



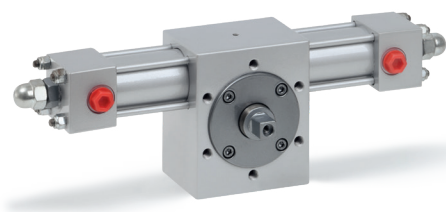
Rotary actuators generate a torque through a cog wheel and a rack moved by an hydraulic cylinder.

This solution simplifies the kinematic and it is easy to maintain; the actuators are capable of generating cushioning torque at the end of the stroke, comparable to the maximum torque of the cylinder, through adjustable cushioning.

End-stroke adjusters allow the system to be in phase with an adjustment range of +/- 5°.

Magnetic piston versions are also available for use with magnetic proximity switches along the entire piston stroke.

All cylinders are tested before delivery in accordance with ISO 10100.



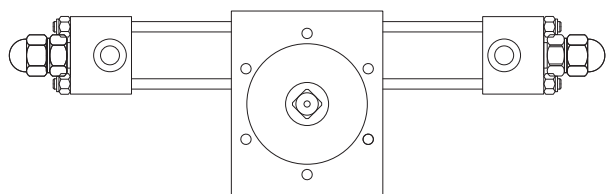
		HR 32/32	HR 40/70	HR 63/96
Maximum operating torque	daNm	6	40	120
Operating pressure	bar	50	100	100
Peak pressure	bar	80	140	140
Bore		32	40	63
Weight per actuator with 180° rotation angle	Kg	4.8	12.5	43
Specific stroke	mm/°	0.28	0.61	0.83

Specific stroke for each degree of rotation.

For example, an angle of 180°, the stroke will result in $0.61 \times 180^\circ = 110$ mm

ROTARY ACTUATORS SERIES

HR

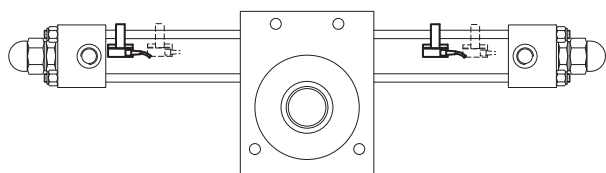


Standard HR series rotary actuators are also available with grooved shaft.
Angle of rotation of actuators from 90° to 270°.

Specifications, options and ordering codes see from page 67.

ROTARY ACTUATORS SERIES WITH MAGNETIC SWITCHES

MR



The rotary actuators with INOX tube and magnetic piston for detection at various positions along their stroke by switches attached to the tie-rods.
Special programmable sensors are available on request.

Technical features, options and ordering codes see from page 70.

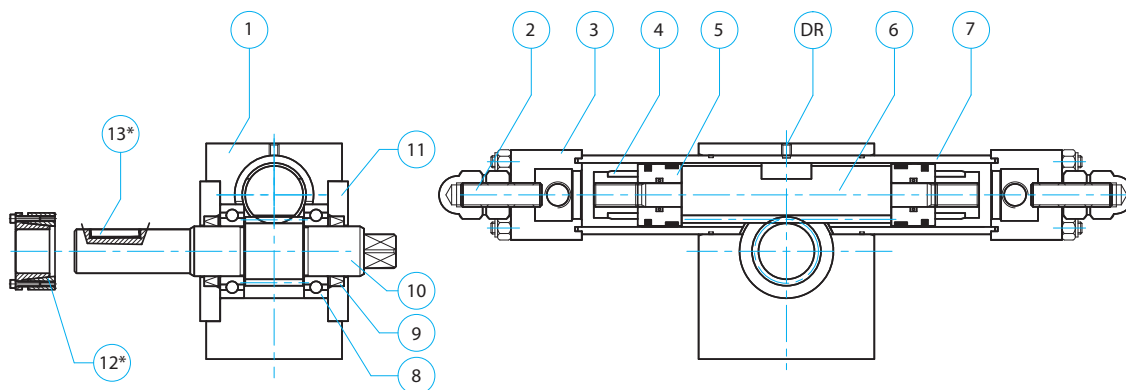
AVAILABLE SEALS

Seals code	Performance					Fluid		
	High sealing	Low friction	Max speed	Temp °C		Hydraulic oil	Phosphoric esters	HFC-fluid
				Min	Max			
S	√		0.5 m/s	-20	+80	√		
L		√	1 m/s	-20	+80	√		
H		√	1 m/s	-20	+150	√	√	
G		√	1 m/s	-20	+80			√

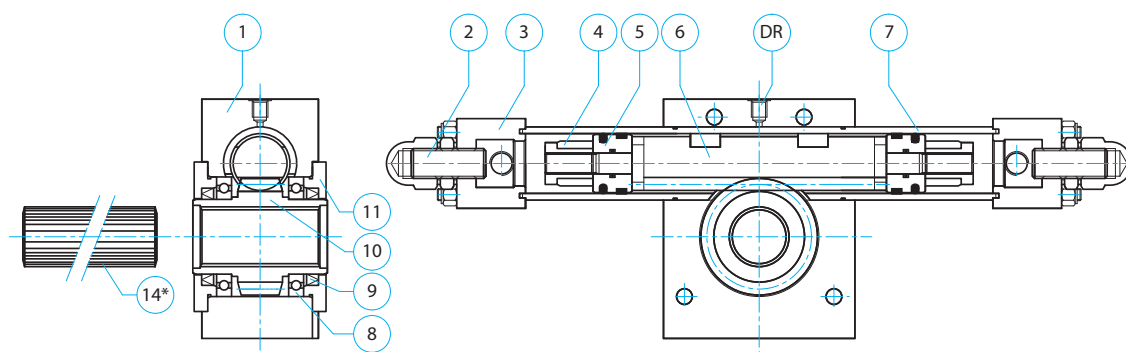
For speeds and temperatures exceeding the indicated limits, please contact our technical department.



HR 32/32



HR 40/70 - HR 63/96

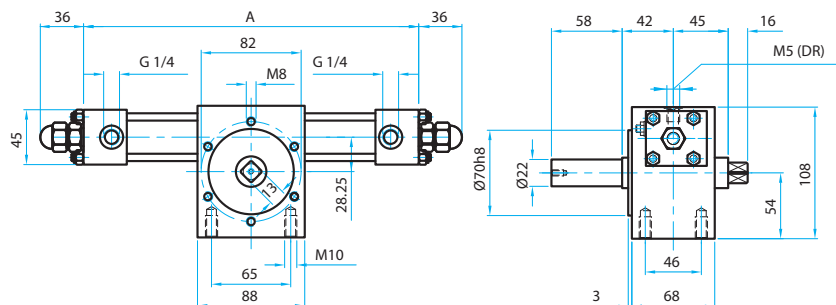
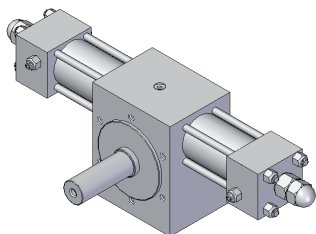


	Component	Material
1	Body	Special aluminium alloy
2	Stroke adjuster $\pm 5^\circ$	Steel
3	Head	Steel
4	Cushioning	Hardened steel
5	Piston	Steel
6	Rack	Alloy steel
7	Tube	Steel
8	Ball bearing	
9	Rotating shaft seal	NBR
10	Cogwheel with shaft	Alloy steel
11	Closing flange	Steel
12*	Shaft clamp (ON REQUEST)	
13*	Shaft keyseat (ON REQUEST)	
14*	Grooved shaft (ON REQUEST)	
DR	Drainage	

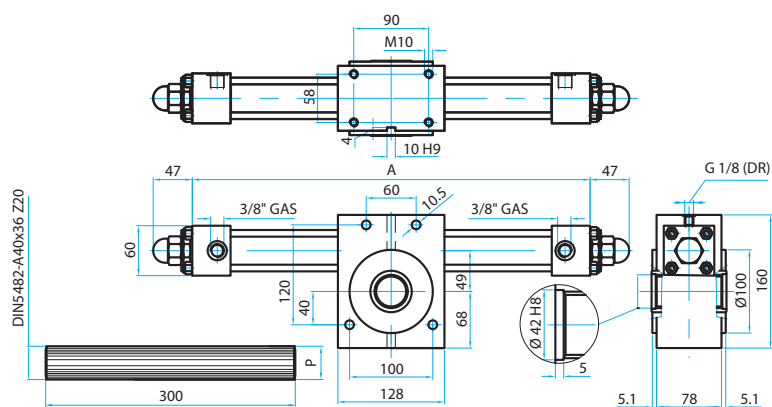
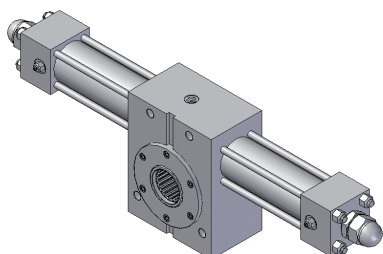
It is mandatory to connect the drainage (DR) to the tank to allow free drainage of the excess fluids that may accumulate during normal operation.



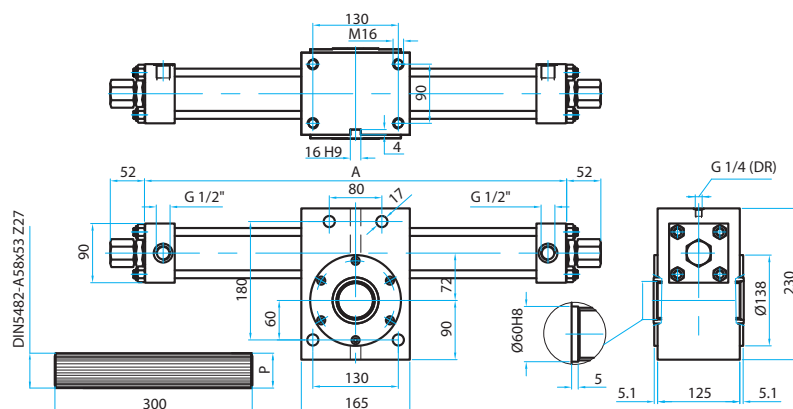
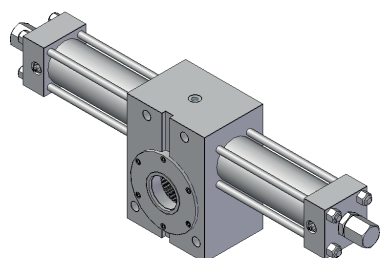
HR 32/32



HR 40/70



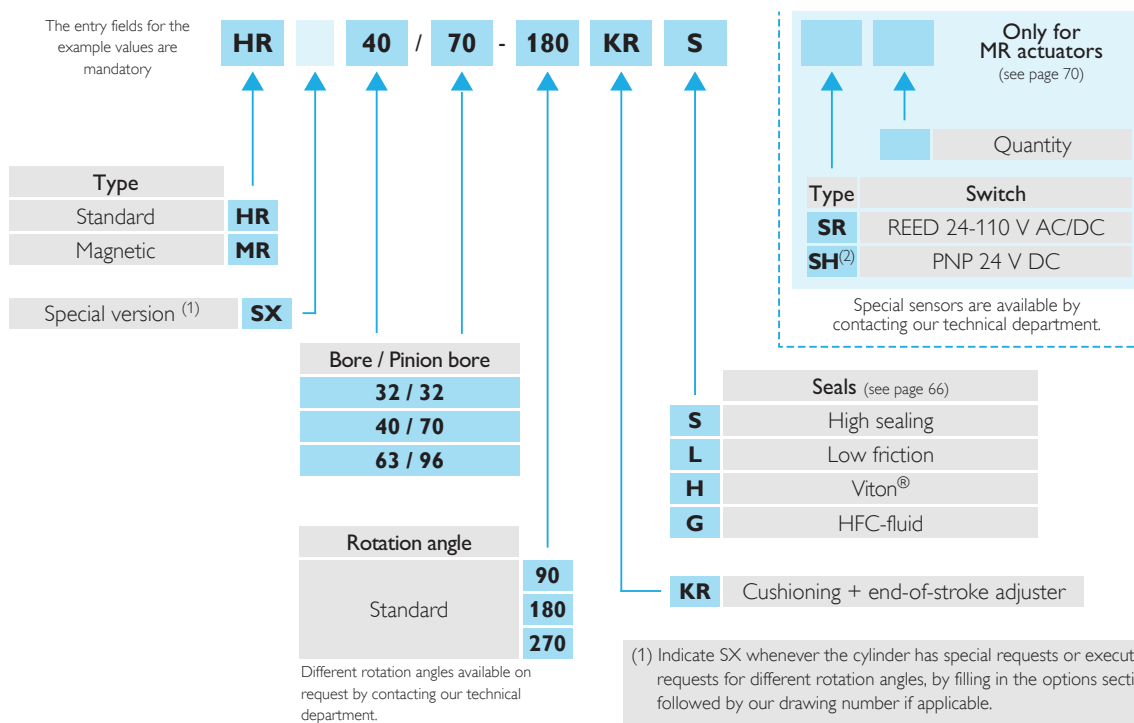
HR 63/96



Type	Dimension (A) for angle of rotation		
	90°	180°	270°
HR 32/32	222	272	322
HR 40/70	368	478	587
HR 63/96	462	510	760



CODE COMPOSITION

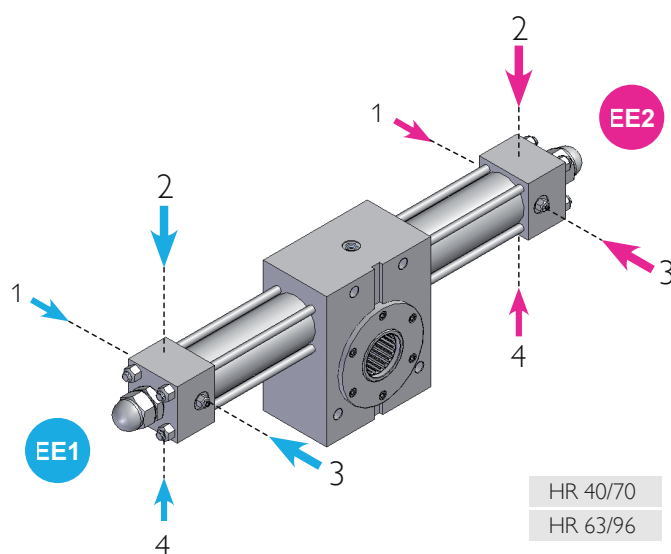
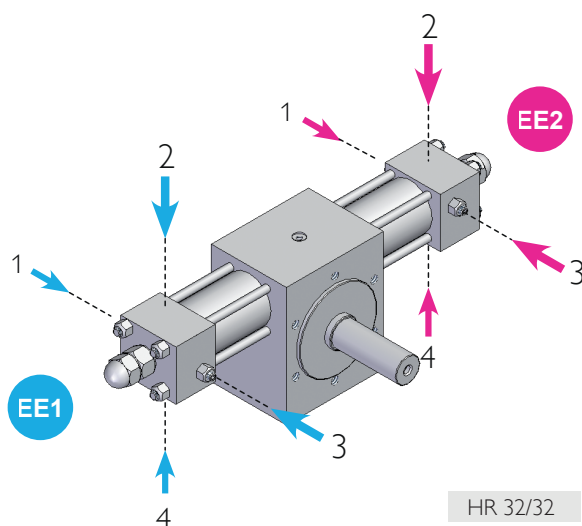


Interactive online coding wizard available at www.confortinet.com

ACCESSORIES - GROOVED SHAFT

Z 20	Shaft DIN 5482-A40x36 for HR 40	Length = 300 mm
Z 27	Shaft DIN 5482-A58x53 for HR 63	

OIL PORTS

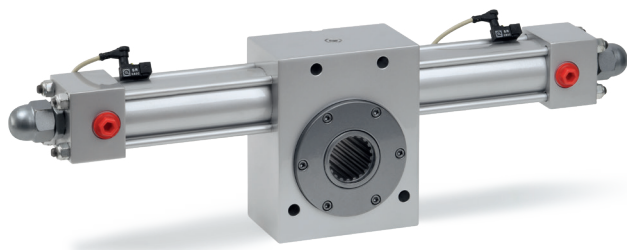


Bore / Pinion bore	ISO 1179-1 (GAS)
32 / 32	G 1/4"
40 / 70	G 3/8"
63 / 96	G 1/2"

In the standard configuration, the oil ports are in position 1 and the cushioning adjustment screws in position 3



ROTARY ACTUATORS SERIES WITH MAGNETIC SWITCHES

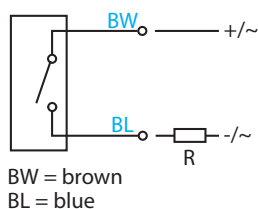
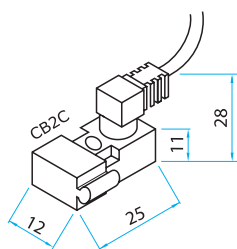


The MR series hydraulic actuators have the same technical features, dimensions and available options as the basic HR series, but are equipped with a magnetic piston and stainless-steel tube. One or more magnetic switches can be positioned along the tube, fixed to the tie-rods, to detect the passage of the piston at the SR or SH switches. Special programmable sensors are available on request.

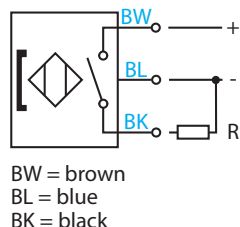
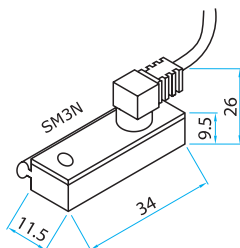
Voltage and current values must never exceed the values given in the table.
Current peaks can be caused by capacitive loads (e.g. cables longer than 3 m).
Voltage peaks can be caused by inductances (e.g. relays, solenoid valves, contactors, etc.).

Magnetic distortions may be caused by ferrous masses (e.g. cylinder seats inside moulds) or by the presence of strong magnetic fields (e.g. electric motors, coils, inverters, etc.).
For space requirements, the SH switch cannot be used on MR 32/32 -90° actuators.
False contacts can occur in the event of strong vibrations.

The SR and SH type switches are able to detect the passage of the magnetic piston underneath them, closing the circuit. They are attached to the tie-rods using the STA/STB brackets.

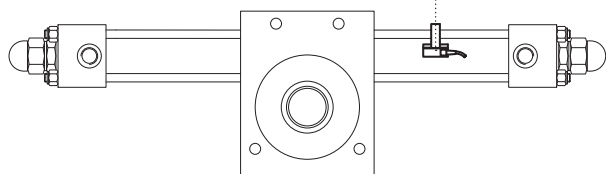
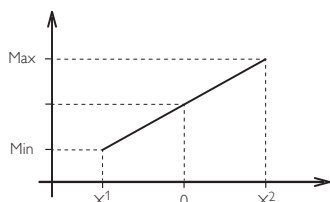
SR REED switches

Voltage	3-110 V AC/DC
Max current (at 25°C)	0.3 A
Switch on time	0.5 ms
Switch off time	0.5 ms
Electric life	10 ⁷ pulse
Protecting rating	IP 67 EN60529
Operating temperature	-10 / +70 °C
Visual signal	LED
Cable	2 × 0.25 mm ²
Cable length	5 m

SH PNP magnetoresistive switches

Voltage	6-30 V DC
Max current (at 25°C)	0.25 A
Switch on time	0.5 ms
Switch off time	0.5 ms
Electric life	10 ⁷ pulse
Protecting rating	IP 67 EN60529
Operating temperature	-10 / +70 °C
Visual signal	LED
Cable	3 × 0.25 mm ²
Cable length	5 m

ROTARY ACTUATORS SERIES WITH SPECIAL SENSORS



On request, by contacting our technical department, special sensors are available that can detect the piston within a programmable range, continuously providing its position via a digital output signal.

It is also feasible to program the closing of the circuit in two intervals within the reading range, which can also be modified via software on board the machine.

The digital connection allows the sensors to send numerous operating parameters, such as the working temperature.

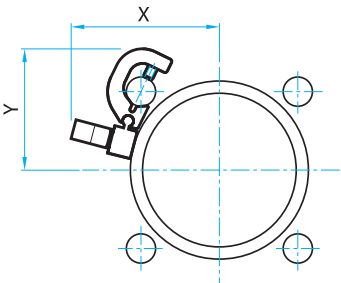
They are fastened to the tie-rods by means of special brackets.



ROTARY ACTUATORS SERIES WITH MAGNETIC SWITCHES

Brackets for mounting SR and SH type switches.

Bore	X	Y	Bracket	
32	45	28	STA	
40	50	32		
63	61	50	STB	



SWITCHES ORDERING CODE COMPOSITION

Switch + mounting bracket.
Can also be ordered separately.

Type	Switch		Bracket	Bore
REED	SR	↑	STA	32 - 40
PNP	SH		STB	63

Special sensors are available by contacting our technical department.