

2-Stroke Engine Parts Reconditioning



Al Technology Breakthrough: Breakthrough: KIMI Upgrades Market's Standards

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KIMI



The combination of our technical expertise with our machinery infrastructure and inhouse metallurgical laboratory, forms a solid unit that can support full reconditioning, no matter what the extent of damage is, fast and reliably.

KIMI leads the way in the development of cost effective yet highest quality reconditioning methods for 2-Stroke engine parts of diesel engines by integrating AI powered robotics and offering unique rebuilding solutions for piston crowns, exhaust valves, seats, cylinder covers and piston rods of all types and makers including MAN, SULZER and MITSUBISHI.





Artificial Intelligence (AI) technology into 2-Stroke engine parts reconditioning, offering a significant leap forward in terms of quality, durability, and cost effectiveness.

Our investment in multiple AI powered robotics combines the use of machine learning with real-time sensors to optimize the welding and machining procedures for critical 2-Stroke engine parts (piston crowns, exhaust valve spindles, seats).

KIMI advanced rebuilding services upgrade quality and cost market standards and yield benefits which were unreachable until today with every traditional reconditioning method.

KEY BENEFITS:

- Benefit from reduced maintenance cost with our streamlined rebuilding solutions (no human interference)
- Ensure spare parts reliability and enhanced performance with our AI powered robotics:
- i. Fine-tuned welding parameters and consistent quality welds every single time
- ii. Maximum penetration
- iii. No thermal stresses
- iv. 100% material adaptive process considering inherent base material flaws

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• Minimize downtime with 24/7/365 Al robotic operation

Piston Crown



We do not just recondition, we fully rebuild piston crown.

We offer an end-to-end seamless rebuilding procedure for piston crowns that involves 3D-scanning evaluation, AI powered welding robotics and latest technology CNC machines. Piston ring grooves are completely removed and re-built from scratch.

KIMI's cutting edge In-house chrome plating infrastructure guarantees both full compliance with Maker's specifications and increased durability. Grooves are grinded on each side and maximum grinding parallelism deviation is 0.01mm while the net chrome plating thickness is 0.50 mm on each piston groove side.

Our rebuilding service for piston crowns ensures full restoration of the pistons' service life. Full warranty of 20.000 running hours is offered for piston crowns rebuilding service.

Exhaust Valve Spindle & Seat





Failing to identify the exact material composition or applying inadequate welding procedure can lead to valve spindle failure during engine operation.



Our streamlined reconditioning procedure for exhaust valve spindles includes careful identification of the material composition and metallurgical examination, geometry evaluation through 3d scanning, CNC machining, AI welding robots, and quality checks by Level II PCN certified personnel prior to, during and after every production phase.

KIMI offers a highly adaptable reconditioning service for valves of all material types and specifications -Duraspindle, Nimonic, Stellite. Our rebuilding service for exhaust valve spindles ensures that reconditioned spare, both metallurgically and dimensionally, is equivalent to a new valve. The exhaust valve seat is fully rebuilt following the same procedure.

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Cylinder Cover



KIMI reconditioning service is designed to restore 2-Stroke cylinder covers of B&W, Sulzer, Mitsubishi engines back to their original dimensions and tolerances. During the inspection of the cylinder cover, proper application of non-destructive testing (NDT) is critical to detect cracks and defects.

When it comes to heavily damaged cylinder covers, KIMI offers a full rebuilding service of the combustion surface, not only a partial reconditioning. Welding and stress relieving is carried out under precise controlled conditions. Combustion's face, landing faces and O-ring grooves are machined on vertical CNC turning table to the original dimensions as specified by the Maker. Finally, the covers are pressure tested, dye checked and visually inspected by certified personnel.



For piston rods, two critical factors determine resistance to wear after reconditioning: surface hardness and roughness. In addition to the commonly used submerged arc welding method, KIMI applies the laser cladding technique as a premium repair option that obtains high surface hardness and ensures a long lifespan of the reconditioned piston rod.

In every case initially, piston rod is subjected to inspection- dimensional measurement, chemical analysis, hardness test and NDT by PCN II certified personnel.



ALL CALLER OF



Why KIMI 2-Stroke Parts Rebuilding Services?



- **Cost- effective rebuilding services** beyond compare with our AI technology
- Quality and performance equal to new Our stringent quality checks, conducted by Level II PCN certified personnel and metallurgists, ensure metallurgical excellence.
- **Reduced downtime** with 24/7/365 AI robotic operation
- In house quality laboratory accredited by ESYD Ultrasonic, dimensional tests, chemical analyses, hardness certificates are issued in accordance with ISO 17025 & ISO 9001 certified quality systems
- Enhanced traceability with KIMI logo and order number stamp on spares for easy tracking





SCAN ME



KIMI is an independent service organization that offers premium repair solutions for marine and power equipment. The company was established in 1984 and has since then evolved to a one-stop shop with a wide service portfolio.



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