



PNEUMATIC ACTUATORS





CENTORK. SPECIALISTS IN VALVE ACTUATION

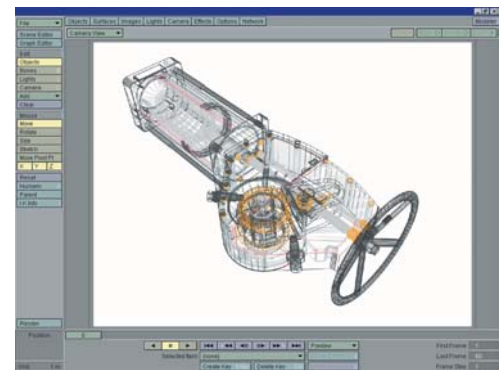
With its wide range of actuation products- electric actuators, pneumatic actuators and positioners- Centork covers virtually any need in the actuation and control of valves.

Inheriting the experience acquired during the last 30 years by Centralair and pushed by its dynamic R+D department, Centork has developed valve actuation products, from the standard product to the special product according to the customers high specifications, that are successfully competing in the international market. Centork has the experience, know-how and product range to supply any valve actuation solution.

From a water sewage treatment plant to an offshore oil platform, through a power generation facility, Centork is present to deliver the best customer service anywhere in the world.

Our international partners network ensures a local answer to our customers, from the initial enquiry through to after-sales service, maintenance or retrofitting.

In a world more and more specialized, with the introduction of the new digital technologies, being able to rely on an actuation specialist like Centork is a warranty for the future.



CENTORK LINEAR PNEUMATIC ACTUATORS

The linear pneumatic actuators have been designed to drive all kind of industrial valves: linear, gate, globe, diaphragm, as well as quarter turn ones (using an articulated mounting in the linear actuator): butterfly, ball, plug, dampers, etc.



MAIN FEATURES

- ▶ They can be of the on/off or modulating type, of single or double acting.
 - ▶ The standard service temperature goes from -10°C to + 70°C.
 - ▶ Thrust goes from 75 Kg to 7.200 Kg (These temperature and thrust values can be higher on request).
 - ▶ The basic range is based on pneumatic cylinders designed for medium-heavy duty work, according to the ISO 6431 Standard.
 - ▶ Cylinders come with a magnetic piston (optional).
 - ▶ The basic manufacture materials withstand corrosion.
 - ▶ The actuator control, in its on/off version, can be pneumatic or electrical, single or double pilot, depending on the installation requirements.
- The actuator control in its modulating version can be pneumatic (3-15 psi or 0,2-1 bar) or electrical (4-20 mA, 0-10V).
- ▶ The valve that controls the actuator movement is incorporated on the pneumatic cylinder forming an integrated and compact unit.
 - ▶ On demand it can also be supplied with:
 - Complementary control elements to adapt its performance to the demands of each application (position sensing, security circuit, flow regulators, etc.).
 - The required control to adapt its performance to the specific needs of each case.

CENTORK ON/OFF LINEAR PNEUMATIC ACTUATORS

When a linear on/off movement has to be made to drive any kind of industrial valve, the CENTORK linear pneumatic actuator turns out to be particularly useful.

The actuator design incorporates all the specified functions (cylinder, mountings, control and security systems, detectors, etc.), so that the user gets the suitable actuator defined and integrated to each application.



TECHNICAL DATA	PNEUMATIC CONTROL	ELECTRIC CONTROL
Available diameters: 50 to 320 mm	YES	YES
Available strokes: 80 to 1500 mm	YES	YES
Max. working pressure 10 bar	YES	YES
Single or double solenoid or 5/3 valve	YES	YES
Control signal	3-10 bar	24,48V / 110, 220V
Magnetic piston (optional)	YES	YES
Cushioning at the ends	YES	YES
Built-up in anodized aluminium and steel	YES	YES
Other materials under request	YES	YES
Standard electric protection degree	-	IP-65
Service temperature -10°C to +70°C	YES	YES

Please check corresponding technical sheets.

ACTUATORS LINEAR THRUST

Ø CYLINDER (mm)	PUSHING THRUST (N at 6 bar)	TRACTION THRUST (N at 6 bar)
50	1176	990
63	1860	1680
80	3000	2718
100	4680	4230
125	7320	6840
160	12060	11280
200	18840	18060
250	29460	27600
320	48240	46380

Higher values available

CENTORK MODULATING LINEAR PNEUMATIC ACTUATORS, WITH EXTERNAL SPRING



They incorporate a precision pneumatic positioner PR-120 Series with external spring.

The linear positioner valve, incorporated to the cylinder by means of a sub-plate, converts the linear pneumatic actuators into flexible units. The feedback spring and its assembly accessories are adapted to the actuator length and characteristics to which they are incorporated.

The design of the actuator incorporates all the specified functions (cylinder, mountings, control and security systems, detectors, etc.) so that you can get, defined and integrated, the suitable actuator to your application from CENTORK.

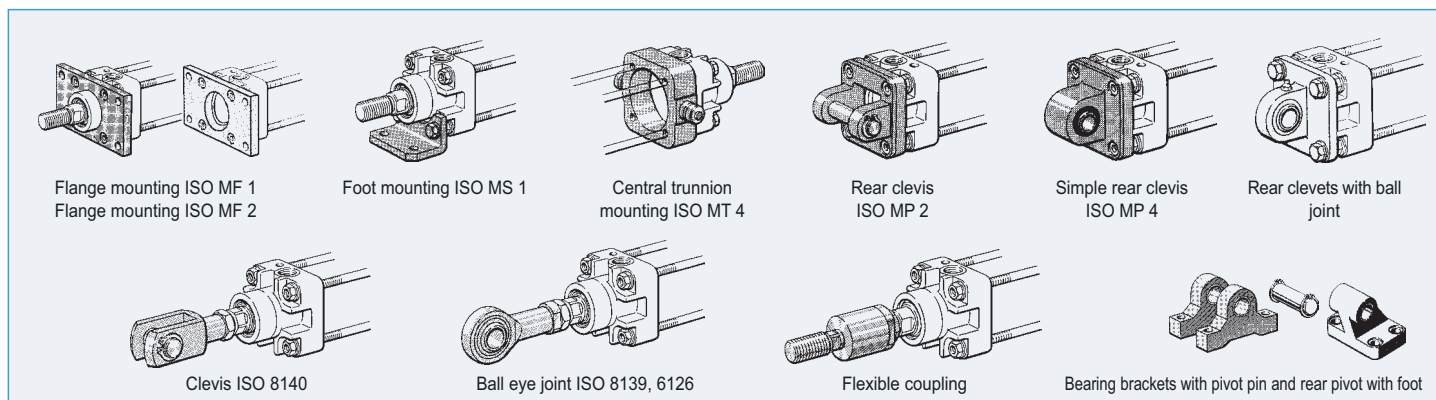
TECHNICAL DATA	PNEUMATIC CONTROL	ELECTRIC CONTROL
Available diameters: 50 to 320 mm	YES	YES
Available strokes: 80 to 1500 mm	YES	YES
Max. working pressure 10 bar	YES	YES
Magnetic piston (optional)	YES	YES
Cushioning at the ends	YES	YES
Built-up in anodized aluminium and steel	YES	YES
Other materials under request	YES	YES
Standard electric protection degree	-	IP-54
Service temperature -10°C to +70°C	YES	YES

THE POSITIONER VALVE CAN BE:

	PR-120	PR-120 R	PR-121	PR-121 R
Function	Direct 0% control signal, piston rod inside	Reverse 0% control signal, piston rod outside	Direct 0% control signal, piston rod inside	Reverse 0% control signal, piston rod outside
Control signal	pneum.: 0,2-1 bar; 3-15 psi	pneum.: 0,2-1 bar; 3-15 psi	elect.: 4-20 mA or 0-10 V.	elect.: 4-20 mA or 0-10 V.

Please check corresponding technical sheets.

MOUNTINGS



CENTORK PROPORTIONAL LINEAR PNEUMATIC ACTUATORS, WITH CHARACTERIZABLE CAM

They incorporate a PR-730/731 precision pneumatic positioner with cam.

The longitudinal cam, which retrofeeds the actuator position, allows the actuator to adapt to the valve needs on which is mounted.



Explosion protection also available.
ATEX II 2G Eexia II CT6



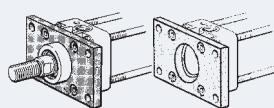
TECHNICAL DATA	PNEUMATIC CONTROL	ELECTRIC CONTROL
Available diameters: 50 to 320 mm	YES	YES
Available strokes: 80 to 500 mm	YES	YES
Max. working pressure 10 bar	YES	YES
Magnetic piston (optional)	YES	YES
Cushioning at the ends	YES	YES
Built-up in anodized aluminium and steel	YES	YES
Other materials under request	YES	YES
Standard electric protection degree	-	IP-65
Service temperature -10°C to +70°C	YES	YES
Explosion proof (Atex) versions available	YES	YES

THE POSITIONER VALVE CAN BE:

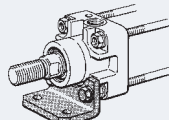
	PR-730	PR-731	PR-733
Function	Reversible 0% control signal, piston rod inside or outside	Reversible 0% control signal, piston rod inside or outside	Reversible 0% control signal, piston rod inside or outside
Control signal	neum.: 0,2-1 bar; 3-15 psi	elect.: 4-20 mA , 0-10 V.	4-20 mA ATEX Eexia II CT6

Please check corresponding technical sheets..

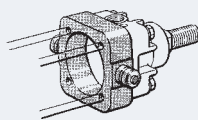
MOUNTINGS



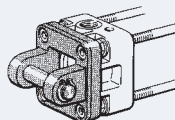
Flange mounting ISO MF 1
Flange mounting ISO MF 2



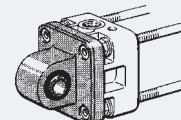
Foot mounting ISO MS 1



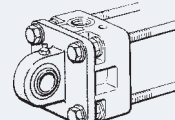
Central trunnion
mounting ISO MT 4



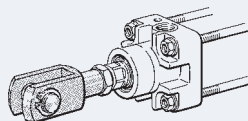
Rear clevis
ISO MP 2



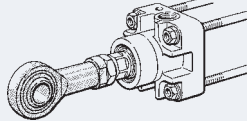
Simple rear clevis
ISO MP 4



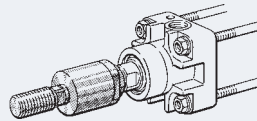
Rear clevis with ball
joint



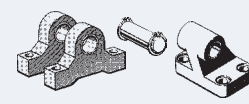
Clevis ISO 8140



Ball eye joint ISO 8139, 6126



Flexible coupling



Bearing brackets with pivot pin and rear pivot with foot

CENTORK QUARTER TURN PNEUMATIC ACTUATORS. SINGLE ACTING

The most compact solution to achieve high torques by pneumatic means.

The experienced connecting rod mechanism of the "scotch-yoke" type guarantees a reliable performance.

The built-in spring, of the right dimension, guarantees the actuator prearranged security position.

The CENTORK quarter turn single acting pneumatic actuators, offer the following variants:

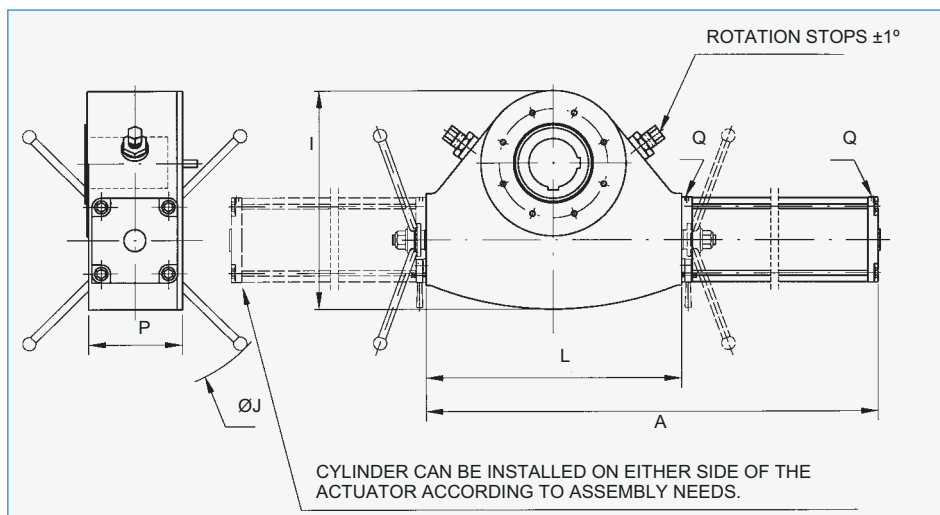
- ▶ ON/OFF Actuator: with different types of solenoid valves to be mounted on them (Namur, ISO, single or double coil, single or double valve)
- ▶ Modulating Actuator: with different types of positioners (pneumatic, electropneumatic, digital)



- ▶ Handwheel optional. Hydraulic hand pump optional.
- ▶ Usual accessories: limit switchboxes, Filter and/or regulator unit, position transmitter.
- ▶ Security position, ESD position pneumatic circuit available. Security air tank available.
- ▶ Partial stroking testing device (optional).

TECHNICAL DATA	ON/OFF, SINGLE ACTING	PROPORTIONAL, SINGLE ACTING
Torque range at 6,3 bar	800, 1400, 2700, 4300, 7000, 13700	800, 1400, 2700, 4300, 7000, 13700
Max. working pressure 10 bar	YES	YES
Control signal	pneum.: 3-10 bar elect.: 24,48V / 110,220V 50Hz	pneum.: 0,2-1 bar; 3-15 psi elect.: 4-20 mA; 0-10V
Mechanical end-stops	YES	YES
Output coupling to valve according to ISO	YES	YES
Counter clockwise as standard	YES	YES
Service temperature -10°C to +70°C	YES	YES
Emergency manual handwheel (option)	YES	YES

Please check corresponding technical data sheets.



REF.	Ø CYLINDER	FLANGE	A	I	DIM.J	L	P	Q	Nm at 6 bar
1695-012	125	F16	1032	411	600	534	188	1/2"G.	800
1695-025	160	F25	1274	558	800	670	234	3/4"G.	1400
1695-039	200	F25	1274	558	800	670	234	3/4"G.	2700
1695-062	250	F30	1294	558	800	670	234	1"G.	4300
1695-126	320	F35	1583	716,5	1000	835	309	1"G.	7000
1695-198	400	F40	1583	716,5	1000	835	309	1"G.	13700

CENTORK QUARTER TURN PNEUMATIC ACTUATORS

The CENTORK quarter turn pneumatic actuators produce a turning movement as result of the pneumatic cylinder linear movement conversion produced by a connecting rod mechanism of the "scotch-yoke" type, integrated in the actuator casing.

The CENTORK quarter turn pneumatic actuators are suitable to drive -90°- quarter turn industrial valves: ball, plug, butterfly, different dampers, etc.

Quarter turn pneumatic actuator single or double acting.

Cylinder diameters according to 6431 ISO Standard and over.

Strong structure in steel.

End screws to change the rotation angle.

Flange according to ISO 5211/1.

Output according to ISO 5211/3.

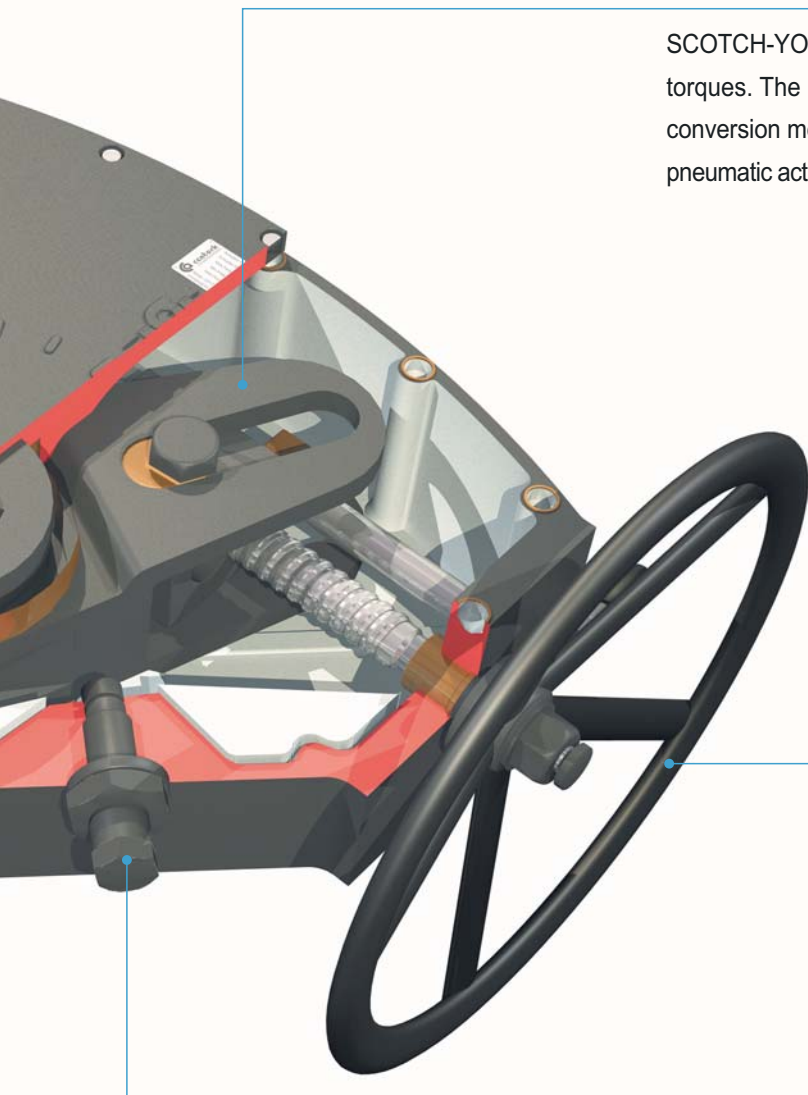
Possibility to incorporate complements, microswitches boxes, position transmitter, positioner with interface according to NAMUR VDI/VDE 3845 standard.

CENTORK QUARTER TURN PNEUMATIC ACTUATORS

MAIN FEATURES

- ▶ The actuators can be of single or double acting.
- ▶ The standard service temperature goes from -10° to +70°C.
- ▶ The output torque goes from 800 Nm up to 120.000 Nm. (These temperature and torque values can be higher on request).
- ▶ The CENTORK quarter turn pneumatic actuator is supplied as an airtight unit, stopping water, dust, etc. from getting in.
- ▶ The CENTORK quarter turn pneumatic actuators have been made to work with compressed air or clean gases and not corrosive ones.

- ▶ The quarter turn stops provide an accurate fixing of the required angle and come with blocking elements to prevent possible alterations caused by external elements (vibrations, etc.).
- ▶ The actuator adaptation on the valve has been designed according to ISO 5211/1 – 5211/3 to enable its coupling onto any type of standard valve.
- ▶ Security circuits can be incorporated.
- ▶ On demand it can also come with:
 - Complementary control elements to adapt its performance to the demands of each application (position stop, regulation, position transmitter, security circuit).
 - The required control to adapt its performance to the specific needs of each case.



SCOTCH-YOKE- connecting rod mechanism able to achieve big torques. The mechanical parts of the rotating linear movement conversion mechanism are permanently lubricated. Likewise the pneumatic actuator internal parts do not need additional lubrication.

Manual control with clutch (optional).

End screws to change the rotation angle.

CENTORK QUARTER TURN PNEUMATIC ACTUATORS. DOUBLE ACTING

The most compact solution to achieve high torques by pneumatic means.

The experienced connecting rod mechanism of the "Scotch-yoke" type guarantees a reliable performance. Double acting performance, strong casing. The CENTORK quarter turn double acting pneumatic actuators, offer the following variants:

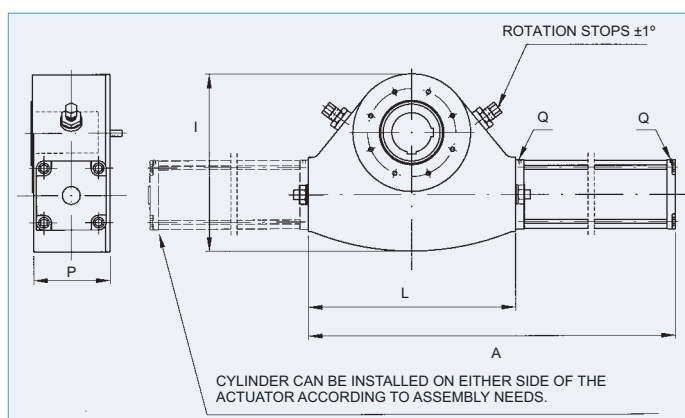
- ON/OFF Actuator: with different types of solenoid valves to be mounted on them (Namur, ISO, single or double coil, single or double valve).
- Modulating Actuator: with different types of positioners (pneumatic, electropneumatic, digital).
- Handwheel optional. Hydraulic hand pump optional.



- Usual accessories: limit switchboxes, Filter and/or regulator unit, position transmitter.
- Security position, ESD position pneumatic circuit available. Security air tank available.
- Partial stroking testing device (optional).

TECHNICAL DATA	ON/OFF, DOUBLE ACTING	MODULATING, DOUBLE ACTING
Torque range at 6.3 bar	1200, 2500, 3900, 6200, 12600, 19800	1200, 2500, 3900, 6200, 12600, 19800
Max. working pressure 10 bar	YES	YES
Control signal	pneum.: 3-10 bar elect.: 24,48V / 110,220V 50Hz	pneum.: 0,2-1 bar; 3-15 psi elect.: 4-20 mA; 0-10V
Mechanical end-stops	YES	YES
Output coupling to valve according to ISO 5211	YES	YES
Counter clockwise as standard	YES	YES
Service temperature -10°C to +70°C	YES	YES
Emergency manual handwheel (option)	YES	YES

Please check corresponding technical sheets..



REF.	Ø CYLINDER	FLANGE	A	I	L	P	Q	Nm at 6 bar
1685-008	125	F14	1544	411	534	188	1/2"G.	1200
1685-014	160	F16	1697	411	534	188	3/4"G.	2500
1685-027	200	F25	1937	558	670	234	3/4"G.	3900
1685-043	250	F25	1988	558	670	234	1"G.	6200
1685-070	320	F30	2066	558	670	234	1"G.	12600
1685-137	400	F35	2623	716,5	835	309	1"G.	19800

LINEAR AND QUARTER TURN ACTUATORS SPECIAL SOLUTIONS

Basing ourselves on our range of actuators, linear as well as quarter turn ones, we adapt our actuators to give the best solution to specific needs:

- Position stops.
- Position transmission.
- Security circuit with preferential position.
- Manual override.
- Manual drive.
- Automatic or manual periodic drive to prevent tightening.
- Physical protection system: covers, bellows, etc.
- Different degrees of electrical protection (Eex, etc.).
- Special performance for Off-shore, Petrochemistry, Gas.
- Used with different driving fluids: hydraulics, pneumatic, gas, water.



CENTORK LINEAR AND QUARTER TURN PNEUMATIC ACTUATOR APPLICATIONS



The CENTORK linear and quarter turn pneumatic actuators are reliable in every case, as from driving a simple gate valve up to a damper of maximum responsibility.

Both linear and quarter turn actuators always adapt to our customer most demanding specifications. Some of the most common applications for our CENTORK actuators are as follows:

- ▶ Gate valves.
- ▶ Knife gate valves.
- ▶ Ball valves.
- ▶ Butterfly valves.
- ▶ Plug valves.
- ▶ Dampers & Diverters.
- ▶ Special valves.



CENTORK LINEAR AND QUARTER TURN PNEUMATIC ACTUATOR APPLICATIONS



At CENTORK we offer solutions to the specific demands of the most varied Industrial Sectors:

- Shipbuilding.
- Mining.
- Iron and steel industry.
- Petrochemical.
- Energy. Power generation.
- Gas
- Water and wastewater

In spite of the fact that, basically, the CENTORK pneumatic linear actuators are based on compressed air as main energy, we also design and manufacture linear actuators based on other driving energies such as: hydraulic, water, gas.



CENTORK PRODUCT RANGE

ELECTRIC ACTUATORS



MULTITURN



**MULTITURN
DIGITAL**



**SPECIAL
ACTUATORS**



LINEAR



**QUARTER-TURN:
MULTITURN+
WORM GEARBOX**



QUARTER-TURN



**QUARTER-TURN
WITH LEVER**



GEARBOXES



**MULTITURN
GEARBOXES**

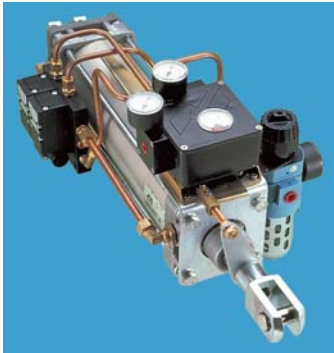


**QUARTER-TURN
GEARBOXES**



CENTORK PRODUCT RANGE

PNEUMATIC ACTUATORS



LINEAR



QUARTER-TURN



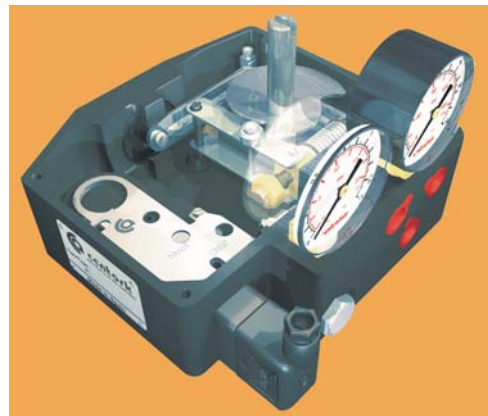
SPECIAL SOLUTIONS



POSITIONERS



LINEAR



QUARTER-TURN



CONTROL & COMMUNICATION



► Digital communication. Fieldbuses.



► Centronik control unit.



STANDARDS

ATEX
European machine directive CE



CENTORK VALVE CONTROL, S.L.

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