

CMSH Series



Multishield Liquid Helium
Container Specifications





CMSH Series

Multishield Liquid Helium Containers

Model CMSH

The Cryofab CMSH helium dewar is designed for minimum loss storage, transportation and dispensing of liquid helium. The CMSH container employs state of the art vapor cooled multishield technology in conjunction with superinsulation to effect the lowest guaranteed loss rates in the industry on comparable units. The advanced insulation system results in quicker, more efficient cool down without the need of nitrogen pre-cooling. In addition the elimination of LN2 or helium gas circulation shielding means that the CMSH is virtually maintenance free.

These units have the same general areas of use as old-style, 4-wall helium containers but permit large storage capacities in small packages with lighter weight.

Construction Features

The helium reservoir and outer jacket are welded 304 stainless steel.

Larger diameter necks accept standard helium transfer lines and eliminate thermal oscillations. This also allows for testing superconducting leads or other applications requiring dipping or immersion of components.

Standard equipment includes a removable halo ring providing protection for the manifold and components while allowing for easy access. Also a variety of handle configurations allow for easy pulling and securing.

The evacuation port is conveniently accessible for re-evacuation and serves as a vacuum space relief port.

All containers feature quick opening ball valves and quick couplings for easy insertion and pressure sealing of transfer lines with minimum loss of container pressure.

Smaller and Larger Volumes Available

5 liters to 25 liters • 1500 liters to 7500 liters

CUSTOM CONFIGURATIONS
ALSO AVAILABLE

1. Lab use only, not for transport

All Vessels Available With:
ASME • DOT • IATA • ADR

Features include:

- No liquid nitrogen shielding or helium gas circulation required
- Lightweight but rugged construction stands up to trucking and everyday abuse
- Suitable for air transport
- All welded construction
- Lowest loss rates in the industry
- All units equipped with integral caster base
- Easily removable and interchangeable manifolds
- Suitable for neon and all other liquid gases¹
- Applications include Distribution, Research and Liquefaction
- Two-year warranty on vacuum

- Net Capacity
- Gross Capacity
- Weight (Empty)
- Material of Construction
- N.E.R.
- Operating Pressure
- Design Pressure²
- Neck ID
- Depth (Flange to Bottom)
- Outside Overall Diameter
- Height
- Maximum Transfer Line O.D.
- Minimum Transfer Line O.D.
- Transfer Line Length for Withdrawal
- Minimum Fill Lance Length
- Caster Size
- Vent Connection (MNPT)



	CMSH 30		CMSH 60		CMSH 100		CMSH 150		CMSH 200		
Net Capacity	30 liters	30 liters	60 liters	60 liters	100 liters	100 liters	150 liters	150 liters	200 liters	200 liters	Net Capacity
Gross Capacity	34 liters	34 liters	65 liters	65 liters	110 liters	110 liters	171 liters	171 liters	220 liters	220 liters	Gross Capacity
Weight (Empty)	59.3 kg	131 lbs	87 kg	192 lbs	95.5 kg	210 lbs	125 kg	275 lbs	156 kg	343 lbs	Weight (Empty)
Material of Construction	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	Material of Construction
N.E.R.	2.75 %	2.75 %	1.5 %	1.5 %	1 %	1 %	1.2 %	1.2 %	1.15 %	1.15 %	N.E.R.
Operating Pressure	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	Operating Pressure
Design Pressure ²	206.9 kPa	30 PSIG	310.3 kPa	45 PSIG	310.3 kPa	45 PSIG	206.9 kPa	30 PSIG	206.9 kPa	30 PSIG	Design Pr
Neck ID	37 mm	1.45 inches	37 mm	1.45 inches	37 mm	1.45 inches	55.5 mm	2.18 inches	54 mm	2.12 inches	Neck ID
Depth (Flange to Bottom)	865 mm	34 inches	941 mm	37 inches	1171 mm	46 inches	1196 mm	47 inches	1221 mm	48 inches	Depth (Flange to Bottom)
Outside Overall Diameter	509 mm	20 inches	611 mm	24 inches	611 mm	24 inches	713 mm	28 inches	814 mm	32 inches	Outside Overall Diameter
Height	1221 mm	48 inches	1298 mm	51 inches	1501 mm	59 inches	1527 mm	60 inches	1654 mm	65 inches	Height
Maximum Transfer Line O.D.	12.7 mm	1/2 inch	12.7 mm	1/2 inch	12.7 mm	1/2 inch	12.7 mm	1/2 inch	19 mm	3/4 inch	Maximum Transfer Line O.D.
Minimum Transfer Line O.D.	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	Minimum Transfer Line O.D.
Transfer Line Length For Withdrawal	1094 mm	43 inches	1170 mm	46 inches	1425 mm	56 inches	1374 mm	54 inches	1450 mm	57 inches	Transfer Line Length For Withdrawal
Minimum Fill Lance Length	764 mm	30 inches	764 mm	30 inches	764 mm	30 inches	764 mm	30 inches	814 mm	32 inches	Minimum Fill Lance Length
Caster Size	102 mm	4 inches	102 mm	4 inches	102 mm	4 inches	102 mm	4 inches	127 mm	5 inches	Caster Size
Vent Connection (MNPT)		1/2 inch		1/2 inch		1/2 inch		1/2 inch		1/2 inch	Vent Connection (MNPT)



Commercial Air Transport Vessels

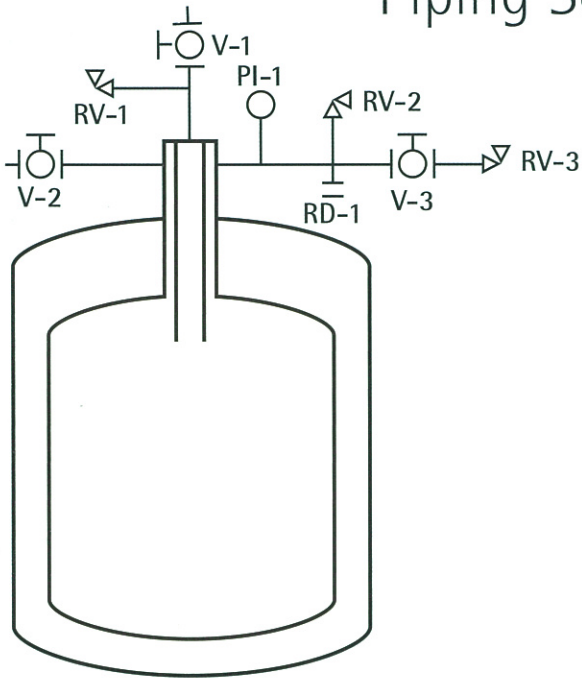
Don't See It?
Call us for our unique custom design and engineering capabilities.

	CMSH 250		CMSH 350		CMSH 500		CMSH 1000		CMSH 250-S		CMSH 400-S		
Net Capacity	250 liters	250 liters	350 liters	350 liters	500 liters	500 liters	1000 liters	1000 liters	250 liters	250 liters	400 liters	400 liters	Net Capacity
Gross Capacity	275 liters	275 liters	370 liters	370 liters	538 liters	538 liters	1074 liters	1074 liters	275 liters	275 liters	440 liters	440 liters	Gross Capacity
Weight (Empty)	154.5 kg	340 lbs	173 kg	380 lbs	255.5 kg	562 lbs	409 kg	900 lbs	150 kg	330 lbs	232 kg	510 lbs	Weight (Empty)
Material of Construction	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	Material of Construction
N.E.R.	1 %	1 %	1.15 %	1.15 %	.7 %	.7 %	.5 %	.5 %	1.25 %	1.25 %	1 %	1 %	N.E.R.
Operating Pressure	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	69 kPa	10 PSIG	Operating Pressure
Design Pressure ²	206.9 kPa	30 PSIG	103.4 kPa	15 PSIG	172.5 kPa	25 PSIG	103.4 kPa	15 PSIG	206.9 kPa	30 PSIG	172.5 kPa	25 PSIG	Design Pressure ²
Neck ID	54 mm	2.12 inches	54 mm	2.12 inches	53.4 mm	2.10 inches	53.4 mm	2.10 inches	54.7 mm	2.15 inches	53.4 mm	2.10 inches	Neck ID
Depth (Flange to Bottom)	1348 mm	53 inches	1399 mm	55 inches	1399 mm	55 inches	1552 mm	61 inches	1196 mm	47 inches	1196 mm	47 inches	Depth (Flange to Bottom)
Outside Overall Diameter	814 mm	32 inches	814 mm	32 inches	1069 mm	42 inches	1374 mm	54 inches	814 mm	32 inches	1069 mm	42 inches	Outside Overall Diameter
Height	1781 mm	70 inches	1852 mm	73 inches	1857 mm	75 inches	1959 mm	77 inches	1524 mm	60 inches ³	1577 mm	62 inches ³	Height
Maximum Transfer Line O.D.	19 mm	3/4 inch	19 mm	3/4 inch	19 mm	3/4 inch	19 mm	3/4 inches	19 mm	3/4 inch	19 mm	3/4 inch	Maximum Transfer Line O.D.
Minimum Transfer Line O.D.	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	9.5 mm	3/8 inch	Minimum Transfer Line O.D.
Transfer Line Length for Withdrawal	1628 mm	64 inches	1679 mm	66 inches	1679 mm	66 inches	1832 mm	72 inches	1374 mm	54 inches	1425 mm	56 inches	Transfer Line Length for Withdrawal
Minimum Fill Lance Length	814 mm	32 inches	814 mm	32 inches	814 mm	32 inches	814 mm	32 inches	814 mm	32 inches	814 mm	32 inches	Minimum Fill Lance Length
Caster Size	127 mm	5 inches	127 mm	5 inches	127 mm	5 inches	153 mm	6 inches	127 mm	5 inches	127 mm	5 inches	Caster Size
Vent Connection (MNPT)		1/2 inch		1/2 inch		1/2 inch		1/2 inch		1/2 inch		1/2 inch	Vent Connection (MNPT)

2. Use of this equipment above Operating Pressure requires factory testing and certification. Please call 1.800.426.2186 for more information.

3. Height to 3/4" quick coupling

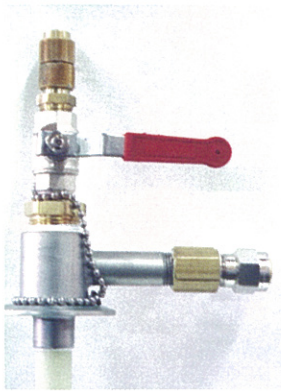
Piping Schematic



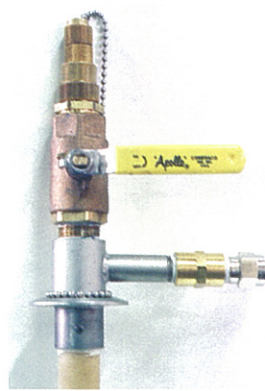
Symbol	Description
V-1	Liquid Valve
V-2	Vent Valve
V-3	Isolation Valve
RD-1	Rupture Disk*
RV-1	Relief Valve, 15 PSIG
RV-2	Relief Valve, 10 PSIG
RV-3	Pressure Control Valve, .5 PSIG
PI-1	Compound Pressure Gauge 30" Hg-0-15 PSIG

*Only on capacities 200 Liters and greater.

Standard Access Ports



Sizes 150 liters and less
1/2" to 3/8" access



Sizes 200 liters and up
3/4" to 1/2" access



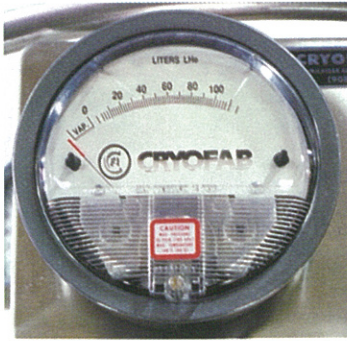
Liquefaction
1/2" to 3/8", 5/8" to 1/2"
side by side

Custom Configurations
also available

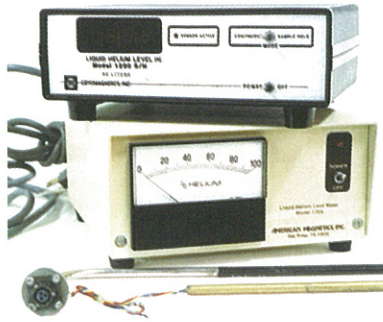




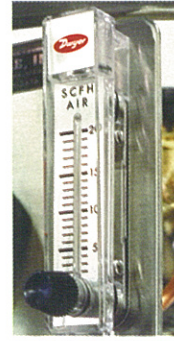
Optional Equipment



Differential Pressure
Liquid Level Gauges



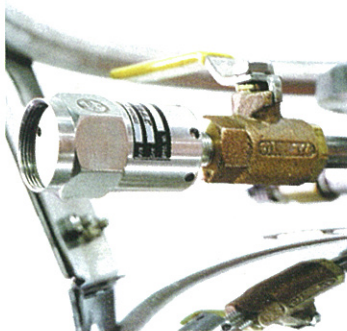
Super Conducting
Liquid Level Systems



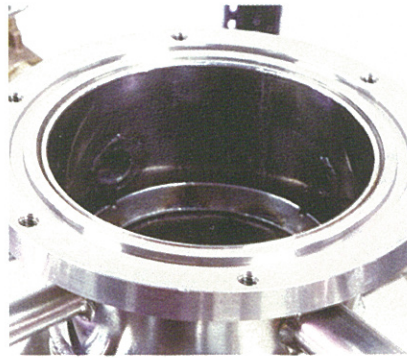
Flow Meters



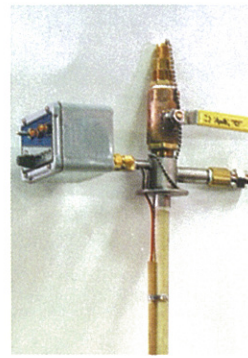
Built-in Vacuum Jacketed
Withdrawal Valve



Absolute Relief Valve
For Air Transport



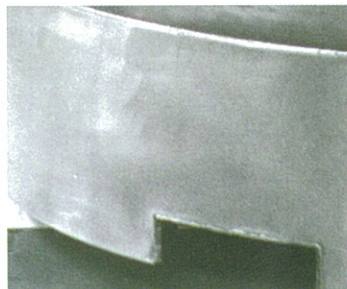
Larger Neck
Openings



Electric Pressure
Building Systems



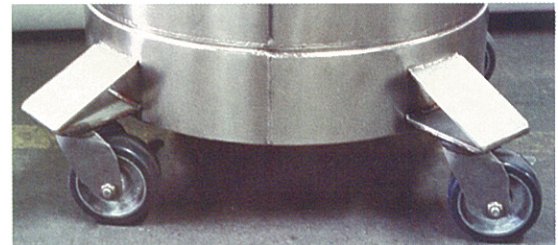
Pull Handles
Available on Sizes
100 It thru 1000 It



Fork Lift Provisions
Available on Sizes 500 It and up



Removable Dollies
Sizes 30 It to 100 It



Outboard Wheel Configuration
Sizes 30 It to 150 It

Locking Casters



Wing Lock

Pedal Lock

埼玉県川越市芳野台 2-8-52
株式会社 鈴木商館 低温機器部
電話川越 (0492) 25局7551 (代表)



CRYOFAB

540 North Michigan Avenue, P.O. Box 485
Kenilworth, NJ 07033
908-686-3636 • FAX: 908-686-9538
1-800-426-2186
www.cryofab.com
sales@cryofab.com

Don't See It?
Call us for our unique custom design and
engineering capabilities.