



certified vacuum pump and blower repair

Cryo Pumps

WARRANTY: FMG Certified™ Cryogenic Pumps have a two-year non-process related warranty – contingent upon performing all recommended Maintenance procedures – that covers 18 months operational use, plus up to six (6) months of storage prior to operational use.



For applications, process, maintenance engineers, and scientists who depend on Cryogenic vacuum pumps and compressors for fast, contamination-free, ultra-high vacuum – in fields such as vacuum coating, semiconductor production, particle accelerators, sputter deposition systems and Molecular Beam Epitaxy – the FMG Certified™ Rebuilt Cryogenic Pumps provide a far more cost-effective alternative than expensive new OEM Cryo Pumps.

Unlike OEM, and other secondary pump rebuilders, our rebuilt Cryogenic pumps are FMG Certified™ to incorporate the most rigorous standards for evaluation, rebuild and testing, and incorporate the highest quality OEM, equivalent, or better parts.

OVERVIEW

High pump speed, clean vacuum environment, and life-cycle cost advantages make cryogenic pumps the leading choice in many vacuum processes – including industrial cooling applications such as low temperature physics and superconductivity. As a result, FMG has rebuilt Cryo pumps from virtually all major manufacturers to OEM or better specifications, performance and reliability.

The keys to FMG's reputation for reliability and quality: vertical integration, technician training, and knowledge of all aspects of Cryo pumps and compressors. For example, FMG can offer enhanced condensing arrays and upgrade older pumps to diodes instead of vapor bulbs.

PROCEDURES

All FMG Certified™ Cryo Pumps are isolated from other pump rebuild departments to ensure a contaminate-free pump.

- 1. Incoming Inspection:** Factory-trained technicians disassemble the Cryo pump with special FMG or OEM tooling, and measure parts to FMG's Certified Pump tolerances (OEM specs – or better). Special attention is given to the motor shaft, drive unit and vessel side.
- 2. Decontamination:** Custom FMG Roto-Jet sprays, plastic media blasts, and vapor degreasers remove process from parts.
- 3. Failure Analysis:** Digital pictures of parts and technician observations are entered into the repairs database for review and reporting.
- 4. Assembly:** Replace Indium gasket kit, condensing arrays, radiation shield, all elastomers, and all components subject to wear – including bushings, bearings, displacer and Kap seals. Repair or replace if needed: Silicon Diode and Hydrogen Vapor bulb temperature indicator, Scotch yoke, valves, valve stems, rocker arms, crankshaft, motor shaft, etc. Replace only if needed (at additional cost): Electric drive motors, displacer regenerators. Set valve timing and test inlet valve for fit. Decon and recharge cold head with helium.
- 5. Final Inspection and Test:** Leak check via helium mass spectrometer and sniffer probe. Perform "cool-down" test to verify conformance to OEM specs. 36-hour burn-in test to ensure performance.

A complete Service Report including performance data is produced and digitally saved prior to pump shipments — which are palletized after foam packaging.

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