

Reinventing Precision: ARK MachTek's CNC Upgradation & Mechanical Reconditioning of Gear Grinding Machines

- By ARK MachTek Pvt. Ltd.

"At ARK MachTek, our gear grinding machine upgradation program delivers the performance of a new machine – at significantly lower investment."

A Legacy of Precision and Innovation

For over 25 years, ARK MachTek Pvt. Ltd. has been synonymous with engineering excellence in gear processing automation. Founded with a vision to modernise India's gear manufacturing landscape, the company has successfully reconditioned and upgraded

as a one-stop partner for the complete spectrum of gear processing equipment—from hobbing and shaping to the most advanced finishing stage: grinding.

Additionally, ARK MachTek is capable and offering gear tooth profile grinding upgradation, and worm thread grinding machine upgradation.

Why Gear Grinding Matters More Than Ever

The demand for precision gear grinding has accelerated rapidly across industries. In the automotive



hundreds of gear hobbing, shaping, and shaving machines—each tailored with Fanuc CNC systems to meet the diverse specifications of its customers.

As one of India's most experienced automation specialists, ARK MachTek continues to evolve with market needs, integrating new technologies and sustainable engineering practices into its solutions.

Expanding Horizons: Introducing Gear Grinding Machine Reconditioning

In 2025, as the company celebrates its silver jubilee, ARK MachTek proudly adds Gear Grinding machines to its product portfolio. This strategic expansion follows extensive in-house R&D and successful pilot projects in the retrofitting and mechanical rebuilding of gear grinding machines, reaffirming ARK's commitment to delivering cost-effective, high-precision manufacturing solutions.

This move strengthens ARK MachTek's position

sector, especially with the rise of electric vehicles, stringent noise, efficiency, and surface finish requirements make gear grinding indispensable. Beyond automotive, aerospace, robotics, wind energy, and industrial automation are also driving the need for superior gear finishing technologies.

However, the capital cost of new gear grinding machines—often exceeding several crores—can be prohibitive. For many manufacturers, particularly MSMEs and Tier-2 suppliers, this presents a significant barrier to competitiveness.

ARK MachTek bridges this gap by offering CNC retro-fitment and mechanical reconditioning—transforming conventional gear grinders into state-of-the-art, high-productivity generating gear grinding machines, at a fraction of the cost of new equipment.

Engineering the Upgrade: From Legacy to Modern Precision

Each reconditioned gear grinding machine is equipped with a FANUC CNC Controller, featuring up to 13-axis control for enhanced precision and process flexibility:

- Rotary Axes: A (swivelling), B (grinding wheel), and C (workpiece)
- Linear Axes: X (grinding slide infeed), Y (Grinding Wheel shifting), Z (work slide stroke)
- Profiling Axes: U and V (infeed and stroke)
- Auxiliary Axes: W (tailstock sleeve), P (coolant nozzle positioning), and dedicated dresser control axes

This advanced configuration allows ARK's rebuilt machines to deliver cutting speeds up to 63 m/s, with customizable performance tailored to customer needs.

Precision Meets Productivity

Reconditioned gear grinders from ARK MachTek incorporate a host of enhanced automation and control features designed for reliability, accuracy, and user-friendliness:

- Automatic dynamic wheel balancing and process monitoring
- Integrated 3,500 rpm grinding wheel spindle motor
- High-torque rotary table drive (up to 400 rpm)
- Variable-speed single disc dresser and OD dresser
- Manual and automatic dressing touch points
- Automatic stock dividing
- User-friendly, menu-driven CNC screens for simplified operation
- Automatic wheel shifting and multi-thread dressing cycles
- Total machine enclosure and guarding
- Automatic axis retraction in emergencies
- Overload protection for grinding and dressing tools
- Hydraulic work-holding actuation
- High-pressure coolant filtration system

"Our reconditioned machines deliver consistent accuracy, improved uptime, and exceptional safety – meeting the precision benchmarks of brand-new machines."

Performance You Can Trust

Each ARK MachTek rebuild undergoes comprehensive testing and calibration, ensuring gear quality that meets international standards. The company's process supports profile and lead corrections for spur and helical gears, taper and crowning cycles, and even point-to-point grinding for complex lead graphs.

With these capabilities, ARK's machines deliver the precision required for automotive transmission gears, EV drivetrains, aerospace actuators, and high-speed industrial gearboxes.

Empowering Indian Manufacturing

By providing cost-effective, high-performance reconditioning solutions, ARK MachTek empowers Indian manufacturers to compete globally—without the financial burden of new capital investment. The company's expertise in automation, motion control, and mechanical engineering ensures every retrofit delivers long-term reliability and measurable ROI.

"Our mission is to modernise legacy machines into intelligent, high-productivity systems – supporting the growth of India's manufacturing ecosystem."

Looking Ahead

As ARK MachTek continues to advance its reconditioning technologies, the company remains committed to innovation, sustainability, and customer partnership. Its successful entry into gear grinding marks a major leap toward becoming India's leading provider of complete gear manufacturing automation solutions.

For more information, visit www.arkmpl.com



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Established in 2000, ARK MachTek Pvt. Ltd. is one of India's oldest and most experienced players in gear processing automation. Headquartered in Pune, the company specialises in CNC retro-fitment, automation, and reconditioning of gear hobbing, shaping, shaving, and grinding machines, offering world-class performance at optimal cost.

Additionally, ARK MachTek is equipped to offer gear tooth profile grinding upgradation and the upgradation of a worm thread grinding machine.