

# COMPANY OVERVIEW







For over 30 years Paladon Systems has been supplying valve actuators and control systems on a global basis.



Since its inception in 1981, Paladon Systems has continuously developed its design, engineering, organisational, quality and management capabilities. Today Paladon Systems designs and manufactures many valve automation technologies that lead the industry in terms of cost efficiency, operational performance and environmental responsibility.



Paladon Systems' vast experience with supporting the Oil, Gas and Power industries with valve automation solutions for the most critical applications in extreme operating environments has resulted in product designs that offer unsurpassed quality and reliability across all industries and applications.

Holding ISO 9001 certification for over 20 years, today Paladon Systems hold accreditation and approvals from almost all major institutes, engineering companies and end users.

Headquartered in England, Paladon Systems has offices and facilities in Scotland, Italy, Malaysia, the Russian Federation and the United States. With a comprehensive suite of valve automation solutions backed by a dedicated team of field service engineers, Paladon Systems is **Total Valve Control**.





- **Focus** - Valve Automation is our primary business and competency, allowing us to outperform companies whose focus is often diluted across multiple disciplines.
- **Agility** - Our smaller size allows us to communicate quickly and efficiently, both internally and externally; ultimately allowing us to effectively manage our client requirements, no matter how demanding or dynamic they might be.
- **Performance** - With a consistent on-time delivery well above the industry standard, we lead the way in what clients can expect from their valve automation solution providers.
- **Stability** - For over 30 years our direction has been successfully set by one Managing Director; giving our clients the reassurance that we will support them in long-term and mutually beneficial relationships.
- **Relationships** - Our close customer relationships allow us to fully understand market and client requirements. All our product solutions have been driven by market requirements, from conceptual design through to production, installation, operation and maintenance.
- **Quality** - Quality consciousness coupled with our vast experience of supplying valve automation solutions for the most demanding applications gives us the ability to provide our clients with robust solutions with low costs of ownership.
- **Ease of Conducting Business** - All our design, application and configuration engineering and project management activities are conducted from our Brixworth England headquarters. Why conduct business with multiple engineering and production teams spread across the globe when you can deal with one facility to get all the answers you need and with unsurpassed responsiveness?



**Rotary Scotch-Yoke Valve Actuators** are designed to operate any quarter-turn valve or mechanism. Available in pneumatic, hydraulic, double-acting and spring-return configurations.

- Torque outputs up to 680,000 Nm (6,018,000 lb in)
- Fabricated all steel construction as standard for excellent corrosion resistance and lightweight designs. Stainless steel designs also available
- 3<sup>rd</sup> party approved for use in SIL3 certified systems
- Hydraulic valve actuators Lloyds certified for operation down to -65°C (-85°F)



**Linear Piston Valve Actuators** are designed to operate any linear valve or mechanism and are available in pneumatic, hydraulic, double-acting and spring-return configurations.

- Thrust outputs up to 289,134 N (65,000 lbf)
- Pedestal and close-coupled valve mounting options
- Scrapped (set removal) springs to ensure optimum and stable performance
- 3<sup>rd</sup> party approved for use in SIL3 certified systems



**Electric Valve Actuators** are available in all common configurations including multi-turn, part-turn, linear and lever and are able to operate practically all valve types and mechanisms.

- Torque outputs up to 675,000 Nm (5,973,750 lb in)
- Suitable for hazardous and non-hazardous areas
- Modular design for flexible operation and easy upgrades



**Valve Positioning Systems** provide precise hydraulic positioning of choke, control, globe or ball valves via continual modulation or stepping control.

- Suitable for use with spring-return and double-acting valve actuators
- System designs using biodegradable fluid available
- All common communication protocols supported including HART and Foundation Fieldbus
- Diagnostics package to permit implementation of cost effective preventive maintenance programs





**Self-Contained Electro-Hydraulic Systems** provide on/off or positional control of linear and rotary valves. Completely self-contained, these systems give operators the low installation costs offered by electric actuator systems, but with the power and fail-safe capabilities which have traditionally only been available from pneumatic or hydraulic systems.

- Low power requirements down to 100 W
- Zero emissions
- System designs available that generate no carbon footprint during operation
- System designs using biodegradable fluid available
- Fail-close and fail-last designs available
- Partial valve stroke testing function with comprehensive diagnostics package available to permit the implementation of cost effective preventive maintenance programs
- All common communication protocols supported including HART and Foundation Fieldbus



**High Integrity Pressure Protection Systems (HIPPS)** are independently instrumented protective devices that act as the last line of defence for protecting downstream operations from over pressurization.

- Streamlined procurement process for reduced CAPEX and lead times
- Turn-key systems in full compliance with IEC 61508 Edition 2 and IEC 61511
- Certified up to SIL3 with complete documentation packages
- Projects executed using a standard design methodology under the responsibility of a TÜV Functional Safety Expert
- Topsides and subsea designs



**Hydraulic Power Units** provide motive power and control logic to operate either single or multiple hydraulically actuated valves.

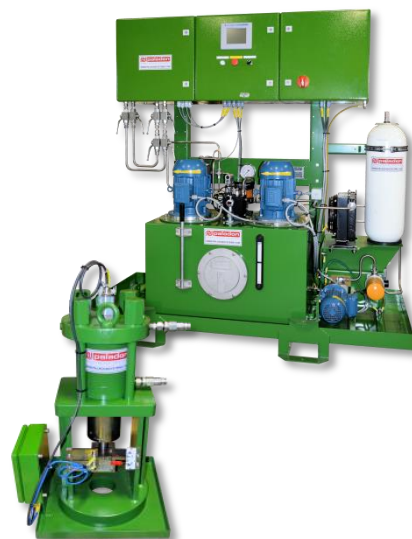
- Bespoke designs to meet specific customer requirements including the monitoring of pressures, levels and flow rates
- Systems available with redundant sub-systems to provide unsurpassed reliability
- Stand-alone units utilising solar panels and rechargeable battery packs provide an ideal solution when no local utilities are available
- Full PLC control available with all common communication protocols supported





**Turbine Bypass Systems** protect gas turbines in coal fired power stations during critical start-up and shutdown operations, or in the event of a system abnormality.

- Extremely lower power requirements and zero power requirements when actuated valves are in a static position; resulting in low OPEX
- No requirement for cooling systems results in low CAPEX and OPEX
- System designs using biodegradable fluid available
- Use of seated poppet style proportional solenoid valves eliminate the constant bleed associated with designs using spool type solenoid valves; reducing operating power requirements and improving system safety



**Gas-over-Oil & Direct Gas Systems** are typically used for on/off valve control in gas transmission pipelines. These systems use the pressure in the pipeline to provide the motive power for the valve actuators to operate rotary and linear valves.

- Compact and highly reliable manifolded control systems
- Modular control system manifolds to allow for quick, simple and inexpensive control system on-site functionality changes or servicing
- Fully enclosed controls with lockable cover to provide excellent environmental protection and protection from unauthorised operation
- PED or ASME approved gas-over-oil and power gas storage tanks for safe containment of power gas



**Subsea Systems** are suitable for the operation of either rotary or linear subsea valves and are available in either double-acting or spring-return configurations.

- Non-pressure compensated designs suitable for operation down to 150 m (492 ft)
- Pressure compensated designs suitable for operation down to 1,000 m (3,281 ft)
- All common ROV and diver override interface standards available





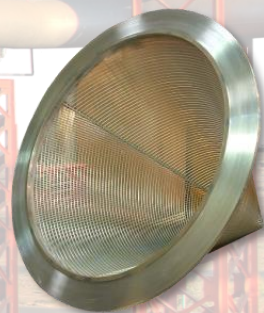
**Autonomous Shutdown Valves (ASV)** are designed primarily for the operation of subsea PLEM valves used in CALM Buoy and similar tanker loading and offloading terminals. The ASV can also be employed in land based applications where external power is limited or unavailable.

- Fully automated fail-safe operation of subsea PLEM valves including automatic linebreak detection and valve shutdown
- Remote status monitoring, override control and in-situ diagnostics
- Significantly reduced risk of pollution and loss of sealine inventory when compared to all competing system designs
- Fully self-contained subsea system able to operate 5 to 7 years before requiring battery replacement



**In-line Pipeline Strainers** protect downstream in gas pipelines from damage from pipeline debris such as scale, rust, jointing compound and weld metal.

- Designed in conjunction with British Gas
- Suitable for pipelines up to 36"
- Novel design features result in high strength, low pressure drops and the reduced possibility of blocking and binding



**Global Onshore & Offshore Support** is available from a dedicated team of certified Paladon Systems onshore and offshore site engineers. They specialise in all site activities from installation of new equipment, to modification and servicing of existing equipment irrespective of the original supplier.

- Installation of electric, pneumatic and hydraulic valve actuators
- Calibration and testing
- Refurbishment and resealing
- Hydraulic flushing
- On-site modifications
- On-site support and supervision
- Site surveys of actuated valve installations





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