paladon

TOTAL VALVE CONTROL

SELF-CONTAINED ELECTRO-HYDRAUIC CONTROL SYSTEMS

COMPANY

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.

Now headquartered in Italy since the 2018 reorganization, is also based in the UK at the historical facility, founded in 1981, and in Houston, United States, thanks to great cooperation with a US partner. With a comprehensive suite of valve automation solutions backed by a dedicated team of field service engineers, Paladon Systems is **Total Valve Control**.

INTRODUCTION

Originally developed for the offshore Oil & Gas Industry, Paladon Systems Self-Contained Electro-Hydraulic Control Systems provide a rugged and reliable valve automation solution. Typically used in applications in which external pneumatic or hydraulic power sources are unavailable, unreliable or uneconomic, these fully customizable systems provide:

- The same simplicity and low cost installation as provided by electric actuators
- Fail safe or fail last operation
- The power, precision and compact size of hydraulic systems
- Industry leading control options and system diagnostics

APPLICATIONS

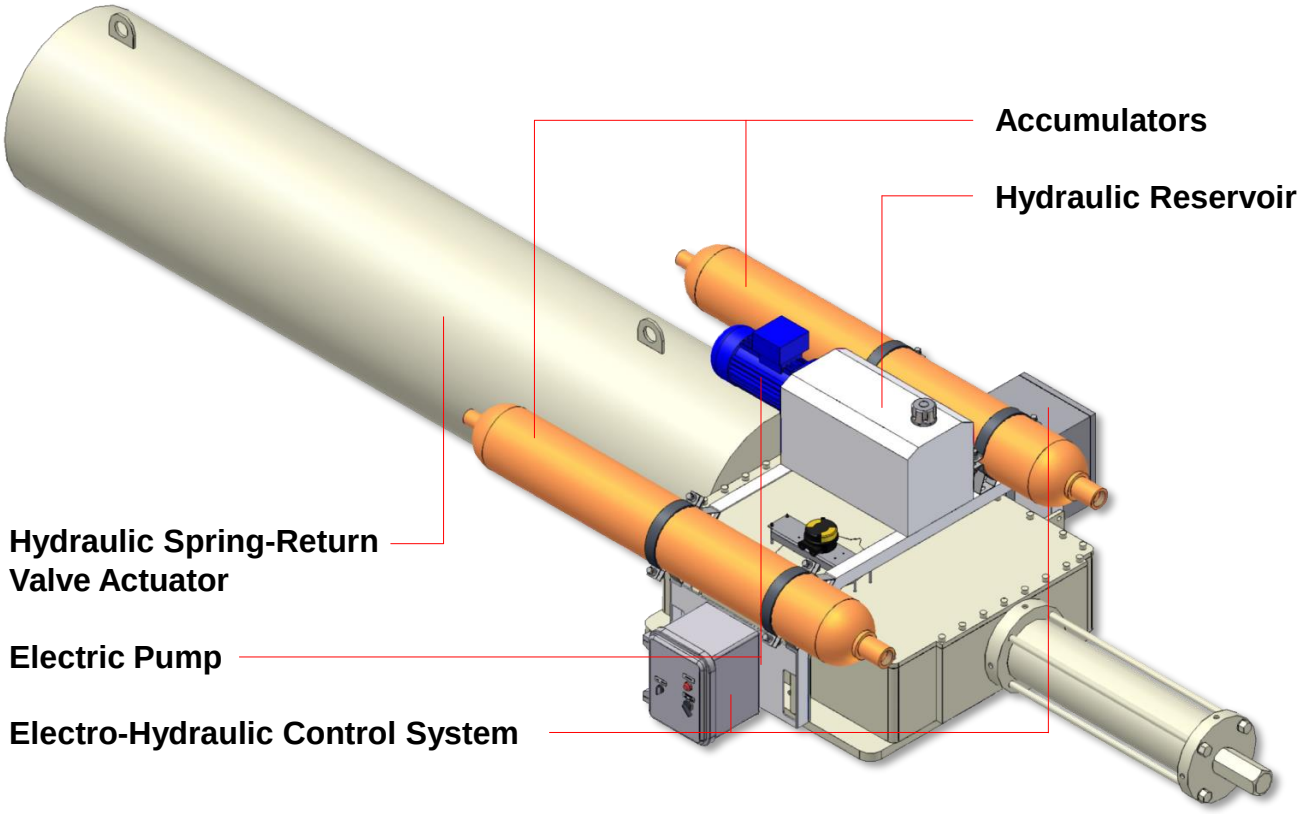
Fully customizable systems are available for practically any application and environment; however, common ones include:

- Partial valve stroking
- Onshore and offshore ESD valves
- Wellhead choke valve positioning
- Control & globe valve positioning
- Water reservoir level systems
- Suction and discharge pump metering stations
- Gas pipeline linebreak shutoff systems
- Ballast systems for FPSOs
- Refinery fire control systems
- Tanker loading/offloading facilities

SYSTEM OVERVIEW

Paladon Systems Self-Contained Electro-Hydraulic Control Systems are integrally mounted to the actuator, and typically consist of the following basic system components:

- Non-Pressurized Hydraulic Reservoir
- Electric Pump/s
- Hydraulic Accumulator/s
- Electro-Hydraulic Control System
- Hydraulic Valve Actuator/s



KEY FEATURES & OPTIONS

- On/off and modulating VALVE operation
- Partial valve stroke testing supported
- Compatible with biodegradable fluids
- Compact and rugged designs
- Low power and solar powered systems available
- Direct acting zero leakage solenoid valve for proportional control with accuracy and fast response
- Manifold construction to eliminate pipework and increase system reliability and ruggedness
- Precise valve positioning capabilities using Paladon Systems smart hydraulic TVC Positioner
- Manual overrides
- Hydraulic accumulators to provide rapid valve operation and back-up valve control on loss of primary power supply source
- Systems flushed to NAS1638 Class 8 as standard, NAS1638 Class 6 available
- Full diagnostic capabilities and communication with all industry standard protocols

PERFORMANCE DATA

- **Electrical Power Sources**
  - ▶ 24VDC
  - ▶ 115/220 VAC, 50/60 Hz, Single Phase
  - ▶ 380/415 VAC, 50/60 Hz, Three Phase
- **Hazardous Area Certification**
  - ▶ ATEX Zones 1 and 2
- **Hydraulic Pressure Output**
  - ▶ 210 to 350 Barg (3,045 to 5,076 psig)
- **Ambient Operating Temperature**
  - ▶ -60 to +60°C (-76 to 140°F)
- **Valve Actuator Output**
  - ▶ Scotch-yoke valve actuators up to 680,000 Nm (6,018,000 lb in)
  - ▶ Linear piston valve actuators up to 289,134 N (65,000 lbf)

DIAGNOSTICS

- Pump Running Operational & Standby
- Pump Fault Operational & Standby
- High Oil Pressure
- Low Oil Pressure
- Low Low Oil Pressure
- Low Oil Level
- High Oil Temperature
- Filter Condition

POSITIONING SYSTEMS

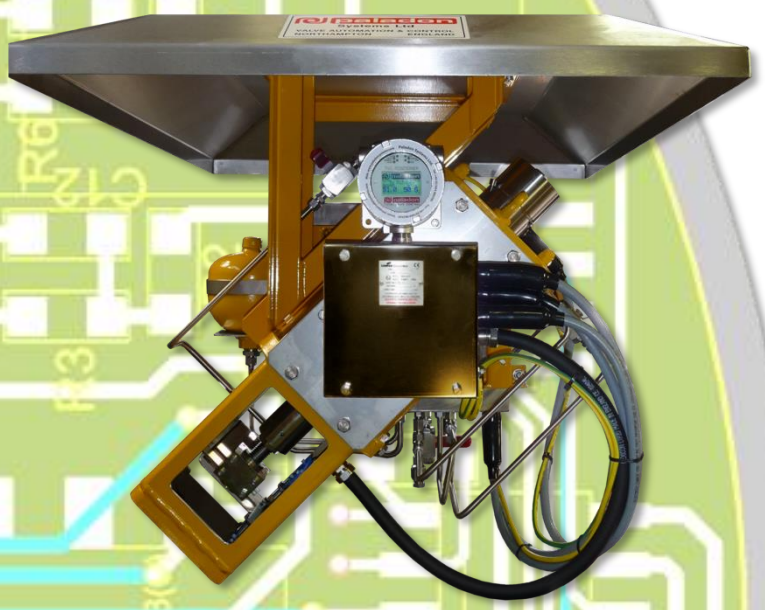
The TVC Positioner is designed specifically to provide precise positional control of hydraulic actuators with on-off or proportional solenoid valves. The TVC Positioner can accept positional feedback from a three wire potentiometer or a position transducer with a current output. Key features include:

Basic System

- Zone 1 / 2 Infrared communication interface using an Exia keypad
- Large graphics LCD with comprehensive status and data display
- Three way galvanic isolation – command in, actual position out and power supply
- Selectable sinking or sourcing actual position 4-20mA output
- Local / remote configuration enable input and open drain status output
- Selectable solenoid drive sense for failsafe operation
- Selectable default operation on command signal/feedback signal break
- ESD solenoid output - 24VDC open drain
- Fault output - 24VDC open drain
- Hydraulic pump drive controlled by demand or external pressure sensors
- External fault contact monitoring
- Selectable interlock between ESD and fault outputs
- Stepping mode with adjustable ON and OFF times
- Low power - normal operation less than 2W plus solenoids

Enhanced System

- HART communication channel on re-transmitted actual position signal
- Foundation Fieldbus interface
- 3 analogue inputs for hydraulic system monitoring and condition monitoring
- Performance logging with USB download
- 2.5A proportional solenoid drive with PID control
- Partial stroke valve testing with logging



Paladon Systems

Loc. Ca' Verde (Strada 412/R),
29011 Borgonovo Val Tidone (PC), Italy

Tel: +39 0523 846611
Fax: +39 0523 846659

info.italia@paladonsystems.com

Paladon Systems

Ferro Fields, Brixworth, Northampton
NN6 9UA, United Kingdom

Tel: +44 (0)1604 880700
Fax: +44 (0)1604 882424

info@paladonsystems.com

Paladon Americas

14514 Luthe Road, Houston,
TX 77039, USA

Tel: +1 855 725 2366
Fax: +1 832 310 2370

info.usa@paladonsystems.com