

The innovative Perma-Cyl storage system incorporates a top fill float designed to allow single hose filling without losses. It automatically shuts off the ORCA delivery unit for safe and reliable fill.

The optimum gas supply system for laser and other high pressure applications.

Engineered and manufactured to the highest quality standards to provide you with the safest and most reliable equipment available. Driven by innovation, our patented cylinder support system revolutionized the industry.



Perma-Cyl ZX

Five-year vacuum warranty

Benefits

- Superior performance due to a larger integrated pressure-building vaporizer
- Continuous gas flow rates of up to 130 Nm³/h at 30 bar
- Capable of providing pressure up to 37 bar

Model		PC 600/37 ZX	PC 1000/37 ZX	PC 1500/37 ZX	PC 2000/37 ZX
Capacity					
Liquide (gross)*	(liters)	601	997	1539	2021
Liquide (net)	(liters)	570,95	947,15	1462	1920
Gas (N ₂)**	(Nm ³)	369	612	945	1241
Gas (O ₂)* Oxygen	(Nm ³)	456	756	1167	1533
Gas (Ar)* Argon	(Nm ³)	446	740	1142	1500
Performance					
NER***(N ₂)	(% day)	1	0,9	0,8	0,8
Gas Flow (N ₂ , O ₂ , Ar)	(Nm ³ /hr)	70	100	120	130
Gas Flow (CO ₂ & N ₂ O)	(Nm ³ /hr)	21	30	40	42
Max. Relief Valve Setting	(bar)	37	37	37	37
Design Regulation		PED (EN 13458)	PED (EN 13458)	PED (EN 13458)	PED (EN 13458)
Dimensions					
Tank Diameter	(mm)	900	1100	1400	1400
Base Dimensions (LxW)	(mm)	1075 x 1430	1280 x 1480	1570 x 1770	1570 x 1770
Base type		Pallet Base	Pallet Base	Pallet Base	Pallet Base
Height	(mm)	2135	2150	2150	2550
Tare Weight (approx.)	(kg)	703	906	1279	1470

* Volume tolerance is ±4%

** At 0 barg pressure for N₂, O₂, Ar and 10 bar for CO₂, N₂O

*** NER: Nominal Evaporation Rate

Note: All models and specifications are conditional and subject to change without prior notice.

Orca & Liquid Cylinder Accessories



No Moving Parts Meter Section with Lifetime Warranty.
Rugged Stainless Steel Enclosure High Accuracy.
Intuitive Operation.
Large Graphic Color LC-Display.
Built-In Data Logger.
Data Communication Capability.

Benefits

- Metering system with no moving parts with lifetime warranty.
- Rugged stainless steel enclosure.
- Accurate, trouble-free service life.
- Built-in data logger.
- Highly accurate.
- Intuitive design for ease of operation.

FlowCom 3000

Flow Measurement for ORCA.

Fowcom3000 metering system and its logic are especially designed to handle both small and larger drafts without compromising accuracy. The built-in auto shutdown terminates filling as soon as the receiving tank has been filled.

Flexible Transfer Hose

Stainless-steel transfer hoses that remain flexible during liquid transfer can be coupled with a bronze phase separator. Ideal for safe discharge of LN₂ into open dewars.



"Lightweight & Economical & Easy Molecules Transportation "

MicroBulk Distribution System

Fill-on-Site Technology



MicroBulk System Benefits:

- Eliminate HP cylinder handling
- Fast, customer-friendly technology
- Safe and customer friendly
 - Minimizes filling time
 - Fill at customer's site
 - Expert technical support



Innovation. Experience. Performance.®

CHart Inc. Distribution & Storage

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The most economical gas delivery system on the market.

Chart Ferox is introducing an innovative system of distributing liquefied atmospheric gases (N2, O2, Ar and LNG) called MicroBulk! Chart's MicroBulk system includes an Orca® delivery truck for transporting the product and Perma-Cyl® liquid cylinders (up to 2,000 liters) which are permanently installed at the customer's site. The product is delivered to the customer's site with the Orca, which uses a flexible hose to fill the Perma-Cyl.

- Benefits & Savings:**
- Easy to use, one-man operation
 - On-site fill occurs in less than five minutes [Tim, is 5 minutes correct?]
 - After-hours deliveries possible
 - Simple equipment installation
 - Low maintenance with submerged Orca pump
 - Higher purity gas supply
 - High quality products and innovative technologies
 - Time and labor savings compared to HP cylinder switch-out
 - Accurate measurement with flow metering system and auto shut-off device
 - Superior performance with no residual and filling losses
 - Safe operation at maximum working pressure of 37 bar

ORCA delivery truck



Doesn't this picture show an external pump?
The wording says "submerged pump."

Chart Ferox provides free customer support and technical training prepared by competent personnel.

Perma-Cyl Five-year vacuum warranty

The optimum liquid supply system for high & low pressure applications.



Performance

The patented Perma-Cyl design is the perfect blend of plumbing controls, rugged durability and thermal efficiency — giving you the highest performance liquid cylinder package on the market today.

Benefits

- Different sizes, pressures, and features to meet your needs
- Stainless steel construction
- Thicker, dent-resistant outer shell
- Patented durable, inner-vessel support system
- Heavy-duty footing
- Large-diameter handling ring with four posts
[I don't see this handling ring in the Perma-Cyl picture you are using.]

Perma-Cyl

Cyl-Tel®

Cyl-Tel is a digital electronic level gauge designed specifically for the Perma-Cyl and provides an accurate liquid level reading. It is designed for rugged application, with a water-resistant case suitable for outdoor use.



Orca is a fast-filling cryogenic gas distribution truck with ADR, TPED and EN 13 530 compliance and a fully-automatic filling system, including a FlowCom 3000 metering system. The truck is available in three models: the standard Orca (with submerged pump), the Orca PT (with Pulse Technology for smaller markets), and Orca XT (with pulse pressure designed for larger deliveries).

Model	ORCA XT 7			ORCA XT 8			ORCA XT 10		
Gas Services	LIN,LAR and LOX			LIN,LAR and LOX			LIN,LAR and LOX		
Dispense Method /Technology	Pulse Transfer Plus Pulse Pressure			Pulse Transfer Plus Pulse Pressure			Pulse Transfer Plus Pulse Pressure		
Pressure Builder Type	HP2 & ZX technologies			HP2 & ZX technologies			HP2 & ZX technologies		
Design Code	TPED, ADR, EN13 530			TPED, ADR, EN13 530			TPED, ADR, EN13 530		
Specifications	Overall Unit			Overall Unit			Overall Unit		
Gross Capacity	6 900L Main tank			8000L Main tank			10 200L Main tank		
	400L Pulse tank			400L Pulse tank			400L Pulse tank		
Payload at 95% filling, 0bar (kg)	5 260 LIN	9 200 LAR	7 250 LOX	6 100 LIN	10 650 LAR	8 650 LOX	7 800 LIN	13 700 LAR	11 100 LOX
MAWP	17,5 bar Main tank			17,5 bar Main tank			17,5 bar Main tank		
	24bar Pulse tank			24bar Pulse tank			24bar Pulse tank		
Overall Length	5 578 mm			6 090 mm			7 110 mm		
Overall Height	2 188 mm			2 188 mm			2 188 mm		
Tare Weight	5 100 kg			5 600 kg			6 500 kg		

Model	PC 230/22 FR	PC 230/22 SB	PC 600/24	PC 1000/24	PC 1000/37
Capacity					
Liquide (gross)	(liters)	240	240	659	996
Liquide (net)	(liters)	228	228	620	945
Gas (N ₂)* Nitrogen	(Nm ³)	147	147	404	611
Gas (O ₂)* Oxygen	(Nm ³)	182	182	500	756
Gas (Ar)* Argon	(Nm ³)	179	179	493	745
Performance					
NER**(N ₂)	(% per day)	1,2	1,2	1,0	0,9
Gas Flow (N ₂ , O ₂ , Ar)	(Nm ³ /hr)	11	11	21	27
Relief Valve Setting	(bar)	22	22	24	37
Code	PED	PED	PED	PED	PED
Dimensions					
Tank Diameter	(mm)	660	660	965	1 067
Base Dimensions (LxW)	(mm)	N/A	740 x 710	1030 x 1030	1140 x 1140
Type of Base		Round Footring	Square Caster Base	Pallet Base	Pallet Base
Heigh	(mm)	1 510	1 610	1 900	2 150
Tara Weight	(kg)	154	154	650	900

Model	PC 1500/24	PC 1500/37	PC 2000/24	PC 2000/37
Capacity				
Liquide (gross)	(liters)	1522	1504	2030
Liquide (net)	(liters)	1 446	1 428	1 928
Gas (N ₂)* Nitrogen	(Nm ³)	935	923	1 246
Gas (O ₂)* Oxygen	(Nm ³)	1 156	1 142	1 541
Gas (Ar)* Argon	(Nm ³)	1 140	1 126	1 520
Performance				
NER**(N ₂)	(% per day)	0,8	0,8	0,8
Gas Flow (N ₂ , O ₂ , Ar)	(Nm ³ /hr)	32	32	32
Relief Valve Setting	(bar)	24	37	24
Code	PED	PED	PED	PED
Dimensions				
Tank Diameter	(mm)	1 300	1 300	1 300
Base Dimensions (LxW)	(mm)	1365 x 1365	1365 x 1365	1365 x 1365
Type of Base		Pallet Base	Pallet Base	Pallet Base
Heigh	(mm)	2 150	2 150	2 590
Tara Weight	(kg)	1 095	1 280	1 510

Note:
* At 0 bar pressure saturated
** NER - Nominal Evaporation Rate

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