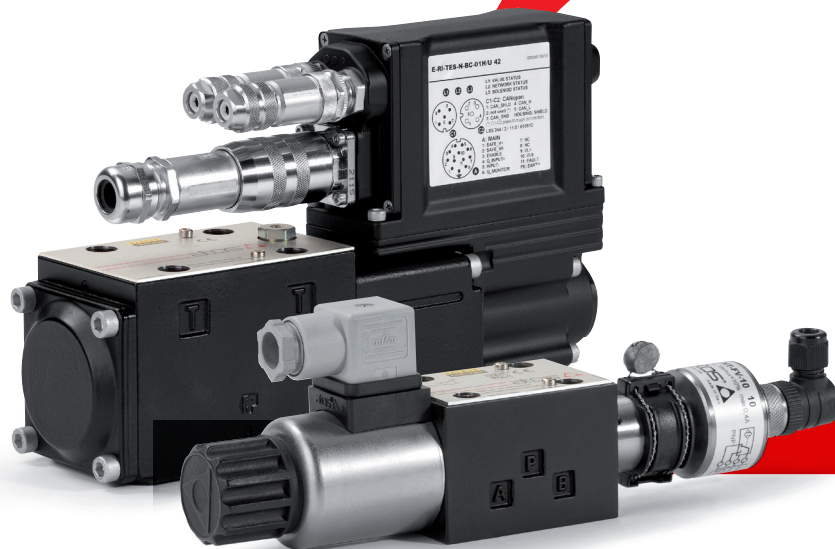


# Safety electrohydraulics

Proportional & on-off valves, cartridges, servocylinders and blocks certified according to safety directives

**SAFETY  
CERTIFIED**

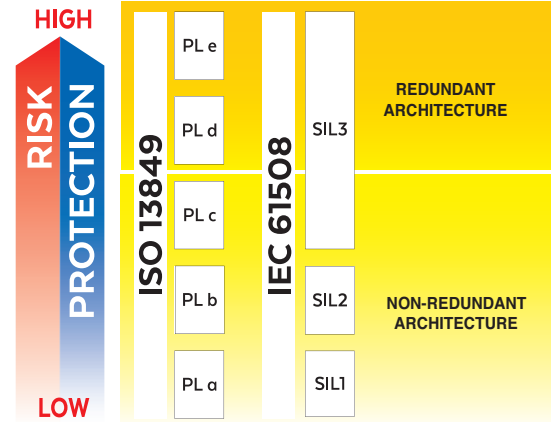
**atos**<sup>®</sup>   
the Italian electrohydraulics



## Safety components range

Atos is the only worldwide brand offering a full range of electrohydraulics safety components  
TÜV certified to **Machine Directive 2006/42/EC**, **IEC 61508**, **ISO 13849**

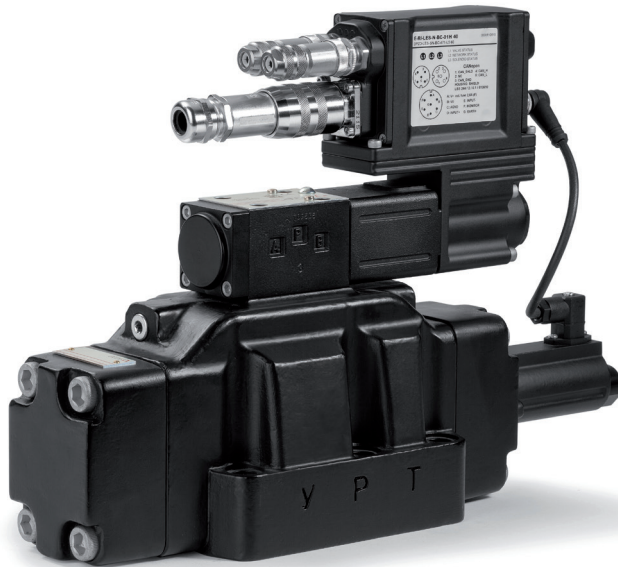
- digital proportional directional valves
- solenoid valves, screw-in and ISO cartridges
- control blocks for vertical presses
- servocylinders with integral transducer



**Safety Integrity Level (SIL) & Performance Level (PL)** states the max acceptable level of risk in process control systems, in order to reduce hazardous events

## Safety proportional valves

Proportional directional valves combining safety functions to standard functionalities



DIRECT & PILOTED

### Safety by double power supply

The separate power supply for electronics and coils allows the electronics to remain active and monitor the spool safety position when coils power supply is externally cut, to operate in safety conditions

### Safety by acknowledge signal

Upon valve's disable command input, to operate in safety conditions, the electronics monitor remains active to detect the spool safety position and confirm it through on-off output signal



ISO sizes 06 • 10 • 16 • 25 • 32 • 35

Q<sub>max</sub> 80 ÷ 3.500 l/min • P<sub>max</sub> 350 bar

IEC 61508 up to SIL 2 / SIL 3  
ISO 13849 up to category 4, PL e

## Inductive safety sensors

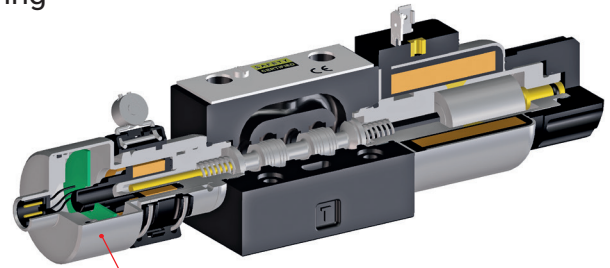
Contactless sensors for spool or poppet position monitoring

### FV inductive position switch

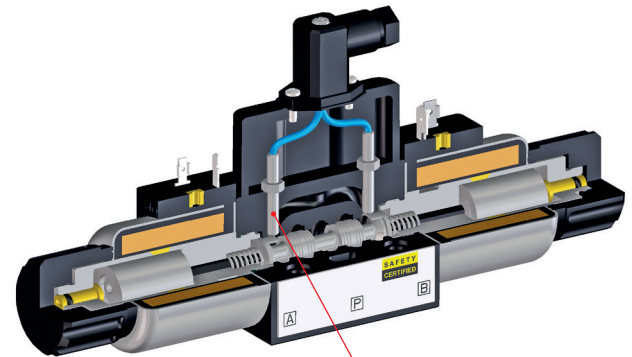
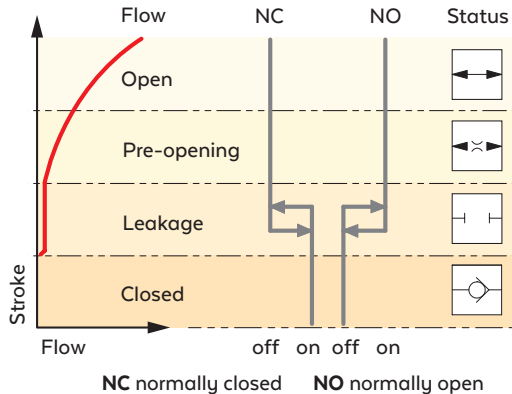
- NC and NO output
- Pmax 400 bar

### FI inductive proximity sensor

- NC or NO output
- Pmax 100 bar for valves, 500 bar for cartridges



**FV INDUCTIVE POSITION SWITCH**



**FI INDUCTIVE PROXIMITY SENSOR**

The spool position monitor signal switches its status from safe condition to unsafe condition

Machine Directive 2006/42/EC

## Safety solenoid valves

Machine Directive 2006/42/EC

On-off directional valves with inductive safety sensors that monitor the spool position to operate in safety conditions



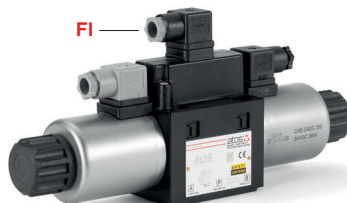
DIRECT

 **ISO sizes** 06 • 10  
**Q<sub>max</sub>** 80 ÷ 150 l/min • **P<sub>max</sub>** 350 bar



MODULAR

 **ISO size** 06  
**Q<sub>max</sub>** 60 l/min • **P<sub>max</sub>** 350 bar



DIRECT

 **ISO sizes** 06 • 10  
**Q<sub>max</sub>** 80 ÷ 150 l/min • **P<sub>max</sub>** 350 bar



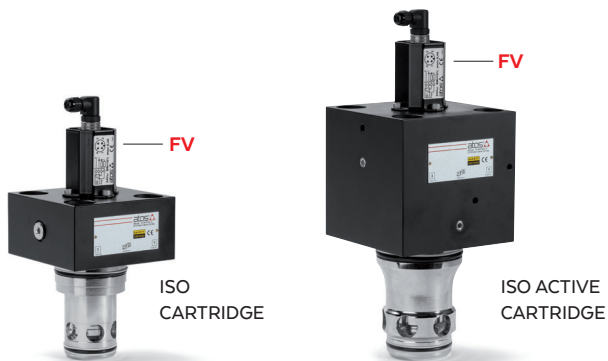
PILOTED

 **ISO sizes** 10 • 16 • 25  
**Q<sub>max</sub>** 160 ÷ 700 l/min • **P<sub>max</sub>** 350 bar

## Safety cartridges

Machine Directive 2006/42/EC

On-off cartridges with inductive safety sensors that monitor the poppet position to operate in safety conditions



ISO sizes  $3/4"$  •  $7/8"$  •  $1\ 5/16"$   
 $Q_{max}$  40 ÷ 300 l/min •  $P_{max}$  350 bar



ISO sizes 16 • 25 • 32 • 40 • 50 • 63 • 80 • 100  
 $Q_{max}$  290 ÷ 16.000 l/min •  $P_{max}$  420 bar

ISO MODULAR  
ELEMENT

ISO sizes 16 • 25 • 32 • 40 • 50  
 $Q_{max}$  290 ÷ 4.000 l/min •  $P_{max}$  420 bar



## Safety hydraulic blocks

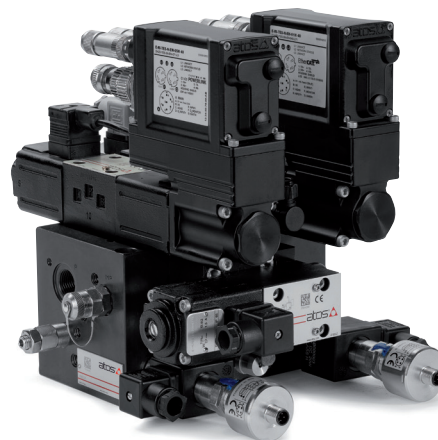
Control blocks for vertical presses, TÜV certified

### CNC synchronized press brakes

- open or closed loop proportional controls
- for presses from 400 to 15.000 kN

### Torque bar press brakes

- for presses from 400 to 10.000 kN



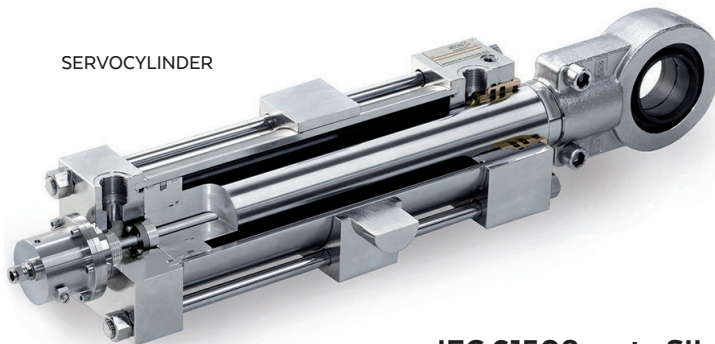
ISO 12622  
ISO 13849

CNC PRESS BRAKES BLOCK

## Safety servocylinders

Servocylinders with certified  
magnetostrictive transducers,  
suitable for harsh environments

SERVOCYLINDER



 **Max stroke** 5 m • **Ømax** 200 mm  
**Speed** 2 m/sec • **Pmax** 320 bar

IEC 61508 up to SIL 2

Atos regularly holds technical training courses on digital electrohydraulics  
Our specialists are available for on-site technical support at customer locations



**Atos spa**

Italy - 21018 Sesto Calende

phone +39 0331 918370

[info@atos.com](mailto:info@atos.com)

[www.atos.com](http://www.atos.com)