

CTI-CRYOGENICS® ON-BOARD® /S 320FX CRYOPUMP (30L & 40L CAPACITY)

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The On-Board® /S 320FX Cryopump, developed specifically to address the challenges of today's ion implant processes, provides enhanced hydrogen pumping speed and capacity while maintaining all the quality, performance and reliability benefits you've come to expect from the On-Board® /S 320FE cryopump.

The On-Board® /S 320FX cryopump is designed to deliver the highest hydrogen vacuum pumping speed and capacity possible for improved product yield and tool throughput. Building upon Edwards' extensive cryogenic pump design expertise, this cryopump outperforms all other comparably sized pumps while meeting rigorous safety guidelines.

Intelligent system controls deliver better process quality, vacuum consistency and uptime, while providing real-time system knowledge for optimised motor speed and cryogenic temperature. Automatic adjustment for changing heat/gas loading conditions enhances vacuum consistency and improves inter-wafer recovery time. The On-Board® /S 320FX also adjusts for accumulation of process-related coatings without compromising reliability or productivity.

The On-Board® /S system ensures full use of system-level helium resources for any operational condition. A patented control system continuously regulates the helium allocation per pump thereby, increasing the pump-to-compressor ratio for reduced cost of ownership. In addition, On-Board /S cryopump systems reduce power and cooling water consumption.

Our state-of-the-art cryogenic array design with higher capacity brings about longer run times between regenerations, and reduces the impact of ion implant residuals for longer pump life. The IntelliPurge power management reduces unexpected pump regeneration due to short-term power failure, and ensures safety during an extended power outage. Proprietary regeneration sequences shorten regeneration time and ensure consistency in the performance of the pump after regenerations.

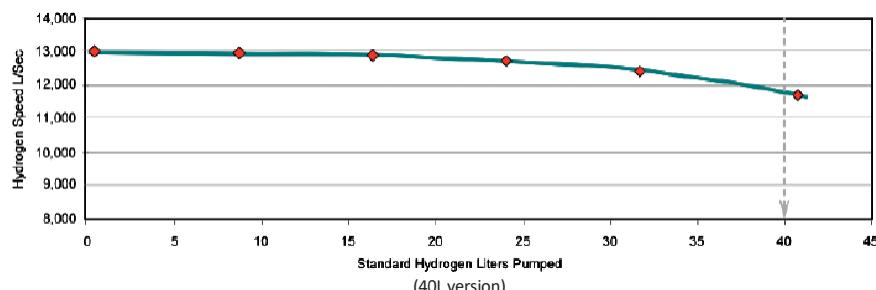
An integrated TC gauge and gate valve interlock eliminates the need for additional controllers, while integrated rough, purge, vent valves and controls simplify installation and improve system reliability.



Features and Benefits

- Specifically designed for ion implant applications
- Optimised for tool throughput
 - 33% increased hydrogen capacity
 - 10% increase in hydrogen pumping speed
 - Meets existing safety guidelines
- 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 for maximising pump operational life
- Increased uptime
 - IntelliPurge power failure pump management

Maximum Vacuum Performance Between Regenerations



Performance Specifications

On-Board® IS 320FX	
Gas Pumping Speeds*	
Water	11,000 L/Sec
Air	3,600 L/Sec
Hydrogen	12,500 L/Sec (30L) 13,000 L/Sec (40L)
Argon	3,000 L/Sec
Gas Capacities	
Hydrogen	30L /40L
Crossover	300 Torr-L
Typical Regeneration Times (includes 20 min. extended purge time)	
Full (First and Second Stage)	150 Minutes
FastRegen™ (Second Stage only)	75 Minutes

Physical Features

ISO Vacuum Flange Inner Diameter	12.6 inches (320 mm)
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* Measurements per: "Recommended practices for measuring the performance and characteristics of closed-loop gaseous helium cryopumps." (J. Vac Technol. A 17(5), Sep/Oct 1999)

Features

Integrated Controls

Pump-mounted, Field-replaceable Module
Motor Drive Electronics
Host Communication Interface (RS-232C, DB-9 Connector)
First Stage Temperature Control
Helium Management
Service Communications Port
Remote Display Option
Gate Valve Control

Integrated Accessories

First and Second Stage Temperature Sensors
First and Second Stage Heaters
Purge Valve
Roughing Valve
Vacuum (TC) Gauge
Pressure Relief Valve
Exhaust Purge Valve
IntelliPurge System

Pump Motor

Variable Speed (3Ø, Low Vibration)

Power

200/230 VAC 50/60 Hz 1Ø, (5A)

Compatible Compressors

On-Board® IS-2000V, On-Board® IS-1000

Edwards continually updates its products to match the evolving needs of the semiconductor industry and any specifications given here are subject to change without notice.



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