



Total Piping Solutions

Design | Detail Engineering | Fabrication | Erection | Testing | Life-cycle Support



The Company

We do it all

Larsen & Toubro is a leading technology, engineering, construction and manufacturing conglomerate with global operations.

L&T Power draws on L&T's rich experience in the power business to deliver unmatched value to its customers from its flagship engineering and manufacturing hubs, set up in partnership with world leaders like Sargent & Lundy, Mitsubishi Heavy Industries, Howden, Clyde Bergemann and CMI.

Fast Facts

Manufacturing muscle: An in-house facility for the manufacture of

- Boilers
- Turbines
- ESPs
- Heat Exchangers & Condensers
- Fans
- Power Cycle Piping

Covers almost 85% of all power plant equipment

Specialisation: Turnkey EPC solutions across core industry sectors

Service strength: Spans EPC, manufacturing, electrical and instrumentation, commissioning, testing, up-gradation and life-cycle support

Proven track record: Enriched experience & expertise in Engineering, Metallurgy, Welding & Fabrication

Technical knowhow: Alliance with leading engineering & manufacturing companies



Strategic Partners

Sargent & Lundy, USA

The US-based engineering major extends world-class consulting, basic engineering and development services to fossil fuel power generation plants and delivery systems. Sargent & Lundy (S&L) has a history of providing specialised services to power & energy companies. It has designed over 1000 power plants globally totalling 125000 MW, over 6200 circuit miles of high to extra-high-voltage transmission lines and over 100 substations. S&L extends comprehensive engineering, energy business consulting and project services to new and operating power plants.

Mitsubishi Heavy Industries Ltd, Japan

A world leader in the manufacture of heavy machinery, Mitsubishi Heavy Industries (MHI) has consolidated sales of over USD 37 billion. With over five decades of experience in manufacturing supercritical boilers and turbine-generators, MHI is a global leader in the power space.

Mitsubishi Electric Corporation, Japan

With operations in 35 countries and over 100000 employees, Mitsubishi Electric Corporation has commanding presence in the electric and electronic equipment space. Its Energy and Industrial Systems Group makes hydraulic turbine generators and nuclear power plant equipment.

CMI, Belgium & CMI-EPTI, USA

CMI is a major supplier of HRSGs. Turbine manufacturers, EPC contractors and operators of power plants across the globe acknowledge the superiority of CMI design. CMI, Belgium has over 500 references in HRSG worldwide.

Clyde Bergemann EEC US Inc

Since 1946, Clyde Bergemann has designed and supplied air pollution control equipment for a swathe of applications and customers. With over 1500 installations worldwide, it has one of the largest installed bases of electrostatic precipitators in North America.

Howden, UK

The UK-based global engineering organisation, Howden supplies fans, rotary heat exchangers, compressors and gas cleaning equipment worldwide to key industries including power generation, petrochemicals, steel making, mining and cement production.






Piping Centre Facilities & Capabilities

The Piping Centre is located in L&T's sprawling 763-acre manufacturing complex at Hazira, (a major port, 21 km from Surat, 300 km from Mumbai, and just eight kilometres from the Arabian Sea). Equipment fabricated can be shipped out on barges or via road through NH 6 and NH 8.

Spread over 30 acres, the Centre has a covered shop area of 16200 sq.m including two bays (270x30m each), and a manufacturing capacity of 12000 MT per year. The Centre is certified by ISO, IBR and ASME (for S, PP and R stamps).

The Centre is an impressive assembly of technology, expertise, people and processes – all primed to provide cutting-edge piping solutions to companies in the core sector. Around 350 experienced piping engineers and skilled workmen deliver solutions based on the Centre's all-round capabilities that encompass design, engineering, fabrication, project management and SCM. This translates into cost-effective, on-time delivery of world-class solutions, augmented by support during erection and beyond through the life-cycle of the plant.

High, intermediate and low pressure piping... We do it all

Engineering	Manufacturing	Erection	Procurement	Service
 <ul style="list-style-type: none"> • Piping conceptual / basic design • Piping detail design • Pressure design • System analysis • Stress calculation • Pipe hanger design • Project management 	 <ul style="list-style-type: none"> • Fabrication of piping spools • Bending • Welding • Heat treatment • Machining • Destructive and non-destructive material testing 	 <ul style="list-style-type: none"> • Assembly of prefabricated pipe spools and hangers • Power plant new builds • Replacement during power plant outages 	 <ul style="list-style-type: none"> • Expediting • Specifications • Quality Assurance • Scheduling 	 <ul style="list-style-type: none"> • Plant maintenance consulting service • Plant maintenance engineering • Plant optimisation • Power plant retrofits • Assessment of residual service life

The Piping Centre Advantage

- End-to-end quality piping solutions minimising rework/ disruption at site
- SAP-enabled integrated ERP system
- Proven capability of handling CS/LAS/SS material including P91/P92/WB36 up to 120 mm thickness & API 5L Grade material e.g. X65, X70, etc
- On-site welding minimised, reducing cost and time
- Eighty per cent of critical welding done using mechanised processes with best-in-class equipment
- Induction and cold bending machines: Can bend pipes of any thickness or diameter for super-critical power plants

Piping Centre Capabilities

Detail Engineering

The Piping Centre has in-house capability to carry out detailed engineering based on basic designs provided by L&T S&L and L&T Chiyoda.

Supply Chain Management

A dedicated group of SCM specialists ensures on-time delivery of premium quality at lowest possible costs using the world's best practices like Best Cost Country Sourcing (BCCS) and Superior Quality Management (SQM).

Fabrication

Missing elbows at work sites often disrupt fabrication activities, causing delays and cost over-runs. L&T-Power's Piping Centre, however, is equipped with hot induction and cold bending machines, which can bend pipes to any required angle and radius - directly reducing material management and fabrication costs and time. The pipes leave our shop-floor with the bends/elbows welded into them, exactly to specifications. The Safop Edge Preparation machine minimises weld deposits, which results in optimum heat input ensuring superior properties of weld joints.

Quality Assurance

We follow practices designed to meet the most stringent quality standards. The projects are reviewed by engineering and QA departments. All special customer requirements are recorded in quality control instruction documents. Finally, our Quality Management System ensures strict adherence to procedure at every step: welding, testing, painting and packaging.

Project Management

L&T has a proven track record in project management. The Piping Centre deploys advanced project management software such as Primavera and MS-Projects along with ERP (SAP) data management packages that integrate processes like SCM, Planning, Production and Dispatch. This helps clients to access information at all stages — from proposal to handover.

Site Support & Field Services

We provide active support to on-field execution, erection and commissioning processes. In combination with central project management control and site execution progress tracking, tools like SAP & eALPS+ enable remote site management, leading to seamless integration and optimum operational efficiency.

Piping Solutions for Diverse Customer Segments

The Piping Centre is capable of serving a range of core sector industries from thermal and nuclear power to refineries, petrochemicals and fertilisers. It has proven capability to handle carbon steels, critical alloys like Gr. P11/P22, P91/P92, WB36, stainless steels, incoloy and API 5L grade material.

Thermal Power piping

- Main steam, cold reheat, hot reheat, HP/LP bypass piping
- Auxiliary PRDS and auxiliary steam piping
- Spray water piping for reheater and superheater attemperators
- Boiler feed water suction and discharge lines
- Extraction steam piping
- CEP suction and discharge lines

Characteristics

- Temperature: Up to 604°C
- Pressure : 340 kg/cm²
- Materials: SA335 Gr. P91/P92/P22/P11, SA106 Gr. B & C

Nuclear power piping

- Main coolant piping (Reactor cooling piping)
- Auxiliary and safety system piping in reactor
- Main steam line

Characteristics

- Temperature: Up to 350°C
- Pressure: 176 kg/cm²
- Materials: SA 333, SA 335 Gr.P22, SA 106 Gr B & C, SS 304L

Fertiliser Plant Piping (Ammonia Syngas Generation Plant)

- HP steam superheater
- Feed/steam preheater
- CO₂ removal unit piping
- Desulphurisation unit piping
- Compressor unit piping

Characteristics

- Temperature: Up to 627°C
- Pressure: 150 kg/cm²
- Materials: SS304L, SS321H, SA335 Gr. P11 & P22, SA106 Gr. B & C

Oil & Gas

- Steam heater unit piping
- Condensate unit piping
- Re-boiler unit piping
- Vaporiser unit piping
- Heat exchanger unit piping
- Cross-country pipelines

Characteristics

- Temperature: Up to 550°C
- Pressure: 60 kg/cm²
- Materials: SA335 Gr.P11/P22, SA106 Gr. B & C, API5L Gr. X60, X65, X70, X80

Certifications



APPROVALS

POWER INDUSTRY

- NTPC • NPCIL • BHEL • Alstom • Toshiba • Doosan • Thermax • MHI • Fluor USA

OIL & GAS

- Essar • P M Piping Germany • SBEC USA • Fluor USA

The Technology Edge



Hot Induction Bending Machine

Make: Cojafex, The Netherlands
Model: PB 1400 R
Capacity
 Outer diameter: 114 to 1422 mm
 Thickness: 5 to 100 mm
 Bend radius: Max. 10200 mm (0°-90°); Min. 152 mm (0°-180°)
Advantage:
 Less pressure drop and enhanced flow efficiency contribute to overall plant performance.

Make : Electro Pneumatics & Hydraulics, Pune, India
Model: 400 CNC-3X
Capacity
 Outer diameter: 114 to 419 mm
 Thickness: Max. 21 mm
 Bend radius: 170 to 2000 mm
Advantage:
 Augments induction-bending. Bends pipes of lower thickness and diameter. Together with induction-bending machine, it offers a comprehensive pipe-bending solution.



Cold Bending Machine



Edge Preparation Machine

Make : Safop, Italy
Model : TUB MATIC-1200 CNC
Capacity
 Outer diameter: 89 to 1200 mm
 Thickness: Max. 100 mm
 Weight: 16000 Kgs
 Quantity: 2 Nos.
Advantage:
 Narrow groove welding minimizes weld deposit, resulting in optimum heat input. Result: superior properties of weld joints.

The Technology Edge



Induction Heating

Make: Miller, USA
Model: Proheat 35
Capacity
 Output power: 35 KW @ 5-30 kHz
 Quantity: 8 Nos.

Advantage:
 Ensures uniform heat distribution across the thickness of pipes during pre/post-heating and stress-relieving.



Submerged Arc Welding

Make: Lincoln, USA
Model : Powerwave AC/DC 1000 SD & others
Capacity
 Output power: 1000 Amps @100% duty cycle
 Quantity: 6 Nos.

Advantage:
 Ensures higher weld productivity with superior & consistent quality.



Shielded Metal /Gas Tungsten Arc Welding

Make: Fronius, Austria
Model: Trans TIG 3000
Capacity
 Output power: 500 Amps @ 60% duty cycle
 Quantity: 20 Nos.

Advantage:
 Achieves high quality weld with controlled heat input & minimum power consumption due to inverter technology.



Pipe Spool Rotator

Make: Primo Automation
Capacity
 Outer diameter: 250 - 914 mm
 Length: 12 Mtr Max
 Weight: 15 MT Max
 Quantity: 02 Nos.

Advantage:
 Facilitates job rotation during welding

The Technology Edge

Make: Seco Warwick
Specifications
 Type: Gas-fired
 Control: SCADA
Capacity 70 MT
 Temperature: 1150°C
 Size: 12 m x 6 m x 3.6 m
Advantage:
 In-house heat treatment facility helps in achieving optimum quality control and faster throughput



Heat Treatment Furnace



Surface Preparation

Make: Redemaco Engineering
Specifications
 Size: 12 m x 6 m x 4 m
 Door opening: 6.4 m x 5.5 m
Advantage:
 Indoor in-house facility ensures superior external/internal surface preparation

Make: Redemaco Engineering
Specifications
 Size: 12 m x 6 m x 4 m
 Door opening: 6.4 m x 5.5 m
 No of Guns: 4
 Type: Airless
Advantage:
 Indoor in-house facility ensures uniform surface coating thickness



Painting

In-house Testing Facility



Y-RT Enclosure



TOFD Testing



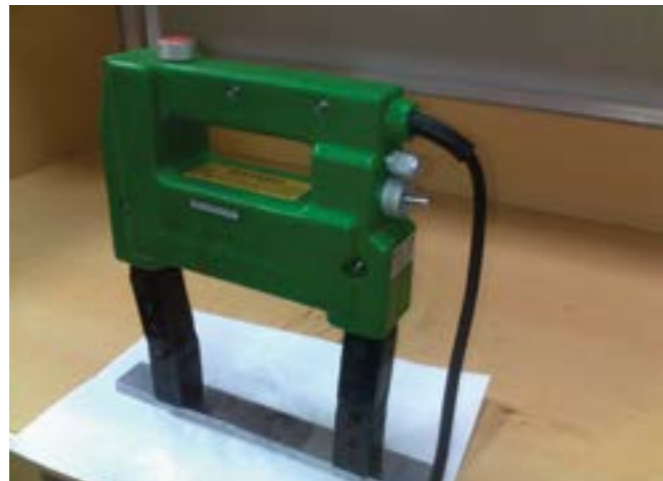
PMI Testing



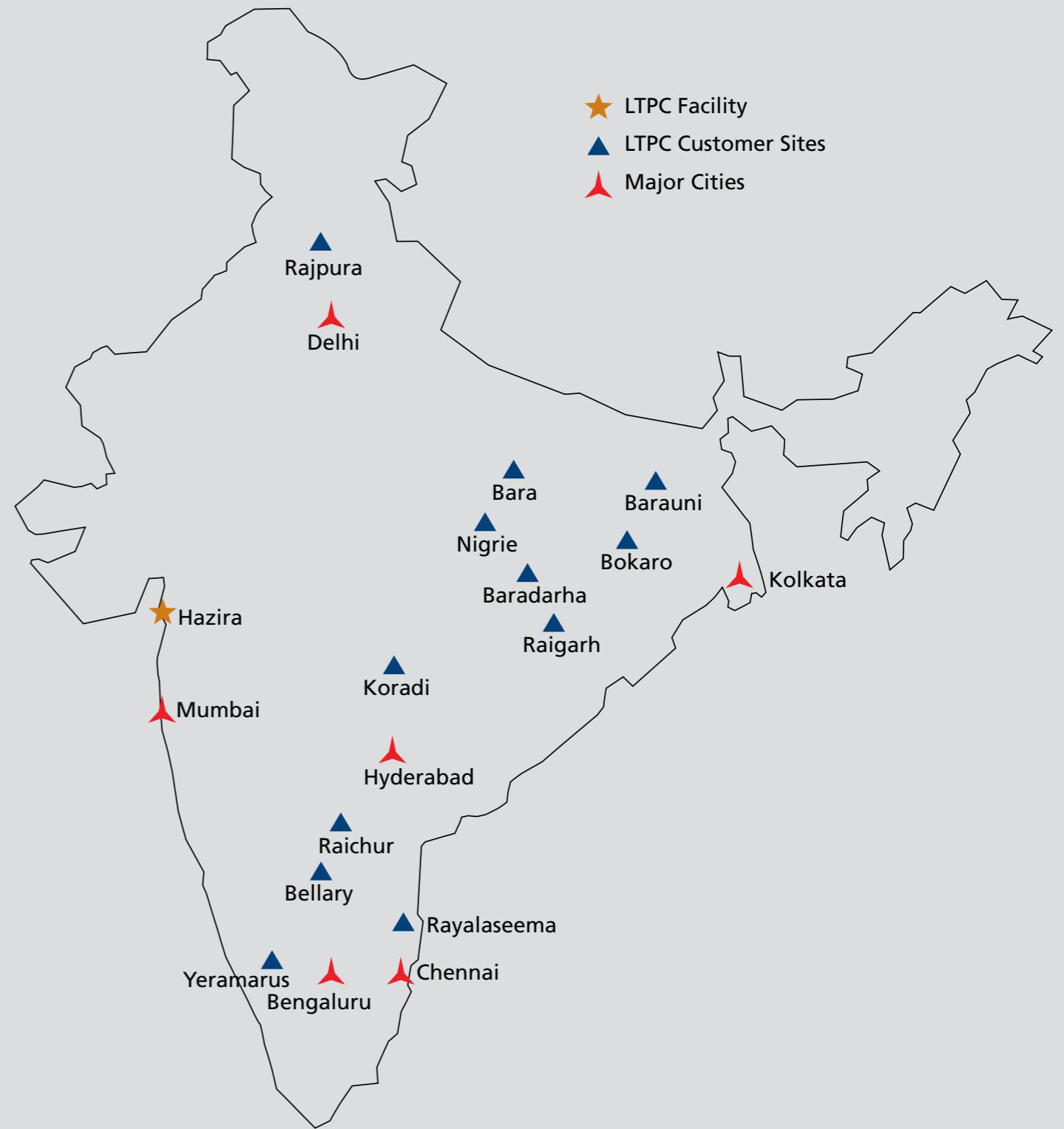
Ultrasonic Testing



Hardness Testing



Magnetic Particle Testing





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