

www.Lntvalves.com

Valve Automation Solutions

that go beyond integration



 **L&T Valves**



From **ideation**
to **integration** and beyond...

L&T Valves is a leader in engineered flow-control solutions for oil & gas, power and process industries, with expertise that spans five decades. We also manufacture mission-critical valves for the defence and aerospace industries.

Leveraging in-house capabilities in system design, manufacture, integration and testing, L&T Valves offers a comprehensive range of SIL-capable Valve Automation Solutions that go beyond industry standards and customer expectations.

We have tracked valve performance across a spectrum of industries and applications for decades. Leveraging the learnings, we ensure a perfect match between L&T valves, actuators and accessories – and offer solutions that deliver precise and consistent performance.

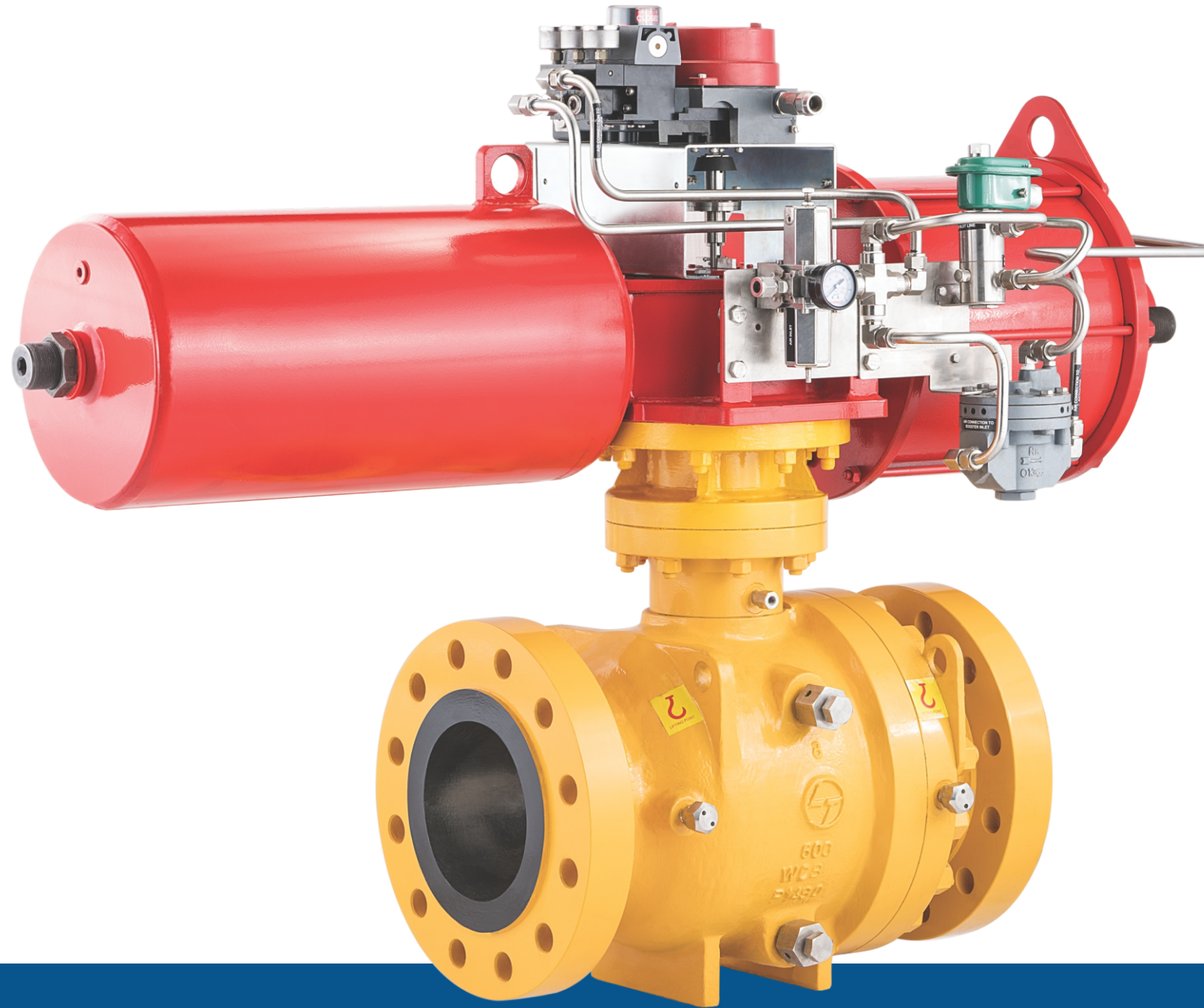
Our strategic partnerships with manufacturers of actuators and accessories translate to greater control over execution schedules and higher customer satisfaction.



Our Valve Automation Solutions include:

- High Integrity Pressure Protection Systems (HIPPS)
- Smart Valves
- Emergency Shut Down Valves (ESDV)
- Shut Down Valves (SDV)
- Remote Operated Shutoff Valves (ROSOV)
- Blowdown Valves (BDV)
- On / Off Valves
- Remote Operated Valves
- Motor-operated Valves

A **matrix** of valve automation solutions



Solenoid Valve
Positioner
Limit Switch
Air Filter Regulator
Quick Exhaust Valve
Volume Booster
Local Control Station (LCS)

Pneumatic Actuators
Hydraulic / Electro-hydraulic Actuators
Gas-over-Oil Actuators
Electric Actuators

Ball Valves – Side-entry and Top-entry
Butterfly Valves
Plug Valves
Gate Valves
Globe Valves

Solenoid Valve

- SIL3-capable
- 3/2-way and 5/2-way
- Auto and Manual Reset / Class F or H coil
- De-Energize: Open / De-Energize: Close
- Operating power: AC / DC Supply
- Body MOC: Brass / Al / SS
- Certification: IP / NEMA / ATEX / IEC / FM / CE / PESO

Positioner

- SIL3-capable
- Partial Stroke Test
- Electro-pneumatic / SMART (HART / FF)
- Advance Diagnostics with Software
- Operating power: 24V DC / 4-20mA
- Enclosure MOC: Al / SS
- Certification: IP / NEMA / ATEX / IEC / FM / CE / PESO

Limit Switch

- Micro / Proximity Switch (SIL2 / SIL3-capable)
- SPDT / DPDT / Non-contact type
- Protection: Hermetically-sealed
- Extended open / close indication (optional)
- Operating power: AC / DC Supply
- Enclosure MOC: Al / SS
- Certification: IP / NEMA / ATEX / IEC / FM / CE / PESO

Air Filter Regulator:

- Manual / Auto Reset
- Filter Element: Sintered Bronze / Polycarbonate / Polyethylene / SS
- Body MOC: Aluminum / Stainless Steel
- Filter Element Size: 5 μ / 25 μ / 40 μ
- Inlet & Outlet Pressure Gauge

Pneumatic Actuators

- SIL3-capable
- Linear / Rotary
- Rack-and-Pinion / Scotch Yoke
- Piston type – Single-acting / Double-acting
- Fast acting with cushioning arrangement
- Certification: IP / ATEX / IEC / PED / CE

Hydraulic / Electro-hydraulic Actuators

- SIL3-capable
- Linear / Rotary
- Scotch Yoke / Rack-and-Pinion (Hydraulic only)
- Piston type – Single-acting / Double-acting
- Electrical failsafe
- With External Hydraulic Power pack
- Certification: IP / ATEX / IEC / PED / CE

Gas-over-Oil Actuators

- Pipeline gas used as power source
- Linear / Rotary
- Scotch Yoke
- Piston type – Double-acting
- Electrical failsafe
- Certification: IP / ATEX / IEC / CE

Electric Actuators

- SIL3-capable
- Linear / Rotary
- Intrusive & Non-intrusive
- On-Off / Inching / Modulating Duty
- Integral or Non-integral Starter
- Electrical fail-safe
- Communication: Hardwire / Modbus / Profibus / FF
- Certification: IP / NEMA / ATEX / IEC / FM / CE / PESO

Trunnion-mounted Ball Valves

- SIL3-capable
- Operating Time: Less than 2 seconds
- Actuation options: Pneumatic, Hydraulic, Electro-hydraulic, Electric
- API 6D Monogram, Fire-safe API 6FA / API 607 / ISO 10497
- Leakage Class: ISO 5208, Rate A (Soft-seated)
- Leakage Class: ISO 5208, Rate B (Metal-seated)
- Fugitive Emission: ISO 15848 Class B / A
- Options: Double-piston Effect
- Size: 3" to 56", Class 150 to 2500

Triple-offset Butterfly Valves

- SIL3-capable
- Operating Time: Less than 5 seconds
- Actuation options: Pneumatic, Hydraulic, Electro-hydraulic, Electric
- API Monogram, Fire-safe API 607 / ISO 10497
- Leakage Class: API 598 Resilient Seated
- Fugitive Emission: ISO 15848 Class B / A
- Size: 3" to 100", Class 150 to 1500

Gate Valves

- SIL3-capable
- Operating Time: 1 second / inch
- Actuation options: Pneumatic, Electric, Hydraulic
- API 600 Monogram / ASME B 16.34, Fire-safe API 607 / ISO 10497
- Leakage Class: API 598 / MSS SP-61
- Fugitive Emission: ISO 15848 Class B
- Size: 2" to 72", Class 150 to 4500

Double Block & Bleed Plug Valves

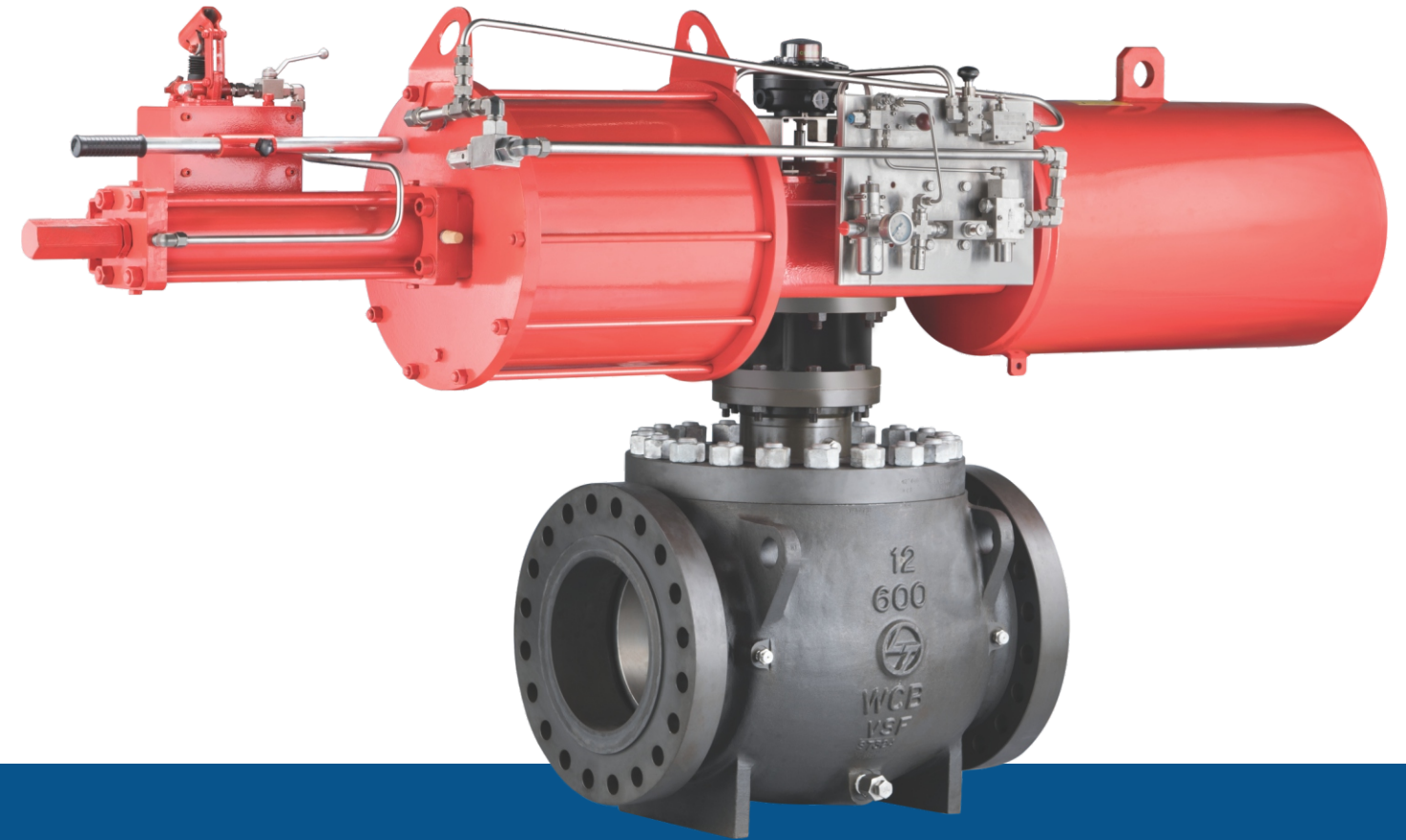
- Actuation options: Pneumatic, Electric
- API 6D / ISO 14313, Fire-safe API 607 / ISO 10497
- Leakage Class: ISO 5208, Rate A (Soft-seated)
- Fugitive Emission: ISO 15848 Class B
- Size: 2" to 42", Class 150 to 600

Emergency Shutdown Valves

L&T Valves offers Emergency shutdown / Blow down Valves (ESDV / SDV / BDV) built on Quarter-turn (Ball & Butterfly) and Linear (Gate & Globe) Valves.

ESDV Features:

- SIL2 or SIL3-capable System
- Fast closing / opening – operating time less than 2 seconds
- Fail-safe configuration (Open / Close / Stay-put)
- Redundancy – 1oo2 / 2oo3 for Solenoid Valve
- Partial Stroke Test (PST) facility
- Open / Close Position Indicator
- Instruments suitable for Hazardous Area Classification IP / NEMA / ATEX / IEC / FM / CE / PESO



Options

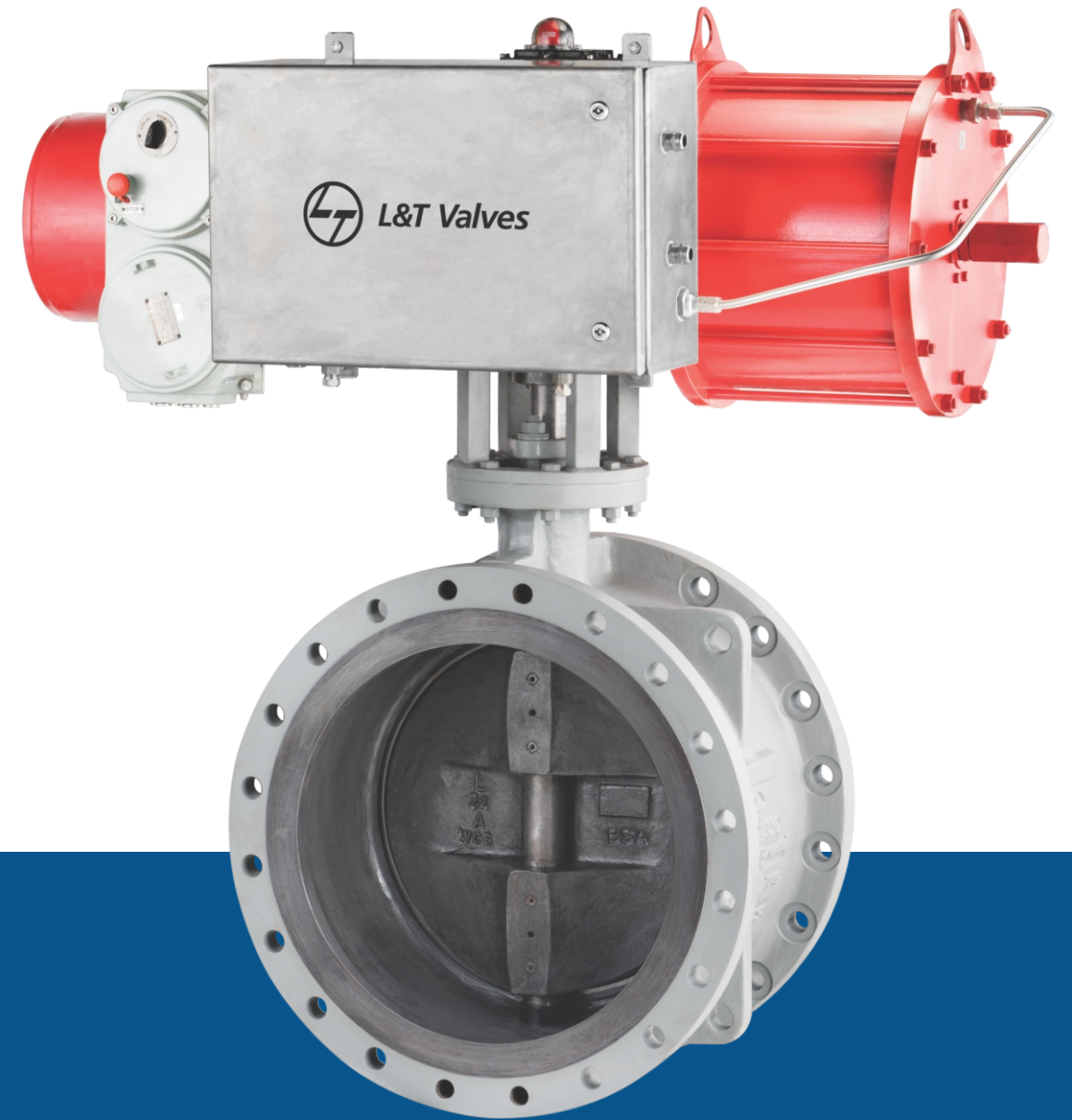
- Fire-proof system (Fusible Plug, Fire box, Jacketing or Coating)
- ESD via Momentary / Pulse signal
- Instruments mounted on IP cabinet box
- Local Control Station (LCS) with customized local operating function
- Manual open / close
- Back-up Air Volume Tank
- Pneumatic ESD control without electric source

Remote Operated Shutoff Valves

L&T Valves offers Remote Operated Shutoff Valves (ROSOV) built on the versatile Triple-offset Butterfly Valves, primarily targeting tankage and custody transfer applications.

ROSOV Features:

- SIL2 or SIL3-capable system
- Fail-safe configuration (Open / Close / Stay-put)
- Redundancy - 1oo2 to meet safety and availability requirements
- Partial Stroke Test (PST) Facility
- Solenoid Valve with Local Manual Reset safety feature
- Open / Close Position Indicator
- LCP on valve and outside-dyke area for emergency operation and mode selection (Local / Remote)
- Field-adjustable operating time
- Instruments mounted on IP cabinet box
- Instruments suitable for Hazardous Area Classification IP / ATEX / IEC / PESO



Track Record

- More than 1500 ROSOVs in service

High Integrity Pressure Protection System (HIPPS)

L&T Valves offers a range of customised SIL3-capable High Integrity Pressure Protection Systems (HIPPS) for over-pressure protection.

In industrial plants, in the case of over-pressurisation, the gases released are primarily flared. Flaring and venting of flammable gases pose health and safety hazards and constitute a significant threat to the environment.

High Integrity Pressure Protection System (HIPPS) is a Safety Instrumented System (SIS), which by definition is a distinct, reliable system, used to contain catastrophic over-pressurisation and prevent the release of toxic, flammable or explosive chemicals.

HIPPS protects downstream equipment by shutting-off the source of over-pressure within seconds, and is designed to offer at least the same reliability as a safety relief valve or flare system.



Compliance Standards:

- IEC 61511 and IEC 61508

Components:

- Valves - Ball or Butterfly
- Actuators - Pneumatic, Hydraulic or Electro-hydraulic
- Pressure Transmitters
- Logic Solver – Solid state or Programmable Logic Controller (PLC)
- High Integrity Manifold Block

Redundancy:

- Final control element (1oo2)
- Solenoid valves (1oo2)
- Pressure transmitters (2oo3)
- Logic Solver – Redundancy on I/O Cards, Relays, Communication and Power Module

L&T Valves Asset Management Program - LAMP™

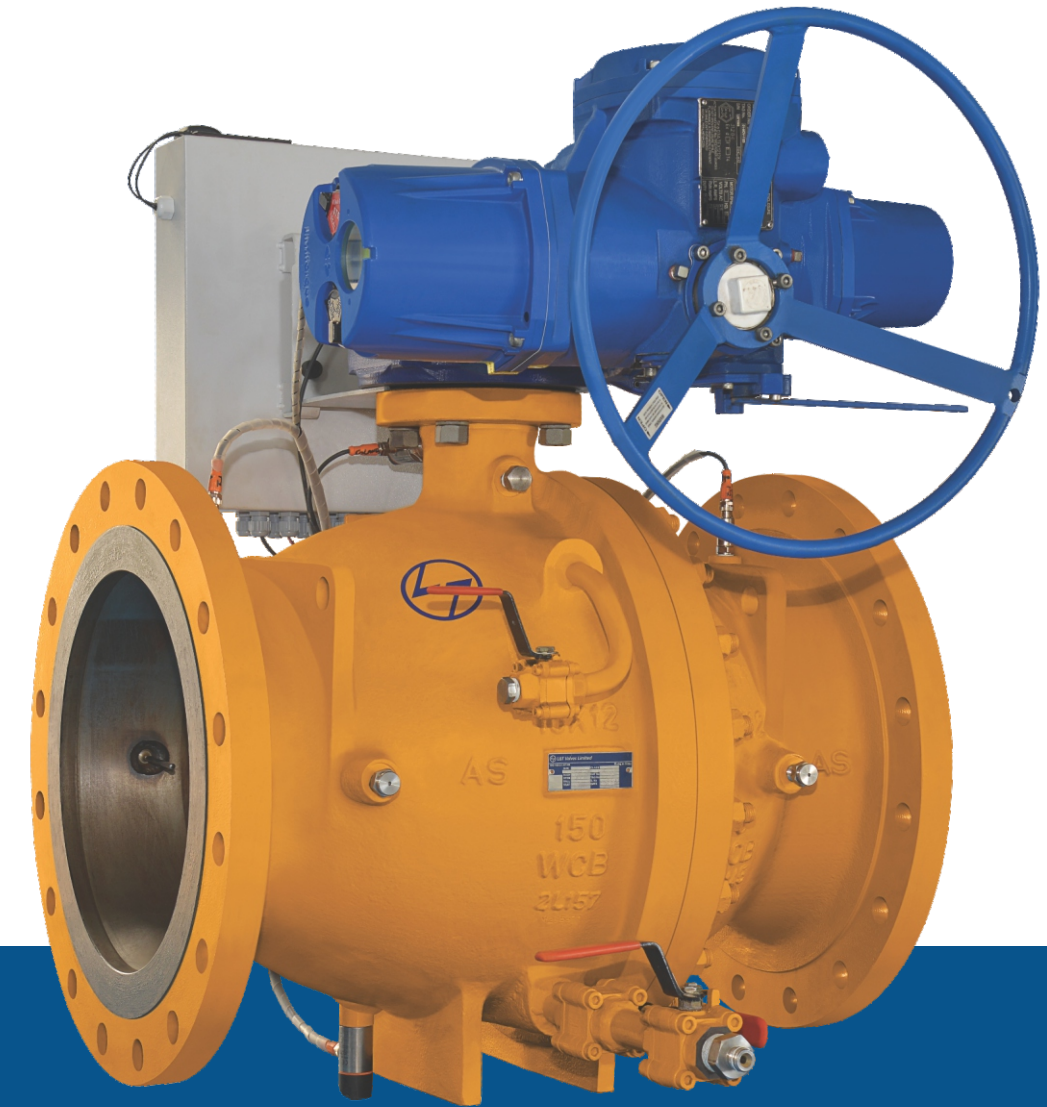
Automation and digitalization being the need of the hour, L&T Valves introduces a revolutionary product – an IoT-ready remote valve performance monitoring system – L&T Valves Asset Management Program (LAMP™).

At the core of the system is a SIL3-capable Ball, Butterfly, Gate or Globe Valve. Each valve is assigned a unique serial number, cross-referenced to all traceability information such as material / test data and valve signature. The traceability data can also be provided on an RFID device attached to the valve.

The valves are upgraded to 'Smart Valves' by integrating them with next-gen smart sensors capable of sensing:

- pressure, temperature, flow
- position, torque, leakage, vibration

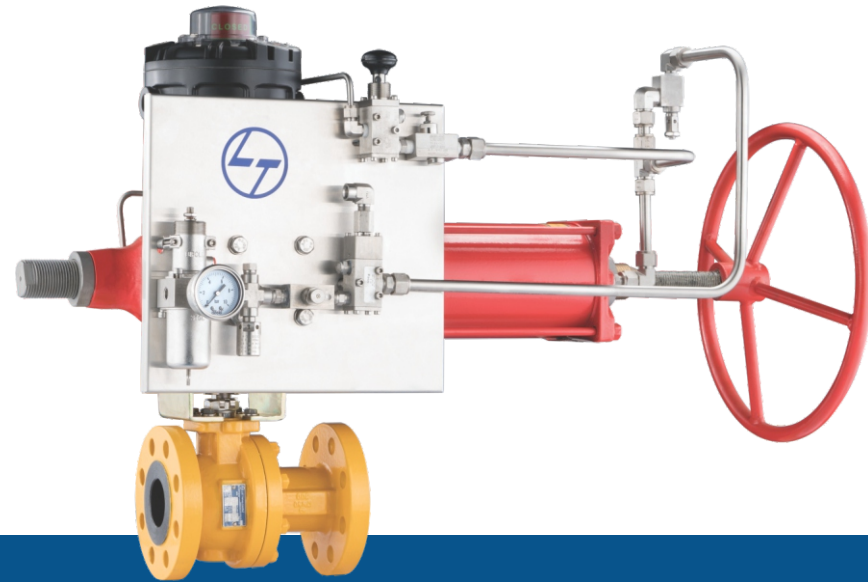
The information is relayed in real-time to a secure, dedicated cloud-computing platform, where it is analyzed to provide complete valve health and diagnostic information.



Benefits

- Move from preventive maintenance based on thumb rules to predictive maintenance based on real data
- Reduces uncertainty in the system
- Enhances overall plant safety and performance



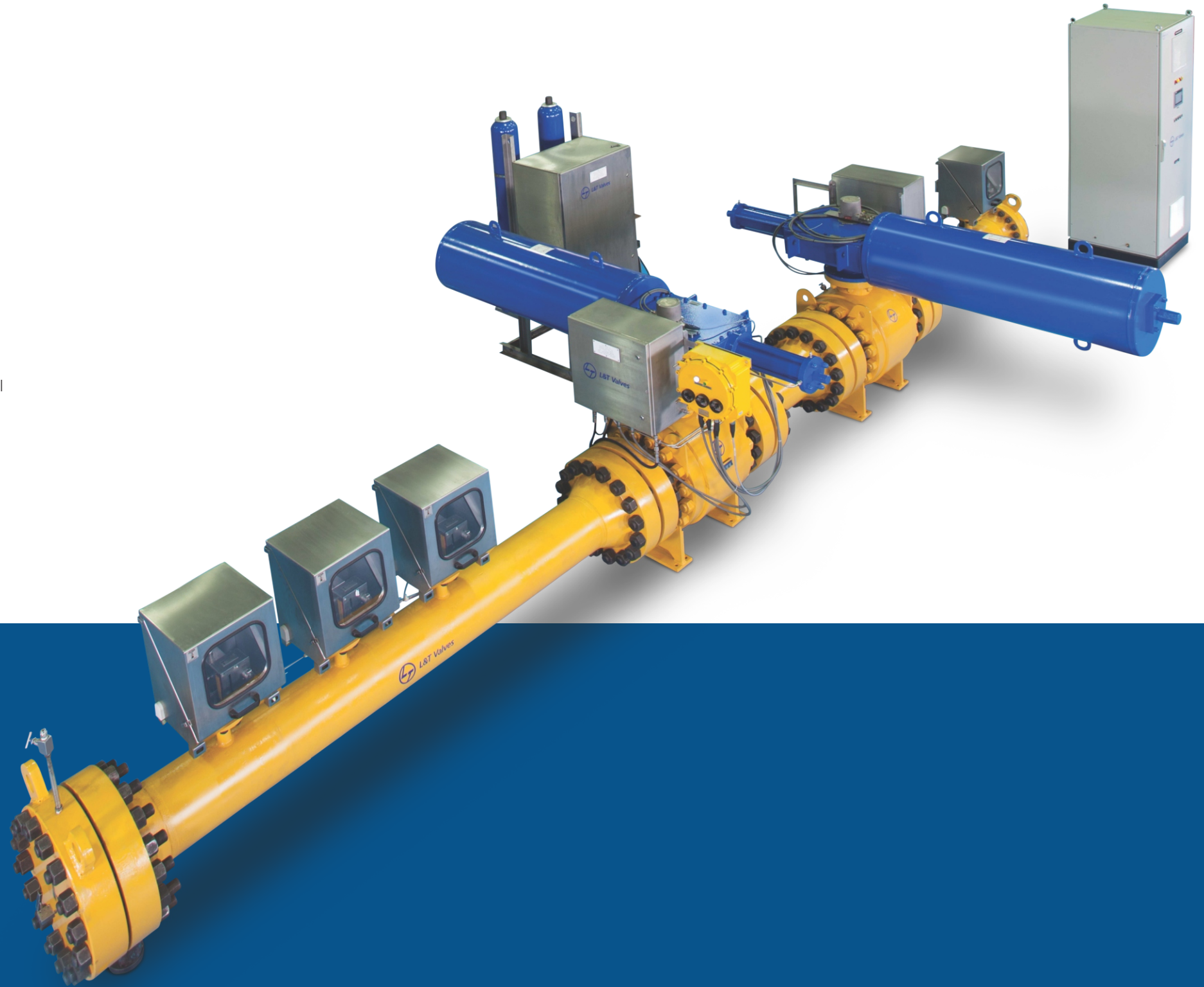


On-Off Valves

L&T Valves offers a variety of On-Off Solutions to meet industry and customer requirements.

The L&T Valves Advantage

- Versatile range of valves - Gate, Globe, Check, Ball, Butterfly and Plug
- Flow-control expertise spanning 55 years
- World-class manufacturing facility
- In-house capability to design and integrate customized automation solutions
- Designs reviewed by Functional Safety Engineer
- Flexibility to offer any combination of valve / actuator / accessory / communication protocol
- New-build and retrofitting options for automation systems for valves
- Trained personnel for commissioning and service support
- Single-point warranty for the complete valve automation system





A wholly owned subsidiary of Larsen & Toubro Limited

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