PRAKASH PROJECTS PVT LTD

(Heavy Forged Division An ISO 9001-2000 Company)

GSTIN No. 09AADCP1178N1ZY

TECHNICAL CAPABILITIES

HEAVY RADIAL FORGING,
MELTING SHOP & CNC MACHINE SHOP

About Us

MISSION & VISION

Our group of companies was established in 1990 and is today recognized as an innovative forging enterprise. We are respected and reputed for our manufacturing standards as well as customized forged components and assemblies. Major OEMs in the Automotive, Power, Engineering, Cement, Steel, Material Handling, Material Processing, Stone crusher, Ship Building, Sugar and Mining as well as other allied industries have been associated with us for years, relying on the product quality, delivery and commitment we have offered.

MISSION

Our Mission is to supply products complying to the highest quality standards and to the complete satisfaction of the Customers, by means of staunchly abiding to the process and statutory and regulatory protocols laid down for continual improvement.

VISION

We envisage keeping a progressive outlook by setting realistic objectives of implementing technology advancements, upgrading infrastructure and becoming independent with respect to in-house maintenance and improvements, as well as optimizing resources to increase productivity and reach the highest possible position in the market.

Our Products

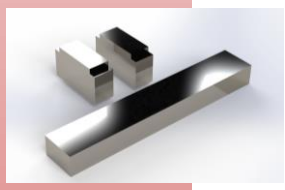
MANUFACTURING RANGE

ROUND SHAFTS / ROLLS / STEP SHAFTS

16,000 mm	2,000 mm	30 M.T.
Max length	Max diameter	Max weight

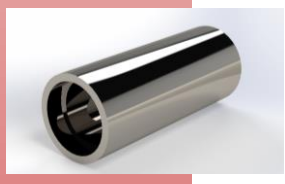
CRANKSHAFTS / ECCENTRIC SHAFTS

6,000 mm	1,500 mm	25 M.T.
Max length	Max diameter	Max weight



SQUARE BLOCKS / RECTANGULAR SHAFTS

12,000 mm	2,500 mm	30 M.T.
Max length	Max width	Max weight



PIPES / HOLLOW SHAFTS

1,500 mm	1,000 mm	10,000 mm	30 M.T.
Max O.D.	Max I.D.	Max length	Max weight

RINGS

3,000 mm	25 M.T.
Max diameter	Max weight

TUBE SHEETS / CRANE WHEELS / GEAR BLANKS

3,000 mm	30 M.T.
Max diameter	Max weight

NON-STANDARD FLANGES

3,000 mm	25 M.T.
Max diameter	Max weight

BUSHES / ROTORS / TRUNIONS

25 M.T.
Max weight

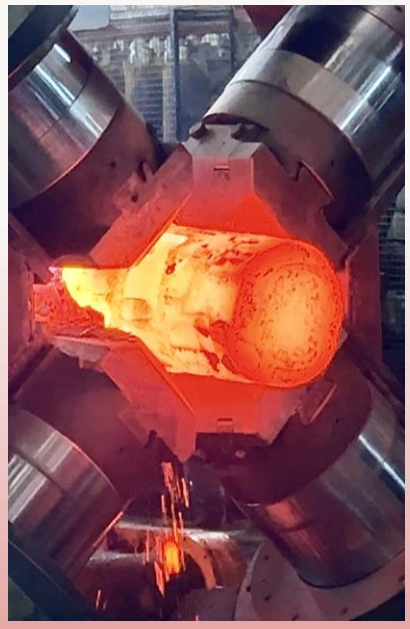
COUPLERS / HUBS / SPINDLES

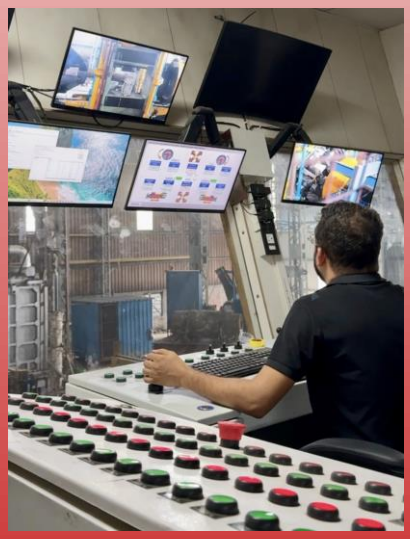
25 M.T.
Max weight

Our Infrastructure

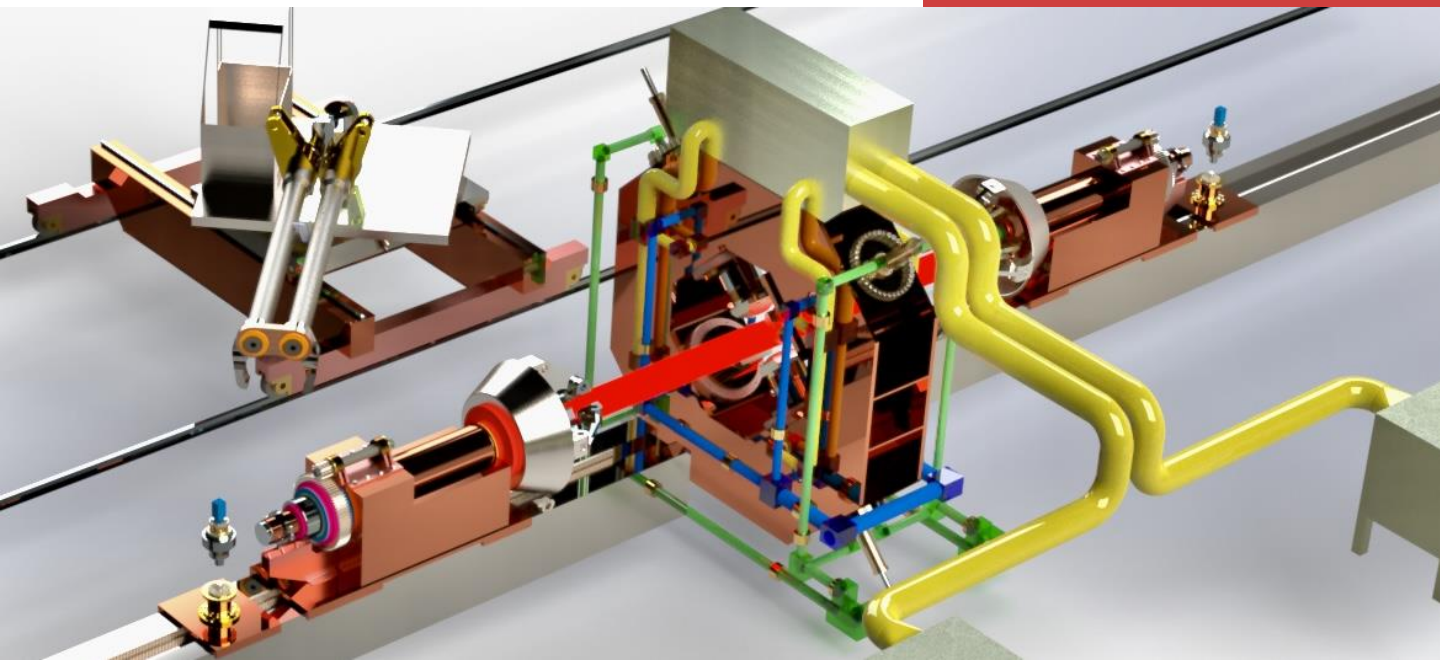
HYDRAULIC RADIAL FORGING FACILITY

A hydraulic radial forging machine is one of the most advanced metal-forming systems in the world, engineered to deliver exceptional dimensional accuracy, metallurgical refinement, and process efficiency. At the heart of the system lies a massive rigid press frame housing **four opposed hydraulic cylinders arranged in an "X" configuration**. These cylinders operate in synchronized strokes, closing uniformly around the workpiece to reduce its diameter while elongating it with unparalleled precision. **2 manipulators on both sides grip, position and rotate the workpiece**. These manipulators are synchronized to the Press using **Advanced PLC and SCADA control systems.**



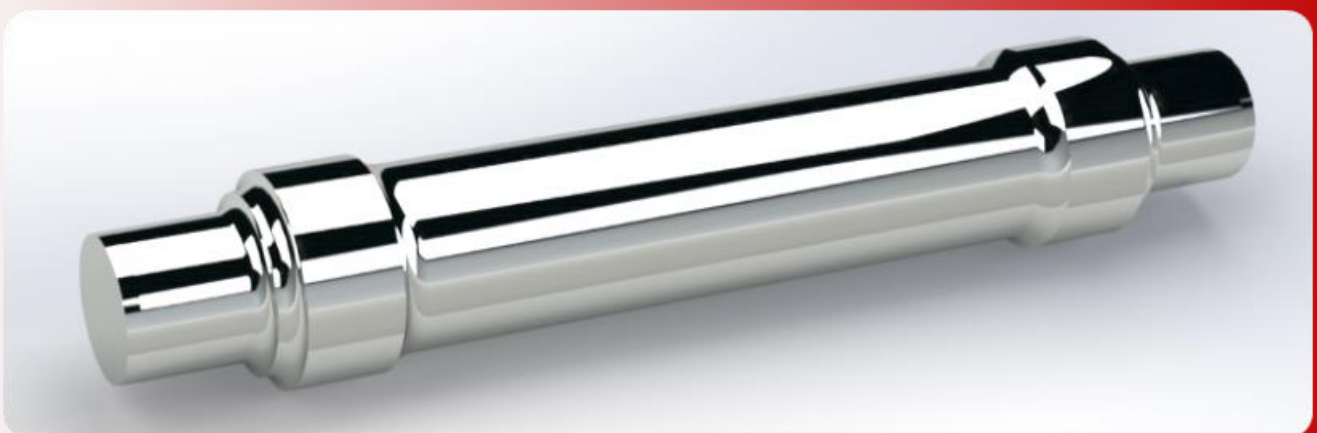


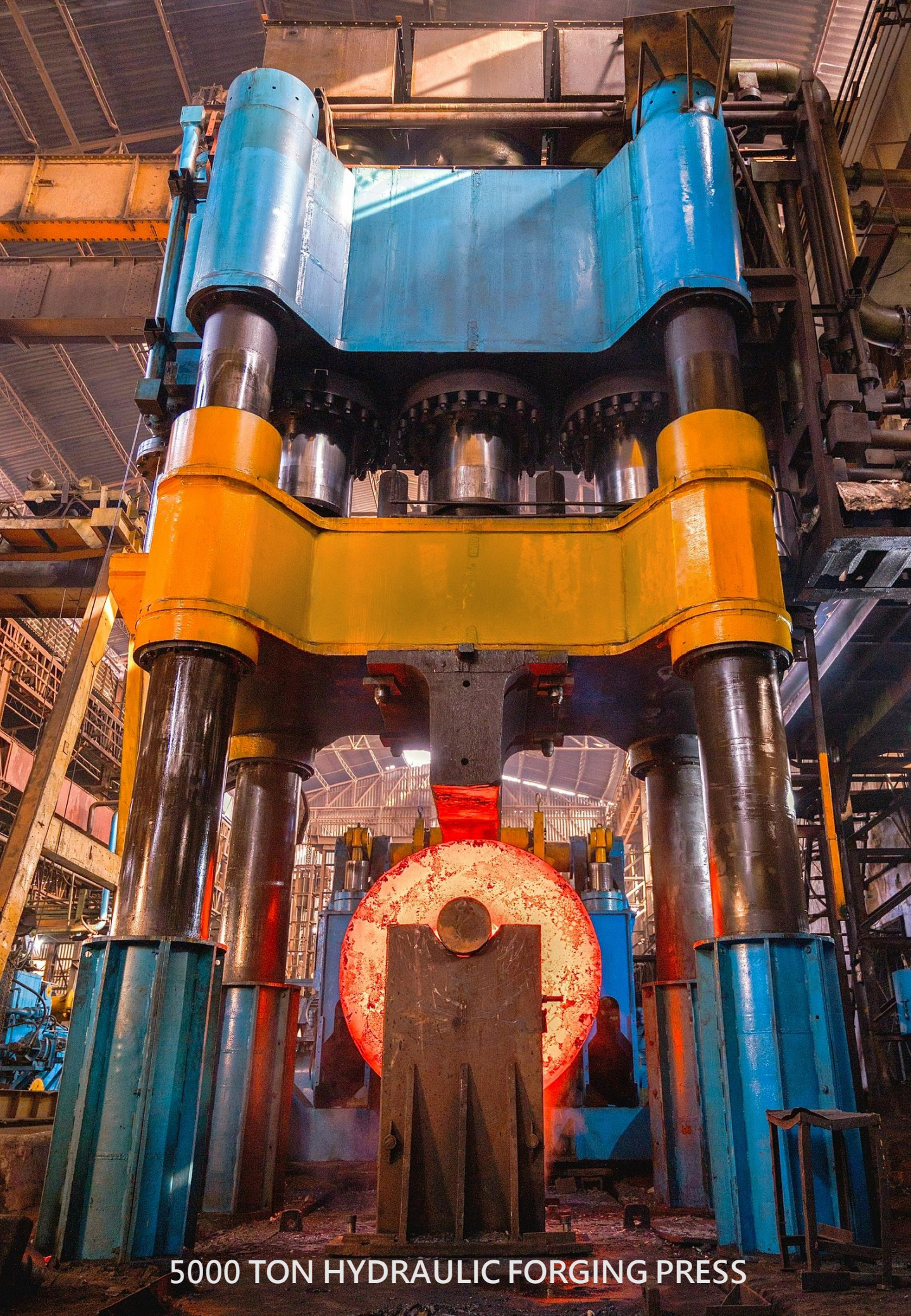
With exceptionally long cylinder strokes and high forming frequencies, radial forging converts raw ingots or continuously cast stock into **accurately dimensioned bars, tubes, shafts, and axles.** This combination of force, rigidity, and intelligent hydraulic control results in **consistent forging action, superior grain flow, and excellent repeatability** across every stroke.



Radial forging offers decisive advantages over conventional open-die forging. With high forming speeds often reaching **up to 200 forging strokes per minute,** it delivers large reductions per pass, shorter cycle times, and exceptional productivity. The process produces a **homogeneous, refined microstructure all the way to the core**, ensuring superior mechanical properties and consistency. Combined with high surface quality and excellent dimensional accuracy, radial forging stands out as a robust, energy-efficient, and versatile solution for precision long products.

Railway axles demand absolute reliability, structural integrity, and flawless microstructure, qualities that radial forging is uniquely suited to deliver. In our fully engineered axle-forging line, radial forging machines operate alongside **synchronized manipulators** that rotate, position, and feed the workpiece with precision. This ensures complete **through-forging along the entire length**, even for large diameter ingots, producing a uniform grain structure free from core defects or segregation. Whether the starting material is ingot cast, continuously cast, or preformed, the hydraulic radial forging process delivers **fine, homogeneous microstructure, enhanced toughness, and superior fatigue strength**, all essential for safety-critical axle applications. The ability to forge single, double, or multiple axles from a single heat further boosts productivity, while the high surface quality minimizes machining allowances. Together, these advantages make radial forging the gold standard for manufacturing high-performance railway axles that meet global standards for strength, durability, and operational reliability.





5000 TON HYDRAULIC FORGING PRESS

Our Infrastructure

HYDRAULIC PRESSES FOR HEAVY FORGING

We are also equipped with state-of-the-art forging presses. This includes:

- **5,000 M.T. hydraulic forging press** which can forge diameters upto 3 meters. This Press is accompanied by a 30 Ton.meter forging manipulator.
- **1,500 M.T. hydraulic forging press** which can forge diameters upto 1.2 meters. This press is accompanied by a 10 Ton.meter forging manipulator

Our forge shop consists of several **Gas fired re-heating furnaces** upto 1400°C which efficiently heat the ingots upto forging temperature. Our furnaces are also equipped with recuperators to minimise energy losses.

These re-heating furnaces are accompanied by 2 rail bound **Loading/Unloading manipulators** which allow us to efficiently stack our furnace. Trained personnel with safety equipment operate these equipment.

Our Infrastructure

PRECISE HEAT TREATMENT EQUIPMENT

Every forged component we produce passes through meticulously engineered heat-treatment cycles that guarantee internal refinement, structural uniformity, and long-term reliability. We offer the full spectrum of heat-treatment processes: **normalizing, annealing, quenching, and tempering** , ensuring that every product meets its exact material specification and service requirements.

We are equipped with:

•**Gas-Fired Bogie Type Furnaces** up to 1200°C, with multi-zone temperature monitoring for precise heat penetration across long components such as shafts and axles.

•**Electrical Tempering Furnaces** upto 800°C provide highly stable, precisely controlled low-temperature cycles essential for relieving stresses after quenching.

•**Polymer Quenching Tank** – size 2.5 × 3.5 × 9 m. Provides controlled, adjustable quench severity to achieve the perfect balance between hardness and toughness.

•**Oil Quenching Tank** – size 2.5 × 3.5 × 9 m. Ensures uniform cooling, minimizes distortion, and stabilizes microstructure during hardening.

Our Infrastructure

HIGH PRECISION CNC MACHINING FACILITY

Our machining division is built to transform heavy forgings into fully finished, high-precision components. Skilled machinists, decades of experience, and a robust fleet of CNC and conventional machines form a unified system that delivers the accuracy, finish, and reliability our customers demand. Whether it is a shaft, axle, mandrel, roller, or any custom designed forging, our machining capability ensures perfect dimensional control and flawless surface quality.

Our machine shop is equipped to handle **the largest, longest, and most complex forgings** with ease, supported by cylindrical grinding, precision boring, milling, and drilling infrastructure. This integration allows us to offer complete end-to-end manufacturing under one roof.

With this extensive infrastructure and a highly skilled team, we can machine **any forging of any size, design, and specification** including custom, one-off, or critical components. From rough machining to final finishing, every job is executed with precision, consistency, and complete quality control.

Our Infrastructure

HIGH PRECISION CNC MACHINING FACILITY

Turning

-CNC Lathes (28 Nos.)

-Manual Lathes (25 Nos)

Diameter **1200 mm**, length **16,000 mm** Enables precision machining of long, heavy components with tight tolerances.

-CNC Vertical Turning Lathes (5 Nos)

-Manual Vertical Turning Lathes (10 Nos)

Diameter up to **5000 mm,** height **3000 mm.** Perfect for large flanges, discs, wheels, and heavy forgings requiring precise vertical turning.

Our Infrastructure

HIGH PRECISION CNC MACHINING FACILITY

Horizontal/Vertical Machining Centers (HMC/VMC)

-CNC HMC/VMC (16 Nos)
-Manual HMC/VMC (8 Nos)

Maximum size of 3m width x 12m length x 2.5 m height.

Grinders

-CNC Grinders (2 Nos)
-Manual Grinders (7 Nos)

Maximum diameter of 1100 mm x 10 m length

-Deep Hole drill hydraulic (6 Nos)
Maximum swing of 1200 mm x 10 m length

-Radial Drill (4 Nos)
Maximum swing of 2 m x 65mm diameter

-Tapping machines (5 Nos) Upto M48 tapping

Our Infrastructure

DESTRUCTIVE & NON-DESTRUCTIVE TESTING

1. **Optical Brinell Hardness Testing Machine (KB-3000)** – Provides accurate Brinell hardness measurements for forged components using high-precision optical evaluation.

2. **Dewinter Trinocular Inverted Metallurgical Microscope** – Enables detailed microstructural analysis to ensure grain refinement, cleanliness, and metallurgical integrity.

3. **Profile Projector (RPP-250)** – Offers precise optical measurement and dimensional inspection of complex profiles and contours.

4. **Impact Testing Machine (KL-300)** – Determines material toughness and notch sensitivity under dynamic loading conditions.

5. **Digital Universal Testing Machine (UTK-200 kN)** – Performs tensile, compression, and bend tests with fully integrated software for accurate mechanical property evaluation.

6. **Coordinate Measuring Machine (CMM)** – Ensures high-accuracy 3D dimensional inspection of critical components and complex geometries.

7. **Magnetic Particle Testing – Magnaflux Yoke Unit** – Detects surface and near-surface cracks using AC/HWDC magnetic fields for reliable defect identification.

8. **Ultrasonic Testing – Einstein-II DGS Flaw Detector** – Locates internal defects and discontinuities with high-resolution ultrasonic wave inspection.

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Industries We Serve

TAILORED SOLUTIONS FOR DIVERSE SECTORS

CEMENT

MINING

SHIPPING

STEEL

MATERIAL HANDLING

OIL & GAS

THERMAL POWER

HYDRO POWER

WIND POWER

DEFENCE

RAILWAYS

Our Management

GUIDED BY EXPERIENCE, STABILITY & INNOVATION

Mr. R.P. Garg (Chairman)

An IIT Roorkee alumni with outstanding achievements in mechanical engineering. His pioneering vision in design and mechanical engineering of equipment has shaped the company's direction from the start. Bringing over 5 decades of experience, the chairman possesses expertise across numerous engineering fields including fabrication, machining & forging.

Mr. Deepak Garg (Managing Director)

The second pillar of the company's explosive growth is our MD Deepak Garg, a seasoned professional who brings over three decades of experience in the manufacturing industry. His expertise over diverse manufacturing practices, high educational pedigree, and a forward-thinking mind give him a distinct edge. With a keen eye for detail, he leads the company to success, ensuring precision is not just promised, but delivered.

Mr. Tushar Garg (Director)

Emboldening our company's strength is our Director Tushar Garg. He is the main project leader behind the Radial Forge project and is also responsible for our innovative developments in recent times. He has a keen sense of engineering design & is currently leading the forged railway wheel plant's design & development.

Contact Us

FOR MORE INFORMATION

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