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.

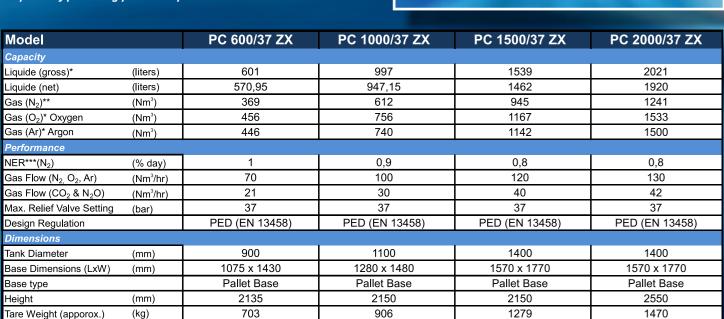
Driven by innovation, our patented cylinder support system revolutionized the industry.

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



- * Volume tolerance is ±4%
- ** At 0 barg pressure for N2, O2, Ar and 10 bar for CO2, N20
- *** 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.

enefits

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



nnovation. Experience. Performance.

Chart Inc. Distribution & Storage
Chart Ferox a.s. • Ústecká 30 CZ-405 30 • Děčín 5
Tel: +420-412-507 343 • Fax: +420 412 507 297

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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.

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

2 188 mm

5 600 kg

2 188 mm

5 100 kg

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

Model

Gas Services

Design Code

oss Capacity

erall Length

erall Height

are Weight

spense Method /Technology

ayload at 95% filling, 0bar (kg)

essure Builder Type

- · 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

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.



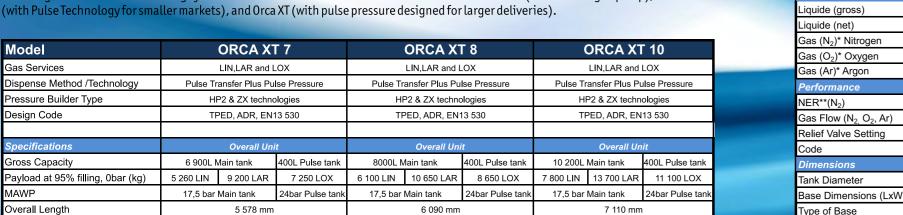
Model	ORCA 6		ORCA 8			ORCA 11			ORCA 15		ORCA 18	
Gas Services	LIN	LAR	LOX	LIN	LAR	LOX	LIN	LAR	LOX	Optimized for LIN		Optimized for LIN
Dispense Method /Technology	Submerg	jed Pump	External Pump	Submerg	ed Pump	External Pump	Submerg	ed Pump	External Pump	Submerged Pump	External Pump	Submerged Pump
Pressure Builder Type	Pump force-feed		Pump force-feed			Pump force-feed			Pump force-feed		Pump force-feed	
Design Code	TPED, ADR, EN13 530		TPED, ADR, EN13 530			TPED, ADR, EN13 530			TPED, ADR, EN13 530		TPED, ADR, EN13 530	
Specifications	Overall Unit		Overall Unit		Overall Unit		Overall Unit		Overall Unit			
Gross Capacity	6 050 liters		8 150 liters		10 920 liters		15 000 liters		17 580 liters			
Payload at 95% filling, 0bar (kg)	4 598 LIN	7 994 LAR	6 498 LOX	6 193 LIN	10 869 LAR	8 754 LOX	8 298 LIN	14 429 LAR	11 729 LOX	11 399 L	N	13 359 LIN
MAWP	3,4 bar		3,4 bar		3,4 bar		3 bar		3 bar			
Overall Length	4 250 mm		5 064 mm			6 114 mm			7 112 mm		7 990 mm	
Overall Height	2 158 mm			2 158 mm			2 158 mm			2 433 mm		2 433 mm
Tare Weight	3 400 kg		3 700 kg			4 200 kg			4 800 kg		5 100 kg	

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 footring
- · Large-diameter handling ring with four posts [I don't see this handling ring in the Perma-Cyl picture you are using.]



2 188 mm

6 500 kg







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 waterresistant case suitable for outdoor use.



Model		PC 1500/24	PC 1500/37	PC 2000/24	PC 2000/37
Capacity					
Liquide (gross)	(liters)	1522	1504	2030	2007
Liquide (net)	(liters)	1 446	1 428	1 928	1 906
Gas (N ₂)* Nitrogen	(Nm³)	935	923	1 246	1 232
Gas (O ₂)* Oxygen	(Nm³)	1 156	1 142	1 541	1 524
Gas (Ar)* Argon	(Nm³)	1 140	1 126	1 520	1 503
Performance					
NER**(N ₂)	(% per day)	0,8	0,8	0,8	0,8
Gas Flow (N _{2,} O ₂ , Ar)	(Nm³/hr)	32	32	32	32
Relief Valve Setting	(bar)	24	37	24	37
Code		PED	PED	PED	PED
Dimensions					
Tank Diameter	(mm)	1 300	1 300	1 300	1 300
Base Dimensions (LxW)	(mm)	1365 x 1365	1365 x 1365	1365 x 1365	1365 x 1365
Type of Base		Pallet Base	Pallet Base	Pallet Base	Pallet Base
Heigh	(mm)	2 150	2 150	2 590	2 590
Tara Weight	(ka)	1 095	1 280	1 270	1 510

* At 0 bar pressure saturated ** NER - Nominal

All models and specifications are conditional and subject to changes without a prior notice.

Evaporation Rate