



Cincinnati Sub-Zero

**INDUSTRIAL FREEZERS &
PRODUCTION CHILLING CHAMBERS**



www.cszproducts.com

Freezers & Chilling Chambers



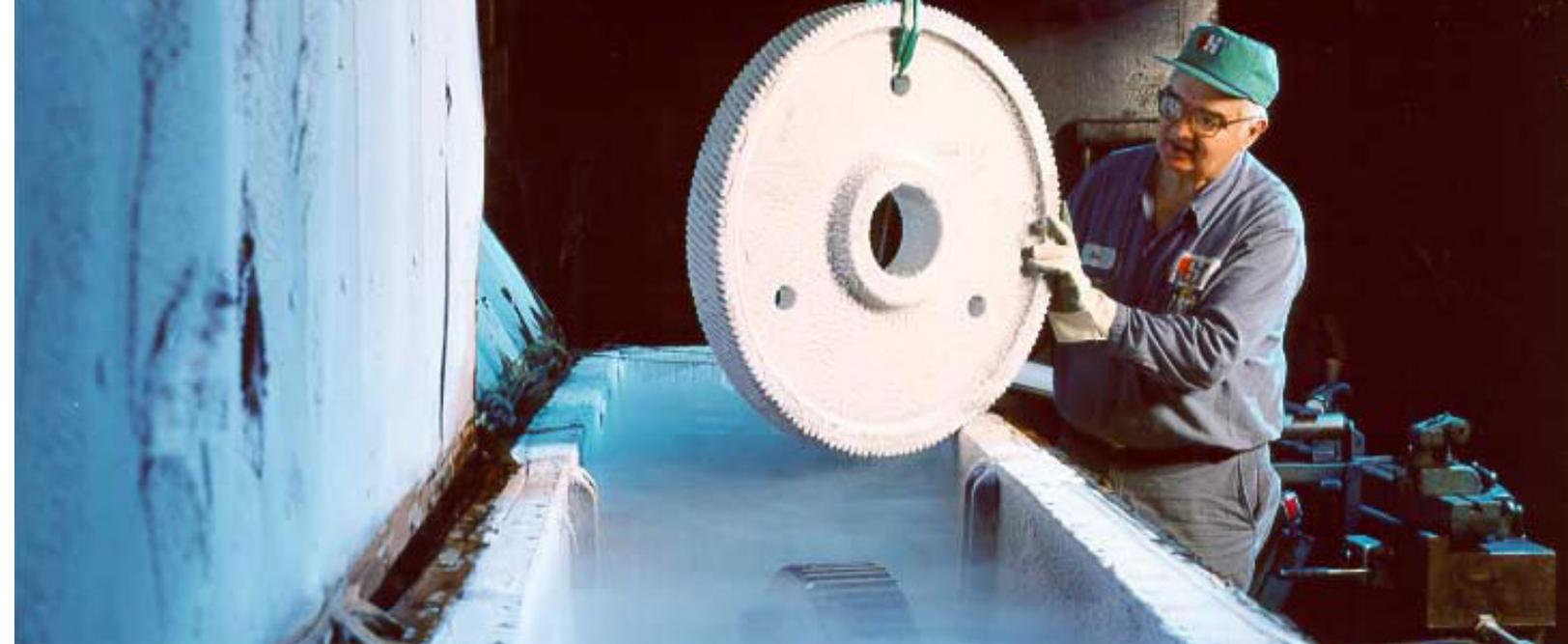
Built to Last for Decades

Our Chilling Chambers are premier, ultra-low temperature industrial freezers. Designed with heavy-duty construction, our units are built-to-last for years of trouble-free operation. These chambers are primarily used for age-hardening, stress-relieving, expansion assembly, martensiting, dimensional stabilization, and other heavy-duty industrial cooling applications.

Select from three different freezer styles

- The V-Series top-loading freezers offer economical chilling capability primarily used as storage freezers and in tool rooms where light duty storage or laboratory freezers are not adequate.
- The T-Series top-loading freezers are used for heavy production loads where high capacities and high performance are required.
- The TF-Series front loading freezers offer side-by-side operation with batch-type heat treating furnaces, heavy-duty rollers and guides to interface directly with most charge car load/unload mechanisms, and compatibility with part baskets and trays used in other heat-treating mechanisms.

**Our Production Chilling Chambers/
Freezers are designed to meet your
most demanding applications.**



Features & Benefits

- Heavy duty, built-to-last construction for long life. (We have fully operational freezers in the field that are 30+ years old)
- Trouble Free operation saves maintenance costs
- Casters for easy mobility (V-Series)
- Thick foam insulation for continuous operation and reduce operating costs
- NEMA-12 enclosures and oil tight switches extend the life of electronics refrigeration
- Gas spring or pneumatic easy-to-open lids
- Fast and efficient cooling with zero ozone depletion refrigerants
- Freezer construction and refrigeration systems hold up in harsh heat treat environments (T & TF-Series)
- High Volume Air Circulation provides uniform cooling (T & TF-Series)

Temperature Range

Standard Range: -40°F to -120°F (-40°C to -84°C)

Optional Liquid Nitrogen Cooling: -300°F (-184°C)



V-Series
Freezer



T-Series Freezer



TF-Series Freezer

V-Series

V-Series

The V-Series light-duty freezer is made to handle light duty storage and are primarily used as storage freezers in areas where laboratory freezers aren't adequate. The unit provides fast and efficient cooling and easy mobility to ensure convenient use. The V-Series Chamber offers economical chilling capability for smaller users where light duty storage or laboratory freezers won't do the job.



Model	Cooling Capacity*	Workspace Size Inches (cm)	Overall Size** Inches (cm)	Recommended Minimum Service	
	Lbs. (kg) Steel/Hr			L x W x D	L x W x H ¹ x H ²
V-Series Light Duty Freezers					
V-6-1-1	60 (27)	32 x 18 x 18 (80 x 46 x 46)	47 x 32 x 47 x 43 (119 x 81 x 119 x 109)	20	10
V-9-1.5-1.5	100 (45)	48 x 18 x 18 (122 x 46 x 46)	64 x 32 x 47 x 43 (163 x 81 x 119 x 109)	25	12
V-11-1.5-1.5	95 (43)	60 x 18 x 18 (152 x 46 x 46)	77 x 32 x 47 x 43 (196 x 81 x 119 x 109)	25	15

All dimensions are approximate. Performance is based on water cooled operation with 3 phase, 60 hertz power, and 75°F (24°C) ambient room temperature. Performance will be reduced for 50 hertz operation. The addition of certain options may affect performance.

* The pounds (kilograms) of steel stated in the chart is the quantity of 75°F (24°C) steel that can be placed in a -120°F (-85°C) prechilled chamber and expect the chamber to recover to -120°F (-85°C) within one hour. The additional time required for the load temperature to stabilize after chamber air temperature recovery depends on factors such as the part's thickness and the amount of exposed surface area.

** H¹ is overall height. H² is loading height.

Notes:

- Floor load is rated for 200 Lbs. per square foot. However, floor reinforcement is available for larger capacities.
- V-Model performance is without the lid mounted and measured air circulator. The recovery time will be longer with the air circulator option.



T-Series Chambers

Our T-Series Production Chilling Chambers are the preferred choice of heat treating companies. These chambers are often used to chill steel to -84°C (-120°F) that will then transform retained austenite to martensite. This relieves internal stress, stabilizes dimensions, and increases hardness and durability of the steel part. This top-loading, heavy-duty industrial freezer is designed to hold up in harsh heat treat environments. T-Series freezers circulate high volume air for uniform cooling throughout the freezer.

**Heavy-duty freezers with easy loading
for industrial applications**



T-Series

Model	Cooling Capacity*	Workspace Size Inches (cm)	Overall Size** Inches (cm)	Recommended Minimum Service	
	Lbs. (kg) Steel/Hr	L x W x D	L x W x H ¹ x H ²	230V	460V
T-Series Heavy-Duty Freezers					
T-13-2-2	60 (27)	36 x 24 x 26 (91 x 61 x 66)	111 x 42 x 61 x 36 (282 x 107 x 155 x 92)	30	15
T-21-2-2	50 (23)	60 x 24 x 26 (152 x 61 x 66)	135 x 42 x 64 x 36 (343 x 107 x 163 x 92)	30	15
T-21-3-3	250 (114)	60 x 24 x 26 (152 x 61 x 66)	143 x 42 x 64 x 36 (363 x 107 x 163 x 92)	50	25
T-25-3-3	248 (113)	48 x 30 x 30 (122 x 76 x 76)	135 x 48 x 64 x 40 (343 x 122 x 163 x 102)	50	25
T-25-6-6	324 (147)	48 x 30 x 30 (122 x 76 x 76)	135 x 48 x 64 x 40 (343 x 122 x 163 x 102)	90	45
T-25-7.5-7.5	638 (290)	48 x 30 x 30 (122 x 76 x 76)	135 x 48 x 64 x 40 (343 x 122 x 163 x 102)	90	45
T-37-3-3	236 (107)	72 x 30 x 30 (183 x 76 x 76)	159 x 48 x 64 x 40 (404 x 122 x 163 x 102)	50	25
T-37-6-6	312 (142)	72 x 30 x 30 (183 x 76 x 76)	159 x 48 x 64 x 40 (404 x 122 x 163 x 102)	90	45
T-37-7.5-7.5	627 (285)	72 x 30 x 30 (183 x 76 x 76)	159 x 48 x 64 x 40 (404 x 122 x 163 x 102)	90	45
T-60-6-6	290 (132)	60 x 48 x 36 (152 x 122 x 91)	149 x 66 x 64 x 46 (379 x 168 x 163 x 117)	90	45
T-60-7.5-7.5	605 (275)	60 x 48 x 36 (152 x 122 x 91)	149 x 66 x 64 x 46 (379 x 168 x 163 x 117)	90	45
T-96-6-6	285 (130)	72 x 48 x 48 (183 x 122 x 122)	161 x 66 x 67 x 58 (409 x 168 x 170 x 148)	90	45
T-96-7.5-7.5	594 (270)	72 x 48 x 48 (183 x 122 x 122)	161 x 66 x 67 x 58 (409 x 168 x 170 x 148)	90	45

All dimensions are approximate. Performance is based on water cooled operation with 3 phase, 60 hertz power, and 75°F (24°C) ambient room temperature. Performance will be reduced for 50 hertz operation. The addition of certain options may affect performance.

* The pounds (kilograms) of steel stated in the chart is the quantity of 75°F (24°C) steel that can be placed in a -120°F (-85°C) prechilled chamber and expect the chamber to recover to -120°F (-85°C) within one hour. The additional time required for the load temperature to stabilize after chamber air temperature recovery depends on factors such as the part's thickness and the amount of exposed surface area.

** H¹ is overall height. H² is loading height.

Notes:

- Floor load is rated for 200 Lbs. per square foot. However, floor reinforcement is available for larger capacities.

TF-Series

TF-Series Chambers

The TF-Series Front Loading Production Chilling Chambers offer side-by-side operation with batch-type heat treating furnaces, heavy-duty rollers and guides to interface directly with most charge car load/unload mechanisms, and compatibility with part baskets and trays used in other heat-treating mechanisms.

TF-Series Chambers provide the same quality, design, construction, and reliability as our T-Series plus the following:

- Side-by-side operation with batch type heat treating furnaces
- Compatibility with part baskets and trays used in other heat treating processes
- Heavy-duty rollers and guides interface directly with most charge car load/unload mechanisms
- Refrigerant injection compressor cooling protects the low-stage compressor when a load of hot parts is placed in the chamber by injecting liquid refrigerant directly into the compressor suction line to cool the returning hot refrigerant gas.



Model	Cooling Capacity	Work Space Size in (cm)			Overall Size in (cm)			
		Lbs. (Kg) Steel/hr.	W	D	H	W	D	H ¹
TF-20-6-6	300 (136)	75 (30)	95 (38)	75 (30)	150 (58)	235 (92)	260 (101)	350 (138)
TF-20-7.5-7.5	400 (182)	75 (30)	95 (38)	75 (30)	150 (58)	235 (92)	260 (101)	350 (138)
TF-38-7.5-7.5	400 (182)	90 (36)	125 (50)	90 (36)	165 (64)	265 (104)	270 (107)	380 (150)
TF-38-10-10	600 (273)	90 (36)	125 (50)	90 (36)	165 (64)	265 (104)	270 (107)	380 (150)
TF-44-7.5-7.5	400 (182)	105 (42)	125 (50)	90 (36)	180 (70)	265 (104)	270 (107)	380 (150)
TF-44-10-10	600 (273)	105 (42)	125 (50)	90 (36)	180 (70)	265 (104)	270 (107)	380 (150)
TF-44-15-15	900 (409)	105 (42)	125 (50)	90 (36)	180 (70)	265 (104)	270 (107)	380 (150)
TF-76-15-15	850 (386)	105 (42)	190 (75)	105 (42)	180 (70)	325 (128)	290 (113)	410 (162)

H¹ Overall height on 4" skid with door support channels removed for shipping

H² Overall installed height from building floor to top of door support channels

Standard Features

- Non-Settling Low "K" Factor Foam Insulation
- Casters (V-Series)
- Lid/Door Switch (T & TF-Series)
- Heavy Duty Heliarc Welded Vapor Tight Liner with Brush Stainless Steel Interior
- Adjustable Chrome Plated Latch
- Oil Tight Switches and Lights
- Digital Display Temperature Controller
- Fused Electrical Components
- Fully Enclosed NEMA 12 Electrical Compartments
- Refrigeration Pressure Gauges
- Refrigeration Service Taps
- Manual Defrost Switch (T & TF-Series)
- Water Cooled Condenser



Custom-Designed Freezers for your Application

Where standard models don't meet your application needs, our extensive range of custom capabilities can provide enhanced performance. We build large freezers for shrink/fit applications for shafts/bearings of large wind mills. See the examples below of other customized-designed freezers we have built.

We also manufacture custom-designed freezers specifically for your product and application including custom sizes and temperature ranges.



Front-opening freezer for epoxy storage



Custom size freezer with 168 cu. ft. interior

Optional Accessories & Custom Capabilities

- Access Ports
- Custom-Size Chambers
- Casters (T-Series)
- Lid Mounted Air Circulator (V-Series)
- Running Time Meter
- EIA-232/485 Communications
- Electrical Disconnect Switch
- Windows-Based Software Packages
- Explosion-Proof Chambers
- Product Soak Timer
- 50 Hz. Operation
- Temperature Recorders
- Compliance to all Wiring Standards
- Custom Control Interface Capability
- Liquid Nitrogen Cooled
- Liquid Baths
- Air Cooled/Remote Refrigeration
- Liquid Nitrogen Boost Cooling
- Automatic Defrost Systems



Cincinnati Sub-Zero is a product brand of Weiss Technik North America, Inc. Weiss Technik North America is a member of the Weiss Technik group of companies, a division of the Schunk Group with its headquarters in Heuchelheim, Germany. Weiss Technik is the world's largest manufacturer of environmental simulation systems and employs more than 2,900 people in 18 group companies in 15 countries.

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The Testing Standard.

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