



CRITICAL COMPONENTS  
GROUP

# CTI-Cryogenics® Turbo Plus® Vacuum Pumps

VACUUM PRODUCTS

TurboPlus Vacuum Pumps offer the process advantages of throughput pumping and the uptime benefits of high speed water vapor pumping, integrated into a compact package with a single, easy to use interface.

## Benefits

- Throughput Pumping with High Water Speed
- Faster Pumpdowns
- Reduced Base Pressure
- Low Profile Configuration
- Maintenance-free Hybrid Turbopump
- Mounts in any Orientation
- Simple Interface for Integrated Operation:
  - Preprogrammed Startup and Shutdown Routines
  - Safe, Automatic Power Failure Recovery
  - On-Board Platform for Control, Communications and Diagnostics
  - Easy Integration into On-Board Vacuum Network
  - Monitors System Status and Pump Parameters
- Backed by GUTS® (Guaranteed Uptime Support)

## *Increases Process Uptime*

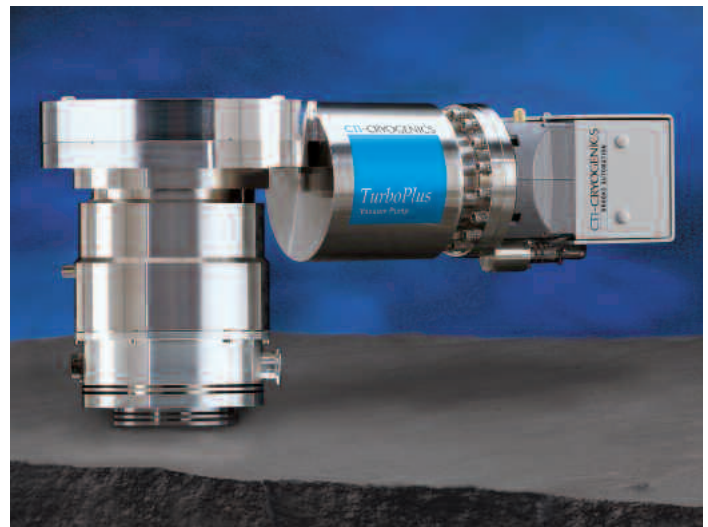
TurboPlus pumps feature high water vapor pumping speed, a 5X increase over that achieved by a standalone turbopump, to reduce pumpdown times by 50 to 70% and gain hours of valuable process time. Higher water vapor pumping speed also results in lower base pressures, ensuring cleaner vacuum and more consistent processes.

## *Compact, Low Profile Package*

The integrated pumping stack is optimized to reduce footprint and maximize flexibility. The TurboPlus vacuum pump can be mounted in any orientation. The TurboPlus pump has high inlet speed and can exhaust to pressures up to 5 Torr, allowing the use of smaller forepumps. TurboPlus Vacuum Pumps, along with other CTI-Cryogenics high vacuum pumps, can be operated simultaneously from existing CTI-Cryogenics helium compressors. This assures cost effective retrofits and low cost of ownership. This simple, compact package is ideal for turbopumped applications such as loadlocks, transfer module or process chambers where fast pumpdowns and low water vapor backgrounds are required.

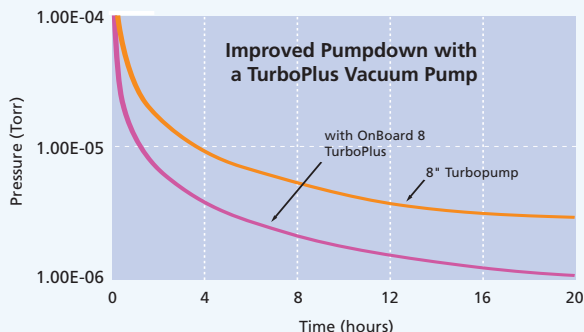
## *Single Interface for Control, Communications and Diagnostics*

The On-Board module provides communication and coordinates all TurboPlus vacuum pump functions. On-Board routines provide safe, automatic start-up, shutdown, regeneration and power failure recovery. Options include local and remote keypad control, or full integration into the On-Board vacuum network.



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*TurboPlus Performance Data*



TurboPlus Model	Flange Type	Water Pumping Speed	Available Air Speed (Throughput*)
On-Board 6 TurboPlus	ISO 160 or 8" O.D. Metal Seal	2200 l/s	340 l/sec (150 sccm)
On-Board 8 TurboPlus	10" O.D. Metal Seal	4000 l/s	480 l/sec (190 sccm) 700 l/sec (270 sccm)

\*For argon at 5 mTorr inlet pressure.  
Throughput will vary with inlet pressure, system conductance and forepump size.

*On-Board Capabilities*

**Ease of use** - Comprehensive monitoring and control is easy, from a keypad mounted on the pump or on an accessory rack or a Network Interface Terminal.

**Consistent vacuum, with process monitoring and control** - Continuous, real-time monitoring and control of critical parameters give stable base pressures, and provide data readout for correlation with process lots. Programmable alarms allow you to respond quickly to any unexpected process variations.

**More efficient process operations** - The On-Board platform networks all types of On-Board pumps, allowing uniform, centralized monitoring, control, and maintenance of all pumps on a process tool or area.

*Backed by GUTS®*

All CTI-Cryogenics products, are backed by GUTS (Guaranteed Uptime Support) rapid response network, our unique, comprehensive global customer support program. When you call a GUTS service center, you are guaranteed immediate, competent response and action by a cryogenic expert from our worldwide technical support staff. We're at work for you 24 hours a day, 365 days a year. 1-800-FOR-GUTS (800-367-4887).

*For more information, please contact your local Brooks Automation sales representative or visit [www.brooks.com](http://www.brooks.com).*

