



**VALVES**

**Automation**

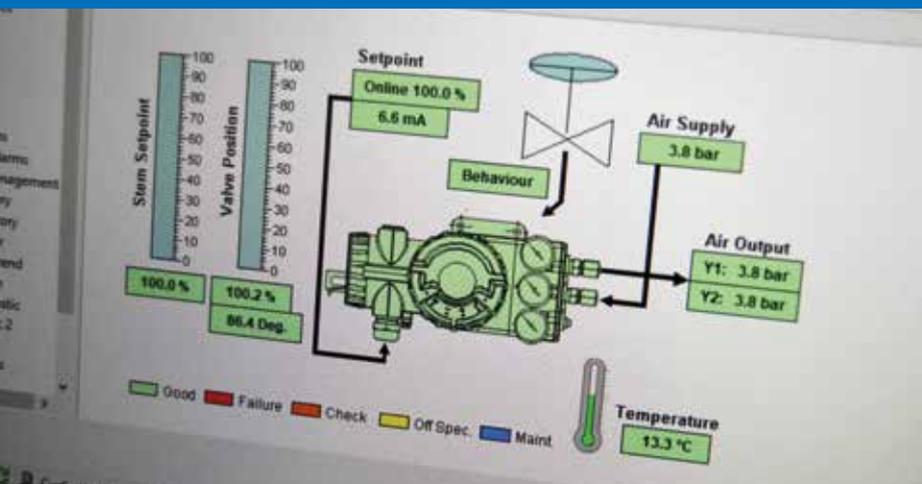


# Pekos Valve Automation

Pekos Automation division provides complete valve sizing and automation for industrial processes.

Valve sizing and automation, based on customer's requirements according to:

- Redundant configuration control.
- ATEX/SIL Classification.
- International standards for specific applications.
- Passive Fire Protection.
- Partial Stroke Test devices.
- Air tank sizing for emergency operating.
- Fast Stroke Sizing



# Pekos Valve Automation

## Pekos Automation Center

The Pekos Automation Center is fully dedicated to valve automation. The building adds 1700 sq/mt to our assets and is equipped with assembling area, 25 TN Crane, Test Bench, warehouse and offices.

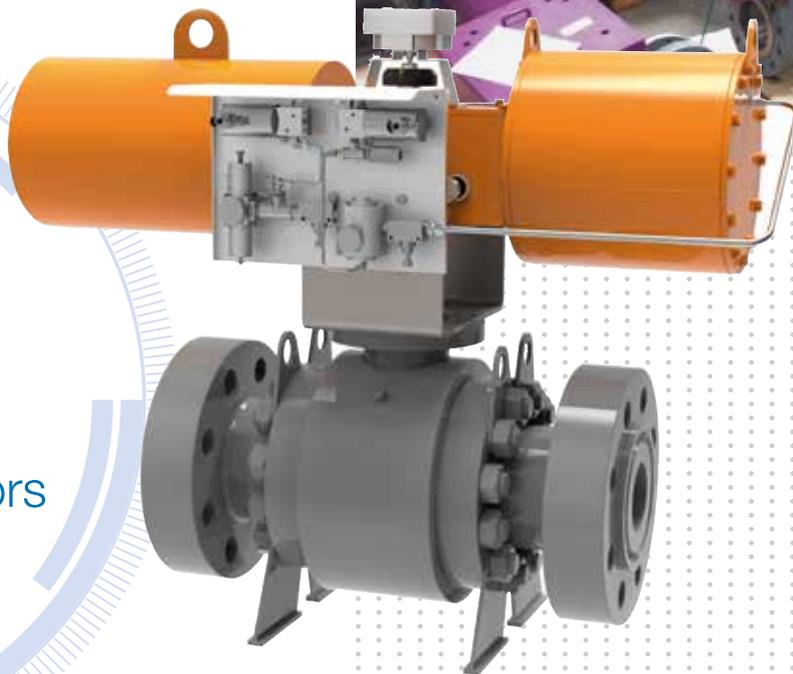
Our capabilities and stock level have increased significantly, being able to offer quick product availability and therefore to serve more automated packages within just a few days. The willing is offering the expertise and service to all our partners worldwide.



## VALVE AUTOMATION STOCK

### All types of Valve Automation:

- 25M € stock in valves and actuators
- Fast track service



# Actuators

Pekos Valves automation division offers all types of actuator assembly; 0-90° rotative actuators (pneumatic, hydraulic, electric, Gas over oil, Direct Gas, etc.).



## RACK & PINION

- Pneumatic.
- Single / Double Acting.
- 0-90° up to 180°.
- Low / Medium Torque



## SCOTCH YOKE

- Pneumatic / hydraulic.
- Single / Double Acting.
- 0-90°.
- High Torque.



## ELECTRIC

- 0-90° up to 180°(or multiturn).
- Power unit: 24 Vdc, 230 Vca, 400 Vac, others.
- Control unit: 24 Vdc, 230 Vac, others.
- Low / High torque.

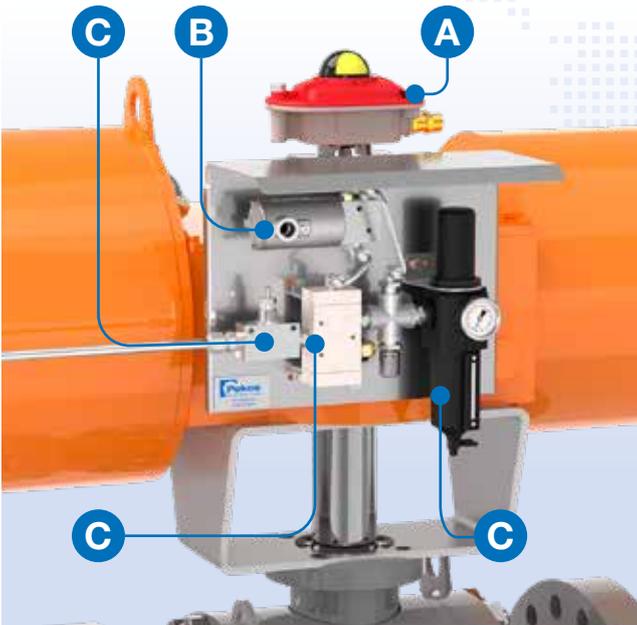


## HYDRAULIC ELECTRO-HYDRAULIC

- Rack & Pinion
- ScotchYoke.
- Single / Double Acting.
- 0-90°.
- Low / High Torque

# Automation Accessories

On board or remote control panels available



## A LIMIT SWITCH

- Limit switch boxes with visual position indicators
- Sensor Types: Mechanical / Magnetic / Inductive / Pneumatic.
- Available with ATEX (Eexia, Exd, Eexed) SIL certificates.
- Aluminium, stainless steel and vestamid housing covers.

## C PNEUMATIC ELEMENTS

- Pneumatic Valves 2/2, 3/2, 5/2, 5/3.
- Filter Regulator.
- Booster.
- Quick Exhaust.
- Thermal Fuse (Fire protection).
- Pressure Switches.
- Relief valves.
- Check valves.
- Lock up valves.

## B SOLENOIDS

- In-line / NAMUR assembly according to VDI/VDE 3845 available.
- For single/double acting
- Working temperature range: -60°C up to +90°C.
- DC/AC available
- Brass, Aluminium or Stainless steel body.
- IP65-IP68 Protection.
- ATEX / IECEx/FM.
- SIL.

## D POSITIONER

- Pekos Valves supplies universal positioners that provide versatility, dynamic performance, and high positioning accuracy.
- Assembled on top, in contact with the actuator, with the same rotary movement.
- Available for hazardous zones, SIL and other certificates...

### Pneumatic Positioner

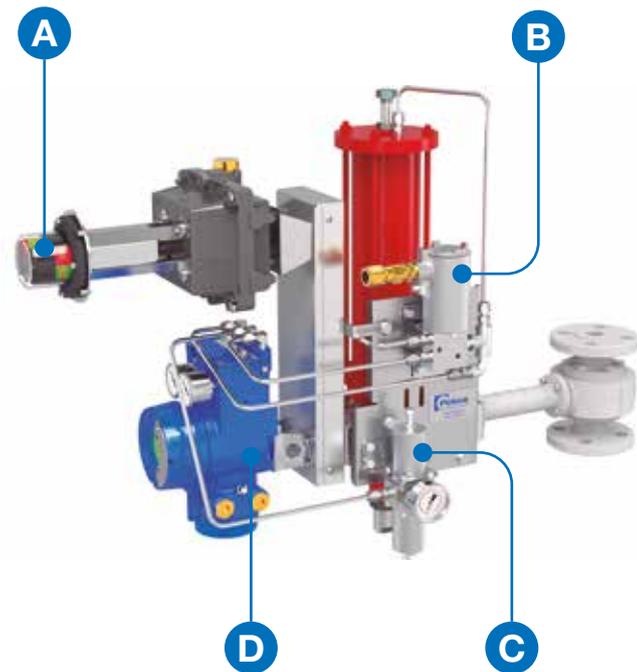
- 3 to 15 psi signal

### Electro-pneumatic Positioner

- 4-20 mA signal
- Optional, 4-20 mA feedback signal

### Smart Positioner

- Self-Calibration.
- Communication protocol: Hard, Profibus, and others.
- Optional, 4-20 mA feedback signal PST Function.



## E EMERGENCY MANUAL OVERRIDE

- For double acting and spring return actuators. Manual Override system available.



# Valve Automation

## SETTING PARAMETERS

### DETECTION / TEST DEVICES

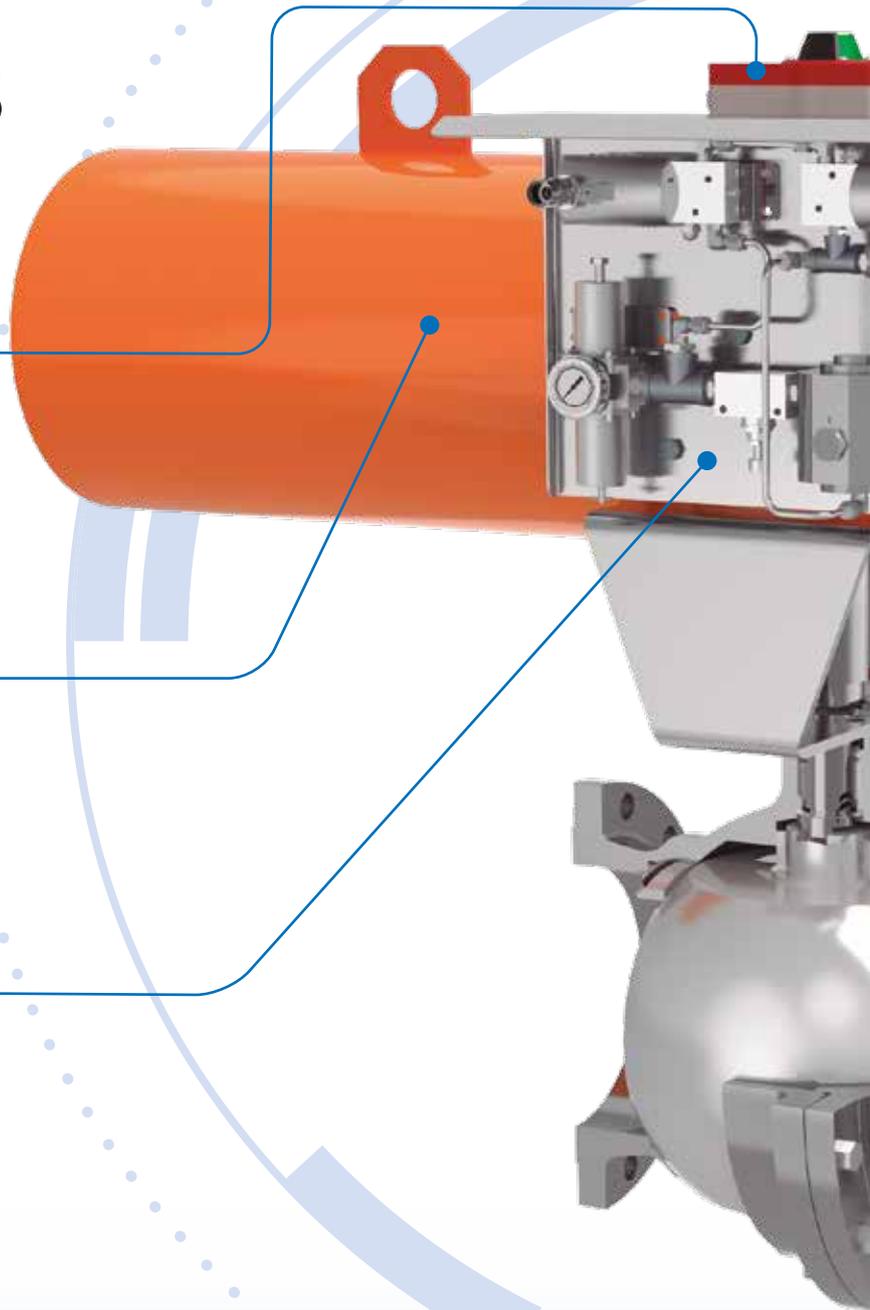
- Limit Switch - Sensor Types SIL
- ATEX
- Partial Stroke Test
- Positioners

### ACTUATORS

- Pneumatic / Hydraulic / Electric
- SIL
- ATEX

### CONTROL PANEL TYPES REQUERIMENTS

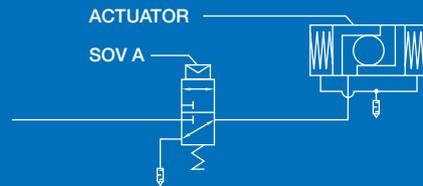
- SIL
- ATEX
- Stroking Times
- Different Control Configuration Available



# Solenoid Configuration

## 1001 Configuration

Only 1 solenoid  
 3/2 Solenoid - Single Acting  
 5/2 Solenoid, Monostable – Double Acting



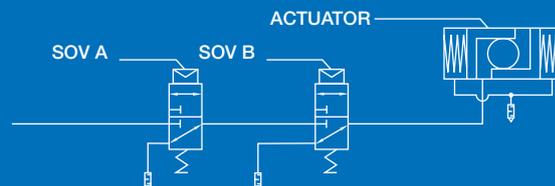
SOV A	ACTUATOR
<b>Single Acting</b>	
On	Open
Off	Close
<b>Double Acting</b>	
On	Open
Off	Close

## 1002 Redundant Configuration

2 solenoid connected in series - Single Acting

### SAFETY

The air has one way to reach the actuator



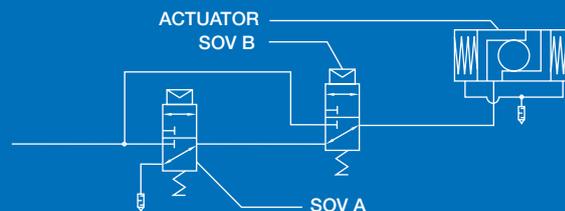
SOV A	SOV B	ACTUATOR
On	On	Open
On	Off	Close
Off	On	Close
Off	Off	Close

## 2002 Redundant Configuration

2 solenoid connected in parallel - Single Acting

### AVAILABILITY

The air has one way to reach the actuator



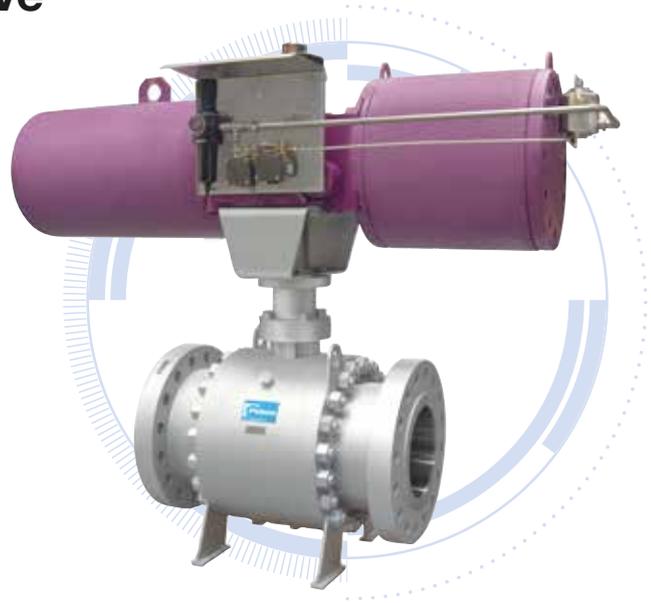
SOV A	SOV B	ACTUATOR
On	On	Open
On	Off	Open
Off	On	Open
Off	Off	Close

# Valve Type

## PROCESS FUNCTION

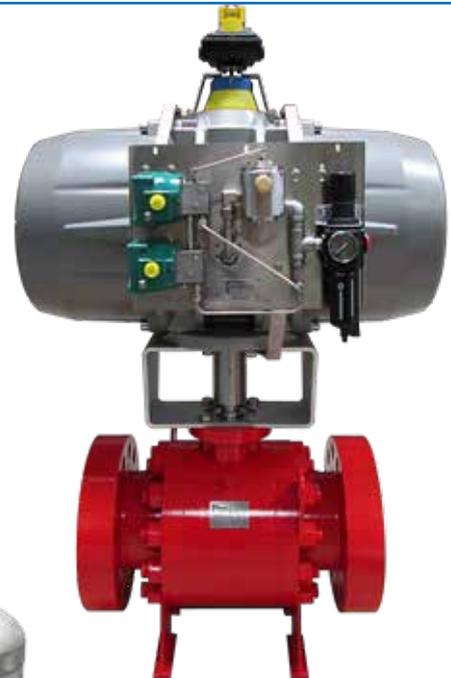
### **ESDV** Emergency Shut-Down Valve **/ SDV** Shut-Down Valve

- ON-OFF valve intended for emergency situations.
- Long periods of time at the same position (opened) until an emergency occurs.
- Required stroking times, especially for safety position.
- Single acting actuators. FAIL CLOSE.
- Manual reset pneumatic valves.
- Pneumatic control configuration: 1oo1, 1oo2.
- PST. / SIL. / Hazardous locations.
- An ESDV valve is controlled by the Emergency Shut-Down system (ESD/SIS)



### **BDV** Blow Down Valves

- Valve intended for venting the pipeline.
- Assembled with an air tank to ensure valve operability during emergency situations.
- Required stroking times.
- Single acting actuators. FAIL OPEN.
- Pneumatic control configuration: 1oo1, 2oo2.
- Hazardous locations.
- A BDV valve is controlled by the Emergency Shut-Down system (ESD/SIS).
- PST./SIL./ Hazardous locations



#### **BDV** Standard Air Tank Parts

- Pressure Switch
- Check Valve
- Gauge
- Drain Valve
- Lock-Up Valve
- Safety Valve



## XV Process Valve

- 2/3 or 4 way valve / V-Port
- Process ON-OFF valve controlled by the Process Control System (PCS).
- Required stroking times.
- Single acting / double acting actuators.
- Pneumatic control configuration:
  - 1oo1, 1oo2, 2oo2, etc.
  - PST.
  - SIL.
- Hazardous locations.



## MOV Motor Operated Valves

- Process ON-OFF valve controlled by Process Control System (PCS).
- Hazardous Locations.
- SIL for ESDV applications with fail safe actuators.
- HART, Profibus and others.
- Stroking Times.
- Manual Override.



Certified assembly for automatic valve according to EN161 & EN23553 (former EN264)

# EN161, EN16678 & EN23553 (EN264)

## EN 161

Automatic shut-off valves for gas burners and gas appliances.

## EN 23553 (former EN 264)

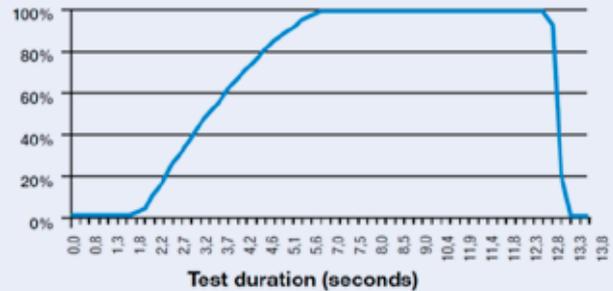
Safety and control devices for oil burners and oil-burning appliances.



Lloyd's Type Approval Certificate EN 161, class A, & EN 23553 (former EN 264), for PEKOS ball vales, with Air Torque actuators, assembled at Pekos facilities.

Equipment description:

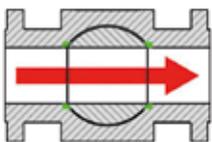
- **Measurement device:** SAMSON 3738-20 (software TROVIS-VIEW)
- **Actuator:** Air Torque AT351U S12 FA.
- **Solenoid Cv:** 0,3; II 2G Ex e mb II C T6
- **Quick Exhaust Cv:** 1.6
- **Air supply pressure:** 5 bar
- **PEKOS ball valve:** Z06 TTTG- PN40 DN50
- **Ambient temp. limitation:** -25°C up to +80°C



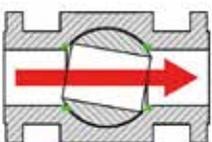
Equipment test according to EN 161 & EN 23553: Closing < 1 second (drawing).

## PST Partial Stroke Test

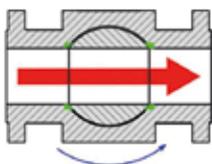
Non-intrusive test for safety prevention



**1° stage**  
Valve in working position.



**2° stage**  
PST operation (PST set point achieved) 10% rotation



**3° stage**  
valve back to working position (non-emergency situation).

The PST does not affect the fluid flow (red arrow). The PST allow us to reach and maintain the required system's SIL level.



**Remote Control Mode**  
Smart Positioner/Transmitter Communication Protocol ( HART, PROFIBUS, etc.).



PST Signature and Full Stroke Signature

# K-MASS® Passive fire protection

## General Standard Equip

Protected parts 1093°C/2000°F during 30 minutes. Result: After the test, the protected parts must be operative and will keep its operational features.



### As the fire starts:

K-Mass® starts to react at 85.6°C. A chemical process causes the coating to expand (intumesce). Evaporation on the surface then takes place which also has a cooling effect. The outside surface then starts to char.



### During the fire:

The surface char deepens reflecting 80-90% of the heat back into the fire. More intumescing takes place which forms a barrier which both insulates and has a cooling effect.



### Long term exposure:

The 1093°C heat will penetrate the first layer so that the K-Mas® below will start to react. The next layer reacts as before. The layers react until the fire is extinguished or the material is consumed.



K-MASS Coating assembled on the valve/actuator/ devices at delivery.

Easy maintenance without disassemble K-MASS protection

## K-MASS Application Types

K-Mass® is applied directly over all external surfaces of the parts which are going to be protected against the fire. The coating is fixed to the surfaces permanently. This protection systems allows to perform any kind of maintenance operations.

### SURFACE COATING

K-MassK-Mass® is applied directly over all external surfaces of the parts which are going to be protected against the fire. The coating is fixed to the surfaces permanently. This protection systems allows to perform any kind of maintenance operations.



### MODULAR SYSTEM

The modular system K-GUARD® consists of two parts which cover and protect the equipment. Both parts are made 100% of K-MASS® and are adapted to the external shape of the equipment, reducing ing all the possible gaps between protected parts and KMASS ®. K-GUARD allows to perform any kind of maintenance.



## BLANKETS

UL-1709, certified fire protection against fire during 30 minutes up to 1093°C.

Blankets must be assembled once the valve is set up at the pipeline





# VALVE Automation



ISO 9001  
ISO 14001  
ISO 45001



BS6364  
CRYOGENIC SERVICE



EN 161  
EN ISO 23553-1



FIRE SAFE



LOW FUGITIVE EMISSION  
TA Luft  
VDI 2440  
ISO 15848-1



TÜV. AR . 352  
TANK OF DANGEROUS  
PRODCUTS



REGISTER 204863



PED 2014/68/EU  
CATEGORY III. MODULE H



ATEX DIRECTIVE  
2014/34/EU



EN 16678  
EN 161



ANSI 372



IEC 61508



VALVES . PIPING SYSTEMS  
LIQUEFIED GAS TANKERS



API 6D - 0363



AD-MERKBLATT WO/TRD



EN 13774

**CRN** CANADA  
Certificate of Authorization issued by ABSA



AUSTRALIAN GAS  
ASSOCIATION  
CERTIFIED PRODUCT.



MODULE H

**TSG** CHINA



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