



# MICROBULK SYSTEMS

EQUIPMENT  
AND CRYOGENIC  
SERVICES



# COREGAS, A WESFARMERS COMPANY, HAS CHALLENGED THE AUSTRALIAN GAS MARKET SUCCESSFULLY SINCE 1974.

## INNOVATION

Innovative Design, Tech & Reliability	03
Coregas MicroBulk Applications	04

## STORAGE

The Right Storage System	06
--------------------------	----

## INSTALLATION

Standard Installation	09
MicroBulk Top & Bottom Fill	11
Smart Metering Innovation Ensures Product Security	12

## SPECIFICATIONS

Specifications	14
----------------	----

## CONTACT

Where You Can Find Us	16
-----------------------	----





“Coregas does things differently.  
We believe that partnership starts  
by listening to our customers’ needs.  
With our established capability and  
innovative thinking, more and more  
customers are trusting us as their  
preferred gas partner”

**Alan Watkins**

Executive General Manager  
Coregas

A handwritten signature in dark ink, appearing to read 'Alan' with a stylized flourish at the end.





When you choose  
Coregas MicroBulk,  
you get single-source  
accountability from  
the integrated  
system through to  
business support.

# INNOVATIVE DESIGN, TECH & RELIABILITY

Across Coregas, we pride ourselves on designing innovative products and services with advanced technology and high reliability to enhance customer value. Our understanding of our customers' business needs and end-use applications has helped us achieve a wide product portfolio of solutions. We provide the right product for the application – driving a competitive advantage for our customer and our company.



## Zero Loss and Total Pressure Control

Unlike other systems Coregas MicroBulk utilises the most up to date submerged pump and pressure control technology meaning you don't lose any gas during refill as well as no pressure drop. 100% uptime for you.



## Innovative Design

Our integrated Coregas MicroBulk advantage is based on a system that incorporates patented and proven innovative technologies. Every component is designed, built and tested to create the safest and most reliable MicroBulk delivery system available today.



## Installation Ready

We allow you to custom build your MicroBulk Storage System to match your application and your business operation. With over 10 sizes and three pressures, there's a model to meet your requirements.



## Telemetry Capable

The Smart Metering Liquid Level Gauge is designed for the MicroBulk system. Packed with user-friendly features.



## Exceptional Service

Our sales process doesn't stop with the equipment supply. We offer electronic tools, technical assistance and training.

# COREGAS MICROBULK APPLICATIONS

## METAL FABRICATION



### Welding – GMAW/MIG, GTAW/TIG and Laser Welding

Metal fabrication uses many different welding processes for the wide range of materials, thickness and product applications. Many of these unique and specialised welding processes use inert shielding gas or the combination of gases to obtain the maximum weld quality and optimised productivity. For single gas or mixed gas requirements, MicroBulk provides you with all the benefits of bulk, such as an uninterrupted gas supply – in an economical compact package.



### Cutting – Laser

All thermal cutting techniques utilise gases to assist in the cutting process. High-pressure nitrogen and oxygen are used as an assist gas to rapidly remove the molten metal from the cut zone or burn it away during the laser cutting process. To maintain maximum laser uptime and achieve the best cut quality, it is critical that the gas supply be uninterrupted and the required pressures and flows for the material and thickness being cut are maintained. MicroBulk offers an engineered “High-Pressure, High-Flow Package” to customise your MicroBulk Storage System for these demanding applications.

## METAL PROCESSING



### Heat Treating, Cryotempering, Thermal Spray Coating

Heat treating and cryotempering processes are dependent on the quality of the nitrogen gas and liquid supply to maintain production at peak performance. With the MicroBulk system directly piped to the equipment or conveniently transported with the caster base model, these applications are assured of a consistent supply of nitrogen with minimal operator intervention. In the thermal spray coating process, oxygen or argon is used at high pressure and high flows. With the VHP ZX coil option, your gas supply will exceed these requirements and provide long-term trouble-free service.

## MEDICAL



### Cryotherapy

Medical applications have some of the most stringent gas requirements and the MicroBulk system meets these requirements. Nitrogen can be supplied for gas applications to operate pneumatic surgical tools and supply liquid for medical uses such as cryotherapy.

## ANALYTICAL / LABORATORY



### ICP/ICP-MS – Inductively Coupled Plasma/Mass Spectrometry GC – Gas Chromatograph

A continuous flow of high purity argon gas is required for ICP/ICP-MS systems to repeatedly process material samples trouble-free. With the all stainless steel option and MicroBulk's short delivery chain, you can be assured of getting the proper purity of argon necessary for peak equipment performance. Similarly, GC's get the same benefits with a system in nitrogen service. And with MicroBulk and telemetry, you get a continuous supply of uninterrupted gas so you never have to change cylinders or restart a sample test from a gas outage.



### Biological Storage and Research

A sufficient supply of high-quality liquid nitrogen is needed to keep valuable biological samples stored indefinitely. Any interruption in supply can result in the loss of many years of research. With the optional vacuum-insulated liquid withdrawal valve and bayonet on the MicroBulk system, you get a continuous supply of quality liquid to your freezer – reducing liquid losses and giving you more control. Adding telemetry to the liquid supply, allows to monitor the liquid level via the internet for added security. For requirements that prohibit a permanent installation, the 230 caster base model is an excellent choice.



### MBE – MolecularBeam Epitaxy

MicroBulk provides vacuum insulated closed loop LN2 piping systems utilising liquid/vapor phase separators and triaxial feed/coaxial return piping to provide low pressure, ultra-pure LN2. In a closed loop system, the LN2 is recirculated back to the phase separator via return pipes connected to the phase separator from the tool. These pipes are designed to flow LN2 back to the head space inside the phase separator reusing the LN2 in a continual loop, providing completely wetted surfaces within the cryoshrouds, while maintaining constant LN2 temperatures at low pressure with minimal gas. The gas is then vented to the atmosphere, leaving pure LN2 at the desired temperature to be delivered to the cryoshroud.

## GENERAL PROCESSING



### Food and Beverage Packaging

In beverage packaging, liquid nitrogen is used to create a positive pressure in non-carbonated drinks to improve the containers rigidity for lower-cost handling. Additionally, this process eliminates oxygen to improve the products shelf life. For food packaging, nitrogen gas yields the same benefits and when combined with carbon dioxide and carbon monoxide for processing meat, a longer shelf life of the desired red colour is maintained. The MicroBulk system gives you optimum control of your liquid and gas supply for maximum production uptime.



### Purging and Blanketing

Inert purging and blanketing with nitrogen or argon gas is a common processing step in many manufacturing applications. These range from pharmaceutical to chemical to the wine industry, and they require a secure supply of gas for optimum processing results. With a dedicated tank and the optional telemetry system, you are assured of a continuous, oxygen-free gas supply because cylinder change outs are eliminated.



### Electronic Manufacturing and Testing

Electronic grade manufacturing requires an Ultra High Purity gas stream void of contamination. The MicroBulk system is built with all stainless steel construction from the internal vaporizer to the exterior plumbing to maintain gas purity. And with the MicroBulk delivery system, the reduced handling results in higher purity over conventional cylinder supplies. In a related business, printed circuit board testing performed in liquid nitrogen-powered environmental test chambers require quality liquid at the point of use.

## THE RIGHT STORAGE SYSTEM

### Built for your application

The MicroBulk Storage System allows small users to enjoy the benefits of on-site gas delivery. Gone are the hassles, waste, and expense of full-for-empty gas cylinders. No cylinders to change, no residual gas losses\*, no back, hand or foot injuries from handling cylinders, and no lost or damaged cylinders.





## MicroBulk exclusive

Internal top float  
assembly assures  
a safe, efficient  
and reliable fill.

The Coregas system is reliable, efficient, and more economical than comparable trans-portable cylinders. Designed for a higher level of thermal efficiency, they can hold their gas contents longer with lower pressure rise than other similar sized vessels. Their extraordinary thermal quality limits product losses during extended periods of little gas use. The innovative MicroBulk system incorporates a top fill float designed to allow single-hose filling without losses. It automatically shuts off the Delivery System for a safe and reliable fill.

### Benefits

- The first fill-at-site solution for packaged or cylinder gas users.
- Fast filling capable.
- Single hose no-loss/low-loss filling.
- Automatic fill shutoff.
- Extended holding times.
- Telemetry ready with Smart Metering Liquid Level Gauge.

### The Coregas Advantage

- Sizes, pressures and configurations to meet most applications.
- Capacities from 230 litres to 5500 litres.
- Pressures from 16.2 barg to 34.5 barg.
- Automatic fill shut-off feature with optional fill box allows for remote filling from outside the building or compound when a Coregas system is installed indoors.
- The system automatically safely stops the fill process when the system is full.
- High-pressure high flow models for laser assist applications.
- Combination pressure control regulators with micrometer adjustment knob or screw.
- Outdoor or indoor installation and operation.
- Horizontal configuration available on the 3000 HP/VHP model.
- Top and bottom fill with auto shut off available on some models.
- Integrated pallet base standard on some models.
- Vacuum jacketed bayonet for liquid withdrawal available on some models.

\* In normal low-pressure applications.





The Coregas MicroBulk Supply System is a no hassle solution. Our experts can build the right package for your application.

# STANDARD INSTALLATION

Our standard installation includes everything you need to operate effectively

SPECIFICATIONS	
MODEL	1500L Very High Pressure Pallet Base
CAPACITY (Litres)	
GROSS	1,550
NET	1,455
MAWP	
BARG	34.5
PRE-SET OPERATING PRESSURE	
BARG	31
STORAGE CAPACITY (1)	
NITROGEN	
Nm3	1,013
THERMAL PERFORMANCE (2) (NER%/Day)	
N2	1%
GAS DELIVERY RATE LIN	
Nm3h	52.4
DIMENSIONS	
DIAMETER	
mm	1,219
HEIGHT	
mm	2311
TARE WEIGHT	
kg	1134

## Zero Losses and Total Pressure Control

- The tanker has an on-board submerged pump, which means it doesn't have to cool down before fill.
- Flexible hose with shut of valve at the end, which that hose is not exposed to the air, so there is no need to purge and vent the hoses. This feature is critical for applications like laser assist gas and medical gas supply where a significant drop in downstream pressure during tank refill could result in equipment alarms and supply interruption.
- Thermally efficient, stationary vessels at the end user site can be filled without venting.
- Technology to interface the vessel to the delivery vehicle and permit automatic fill termination and indoor vessel placement (vent and safety line still has to be run to the open space).

## MicroBulk Installations are Simple

- Palletised tank and vaporizer that does not require a crane to install. The system enables an easy install with a forklift.
- The tank and vaporizer do not require concrete foundations to support the weight.
- There is no power requirement to run the tank or the telemetry.
- The pump is powered by the small delivery truck so there is no need for the 3-phase power usually required for semitrailer deliveries.

## Smart Metering and Security of Supply

- Telemetry unit, which provide pressure and level reading to Coregas distribution team and customers' personnel.

## Or Build Your Own Solution

- Custom build your MicroBulk Storage system to match your application and business operation. With over 10 sizes and three pressures, there's a model to meet your requirements.









# MICROBULK TOP & BOTTOM FILL

## A new technology in tank storage

The new piping option has a top and bottom fill circuit that replaces the top float assembly so the driver can control the tank pressure while filling the MicroBulk Storage System. This option uses technology adopted from the LNG fueling system which allows it to safely go liquid full. Once the 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 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 tank refill could result in equipment alarms.

### Product Advantages

- Allows top & bottom filling for accurate pressure control in the system during refill.
- Provides the same safe, single hose, no-loss, auto shut-off fill with the delivery system as the top fill float design.
- Available on 1000 HP/VHP, 1500 HP/VHP, 2000 HP/VHP, 3000 HP/VHP, and 5500 MP/VHP models.



# SMART METERING INNOVATION ENSURES PRODUCT SECURITY

The Coregas telemetry system with 'Smart Metering' meets the demand to provide real time visibility of your liquid levels in the tanks or gas levels in the cylinders and consumption patterns.

Our innovative system means contents delivered will be confirmed via email/SMS to customer via Smart Metering.

Smart Metering is a combination of Digital Hoffer Flow Meters and 4G Activated Scanners that can provide the real time liquid drop sizes.



The diagram illustrates the Smart Metering system architecture. It features a central white circle labeled "SMART METERING". To its right is another white circle labeled "Monitor levels for re-order". These two circles are connected by a dashed line. A larger dashed circle encompasses both circles. The background is a blue gradient with various circular bokeh effects and dashed lines.

**SMART  
METERING**

Monitor levels  
for re-order



## 14 SPECIFICATIONS

SPECIFICATIONS														
MODEL	230L MP, LCCM Sq/Rnd Base w/ Casters	230L HP, LCCM Sq/Rnd Base w/ Casters	265L MP, LCCM Sq/Rnd Base w/ Casters	265L HP, LCCM Sq/Rnd Base w/ Casters	450L HP Plate Base	450L MP Plate Base	450L VHP Plate Base	700L HP Plate Base	1000L HP/VHP Plate Base	1500L HP/VHP Pallet Base	2000L HP/VHP Pallet	3000L HP/VHP Pallet Base	3000L HP/VHP Horizontal Forklift Base	5500L MP/VHP Pallet Base
CAPACITY (Litres)														
GROSS	240	240	276	276	450	450	450	688	1,056	1,550	2,042	2,911	2,911	5510/5434
NET	230	230	265	265	420	420	420	645	950	1,455	1,945	2,707	2,707	5262/5110
MAWP														
BARG	15.9	24.1	15.9	24.1	24.1	17.2	34.5	24.1	24.1/34.5	24.1/34.5	24.1/34.5	24.1/34.5	24.1/34.5	17.2/34.5
PRE-SET OPERATING PRESSURE														
BARG	8.6	20.7	8.6	20.7	20.7	8.6	31.0	20.7	20.7/31.0	20.7/31.0	20.7/31.0	20.7/31.0	20.7/31.0	8.6/31.0
DESIGN SPECIFICATIONS														
DOT/ASME	DOT	DOT	DOT	DOT	DOT/ASME	ASME	DOT/ASME	ASME	ASME	ASME	ASME	ASME	ASME	ASME
STORAGE CAPACITY (1)														
NITROGEN														
Nm3	142	134	152	152	271/272	272	271/272	449	689	1,013	1,257	1,750	1,750	3644/3540
OXYGEN														
Nm3	177	168	189	189	315/336	336	315/336	554	850	1,250	1,553	2,161	2,161	4514/4386
ARGON														
Nm3	172	163	183	183	306/328	328	306/328	542	832	1,223	1,519	2,115	2,115	4423/4296
CO <sub>2</sub>														
Nm3	N/A	130.7	N/A	150.3	235/232	N/A	235/232	357	564	830	1,000	1,390	N/A	N/A
THERMAL PERFORMANCE (2) (NER%/Day)														
N <sub>2</sub>	1.8%	1.8%	2%	2%	1.9%/1.6%	1.6%	1.9%/1.6%	1%	1%	1%	1%	1%	1%	.7%
O <sub>2</sub> -Ar	1.12%	1.12%	1.4%	1.4%	1.2%/1%	1%	1.2%/1%	.62%	.62%	.62%	.62%	.62%	.62%	.43%
CO <sub>2</sub>	N/A	.6%	N/A	.7%	.6%/5%	N/A	.6%/5%	.3%	.3%	.3%	.3%	.3%	N/A	N/A
GAS DELIVERY RATE (LIN/LAR/LOX)														
Nm3h	10.5	10.5	10.5	10.5	15.1	15.1	15.1	18.6	25.2	35.4	35.4/52.4	35.4/52.4	52.4	99/141
Nm3h	N/A	3.8	N/A	3.8	5.4	N/A	5.4	6.2	9.0	12.7	12.7/17.5	12.7/17.5	N/A	N/A
DIMENSIONS														
DIAMETER														
mm	660	660	660	660	762	762	762	1,067	1,067	1,219	1,219	1,473	1,473	2,032
HEIGHT														
mm	1570/1575	1570/1575	1641/1646	1641/1646	1,753	1,753	1,753	1,588	2,083	2337/2311	3,010/3,037	3099/3105	1,803	3,023
TARE WEIGHT														
kg	136	154	154	154	312	274	368	567	680/794	998/1134	1179/1751	1497/2045	1724/1928	3084/4128

All specifications are subject to change without prior notice.

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

CO<sub>2</sub> vessels are based on net capacity at 300 psig (20.7 barg).

DOT vessels are per code.

Values are based on gross capacity.

Optional 3,500 SCFH (92 Nm3h) flow kit available.

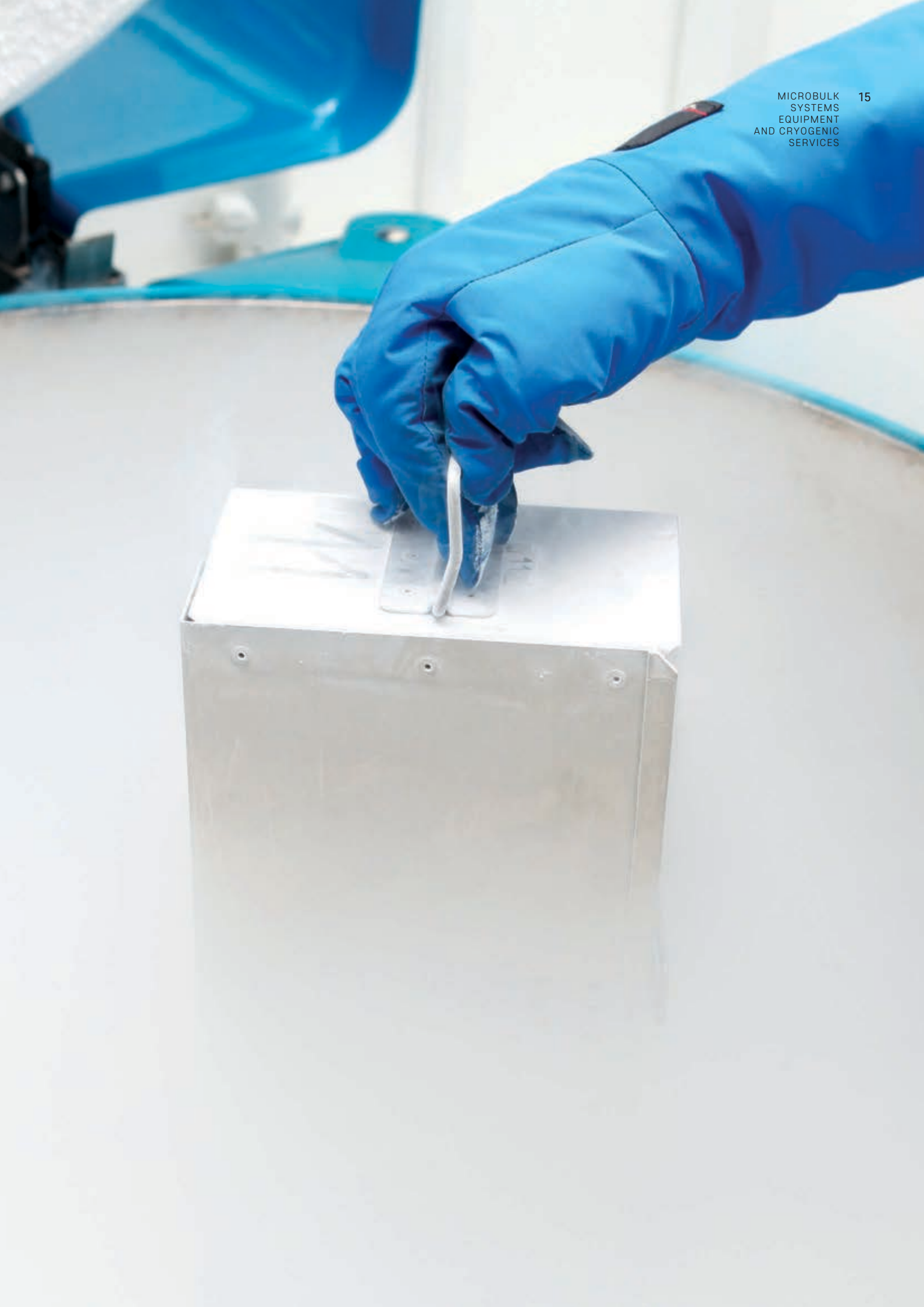
Optional 3,500 SCFH hang on vaporizer

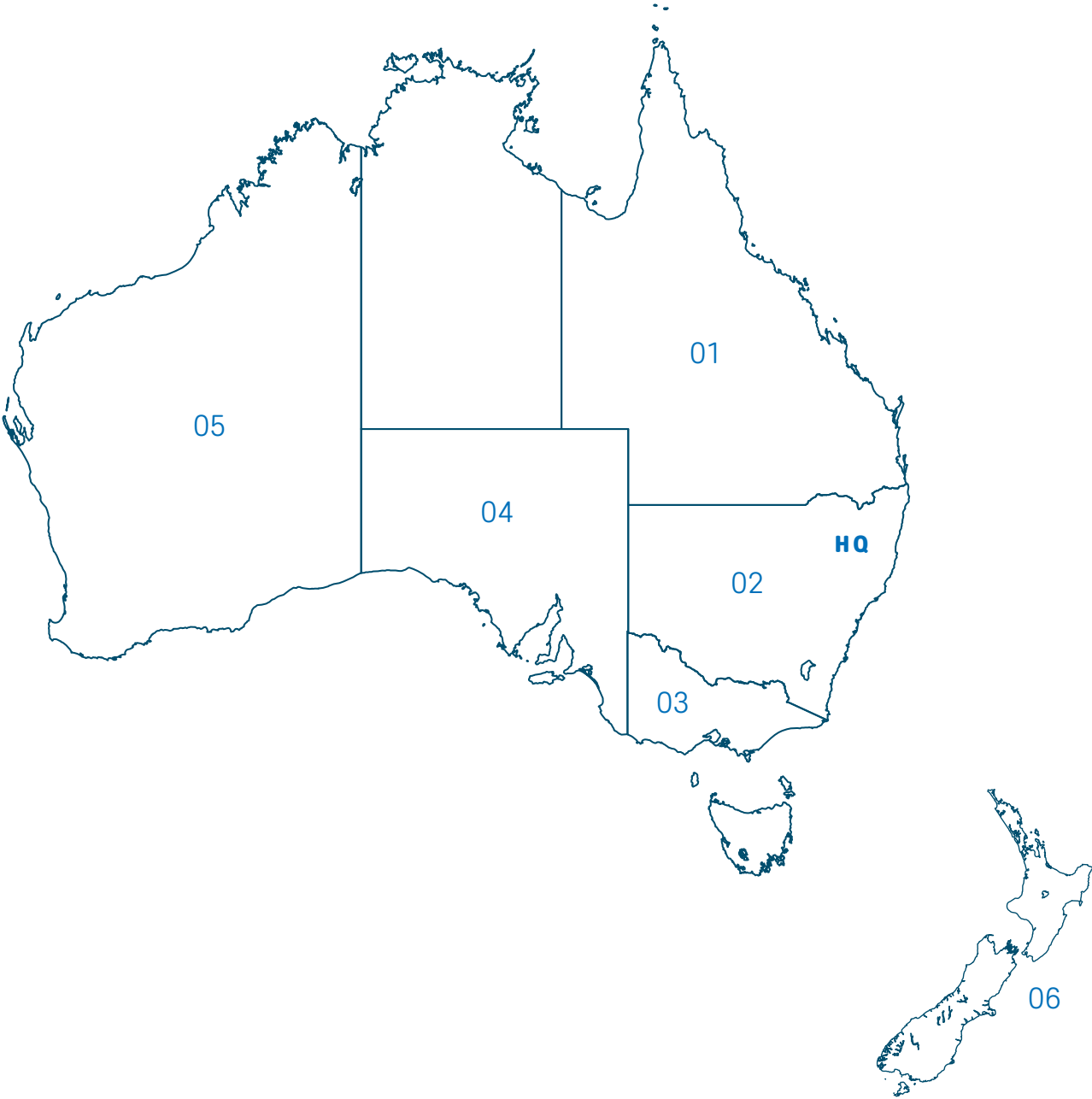
or 5,000 SCFH stand alone vaporizer.

**Patents:** 5,954,101 • 6,542,848 - Other Patents Pending DOT- Department of Transportation, 4L Code ASME- American Society of Mechanical Engineers, Section VIII, Division 1. Contact Factory for Canadian Approvals.

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







# WHERE YOU CAN FIND US

## AUSTRALIA BRANCHES

### HQ – HEAD OFFICE

**Yennora**  
66 Loftus Road  
Yennora NSW 2161 Australia  
PO Box 51  
Villawood NSW 2163 Australia  
Ph: 02 9794 2222  
Fax: 02 9794 2265

### 01 – QLD

**Brisbane**  
cnr Pradella St & Ipswich Rd  
Darra QLD 4076  
Ph: 07 3291 7111  
Fax: 07 3274 0079

**Gladstone**  
Lot 15 / 42 Bensted Street  
Callemondah QLD 4680  
Ph: 07 4839 5700  
Fax: 07 4972 9159

**Mackay**  
54-64 Dozer Drive  
Paget QLD 4740  
Ph: 07 4841 9500  
Fax: 07 4952 6406

### 02 – NSW

**Sydney**  
66 Loftus Rd  
Yennora NSW 2161  
Ph: 02 9794 2222  
Fax: 02 9794 2265

**Newcastle**  
6 Laurio Place  
Mayfield NSW 2304  
Ph: 02 4968 5111  
Fax: 02 4967 3533

**Wollongong**  
228 Berkeley Rd  
Unanderra NSW 2526  
Ph: 02 4271 5337  
Fax: 02 4271 3348

**Cryogenic Plant ASU 3**  
Bulk production facility within  
Bluescope Steel  
Port Kembla NSW 2505  
Ph: 02 4275 7260  
Fax: 02 4275 7289

### 03 – VIC

**Melbourne**  
3 Milne St  
Thomastown VIC 3074  
Ph: 03 9463 9111  
Fax: 03 9464 0079

### 04 – SA

**Adelaide**  
6 Jonal Drive  
Cavan SA 5094  
Ph: 08 8222 1111  
Fax: 08 8262 1104

### 05 – WA

**Perth**  
20 Marriott Road  
Jandakot WA 6164  
Ph: 1300 119 584  
Fax: 1300 119 764

## NEW ZEALAND BRANCHES

### 06 – NEW ZEALAND

**Auckland**  
141 Roscommon Road  
Manukau Auckland 2104  
Ph: +64 9 278 0145  
Fax: +64 9 278 5672

**Hamilton**  
12 Manchester Place  
Te Rapa Hamilton 3200  
Ph: +64 7 847 2202  
Fax: +64 7 847 0818

A branch is directly owned and staffed by Coregas. It is our local presence and the central point from which we fill and deliver cylinders to service centres, distributors and other customers. Each branch has its own sales team.

For a full list of Depot and Service Centres please visit us at **COREGAS.COM.AU**



Yennora  
66 Loftus Road  
Yennora NSW 2161 Australia  
PO Box 51  
Villawood NSW 2163 Australia  
Ph: 02 9794 2222  
Fax: 02 9794 2265  
[coregas.com.au](http://coregas.com.au)