



A brand of Larsen & Toubro Limited

L&T Special Steels and Heavy Forgings Private Limited
Hazira Manufacturing Complex
P. O. Bhatia, Surat, Gujarat - 394 510, INDIA
Email: Ltshf.sales@Larsentoubro.com
www.Ltshf.com CIN: U27109MH2009PTC193699

Registered Office:
L&T House, N. M. Marg
Ballard Estate
Mumbai 400 001, INDIA

CBMC/IRDP/06/2016



A WINNING PARTNERSHIP



The Power of Two

L&T Special Steels and Heavy Forgings (LTSSHF) is a joint venture of Larsen & Toubro and Nuclear Power Corporation of India Ltd. (NPCIL).

Larsen & Toubro is a multi-billion-dollar technology, engineering, construction, manufacturing and financial services conglomerate, with global operations. Its products and systems are marketed in over 30 countries worldwide. L&T is one of the largest and most respected companies in India's private sector. A strong, customer-focused approach and the constant quest for top-class quality have enabled L&T to attain and sustain leadership in its major lines of business over seven decades.

Our partner, NPCIL operates under the Department of Atomic Energy, India. NPCIL is the sole operator of more than 20 commercial nuclear power plants in India with more than 320 reactor-years of safe and reliable operation.

This Public-Private Partnership has come together to give India its biggest integrated steel-making, forging and machining facility.



LARSEN & TOUBRO



NPCIL

Technology Partner

LTSSHF has entered into a technical collaboration with world renowned Japan Steel Works (JSW) to make heavy steel forgings, using ingots up to 200MT. This collaboration allows access to JSW's technical expertise and over a century of steel-making experience for the following sectors:

- Hydrocarbon
- Steel
- Thermal & Hydro Power

THE INDUSTRIES



Photograph is for representational purpose only.



A Multi-sector Focus

L&T Special Steels and Heavy Forgings has the capacity to meet almost all the heavy forging requirements of critical sectors. Our custom-made products are used across the industrial spectrum right from the nuclear sectors, to refineries, power, fertilizers, hydrocarbons, petrochemicals, cement, mining, ship building and steel.

For all sectors, we make the widest range of high quality forgings on par with the best in the world. Forgings manufactured by us for various industries include shafts, shells, nozzles, dished ends, cones, plates, tube sheets and steel mill rolls.

Our products meet the needs of clients around the world. We have chosen our location as India to give our customers world-class technical expertise and cost advantages.

OUR STRENGTH



India's Largest Integrated Steel-making and Forging Facility

Our steel making and forging facility at Hazira, Gujarat is India's largest integrated steel making, forging and machining facility. It is the only facility of its kind in South East Asia to produce nuclear-grade forgings.

This facility spreads over a 100-acre campus with a covered shop area of approximately 65,000 m² and a total land area of 420,000 m².

Our Focus, Our People

L&T Special Steels and Heavy Forgings is backed by a highly experienced team with the right skills and high-competence required for the industry.

Our team is proficient in the areas of Technology, Forging, Safety and EHS. Our team members complement their experience with the knowledge held by both partners, and update their skills through frequent training programmes.

This goes a long way towards fulfilling the joint vision of NPCIL and L&T to provide custom-made steel and forgings that are on par with the best in the world.



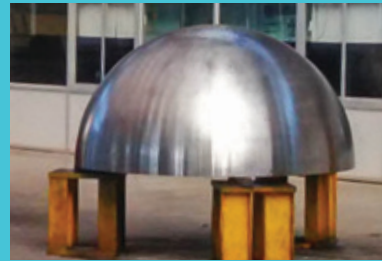
OUR RANGE



Shells



Rotors and Rolls



Contoured Forging - Dished end



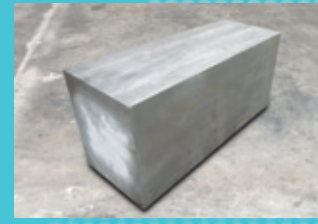
Contoured Forging - BOP



Plates



Forged Round Bars



Forged Square Blocks



Tubesheets



Liquid Metal



Ingots



Forged Blooms

Steel Forgings for Every Need

Nuclear Products



Our nuclear product range includes shells, dished ends, cones and tube-sheets.

Hydrocarbon



Our hydrocarbon range includes shells, tube sheets and other heavy components.

Defence



Our defense equipment range includes plates, gun barrels and shells & rings.

Power



Our power equipment range includes generator shafts, rotors and turbine shafts.

Oil & Gas and Steel Industry



Our steel industry range includes steel mill rolls, mould / die steels, Blow Off Preventer (BOP).

Material Handling and Mining Sector



Our cement & mining industry range includes forged shafts for crushers and mills.

L&T Special Steels and Heavy Forgings provides customers with the widest range of finished forgings. We provide solutions for customised, end-to-end requirements, from steel-making to forging. We provide the widest range of high grade steels, with applications as varied as industrial piping and aerospace. We offer customers a perfect blend of size, variety, accelerated delivery and quality.

Our steel product range includes:

- Carbon Steel
 - Carbon Manganese Steel
 - Low Alloy Steel
 - Stainless steel
- (All of the above conform to ASME, ASTM, DIN, EN, GOST and other international standards)
- Custom-made steel (based on industry requirement)
 - Clean Steel
 - Controlled Tramp Elements such as As, Sb, Sn, Co, Cu and others
 - Control of gases such as hydrogen, oxygen, nitrogen, etc.
 - Control of elements such as phosphorus, sulphur, etc.
 - Control of X factor, J factor and other required factors

OUR FACILITIES



Integrated Facility for Enhanced Scale and Sophistication

Our 65000 m² integrated facility at Hazira offers you state-of-the-art melting equipment. We have one of the world's largest forging presses, capable of producing forgings as large as 5 m in height and 6.1 m in diameter. All this is supported by a fully-equipped machine shop and an advanced testing facility.

PROCESS FLOW



Scrap to finished forging



Facility	Equipment
Steel Melt Shop	100 MT Electric Arc Furnace Ladle Refining Furnace VD/VOD Bottom Pouring Ingot Casting Vacuum Ingot Casting
Forge Shop	9000 MT Forging Press 150 MT Manipulator Re-heating Furnaces Heat-treatment Furnaces Vertical Shaft Furnace
Machine Shop	Vertical Turning Lathes (250 MT) Horizontal Lathes (up to 12M) Floor Type Horizontal borers Other conventional machines for cutting, milling and planing

OUR BENCHMARKS

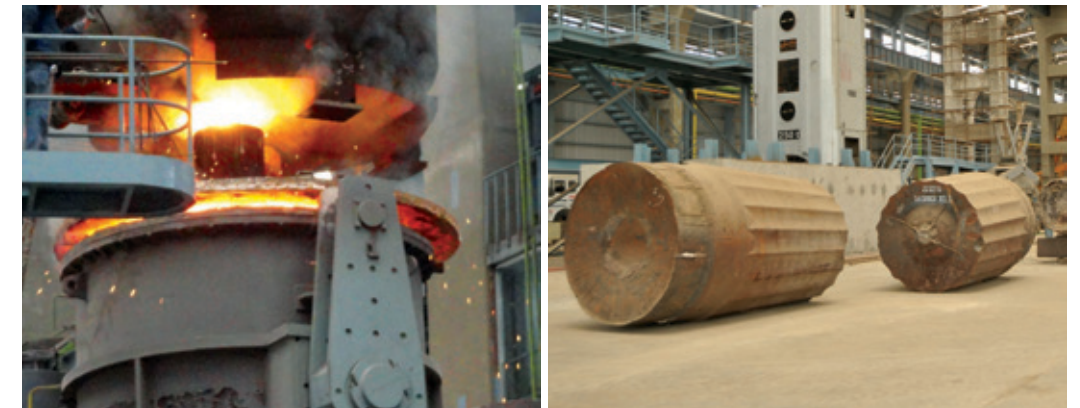


Setting New Standards of Metallurgical Excellence

At L&T Special Steel and Heavy Forgings, a commitment to quality drives us to improve upon our offerings. This has led to products that have substantially raised the industrial bar.

We consistently maintain extremely low H ($<1\text{ppm}$) in our supplies along with ultra low tramp elements meeting the stringent requirements of J & X factors, magnetic permeability under i.e. $<1.05\mu$, maintaining hardness levels within the band of 20 BHN.

Our commitment to quality is peerless and is directly reflected in the products we deliver to our customers.



QUALITY



Certified Fit

L&T Special Steels and Heavy Forgings is equipped with state-of-the-art in-house inspection and testing facilities for mechanical, chemical, metallurgical, non-destructive examination including radioactivity inspection.

Every piece of finished forging that we create undergoes a battery of mechanical, chemical, metallurgical, dimensional and non-destructive tests at our dedicated testing and inspection centres to ensure total quality before it is shipped to our customers.

Our testing laboratory is accredited by NABL (ISO/IEC 17025:2005) for chemical and mechanical testings.

We hold various certifications such as ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001.

Our fabrication facility has also been awarded the U/U2 Certification by ASME and continues to provide value to our customers.

The Company is approved by various national/international bodies like Lummus, BARC, IBR, NPCIL, EIL, GE, etc.

Our processes, quality systems, safety standards and sustainability efforts are regularly ratified by various global agencies, enabling us to not only meet but even exceed global benchmarks on all counts.



Certifications:

- Quality:** ISO 9001 • ISO 14001 • ISO18001 • ISO50001
- ASME (Material) • Lab Accreditation by NABL (National Accreditation Board of Testing Laboratory)

Testing Systems

Mechanical	Chemical	Metallurgical	Non-Destructive Examination
Tensile Test	Spectrometric Test	Metallographic study	Radioactivity Detection system
Impact Test	"C" & "S" Analysis	Microhardness Test	Ultrasonic Examination
Dropweight Test	O ₂ , H, N Gas Analysis		Liquid Penetrant Examination
Hardness Test	WDXRF Analysis of Fluxes Ferro Alloys, Slag, etc.		Magnetic Particle Examination



SUSTAINABILITY



Forged for A Better World

Our integrated approach towards Environment Health and Safety (EHS) Management is based on various national and international standards. This helps us to achieve our goal of going beyond legal compliance.

SAFETY

We monitor competency and employ Behavior Based Safety methodology to bring the culture of safety into every aspect of operation.

ENVIRONMENT

We meet the norms for environment management with:

- Highly efficient Fume Extraction system
- Zero Liquid Discharge
 - 100% Recycling of treated effluent
 - 100% Reusing of treated Sewage
- Advanced technologies for pollution control
 - UF & RO-based effluent treatment plant and SBR-based sewage treatment plant
- Robust Environmental Monitoring System
 - Online Monitoring System for Ambient Air Quality and Stack Monitoring
- Rainwater harvesting
- Usage of green fuel (natural gas)
- Wealth out of waste (converting waste into reusable form)
- More than 33% green belt area

Certificates:

Safety: OHSAS 18001: 2007

Environment: ISO 14001: 2004

Energy Conservation: ISO 50001: 2011

We have been awarded IGBC's LEED INDIA PLATINUM RATING for our buildings that use less water, optimise use of energy, conserve natural resources and provide a healthier work environment, as compared to conventional buildings.

