



Taylor-Wharton

# Liquid Cylinders

## LIQUID CYLINDERS

Portable vacuum-insulated containers that provide convenient and economical means of transporting, storing and dispensing liquefied gases.

- Full Circle® Shock-Mount Ring\*
- Polished Heavy Duty Outer Body
- Innovative Non-Binding Contents Gauge
- Reinforced Lateral Head Support
- Color-Coded Relief Valves for Different Pressure Settings
- Protective Nylon Shipping Sleeve\*\*
- 5-Year Warranty on Vacuum



**Taylor-Wharton**





# L Series



## L SERIES - Liquid Withdrawal Low Pressure *XL-100, XL-160, XL-180 and XL-240*

### Liquid Nitrogen or Liquid Oxygen

The XL-100, XL-160 and XL-180 are transportable units built to rugged construction standards. They are specifically designed for the low pressure requirements of liquid Nitrogen filling, storing and dispensing and feature easy, quick liquid withdrawal.

This series is versatile and was built with the liquid nitrogen user in mind. The XL-100 meets the needs of small volume users, while the XL-160 and XL-180 allow more frequent usage. The XL-100 and XL-240 are easily maneuvered on a five-caster base.

The XL-240 is available in 50 psig and 100 psig (3.4 bar and 6.9 bar) for oxygen service. The XL-240 is available with pressure building capabilities. (MRI version available).

	XL-100	XL-160	XL-180	XL-240
<b>Dimensions</b>				
Diameter	20 in. (508 mm)	20 in. (508 mm)	20 in. (508 mm)	26 in. (660 mm)
Height	50.9 (1293 mm)	57 5/8 in. (1464 mm)	64 3/8 in. (1635 mm)	59 1/2 in. (1511 mm) <sup>4</sup>
<b>Weight</b>				
Empty (Nominal)	175 lb. (79 kg)	197 lb. (89 kg)	205 lb. (93 kg)	N/A
5 caster base	N/A	N/A	N/A	375 lb. (170 kg)
4 caster base	N/A	N/A	N/A	N/A
<b>Maximum Liquid Capacity</b>				
	103 liters	163 liters	186 liters	250 liters
<b>Usable Liquid Capacity</b>				
	98 liters	160 liters	180 liters	240 liters
<b>Normal Evaporation Rate<sup>1</sup> % Capacity per Day</b>				
Oxygen	N/A	N/A	N/A	0.9%
Nitrogen	2.8%	1.3%	1.25%	1.4%
Argon	N/A	N/A	N/A	N/A
Carbon Dioxide	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A
<b>Dual Pressure Building/ Economizer Regulator<sup>3</sup></b>				
Pressure Building Setting	N/A	N/A	N/A	15 psig <sup>5</sup> (1 bar/103 kPa)
Economizer Setting	N/A	N/A	N/A	N/A
<b>Design Specification</b>				
TC N/A	4LM	4LM	4LM	4LM
DOT	4L	4L	4L	4LM
Rated DOT Service Pressure	100 psig	100 psig	100 psig	100 psig
<b>Safety Devices</b>				
Pressure Relief Valve	22 psig (1.5 bar/152 kPa)			
Inner Container Bursting Disc	176 psig (12 bar/1213 kPa)			
<b>Weight of Contents Based on DOT Rated Service Pressure</b>				
Oxygen	N/A	N/A	N/A	563 lb. (255 kg)
Nitrogen	173 lb. (78 kg)	259 lb. (117 kg)	296 lb. (134 kg)	394 lb. (179 kg)
Argon	N/A	N/A	N/A	N/A
Carbon Dioxide	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A

(1) - Vented N.E.R. based on usable liquid capacity

(2) - Container pressure at or above factory pressure/economizer regulator setting

(3) - Regulator has a pressure delta of 20 psig (1.4 bar/138 kPa)

(4) - 5 caster base used for weight and height measurement. For 4 caster square base with handle add approx. 70lb (32 kg) and 1/2 in. (12.7mm)

(5) - XL-240 available with or without pressure building capabilities. L2400C04 for oxygen service employs a single action regulator set at 90 psig (6 bar/621 kPa)



# GL Series



## GL SERIES - Gas and Liquid Withdrawal Medium Pressure *XL-45, XL-50, XL-55, XL-65 and XL-70*

Liquid or Gaseous Nitrogen, Oxygen, Argon

These over-the-road transport cylinders feature automatic pressure-building and economizer circuits. Low-loss holding capabilities help conserve gas during low demand periods. These units are considered the workhorses of the industry.

	XL-45	XL-50	XL-55	XL-65	XL-70
<b>Dimensions</b>					
Diameter	20 in. (508 mm)	20 in. (508 mm)	20 in. (508 mm)	26 in. (660 mm)	26 in. (660 mm)
Height	61 3/8 in. (1559 mm)	64 5/8 in. (1641 mm)	69 7/16 in. (1764 mm)	59 1/2 in. (1511 mm) <sup>4</sup>	63 1/4 in. (1607 mm)
<b>Weight</b>					
Empty (Nominal)	255 lb. (116 kg)	270 lb. (122 kg)	270 lb. (122 kg)	N/A	N/A
5 caster base	N/A	N/A	N/A	375 lb. (170 kg)	395 lb. (179 kg)
4 caster base	N/A	N/A	N/A	445 lb. (202 kg)	465 lb. (211 kg)
Maximum Liquid Capacity	180 liters	193 liters	210 liters	250 liters	280 liters
Usable Liquid Capacity	169 liters	181 liters	200 liters	240 liters	265 liters
<b>Normal Evaporation Rate<sup>1</sup> % Capacity per Day</b>					
Oxygen	1.2%	1.1%	1.1%	0.9%	1.0%
Nitrogen	1.9%	1.8%	1.7%	1.4%	1.6%
Argon	1.2%	1.1%	1.1%	0.9%	1.0%
Carbon Dioxide	N/A	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A	N/A
<b>Gas Withdrawal Rate<sup>2</sup> @ NTP (STP)</b>					
Oxygen	350 cfm (9.2 cu. m/h)	350 cfm (9.2 cu. m/h)			
Nitrogen	350 cfm (9.2 cu. m/h)	350 cfm (9.2 cu. m/h)			
Argon	350 cfm (9.2 cu. m/h)	350 cfm (9.2 cu. m/h)			
Carbon Dioxide	N/A	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A	N/A
<b>Dual Pressure Building/ Economizer Regulator<sup>3</sup></b>					
Pressure Building	125 psig (8.6 bar/862 kPa)	125 psig (8.6 bar/862 kPa)			
Economizer Setting	145 psig (10 bar/1000 kPa)	145 psig (10 bar/1000 kPa)			
<b>Design Specification</b>					
TC N/A	4LM	4LM	4LM	4LM	4LM
DOT	4L	4L	4L	4L	4L
Rated DOT Service	200 psig	200 psig	200 psig	200 psig	200 psig
<b>Safety Devices</b>					
Pressure Relief Valve	230 psig (16 bar/1586 kPa)	230 psig (16 bar/1586 kPa)			
Inner Container Bursting Disc	360 psig (24.8 bar/248 kPa)	360 psig (24.8 bar/248 kPa)			
<b>Weight of Contents Based on DOT Rated Service Pressure</b>					
Oxygen	388 lb. (176 kg)	416 lb. (189 kg)	454 lb. (206 kg)	539 lb. (244 kg)	606 lb. (275 kg)
Nitrogen	273 lb. (124 kg)	293 lb. (133 kg)	319 lb. (145 kg)	380 lb. (172 kg)	426 lb. (193 kg)
Argon	471 lb. (214 kg)	505 lb. (229 kg)	551 lb. (250 kg)	655 lb. (297 kg)	735 lb. (333 kg)
Carbon Dioxide	N/A	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A	N/A
<b>Gaseous Capacity Based on DOT Rated Service Pressure @ NTP (STP)</b>					
Oxygen	4688 cu.ft. (123 cu.m)	5025 cu.ft. (132 cu.m)	5484 cu.ft. (144 cu.m)	6511 cu.ft. (171 cu.m)	7320 cu.ft. (207 cu.m)
Nitrogen	3771 cu.ft. (99 cu.m)	4043 cu.ft. (106 cu.m)	4402 cu.ft. (116 cu.m)	5244 cu.ft. (139 cu.m)	5879 cu.ft. (166 cu.m)
Argon	4558 cu.ft. (120 cu.m)	4884 cu.ft. (128 cu.m)	5331 cu.ft. (140 cu.m)	6335 cu.ft. (166 cu.m)	7112 cu.ft. (201 cu.m)
Carbon Dioxide	N/A	N/A	N/A	N/A	N/A
Nitrous Oxide	N/A	N/A	N/A	N/A	N/A

(1) - Vented N.E.R. based on usable liquid capacity

(2) - Container pressure at or above factory dual pressure/economizer regulator setting

(3) - Regulator has a pressure delta of 20 psig (1.4 bar/138 kPa)



# HP Series



## HP SERIES - Gas and Liquid Withdrawal High Pressure

**XL-45HP, XL-50HP, XL-55HP, XL-65HP, XL-70HP**

Liquefied or Gaseous Nitrogen, Oxygen, Argon, Carbon Dioxide, Nitrous Oxide

These high pressure units are equipped with automatic pressure building and economizer circuits, as well as an internal vaporizer, making them ideal for handling a variety of gases or liquefied gases.

	XL-45HP	XL-50HP	XL-55HP	XL-65HP	XL-70HP
<b>Dimensions</b>					
Diameter	20 in. (508 mm)	20 in. (508 mm)	20 in. (508 mm)	26 in. (660 mm)	26 in. (660 mm)
Height	61 3/8 in. (1559 mm)	64 5/8 in. (1641 mm)	69 7/16 in. (1764 mm)	58 1/8 in. (1476 mm) <sup>4</sup>	64 1/4 in. (1607 mm)
<b>Weight</b>					
Empty (Nominal)	272 lb. (123 kg)	284 lb. (129 kg)	287 lb. (130 kg)	465 lb. (211 kg)	N/A
5 caster base	N/A	N/A	N/A	465 lb. (211 kg)	490 lb. (222 kg)
4 caster base	N/A	N/A	N/A	535 lb. (243 kg)	560 lb. (254 kg)
<b>Maximum Liquid Capacity</b>					
	176 liters	188 liters	208 liters	247 liters	280 liters
<b>Usable Liquid Capacity</b>					
	165 liters	176 liters	198 liters	240 liters	265 liters
<b>Normal Evaporation Rate<sup>1</sup> % Capacity per Day</b>					
Oxygen	1.4%	1.2%	1.2%	1.0%	1.0%
Nitrogen	2.2%	2.0%	1.9%	1.6%	1.6%
Argon	1.4%	1.2%	1.2%	1.0%	1.0%
Carbon Dioxide	0.75%	0.75%	0.75%	0.75%	0.75%
Nitrous Oxide	0.75%	0.75%	0.75%	0.75%	0.75%
<b>Gas Withdrawal Rate<sup>2</sup> @ NTP (STP)</b>					
Oxygen	350 cfh (9.2 cu. m/h)	350 cfh (9.2 cu. m/h)			
Nitrogen	350 cfh (9.2 cu. m/h)	350 cfh (9.2 cu. m/h)			
Argon	350 cfh (9.2 cu. m/h)	350 cfh (9.2 cu. m/h)			
Carbon Dioxide	150 cfh (3.9 cu. m/h)	150 cfh (3.9 cu. m/h)			
Nitrous Oxide	110 cfh (2.9 cu. m/h)	110 cfh (2.9 cu. m/h)			
<b>Dual Pressure Building/ Economizer Regulator<sup>3</sup></b>					
Pressure Building Setting	300 psig (20.7 bar/2068 kPa)	300 psig (20.7 bar/2068 kPa)			
Economizer Setting	320 psig (22 bar/2206 kPa)	320 psig (22 bar/2206 kPa)			
<b>Design Specification</b>					
TC N/A	4LM	4LM	4LM	4LM	4LM
DOT	4L	4L	4L	4L	4L
Rated DOT Service Pressure	292 psig	292 psig	292 psig	292 psig	292 psig
<b>Safety Devices</b>					
Pressure Relief Valve	350 psig (24 bar/2413 kPa)	350 psig (24 bar/2413 kPa)			
Inner Container Bursting Disc	525 psig (36 bar/3620 kPa)	525 psig (36 bar/3620 kPa)			
<b>Weight of Contents Based on DOT Rated Service Pressure</b>					
Oxygen	360 lb. (163 kg)	385 lb. (175 kg)	458 lb. (208 kg)	505 lb. (229 kg)	572 lb. (259 kg)
Nitrogen	252 lb. (114 kg)	296 lb. (122 kg)	298 lb. (135 kg)	353 lb. (160 kg)	400 lb. (181 kg)
Argon	438 lb. (199 kg)	467 lb. (212 kg)	518 lb. (235 kg)	614 lb. (279 kg)	695 lb. (315 kg)
Carbon Dioxide	387 lb. (176 kg)	414 lb. (188 kg)	458 lb. (208 kg)	516 lb. (234 kg)	615 lb. (279 kg)
Nitrous Oxide	368 lb. (167 kg)	393 lb. (177 kg)	435 lb. (197 kg)	543 lb. (246 kg)	584 lb. (265 kg)
<b>Gaseous Capacity Based on DOT Rated Service Pressure @ NTP (STP)</b>					
Oxygen	4350 cu.ft. (114 cu.m)	4651 cu.ft. (122 cu.m)	5146 cu.ft. (135 cu.m)	6100 cu.ft. (160 cu.m)	6910 cu.ft. (196 cu.m)
Nitrogen	3478 cu.ft. (91 cu.m)	3712 cu.ft. (98 cu.m)	4112 cu.ft. (108 cu.m)	4871 cu.ft. (128 cu.m)	5520 cu.ft. (156 cu.m)
Argon	4236 cu.ft. (111 cu.m)	4516 cu.ft. (119 cu.m)	5012 cu.ft. (132 cu.m)	5938 cu.ft. (156 cu.m)	6725 cu.ft. (190 cu.m)
Carbon Dioxide	3383 cu.ft. (89 cu.m)	3619 cu.ft. (89 cu.m)	4003 cu.ft. (105 cu.m)	4511 cu.ft. (119 cu.m)	5376 cu.ft. (152 cu.m)
Nitrous Oxide	3211 cu.ft. (84 cu.m)	3429 cu.ft. (90 cu.m)	3796 cu.ft. (100 cu.m)	5419 cu.ft. (142 cu.m)	5096 cu.ft. (144 cu.m)

(1) - Vented N.E.R. based on usable liquid capacity

(2) - Container pressure at or above factory dual pressure/economizer regulator setting

(3) - Regulator has a pressure delta of 20 psig (1.4 bar/138 kPa)

(4) - 5 caster base used for weight and height measurement. For 4 caster square base with handle add approximately 70 lb. and 1/2 in. (12.7 mm)



# VHP Series



## VHP SERIES - Gas and Liquid Withdrawal

Very High Pressure **XL-50VHP**

Liquefied or Gaseous

Nitrogen, Oxygen, Argon, Carbon Dioxide

The XL-50VHP offers the unique features of our HP models with an increased maximum allowable working pressure of 500 psig (34 bar). The unit is ideal for laser cutting and other high pressure applications.

XL-50VHP	
<b>Dimensions</b>	
Diameter	20 in. (508 mm)
Height	64 3/4 in. (1559 mm)
<b>Weight Empty (Nominal)</b>	310 lb. (141 kg)
5 caster base	N/A
4 caster base	N/A
Maximum Liquid Capacity	188 liters
Usable Liquid Capacity	176 liters
<b>Normal Evaporation Rate<sup>1</sup> % Capacity per Day</b>	
Oxygen	1.5%
Nitrogen	2.2%
Argon	1.5%
Carbon Dioxide	0.80%
Nitrous Oxide	N/A
<b>Gas Withdrawal Rate<sup>2</sup> @ NTP (STP)</b>	
Oxygen	350 cfh (9.2 cu. m/h)
Nitrogen	350 cfh (9.2 cu. m/h)
Argon	350 cfh (9.2 cu. m/h)
Carbon Dioxide	150 cfh (3.9 cu. m/h)
Nitrous Oxide	N/A
<b>Dual Pressure Building/ Economizer Regulator<sup>3</sup></b>	
Pressure Building Setting	400 psig (28 bar/2758 kPa)
Economizer Setting	420 psig 29 bar/2896 kPa)
<b>Design Specification</b>	
TC N/A	N/A
DOT	4L
Rated DOT Service Pressure	412 psig (28.4 bar/2841 kPa)
<b>Safety Devices</b>	
Pressure Relief Valve	500 psig (34 bar/3447 kPa)
Inner Container Bursting Disc	750 psig (52 bar/5171 kPa)
<b>Weight of Contents Based on DOT Rated Service Pressure</b>	
Oxygen	364 lb. (165 kg)
Nitrogen	240 lb. (109 kg)
Argon	443 lb. (201 kg)
Carbon Dioxide	381 lb. (173 kg)
Nitrous Oxide	N/A
<b>Gaseous Capacity Based on DOT Rated Service Pressure @ NTP (STP)</b>	
Oxygen	4397 cu.ft. (116 cu.m)
Nitrogen	3312 cu.ft. (87 cu.m)
Argon	4285 cu.ft. (113 cu.m)
Carbon Dioxide	3330 cu.ft. (88 cu.m)
Nitrous Oxide	N/A

(1) - Vented N.E.R. based on usable liquid capacity

(2) - Container pressure at or above factory dual pressure/economizer regulator setting

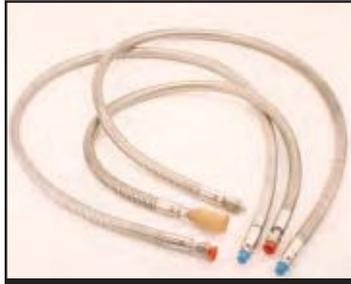
(3) - Regulator has a pressure delta of 20 psig (1.4 bar/138 kPa)



# Accessories

## TRANSFER HOSES

Transfer hoses are constructed of a flexible stainless steel suitable for the transfer of cryogenic fluids and are available in 4 ft. (1.2 m) or 6 ft. (1.8 m) lengths. Hoses are fitted with a 3/8 in. NPT male fitting on one end and a CGA female fitting on the other end.



Female End Fitting	Hose Length	Male End Fitting	Part Number
<b>Nitrogen and Argon LIQUID or VENT Connection</b>			
CGA 295	4 ft. (1.2 m)	3/8 in. NPT	1700-9C65
CGA 295	6 ft. (1.8 m)	3/8 in. NPT	1600-9C66
<b>Nitrogen and Argon USE Connection</b>			
CGA 580	6 ft. (1.8 m)	3/8 in. NPT	GL50-8C51
<b>Oxygen LIQUID or VENT Connection</b>			
CGA 440	6 ft. (1.8 m)	3/8 in. NPT	GL50-8C53
<b>Oxygen USE Connection</b>			
CGA 540	6 ft. (1.8 m)	3/8 in. NPT	GL50-8C56
<b>Carbon Dioxide LIQUID or Gas USE Connection</b>			
CGA 320	6 ft. (1.8 m)	3/8 in. NPT	HP50-8C51
<b>Carbon Dioxide Gas VENT Connection</b>			
CGA 295	4 ft. (1.2 m)	3/8 in. NPT	1700-9C65
CGA 295	6 ft. (1.8 m)	3/8 in. NPT	1600-9C66

## CRYOGENIC PHASE SEPARATORS

Designed to minimize hazardous splashing and vaporization, phase separators are available in three different sizes to accommodate transferring liquids into various open containers. The two larger phase separator are designed to fit the 3/8 in. NPT end of Taylor-Wharton transfer hoses. Specify quantity and size or part number.



Model	Part No.
2 3/4 in. x 1 3/8 in. OD (3/8 in. NPT) (70 mm x 35 mm)	1193-8C80
1 1/4 in. x 1 in. OD (3/8 in. NPT) (32 mm x 25.4 mm)	1193-8C82
1 1/4 in. x 1/2 in. OD (1/8 in. NPT) (32 mm x 12.7 mm)	1193-8C83

## EXTERNAL HEAT EXCHANGER

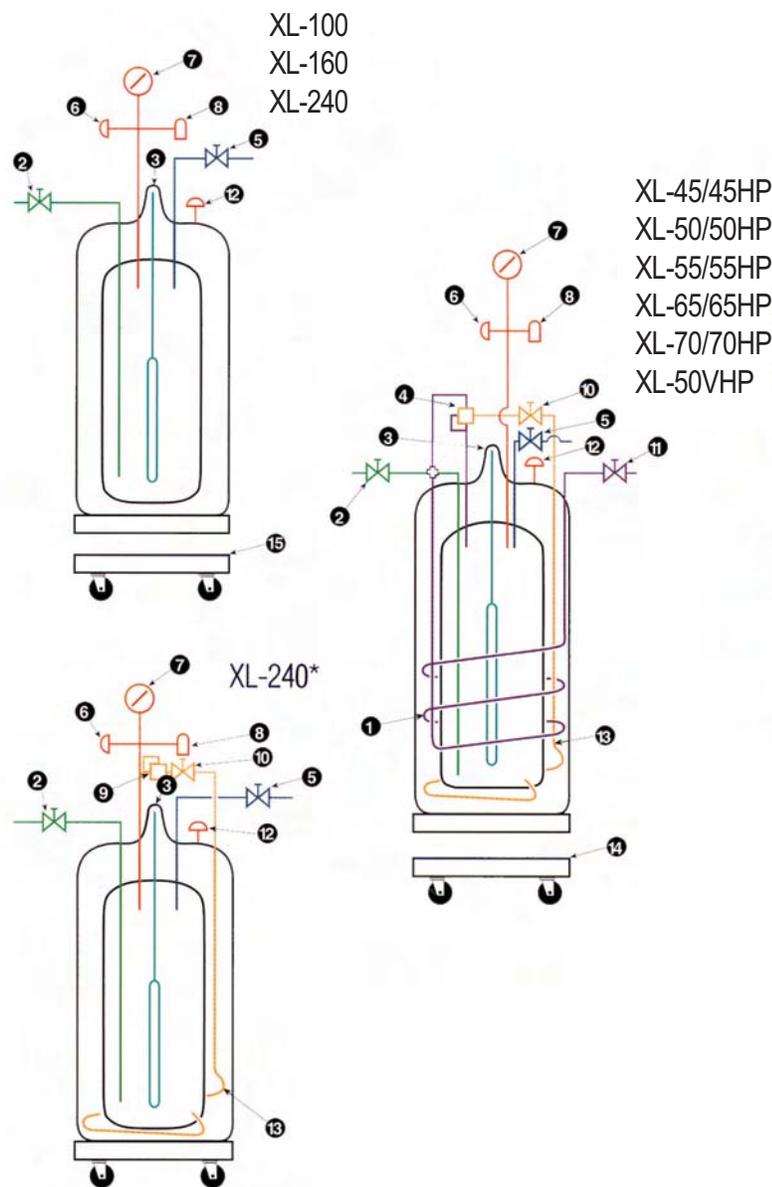
An External Heat Exchanger (vaporizer) effectively increases the gaseous delivery rate of any liquid cylinder by approximately 250 cfh (7.0 cu. m/h) air gases and 120 cfh (3.4 cu m/h) CO<sub>2</sub> continuous at pressures up to 500 psig (34 bar/3447 kPa). The vaporizer is cleaned for oxygen service and comes equipped with a 3/8 in. NPT fitting to connect to a transfer hose and regulator suited to your application. Dimensions - 12 x 15 3/4 x 46



Model	Part No.
External Heat Exchanger	VP50-7C10



# Flow Diagram



- Safety
- Vent
- Liquid Withdrawal
- Contents Gauge
- Economizer & Gas Use
- Pressure Building\*

\* Diagram shows XL-240 with pressure building system. XL-240 model also available without this feature.

1. Vaporizer
2. Liquid Fill/Withdrawal Valve
3. Contents Gauge
4. Dual Pressure Building/Economizer Regulator
5. Vent Valve
6. Inner Containing Bursting Disc
7. Pressure Gauge
8. Pressure Relief Valve
9. Pressure Building Regulator
10. Pressure Building Valve
11. Gas Withdrawal (USE) Valve
12. Vacuum Bursting Disc
13. Pressure Building Coil
14. Base for XL-65/65HP, XL-70/70HP only, optional five-caster base or four-caster base with SureGrip handle available.
15. Five-caster base for XL-100 and XL-240.



**Taylor-Wharton**



# Contact Information



## Taylor-Wharton

For the name of the Taylor-Wharton distributor nearest you, or for more information on Taylor-Wharton Liquid Cylinders, please contact:

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