AC series | Accessories

IMI SEVERE SERVICE

STI

Total capability in valve actuation

STI

accessories | index

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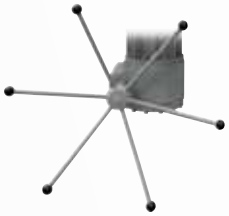

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AV | Volume booster
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2030 | Electronic position transmitter

Product description

The Electronic Position Transmitter (model **2030**) is suitable for installation on quarter turn and linear actuators. It has been designed to meet various industrial application requirements, for example on board pneumatic actuators.
The enclosure has the capability to house a wide range of either mechanical or inductive limit switches (up to 4).
A shaft with a manually-adjustable cam is used for accurate and easy setting of the limit switches which are prewired to a terminal strip.

Advantages

- **Contactless sensor**
- **Easy configurable for 30-90° angles**
- **Direct or reverse action**
- **Explosion proof version**
- **Position transmitter / Position Transmitter + Limit switch version available**
- **Available with integrated limit switches (see page 6)**

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature
- Quarter turn and linear actuators
- Design to be coupled with STI motion converter device (see page 24)

Electrical certifications

- Protection degree: IP66
- Hazardous area certification: ATEX EExd II 2 G EEx d IIC T6
- CE and EMC certifications

Technical specifications

Position transmitter with limit switches (ALUMINUM) - See page 6

Position transmitter without limit switches (ALUMINUM)

Position transmitter without limit switches (STAINLESS STEEL 316)

Housing materials
- Painted RAL 9005 aluminum
- Stainless steel 316 (without limit switches)

Operating temperature
- - 40°C / + 85°C

Accuracy (*)
- < 0,5% (including linearity, repeatibility and hysteresis)

Loop supply effect (*)
- < 0,2% on the full supply range

Temperature drift (*)
- < 0,3% every 10°C

Response time
- < 0,2 s

(*) Referred to 90° operating angle.

Output
- 4-20 mA (passive loop)

Operative angle
- 30° - 90°

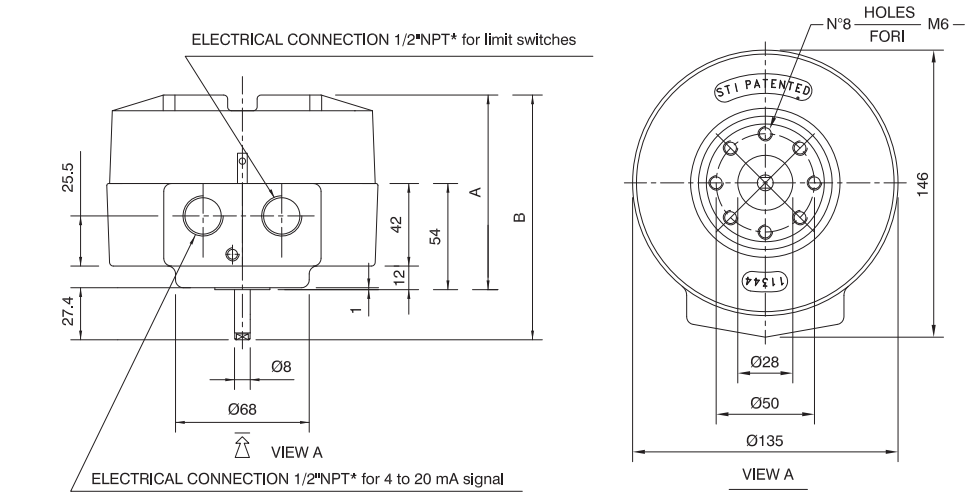
Action
- Direct or reverse locally configurable by a simple switch

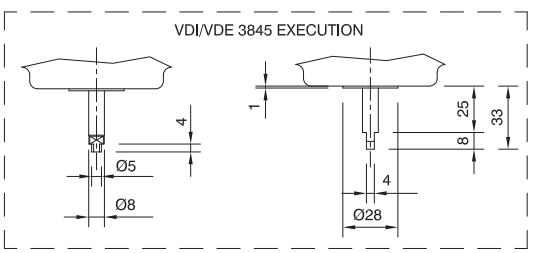
Supply range
- 12 to 32 Vdc, reverse polarity protected

Zero and span adjustment
- Locally adjustable with a screw driver

Weight
- TR Aluminum = 1,6 kg
- TR + LS Aluminum = 2,2 kg
- TR Stainless steel 316 = 5 kg

Dimensional drawing





	POSITION TRANSMITTER ONLY 2030 SERIES		POSITION TRANSMITTER AND/OR LIMIT SWITCHES 2030 or 2130 SERIES	
	STD SHAFT	VDI/VDE 3845 EXECUTION	STD SHAFT	VDI/VDE 3845 EXECUTION
A	99	99	150	150
B	125.4	131	176.4	182

* : M20x1.5 execution is also available

2130 | Limit switch

Product description

The Limit Switch (model **2130**) is suitable for installation on rotary motion. It has been designed to meet various industrial application requirements, for example on board pneumatic actuators. The enclosure has the capability to house a wide range of either mechanical or inductive limit switches.
A shaft with manually-adjustable cam is used for accurate and easy setting of the limit switches, which are prewired to a terminal strip.

Advantages

- **Up to 4 limit switches**
- **Mechanical or Inductive limit switch**
- **Gold plated limit switch option available**
- **Easy adjustable independent cam for switch position adjustment**
- **Easy access, robust terminal board suitable for 2,5mm^2 wires**

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Quarter turn and linear actuators
- Low and high ambient temperature

Electrical certifications

- Protection degree: IP66
- Hazardous area certification: ATEX EExd II 2 G EEx d IIC T6
- CE and EMC certifications

Technical specifications

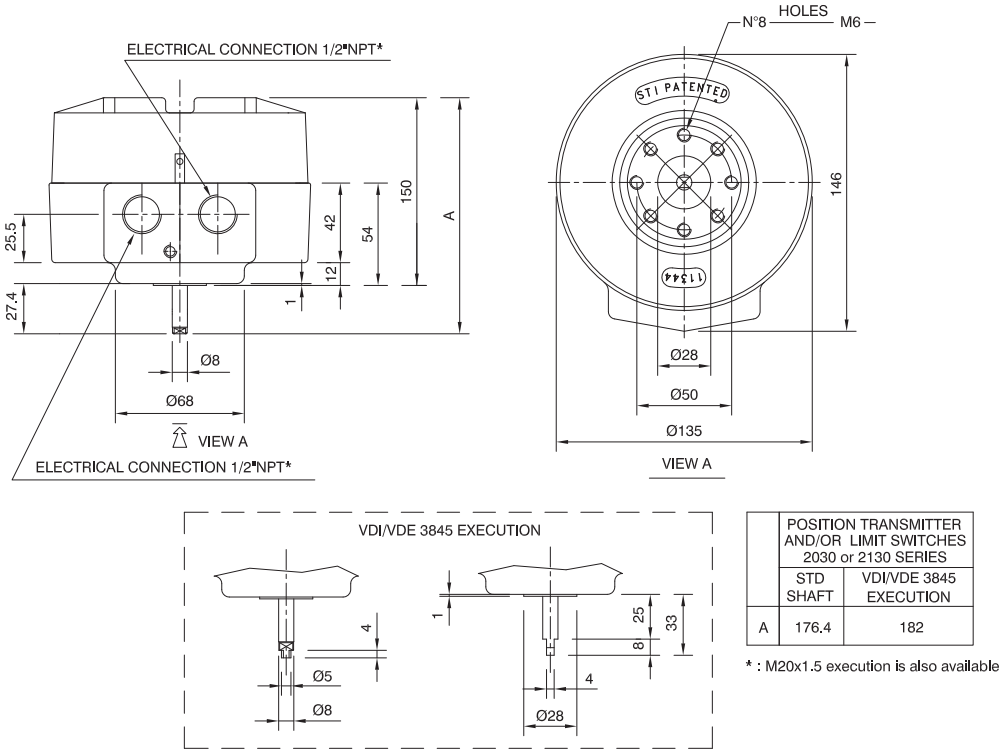
Limit switches box
(ALUMINUM)

Housing materials
• Painted RAL 9005 aluminum

Operating temperature
• - 40°C / + 85°C

Weight
• 2,2 kg

Dimensional drawing



	POSITION TRANSMITTER AND/OR LIMIT SWITCHES 2030 or 2130 SERIES	
	STD SHAFT	VDI/VDE 3845 EXECUTION
A	176.4	182

* : M20x1.5 execution is also available

AL | Air-lock 101 device

Product description

The Air-Lock pressure static device (model **AL**) is composed of a TP Pneumatic pressure switch (see page 10) combined with 2 x 3 way valves ND 1/4" in a single body (see page 12).
The Air-Lock pressure static device is mounted on pneumatic actuators when they need to be isolated from control devices (positioners, electro-pneumatic distributors, etc.) in the event air pressure falls below the pre-determined operating safety point. The Air-Lock device consists mainly of a pneumatic pressure switch with an adjustable set point. This device synchronously drives the 2 x 3 way valves. The switching device operates immediately, even in the case of a gradual air-pressure decrease to the set value. The device will automatically reset after a failure, when the line pressure is 1 bar greater than set pressure to avoid instability around the device set point.

Advantages

- **Accurate pressure setting**
- **Set screw lockable with nut**
- **Insensitive to vibrations**
- **Reset hysteresis with established safety**
- **Synchronous drive for set pressure group + 2 x 3 way valve in one body**
- **Small dimension and light weight**

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature

Exclusive STI design for double 3 way valve in one body, to reduce assembly time, space and cost.

Technical specifications

ALUMINUM

STAINLESS STEEL 316

Materials
- Anodized aluminum
- Stainless steel 316

CV max
- Inlet = 1
- Outlet = 1

Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Operating pressure
- Design = 10 bar
- Operating = 7 bar
- Minimum operating = 2 bar

Feeding connections
- 1/4” NPT

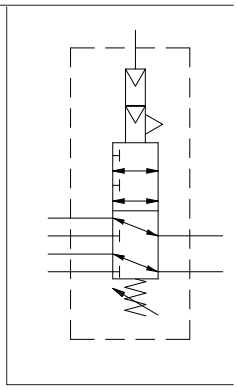
Output connections
- 1/4” NPT

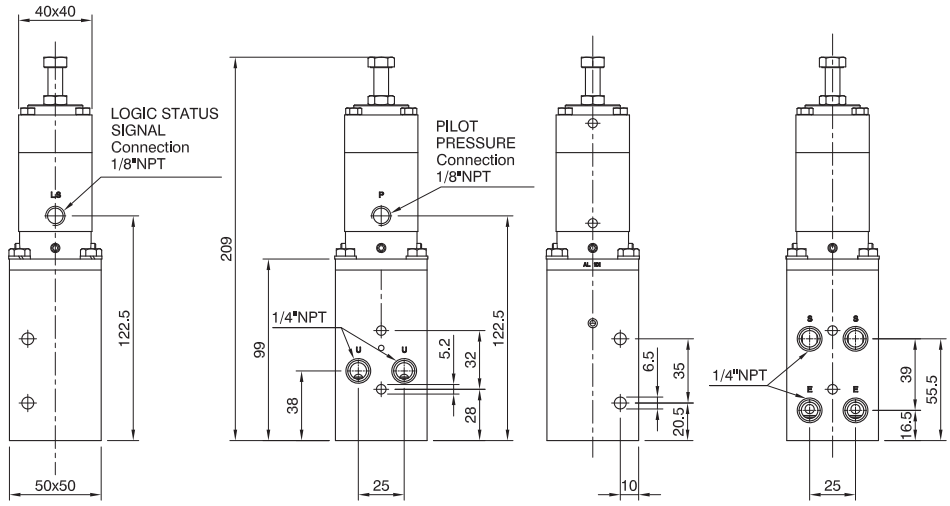
Pilot signal connection
- 1/8” NPT

Weight
- Aluminum = 1 kg
- Stainless steel 316 = 2,5 kg

(*) Lower or higher temperature available on request.

Dimensional drawing





TP | Pneumatic pressure switch

Product description

The Pneumatic Pressure Switch (model **TP**) device has been designed to drive lock-up devices to the safety shut down position in the event supply air pressure falls below the operating safety value. The switching value is easily adjustable and the device allows maintainers to set switching pressure required switch in the safety/shut down function. The switching device operates immediately, even in the case of a gradual air-pressure decrease to the set value. The device will automatically reset after a failure, when the line pressure is 1 bar greater than set pressure to avoid instability around the device set point.

Advantages

- **Accurate pressure setting**
- **Set screw lockable with nut**
- **Insensitive to vibrations**
- **Small dimensions and light weight allows mounting on lock-up 3 way valve**
- **Reset hysteresis with established safety**

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature

Technical specifications

ALUMINUM
with square plate

STAINLESS
STEEL 316
with threaded
connection

Housing materials
- Anodized aluminum
- Stainless steel 316

Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Pilot signal connection
- 1/8” NPT

Operating pressure
- P min = 2 bar
- P max = 7 bar
- Design pressure = 10 bar

Output connections

Fig. 1
- 1/8” NPT

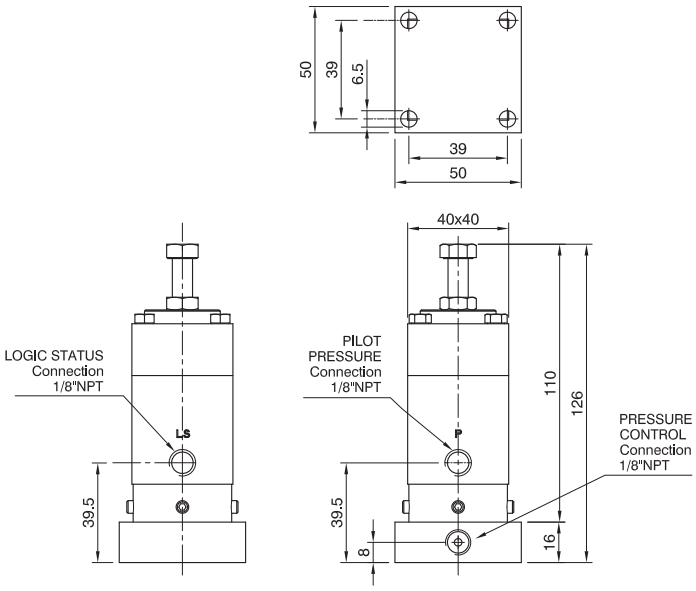
Fig. 2
- 1/8” NPT
- 1/4” NPT

Weight
- Aluminum = 0,4 kg
- Stainless steel 316 = 0,8 kg

(*) Lower or higher temperature available on request.

Dimensional drawings

fig. 1



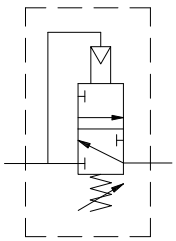
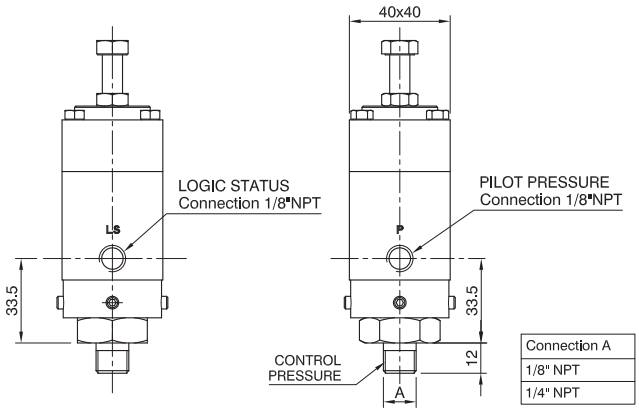


fig. 2



CO | 3-Way pneumatic operating valve

Product description

The 3-Way Pneumatic Operating Valve (model **CO**) are pilot operated, and designed for high flow applications. The 3-way valve is available in sizes ¼", ½", 1", 1 ½" and 2". The STI 3-way valve can be used in one or more synchronous units piloted by a pneumatic pressure switch or solenoid valve or both in order to achieve safety, trip or shut down function.

Advantages

- **Size 1/4"**
  2x3 way valves in one body, reduced dimensions.
- **Sizes 1 1/2" - 2"**
  Large size 3 way valve with a special device to switch quickly when in the de-energized position, even when controlled by a low CV pilot.
- **Sizes 1 1/2" - 2"**
  Pilot quick exhaust valve included.
- **Sizes 1/2" - 1" - 1 1/2" - 2"**
  Perfect tight shut off regardless of the flow direction up to 7 bar with pilot pressure over 2 bar when energized.
- **Sizes 1/2" - 1" - 1 1/2" - 2"**
  SIL 3 certified.

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature

Exclusive manifold mounting system. It is a special **STI** application to connect our accessories. Fittings or nipples are not necessary as the connection is achieved using machined connection faces with sealing o'ring. This system saves time for assembly, reduces cost on items such as fittings, reducing inventory and the shortened dimensions save space.

Technical specifications - Model 1/4”

CO 1/4”
ALUMINUM

CO 1/4”
STAINLESS STEEL 316

Materials
- Anodized aluminum
- Stainless steel 316

Port size
- Pilot signal = 1/8” NPT
- Others = 1/4” NPT

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

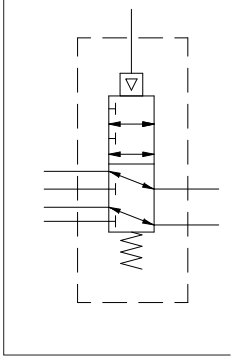
CV Max
- Inlet = 1
- Outlet = 1

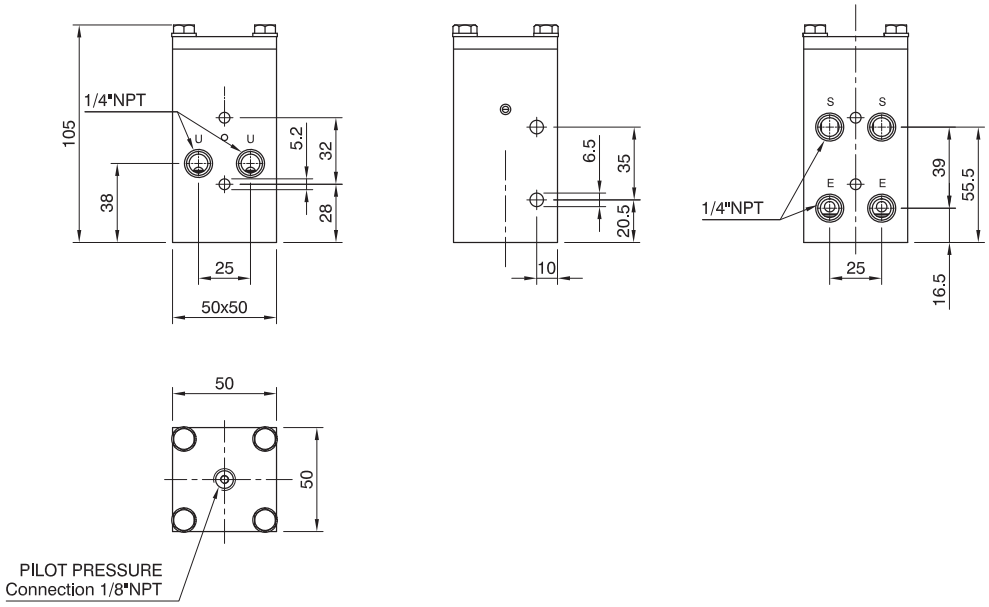
Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Weight
- CO 1/4” Aluminum = 0,5 kg
- CO 1/4” Stainless steel 316 = 1,7 kg

(*) Lower or higher temperature available on request.

Dimensional drawing





Technical specifications - Model 1/2”

CO 1/2” ALUMINUM
Manifold mounting

CO 1/2” STAINLEES
STEEL 316
Manifold mounting

Materials
- Anodized aluminum
- Stainless steel 316

Port size
- Pilot signal = 1/8” NPT
- Others = 1/2” NPT

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

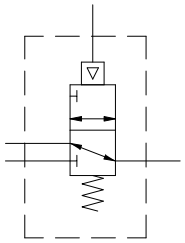
CV Max
- Inlet = 2,5
- Outlet = 2,5

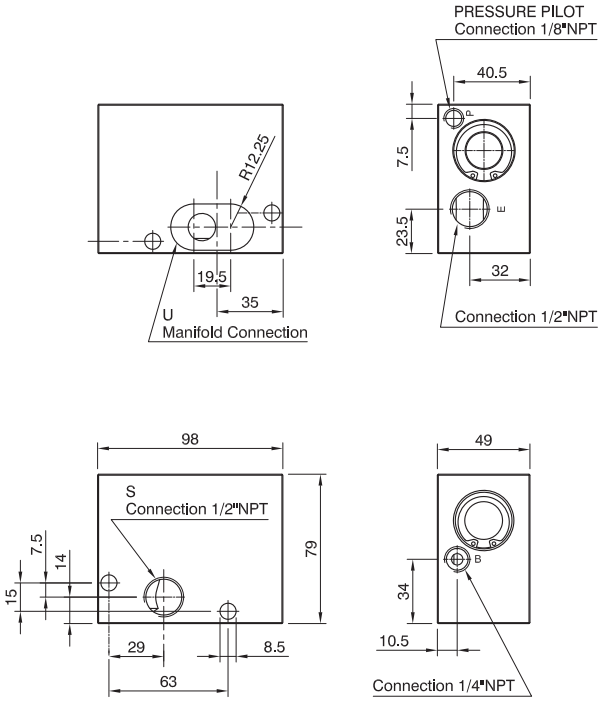
Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Weight
- CO 1/2” Aluminum = 1 kg
- CO 1/2” Stainless steel 316 = 1,5 kg

(*) Lower or higher temperature available on request.

Dimensional drawing





Technical specifications - Model 1”

CO 1” ALUMINUM
Manifold mounting

CO 1” STAINLEES STEEL 316
Manifold mounting

Materials
- Anodized aluminum
- Stainless steel 316

Port size
- Pilot signal = 1/4” NPT
- Others = 1” NPT or manifold mounting

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

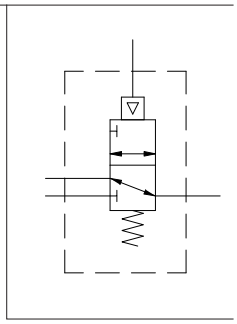
CV Max
- Inlet = 6,5
- Outlet = 6,5

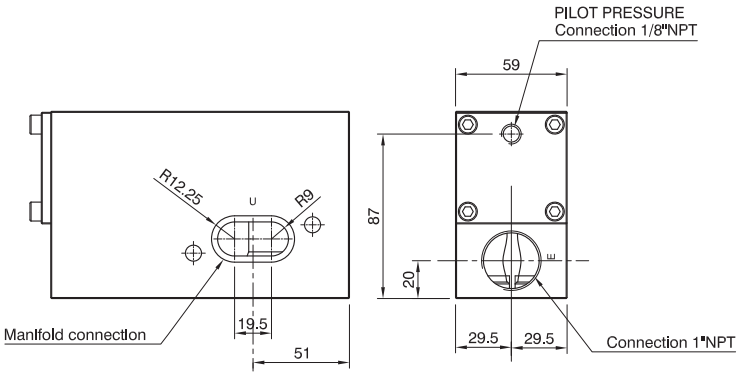
Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

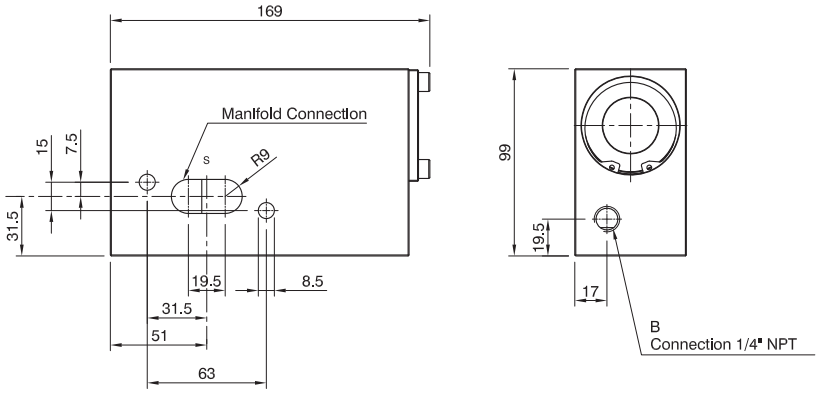
Weight
- CO 1” Aluminum = 2,2 kg
- CO 1” Stainless steel 316 = 5,1 kg

(*) Lower or higher temperature available on request.

Dimensional drawing







Technical specifications - Model 1” 1/2

CO 1 1/2”
ALUMINUM
Manifold mounting

CO 1 1/2” STAINLESS
STEEL 316
Manifold mounting

Materials
- Painted RAL 7001 aluminum
- Stainless steel 316

Port size
- Pilot signal = 1/4” NPT
- Others = 1 1/2” NPT or manifold mounting

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

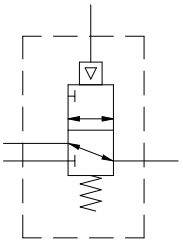
CV Max
- Inlet = 10,5
- Outlet = 13

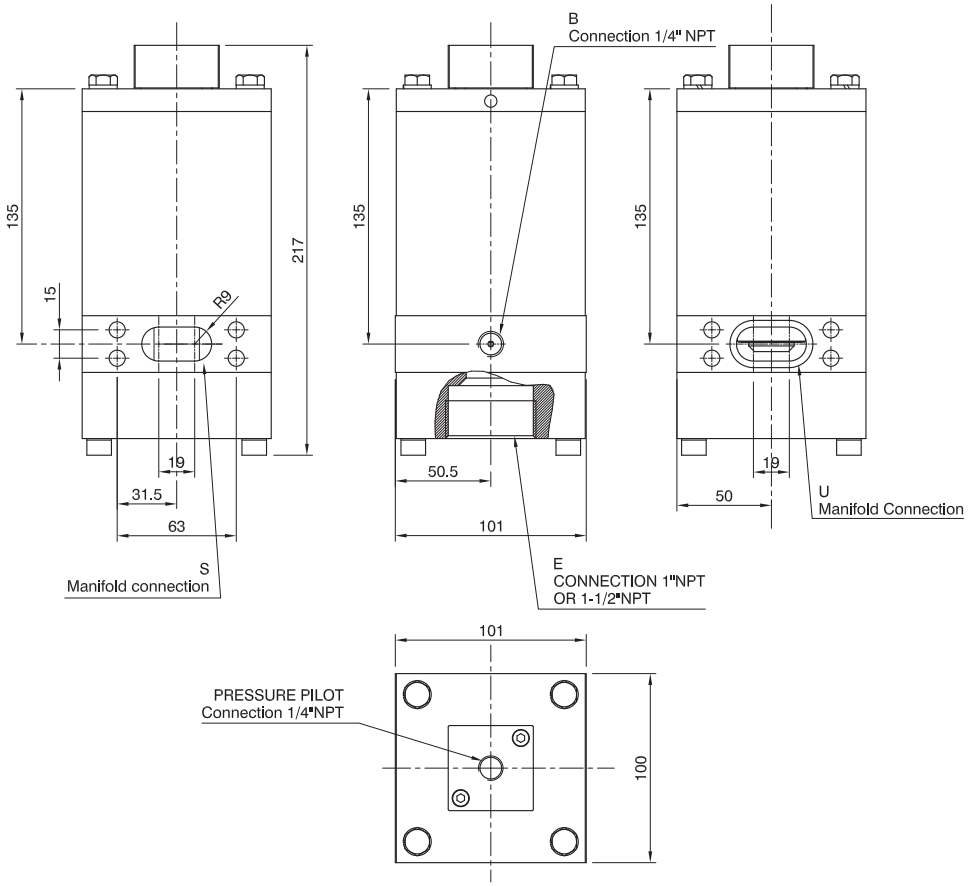
Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Weight
- CO 1 1/2” Aluminum = 4,5 kg
- CO 1 1/2” Stainless steel 316 = 10 kg

(*) Lower or higher temperature available on request.

Dimensional drawing





Technical specifications - Model 2”

CO 2” ALUMINUM
Manifold mounting

Materials
- Painted RAL 7001 aluminum

Port size
- Pilot signal = 1/4” NPT
- Others = 2” NPT or manifold mounting

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

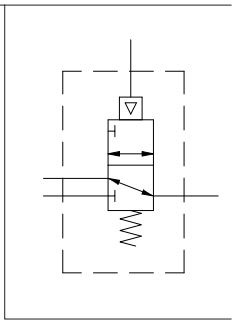
CV Max
- Inlet = 45
- Outlet = 45

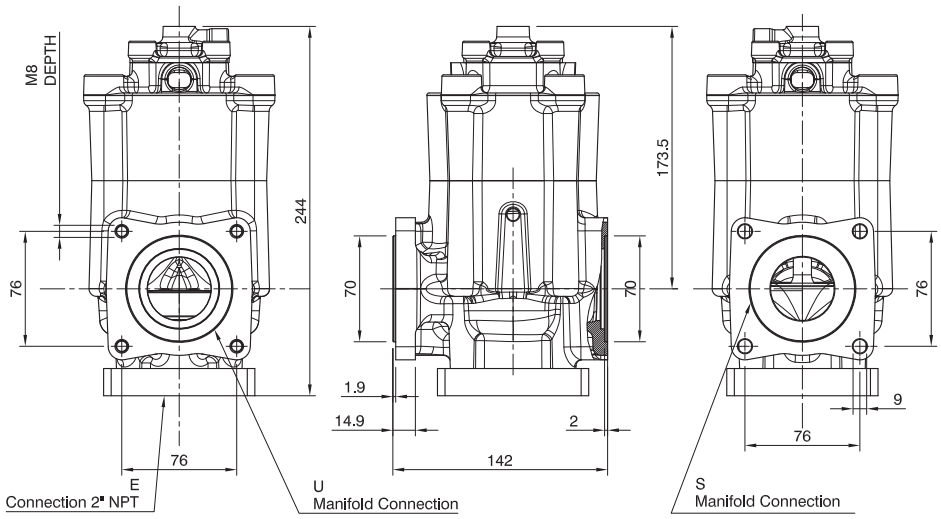
Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

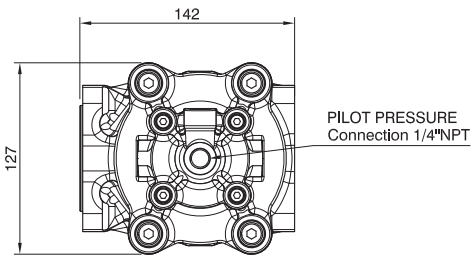
Weight
- CO 2” Aluminum = 4,1 kg

(*) Lower or higher temperature available on request.

Dimensional drawing







CS | Quick exhaust

Product description

The Quick Exhaust (model **CS**) is a 2 way valve used for on/off movement (trip or fail) to fully exhaust the connected chamber of the actuator. When mounted on a modulating actuator, this device when pilot operated permits quick exhausting of the connected chamber even when piloted by a small CV device.

Advantages

- **Compact design**
- **Big exhaust CV (up to 60)**
- **Metal piston operated (diaphragm free)**
- **Flange mounted on actuator cap**
- **Suitable for internal actuator damper**
- **Suitable for SL exhaust protection system (from 1 to 3 max SL) depending on exhaust flow request**

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature

Technical specifications

ALUMINUM
Manifold mounting

STAINLESS
STEEL 316
Manifold mounting

Housing materials
- Anodized aluminum
- Stainless steel 316

CV max
- Exhaust = 60

Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Operating pressure
- P min = 2,5 bar
- P max = 7 bar
- Design pressure = 10 bar

Actuator connections
- Dedicated flange

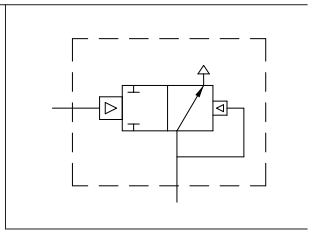
Exhaust connections
- Dedicated to SL

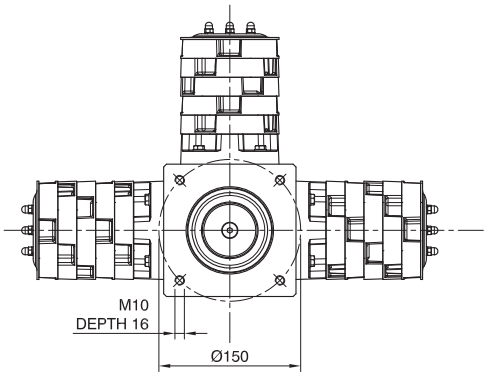
Pilot signal connection
- 1/4" NPT

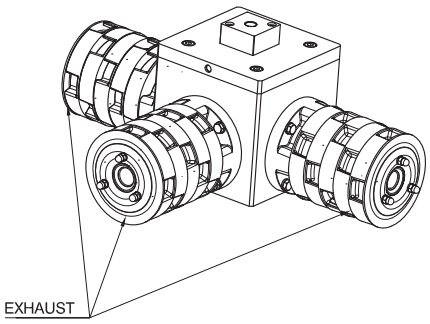
Weight
- Aluminum = 9,3 kg
- Stainles steel 316 = 22 kg

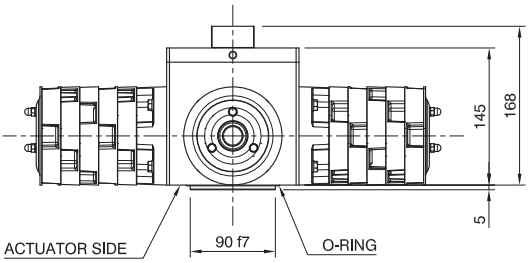
(*) Lower or higher temperature available on request.

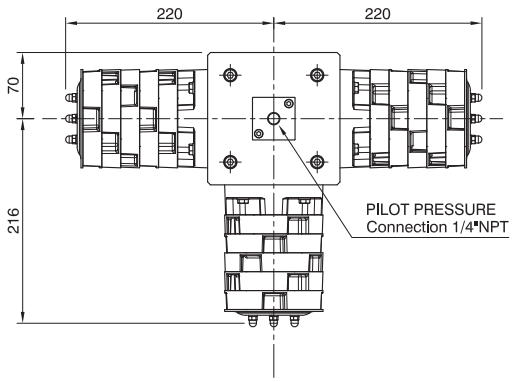
Dimensional drawing











SL | Exhaust protection system

Product description

The Exhaust Protection System (model **SL**) has excellent exhaust and silencing characteristics with minimal resistance to air flow. In addition, it has an integral check valve that enables the maximum IP protection. This product is made with special polymeric material which is compliant with ATEX directives for use in an explosive atmosphere. The exhaust protection system design incorporated a very low back-pressure, ensuring a very high exhaust flow.

Advantages

- **High exhaust flow**
- **Exhaust flow dissipation of energy though a cage labyrinth system which is self cleaning minimize clogging**
- **Includes an integral check valve that maintains a very low back-pressure to permit quick opening allowing high dynamic movement (the check valve will immeditely close at the end of exhaust flow)**
- **Internal check valve also serves to protect devices where the SL system is installed, from dust or any other material when there isn't exhaust flow**
- **The special design of the labyrinth allows installation in any orientation, minimizing the ingress or storage of water into the SL system**
- **Made of stainless steel and plastic material suitable for use in hazardous areas (ATEX)**

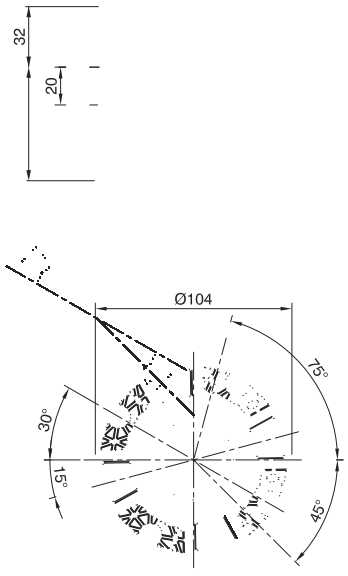
Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition
- Single and double acting actuators
- Low and high ambient temperature

Technical specifications

Dimensional drawing



AV | Volume booster

Product description

The Volume Booster (model **AV**), available sizes 1⁄4" and 3⁄4", is designed to meet high speed control valve applications. It produces a high volume boosting action and contains an integral stabilizing by-pass valve controlled by a screwdriver adjustment in the body. By opening this valve it is possible improve the stability of the pneumatic circuit made up of a positioner, volume booster(s) and actuator.

Advantages

- **Safety - more sensibility - more accuracy**
  Regulation screw is not ejectable by internal air pressure.
  Regulation screw is accurate and lockable.
- **Environment protection increase**
  Exhaust protected by double differentiated mesh.
- **Cost saving**
  Suitable for one air connection to feed both volume boosters on a double acting actuator.
- **Design advantages**
  Less leakage ➛ More repeatability
  Using conical plug seat with controlled deformation for elastomeric air-tight.

Key features

Suitable for

- Standard, Offshore, Sandstorm, copper free ambient condition.
- Single and double acting actuators.
- Low and high ambient temperature.

Exclusive manifold mounting system. It is a special **STI** application to connect our accessories. Fittings or nipples are not necessary as the connection is achieved using machined connection faces with sealing o'ring. This system saves time for assembly, reduces cost on items such as fittings, reducing inventory and the shortened dimensions save space.

Technical specifications - Model AV 1/4”

AV 1/4” ALUMINUM
Manifold mounting

AV 1/4” STAINLESS STEEL 316
Manifold mounting

AV 1/4” ALUMINUM

Housing materials
- Painted RAL 7001 aluminum
- Stainless steel 316

Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Operating pressure
- P min = 3 bar
- P max = 7 bar
- Design pressure = 10 bar

Pilot signal connection
- 1/4” NPT

Options
- Collected exhaust
- Silencer

CV Max
- Inlet = 1
- Outlet = 1

Diaphragm material
- Elastomeric fabric reinforced

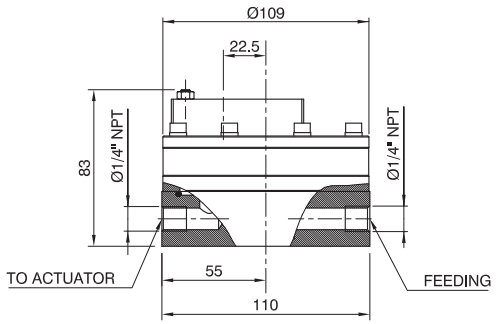
Output connections
- Manifold mounting
- 1/4” NPT

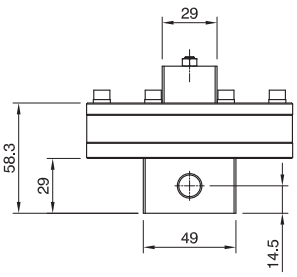
Feeding connections
- 1/4” NPT

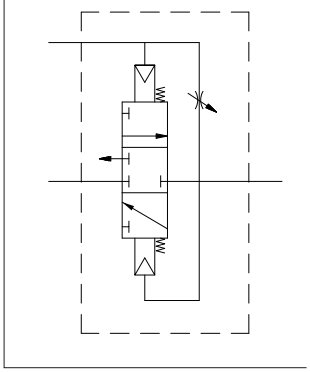
Weight
- Aluminum = 1,2 kg
- Stainless steel 316 = 3,3 kg

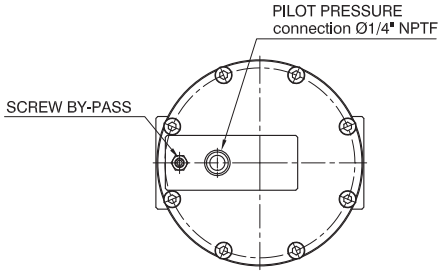
(*) Lower or higher temperature available on request.

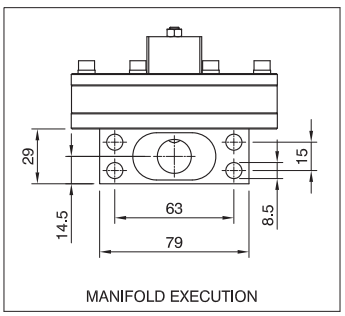
Dimensional drawing











Technical specifications - Model AV 3/4”

AV 3/4”
ALUMINUM

AV 3/4”
ALUMINUM
Manifold mounting

Housing materials
- Painted RAL 7001 aluminum
- Stainless steel 316

Operating temperature*
- -20°C / +70°C
- -40°C / +70°C available on request
- -20°C / +85°C available on request

Operating pressure
- P min = 3 bar
- P max = 7 bar
- Design pressure = 10 bar

Pilot signal connection
- 1/4” NPT

Options
- Collected exhaust
- Silencer

CV Max
- Inlet = 4,5
- Outlet = 3

Diaphragm material
- Elastomeric fabric reinforced

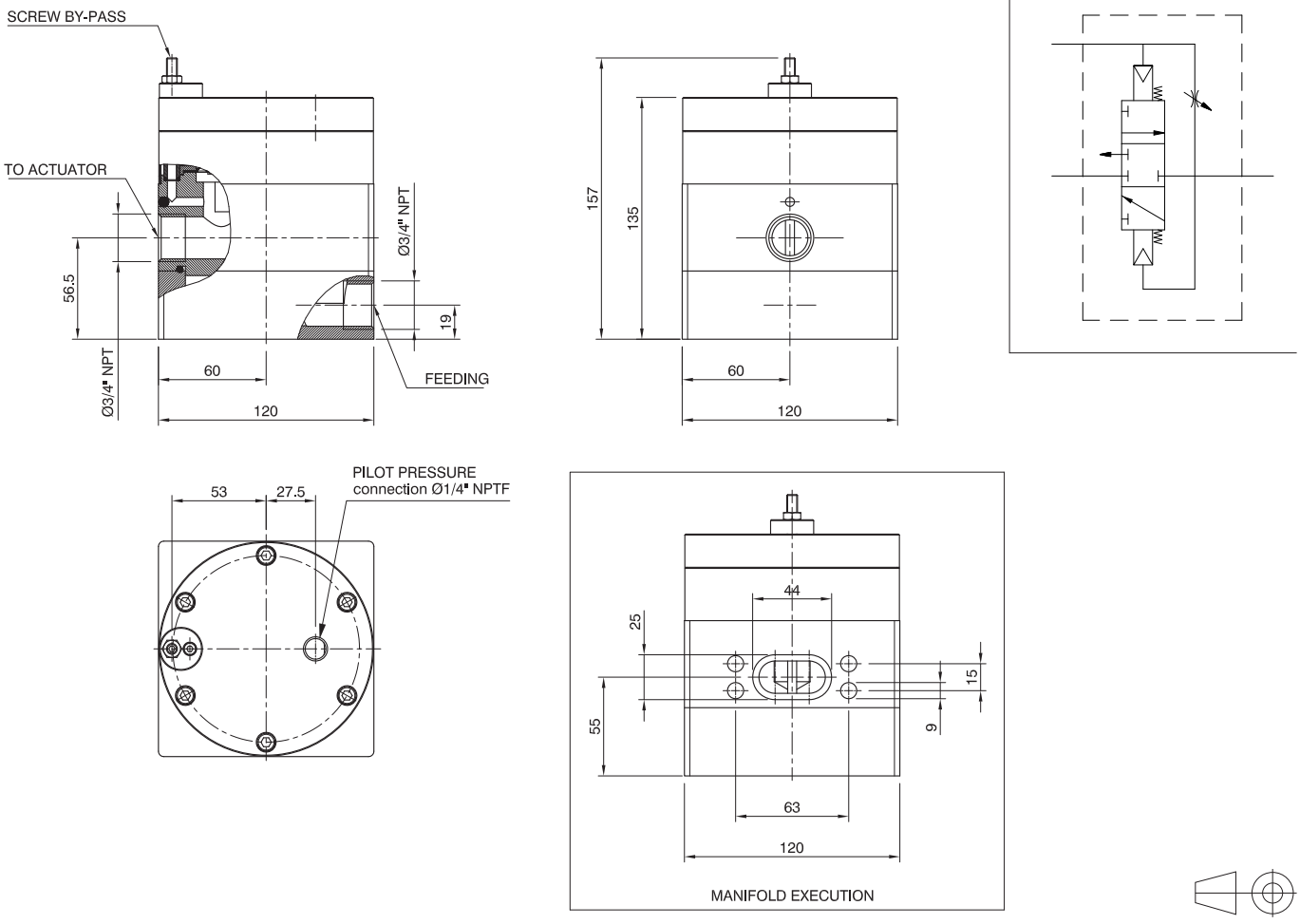
Output connections
- Manifold mounting
- 3/4” NPT

Feeding connections
- 3/4” NPT

Weight
- Aluminum = 4 kg
- Stainless steel 316 = 10,3 kg

(*) Lower or higher temperature available on request.

Dimensional drawing



STI

gfstudio.com

rev. 0

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www.stiactuation.com

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Total capability in **valve actuation**

series

SC RT CM PT AC

IMI SEVERE SERVICE

STI

1960

sti
BERGAMO

1990

STI

2000

STI
STI strumentazione industriale s.p.a.

Today

STI

Our **mission**

Since its foundation in 1960, **STI** has focused on development, design and production of complete actuation systems to operate industrial valves for the most demanding applications and processes – those applications assessed in terms of forces, speed, accuracy or a combination of these demands. This requires not just the 'muscle' (the actuator, linear or quarter turn) but also the 'brain' (the positioners and other components, which control the motion following an inlet signal).
Our products are designed for use in the most severe service applications (valves, dampers, fan inlet drives and other devices). Our goal is to meet customers' every specific need – as a result, we specialize in customized products.
In 2002 **STI** was acquired by IMI (ww.imiplc.com), an international engineering group and therefore was able to expand its presence globally. Now **STI** is part of IMI Critical Engineering, one of the three IMI's business platforms. The IMI Group shares a common goal – to convert their industry knowledge and market insight into bespoke design-engineered solutions which create customer advantage and value.
Therefore the original business approach of **STI** has not changed.
We call this 'Total capability in valve actuation'.

Some actuation applications are on:

- Bypass valves in large steam and gas turbines;
- Anti-surge valves in LNG compressors (over 90% of compressor anti-surge valves in LNG plants worldwide are fitted with STI actuation control systems);
- Safety relief valves in large pipelines;
- Combustion and exhaust valves.

The build quality of STI actuators is excellent.
They have the ability to achieve very precise control.
(Project Engineer, Gorgon LNG project)

Fast and accurate response of the recycle valve actuator allows the antisurge controller to arrest the sudden drop in deviation and increase the compressor flow.
(Instrument Engineer, Woodside Energy ltd)

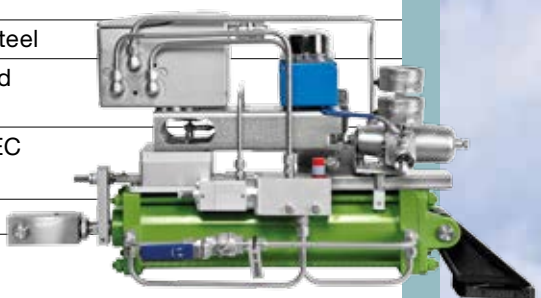
SC
series

SC is a complete line of linear pneumatic actuators purposely designed and manufactured for the operation of flow control devices such as dampers, louvers, butterfly and ball valves. Thanks to their design, they find ideal application in power plants, refineries, pipe steel works and on board of vessels. The range of products includes double acting units and are available in different sizes.
Standard SC actuators grant excellent response times without the use of boosters, however, an high speed design is also available.
SC actuators are integrated with a wide range of positioners and accessories developed to meet the most adverse operating conditions. They can be provided with gearbox for the manual operation in case of emergency. Various linkages for the coupling to the control devices can be designed according to the customers' specific requirements.

SC

Main features & technical data:

- Different strokes are available on request
- Operating pressure: pneumatic version up to 10 barg (special version available on request)
- Standard operating temperature: -20°C to 70°C (lower or higher temperature on option)
- Built in permanent lubrication system
- Cylinder Aluminum alloy for Ø 63 to 100
  Carbon steel for Ø 125 to 420 (Chrome or nickel plated)
- Caps Aluminum alloy for Ø 63 to 260
  Carbon steel for Ø 330 to 420
- Piston: aluminum alloy for Ø 63 to 260
  Carbon steel for Ø 330 to 420
- Shaft: chromium plated alloy steel
- Tie rods and clevis: tropicalized zinc-plated carbon steel
- ATEX 94/9/EC and PED97/23/EC compliance
- GOST certification



Control actuation systems

SCV

Main features & technical data:

- Double & single acting and double acting plus spring design
- Die casting aluminum for small/medium sizes up to ND 320
- Operating pressure: pneumatic version up to 10 barg (design up to 12 barg)
- Standard operating temperature: -20°C to 70°C (special version available on request)
- Carbon steel execution for larger sizes (stainless steel available on request)
- Built in permanent lubrication system
- Designed to meet SIL3 requirements (IEC 61508) as a “single device”
- Standard pneumatic supply medium: air, nitrogen or sweet gas (Special version for sour gas on request)
- ATEX 94/9/EC and PED97/23/EC compliance
- GOST certification
- Thrust: up to 850.000 N

SCV pneumatic linear piston actuators are designed to drive control valves for the most demanding applications of Power and Oil & Gas Industries, such Turbine Bypass, Steam Conditioning valves, desuperheaters, antisurge valve compressors and many others. **STI**’s fast stroking, highly reliable actuators have been recognized for providing superior performance in severe service applications for over 50 years.Thanks to the special patented design of piston, including a double rings guiding system and a grease channel providing continuous lubrication, **SCV** actuators grant smooth and precise valve operation without any maintenance for whole operating life. **SCV** actuators are designed with patented plug-in connection system for a wide range of custom-tailored accessories and control systems to meet the most demanding and critical operating conditions of valves.

series

RTC

Compact quarter turn actuator series
main features & technical data:

- Double and single acting compact design
- Carbon steel scotch yoke mechanism
- Chromium plated guide bar to absorb transverse forces
- Electroless nickel or chromium plated cylinder
- Designed for environmental protection up to IP67M
- Designed to meet SIL3 requirements (IEC 61508) as a "single device"
- PED97/23/EC compliance
- Standard pneumatic supply medium: air, nitrogen or sweet gas (special version for sour gas on request)
- Standard hydraulic supply medium: mineral hydraulic oil
- Operating pressure: pneumatic version up to 12 barg
- Hydraulic version up to 350 barg
- Standard operating temperature: -30°C to 100°C (special version available on request)
- Output torque: up to 7.000 Nm

RTQ

Quarter turn actuator series
main features & technical data:

- Double and single acting modular design
- Carbon steel scotch yoke mechanism
- Chromium plated guide bar to absorb transverse forces
- Electroless nickel or chromium plated cylinder
- Designed for environmental protection up to IP67M
- Designed to meet SIL3 requirements (IEC 61508) as a "single device"
- PED97/23/EC compliance
- Standard pneumatic supply medium: air, nitrogen or sweet gas (special version for sour gas on request)
- Standard hydraulic supply medium: mineral hydraulic oil
- Operating pressure: pneumatic version up to 12 barg
- Hydraulic version up to 350 barg
- Standard operating temperature: -30°C to 100°C (special version available on request)
- Output torque: Up to 600.000 Nm

Pneumatic and **Hydraulic** actuators

STI's know-how and application experience enable us to develop products, services, and solutions that deliver proven performance and reliability according to custpmers' expectations; for these reasons we are leader in valve actuation technology. **RT Series** is a complete range of pneumatic and hydraulic quarter turn actuators with materials selected to withstand the most hostile environment conditions, suitable for all Onshore and Offshore applications, covering the general On-Off valve and Modulating Control Valve duties. **RT Series** is designed to provide maximum reliability and flexibility to cover a wide range of valves in all pressure classes, with a full range of **STI**'s accessories and control systems available for any product line, designed and manufactured to fully comply with the most demanding customer specifications. Thanks to its sixty-year of engineering and manufacturing experience, **STI** has thousands of actuators installed in most of the plants in the world.

RTM

Modulating quarter turn actuator series main features & technical data:

- Double and single acting modular design
- Modulating-control specific design
- No backlash on power chain
- Electroless nickel or chromium plated cylinder
- Designed for environmental protection up to IP67M
- Designed to meet SIL3 requirements (IEC 61508) as a "single device"
- PED97/23/EC compliance
- Standard pneumatic supply medium: air, nitrogen or sweet gas (special version for sour gas on request)
- Standard hydraulic supply medium: mineral hydraulic oil
- Operating pressure: pneumatic version up to 12 barg
- Hydraulic version up to 350 barg
- Standard operating temperature: -30°C to 100°C (special version available on request)
- Output torque: up to 600.000 Nm

PT series

Positioners

FasTrak

FT SMART POSITIONER

High performances smart, 2 wires, positioner

- High flow rate (Cv=2)
- Hart protocol
- Integrated position transmitter
- Exia and Exd version
- Intrinsically safe and explosion proof (ATEX, IECEX, GOST, FM, CSA)
- Remote mounting option
- Fail freeze option (2 wires)
- DD files for 375/475 and AMS available
- Display and push buttons on option

DigitalTrak

DT Digital Trak POSITIONER

Smart 2 wires positioner

- Display & push button
- Fail freeze option
- Integrated position transmitter

SmartTrak

ST Smart Trak POSITIONER

Hydraulic electronic controller

- Dual and single channel hydraulic controller
- Fully configurable
- Up to 2 modulating channel and 8 on/off SOV
- Booster function
- Hart protocol

AC series

Accessories

Miscellaneous

- 2030
- 2130
- AL Look up device
- AV ¼" and ¾" Volume Booster
- BD Derivative booster
- BV Big Volume Booster
- BW Ultra High capacity booster
- CF Fast commutator
- CO 3 way pneumatic valves
- GR Manual override
- MC Motion Converter
- SL Silencer
- SR Quick discharge valve
- TP Pressostatic switch
- UD Quick Exhaust

Advanced Diagnostic

Partial stroke test & dynamic error

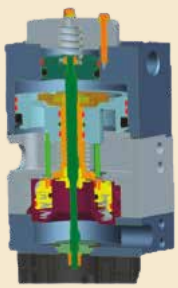
Step response

Stability control

Soft approach to seat

Signal generator for frequency analysis (dynamic tests)

Valsafe SIL (Safety Integrity Level)



Safety Valve

- Partial stroke tests without interruption in plant operation

STI actuators and accessories are installed in demanding applications therefore it is crucial to keep them operating at top performances.

STI provides a wide range of aftermarket support services, from web-based spare parts availability to components' express delivery service. A team of qualified engineers is available for customer support, including on-site, for commissioning, troubleshooting and maintenance activities.

Most of **STI** actuators are equipped with diagnostic communication tool to deliver plants operators with information about optimal equipments performances and compliance to safety and regulatory requirements.

Aftermarket support
Service

- Installation and commissioning
- Failure analysis and performance improvement
- Inspection and Repair of damaged parts and components
- Emergency Services
- Upgrading of existing actuators to propose always the best new solution available for your system
- Over 50 years' experience and knowledge of control actuators for severe service applications

If you have any problem
contact us at:
support@stistrumentazione.com

Total capability in **valve actuation**

gfstudio.com

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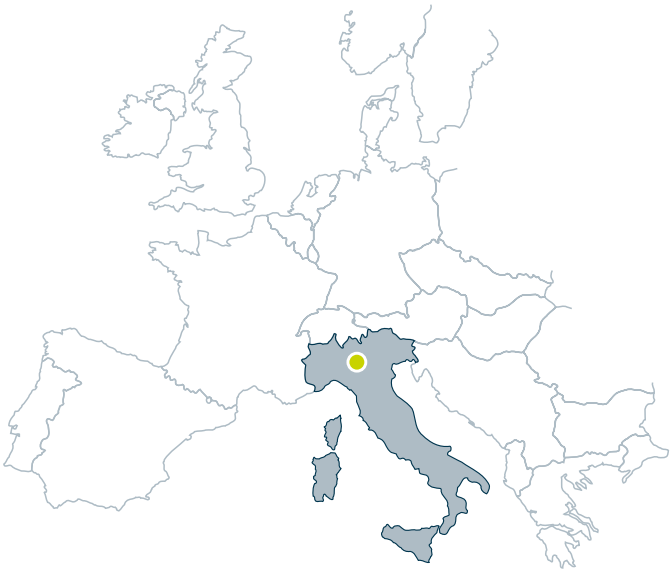


Made in Italy

Control drive

- V – large enclosed actuator
- L – enclosed actuator

Linear

- – damper actuator
- V – valve actuator

Quarter turn

- C – compact actuator
- Q – high torque actuator
- M – modulating actuator

Positioners

- SA/CL
- DE-3/M
- SR/CCK
- CRP-3/M
- SA-1
- UP

Accessories

- AL – air-lock
- AV – volume booster
- BD – derivative booster
- BV – big volume booster
- BW – ultra high capacity booster
- CO – 3-way valve
- GR – manual override
- MC – motion converter
- UD – derivative unit
- …

Total capability in valve actuation

IMI

Critical Engineering

IMI STI®

Engineering GREAT Solutions

Company presentation

Company

Engineering GREAT Solutions

IMI Critical Engineering

- Established 1960 in Gorle, Bergamo, Italy
- Acquired by IMI 2002, part of IMI Critical Engineering
- Opened a Quarter Turn division near Piacenza, Italy
- Since 2014 located in Levate, Bergamo, Italy
- More than 100 employees

- Several International Patents, Certifications & Approvals
- Key Markets are Oil & Gas and Power
- Development, Design and Production of Pneumatic Actuation Control Systems for Severe Services
- Over 90% of compressor antisurge valves in LNG WW are fitted with STI actuation control systems

Made in Italy

What we do…

Engineering GREAT Solutions

IMI Critical Engineering

"An actuator is a type of motor for moving or controlling a mechanism or system. It is operated by a source of energy, usually in the form of an electric current, hydraulic fluid pressure or pneumatic pressure, and converts that energy into some kind of motion."

STI core business is development, design and manufacture of pneumatic actuators to operate modulating equipments such as valves, dampers, fans inlet drives and other devices.

We focused on demanding applications in terms of forces, speed, accuracy, or a combination of them.

This requires not just the "muscle" (the actuator) but also the "brain" (the positioners and other components which control the motion following an inlet signal).

Made in Italy

We provide…

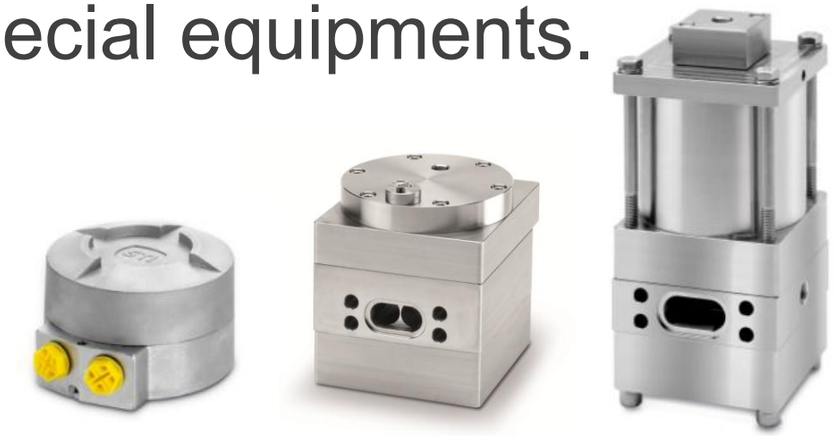
Engineering GREAT Solutions

IMI Critical Engineering

…complete pneumatic control systems for critical service,

…customized actuators and

…special equipments.



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Business model

Engineering GREAT Solutions

IMI Critical Engineering

STI is capturing all opportunities related to the flow control business due to:

- Its FULL range of products.
- Its LARGE SCALE production capacity.
- Its focus on CUSTOMIZATION following customer's and project's specifications. *"We REALIZE your NEEDS in actuation and you choose what you get*".
- Its HYSTORY and PRESENCE in the market and in major Vendor's List with a highest number of customers in the world SATISFIED about STI products.

شركة البترول الوطنية الكويتية
إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation
KNPC

VENDORS & CONTRACTORS EVALUATION COMMITTEE

Vendor Registration Certificate

This document certifies that the manufacturing facility of

M/s. STI STRUMENTAZIONE IND. S.P.A.
24020-GORLE (BERGAMO) I ,
VIA-GIOVANI PASCOLI 10/A-B,
ITALY.

have been assessed and approved to supply of the following product(s) for KNPC refineries

Product		Description
16	45	VALVE ACTUATORS - PNEUMATIC

Ahmad Al- Tabtabai
Chairman V & CEC

Revalidation Approval: 02/01/2013
Approval Expiry: 28/02/2018
Code Number: 067766

PLEASE REFER OVERLEAF FOR INSTRUCTIONS TO THE VENDOR

Made in Italy

Applications

Engineering GREAT Solutions

IMI Critical Engineering

- POWER
- OIL & GAS
- LNG
- Other

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Applications

Engineering GREAT Solutions

IMI Critical Engineering

UP / Midstream O&G

- Compressor anti-surge
- Hot gas bypass
- Choke valves
- Gas to flare
- Dampers for fans
- Louvers

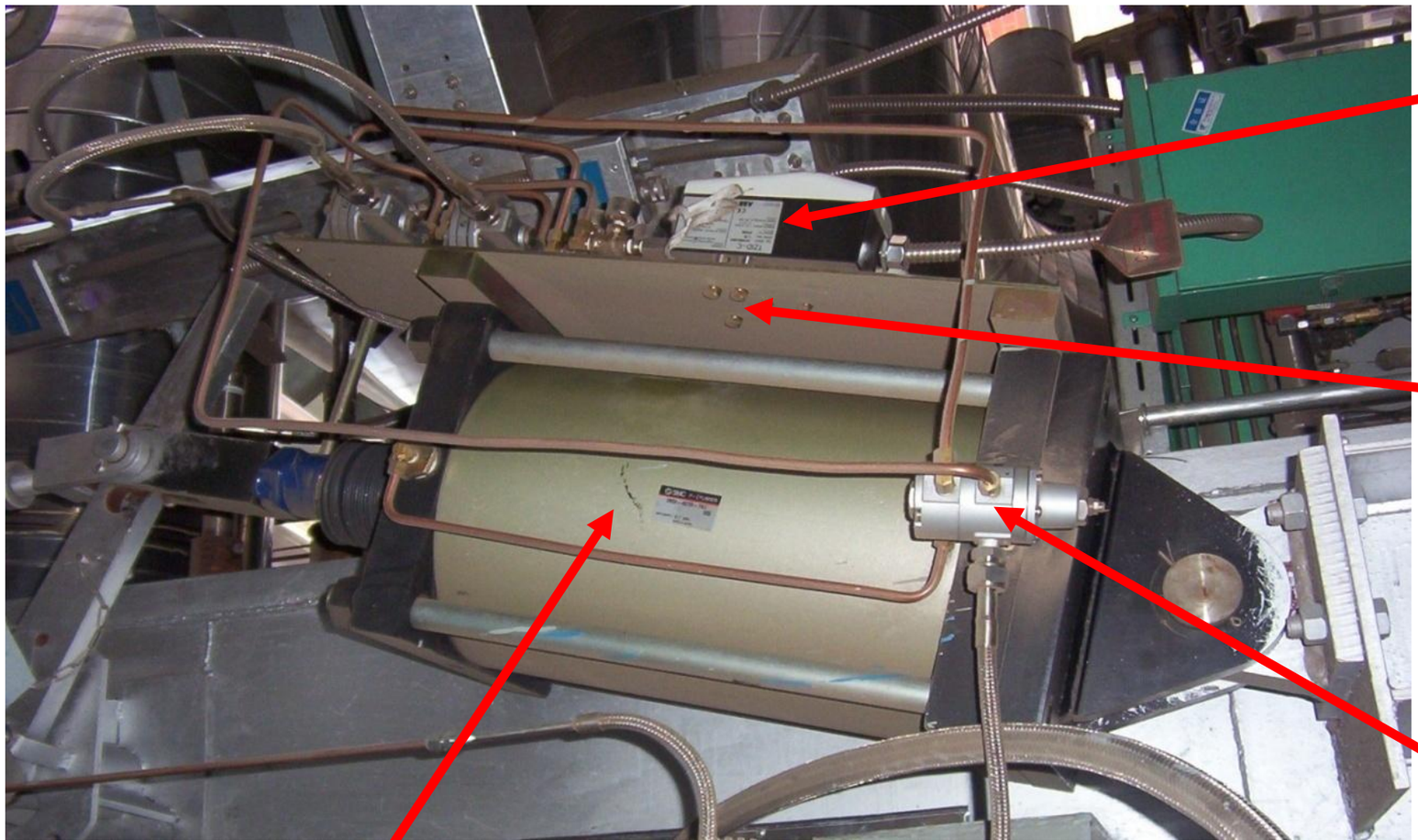
POWER

- Turbine bypass systems
- Steam damper heating
- Boiler level control (inc. Nuclear)
- Pump recirculation
- Emergency shut down
- Line isolation
- Dampers for fans
- Louvers

Competitor's actuator

Competitor actuator called "PUZZLE"

Various Accessories ➔ Various different companies



Positioner: Company A

Linkage: poor without engineering (Company B)

Air-lock: not integrated dangerous execution (Company C)

Cylinder: Company D

Competitor's actuator

Engineering GREAT Solutions

IMI Critical Engineering

COMPETITOR'S DISADVANTAGES

- Single device designed independently.
- Devices usually designed for automation on process industry not for Power and Oil&Gas plants.
- No specific knowledge of needs for Power industry.
- Independent operation for each equipment (not integrated control loop).
- Low flexibility on applications.
- Difficult assistance and technical service. There are too many different manufacturer for only one applications.

STI'S ADVANTAGES

- All devices designed to provide integrated solutions.
- Designed for high performance.
- Devices purposely designed for Power and Oil&Gas plants.
- High specific knowledge of needs for Power industry.
- Integrated operation for each equipment (with integrated control loop).
- High flexibility to design specific solutions.
- Excellent assistance and technical service. Only one company to solve your problems.

Made in Italy

Our brands

Engineering GREAT Solutions

IMI Critical Engineering

Linear

- SC – damper actuator
- SC V – valve actuator
- SC B – for metering pump
- SC BQ – for metering pump

Control drive

- CM V – large enclosed actuator
- CM L – enclosed actuator

Quarter turn

- RT C – compact actuator
- RT Q – high torque actuator
- RT M – modulating actuator

Positioners

- DT Digital Trak Positioner
- FT Smart Positioner
- ST Smart Trak Positioner
- PT SA/CL
- PT DE-3/M
- PT SR/CCK
- PT CRP-3/M
- PT SA-1
- PT UP

Accessories

- AC AL – air-lock
- AC AV – volume booster
- AC BD – derivative booster
- AC BV – big volume booster
- AC BW – ultra high capacity booster
- AC CO – 3-way valve
- AC GR – manual override
- AC MC – motion converter
- AC UD – derivative unit
- AC …

Actuator general features

Engineering GREAT Solutions

IMI Critical Engineering

- *Double piston guide system, patented life self lubricated.*
- *Strong cone locking at piston / stem connection.*
- *Lower bearing guide system and effective stem guide by long bearing in the cover for spring actuator.*
- *Specific safety spring design.*
- *Most of actuators have manifold mounting connection system.*

Made in Italy

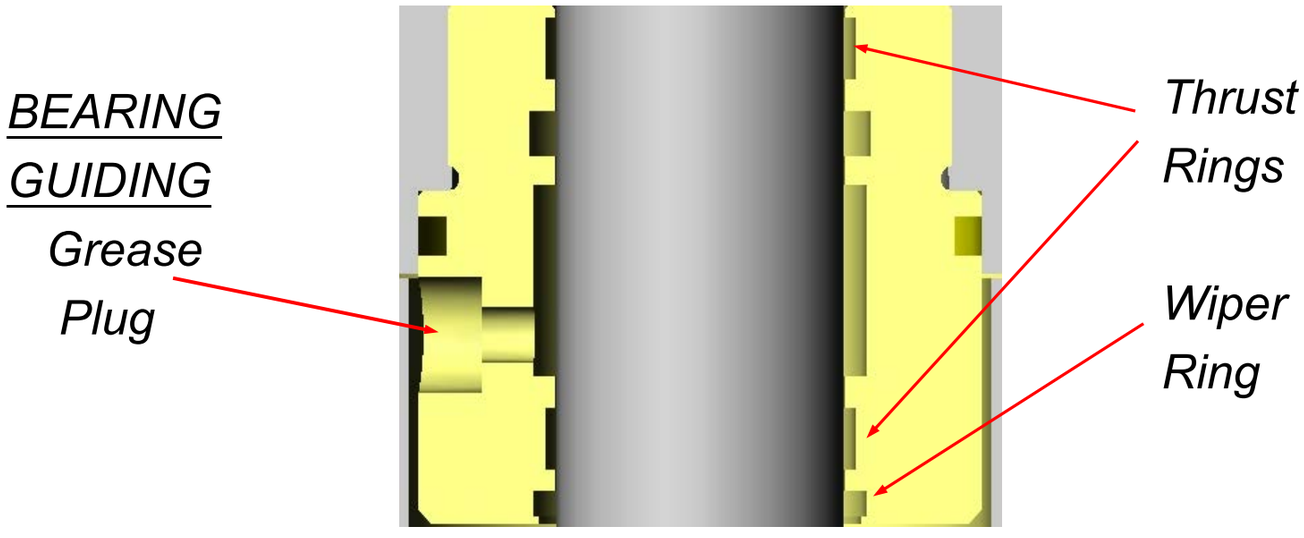
Actuator general features

Engineering GREAT Solutions

IMI Critical Engineering

USUAL DESIGN:

- Piston Guiding System:
  - *Single "O" ring design*
- Lower Bearing Guiding:
  - *Not considered (most of cases)*
  - *Oil bronze bushing*



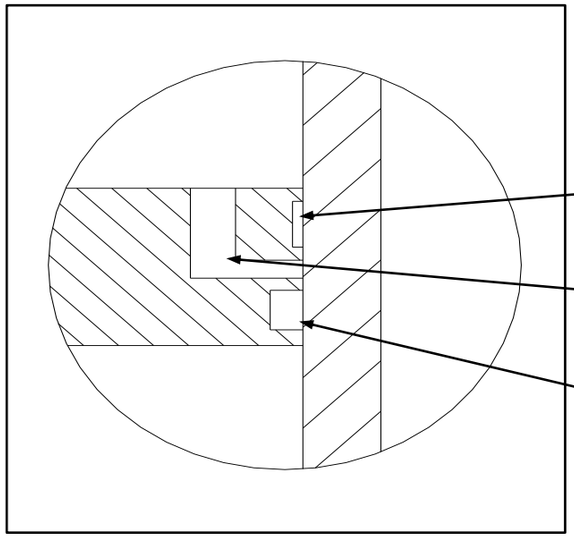
STI DESIGN:

- Piston Guiding System:
  - D "O" ring
  - Teflon guide
  - Thicker Piston
- Lower Bearing Guiding:
  - Anodized aluminum bearing
  - Grease plug
  - Inner and outer O ring
  - 2 Thrust rings, 1 wiper ring

Made in Italy

Actuator general features

Key features

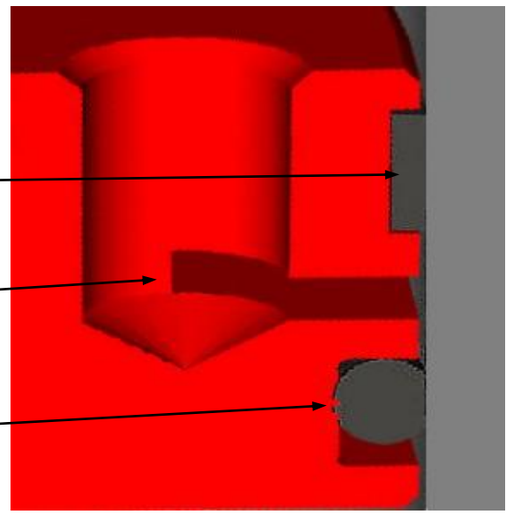


PISTON GUIDING

Teflon Guide

Grease Trap

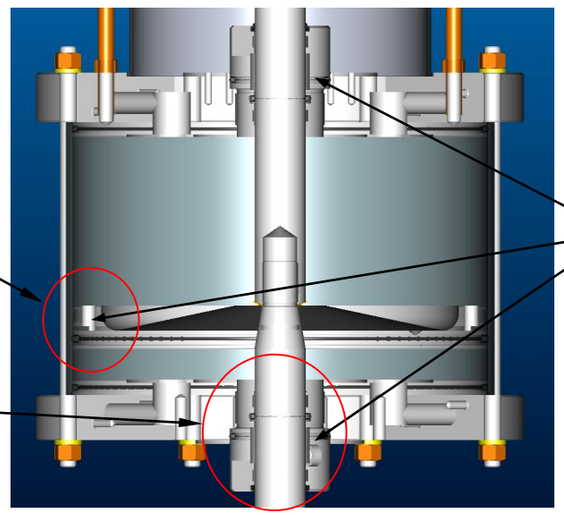
O-Ring



Option below is only for SC/V with spring.

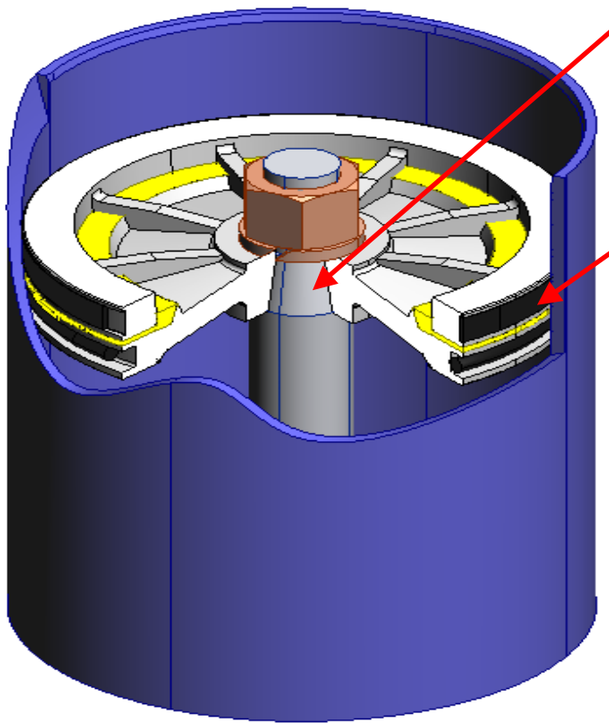
PISTON GUIDING

BEARING GUIDING

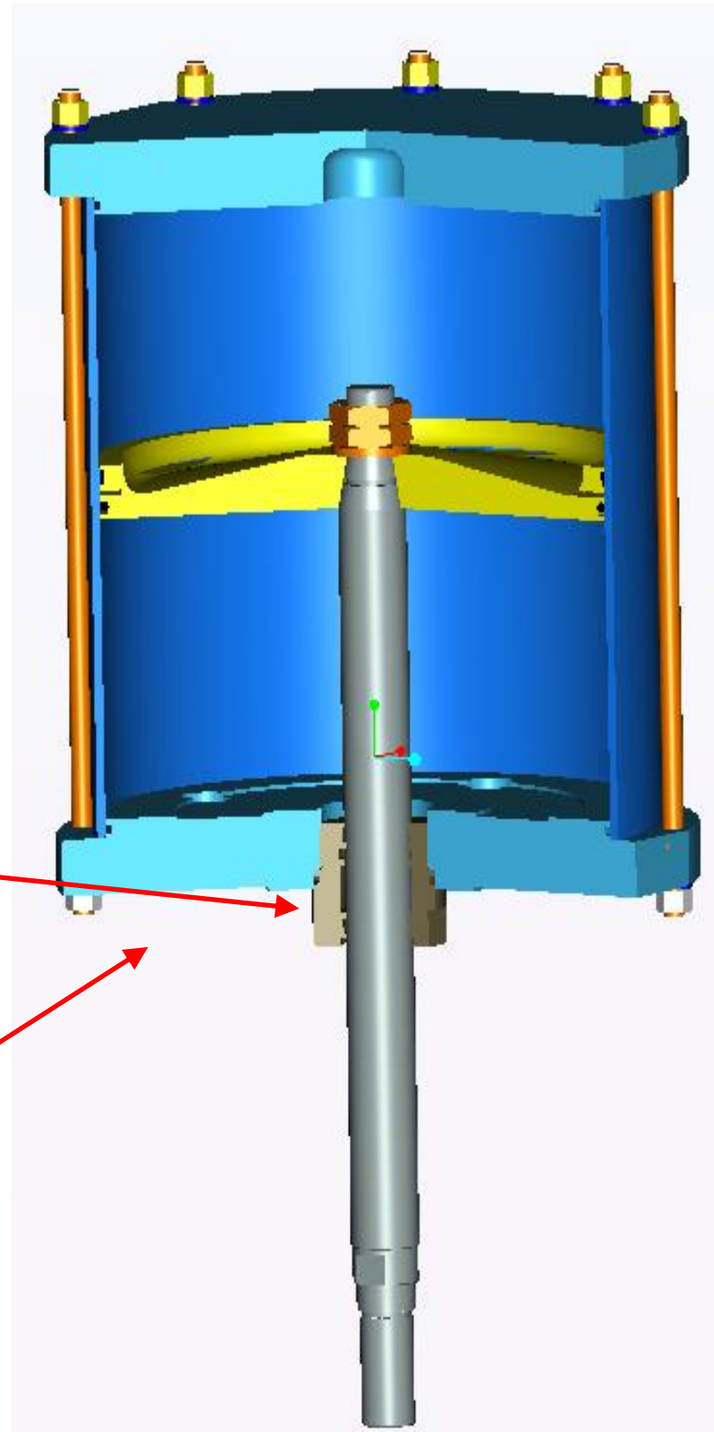


TRIPLE GUIDING FOR SPRING ACTUATORS

Actuator general features



- Strong cone locking at piston / stem connection.
- Double piston guide , life lubricated.
- Effective stem guide by long bearing in the cover.
- Designed for easy mounting and high cross section port accessories.



Actuator general features

Engineering GREAT Solutions

IMI Critical Engineering

STI design:

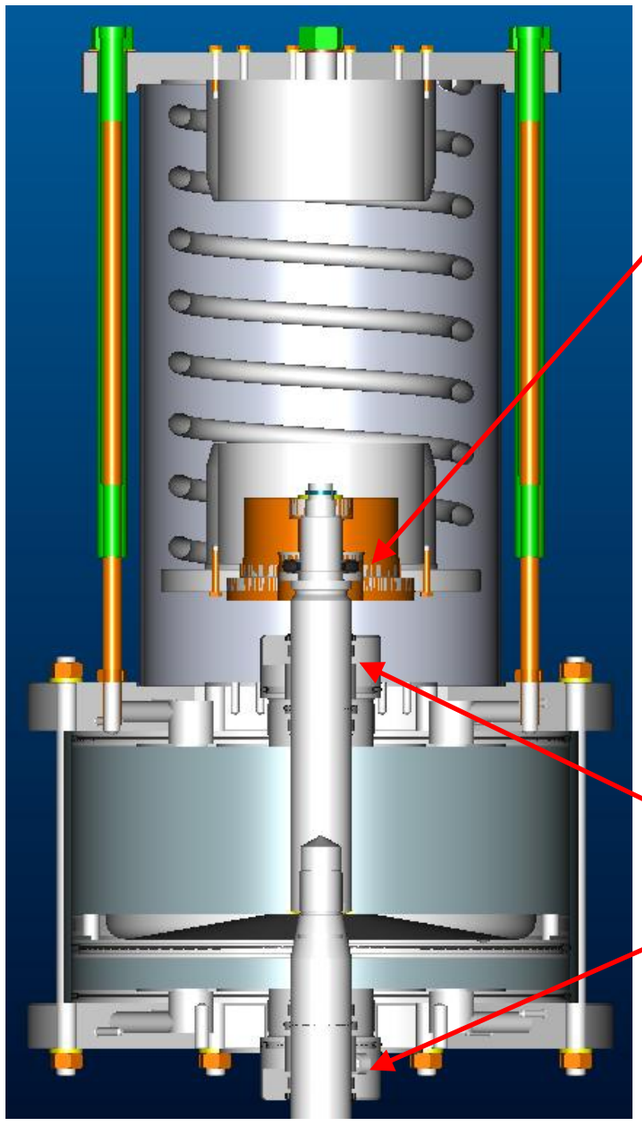
- *Piston Guiding System*:
  - *The grease reservoir continuously provides lubrication for long service life and low friction (permanent lubrication)*
  - *Teflon ring provide a mechanical guide to the piston*
  - *Thicker Piston is a more robust design*
  - *Elimination of O ring “roll over”*
- *Lower Bearing Guiding*:
  - *New material reduces friction on actuator stem*
  - *Grease trap provides constant lubrication to the stem*
  - *Plug reduces maintenance time with easy access for adding grease*
  - *Additional O ring provides added sealing*
  - *Thrust rings provide added guiding by absorbing radial stress*
  - *The wiper ring keeps debris out of sealing surfaces*

Made in Italy

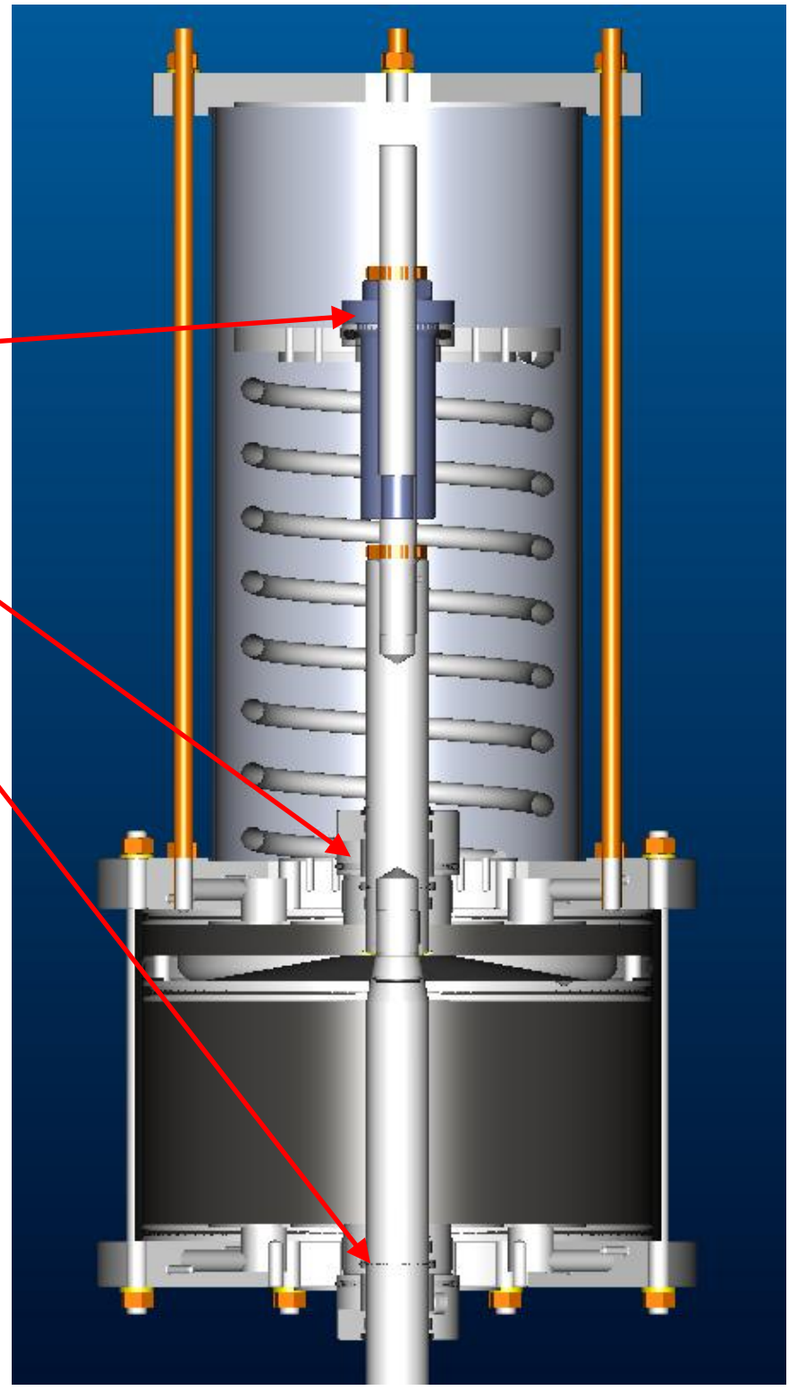
Actuator general features

Engineering GREAT Solutions

IMI Critical Engineering

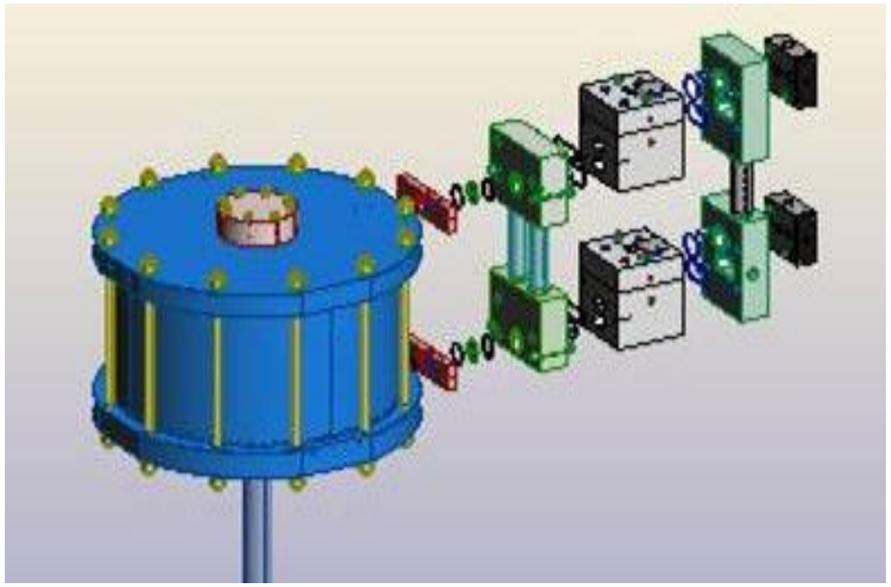


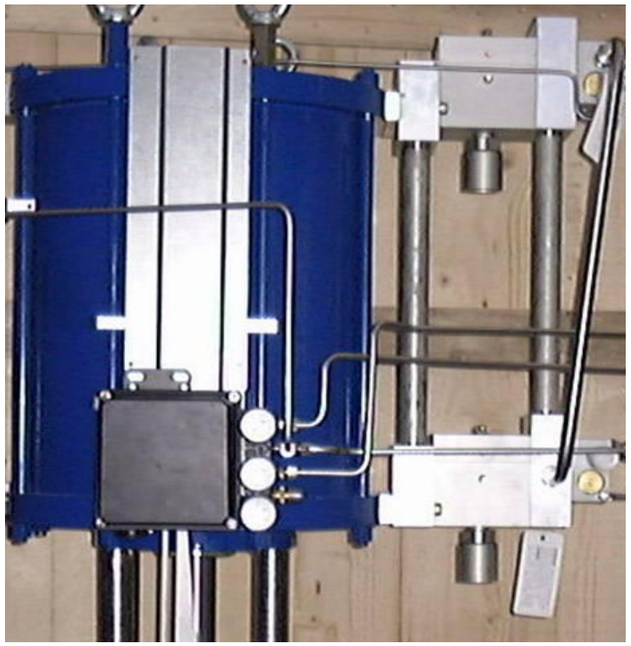
- No spring torque by means of bearing.
- Triple guide for less radial stress.
- Safety disassembling system.
- Strong cone locking at piston / stem connection.
- Double piston guide , life lubricated.
- Designed for easy mounting and high cross section port accessories.



Made in Italy

Actuator general features





MANIFOLD MOUNTING SYSTEM:

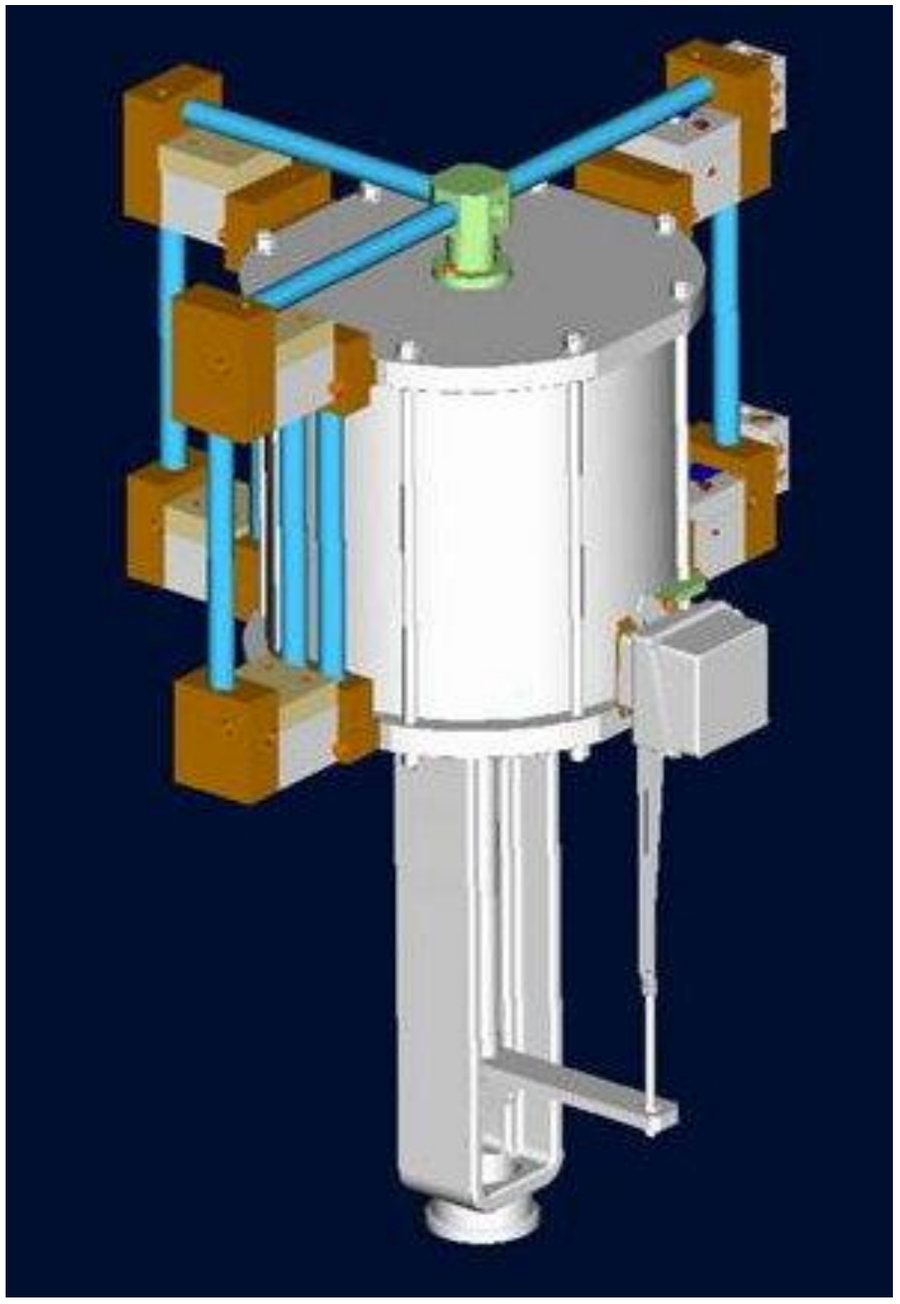
A plug-in system is used to apply the accessories in order to:

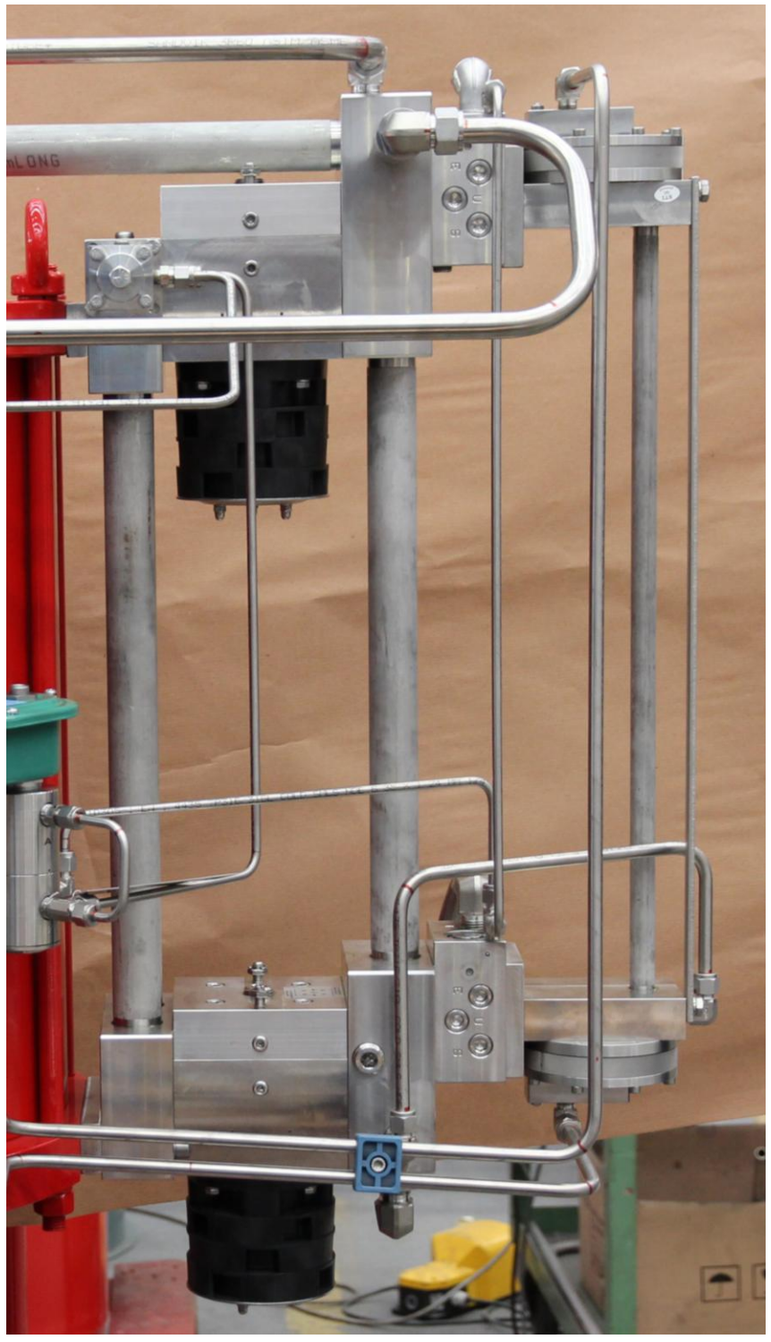
- maximize the port size connection (Max CV);
- reduce the actuator overall dimension;
- have an easy and fast mounting;
- reduce the use of hoses and fittings;
- minimize vibration effect.

Manifold mounting system

Engineering GREAT Solutions

IMI Critical Engineering



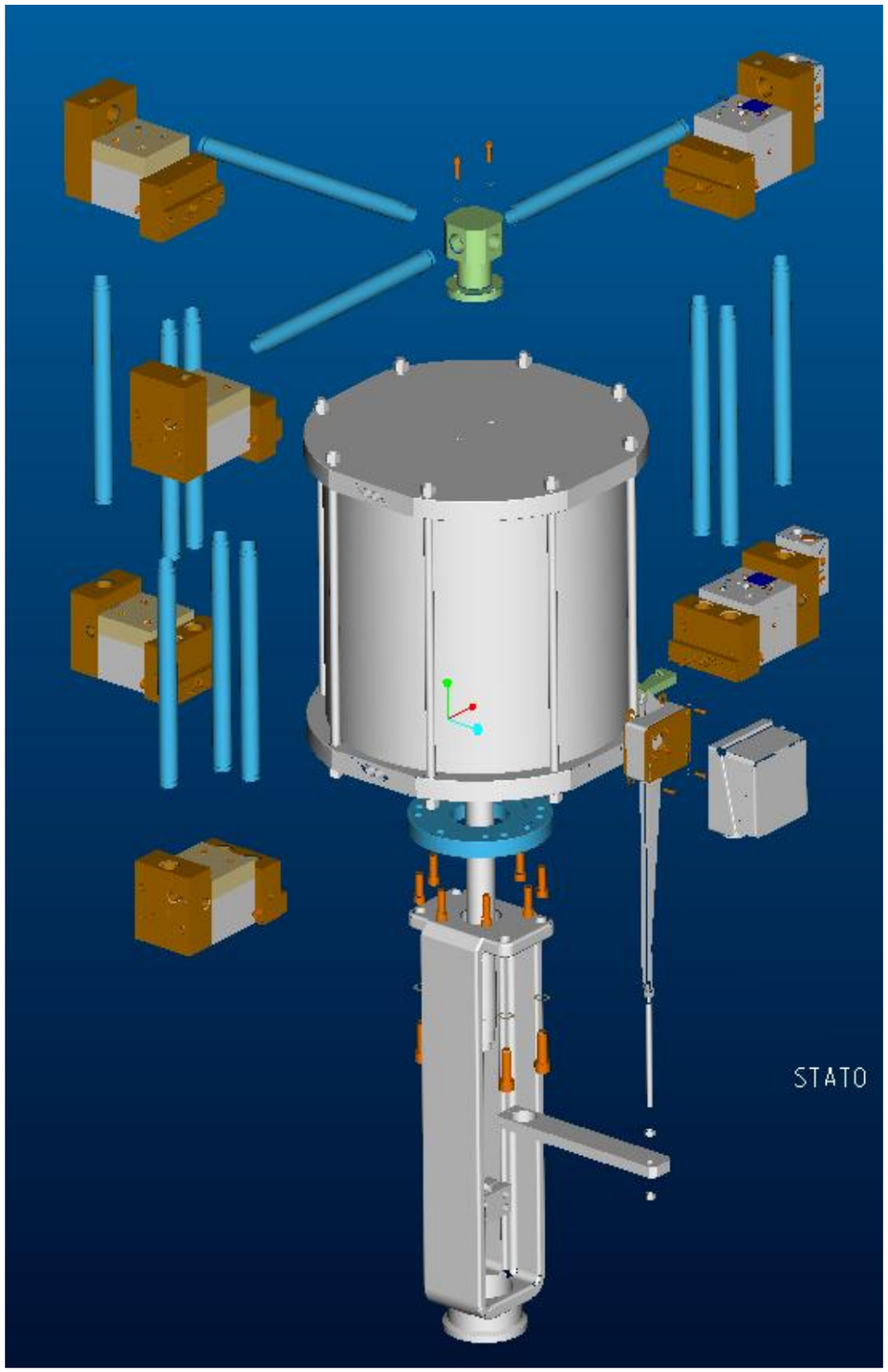


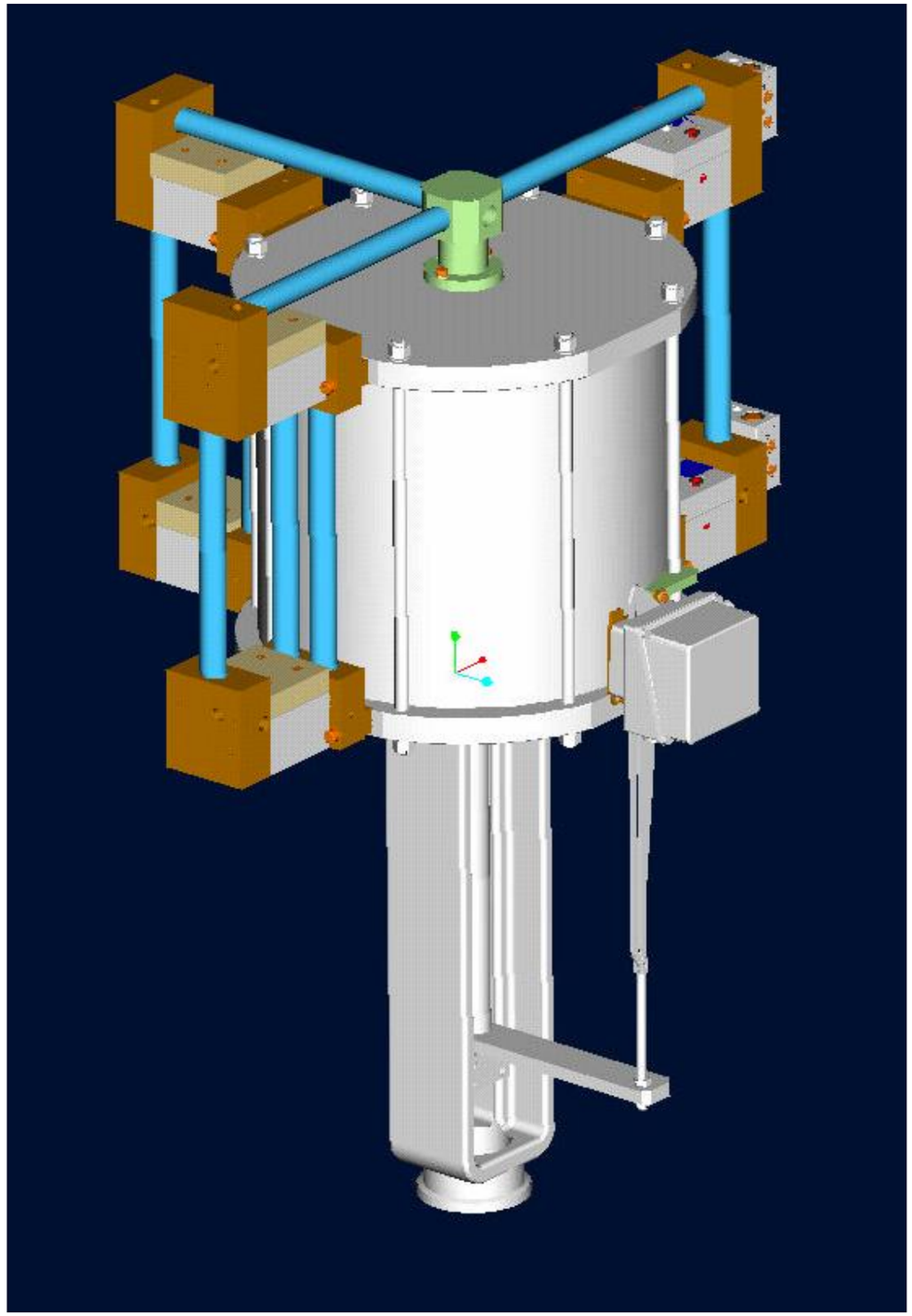
Made in Italy

Manifold mounting system

Engineering GREAT Solutions

IMI Critical Engineering





Made in Italy

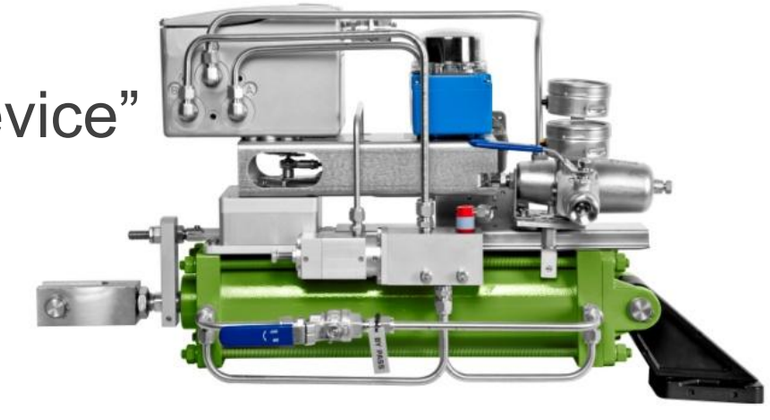
Linear actuator – SC Series

Engineering GREAT Solutions

IMI Critical Engineering

SC – Damper actuator

- Designed to meet SIL3 requirements as a “single device”
- ATEX 94/9/EC and PED 97/23/EC compliance
- Operating pressure: max 1.000 kPa
- Standard operating temperature: -20°C to +70°C
- Thrust: up to 850.000 N



SCV – Valve actuator

- Designed to meet SIL3 requirements as a “single device”
- ATEX 94/9/EC and PED 97/23/EC compliance
- GOST certification
- Operating pressure: pneumatic version up to 10 barg
- Standard operating temperature: -20°C to 70°C
- Thrust: up to 2 millions N

SC

Made in Italy

SC line for dampers

- Sizes **63** to **650** mm.
- Available sizes (mm): Ø 63, 100, 125, 160, 200, 260, 330, 390, 420, 520, 600, 650.
- Strokes **60** to **1400** mm.
- Small size available made of Aluminum (from 63 to 260 mm), bigger size made of carbon steel or 316 stainless steel.
- Installed directly on the damper.
- Actuators stroke can be reduced according to the specification (longer strokes are available on request).

SC

SC/V General purpose actuators

- Body made of cast aluminum.
- Stroke reduction made by spacers.
- Thrust up to 40000 N / 9000 lbf.
- Available as double acting and spring return.
- Sizes available ND 150 – 200 – 250 – 320 mm.
- Maximum stroke available is 305 mm.

SC/V Heavy-duty actuators

- Cylinder/covers (end caps) made of carbon steel or 316 stainless steel.
- Stroke made according to the specification.
- Thrust up to 300000 N / 67500 lbf (higher thrusts on request).
- Available as double acting and spring return.
- Available sizes from ND 260 mm up to 1400 mm.

Linear actuator – SC Series

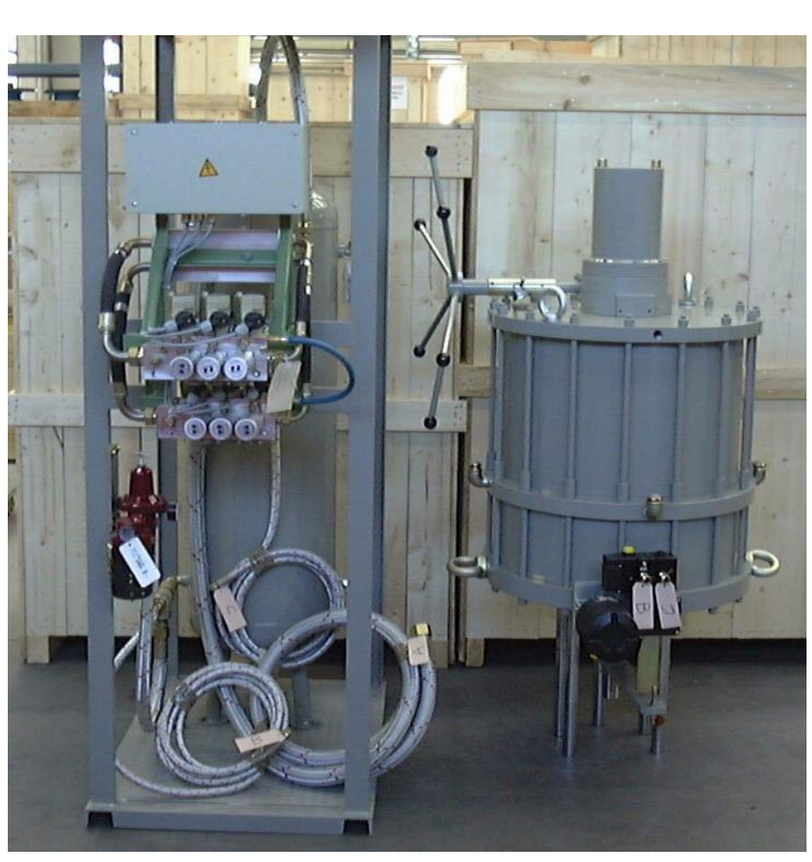
SC/V Heavy-duty actuators

TYPE	ACTIVE AREA	THRUST at 5 barg
SC/V	Cm^2	N
600 TANDEM	5.645	282.250
600 TRIPLEX	8.476	423.800
650 TANDEM	6.630	331.500
650 TRIPLEX	9.937	496.850
850 TANDEM	11.342	567.143
850 TRIPLEX	17.014	850.700

** TANDEM: 2 pistons in parallel*
** TRIPLEX: 3 pistons in parallel*

SC/V Spring Return Actuators

- Available in a wide range of solutions: single acting spring return and double acting plus spring.



Linear actuator – SC Series

Engineering GREAT Solutions

IMI Critical Engineering

- Large sizes: SC/V 300-400-500.
- Long strokes: up to 600 mm (24”).
- Side mounted positioner.
- Plug stop in the valve.
- Double acting - low volume construction.
- Light materials (amalgon cylinder with aluminum caps).
- Long extra strokes (25 mm per actuator side in most of cases, 7 mm per side for shortest strokes only).

SC

Made in Italy

Linear actuator – SC Series

Engineering GREAT Solutions

IMI Critical Engineering

	SCV	150	200	250	260	300	320	330	390	400	420	500	520	600	650	800	850	ATEX	PED	Standard (Indoor)	Tropical (Outdoor)	Off shore	Off shore+Sand storm
Actuator	Cylinder					■				■		■						☐	☐	Polimeric fiber Amalga	Polimeric fiber Amalga	Polimeric fiber Amalga	Polimeric fiber Amalga
						■				■		■						☑	☑	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted
					■			■	■		■		■	■	■	■	■	☑	☑	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted	Chrome or nichel plated carbon steel outside surface painted
		■	■	■			■											☑	☑	Painted Aluminium	Painted Aluminium	Painted Aluminium	Painted Aluminium
	Caps					■				■		■						☑	☑	Painted Aluminium	Painted Aluminium	Painted Aluminium	Painted Aluminium
					■			■	■		■		■	■	■	■	■	☑	☑	Painted carbon steel	Painted carbon steel	Painted with off shore cycle carbon steel	Painted carbon steel
		■	■	■			■											☑	☑	Painted Aluminium	Painted Aluminium	Painted Aluminium	Painted Aluminium
	Stem					■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	ASTM A582 type 416 [AISI 416]	ASTM A582 type 416 [AISI 416]	X2 CrNiMoN 22 5 3 EN 10088 [1.4462]	X2 CrNiMoN 22 5 3 EN 10088 [1.4462] + BELLOW
		■	■	■	■													☑	☑	Aisi 304	Aisi 304	X5 CrNiMo 17 12 2 EN 10088-1 [AISI 316]	X5 CrNiMo 17 12 2 EN 10088-1 [AISI 316] + BELLOW
	Tie rod				■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	Zinc plated painted carbon steel	Zinc plated painted carbon steel	Zinc plated painted carbon steel	Zinc plated painted carbon steel
	Piston	■	■	■	■													☑	☑	Aluminum	Aluminum	Aluminum	Aluminum
					■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	Carbon steel	Carbon steel	Carbon steel	Carbon steel
	Gasket	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	Buna N	Buna N	Buna N	Viton
	External screws	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	carbon steel (Aisi 316 only for RSM or where required)	carbon steel (Aisi 316 only for RSM or where required)	Aisi 316	Aisi 316
	Bushing	■	■	■		■												☑	☑	Bronze	Bronze	Aisi 316	Aisi 316
						■				■		■						☑	☑	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
					■			■	■		■		■	■	■	■	■	☑	☑	carbon steel	carbon steel	carbon steel	carbon steel
	Spring package	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	Painted carbon steel	Painted carbon steel	Painted with off shore cycle carbon steel	Painted carbon steel
	Positioner linckage stem	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	Aisi 316	Aisi 316	Aisi 316	Aisi 316
	Painting	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	☑	☑	CV-01,02,03,04	CV-11,12	CV-21	CV-21

Options can be supplied on request

Control drive actuators – CM Series

Engineering GREAT Solutions

IMI Critical Engineering

CML – Enclosed actuator

- Housing: carbon steel
- Shaft and lever: carbon steel
- Standard painting: epoxy
- Max. operating pressure: 7 bar
- Supply: dry instrument air
- Working angle of actuator lever:
  - CML 63/125 and 100/100: 90°
  - CML 100/200 and 125/200: 70°
- Operating temperature: -20°C / +70°C
- Torque from 140 Nm to 1000 Nm (70°)

CMV – Large enclosed actuator

- Housing: carbon steel
- Standard painting: epoxy
- Max. operating pressure: 7 bar
- Supply: dry instrument air 35/100 Psig
- Lever operating angle: 70°
- Control signal: 3 / 15 Psig or 4/20 mA
- Operating temperature: -20°C / +70°C
- Torque from 1240 Nm to 41190 Nm (70°)

CM

Made in Italy

Quarter turn actuators – RT Series

Engineering GREAT Solutions

IMI Critical Engineering

RT Series is a complete range of pneumatic and hydraulic actuators with material selected to withstand the most hostile environment conditions, suitable for Onshore and Offshore application, covering the On-Off and Modulating Control valve duties.

RTC – Compact quarter turn actuator

- Designed for environmental protection up to IP66 / IP67M
- Up to SIL3 requirements as a “single device”
- Actuators certified in accordance with PED 97/23/EC and/or ATEX 94/9/EC
- Standard hydraulic supply medium: mineral oil
- Operating pressure: Pneumatic up to 12 barg / Hydraulic up to 350 barg
- Standard operating temperature: -30°C to 100°C
- Output torque: from 40 Nm up to 6.000 Nm for double acting version
- Spring Ending Torque: from 40 Nm up to 2.500 Nm for single acting version

RT

Made in Italy

BENEFITS

RTC:

- Rugged steel housing & high-strenght alloy steel scotch yoke ensure safe and reliable operation.
- Housing is not under pressure, reducing points of leakage and simplifying maintenace.
- Available in double-acting and spring return.
- Symmetric or Canted scotch-yoke for ideal torque distribution.
- Designed to provide high torque with minimum space and weight.
- Spring package, is installed inside the cylinder; cylinder seals can be replaced safely without spring removal.
- Maximum safely is ensured by design of spring packs as spring compression is indipendent from removal of cylinder cap &tie rods.

Quarter turn actuators – RT Series

Engineering GREAT Solutions

IMI Critical Engineering

RTQ – Quarter turn actuator

- Designed for environmental protection up to IP66 / IP67M
- Up to SIL3 requirements as a “single device”
- Actuators certified in accordance with PED 97/23/EC and/or ATEX 94/9/EC
- Standard hydraulic supply medium: mineral oil

- Operating pressure: Pneumatic up to 12 barg / Hydraulic up to 350 barg
- Standard operating temperature: -30°C to 100°C
- Output torque: from 2.000 Nm up to 600.000 Nm for double acting version
- Spring Ending Torque: from 1.650 Nm up to 165.000 Nm for single acting version

RT

Made in Italy

Quarter turn actuators – RT Series

Engineering GREAT Solutions

IMI Critical Engineering

BENEFITS

RTQ:

- Welded carbon steel housing & hi-strenght scotch-yoke ensure safe and reliable operations.
- Low friction heavy-duty nickel or chrome plated cylinders allows high performance & long life of the pneumatic cylinder.
- Available in double-acting and spring return.
- Lightweight but rugged actuator's series with both Symmetric or Canted scotch-yoke for ideal torque distribution.
- Internally coated waterproof housing, for long-lasting corrosion resistance.
- Selected material and surface treatments for top-in class performances.
- Stainless steel travel stops allow fine angular stroke adjustments between 82° & 98°.

RT

Made in Italy

Positioners – PT Series

Engineering GREAT Solutions

IMI Critical Engineering

- Smart type (Very High Flow Rate)
- Traditional type
- Pneumatic or Electro-pneumatic (High-flow spool valve size 1/2” available on request)
- Intrinsically Safe &Explosion proof executions

PT

Made in Italy

Positioners – PT Series

FT – FasTrak smart positioner

- Unique big CV 2.
- Suitable for Natural Gas certified.
- Integrated position transmitter.
- Environmental protection: IP66.
- Remote mounting option.
- Aluminum and stainless steel 316 housing available.
- Analog output 4-20 mA.
- Fail freeze option (2 wires).
- Air supply pressure: 2,5/10 bar.
- E xia and E xd version (also for natural gas option).
- Several certifications available.
- Standard operating temperature: -40°C to +80°C.
- Display and push buttons option.
- Auto tuning on control stroking time applications: from 0,5 sec to 50 sec.

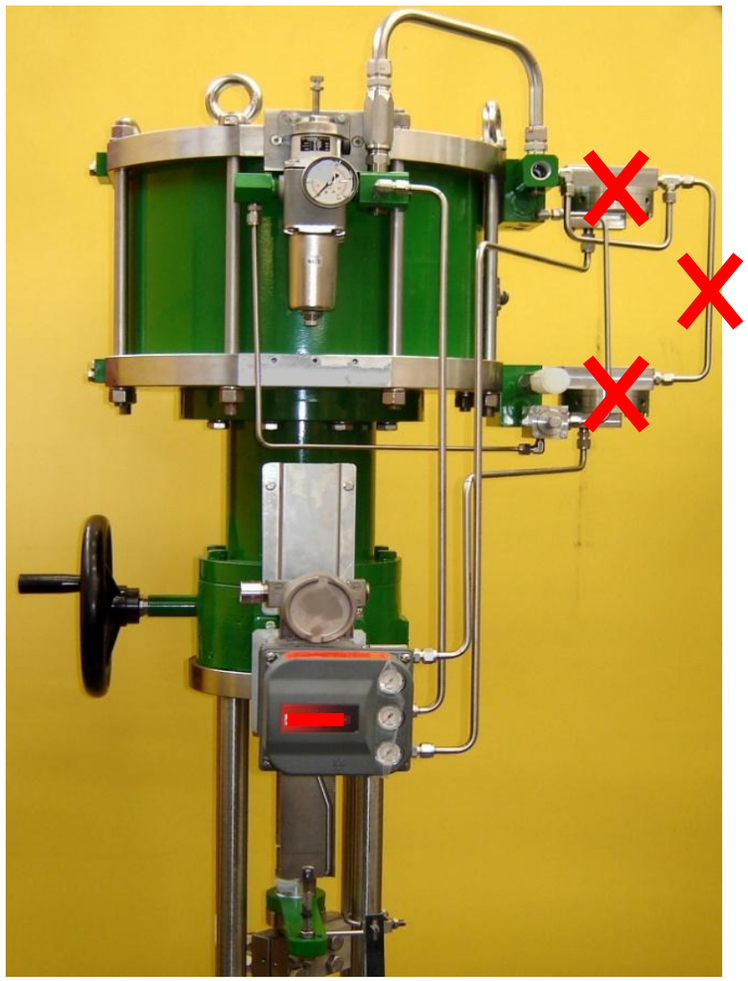
FasTrak with display and push buttons option (E xd)

Positioners – PT Series

FT Advantages

- No more booster & quick exhaust valves ➔ less components installed.
- Better quality of control.
- Cost saving.
- Space saving.
- Less parts to stock.

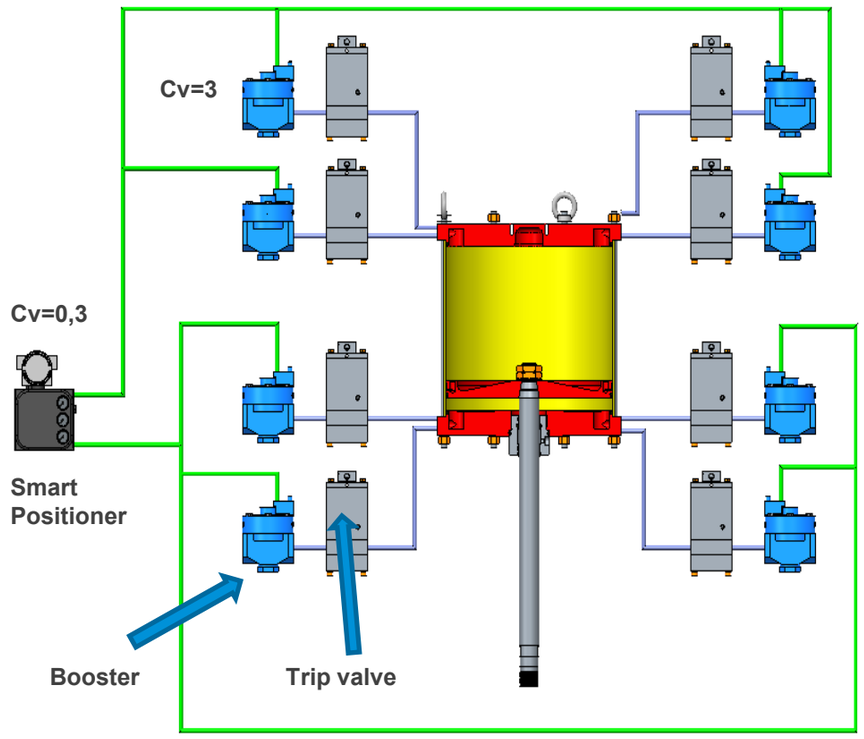
FT SMART POSITIONER



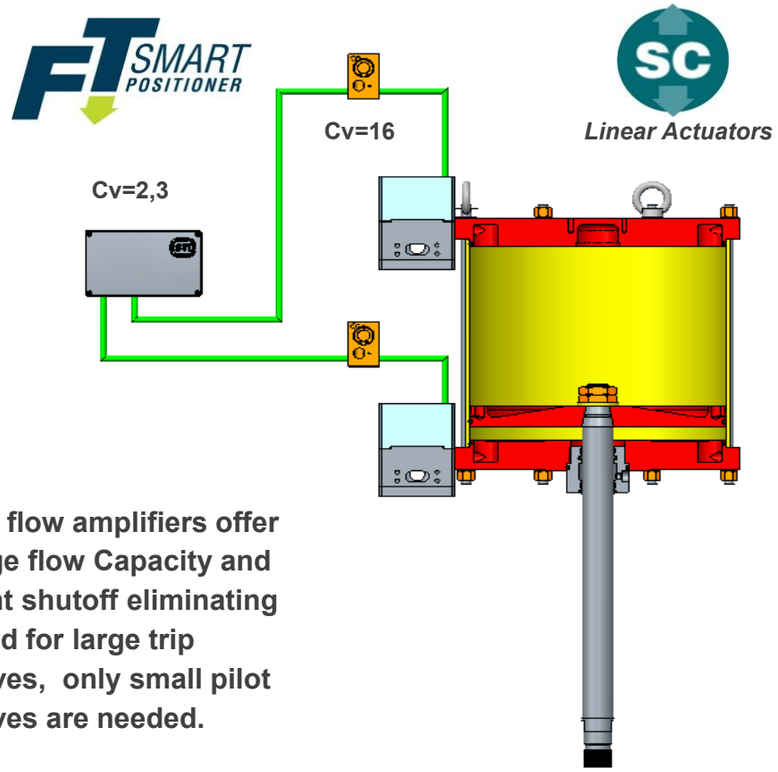
How to move 1 ton valve plug for 500 mm in 1 sec with 1mm accuracy and no overshoot ? And by using compressible power media (air)?

Competitor's Solution

Multiple boosters and trip valves. Poor performances and reliability, has lot of fittings and leakage points.



STI Solution



BW flow amplifiers offer huge flow Capacity and tight shutoff eliminating need for large trip valves, only small pilot valves are needed.

Positioners – PT Series

Engineering GREAT Solutions

IMI Critical Engineering

Traditional positioner

- Pneumatic & Electro-Pneumatic
- Linkages designed to reduce linearity error to minimum value
- Integrated pneumatic valves
- Modular Design

UP-2

CRP-3/M

DE/3M

SA-1

SR-CCK

SA/CL

PT

Made in Italy

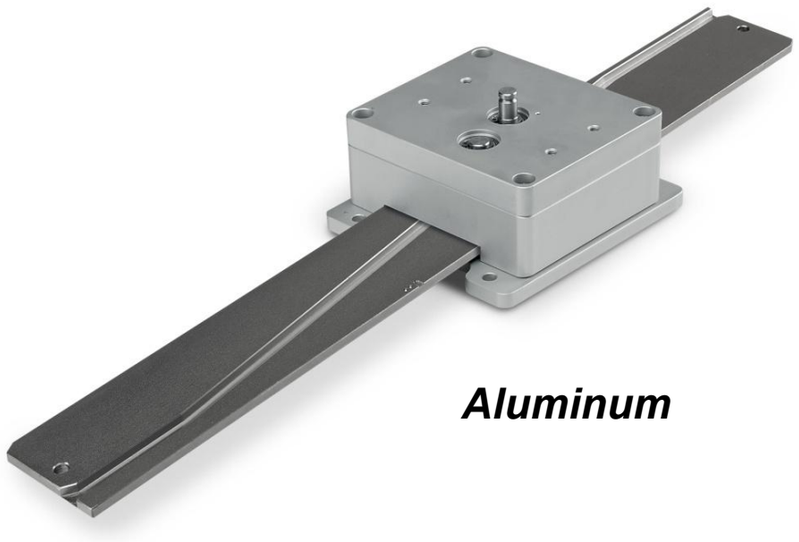
Accessories – AC Series

Selection of accessories

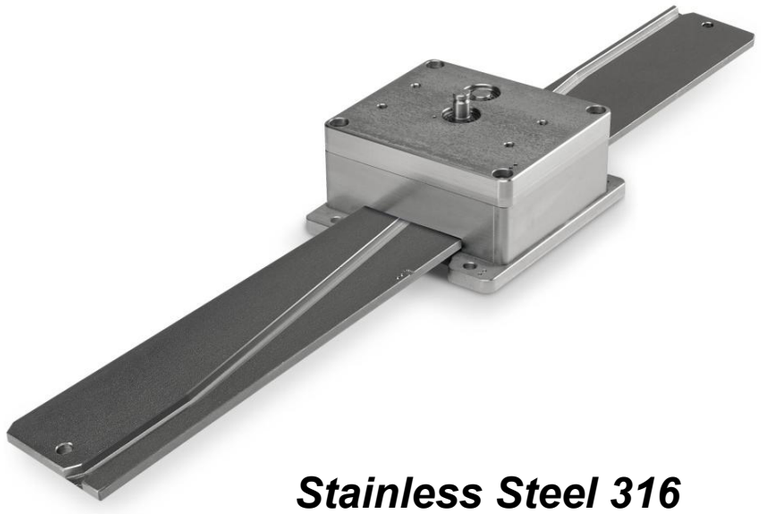
- Customer's requirements & Project Technical Specifications
- Size & Type based on technical data (P, size of actuator, stroke, velocity etc.)
- More solutions for same purpose
- Choice: technical & economical aspects

Accessories – AC Series

Motion Converter - MC



Aluminum



Stainless Steel 316

Air-Lock - AL

Aluminum

Stainless Steel 316

- Safety / Emergency functions
- Air and/or Energy failure

Position transmitter (2030) & Limit switch (2130)

2130

2030

Accessories – AC Series

Derivative Booster - BD

Derivative Unit - UD

Aluminum

Stainless Steel 316

Manual override – GR

Volume Booster – AV, BV & BW

AV

BV

BW

3-Way Valves - CO

1”

¼”

½”

1” ½

2”

R&D Laboratory

We have a laboratory in which we can do tests and trainings to our customer.

Aftermarket service

With several thousand actuators operating in every industry from mosto severe and remote locations down to the suburb you live, our reliability is world wide recognized.

STI technicians are always available to give maximum support on site for start-up, commissioning and in case of trouble shooting.

The advantage to chose us as supplier is that you need only one company to solve your problems.

We have ***Total capability in valve actuation***.

Aftermarket service

Engineering GREAT Solutions

IMI Critical Engineering

- **Remote customer care :** telephone assistance during start-up, commissioning or normal operation
- **Field Service on site :** for spare parts installation and upgrade
- **Maintenance Service on site :** for regular maintenance of our actuator and accessories
- **Spare parts service :** to guarantee original spare parts interchangeable with existing one
- **Upgrade service :** to propose always the best new solution available for your system
- **Training on site :** for better calibration and knowledge of our system
- **Fast delivery :** 24 hours spare parts shipment service

Made in Italy

Approvals & Certifications

Engineering GREAT Solutions

IMI Critical Engineering

This is a (partial and continuously evolving) list of our international approvals and certifications.

Intertek

QUALITY ASSURANCE NOTIFICATION

1. **Equipment and Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC (ATEX)**
2. **Manufactures Notification Number:** ITS13ATEXQ7305
3. **Explosion Protection concept(s) covered by this Notification:** See schedule 1
4. **Manufacturer:** STI srl, Via G.Pascoli 10A/B, 24020 GORLE (BG), ITALY

   Intertek Testing & Certification Limited, Notified Body No. 0359 for Annexes IV and VII in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, confirms that the manufacturer has a quality system which complies with Annex IV and VII of the Directive.
5. **Full details of the Audit are held on file ref: ITS/13/Q7305 (Job No. 101438099)**
6. This notification may be withdrawn if the manufacturer no longer satisfies the requirements of Annex IV. Periodic inspection form part of this Notification.
7. This notification is valid until **11 November 2016** and can be withdrawn if the manufacturer does not satisfy the quality assurance re-assessment.
8. The CE marking shall be followed by the identification number 0359 identifying the notified body involved in the production control stage required by Article 10 [1] of the Directive 94/9/EC.
9. This notification may only be reproduced in its entirety and without any change

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: +44 (0)1372 370900 Fax: +44 (0)1372 370977
www.intertek.com
Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

P Moss
Certification Officer
28th January 2014

This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification's Conditions for Granting Certification.

Sheet 1 of 2

F4F-303 - Quality Assurance Notification Template Revision 5 June 2013

DNV

DNV BUSINESS ASSURANCE

FULL QUALITY ASSURANCE CERTIFICATE – EC

Certificate No. ***136070-2013-CE-ITA-ACCREDIA***

This certificate consists of 3 pages

This is to certify that the quality management system of

STI S.r.l.

Via G. Pascoli, 10 a/b – 24020 Gorle (BG) – Italy

for design, production, final product inspection and testing of

Pneumatic cylinders for actuators

has been assessed with respect to the conformity assessment procedure described in annex III (Module H) of Directive 97/23/EC on pressure equipment, as amended, and found to comply.

Further details are given in the following pages

This certificate is valid until
2016-05-05

Place and date
Agrate Brianza, 2013-05-06
for the Notified Body 0496
Det Norske Veritas Italia S.r.l.

Torgny Segerstedt
Technical Reviewer

Renato Grottola
Management Representative

CE

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Page 1 of 3

QUALITY SYSTEM CERTIFICATION ISO 9001 DNV

Range	Product(s)	Ref.
QUALITY	ISO 9000	TUV NORD 78 100 045984
	ATEX (QAN)	TUV NORD 03ATEX2535Q
	PED D1	TUV NORD 07 202 1837 Z 0021/6/01
	IECEX (QAR) - per DPS	IEC QAR TUN 10.0038
	FSM	
ATEX	POSITIONER/ACCESSORIES	TUV NORD (JOB CERTIFICATE)
	actuator	TUV NORD (JOB CERTIFICATE)
	DPS QT Controller	TUV NORD 10ATEX386763
	DPS QT Motore	TUV NORD 10ATEX386764
	SPS (Scheda FT Eexia)	Baseefa 08ATEX0112U /-1 / -2
	FT Exia (BASEEFA)	Baseefa 10ATEX0155X
	FT Exd (BASEEFA)	Baseefa 10ATEX0254X
	ID x FT Exd (ICEPI)	ICEPI 10ATEX03C007
	ID x FT Exd (BASEEFA)	Baseefa 10ATEX0158X
	TR2030	TUV NORD 03ATEX2228
IECEX	DPS series QT: controller	IEC TUN 10.0020
	DPS series QT: Step motor	IEC TUN 10.0019
	FT Exia	IECEX BAS 11.0082X + Annex
	ID x FT Exd	IECEX BAS 11.0080X + Annex
	FT Exd (ID)	IECEX BAS 11.00.....
PED	ACTUATORS	CAT. 1;2;3 as applicable
	AIR TANKS	CAT. 1;2;3 as applicable
SIL (SIL 1, 2 or 3 as applicable)	SC/V 150/200/250/320	Tuv Rheinland FS 28111448
	SC/V 260/330/300/390/400/500/420/520/600	Tuv Rheinland FS 28111675
	SC/V with SPRING	BV G14075/09/CG/ep
	CO - AL	BV G13041/09/CG/ep
UL	Quick Track III - Hazardous	UL 080805 - E256179
	Quick Track III - Ordinary location	UL E250279
GOST (Russia)	SC-SC/V	712219
	Posizionatori ed accessori	1723899
	FT Exia	8918410
	QT	40655
SANS (South Africa)	DPS series QT: controller (IS SANS 10108)	XPL12239 11.0561
	DPS series QT: Step motor (IS SANS 10108)	XLP12239 11,0604
	FT Eexia (IS SANS 10108)	XPL12239 11.0562
	FT ID BarrierExd (IS SANS 10108)	XPL12239 11.0563
	SC/V 500 Spring Open (SANS 347:2010)	Waiting for number

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US006732629B1

(12) **United States Patent**
Miller et al.

(10) **Patent No.: US 6,732,629 B1**
(45) **Date of Patent: May 11, 2004**

(54) **PNEUMATIC ACTUATOR CIRCUIT**

5,899,064 A * 5/1999 Cheung ..... 91/363 A
6,116,139 A * 9/2000 Yuda et al. 91/51

US 20050115232A1

(19) **United States**

(12) **Patent Application Publication**
Tondolo

(10) **Pub. No.: US 2005/0115232 A1**
(43) **Pub. Date: Jun. 2, 2005**

(54) **THREE-WAY PNEUMATIC COMMUTATOR AND VOLUME BOOSTER**

(57) **ABSTRACT**

Disclosed is an actuator system for positioning a piston

US 20090178713A1

(19) **United States**

(12) **Patent Application Publication**
Tondolo

(10) **Pub. No.: US 2009/0178713 A1**
(43) **Pub. Date: Jul. 16, 2009**

(54) **HIGH FLOW CAPACITY POSITIONER**

(52) **U.S. Cl.** **137/2**; 137/625.42; 137/871; 137/863; 137/101.21; 137/118.02

US007533589B2

(12) **United States Patent**
Tondolo

(10) **Patent No.: US 7,533,589 B2**
(45) **Date of Patent: May 19, 2009**

(54) **MOTION CONVERTER**

4,527,769 A * 7/1985 Stogner et al. 251/14

(75) Inventor: **Flavio Tondolo**, Stezzano (IT)

WIPO **PATENTSCOPE**

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1. (WO2009090569) ACTUATOR FOR A SPOOL VALVE

PCT Biblio. Data | Description | Claims | National Phase | Notices | Documents

Latest bibliographic data on file with the International Bureau

Pub. No.:
Publication D
Chapter 2 De
IPC:
Applicants:
Inventors:
Agent:
Priority Data:
Title
Abstract:

US 20100243929A1

(19) **United States**

(12) **Patent Application Publication**
TONDOLO

(10) **Pub. No.: US 2010/0243929 A1**
(43) **Pub. Date: Sep. 30, 2010**

(54) **BOOSTER VALVE**

(52) **U.S. Cl.** **251/62**

US 20090282937A1

(19) **United States**

(12) **Patent Application Publication**
PICERNO et al.

(10) **Pub. No.: US 2009/0282937 A1**
(43) **Pub. Date: Nov. 19, 2009**

(54) **STEPPER ACTUATOR HAVING A BREAKING MECHANISM**

(52) **U.S. Cl.** **74/128**

(57) **ABSTRACT**

US 20110284083A1

(19) **United States**

(12) **Patent Application Publication**
Tondolo et al.

(10) **Pub. No.: US 2011/0284083 A1**
(43) **Pub. Date: Nov. 24, 2011**

(54) **FAIL-FREEZE DEVICE FOR POSITIONER**

(52) **U.S. Cl.** **137/1**; 251/30.01

(57) **ABSTRACT**

(76) Inventors: **Flavio Tondolo**, Stezzano BG (IT); **Roberto Valoti**, Seriate BG (IT)

A fail-freeze valve positioner system is disclosed. The system has a transducer with a first type output port connectible to a

Conclusion

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