



**CERTIFIED VACUUM PUMP
SALES AND SERVICE**

CRYO PUMP REMANUFACTURING

FMG Certified™ Remanufactured Cryogenic Pumps provide a **more cost-effective solution** than purchasing expensive new OEM Cryo Pumps. Applications, process and maintenance engineers and scientists depend on FMG for reliably rebuilt Cryogenic Vacuum Pumps for fast, contamination-free, ultra-high vacuum pumps (in applications such as vacuum coating, semiconductor production, particle accelerators, sputter deposition systems and Molecular Beam Epitaxy). 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.

Using our factory-trained, highly experienced technicians, FMG rebuilds Cryogenic Pumps from most major manufacturers up to "OEM or better" specifications, performance and reliability. With over 100,000 remanufactured pumps since 1985, FMG is a leader in vacuum pump service. FMG Certified™ Rebuilt Cryogenic Pumps adhere to the most rigorous standards for evaluation, remanufacturing, and testing. FMG uses the highest quality OEM-equivalent or superior parts. Plus, FMG Certified™ means your rebuilt pump comes with an FMG warranty.

Unlike OEMs who are locked into using corporate parts, FMG has choices. We can and do select the best parts to fit your application and to ensure maximum reliability. Unlike other secondary pump rebuilders, FMG replaces everything to like-new condition.

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



PROCEDURES

Cryogenic pumps are isolated from other pump rebuild departments to ensure a contaminate-free pump.

- 1. Disassembly:** Prior to disassembly, pumps are photographed to ensure same configuration upon rebuild. Pumps undergo a complete teardown and written evaluation. Parts are evaluated and later reset to original OEM specifications.
- 2. Cleaning:** Parts are cleaned with a proprietary solution, dried, blasted with plastic media to prevent metal removal, and aqua-blasted to remove any non-visible contaminants. Ultrasonic vapor degreaser removes process from parts. Cleaning system eliminates cross contamination.
- 3. Inspection:** All critical parts are inspected. Photos of parts and technician observations are entered into the repairs database for review and reporting.
- 4. Electrical:** Electrical system checked and repaired. Motors inspected for bearing condition. All bearings replaced, along with other parts as needed. Motors repaired and degaussed, as needed.
- 5. Assembly:** Replace Indium gasket kit, condensing arrays, radiation shield, all elastomers, plus 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 if needed at additional cost: Electric drive motors, displacer regenerators. Set valve timing and test inlet valve for fit. Decontaminate and recharge cold head with helium.
- 6. Painting:** At our "Bay Area Air Quality Permitted" In-House Spray Booth, pumps are painted with low VOC paint to ensure that volatile organic compounds are out-gassed in FMG's facility, not in the customer's facility. We use standard OEM colors. On request, special colors used to indicate corrosive, non-corrosive, Fomblin, etc.
- 7. Testing:** Testing follows AVS standards and occurs at various points in the rebuild process. Helium mass spectrometer and sniffer probe used to check for leaks. Perform "cool-down" test to verify conformance to OEM specs. 36-hour burn-in test to ensure performance. Upon successful test, pump is tagged as FMG Certified™.
- 8. Shipping:** System is "bagged", dust-barrier wrapped and palletized for shipping. Service Report is produced and shipped with the product. Performance data includes voltage readout information; helium leak points and repairs.



WARRANTY

1 Year

Damage due to process-related failure or improper maintenance not covered by warranty.

TURN-AROUND TIME

- Emergency: 48 hours
- Pump Exchange: 2-3 working days, if pump is in stock
- Rush: 5 working days
- Standard: 20 working days



Visit our site

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 **FMG**

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