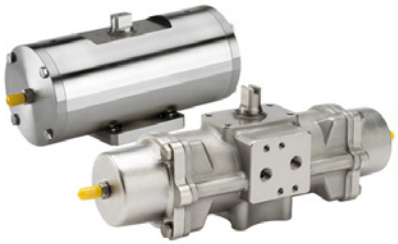
OMAL AUTOMATION
EMPOWERED PERFORMANCE

COMPANY WITH ENVIRONMENTAL SYSTEM CERTIFIED BY DNV GL = ISO 14001 = Rodengo Saiano

PNEUMATIC ACTUATORS



CONFORME ALLA DIRETTIVA 2006/42/CE
CONFORME ALLA NORMA IEC 61508 - SIL 3

OMAL S.p.A.
Headquarters: via Ponte Nuovo 11, 25050 Rodengo Saiano Brescia Italy
Production Site: ViaSan Lorenzo 70, 25069 Villa Carcina Brescia Italy
Ph. +39 0308900145 **Fax.** +39 0308900423 **www.omal.it - info@omal.it**

OMAL ACTUATOR FEATURES

OMAL produces a wide range of pneumatic actuators (Double Acting actuators: from 8 to 8000 Nm - Spring Return actuators: from 15 to 4000 Nm) which can meet all customersí requests. Their torque curve has been made higher in the opening and closing phase to overcome the adherence of the seats which might take place when a valve has been closed for a long time. A very accurate selection of materials and their careful treatment make total reliability and high working quality possible.
- CONTROL MEDIA: Filtered compressed air (maximum filter size 40µm) dry, not necessarily lubricated.
- TEMPERATUE: from 0°C to +80°C; from - 20°C to +80°C with dry air
Special versions: hight temperature:-20°C +150°C; low temperature: -50°C +60°
- PRESSURE: 5,6 bar nominal pressure 8,4 bar max.
Pmax * 7 bar for actuators and SR4000 series DA8000
NOTE: Make sure that the torque necessary to operate the valve is compatible with the actuator torque (it depens on both actuator type and air supply). Please note that the requested torque depends not only on the valve, but on the working conditions and the safety margins of the plant in question, too.

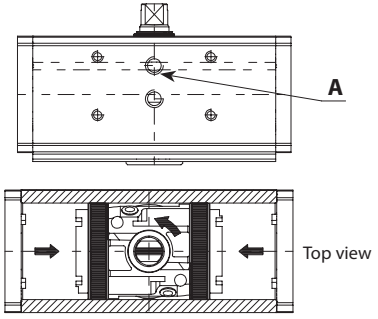
MOUNTING INSTRUCTIONS

No special measures are required for the handling of the smallesr size acyuators: for the series DA14440/SR720 is recommended the use of the apropriate means of grip and lift to avoid risks to safety of persons and damage to the product. For larger sizes, from DA2840/SR1920, instructions for handling are reported directly on the devices'label.
Remove any manual opening device from the valve, leaving the valve stem clear. Make sure that the shape of the stem fits the actuator output and that the rotation is not hindered in any way. Mount the actuator onto the valve, centring it well on the stem. Make sure that the rotation direction is correct (see the ìWorking diagramî). We strongly suggest checking the cleanness of the air-supply pipes, especially when the plant is not provided with filters. A spacer between actuator and valve will be necessary with fluids at high temperatures.
The devices must always be not in service (without air feed), during installation, maintenance and handling operations to avoid risks for the safety.
NOTE: A Spring Return (S.R.) actuator must be provided with a filter on the air outlet hole to prevent dust and other substances from being sucked up into the actuator.
WARNING!!: Being pre-compressed, springs must not be disassembled from the caps. Such an operation might be very dangerous.The actuator in some configuration has protruding and moving parts that may be a risk to the safety of persons in case of accidental contact:
-Stem
-Device switches (mechanical, pneumatic ...)
The user has to verify before the installation if any possible risk is occuring and take all the appropriate protections asking them if needed, to the producer.
OMAL S.p.A. can not be held responsible for any damage to people, things or animals due to an improper use of the product.

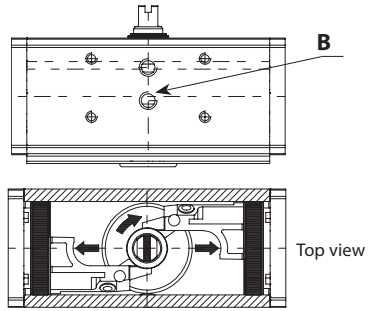
MAINTENANCE

If an OMAL actuator is properly assembled and used, it will be maintenance free, as it has been lubricated enough to last a normal working life under normal working conditions. Should it get necessary to replace its seals, we suggest turning to OMAL s.a.s where the product will be overhauled first and, then, tested. On request, OMAL s.a.s will be willing to provide its customers with Kits and instructions (see the ìTableî). Maintenance tasks should be carried out by qualified personnel.
OMAL S.p.A. declines any responsibility for products repaired by third parties.
For particular applications and special features, please refer to the catalogue OMAL, where you will be able to find a wide range of accessories to go with the actuators.

DOUBLE ACTING ACTUATOR WORKING PRINCIPLE

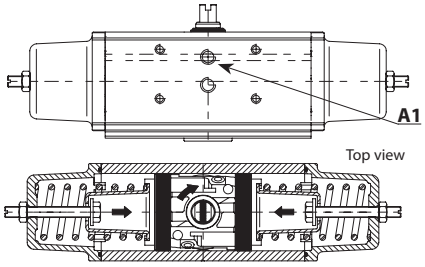


Supplying the hole "A" with air, the pistons move towards the centre and there is an anti-clockwise rotation. The drawing shows the final position.

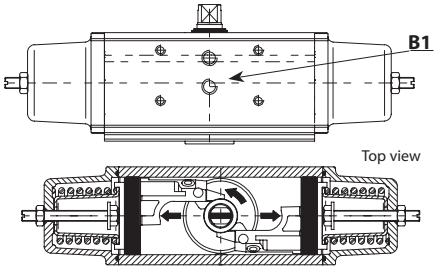


Supplying the hole "B" with air, the pistons move outwards and there is a clockwise rotation. The drawing shows the final position.

SPRING RETURN ACTUATOR WORKING PRINCIPLE

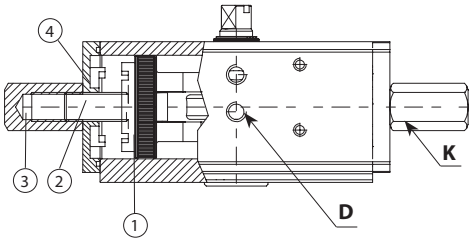


With no air supply, the actuator goes automatically back to its resting position, rotating in a clockwise direction. The drawing shows the final position. Put a small filter on the hole "A1", so that no dust or particles will get into the cylinder chamber.



Supplying the hole "B1" with air, the pistons move outwards compressing the springs and there is an anti-clockwise rotation. The drawing shows the final position.

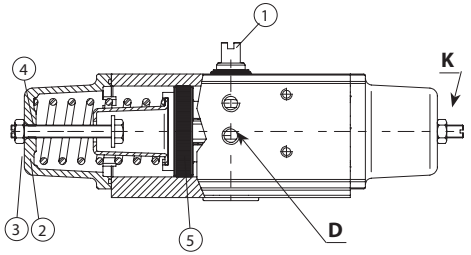
Adjustable Double Acting actuator



The drawing shows an actuator which has already

A) Supply the hole "D" with air, so that the pistons (part no. 1) get to limit switch position towards the caps.
B) Remove the lock nut (part no. 3) acting on the hexagon "K"
C) Stop supplying the hole "D" with air.
D) Act on the screws (part no. 2) by means of an allen key and adjust as requested
NOTE: The standard adjusting range can be 10% max. Other adjustments are available on request.
E) Supply the hole "D" with air and make sure that both screws (part no. 2) are against the pistons.
F) Set the lock nut (part no. 3) provided with an O-Ring (part no. 4) sealing nut and cap.

Adjustable Spring Return actuator



The drawing shows an actuator which has already

A) Make sure that the springs are in resting position by looking at the shaft wrench (part no. 1 in the drawing) and checking that there is no air supply in the hole "D".
B) Remove the lock nuts (part no. 2) acting on the hexagon "K".
C) Screw the screws (part no. 3) in a clockwise direction by means of a screwdriver and adjust as requested.
NOTE: The standard adjusting range can be 10% max.
D) Supply the hole "D" with air, make sure that both screws (part no 3) are against the pistons (part no. 5).
E) Fix the lock nuts (part no. 2) provided with O-Rings (part no. 4) sealing lock nut, cap and screw.

KIT-CODE TABLE SPARE SEALS FOR ACTUATORS

TYPE / SIZE	DA 8	DA 15	DA 30 SR 15	DA 45	DA 60 SR 30	DA 90 SR 45	DA 120 SR 60	DA 180 SR 90	DA 240 SR 120	DA 360 SR 180	DA 480 SR 240
ISO actuator kit	KGDI0010	KGDI0012	KGDI0014	KGDI0015	KGDI0016	KGDI0017	KGDI0018	KGDI0019	KGDI0020	KGDI0021	KGDI0022
INOX actuator kit	---	KGXI0112	KGXI0114	---	KGXI0116	---	KGXI0118	---	KGXI0120	---	KGXI0122
ISO METRING actuator kit	---	---	KGNI0014	---	KGNI0016	---	KGNI0018	---	KGNI0020	---	KGNI0022
Switch protection	KZN00014								KZN00022		
Plastic NAMUR indicator	KI02PP10								KI02PP16		
3 way plastic NAMUR indicator	KI03PP10								KI03PP16		
Red-green NAMUR indicator	---	---	---	---	---	---	KISD0370				

TYPE / SIZE	DA 720 SR 360	DA 960 SR 480	DA 1440 SR 720	DA 1920 SR 960	DA 2880 SR 1440	DA 3840 AR 1920	DA 5760 SR 2880	DA8000 SR4000	
ISO actuator kit	KGDI0023	KGDI0024	KGDI0025	KGDI0026	KGDI1035	KGDI0030	KGDI2035	KGDI0040	
Switch protection	KZN00022				---	---	---	---	
Plastic NAMUR indicator	---	---	---	---	---	---	---	---	
3 way plastic NAMUR indicator	---	---	---	---	---	---	---	---	
Red-green NAMUR indicator	KISD0370								

METAL INDICATOR NAMUR EXECUTION	
Indicator	KI01VR14