

Authorized Dealer



Innovation. Experience. Performance.™

MicroBulk Systems

Phone  
1-800-400-4683

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1-952-758-8275

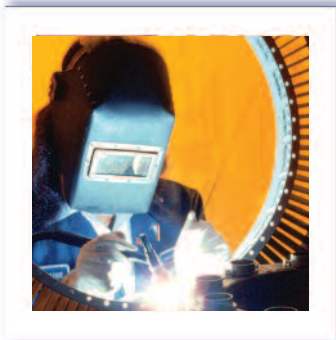
Worldwide  
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[www.microbulk.com](http://www.microbulk.com)

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P/N 13162050



Ensuring cryogenic supply capabilities.  
Any application - Any time

*The Highest Quality MicroBulk  
Systems In The World*



# Ensuring cryogenic supply capabilities. Any application - Any time

## MicroBulk Solutions Gas Management System



### Orca Delivery

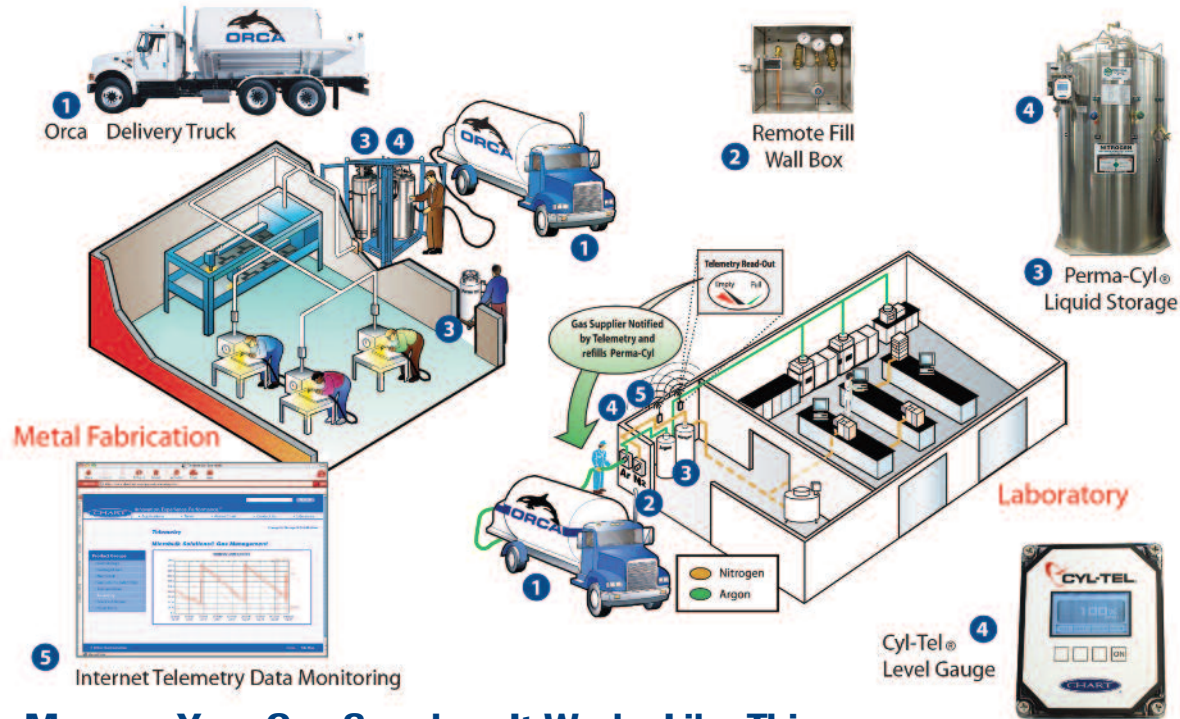
- Fast, reliable, accurate filling
- On-site refilling reduces your costs
- Provides better gas management

### Perma-Cyl® Storage

- Installed and dedicated to your application
- Eliminates cylinder handling
- Achieve a higher purity gas supply

### Cyl-Tel® Remote Monitoring

- Eliminates product run-out
- User-friendly contents read-out
- Guarantees a continuous gas supply



## The Chart MicroBulk Advantage

Saves you time. Saves you money.  
**Here's the math.**

Company: \_\_\_\_\_ Date: \_\_\_\_\_  
 Prepared for: \_\_\_\_\_ Sales Company: \_\_\_\_\_  
 Address: \_\_\_\_\_ Sales Person: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_ Phone, Fax: \_\_\_\_\_  
 Phone, Fax: \_\_\_\_\_ Email Address: \_\_\_\_\_  
 Contact: \_\_\_\_\_ Application: \_\_\_\_\_  
 Email Address: \_\_\_\_\_ Service: \_\_\_\_\_  
 Current Gas Supply: \_\_\_\_\_ Perma-Cyl Model: \_\_\_\_\_

Note: All percentages (%) to be in decimal form for calculations

Current Gas Usage and Perma-Cyl Sizing		Calculation	Your Results	
			Before MB	After MB
A. Current Gas Usage (cuft/mo)		Your Information	_____	_____
B. Volume of Gas (ltrs/mo) (Note 1)	$= A / (25.4 \text{ Ar}, 20.3 \text{ N}_2, 26.1 \text{ O}_2, 21.6 \text{ CO}_2)$	_____	_____	_____
C. Residual Gas Waste (%)		Your Information	_____	_____
D. Delivery Cycle (days)		Your Information	_____	_____
E. Growth Allowance (%)		Your Information	_____	_____
F. Refill Level (%)		Your Information	_____	_____
G. Minimum Perma-Cyl size (ltrs)	$= B \times (1-C) \times (D/30) \times (1+E) / (1-F)$	_____	_____	_____
<b>Current Gas Costs &amp; MicroBulk Costs</b>		<b>Perma-Cyl model</b>		
H. Cylinder Rental Charges or Facility Fee (\$/mo)		Your Information	_____	_____
I. Delivery Charges/Stop (\$)		Your Information	_____	_____
J. Deliveries per Month		Your Information	_____	_____
K. Gas Price (\$/100cf)		Your Information	_____	_____
L. Direct Labor Rate (\$/hr)		Your Information	_____	_____
M. Cylinder Changeout Time (hr/mo)		Your Information	_____	_____
N. Machine Down Time (\$/mo)		Your Information	_____	_____
O. Soft Costs (\$/mo) (P.O.'s, Emgcy Del, Cyl Inv., Insurance)		Your Information	_____	_____
P. Telemetry (\$/mo)		Your Information	_____	_____
Q. Total Current Gas Costs (\$/mo)	$= H + (I \times J) + (A/100 \times K) + (L \times M) + N + O$	_____	_____	_____
R. Total MicroBulk Gas Costs (\$/mo)	$= (I \times 30/D) + H + (A/100 \times K \times (1 - C)) + O + P$	_____	_____	_____
S. NET SAVINGS PER MONTH (\$/mo)		Q - R	_____	_____
T. NET SAVINGS PER YEAR (\$/yr)		S x 12	_____	_____
U. Piping and Installation Costs (\$)		Your Information	_____	_____
V. ROI on Piping and Installation (yr)		= U/T	_____	_____

## Manage Your Gas Supply – It Works Like This:

- 1 Liquefied gases are delivered to the customer's facility with the Orca cryogenic delivery truck. Key controls and components on the Orca allow the driver to safely and quickly deliver the proper amount of liquid accurately into the Perma-Cyl storage vessel or small bulk tanks.
- 2 When the Perma-Cyl storage vessel is installed indoors, an externally wall-mounted control box can be added for remote filling. This allows the gas delivery to safely take place without the driver entering the building in most installations.
- 3 Liquefied gases are stored at ultra-cold temperatures in the vacuum-insulated Perma-Cyl. Customized controls for the application on the Perma-Cyl maintain the vessel at the proper delivery pressure and deliver gas or liquid on demand.
- 4 The Cyl-Tel electronic level gauge accurately monitors the cryogenic liquid level and is telemetry ready for remote monitoring or connection to customer monitoring systems.
- 5 Telemetry systems allow the gas supplier to remotely monitor the Perma-Cyl liquid level to maximize delivery efficiency without the risk of product outages.

Note1: Gas densities are in SCF/LTR at 125 psig. For different pressure applications, substitute the correct density from the chart at the top of page 19 in the MicroBulk Systems product catalog.