---|---|---|---|
| | | | Hot | Cold | 24°C | 30°C | 460V | 230V |
| VTS-1.5-5-5 | 9 | 3 | 1000 | 1000 | 7 | 11 | 45 | 90 |
| VTS-2.6-6-6 | 9 | 3 | 2000 | 2000 | 8 | 13 | 60 | 135 |
| VTS-2.6-705-705 | 9 | 3 | 2000 | 2000 | 11 | 18 | 80 | 150 |
| VTS-3.3-6-6 | 9 | 3 | 2000 | 2000 | 8 | 13 | 60 | 135 |
| VTS-3.3-705-705 | 9 | 3 | 2000 | 2000 | 11 | 18 | 80 | 150 |
| VTS-9-15-15 | 30 | 6 | 3500 | 3500 | 19 | 32 | 135 | 275 |
| VTS-9-27-27 | 30 | 6 | 3500 | 3500 | 28 | 45 | 200 | 400 |
| DTS-16-22-22 | (2x) 30 | 10 | 4400 | 4400 | 23 | 39 | 225 | 400 |
| DTS-27-30-30 | (2x) 40 | 10 | 6000 | 6000 | 33 | 60 | 275 | 500 |

# Meeting the needs of our customers...

Cincinnati Sub-Zero has designed thousands of test chambers for special applications. We can custom design the right environmental testing system for you. Whether you require environmental test chambers, thermal shock/temperature cycling units or special calibration bath systems, CSZ is prepared to design and build the test chamber to fit all your needs.

## Parts

CSZ maintains a complete parts inventory that are readily available for overnight delivery - increasing your uptime.

## Service

Our factory-trained dealer service organizations throughout the world are supported by CSZ field service technicians. This combination of experts assures timely, professional and cost-effective installation, start-up, and service.

With Sales and Service locations across the United States, we can provide complete customer support for all of your environmental simulation needs.

For Parts or Service, contact our Customer Service department at 513-772-8810 or call us toll-free at 1-800-989-7373 for more information.




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