

# PERMA-CYL® w/ FLEXFILL

## MICROBULK STORAGE SYSTEM WITH TOP & BOTTOM FILL

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The FlexFill™ Piping Option on the Perma-Cyl® 1000 through 5000 MicroBulk Storage Systems is a top and bottom fill circuit that replaces the top float assembly so the driver can control the tank pressure while filling the Perma-Cyl tank. The FlexFill option uses technology adopted from our LNG fueling system which allows it to safely go liquid full. Once the Orca™ MicroBulk Delivery System meter senses a flow rate reduction, the pump is automatically shut down. This patented automatic dispensing system simulates the same process drivers have used for years to safely fill Perma-Cyl storage tanks with a single hose.

The FlexFill feature is critical for applications like laser assist gas and medical gas supply where a significant drop in downstream pressure during the Perma-Cyl tank refill could result in equipment alarms. The new FlexFill feature works with all Orca models, both new and existing units.

*\*The FlexFill tank is presently not approved for use with CO<sub>2</sub>.*



FlexFill Assembly  
Patent No. 6,128,908 & others pending

### PRODUCT HIGHLIGHTS

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- Allows top & bottom filling for accurate pressure control in Perma-Cyl during refill
- Provides the same safe, single hose, no-loss, auto-shut off fill with the Orca delivery system as the top fill float design
- Backward compatible – works with new and existing Orca delivery units without modifications
- Incorporates the filling technology from the LNG vehicle & dispenser system
- Separate economizer and PB regulators on most models
- Bottom liquid withdrawal port on all tank models

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MICROBULK STORAGE SYSTEM WITH TOP & BOTTOM FILL

SPECIFICATIONS						
MODEL	1000L	1500L	2000L	3000L	3000L	5500L
	HP/VHP Plate Base	HP/VHP Pallet Base	HP/VHP Pallet Base	HP/VHP Pallet Base	HP/VHP Horizontal Forklift Base	VHP Pallet Base
<b>CAPACITY (Liters)</b>						
Gross	1,056	1,550	2,042	2,911	2,911	5,434
Net	950	1,455	1,945	2,707	2,707	5,110
<b>CAPACITY (Gallons)</b>						
Gross	279.0	409.5	539.5	770	770	1,435
Net	251.0	384.4	513.9	715	715	1,350
<b>MAWP</b>						
psig	350/500	350/500	350/500	350/500	350/500	500
barg	24.1/34.5	24.1/34.5	24.1/34.5	24.1/34.5	24.1/34.5	34.5
<b>MAXIMUM PRE-SET OPERATING PRESSURE</b>						
psig	300/450	300/450	300/450	300/450	300/450	450
barg	20.7/31.0	20.7/31.0	20.7/31.0	20.7/31.0	20.7/31.0	31.0
<b>DESIGN SPECIFICATIONS</b>						
DOT/ASME	ASME	ASME	ASME	ASME	ASME	ASME
<b>STORAGE CAPACITY (1)</b>						
<b>Nitrogen</b>						
SCF	24,350	35,790	47,847	66,592	66,592	125,000
Nm <sup>3</sup>	689	1,013	1,257	1,750	1,750	3,540
<b>Oxygen</b>						
SCF	30,070	44,220	59,089	82,239	82,239	154,900
Nm <sup>3</sup>	850	1,250	1,553	2,161	2,161	4,386
<b>Argon</b>						
SCF	29,400	43,220	57,786	80,425	80,425	151,700
Nm <sup>3</sup>	832	1,223	1,519	2,115	2,115	4,296
<b>THERMAL PERFORMANCE (2) (NER%/Day)</b>						
N <sub>2</sub>	1%	1%	1%	1%	1%	.7%
O <sub>2</sub> -Ar	.62%	.62%	.62%	.62%	.62%	.43%
<b>GAS DELIVERY RATE (LIN/LAR/LOX)</b>						
SCF/H	960	1,350	1350/2000 <sup>(3)</sup>	1350/2000 <sup>(3)</sup>	2,000	5,000
Nm <sup>3</sup> /h	25.2	35.4	35.4/52.4	35.4/52.4	52.4	141
<b>DIMENSIONS</b>						
<b>Diameter</b>						
in	42	48	48	59	59	80
mm	1,067	1,219	1,219	1,499	1,499	2,030
<b>Pallet Base</b>						
in	47 x 51	53 x 67	53 x 67	61 x 76	61 x 76	86 x 102
mm	1194x1295	1346x1702	1346x1702	1549x1930	1549x1930	2184x2591
<b>Height</b>						
in	82	92/91	118.5/119.5	122/122.5	71	119
mm	2,083	2337/2311	3,010/3,035	3099/3112	1,803	3,020
<b>Tare Weight</b>						
lbs	1500/1750*	2200/2500**	2600/2950**	3300/4250**	3800/4250**	9100**
kg	680/794	998/1134	1179/1338	1497/1928	1724/1928	4128



All specifications are subject to change without prior notice.

1) Values are based on net capacity at 0 psig (0 barg) for ASME vessels.

2) Values are based on gross capacity.

3) Optional 3,500 SCF/H (92 Nm<sup>3</sup>/h) flow kit available.

All dimensions are measured from the floor to the top of the highest plumbing component.

Patents: 6,128,908 • 5,954,101 • 6,799,429

ASME- American Society of Mechanical Engineers, Section VIII, Division 1

Contact Factory for Canadian Approvals.

\* Weights do not include lab base option. (base option: 265 lbs)

\*\* Weights include lab bases.

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