



# **OMNI<sup>®</sup> Helium Compressors & Cryogenic Systems**

**The Solution for Maintaining and Upgrading  
Your Installed Base of Helium  
Compressors and Cryogenic Pumps**

**OMNI® Helium Compressors replace legacy compressors and drive Cryo-Torr®, On-Board®, Cryo-Plex®, and Marathon® cryogenic pumps on the same tool at the same time.**

OMNI® Helium Compressors replace your legacy compressors and give you the opportunity to back up and replace cryogenic pumps, one at a time, with superior performing products.

**OMNI® HELIUM COMPRESSORS:**

Run Standard and Auto Regen Pumps

Run 2-phase or 3-phase Pumps

Made in the USA

Serviced in the USA

Supported and Serviced Globally

**OMNI® HELIUM COMPRESSORS REPLACE THE FOLLOWING COMPRESSOR MODELS**

OMNI® 100WL	OMNI® 100AL	OMNI® 800WL	OMNI® 800AL	OMNI® 900WL	OMNI® 900AL	OMNI® 1000WL
Water Cooled	Air Cooled	Water Cooled	Air Cooled	Water Cooled	Air Cooled	Water Cooled
REPLACES 8200 SCW M250	REPLACES 8200 SCA M125	REPLACES 8200 M350	REPLACES 8200	REPLACES 9600 / 8600 / 8500 8510 / 1020 / M600	REPLACES 1020R M600	REPLACES 9700 M700

Cryo-Plex is a registered trademark of Trillium US Inc., On-Board and Cryo-Torr are registered trademarks of Edwards Vacuum Inc., and Marathon is a registered trademark of Sumitomo (SHI) Cryogenics of America, Inc.



## AN APPLICATION EXAMPLE

Gas	OEM "A" Process Pump
Speed (L/Sec)	
H <sub>2</sub> O	4,000
Air	1,500
H	2,200
AR	1,200
Capacity (Std L.)	
AR	1,000
H	8
Cooldown (Min)	
	110

Gas	OEM "B" Process Pump
Speed (L/Sec)	
H <sub>2</sub> O	4,200
Air	1,800
H	3,000
AR	1,500
Capacity (Std L.)	
AR	1,600
H	23
Cooldown (Min)	
	90

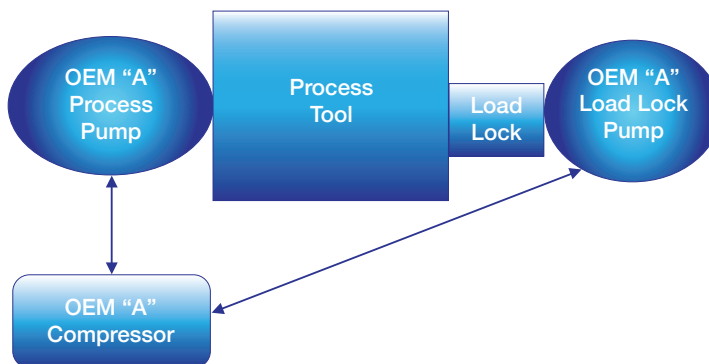
### THE PROBLEM:

#### Pre-OMNI®

- Cooldown Times are too long
- Pumping Speeds are too slow
- Limited Hydrogen and Argon Capacity requires frequent regens
- Legacy Compressor is at End of Life

### THE ISSUES:

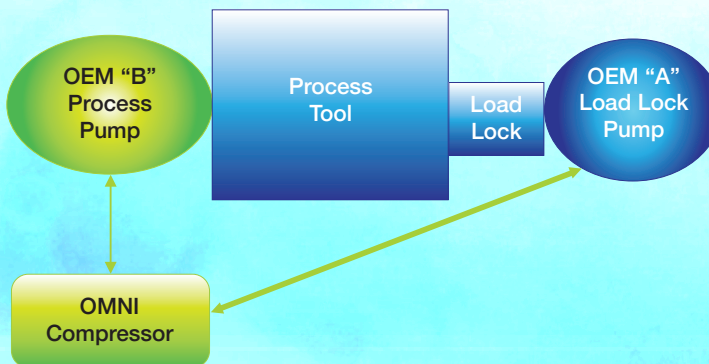
- OEM "A" does not have a higher performance pump that fits the tool
- OEM "B" DOES have a higher performance pump that fits the tool
- OEM "A" compressors cannot drive OEM "B" pumps due to different phasing and voltages



### THE SOLUTION:

#### Post-OMNI®

- The End User trades in the "A" compressor and "A" process pump and keeps the "A" load lock pump
- Cryopump "B" is installed to solve Cooldown, Pumping Speed and Carrying Capacity problems
- An OMNI® Compressor is installed and it drives cryopumps "A" and "B"
- The process now has faster cool downs, higher pumping speeds, larger carrying capacities, and a world-class new compressor



# OMNI® HELIUM COMPRESSORS

Replace your existing compressors and drive your existing cryopumps

Drive multiple cryogenic pumps, made by different manufacturers, at the same time, on the same tool

Drive Standard Pumps & Auto-Regen pumps at the same time

Drive 3-phase or 2-phase cryopump motors



## FEATURES and BENEFITS

- Water cooled and air cooled versions
- 2 year warranty
- Two oil separators plus an adsorber
- 30,000+ hour adsorber exchange (42 months running 24/7)
- Drive standard and auto regen pumps simultaneously
- Drive 3-phase or 2-phase cryopumps
- Very quiet smooth operation
- Simple controls and utility hook up
- Displays supply and return pressure
- Multiple service centers globally
- Small footprint vs. pumping capacity
- Simplicity of design provides for easy repair and maintenance
- Enables the selection and installation of Cryopumps based on their performance —not by their manufacturer

## MODELS AND CAPACITIES

CryoPump	OMNI® 1000 Water Cooled	OMNI® 900 Water & Air Cooled	OMNI® 800 Water & Air Cooled	OMNI® 100 Water & Air Cooled
OnBoard and Cryo-Torr 8, 8F	3-4	3	2	1
OnBoard and Cryo-Torr 250F	2-3	1-2	1	1
OnBoard and Cryo-Torr 10, 10F	2-3	1-2	1	NA
OnBoard and Cryo-Torr 400	2	1	1	NA
OnBoard and Cryo-Torr 500	1	1	NA	NA
Cryo-Torr 20HP	1	1	NA	NA
Marathon CP8	3	2	1	1
Marathon CP250	3	2	1	1
Marathon CP12	2	1	1	NA
Marathon CP16	2	1	NA	NA
Marathon CP-20	1	1	NA	NA
Cryo-Plex 8	3	3	2	1
Cryo-Plex 10	2-3	1-2	1	NA
Cryo-Plex 16	2	1	NA	NA

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# OMNI® HELIUM COMPRESSORS

**OMNI®-100AL**



Electrical Supply	Single Phase- 20 AMP 208-230 VAC/60Hz 220-240VAC/50hz
Power Consumption	2.25 kW at 50 Hz 2.60 kW at 60 Hz
Ambient Temp	4-40 °C (40-104 °F)
Cooling Air	20 m³/min. (706 cfm)
Dimensions (HxWxD)	876 x 443 x 453 mm (34.5 x 17.8 x 17.8 in.)
Weight	102 kg (225 lbs.)
Adsorber	30,000 hrs. (~ 42 mo.)

**OMNI®-100WL**



Electrical Supply	Single Phase- 20 AMP 208-230 VAC/60Hz 220-240VAC/50hz
Power Consumption	2.25 kW at 50 Hz 2.6 kW at 60 Hz
Ambient Temp	4-40°C: (40 -104F)
Dimensions (HxWxD)	617 x 443 x 453 mm (24.3 x 17.5 x 17.8 in.)
Weight	73 kg (160 lbs.)
Adsorber	30,000 hrs. (~ 42 mo.)

**OMNI®-800AL**



Electrical Supply	3 Phase- 25 AMP 200 V, 50/60 Hz
Power Consumption	3.6-3.8 kW at 50 Hz 4.6-4.8 kW at 60 Hz
Ambient Temp	4-38 °C (40-100 °F)
Dimensions (HxWxD)	888 x 442 x 512 mm (34.9 x 17.4 x 20.2 in.)
Weight	110 kg (242 lbs.)
Adsorber	30,000 hrs. (~ 42 mo.)

**OMNI®-800WL**



Electrical Supply	3 Phase- 25 AMP 200 V, 50/60 Hz
Power Consumption	3.6-3.8 kW at 50 Hz 4.6-4.8 kW at 60 Hz
Ambient Temp	4-40 °C (40-104 °F)
Dimensions (HxWxD)	532 x 443 x 493 mm (20.9 x 17.4 x 19.4 in.)
Weight	96 kg (212 lbs.)
Adsorber	30,000 hrs. (~ 42 mo.)

**OMNI®-900AL**



Indoor/Outdoor Unit

Electrical Supply	3 Phase- 30 AMP 200 V, 50/60 Hz
Power Consumption	6.6-6.9 kW at 50 Hz 7.5-7.8 kW at 60 Hz
Ambient Temp	-30 °C to 44 °C (-22 °F to 112 °F)
Dimensions (HxWxD)	Outdoor Unit (mm) 948 x 928 x 335 (inch) 36.5 x 37.4 x 13.5
Dimensions (HxWxD)	Indoor Unit (mm) 547 x 637 x 262 (inch) 21.6 x 10.4 x 25
Adsorber	30,000 hrs. (~ 42 mo.)

**OMNI®-900WL**



Electrical Supply	3 Phase- 30 AMP 200 V, 50/60 Hz
Power Consumption	6.6-6.9 kW at 50 Hz 7.5-7.8 kW at 60 Hz
Ambient Temp	4-40 °C (40-104 °F)
Dimensions (HxWxD)	532 x 443 x 493 mm (20.9 x 17.4 x 19.4 in.)
Weight	100 kg (225 lbs.)
Adsorber	30,000 hrs. (~ 42 mo.)



**OMNI®-1000WL**

Electrical Supply	3 Phase- 40 AMP 200-230VAC 50/60 Hz	Cooling Water (Inlet)	6-9 L/min. (1.6-2.4 gal./min.) 5-25 °C (41-77 °F)
Power Consumption	6.7-7.2 kW at 50Hz 7.5-8.5 kW at 60 Hz	Dimensions (HxWxD)	625 x 444.5 x 528.4 mm (24.6 x 17.5 x 20.8 in.)
Ambient Temp	4-40°C (40-104°F)	Adsorber	30,000 hrs. (~ 42 mo.)
Weight	101 kg (220 lbs)		



# MARATHON® CRYOGENIC PUMPS

**Made in the USA:** Marathon Cryopumps are manufactured by Sumitomo Corporation America, Inc. in Allentown, PA USA.

**Whisper™ Quiet Technology:** Provides quiet, low vibration, pneumatic operation combined with world-class performance and reliability. Global OEMs choose Marathon® for MRI helium re-liquefaction and the most demanding coating, flat panel and R&D applications.

**World Class Performance:** Industry leading carrying capacities extend Regen times. Very flat pumping speed curves between Regens maintain chamber performance and pressures.

**Versatile Application:** Marathon® Cryopumps are driven by OMNI® Helium Compressors. Pump models are available from 8 inches to 20 inches, with standard and auto-regen capabilities.

**Global Support:** Service, maintenance, parts and support are available through 7 locations globally.

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## A Marathon® Keeps You Running Longer



## MARATHON® CRYOPUMPS

### MARATHON® CP-8



#### Available Configurations

- ANSI 6", ISO 200 or CF 10" Flange Options
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® Technology

#### Performance Specifications

Air (liters/second)	1,500
Water (liters/second)	4,200
Argon (liters/second)	1,250
Hydrogen (liters/second)	2,300
Argon Throughput (liters/second)	11.0
Argon Capacity (standard liters)	1,200
Hydrogen Capacity (standard liters)	25
Crossover Rating (torr-liters)	220
Cooldown Time (minutes)	75
Weight (kg/lbs.)	16.8 (35)
Dimensions (mm/in.)	516 (20.3)

### MARATHON® CP-8LP



#### Available Configurations

- Standard Low Profile Design in Left or Right Hand Configurations
- ANSI 6", ISO 200 or CF 10" Flange Options
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® Technology

#### Performance Specifications

Air (liters/second)	1,800
Water (liters/second)	4,200
Argon (liters/second)	1,500
Hydrogen (liters/second)	3,000
Argon Throughput (liters/second)	11.0
Argon Capacity (standard liters)	1,600
Hydrogen Capacity (standard liters)	25
Crossover Rating (torr-liters)	220
Cooldown Time (minutes)	110
Weight (kg/lbs.)	17.9 (39.5)
Dimensions (mm/in.)	186 x 565 (7.3 x 22.3)

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## MARATHON® CRYOPUMPS

### MARATHON® CP-250LP



#### Available Configurations

- Standard Low Profile Design in Left or Right Hand Configurations
- ISO 250 Flange
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® Technology

#### Performance Specifications

Air (liters/second)	3,060
Water (liters/second)	6,300
Argon (liters/second)	2,500
Hydrogen (liters/second)	5,000
Argon Throughput (liters/second)	11.0
Argon Capacity (standard liters)	1,600
Hydrogen Capacity (standard liters)	30
Crossover Rating (torr-liters)	300
Cooldown Time (minutes)	110
Weight (kg/lbs.)	20 (44)
Dimensions (mm/in.)	181 x 591 (7.2 x 23.2)

### MARATHON® CP-12



#### Available Configurations

- ANSI 10", ISO 320 or CF 14" Flange Options
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® and Whisper® Technology

#### Performance Specifications

Air (liters/second)	3,600
Water (liters/second)	9,560
Argon (liters/second)	3,100
Hydrogen (liters/second)	7,300
Argon Throughput (liters/second)	12.6
Argon Capacity (standard liters)	2,000
Hydrogen Capacity (standard liters)	50
Crossover Rating (torr-liters)	650
Cooldown Time (minutes)	90
Weight (kg/lbs.)	41 (90)
Dimensions (mm/in.)	600 (23.5)

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## MARATHON® CRYOPUMPS

### MARATHON® CP-16



#### Available Configurations

- ISO 400 or CVC 10" or Wire Seal Flange Options
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® and Whisper® Technology

#### Performance Specifications

Air (liters/second)	4,800
Water (liters/second)	17,300
Argon (liters/second)	4,100
Hydrogen (liters/second)	12,000
Argon Throughput (liters/second)	11.4
Argon Capacity (standard liters)	5,500
Hydrogen Capacity (standard liters)	50
Crossover Rating (torr-liters)	500
Cooldown Time (minutes)	135
Weight (kg/lbs.)	50 (110)
Dimensions (mm/in.)	633 (24.9)

### MARATHON® CP-20



#### Available Configurations

- ISO 500 or ANSI 20" or Wire Seal Flange Options
- Standard Manual Operation
- Optional Fully-Automated Operation with Marathon® Cryopump Controller
- Displex® and Whisper® Technology

#### Performance Specifications

Air (liters/second)	9,700
Water (liters/second)	29,100
Argon (liters/second)	8,300
Hydrogen (liters/second)	14,000
Argon Throughput (liters/second)	11.3
Argon Capacity (standard liters)	6,000
Hydrogen Capacity (standard liters)	33
Crossover Rating (torr-liters)	400
Cooldown Time (minutes)	190
Weight (kg/lbs.)	77 (170)
Dimensions (mm/in.)	569 (22.4)

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## CRYOPUMP ACCESSORIES

### Auxillary Devices



HMI displays, Compressor and Pump remote Start/Stop Modules, and PTE Network Interface Modules are available to create the specific OMNI® cryogenic system required for your application.

### Temperature Indicators



Temperature Indicators, are designed to display and communicate cryopump temperatures. Single, dual, and four channel temperature indicators are available. All have alarm set points, RS-232 interface and analog output.

### Kashiyama NeoDry Pumps



Full line of dry screw vacuum pumps. Excellent for support of Semiconductor, High Tech Manufacturing, Space Simulation, Labs & Research, and Industrial Process. Global Support, Excellent Warranties.

### OMNI® PTE Module



The OMNI® PTE integrates Marathon® cryo pumps into a tool using a CTI® network controller and automates the operation of the Marathon® cryopumps on the tool. Auto-regen, monitoring and communication of critical functions improve process times and reduces downtime.

### Flexible & Superflex Gas Lines



Cryopumps come standard with flexible helium gas lines in lengths from 10 feet to 66 feet (20 meters). Superflex lines offer smaller bend radius without thinning the wall of the hose and a higher flexing cycle life than standard lines. Superflex lines dampen vibration and noise of the helium gas traveling through the lines.

### Cables



Standard manual systems include cables from our compressors to the cryopump cold head, with options to extend up to 66 feet (20 meters). For PTE systems, cables are included to power the cold head, automatic valves, blanket heater and vacuum and temp instrumentation. RS-232 cables connect between the PTE and the customer's host computer, PLC or PC.



# **SynSysCo REBUILDS HELIUM COMPRESSORS AND CRYOGENIC PUMPS**

## **Support and Maintain Legacy Cryogenic Equipment**

At SynSysCo we fully appreciate the value of an installed base of well-maintained legacy cryogenic equipment which is critical to production up-time and financial performance. We rebuild and sustain most manufacturers' makes and models of legacy cryogenic equipment.

## **Replace Legacy Cryogenic Equipment**

As we rebuild and sustain your existing cryogenic equipment, we can also replace end-of-life equipment with OMNI® Helium Compressors and Marathon® cryopumps in an incremental approach as determined by your operational needs.

## **Upgrade Equipment Incrementally**

Since the OMNI® Helium compressor can drive a mix of different manufacturer's pumps on the same tool at the same time, you can incrementally upgrade one compressor or one pump at a time. There is no need to replace a multiple cryo-pump set all at once with a new multiple cryo-pump set when you need to upgrade equipment.

## **Exceptional Warranties**

The OMNI® Helium Compressor line of equipment comes with a standard 2 year warranty and a scheduled 30,000 hour (42 month) Adsorber change.

## **Contact Us**

We will be happy to discuss the advantages of OMNI® Helium Compressors and the Marathon® equipment line.

**SynSysCo**  
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