



DEAR READERS,

The "SCREEN" initiative reflects the spirit of Bharat Forge Limited to innovate by accomplishing seamless collaboration across its multiple verticals and teams.

Bharat Forge has given significant importance to building cooperation between various entities resulting in collective development. We are actively contributing to India's transformation into a global economic superpower, by driving growth and self-reliance through team ups with subsidiaries and other companies.

Adopting the ideology of Viksit Bharat, we have transitioned from muscle power to brain power to digitalisation with Al. Resonating with the nation's transformation in the energy, digital and supply chain sectors, Bharat Forge is set to make an impact owing to our development programs.

From revitalising the indigenous manufacturing capabilities to exporting high-profile hardware, we are helping India reestablish itself as an internationally recognized innovation powerhouse. With our significant investment in R&D, considering the changing trends in the international market, we transitioned to automatic forging, expanding our global presence.

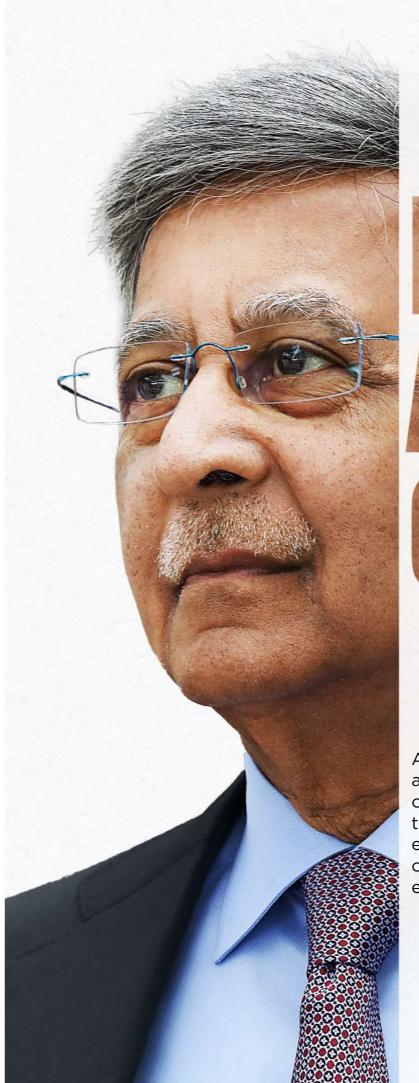
The SCREEN initiative resonates with Bharat Forge Limited's efforts in uniting the greatest minds in the nation, propelling India's growth and technological prowess. The products we developed, the technological advancements, and unwavering commitment to sustainability and social responsibility ensure we continue to drive positive change and foster spirit of collaboration as a major player in India's industrial development.

We are cognizant that the potential for development lies in our people, culture, and values. Our workforce is our greatest asset. Their determination & hardwork have helped us forge a legacy of excellence and trust that Bharat Forge prides itself on. Every BFL employee has inspired us to look to the future and uphold our mission of innovation, cooperation, and contribution to nation-building.

Bharat Forge Limited, as India's first truly manufacturing multinational company, will continue to forge new paths, overcome challenges, and create a brighter future for all from behind the scenes.

Baba Kalyani

Chairman & Managing Director Bharat Forge Limited



As Bharat Forge embraces the digital age of AI, it's the collaboration between our research and development teams that drives our progress. This collective effort will be the cornerstone of both our current achievements and future endeavours

#BFL2.0

Bharat Forge has evolved into a diversified, global conglomerate, engineering critical solutions for automotive and industrial OEMs. Our industrial excellence, cutting edge manufacturing and R&D expertise form the bedrock of our operations. We have constantly pushed the boundaries of technological advancements, creating indigenous products and solutions that meet the highest standards of quality and performance.

Our advanced technological capabilities enable us to provide essential components that our clients consider game-changing. BFL's extensive metallurgical expertise and comprehensive supply chain capabilities—from concept to validation—position us at the industry forefront. We focus on defence, industrial technologies, aerospace, and E-mobility, evolving into a global powerhouse with significant growth in these areas.

With the conception of BFL 2.0, we have leveraged resources across verticals by upgrading from sub-assemblies to assemblies. This approach has improved our overall efficiency and effectiveness, as we look into multiple product offerings across different sectors balancing volatility.

Bharat Forge is the industry leader, offering top-quality products, cutting-edge engineering, competitive pricing, and unmatched financial strength. We continuously enhance our processes with the latest technologies to maximise customer delight while being cost-effective.

We will continue embodying the spirit of SCREEN's mission of empowering Indian industries, innovating, collaborating and fostering a sustainable and inclusive future, while influencing overall technological advancement.

Let's continue to pioneer, innovate and march ahead towards a more prosperous tomorrow.



Vice Chairman & Joint Managing Director Bharat Forge Limited



#TRANSITION

Founded in 1966 by the late Dr. N. Kalyani, Bharat Forge began as a small forge shop, learning the art of forging through perseverance. In its early years, the company hired strong men from local farms to operate large steam hammers, setting the foundation for future growth.

The second decade marked a turning point as Mr. Baba Kalyani, an engineer from BITS Pilani and MIT, USA, took the helm. Under his leadership, Bharat Forge embraced new technologies and successfully competed with an American firm in India. A key decision to establish a steel plant through backward integration became a lasting competitive advantage.

In the third decade, Bharat Forge diversified beyond the automotive industry into defence and other sectors, focusing on exporting to Eastern Bloc countries. This period also saw the adoption of advanced press forging technology, despite initial challenges, setting the stage for international expansion.

The fourth decade was a combination of absorbing new technology and expanding our customer base internationally. The strategy worked extremely well.

The fifth decade brought inorganic growth through acquisitions in Europe and the US. These strategic moves strengthened Bharat Forge's operations and customer base, leading to its emergence as a global leader.

Now, in its sixth decade, Bharat Forge faces new challenges as an industry leader. To maintain its competitive edge, the company has embraced digital technologies and manufacturing excellence initiatives. We are evolving from being a component supplier to full product manufacturing, restructuring into new verticals for creating future growth strategy.

As Bharat Forge moves forward, its journey from a small forge shop to a global leader stands as a testament to innovation, resilience, and a commitment to excellence.









J. J. Kalyani

Executive Director, Bharat Forge Limited

#CUSTOMER-DELIGHT

At Bharat Forge, customer delight has always been at the core of everything we do. This commitment is driven by our Customer First Initiative, which emphasises dependability, zero PPM quality, and our ability to adapt with agility and velocity. By offering a strong value proposition, paired with innovative and frugal engineering solutions, we ensure that our customers receive unmatched service and products. Our digital mindset keeps us ahead of the curve, enabling us to drive efficiency and deliver on our promises.

Embodying the values of being pioneering, dependable, and extremely customer-centric, the customer stands at the heart of everything at Bharat Forge-from communication to production and even day-to-day operations. Whether serving clients in India or across the globe, our proactive approach ensures a consistent focus on delighting customers.

At Bharat Forge, we speak as one unified voice, adapting to growth and building strong, lasting relationships with our stakeholders. Our commitment to streamlining creative processes and fostering a culture of collaboration ensures that we consistently deliver on our brand promise.

Me and my colleagues are Proud To Be Brand Advocates, standing together to reinforce our legacy of trust, innovation, and excellence.





#INDIGENISATION

Bharat Forge, India's first multinational manufacturer, established a global presence with plants in Germany, Sweden, France, and the USA. This expansion allowed the company to supply high-profile clients like Volvo, Scania, and Mercedes, but it also inspired Bharat Forge to go beyond metallurgy and venture into defence manufacturing, guided by the "Make in India" vision.

India has long been the world's largest importer of defence equipment, despite having the potential to develop it domestically. Bharat Forge recognized this opportunity and took the bold step to begin producing defence products for India, in India. The journey started in 2012 with the introduction of the Bharat 52, an indigenously developed gun, at the Defense Expo in Delhi. This was the first step in creating a robust, homegrown defence manufacturing capability.

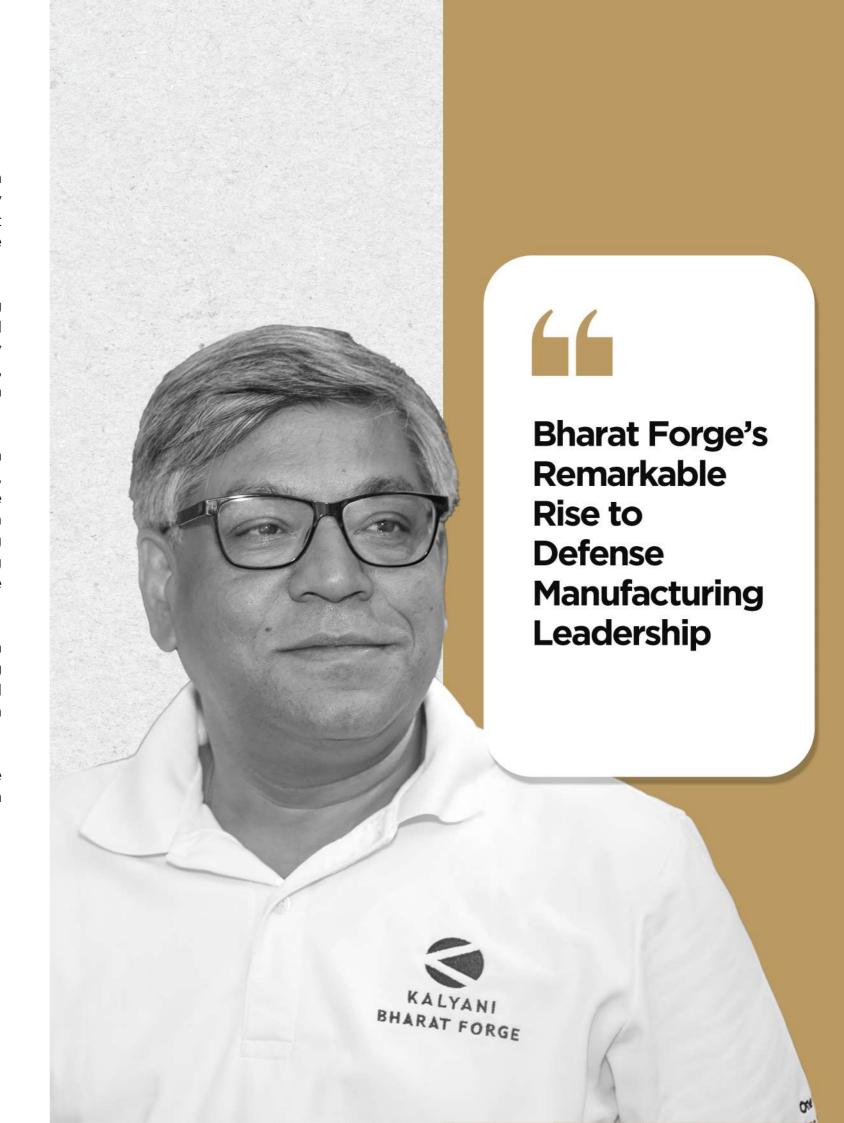
Bharat Forge's approach was unique. While many Indian companies partnered with foreign entities to borrow technology, Bharat Forge invested heavily in in-house research, development, and manufacturing, ensuring full ownership of its products. A key milestone was the development of the ATAGS artillery gun, in collaboration with DRDO. The gun successfully passed rigorous tests, achieving a range of 48 kilometres and demonstrating India's growing defence capabilities. Even when faced with the challenge of lacking advanced control systems for the gun, Bharat Forge overcame it by developing the necessary technology in-house with help from an Indian partner.

The Aatma Nirbhar Bharat movement further fueled the company's efforts to lead in defence manufacturing. Bharat Forge now operates six artillery platforms, positioning itself as a global leader. This journey has not only brought recognition from international defence bodies like the Pentagon but has also solidified Bharat Forge's reputation as a key player in the global defence industry.

With continued investment in R&D and innovation, Bharat Forge is on track to become a major global exporter of arms and ammunition by 2030, driving India's self-reliance in the defence sector and setting new benchmarks in manufacturing excellence.

Chief Executing Officer at

Kalyani Strategic Systems Limited



#BRAND-PROTECTION

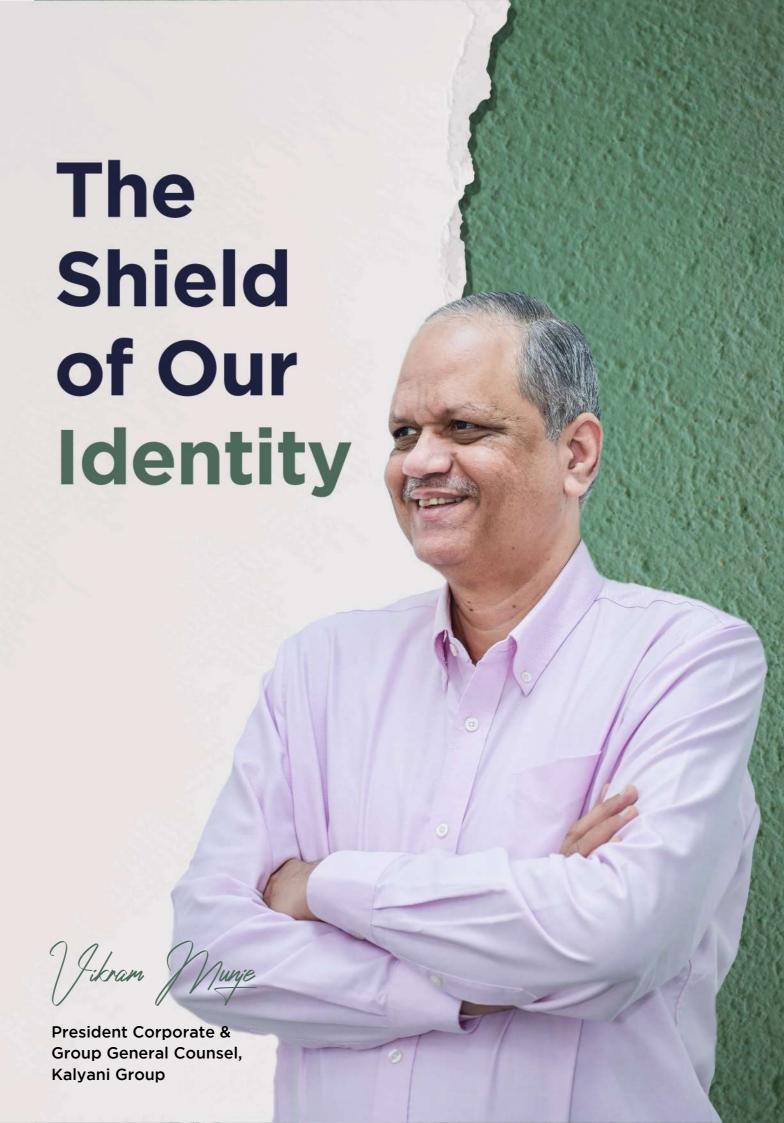
In today's competitive market, brand protection stands as a pillar of a company's identity, reputation, and competitive advantage. For Bharat Forge Limited, safeguarding our brand is not merely a legal formality; it is a strategic necessity that ensures the integrity and trustworthiness of the Kalyani Brand.

Over the years, our dedicated legal team has meticulously protected the Kalyani Brand and image, through the registration of over 240 trademarks across multiple classes to cover our major business areas. These registrations have been strategically filed across various countries to ensure protection of our brand in key business regions. This extensive trademark portfolio is a testament to our commitment to strengthening our unique identity and reputation built with unwavering dedication and hard work.

In order to prevent other companies from unfairly benefiting from our hard-earned goodwill and brand mileage, we have proactively filed more than 25 objections in India & abroad, against marks that are deceptively similar to ours. Our law firm partners are also instructed to be on the lookout for such instances so that we can take pre-emptive actions.

In the future, brand protection will only continue to evolve. With advanced digital tools and vigilant monitoring systems we can counteract emerging threats and fortify our brand further by becoming synonymous with goodwill and integrity. We will continue to safeguard our brand, ensuring its legacy of excellence and reliability endures, through rigorous legal strategies and forward-thinking approaches.





#INVESTOR-TRUST

At Bharat Forge, we recognize that our investors, much like our employees and customers, are vital stakeholders who contribute to and celebrate our success. Over the past five decades, our investors have been an integral part of our growth journey, significantly contributing to our achievements and milestones.

From our humble beginnings to becoming a global leader in many areas, our investors have provided unwavering support.

As we continue to forge ahead, we remain deeply grateful for the enduring partnership with our investors. Together, we celebrate our past successes and look forward to a future filled with promise and potential.



Pajhagopalan S

Head, Investor Relations, Bharat Forge Ltd

#TEAM-BUILDING

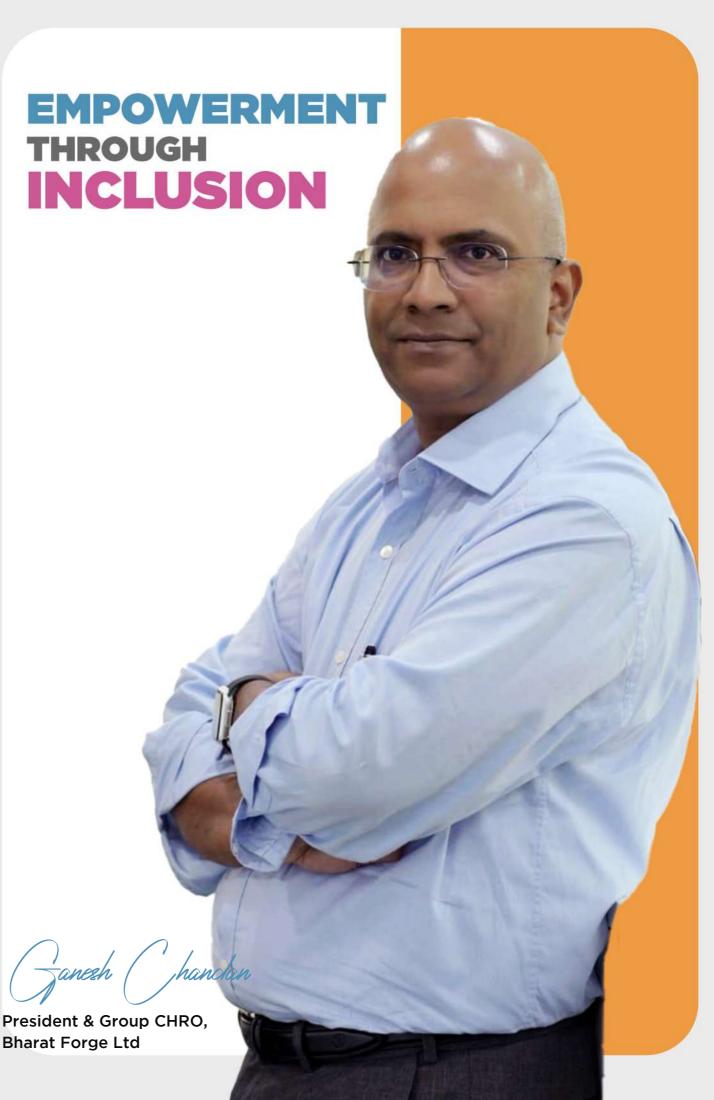
At Kalyani Group, we believe that our ability to collaborate and leverage our diversity is our strength. It's the mix of backgrounds, experience, insights and perspectives that makes our workplace challenging and exciting. Embracing diversity is all about evolving a culture where everyone feels valued and included in making big contributions to our growth and success.

Inclusion is every one of us, no matter where we come from or what role we play, has a voice that truly matters. It's important that we continue to foster an environment where collaboration thrives, and everyone's contributions are recognized and respected. Our collective success is a result of the diverse talents and unique viewpoints each of us brings to the Group.

Recognition is also a crucial part of that equation. When we acknowledge each other's efforts and celebrate the wins—big or small—we build a stronger, more connected and integrated organization. Let's continue to support each other, celebrate our differences, and recognize the distinct value that gives us an edge as a Group.

Together, let's keep collaborating and innovating, ensuring that we remain not just a great place to work but a place where everyone is enabled to succeed and feel good about working with us.





#EXCEED-EXPECTATIONS

Kalyani Powertrain Ltd. (KPTL), the e-mobility arm of Bharat Forge Ltd. (BFL), provides a complete range of electrification solutions for re-powering existing diesel CVs. These vehicles, when re-powered with an electric powertrain, not only contributes to sustainable transportation but also ensures addition to circular economy - a win-win proposition for all the involved stakeholders.

Imbibing the DNA of Innovation of our parent company BFL, we bring tailor-made cutting-edge solutions to our customers which are made by carefully studying their different use cases. Our agile and customer-centric teams ensure that these solutions are crafted with a keen eye for detailing and passionate engineering aimed at increasing Customer Value Proposition (CVP) across all facets.

At KPTL, we have a 'Culture of Execution Excellence' wherein our young and energetic teams always exhibit a 'Can Do' approach. Being a startup with the support of our parent company BFL, we are able to assimilate the characteristics of Maturity combined with Adroitness.

To make our solutions cost effective, we have invested in backward integration to command control over complete value chain, including in-house manufacturing of complex Power Electronics. Through this integration, we are capable of providing GLOCAL solutions which are in perfect alignment with the Indian Government's vision of Aatmanirbhar and Viksit Bharat and our internal strategy of creating BFL 2.0.





#AI-ENABLED

Introducing Bharat Forge's Digital & AI Tech Centre, a hub where creativity and cuttingedge technology come together to transform business operations. To move beyond experiments into game-changing solutions, the Centre fosters a culture of risk-taking and innovation, combining multidisciplinary skills with state-of-the-art infrastructure. It's not only revolutionizing current processes but also accelerating new product development in a cost-effective way.

The Centre offers a flexible, open-plan space that adapts to the needs of employees, with collaboration zones and quiet areas for focused work. Features like sleeping pods enhance productivity by allowing team members to recharge. Since its inception, the Centre has hosted customer visits, evolving into a Customer Experience Centre, showcasing how Bharat Forge leverages technology to create faster, more efficient solutions for clients.

The Centre's top priorities include:

- Freeing up management bandwidth by 30% over the next two years with Agentic Al.
- Creating an AI Verse for better knowledge retention and faster decision-making.
- Using AI and Robotics to boost operational efficiency.
- Experimenting with next-gen technologies to enhance product innovation.

This innovative environment, inspired by the creative vibe of West Coast USA, has become a magnet for young talent, keeping Bharat Forge at the forefront of digital transformation and product development.







Kalyani Group

#BRAND-ADVOCACY

We are thrilled to introduce the third edition of "SCREEN," our biannual newsletter. This edition's theme revolves around the incredible employees of Bharat Forge Limited (BFL), whose tireless efforts and collaboration have elevated us to the globally renowned brand we are today.

The spirit of innovation and cooperation is embodied by every person working at Bharat Forge. They are the engineers crafting precision components, the innovators driving technological advancements, the workers striving on shop floors, and the environmentalists championing sustainability. Each one of them plays a crucial role in our brand story, making valuable contributions to our success. Our employees are our brand advocates who have tirelessly contributed to building BFL and its legacy, making Bharat Forge a strong and respected brand worldwide. In this edition, you will discover incredible stories of our teams and their remarkable achievements.

I extend my sincerest gratitude to everyone who has been a part of this incredible journey. Thank you for your unwavering support and trust in Bharat Forge. Together, let us continue to elevate the Bharat Forge brand, setting new benchmarks in brand excellence, innovation, and collaboration.

Sincerely,

ENHANCED CAPABILITIES:

533+
Coverage in print,
Online, and electronic

Internal Design assignments

36+
Reel videos

16+
One-on-one interactions

Announcements in media

Engagement videos

Corporate advertisement

Participations in expo

TEAM CORPCOMM:

Abhay Kesharwani Bharat Forge Limited Abhijit Kalyani Kalyani Technoforge Limited Nicole Hehn
Bharat Forge Global Holding GmbH

Dr. Raju Kadam

Kalyani Center for Technological Innovation

Sandeep Gupta

Kalyani Center for Manufacturing Innovation

Yashwardhan Singh

Kalyani Powertrain Limited

Manish Mehta

Kalyani Strategic Systems Limited





































VISION 2030

Progress to BFL 2.0 by scaling our competencies and reaping the benefits of our investments.

- Produce high quality, technology driven, highly differentiated products
- 80% of electrical energy to be renewable by 2030
- Convert 100+ drought-prone villages of Maharashtra to Green villages.
- Plant 1 million trees by 2030 under CSR initiatives
- Become Water positive by 2030
- Be the preferred partner for all stakeholders
- Expand market share and increasing value addition through subassemblies and assemblies

MISSION 2030

To bring cutting-edge technology to markets

- · With speed and agility
- By encouraging creativity
- By fostering an inclusive environment
- Integrating advanced technology in all facets of the business

Be aligned with Viksit Bharat mission of making India self-reliant by 2047

OUR VALUES

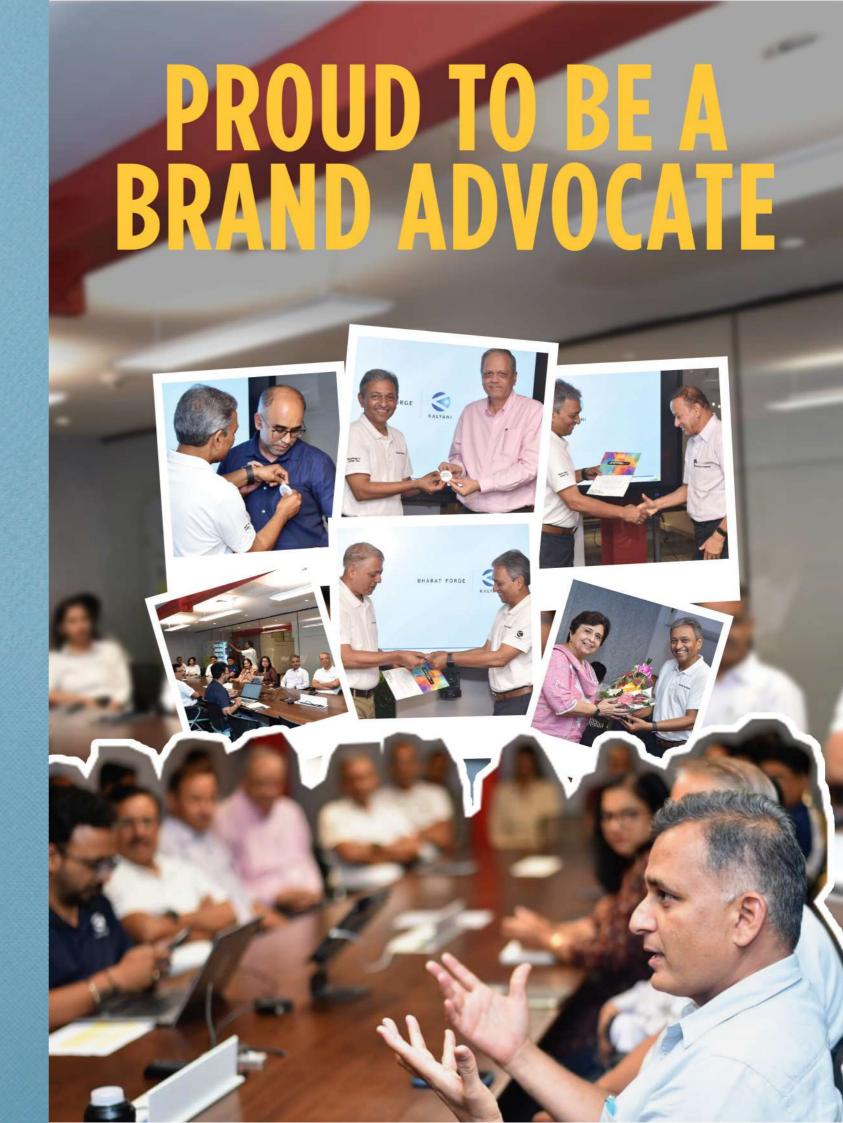


THE DAY OF CELEBRATIONS WELL WISHES





IT IS THE LOYAL SUPPORTERS
WHO PROMOTE THE BRAND
THROUGH WORD-OF-MOUTH,
BLOGS & REVIEWS







CSR REPORT 2023-24

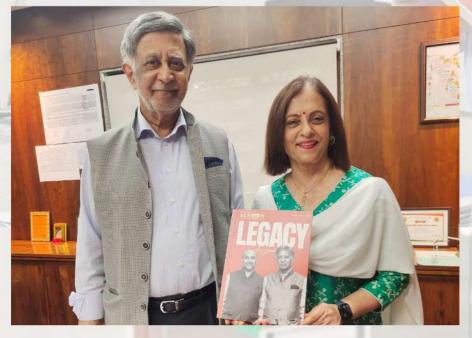




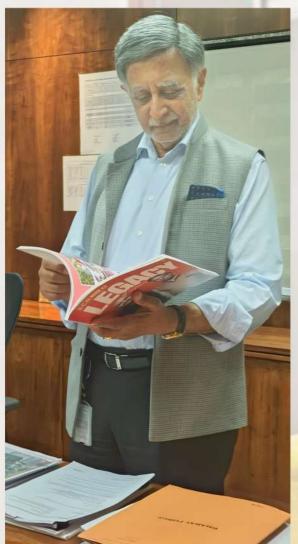


BFL MERCHANDISE

SCREEN 2.0 UNVEILED





















MELODIES OF HERITAGE @Dhol-tasha pathak, Ganpati













HOT @Print coverage on 15th August, 2024 - Times of India, Hindustan Times, The Mint





Story Unfolds



CDFD ENGINEERING



RE-ENGINEERING TRANSMISSION

1. Double Flange with Complex Wedge Tooling

This innovation project focuses on producing two flanges in a single shaft, using a three-stage cold forging process at room temperature. By implementing an undercut profile in one stroke, this technology utilises complex wedge tooling, equipped with split tools and gas springs. The result is a significant reduction in input cut weight, machining cycle time, and overall machining cost. By developing this technology, BFL can enhance productivity and cost-efficiency, particularly for mass production. Additionally, it opens opportunities for expanding the part portfolio in transmission shafts, supporting long-term growth.

2. Coupling Half with Back Taper Tooth

The project introduces an innovative approach to creating negative tooth formations in the cold forging process. It combines hot forging with straight tooth formation and a two-stage cold calibration process. The back taper, or negative tooth, is achieved through a second calibration using multiple segmented tools that rely on springs and cam action. This technology has been successfully applied in mass production, adding value to the transmission axle component family. The advanced tooling enables precision and efficiency, opening up opportunities for expanding the part portfolio within this category.

Jajanan Desai

Sr. Vice President, CDFD Engineering

DIESHOP



HISTORY OF THE DIESHOP: 50 YEARS OF INNOVATION AND EVOLUTION

At Bharat Forge, the Dieshop is the "Start, State-of-the-Art, and Heart" of our operations. Over the last 50+ years, it has evolved from humble beginnings into a hub of cutting-edge technology, playing a crucial role in shaping the success of BFL.

Early Years (1970s-1990s)

In the early years, the Dieshop relied on manual processes and skilled craftsmen. Traditional methods, including hand-finished templates and plaster cast models, were used to design and manufacture dies. Limited technology and resources made the process time-consuming, labour-intensive, and costly. Dies had high tolerances, shorter lifespans, and frequent reworks, which impacted production capacity and efficiency.

Adoption of CNC Technology (1990s-2000s)

The introduction of CNC (Computer Numerical Control) machines and EDM (Electrical Discharge Machining) revolutionised die production, improving accuracy and speed. This shift marked a turning point, allowing the Dieshop to meet growing demand with enhanced precision and efficiency.

High-Speed Machining (2000s-2020s)

The adoption of High-Speed Machining (HSM) enabled faster production with improved surface finishes, while modular die design and advanced materials simplified maintenance and extended die lifespans. The introduction of Coordinate Measuring Machines (CMMs) for inspection ensured precision and quality. Simulation software also allowed for virtual testing, reducing physical prototypes and shortening lead times.

Surface Treatments & Laser Scanning (2020s-present)

The implementation of surface treatments like gas nitriding and plasma nitriding doubled the lifespan of dies, while the adoption of laser scanning technology for reverse engineering, design verification, and quality control improved accuracy and efficiency. These advancements reduced die costs and enhanced production processes.

Industry 4.0 and Digitalization (Present Day)

Embracing Industry 4.0, the Dieshop has integrated IoT sensors, enabling real-time monitoring of furnace temperatures, predictive maintenance, and optimised production. The shift to digital screens for monitoring has reduced touchpoints and increased efficiency, streamlining operations.

Team Involvement

The Dieshop team has been instrumental in driving innovation. Through initiatives like 5S, Kaizen, TPM, and continuous improvements, they have optimised processes, improved safety, and reduced energy consumption. Collaborative efforts have also led to advanced problem-solving techniques and cutting-edge technologies like spindle coolant systems, VFD compressors, and dust collection for employee safety. The team has consistently supported global business needs, guided by leadership from top management.

Skill Development and Leadership

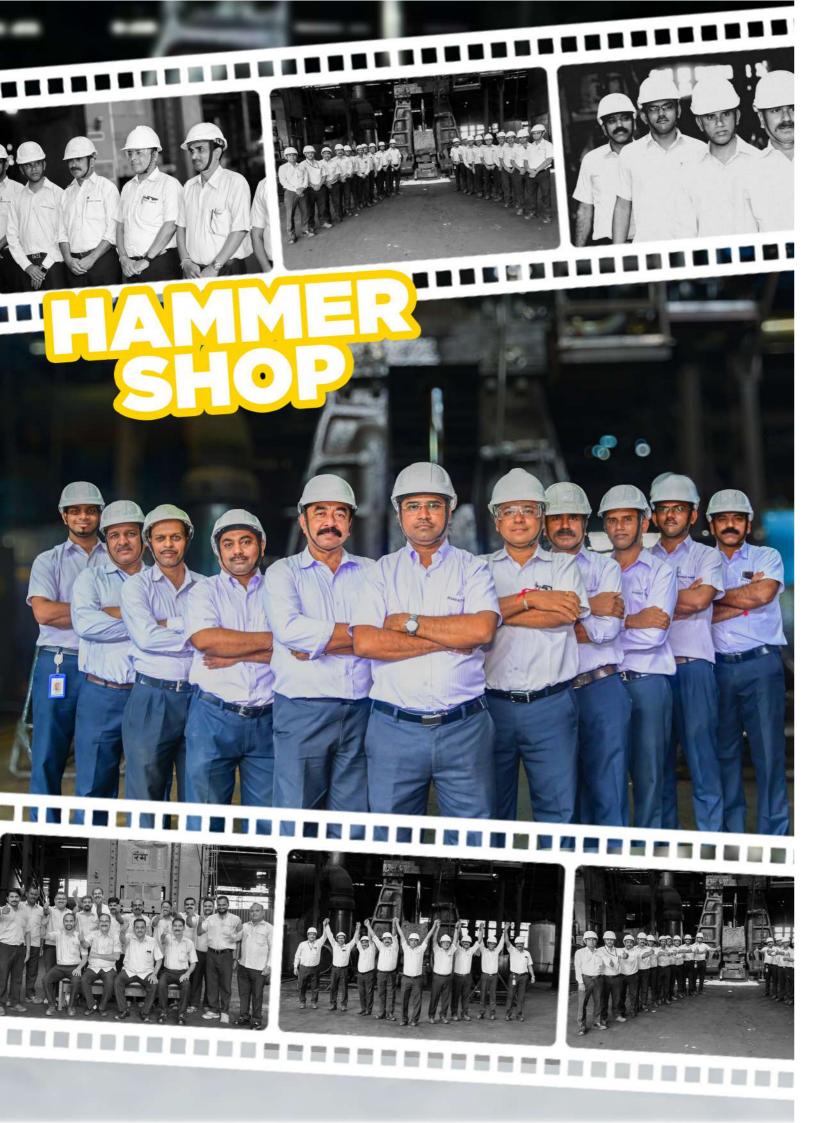
From basic template making to advanced technologies like CNC, HSM, EDM, and laser scanning, the team has continuously upgraded its skills. With talent from prestigious institutions such as BITS Pilani, M-Tech, and Warwick Management, the Dieshop has fostered strong leadership that will continue to guide its future.

The Dieshop's journey over the past 50 years reflects Bharat Forge's resilience, adaptability, and commitment to innovation. From manual processes to cutting-edge technology, it has evolved to meet changing demands, producing high-quality dies for sectors such as defense, aerospace, automotive, and energy. As Bharat Forge continues to embrace new technologies, the Dieshop will remain a vital component of its success, driving excellence and growth for the future.





A team is built like a die—through patience, skill, and constant refinement, ensuring lasting strength and reliability



IT STARTED HERE: IN 1964 @ HAMMER SHOP

In 1964, a small forge shop with a 6,000-pound hammer started producing high-quality hammer forgings, including crankshafts, axles, and road wheels.

The forge shop quickly gained reputation and expanded its capabilities, investing in new technologies and equipment to meet the evolving needs of its customers. CMD Mr. Babasaheb Kalyani oversaw the significant growth of the forge shop in the 1980s and 1990s. It diversified into new markets, including heavy-duty applications and specialised industries. The shop's commitment to innovation and excellence earned it a loyal customer base and recognition as a trusted partner.

In the 21st century, the forge shop embarked on a new chapter, venturing into the aerospace and defence industries. With its expertise in precision forging, the shop began producing critical components for aircraft, spacecraft, and defence systems. Six decades after its inception, the forge shop remains a beacon of excellence in the forging industry. With a legacy of strength, innovation, and customer satisfaction, it continues to push boundaries, driving growth and delivering exceptional value to the customers.

The 10 Ton Hammer Developed Parts for The 25000 Pound Hammer

In a ground-breaking achievement, our team developed 14 critical parts for the 25000 Pound Hammer using a 10-ton hammer, pushing the boundaries of manufacturing excellence. This innovative approach enabled us to:

- -Increase production efficiency by 30%
- Enhance part quality and consistency
- Meet stringent deadlines for a major customer
- Unparalleled precision and accuracy
- Improved durability and performance
- Enhanced customer satisfaction
- Energy cost saving

The 25000 Pound Hammer parts developed on the 10 Ton Hammer exceeded our expectations. The quality and timely delivery were instrumental in our project's success.

The 10 Ton hammer success story showcases our commitment to innovation, quality, and customer satisfaction. By leveraging the 10 Ton hammer's capabilities, we achieved remarkable results, solidifying our position as industry leaders.

Forged 500 pcs of Titanium Gas Bottle

In a great achievement, our team successfully forged 500 pieces of high-pressure titanium gas bottles, which was part of the Chandrayaan-3 moon mission, showcasing our expertise in forging. This project demonstrated our capabilities in:

- Delivering high-quality, lightweight titanium components
- Achieving precise tolerances and surface finishes
- Completing the project ahead of schedule and within budget
- Reducing lead time and cost savings





Teamwork is forged in the fires of shared challenges, where individual strengths meld into collective success



Forge Modernization Division 1 (FMD I)

In 1990, Bharat Forge made a bold transformation from conventional hammer forging to the first-ever high-end automated screw press forging lines with robotic handling systems. Despite initial scepticism from both the media and within the company, Bharat Forge, under the visionary leadership of CMD and Raju Sir, overcame challenges & set a global benchmark for forging technology. Since then, the company has continued to embrace innovation, adopting cutting-edge technologies and establishing itself as a leader in both automotive & non-automotive sectors.

Adoption of the Rembrandt Management System: doubled the PZS I production from 600-700 pieces to 1500-1600 pieces per day Expanded production capacity with LKM 2500 and LKM 4000 forging lines Commissioned the LMZ 2500 PSH 4.560 press line, further enhancing production. Screw Forging Press, billet heating with First-ever six-axis 1000 kg payload robot for part induction heating placement and die care in the forging industry technology improved the die life and production efficiency Introduced the Started forging Titanium and Inconel for the aerospace industry & ISRO projects first-ever fully automated Screw · Enhanced automation with the Forging Press, first-ever robot with a vision system PZS 900 for unloading jobs • Transitioned from furnace oil to cleaner energy sources like LPG & PNG Transitioned to electric heating for large parts • Reduced water consumption with a closed-loop cooling tower system 1995-96 1996-97 Introduced a transfer system that boosted production from 60,000 pieces to 160,000 pieces per month FMD I diversified into both automotive and non-automotive sectors, forging complex parts for aerospace, mining, and oil & gas industries. It also 2023-24 became a center for leadership development and technical support LMZ 2500 for Bharat Forge's press line other forging departments in India and overseas facilities FMD I Development



DOJO TRAINING CENTRE: FROM PRACTICE TO PERFECTION

The DOJO Centre is a core part of the ET Pillar under TPM, developed to bolster essential skills for operators and maintenance personnel. Initially located in a converted MRS substation, the centre moved to a more suitable location, offering expanded resources for in-depth, practical training. Since becoming operational in February 2024, DOJO has provided immersive, hands-on training with modules focused on Safety, TPM awareness, and enhanced sensory skill application through exercises like 5 Axes and 5 Senses.

The Dojo Training for Manufacturing are designed to cater following:

- Awareness of equipment axes Hydraulic, Electric, Mechanical, Pneumatic, Lubrication,
- Process specific training
- Re-Skilling of the existing workforce

The fully functioning DOJO Training helps 500 employees across the Mundhwa plant with guidance from the in-house trainers, experts in their respective fields, every month. The trainees as well as HODs have given positive reactions and excellent feedback. New joinees – operators, DET-GETs contractual employees can also undergo DOJO during their induction program.

DOJO training contributes in:

- Accident/Incident Reduction
- Abnormity identification leading to "I operate I maintain" concept
- Defect Reduction

Aligned with the goals of DOJO, the cross-functional A-Team at the FMD2/16000T PZS2 line has recently achieved a significant milestone: producing 30,653 front axle beams in a single month. Their success was fueled by dedicated improvements across IoT systems, tooling design, operator skill enhancement, and predictive maintenance, with a TPM-oriented approach. This accomplishment not only resulted in high output but also set a record with the lowest-ever scrap rate of 1.67%. The team's commitment has also positively impacted key KPIs, including reduced die and operational downtime, setup, and job establishment times.

This achievement wasn't a one-time effort. It reflects a consistent push for excellence, collaboration, and a shared goal of advancing productivity and quality. A special acknowledgement goes out to the FMD2 team and all supporting departments, from PPC and Die Shop to Design, Materials, and beyond, for their invaluable contributions.

With this solid foundation and continuous upskilling provided by DOJO, the A-Team is now focused on reaching a new target: the ambitious production goal of 35,000 pieces in a month. Together, under the mentorship and leadership guiding them, they're shaping an even more promising future.



HEAT TREATINE



THE HEART OF FORGING

Heat treatment plays a pivotal role in the forging process at Bharat Forge Ltd. (BFL), much like the heart in a living organism. This process of heating and cooling metal ensures specific mechanical and metallurgical properties, adding durability and value to forged components. As a "special process," the success of heat treatment is verified through destructive testing, crucial to the life and performance of components.

The 1960s: The Beginning

The journey of heat treatment at BFL began in the 1960s, alongside the forging unit, Hammer Shop. The initial facility had a modest setup with a few manually operated furnaces, such as the Bogie Hearth furnace. The process was labour-intensive, and workers endured high temperatures, but it set the foundation for future advancements.

The 1990s: Expansion and Modernization

By the 1990s, BFL expanded its heat treatment facilities to meet growing production demands. Automation was introduced, marking a significant shift from manual operation to PLC-controlled systems, leading to better efficiency and quality. The installation of the first continuous furnace for front axle beams (for clients like Meritor) marked the beginning of a transformation that continues today. With the addition of Gas Nitriding, Low Pressure Vacuum Carburizing, and Plasma Ion Nitriding furnaces, BFL now operates 61 furnaces across 4 different facilities.

Innovations in Quenching and Fuel Efficiency

Initially, water and oil were the primary quenching media. Over time, polymer quenching was introduced, reducing fire risk, minimizing distortion, and improving quality. In an effort to become more environmentally responsible, BFL transitioned from furnace oil to cleaner fuels like LPG and PNG. Many specialized furnaces are electrically heated, significantly reducing our carbon footprint. These changes, along with the replacement of brick furnace structures with fibre linings, have decreased energy consumption.

Customer Focus and Quality Assurance

BFL's Heat Treatment department was the first in India to implement CQI-9 standards in 2008. By 2013, the department earned the NADCAP aerospace certification & has been receiving Gold Merit since 2016. The team enhanced inspection efficiency, reducing scrap and rework to below 1% through improved furnace conditions and robust controls. The adoption of lean manufacturing principles and the integration of 100% online hardness testing have streamlined operations, saving time and resources.

Enhancing Die Durability

BFL established in-house nitrocarburizing and plasma nitriding processes to extend the lifespan of forging dies. These processes have doubled the life of dies, leading to better performance, reduced costs, and greater efficiency in forging.

Digitization and Automation

Embracing digitization, the department replaced hardcopy time-temperature charts with paperless recorders that monitor critical parameters such as bath temperature and agitation. SCADA systems and IoT integration have reduced manual intervention and downtime, particularly in batch furnaces. The introduction of Hardness Testing Automation for Passcar Crankshafts has increased productivity, reduced labour, and improved product consistency.

Employee Skill Enhancement

Recognizing the complexity of heat treatment, BFL partnered with Government Polytechnic Pune to provide short-term diploma courses for employees. Additional programs from BITS Pilani and Warwick University further upgraded workforce skills, ensuring that the teams in production, quality, maintenance, and safety are well-equipped to handle the challenges of the evolving industry.

TPM Culture and Achievements

The Heat Treatment department has adopted Total Productive Maintenance (TPM), earning numerous awards, including the Best TPM Line Award for a 30-year-old continuous furnace. The team also received safety awards, recording zero reportable accidents over the last five years, further emphasizing its commitment to excellence and safety.

Building the Future

The success of BFL's Heat Treatment department is a testament to the power of teamwork, innovation, and leadership. As part of the BFL 2.0 journey, the department continues to reduce downtime, minimize scrap, and maximize productivity. With a positive culture that fosters recognition and teamwork, the department's efforts have been recognized through Gold and Silver awards at the CII National Kaizen Competitions. The unwavering support from management and the commitment to continuous improvement ensure that the Heat Treatment department will continue to excel and shape the future of BFL's success.

As the famous quote goes, "Every revolution was first a thought in one man's mind, and when the same thought occurs to another, it is the key to that era." This journey of heat treatment reflects that revolution, building the future on a foundation of innovation and dedication.



Just like heat treatment hardens steel, challenges strengthen a team's core





MATERIALISING INNOVATION:

DEVELOPMENT OF ADI (AUSTEMPERED DUCTILE IRON) CASTINGS FOR JS AUTO

CAST - DR. RAJKUMAR SINGH, SENIOR DIRECTOR, KCTI

In 2009, Kalyani Centre for Technology and Innovation (KCTI) came into being. It was a facility that was all about creating a space where knowledge, expertise, and dedication could flourish. With unwavering support from Bharat Forge's top leadership, KCTI set out to become a world-class R&D hub that would shape the future.

Partnering with leading institutions like Warwick University (UK), Deakin University (Australia), BITS Pilani, and the IITs, KCTI became home to some of the brightest minds. Today, with a team of over 50 Masters and 10 PhDs, fully equipped with advanced tools, cutting-edge facilities, and a rich library of resources, KCTI plays a crucial role in driving Bharat Forge's innovation, solving complex problems, and developing technologies that not only save costs but also keep us ahead of the global competition.

One of the most exciting challenges KCTI tackled recently is the development of Austempered Ductile Iron (ADI). This material offers incredible advantages over traditional forged steel in terms of both cost and weight. But like any breakthrough, it didn't come easy. JS Auto Cast, one of BFL's subsidiaries, saw the potential of ADI but faced numerous roadblocks in achieving the desired mechanical properties.

After several unsuccessful attempts using different heat treaters, KCTI's Material Science team stepped in. Developing ADI right was very challenging—it involved a complex heat treatment process, precise alloy composition, and control over factors like quenching uniformity. We began by drawing on past research and a deep dive into metallurgical data, we developed a statistical model to optimise the chemical composition based on casting thickness and the specific properties we needed.

Eventually, we were able to produce actuator housings that passed customer specifications on the first attempt. From there, JS Auto Cast produced 50 housings, all of which underwent austempering and passed rigorous testing. This success paved the way for the development of ADI Grades I, II, and III, with more grades on the horizon. We are in the process of developing ADI Grade IV and V. Our efforts will expand our ability to provide customised solutions for a broader range of customer needs.

What makes this journey truly special is not just the technology or the products, but the people behind it. The young, passionate engineers, the seasoned mentors, and the collective determination to keep innovating, no matter how tough the challenge. KCTI's role in this success story is a testament to what we can achieve when we combine cutting-edge research with teamwork and a passion for excellence.



KALYANI CENTRE FOR MANUFACTURING INNOVATION



PLANETARY REDUCER GEARBOX: AN ACHIEVEMENT OF ENGINEERING AND COLLABORATION

- VINOD SUTAR, HOD KCMI

The development of the 'Planetary Reducer Gearbox' is a fantastic achievement for our team and a testimony to the collaborative spirit and engineering excellence of Bharat Forge. This project not only showcased our capabilities but also paved the way for future growth and innovation. I am proud to mention that every phase of the project, from design ownership to development and testing, was entirely handled in-house, within the BFL group. We are confident that the 'Planetary Reducer Gearbox' will make a significant contribution to Bharat Forge's success and solidify our position as a leader in the engineering and manufacturing industry.



TEAM AEROSPACE









AEROSPACE BU"INTRODUCING THE NEW "CLASS LEADING" SUPPLIER TO ROLLS ROYCE"

Rolls-Royce (RR), a key client of the Aerospace Business Unit (BU), has emerged as a global leader in engine supply for business aviation with over six decades of powering some of the largest, fastest and longest-range business jets available in association with their worldwide supply chain.

Managing a complex supply chain while ensuring zero defects and product safety is a significant challenge for any OEM. To address this, RR introduced the Integrated Supplier Scorecard (ISS), a tool for evaluating and managing supplier performance in areas like Quality, Cost, Delivery, and Management.

Present ISS comprises four main scorable heads- Quality, Cost, Delivery & Management, each with 25% weightage. Each supplier is further categorised based on their score:

"Class Leading" (≥ 90%),

"Support Development" (70-89%),

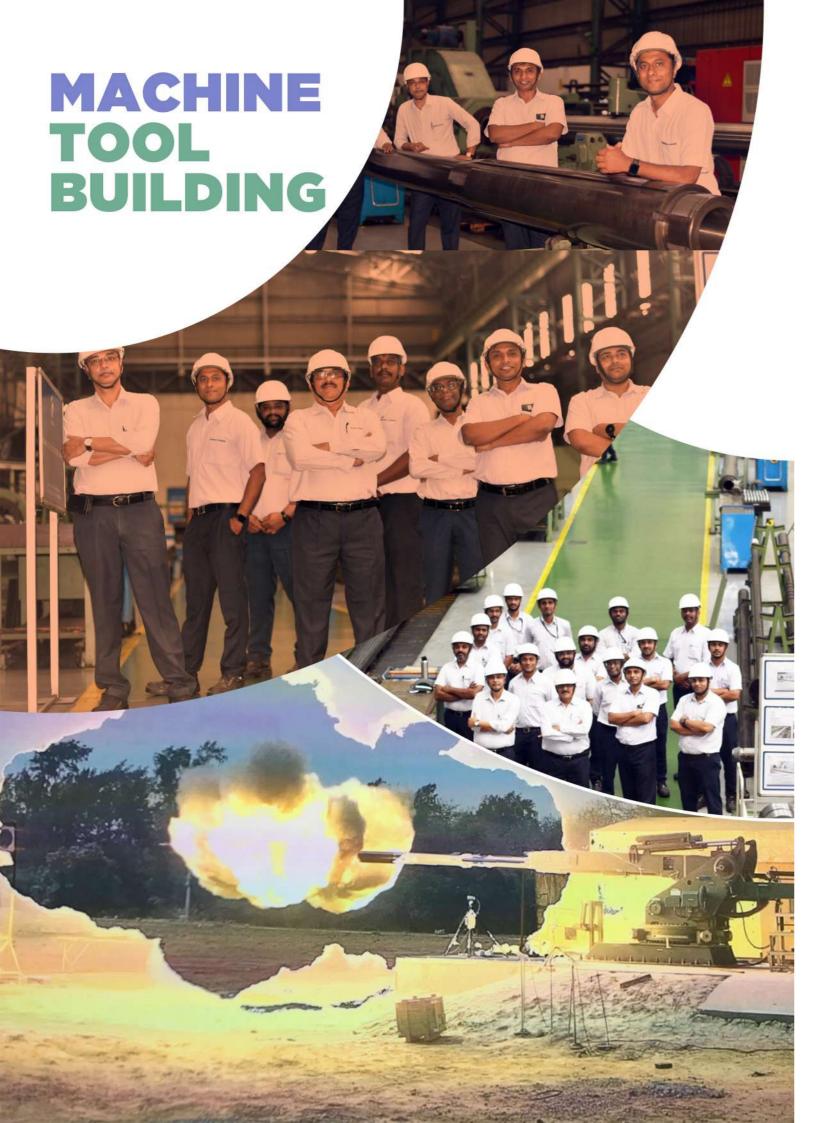
"Needs Improvement" (50-69%),

"Get Well or Exit" (≤ 50%)

BU had been in the "Support Development" category until mid-last year when they aimed to achieve "Class Leading" status. By improving control on defects, delivery times, and costs, the BU reached a score of 91% by March 31, 2024, moving into the elite "Class Leading" category—one of only 12 suppliers worldwide.

This success was the result of a collaborative effort across Sales & BD, QMS, Planning, Engineering, and other teams, who all hit their targets. BU is now recognized among RR's top 15 global suppliers. However, BU is not resting on this achievement and plans to continue improving, maintaining excellence in all areas. The team also attributes their success to the inspiration and support of Mr. Guru Biswal, dedicating this achievement to him.

Looking forward, BU aims to sustain their score and further excel, continuously pushing for excellence.



BHARAT KA BARREL

The Chairman's vision of making Bharat Forge Ltd. (BFL) the leader in the defence sector and driving India towards self-sufficiency gained massive momentum in 2011, well before the "Make in India" and "Aatma Nirbhar Bharat" initiatives launched by the Prime Minister.

A new era of artillery in the Indian defence force's history began in September 2017 when the Indian Army fired the ATAGS (Advanced Towed Artillery Gun System), a 155mm/52 caliber all-electric gun. During proof firing at the Pokhran Ranges, the ATAGS variant—jointly developed by BFL and DRDO—set a world record with a firing distance of 48.074 km, far surpassing the typical 35-40 km distance for similar artillery systems.

At the heart of this success was BFL's MTB team, responsible for manufacturing key components like the barrel, recoil system, and breech mechanism. Under the mentorship of Chairman, the MTB department sourced and commissioned an entire barrel manufacturing plant at the BFL Mundhwa facility. The project began in 2012. The team faced numerous challenges, including machine controllers and unfamiliar machining, tooling processes. The team worked diligently, from disassembling machines to installing them and optimising processes in Pune. By 2013, all key machines were installed, and after successful trials, we accomplished manufacturing.

The learning phase, involving complex processes like high hydraulic autofrettage, deep-hole drilling, and rifling for long barrels, was challenging. The young, enthusiastic team worked hard to manufacture India's first 155mm/52 caliber barrel in December 2014. Each manufacturing step was meticulously checked, and the first barrel passed proof testing at CPE Itarsi in June 2015. A larger 25-litre chamber barrel was soon developed and proof-fired at PXE Balasore in February 2016, enduring very high pressure.

In September 2015, the barrel was mounted on the gun and fired at the Pokhran Range, achieving a world-record-breaking distance of 48.074 km. This historic milestone boosted confidence and laid the foundation for future defence projects under the "Make in India" and "Aatma Nirbhar Bharat" movements.

India's first private-sector barrel manufacturing facility at BFL marks a significant leap towards achieving the goal of Viksit Bharat, exponential industrial growth, self-sufficiency, and economic progress, positioning India as a rising global industrial powerhouse.

KSSL TEAM











SOLAR INITIATIVE & EMPLOYEE ENGAGEMENT HIGHLIGHT

As part of KSSL's ongoing CSR initiatives, we recently installed solar panels at Jnanprabodhini School, Nigdi, with a budget of 6.58 lakhs. This project has successfully reduced the school's operating costs by 40%, contributing to both sustainability and cost efficiency.

On 24th July, a Townhall was organized to update all employees on the company's progress and future plans. Led by the Business Unit Head, the session covered achievements for FY 23-24 and the strategic focus for FY 24-25, across all verticals. It provided valuable insights into the company's roadmap and reinforced our commitment to growth.

In addition, a Recognition & Rewards (R&R) program was held for the entire Defence vertical, where 23 employees were honored for their outstanding contributions in Q3 and Q4. Their hard work and dedication were acknowledged, emphasizing our culture of celebrating excellence.





EMPOWERING GROWTH & PROGRESS IN THE NORTH EAST OF INDIA

The North Eastern region of India, comprising Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura, is home to over 45 million people, with more than 80% residing in rural areas. Despite its natural wealth and cultural heritage, the region with 3.7% of India's total population, struggles with high unemployment and limited industrialization, leaving many dependent on low-paying agricultural jobs. Despite government initiatives like the North East Skill Centre (NESC) to provide vocational training, the reach is limited due to logistical challenges and lack of awareness.

In response, Bharat Forge has taken proactive steps to contribute to the region's socio-economic upliftment through its CSR initiatives, focusing on three key areas:

Vidyanjali Scholarship: In collaboration with the Ministry of Education, Bharat Forge supports the higher education of 31 students from various North Eastern states, empowering future generations to pursue technical and higher studies.

School Projects: Bharat Forge is actively working to improve infrastructure and promote technical education in government schools. Initial assessments in Assam have laid the groundwork for future projects in Majuli, Dhemaji, Sissiborgaon, and Dibrugarh.

Skill Development: To strengthen technical education, Bharat Forge is setting up skill labs in ITI and diploma colleges in Dimapur, Nagaland, coordinating closely with the Nagaland government's Department of Technical Education.

In addition, Bharat Forge has played a key role in capacity-building workshops for NGOs in Nagaland, and has partnered with CII to drive sustainable development through the "North East CSR Connect 2024," facilitating collaborations between NGOs, corporates, and government officials. Through these initiatives, Bharat Forge is committed to unlocking the potential of the North Eastern region and contributing to its holistic development.



A FEW MORE ACCOLADES



ACCLAIMED INNOVATIONS BY JS AUTO CAST

We are proud to announce that JS Auto Cast India Private Limited has achieved remarkable success at the CII National Kaizen Competition. We won the Gold Award for outstanding improvements on the VMC Machine and the Silver Award for exceptional work on the Special Process Machine.

The key improvements that led to the Gold Award include:

- Productivity Increase: Raised output from 45 to 54 units per day.
- Cycle Time Reduction: Reduced cycle time from 26 minutes to 22 minutes.
- Operator Fatigue Reduction: Minimised handling time from 4 minutes to 3 minutes, significantly reducing operator fatigue.

The achievements, which secured us the Silver Award, include:

- Internal Complaints: Reduced from 5 to 0, significantly improving product quality.
- OEE (Overall Equipment Effectiveness): Improved from 72.03% to 76.96%.
- Rejection Cost Reduction: Cut the cost of poor quality (COPQ) by 1.44 Lakhs per annum.

In addition to these achievements, JS Auto Cast introduced robotics in PH Motor covers, resulting in an annual cost saving of 12.96 Lakhs by effectively reducing the need for 6 manpower positions. This implementation not only streamlined operations but also enhanced overall productivity.

These awards and innovations reflect our continuous commitment to operational excellence, cost efficiency, and innovation, ensuring that we remain at the forefront of the industry.









APPRENTICESHIP 2024 AT BFAT

New apprentices enjoyed tours, briefings, interesting training sessions & fun team building events, marking the beginning of their journey with Bharat Forge Aluminiumtechnik

Bharat Forge Aluminiumtechnik

BFAT - SUCCESSFUL IATF 16949 RECERTIFICATION

Dr. Franz Berge, Head of Quality and Andreas Weikinn, Quality Auditor at BFAT announce the successful completion of the recertification audit in accordance with IATF 16949!



Bharat Forge Aluminiumtechnik



AGREEMENT BETWEEN VIKING ANALYTICS AND BHARAT FORGE KILSTA

A new three-year agreement has been signed between Viking Analytics and Bharat Forge Kilsta (BFK) from Karlskoga, providing BFK with the Al-based optimization tool "Smartforge" after a 10-month implementation phase.

Bharat Forge Kilsta

BHARAT FORGE CDP RAILSYSTEMS AT INNOTRANS 2024

Bharat Forge CDP Railsystems showcased innovations and connected with industry leaders at InnoTrans 2024, Berlin.





Bharat Forge Receives ESG Award from Ashok Leyland, Affirming Commitment to Sustainability and ESG Excellence

Baba Kalyani, Chairman & MD of Bharat Forge Ltd., has received the USIBC 2024 award.



ZF Wind Power has proudly awarded Bharat Forge's Awards 2024!



Rural Development category at the CSR Times Awards 2024!



At Kargil Honours Awards 2024!



Bharat Forge Ltd. has been awarded the prestigious IGBC Green Village rating.



BFL Received 'Master' Award from DAF Trucks NV



F

Bharat Forge Aerospace Division is awarded the Supplier Excellence Award 2024!



Bharat Forge has been recognized as one of the FT Asia-Pacific Climate Leaders Award 2024

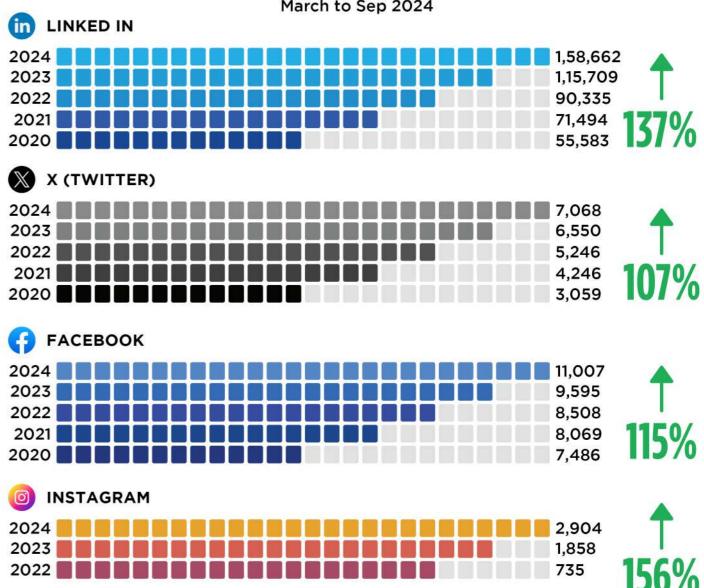


Bharat Forge is proud and delighted to be recognized as "EXCELLENT-Y2024"



SOCIAL MEDIA

March to Sep 2024



WEBSITE

March 2024 to Sep 2024





1,14,477

Organic new user acquisition





3.27min

avg session duration

TLIGHTS SO24

4.35% Reduction in Emission Intensity

40.98%

Renewable Energy is consumed

48,231

TCO2e Emissions avoided

35.6%

Recycled water out of total consumption

Human Right Due Diligence

of all plants by third party agency

Materiality Assessment

(Double Materiality) completed after a gap of three years.

54.6%

reduction in absolute scope 1, 2 and 3 GHG emissions, by FY2033

99.6%

Waste generated is recycled

7.69%

Reduction in Waste Intensity

BRSR

for FY 2023-24 submitted to SEBI with Third party assurance.

ISO 50001:2018

All plants of BFL got certified for ISO-Energy Management System

CSR. HIGHLIGHTS 2023-2024

418 TCM

Total Water Storage

13

Bandharas

4,18,000

Total Silt Removed

7070 Acres

Total Benefited Land

35,387

Drinking Water Beneficiaries

25,200

Water Filter Beneficiaries

10

Water Filter

15Kms

Road Construction

3 Schools

Village Education

1036

Woman Health
Camp Participation

1036

Woman Health Camp Participation





INFRA BRANDING







UNITE. CELEBRATE.







International Yoga Day, 2024



Idol Making Workshop



'MY-CONTRACTS' Software Launch



National Readers Day, Book Fair Shree Ganesh Chathurthi Celebration





Quarterly R&R (Rewards & Recognition) Ceremony



World Blood Donors Day



Independence Day Celebrations



ITI Malegaon Lab Inauguration





Kaizen Awards in Unit 03

TEAM CORPCOMM

@KALYANI GROUP



BHAKTI SHARMA, ABHAY KESHARWANI, MANISH MEHTA, YASHWARDHAN SINGH, SANDEEP GUPTA, DR. RAJU KADAM, ABHIJIT KALYANI, NICOLE HEHN





May this forge new opportunities, lighting up your path to strength

and success





CORPCOMM

SCREIN

Empowering voices, Amplifying culture

Concept by: Bhakti Sharma Visualization by: Abhay Kesharwani

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