

EDWARDS CTI ON-BOARD® IS 250FE AND IS 250FX CRYOPUMPS

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The harsh environment of ion implant processes requires consistent vacuum pumping that maximises tool availability and product yield.

Hydrogen gas is one of the principal by products of the ion implantation process and can cause detrimental effects on both product yield and tool throughput. The On-Board® IS 250FE and On-Board® IS 250FX cryopump systems are designed to deliver the highest hydrogen vacuum pumping speed possible, thus opposing the possible impact on tool throughput. Our breakthrough technology uses Edwards' extensive cryogenic pump design capability, enabling these cryopumps to outperform all other comparably sized pumps and still meet our rigorous safety guidelines.

Edwards' On-Board® IS 250FE and On-Board® IS 250FX cryopump systems use intelligent system controls to deliver better process quality, vacuum consistency and uptime. 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 optimisation of helium allocation per pump, thus increasing the pump-to-compressor ratio. Lower power and cooling water consumption can be achieved with our On-Board® IS cryopump systems.

On-Board® IS cryopumps for implant include proprietary regeneration sequences that optimize regeneration time and allow longer run times between regeneration. The very nature of this regeneration programme 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 short-term power failure, while ensuring safety should power remain off for an extended period of time.

To reduce system cost and increase ease of use the On-Board® IS cryopump system includes an integrated TC gauge and controller 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.



Features and benefits

- Specifically designed for ion implant applications
- Optimised for tool throughput
 - improved 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 maximises pump operational life
- Increased uptime
 - IntelliPurge power failure pump management

Physical Features

	On-Board® IS 250FE	On-Board® IS 250FX
Gas Pumping Speeds		
Water	6,500 L/Sec	6,500 L/Sec
Air	2,200 L/Sec	2,200 L/Sec
Hydrogen	7,000 L/Sec	7,400 L/Sec
Argon	1,800 L/Sec	1,800 L/Sec
Gas Capacities		
Hydrogen	24 L	32 L
Crossover	150 Torr-L	150 Torr-L
Typical Regeneration Times (includes 20 min. extended purge time)		
Full (First and Second Stage)	115 Minutes	115 Minutes
FastRegen (Second Stage only)	50 Minutes	50 Minutes
Vacuum Flange Inner Diameter	10 inches (250 mm)	10 inches (250 mm)

**Features for On-Board®
IS 250FE and IS 250FX**

Integrated Controls	Integrated Accessories
Pump-mounted, Field-replaceable Module	First and Second Stage Temperature Sensors
Motor Drive Electronics	First and Second Stage Heaters
Host Computer Interface (RS-232C, DB-9 Connector)	Purge Valve
First Stage Temperature Control	Roughing Valve
Helium Management	Vacuum (TC) Gauge
Service Communications Port	Pressure Relief Valve
Remote Display Option (USB connector)	Exhaust Purge Valve
	IntelliPurge System

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.

GLOBAL CONTACTS

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