



CRITICAL COMPONENTS  
GROUP

# CTI-Cryogenics® On-Board® IS 250F and On-Board IS 320F Cryopumps

VACUUM PRODUCTS

The harsh environment of Ion Implant processes requires consistent vacuum pumping that maximizes tool availability and product yield.

Brooks On-Board IS 250F and On-Board IS 320F cryopump systems utilize intelligent system controls to deliver better process quality, vacuum consistency and up time. Intelligent system controls allow for 'real time' system knowledge for managing motor speed and cryogenic temperature. The On-Board IS system automatically adjusts for changing heat/gas loading conditions resulting in enhanced vacuum consistency and improved inter-wafer recovery time. In addition, On-Board IS cryopumps adjust for accumulation of process-related coatings with no compromise in reliability and productivity.

The On-Board IS system ensures full use of system level helium resources for any operational condition. This results in a substantial reduction in cost of ownership due to continuous optimization of helium allocation per pump, thus increasing the pump-to-compressor ratio. With On-Board IS cryopump systems, lower power and cooling water consumption can be achieved.

On-Board IS cryopumps for Implant include proprietary regeneration sequences that make regeneration time faster and allows for longer run times between regeneration. The very nature of this regeneration program considerably reduces the impact of ion implant residuals in the pump, providing longer pump life. The "IntelliPurge" power management routine reduces unexpected pump regeneration due to a short-term power failure, while ensuring safety should power remain off for an extended period of time.

To reduce system cost and increase simplicity, On-Board IS cryopump system includes an integrated TC gauge and controls for a gate valve, eliminating the need for additional controllers. In addition, integrated rough, purge, vent valves and controls are included, increasing serviceability and system reliability.

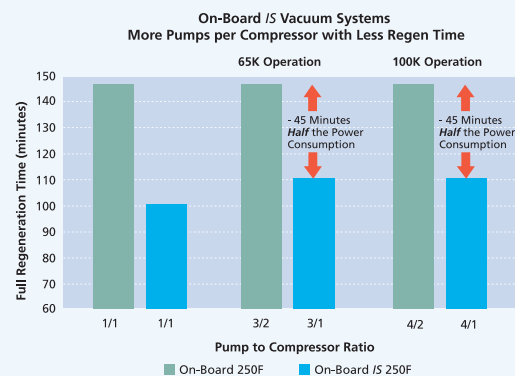
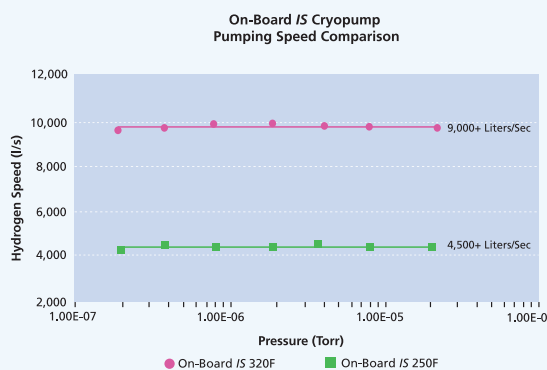
## Benefits

- Specifically Designed for Ion Implant Applications
- Intelligent "Self Adjusting" Technology:
  - Automatic Cryogenic
  - Heat Load Compensation
  - Variable Speed Motor and Control System with Reduced Vibration
- Lower Cost of Ownership:
  - More Pumps per Compressor
  - Energy Savings with No Compromise in Productivity
  - Variable Speed Motor Maximizes Pump Operational Life
- Increased Up-Time
  - IntelliPurge Power Failure Pump Management
  - Integrated Brooks GoldLink® Connection
- Backed by GUTS® (Guaranteed Uptime Support)



CTI Cryogenics® On-Board® IS Cryopump

*On-Board  
IS 250F and  
IS 320F  
Performance*



	On-Board IS 250F	On-Board IS 320F
<b>Gas Pumping Speeds</b>		
Water	6,500 L/Sec	11,000 L/Sec
Air	2,200 L/Sec	3,300 L/Sec
Hydrogen	4,500 L/Sec	9,000 L/Sec
Argon	1,800 L/Sec	2,700 L/Sec
<b>Gas Capacities</b>		
Hydrogen	24 L	30 L
Crossover	150 Torr-L	300 Torr-L
<b>Typical Regeneration Times (includes 20 min. extended purge time)</b>		
Full (First and Second Stage)	115 Minutes	150 Minutes
FastRegen™ (Second Stage Only)	50 Minutes	75 Minutes
<b>Vacuum Flange Inner Diameter</b>	10 inches (250 mm)	12.6 inches (320 mm)

*Physical Features*

*Features for  
On-Board IS 250F  
and IS 320F*

**Integrated Controls**

- Pump-mounted, Field-replaceable Module
- Motor Drive Electronics
- Host Computer Interface (RS-232C, DB-9 Connector)
- First Stage Temperature Control
- Helium Management
- Service Communications Port
- Remote Display Option (USB connector)
- Support for Brooks Inter-component Network

**Integrated Accessories**

- First and Second Stage Temperature Sensors
- First and Second Stage Heaters
- Purge Valve
- Roughing Valve
- Vacuum (T<sub>C</sub>) Gauge
- Pressure Relief Valve
- Exhaust Purge Valve
- IntelliPurge System

Pump Motor	Variable Speed (low vibration, 3-Phase)
Power Source	Direct 220 VAC (1φ @ 5A) power connection to On-Board IS Cryopump
Compatible Compressors	On-Board IS 1000

*Brooks Global Customer Support*

All CTI-Cryogenics products are supported by a panel of services which includes:

- GUTS® (Guaranteed Uptime Support), our rapid response network delivers fast, competent action whenever you need a part, a pump or service. You deal directly with a vacuum expert from our worldwide technical support team. GUTS works for you 24 hours a day, 365 days a year. Call 1-800-FOR-GUTS (800-367-4887).
- e-JIT powered by GOLDLink®, our Global On-Line Remote Diagnostics Tool, enables predictive maintenance-based Repair Scheduling.
- Performance Upgrades provides tailored system upgrades to maximize efficiency and performance.
- TrueBlue<sup>SM</sup> Service Agreements, custom-tailored to your company's requirements, help you maximize efficiency enterprise-wide, reducing your total cost of ownership while optimizing return on investment.

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

