

AGO - PNEUMATIC ACTUATORS
INSTRUZIONE PER L'USO
DA 8 - DA 8000 / SR 15 – SR 4000

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 customers requests. Their torque curve has been made higher in the opening and closing phases 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: Dry filtered compressed air, not necessarily lubricated (UNI EN 15714-3:2009).
- TEMPERATURE: from 0°C to +80°C; from -20°C to +80°C with dry air.

Special versions: high temperature: -20°C +150°C; low temperature: -50°C +60°C

- PRESSURE: 5,6 bar nominal pressure 8,4 bar max. (max 7,0 bar for DA8000)

NOTE: Make sure that the torque necessary to operate the valve is compatible with the actuator torque (it depends 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 smaller size actuators: for the series DAN1440/SRN720 is recommended the use of the appropriate means of grip and lift to avoid risks to safety of persons and damage to the product.

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, centering it well on the stem. Make sure that the rotation direction is correct (see the Working diagram), in any case do not insert your hands inside the valve. We strongly suggest checking the cleanliness 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. Before assembly check the maximum flange torque values.

NOTE: A Spring Return 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 occurring and take all the appropriate protections asking them if needed, to the producer

OMAL cannot 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 be necessary to replace its seals, we suggest turning to OMAL where the product will be overhauled first, and then tested. On request, OMAL will be willing to provide its customers with kits and instructions (see the Table). **Maintenance tasks should be carried out by qualified personnel.**

OMAL declines any responsibility for products repaired by third parties.

For particular applications and special features, please refer to the OMAL catalogue, where you will be able to find a wide range of accessories to go with the actuators.

Disposal of products at the end of life

- Metal components can be recovered as raw materials;
- Gaskets/seals, insofar as they are contaminated by blocked fluids and lubrication materials, must be sent for disposal;
- Packaging materials that are supplied with the product must be recycled according to local waste recycling systems.

OMAL will be free to change all specifications and data included in this catalogue at any time, so as to improve the quality and the performance of its products.

AGO - ALLGEMEINE EIGENSCHAFTEN DER PNEUMATISCHE ANTRIEBE
DA 8 - DA 8000 / SR 15 – SR 4000

OMAL stellt eine feine abgestufte Baureihe (doppeltwirkend ab 8 bis 8000 Nm, einfachwirkend ab 15 bis 4000 Nm) von pneumatischen Antrieben her.

Der Kräfteverlauf des Antriebes sichert Ihnen hohe Werte beim Öffnen und Schliessen des Hahnes bzw. der Klappe. Die verwendeten hochwertigsten Werkstoffe und sorgfältigste Behandlung sind Garant eines langlebigen und reibungslosen Betriebes.

- STEUEREDIUM: gefilterte trockene oder geschmierte Druckluft (UNI EN 15714-3:2009).
- TEMPERATUR: ab -20°C bis +80°C bei trockener Luft; ab 0°C bis +80°C bei geschmierter Luft.
- TEMPERATUR: von 0°C to +80°C; from -20°C to +80°C with dry air.
- DRUCKLUFT: Nenndruck 5,6 bar, max 8,4 bar. (max 7,0 bar für DA8000)

ACHTUNG: Das Drehmoment des Antriebes muss unter Berücksichtigung des Steuerdruckes zum regeltem Hahn passen. Das Drehmoment ist abhängig von dem Hahn/Klappe, den Betriebsbedingungen der Anlage und dem gewünschten Sicherheitsgrad der Anlage.

MONTAGEANLEITUNG

Keine besonderen Maßnahmen erforderlich für die Bewegung der Getriebe in kleineren Größen; für die Serie DAN1440/SRN720 den Einsatz geeigneter Mittel, Griff und heben Sie empfiehlt, um Risiken für die Sicherheit der Menschen zu vermeiden.

Vom dem Hahn eventuelle Handhebel entfernen und die Zapfen des Hahnes frei lassen; kontrollieren dass die volle Drehbewegung gewährleistet ist.

Kontrollieren dass die Aufnahme des Antriebes zum Zapfen des Hahnes passt. Den Antrieb gut zentriert auf den Hahn aufbauen und darauf achten, dass die Drehbewegung des Hahnes und des Antriebes identisch ist (siehe Betriebsanweisung), auf keinen Fall Ihre Hände in den Hahn heinstecken.

Beachten Sie besonders, dass die Luftzufuhr keine Verschmutzung hat bzw. enthaftet.

Bei hohen Mediumtemperaturen muss eine Distanzwelle zwischen Hahn und Antrieb verwendet werden. Vor der Montage prüfen Sie die maximale Flansch Drehmomentwerte.

ACHTUNG: Bei einfachwirkenden Antrieben muss bei der Entlastungsöffnung ein Filterelement montiert sein, um das Ansaugen von Schmutzteilchen zu verhindern.

ACHTUNG! Bei einfachwirkenden Antrieben kann die Demontage der Feder ohne Spezialwerkzeug sehr gefährlich sein.

Der Stellantrieb weist in einigen Konfigurationen vorspringende Teile und Teile in Bewegung auf, die im Fall eines zufälligen Kontaktes ein Risiko für die Sicherheit von Personen darstellen können:

- Schaft
- Endschaltvorrichtung (mechanisch, pneumatisch...)

Es ist die Aufgabe des Benutzers, vor der Installation das eventuelle Bestehen solcher Risiken zu überprüfen und entsprechende Schutzvorrichtungen einzusetzen. Diese können eventuell beim Hersteller angefordert werden.

Bei unsachgemässer Nutzung des Produktes ist OMAL von Rechtsansprüchen jeder Art unbunden.

WARTUNG

Bei korrektem Einsatz ist der OMAL Antrieb wartungsfrei. Sollten die Dichtungen ausgetauscht werden müssen, so empfehlen wir Ihnen eine Überarbeitung des Antriebes bei OMAL. Sollten Sie dennoch den Austausch selbst vornehmen wollen, so haben wir entsprechende Reparaturpakete fuer Sie im Angebot (siehe Tabelle); gleichzeitig muessen wir darauf hinweisen, dass die Haftung von OMAL fuer solche Antriebe erlischt.

Wartungsarbeiten sollten ausschliesslich von qualifiziertem Personal durchgeführt werden.

OMAL haftet nur fuer ungeeigneten Produkte.

Fuer eventuell erforderliches Zubehör bzw. fuer besondere Anwendungen empfehlen wir unseren Hauptkatalog.

Entsorgung der Produkte am Ende ihrer Lebensdauer

- Die metallischen Komponenten können als Rohstoffe verwertet werden;
- Dichtungen/Dichtungselemente müssen entsorgt werden, da sie durch die aufgefangenen Flüssigkeiten sowie durch Schmiermittel verunreinigt sind.
- Die Verpackungsmaterialien, mit denen das Produkt versehen ist, müssen in das regional organisierte System zur Mülltrennung abgegeben werden.

Die Daten und Eigenschaften dieser Broschüre können zum Zwecke einer technischen Verbesserung auch ohne Vorankündigung verändert werden und sind daher für die Lieferung nicht bindend.

AGO - INSTRUCCIONES DE USO ACTUADORES PNEUMÁTICOS
DA 8 - DA 8000 / SR 15 – SR 4000

OMAL fabrica una amplia gama de actuadores neumáticos (de doble efecto, con potencia de 8 a 8000 Nm.; de simple efecto, con potencia desde 15 a 4000 Nm.) a fin de satisfacer cualquier exigencia.

Están caracterizados por una curva de fuerza mejorada en su fase de apertura y fase de cierre, para vencer la resistencia de sus asientos, debido a un cierre prolongado de la válvula. La minuciosa selección de los materiales y su cuidadoso tratamiento son la garantía de su gran fiabilidad y elevada calidad de funcionamiento.

- FLUIDO DE ALIMENTACION: Aire comprimido filtrado y seco, no necesariamente lubricado (UNI EN 15714-3:2009).
- TEMPERATURA: de 0°C a +80°C; de -20°C a +80°C, con aire seco.
- Versiones especiales: Temperatura alta: -20°C +150°C; baja temperatura: -50°C +60°C.
- PRESION: Nominal 5,6 bar, max 8,4 bar. (max 7,0 bar para DA8000)

NOTA: Verificar que la fuerza precisada para accionar la válvula sea compatible con la suministrada por el actuador (correspondiente al tipo de actuador y a la presión de la alimentación). Con este fin, es oportuno recordar que la fuerza precisada depende además de la válvula, de las condiciones de funcionamiento y de los márgenes de seguridad previstos para la instalación.

INSTRUCCIONES PARA EL MONTAJE

No requiere medidas especiales para el movimiento de los actuadores en tamaños más pequeños: para la serie DAN1440/SRN720 recomendamos el uso de medios adecuados de agarrar y levantar para evitar riesgos a la seguridad humana.

Sacar de la válvula cualquier tipo de mecanismo de apertura manual, dejando libre el eje de la válvula.

Comprobar que la forma del eje esté adaptado a la salida del actuador y que no hayan obstáculos que limiten su rotación. Montar el actuador sobre la válvula prestando atención a que quede bien centrado sobre el eje de la válvula y verificar que el sentido de rotación de la válvula sea correcto (Ver el esquema de funcionamiento). "Atención" no introducir nunca la mano en el interior de la válvula. Se aconseja que se verifique la limpieza de los conductos del aire de alimentación, sobre todo en el caso en que la instalación no esta provista de filtros. Su utilización con fluidos a temperaturas elevadas precisa de un separador montado entre la válvula y el actuador. Antes de la instalación, compruebe los valores de par de bridas máximo.

NOTA: En el caso de utilizar actuadores de resorte por resorte, debe utilizarse un filtro montado sobre el orificio de entrada del aire, para evitar que pueda introducirse polvo u otras sustancias al interior del actuador.

ATENCIÓN! Por ningún motivo debido a su tensión, los resortes nunca se deben sacar de sus alojamientos. Esta operación puede resultar muy peligrosa.

El actuador en algunas configuraciones tiene partes sobresalientes y partes móviles que pueden presentar un riesgo de seguridad de personas en caso de contacto accidental:

- Eje
- Dispositivo interruptor de límite (mecánico, neumático...)

Depende del usuario verificar la instalación antes de la instalación existencia de tales riesgos y adopte las protecciones apropiadas solicitándolos posiblemente para el fabricante.

OMAL declina cualquier responsabilidad de los daños originados a personas, cosas o animales, por causas que sean debidas a un uso inadecuado del producto.

MANTENIMIENTO

En su aplicación normal, el actuador OMAL instalado y utilizado correctamente, no necesita de manutención ordinaria, debido a que dispone de suficiente lubricación para su duración normal. En el caso de que se necesita sustituir la junta, es aconsejable dirigirse a OMAL, donde una vez revisado el producto, este será ajustado de nuevo. Bajo petición, OMAL suministra el conjunto y las instrucciones para la sustitución de las juntas (Ver tabla). **Las operaciones de mantenimiento deben ser realizadas por personal calificado.**

OMAL declina cualquier responsabilidad y garantía sobre los productos reparados por terceros.

Para aplicaciones específicas y ejecuciones especiales, véase el catálogo OMAL, en el que se indica una amplia línea de accesorios para completar el actuador.

Eliminación de los productos al final de su vida útil

- Los componentes metálicos pueden reciclarse como materia prima;
- Tapas/elementos de sujeción, por estar contaminados por los fluidos interceptados y por los materiales de lubricación, deben ser eliminados.
- Los materiales de embalaje que acompañan al producto deben ser depositados en el sistema de recogida diferenciada dispuesto en el territorio.

A efectos de su mejora técnica, los datos y características indicadas en este papee pueden ser modificadas sin previo aviso y por lo tanto, no son vinculantes para los fines de entrega.

AGO - ISTRUZIONI D'USO ATTUATORI PNEUMATICI
DA 8 - DA 8000 / SR 15 – SR 4000

OMAL produce un'ampia gamma di attuatori pneumatici (doppio effetto con potenza da 8 a 8000 Nm, semplice effetto con potenze da 15 a 4000 Nm) in grado di soddisfare qualsiasi esigenza, caratterizzati da una curva di coppia maggiorata in fase di apertura e chiusura per vincere l'incollamento delle sedi dovuto ad una prolungata chiusura della valvola. La minuziosa selezione dei materiali ed il loro accurato trattamento sono garanzia di grande affidabilità ed elevata qualità di funzionamento.

- FLUIDO DI ALIMENTAZIONE: aria compressa filtrata secca non necessariamente lubrificata (UNI EN 15714-3:2009).
- TEMPERATURA: da 0°C a +80°C; da -20°C a +80°C con aria secca.
- Versioni speciali: alta temperatura: -20°C +150°C; bassa temperatura: -50°C +60°C.
- PRESSIONE: nominale 5,6 bar; max 8,4 bar. (max 7,0 bar per DA8000)

N.B. Verificare che la coppia necessaria per azionare la valvola sia compatibile con quella erogata dall'attuatore (legata al tipo di attuatore e alla pressione di alimentazione). A tal proposito occorre ricordare che la coppia richiesta dipende, oltre che dalla valvola, dalle condizioni di esercizio e dai margini di sicurezza previsti dall'impianto.

ISTRUZIONI PER IL MONTAGGIO

Non sono richieste misure particolari per la movimentazione degli attuatori nelle taglie più piccole: dalle serie DAN1440/SRN720 si raccomanda l'impiego di idonei mezzi di presa e sollevamento per evitare rischi per la sicurezza delle persone.

Rimuovere dalla valvola ogni meccanismo manuale di apertura lasciando libero lo stelo della valvola. Controllare che la forma dello stelo sia adatta all'uscita dell'attuatore e che non ci siano fermi che limitano la rotazione. Montare l'attuatore sulla valvola facendo attenzione a centrarlo bene sullo stelo e verificare che il senso di rotazione sia corretto (vedi schema di funzionamento). Non inserire in nessun caso le mani all'interno della valvola. Si raccomanda di verificare la pulizia dei condotti dell'aria di alimentazione soprattutto nel caso in cui l'impianto sia sprovvisto di filtri. L'impiego in presenza di fluido ad alte temperature prevede un distanziale tra la valvola e l'attuatore. Prima del montaggio controllare i valori di coppia massima della flangia di attacco.

N.B. nel caso di utilizzo di attuatori semplice effetto prevedere un filtro sul foro di sfogo dell'aria per evitare che polveri o altre sostanze vengano aspirate all'interno dell'attuatore.

ATTENZIONE! Per nessun motivo dovuto a sua tensione, le molle, a causa della loro precaria, devono essere smontate dai tappi; tale operazione può risultare molto pericolosa.

L'attuatore in alcune configurazioni presenta parti sporgenti ed organi in movimento che possono costituire un rischio per la sicurezza delle persone in caso di contatto accidentale:

- Stelo
- Dispositivo finecorsa (meccanico, pneumatico...)

E' compito dell'utilizzatore verificare prima dell'installazione l'eventuale esistenza di tali rischi e adottare opportune protezioni richiedendole eventualmente al produttore.

OMAL non risponde di danni causati a persone, cose o animali dovuti ad un uso improprio del prodotto.

MANUTENZIONE

L'attuatore OMAL, installato ed impiegato correttamente, non necessita, nelle normali applicazioni, di manutenzione poiché fornito di sufficiente lubrificazione per la normale durata. Nel caso sia necessario sostituire le guarnizioni consigliamo di rivolgersi alla OMAL dove il prodotto, una volta revisionato, viene anche collaudato. OMAL fornisce comunque il kit e le istruzioni per la sostituzione delle guarnizioni a quanti lo richiedono. (vedi tabella).

Le operazioni di manutenzione devono essere effettuate da personale qualificato.

OMAL declina ogni responsabilità e garanzia sui prodotti riparati da terzi.

Per applicazioni particolari ed esecuzioni speciali fare riferimento al catalogo OMAL, dov'è possibile trovare una vasta linea di accessori di completamento per l'attuatore.

Smaltimento dei prodotti a fine vita

- I componenti metallici possono essere recuperati come materia prima;
- Guarnizioni/elementi di tenuta, in quanto contaminati dai fluidi intercettati e dai materiali di lubrificazione, devono essere avviati a smaltimento.
- I materiali di imballaggio che accompagnano il prodotto devono essere conferiti al sistema di raccolta differenziata organizzato sul territorio.

I dati e le caratteristiche di questo opuscolo potrebbero essere variati a scopo di miglioramento tecnico anche senza preavviso e, pertanto non sono vincolanti ai fini della fornitura.

AGO - CARACTERISTIQUES DES ACTIONNEURS PNEUMATIQUES
DA 8 - DA 8000 / SR 15 – SR 4000

OMAL propose une large gamme d'actionneurs pneumatiques; double effet avec un puissance de 8 Nm a 8000 Nm; simple effet avec un puissance de 15 Nm à 4000 Nm, à fin de satisfaire la plupart des exigences. Ils sont caractérisés par une courbe de puissance améliorée en phase d'ouverture et phase de fermeture, pour vaincre la résistance des joints, surtout après une fermeture prolongée de la vanne. Une minutieuse sélection des matériaux et des traitements sont la garantie de sa grande fiabilité et d'un nombre de manoeuvres.

- FLUIDE D'ALIMENTATION: air comprimé filtré et sec, pas nécessairement lubrifié (UNI EN 15714-3:2009).
- TEMPERATURE: de 0°C à +80°C; de -20°C à +80°C en air sec.
- Versions spéciales : haute température : -20°C +150°C ; basse température : -50°C +60°C.
- PRESSION: nominale 5,6 bar; max 8,4 bar. (max 7,0 bar pour DA8000)

NOTE: Vérifier que le couple fournit par l'actionneur soit compatible avec le couple nécessaire à la vanne (lié au type d'actionneur et à la pression d'alimentation). A cette fin, il est opportun de rappeler que le couple demandé dépend en plus de la vanne, des conditions de service et des marges de sécurité prévues pour l'installation.

INSTRUCTION POUR LE MONTAGE

Il n'est pas nécessaire d'adopter des mesures particulières pour la manipulation des actionneurs les plus petits ; à partir de la série DAN1440/SRN720, il est recommandé d'utiliser des moyens de préhension et de levage appropriés pour éviter tout risque pour la sécurité des personnes.

Enlever à la vanne, tout type de mécanisme de commande manuelle, laissant libre, l'axe de sortie. Vérifier que la forme de l'axe de sortie soit compatible avec l'actionneur et qu'aucun obstacle ne vienne gêner la rotation. Utiliser l'actionneur sur la vanne, en faisant bien attention à ce que la vanne soit bien centrée, sur l'axe de la vanne et vérifier que le sens de manoeuvre soit correct (voir le schéma de fonctionnement), ne jamais insérer les mains dans la vanne. Il est conseillé de vérifier la propreté des conduits de l'air d'alimentation, surtout dans le cas où l'installation n'est pas pourvue de filtration. Son utilisation dans le cas de fluides à des températures élevées demande à que soit installé une séparation entre la vanne et l'actionneur.

NOTE: Dans le cas des actionneurs simple effet, il est recommandé de munir la sortie d'air (mise à l'air libre, ou non utilisée) d'un filtre ou protection (en bronze finité Type par exemple), pour éviter l'entrée de poussières ou autres substances à l'intérieur de l'actionneur.

ATTENTION! Pour aucun motif, à cause de leur tension, les ressorts ne doivent être enlevés de leur logement. Cette opération peut s'avérer très dangereuse.

Dans certaines configurations, l'actionneur présente des parties saillantes et des organes en mouvement qui peuvent constituer un risque pour la sécurité des personnes en cas de contact accidentel :

- Tige
- Dispositif de fin de course (mécanique, pneumatique...)

Avant l'installation, l'utilisateur doit vérifier l'éventuelle présence de tels risques et adopter les protections nécessaires, en les demandant éventuellement au fabricant.

OMAL décline toutes responsabilités pour les dommages occasionnés à des personnes, objets et animaux, dans le cas d'une utilisation inadéquate du produit.

MAINTENANCE

Dans le cas d'une utilisation normale, l'actionneur OMAL installé et fonctionnant correctement, ne nécessite pas du tout de maintenance, du au fait qu'il y dispose de suffisamment de lubrifiant pour une durée de vie normale. Dans le cas où il faut changer les joints, il est conseillé de voir avec OMAL, où le produit sera révisé et testé à nouveau. Sur demande, OMAL propose un jeu et des instruction pour le changement des joints (voir tableau).

Les opérations d'entretien doivent être effectuées par un personnel qualifié.

OMAL décline toutes responsabilités et garanties sur les produits réparés par des tiers.

Pour des applications et exécutions spéciales, voir le catalogue OMAL, dans lequel ce trouve une large gamme d'accessoires pour compléter les actionneurs.

Élimination des produits en fin de vie

- Les composants métalliques peuvent être récupérés en tant que matière première;
- Joints / éléments d'étanchéité, contaminés par des fluides matériaux interceptés et lubrifiés, doivent être commencé à l'élimination.
- Les matériaux d'emballage qui accompagnent le produit doit être affecté au système de collecte séparé organisé sur le territoire.

Les données et les caractéristiques de cette brochure pourraient subir des modifications en vue d'améliorations techniques, et compris sans préavis ; elles ne sont donc pas contraignantes aux fins de la fourniture.



AGC
DA 08 - DA 8000
SR 15 - SR 4000
IEC 61508 - UP TO SIL 3

EN Before installing the actuator please read carefully this short instruction manual that contain important information regarding the installation, operation and maintenance for the scotch yoke system actuators. Keep safe this manual for future reference.

DE Drehrichtung und Stellung des Antriebe im Probelauf überprüfen bevor der Antriebe und lesen sie bitte gründlich diese Anleitung wo die wichtige hinweise, die Installation, Funktion und Lagerung der Antriebe beinhaltet sind. Bewahren sie diese fuer eventuelle fragen auf.

ES Antes de montar el actuador por favor lea muy atentamente este manual de istrucciones que contiene información importante para la instalación, funcionamiento y mantenimiento de los actuadores neumático rotativo con sistema "scotch yoke". Guárdela para futuras consultas.

FR Prima di procedere all'installazione dell'attuatore si prega di leggere attentamente il presente breve manuale d'istruzione che contiene importanti informazioni per l'installazione, l'utilizzo e la manutenzione degli attuatori a 1/4 di giro con sistema a glifo. Conservare questo manuale in caso di necessità.

FR Avant de monter l'actionneur, s'il vous plaît, lisez attentivement ce manuel d'instruction. Il contient des informations importantes pour l'installation, le fonctionnement, et l'entretien des actionneurs rotatifs avec système "scotch yoke". Gardez ce manuel en cas de besoin.

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Actuators from 8 to 1920 Nm - Double Acting and from 15 to 960 Nm - Spring Return. For bigger size see the specific instruction

Double Acting actuator working principle - Funktion des doppeltwirkenden Antriebes
Funcionamiento del actuador de doble efecto - Funzionamento attuatore doppio effetto
Principe de fonctionnement de l'actionneur double effet

Supplying the hole "2" with air, the pistons move towards the centre and there is a counter-clockwise rotation. The drawing shows the final position.

Fuehrt man Druckluft durch "2" ein, so bewegen sich die Kolben zu dem Zentrum; die Drehrichtung ist gegen den Uhrzeigersinn (siehe Zeichnung).

Al aplicar aire en el orificio de alimentación "2", el pistón se desplaza hacia el centro y se produce una rotación en sentido antihorario. La posición final es representada en la figura.

Immettendo aria nel foro "2" di alimentazione, i pistoni si muovono verso il centro e si ha una rotazione antioraria, la posizione finale è quella rappresentata nel disegno.

En mettant de l'air à l'orifice d'alimentation "2", le piston se déplace vers le centre et produit une rotation en sens antihoraire. La position finale est représentée sur le dessin.

Adjustable Double Acting actuator
Doppeltwirkender regelbarer Antrieb
Actuador de doble efecto, regulable
Attuatore doppio effetto regolabile
Actionneur double effet réglable

The drawing shows an actuator which has already been adjusted
In der Zeichnung schon geregelt
En la figura, el actuador ya regulado
Nel disegno l'attuatore già regolato
Dans le dessin, l'actionneur est déjà réglé

A) Supply the hole "4" 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 "4" 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 "4" 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 sealing nut and cap.

A) Apply air to the orifice "4", de forma que el pistón (Parte n."1") pase a la posición de final de recorrido.
B) Sacar la contratuercas (parte n."3"), actuando sobre la tuercas "K".
C) Dejar de aplicar el aire de alimentación al orificio "4".
D) Con una llave apropiada, actuar sobre los tornillos (parte n."2") en efectuando la regulación deseada.
NOTA: El rango de regulación normal puede ser como máximo de 10%. Bajo pedido, pueden suministrarse otros valores de regulación.
E) Introducir aire en el orificio "4" y verificar que ambos tornillos (part n."2") estén en contacto con los pistones.
F) Colocar la contratuercas (part n."3") provista de una junta toroidal para la perfecta estanqueidad entre el tornillo y la tapa.

A) Supply the hole "4" 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) 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 "4" 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 sealing lock nut, cap and screw.

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 "4".
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 "4" 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 sealing lock nut, cap and screw.

A) Verificar que los resortes sean en su posición de reposo, observando que la llave del eje (part n."1") sea como en la figura, comprobando que no exista presión en el orificio "4".
B) Sacar las contratuercas (part n."2") actuando sobre el tornillo "K".
C) Con un destornillador, apretar los tornillos (part n."3") en sentido horario y efectuar la regulación deseada.
NOTA: El rango normal de regulación puede ser como máximo de 10%.
D) Introducir aire en el orificio "4" y verificar que ambos tornillos (part n."3") sean en contacto con los pistones (part n."5").
E) Colocar las contratuercas (part n."2") munidas de un joint torique para la perfecta estanqueidad entre la contratuercas, la tapa y el tornillo.

A) Mettre l'air à l'orifice "4", de manière à ce que le piston passe à la position de fin de course.
B) Enlever le contre écrou (pièce "3"), agissant sur l'écrou "K".
C) Arrêter d'appliquer de l'air sur l'orifice "4".
D) Avec une clé Allen agir sur les vis (pièce "2"), et ajuster comme voulu.
NOTE: l'amplitude maximum de régulation est de 10%. Sur demande, nous pouvons fournir d'autres valeurs de régulation.
E) Mettre de l'air à l'orifice d'alimentation "4", et vérifier que chaque vis (pièce "2") est bien en contact avec chaque piston.
F) Mettre l'écrou de blocage (pièce n."2") muni d'un joint torique pour l'étanchéité entre l'écrou et le bouchon.

Spring Return actuator working principle - Funktion des einfachwirkenden Antriebes
Funcionamiento del actuador de simple efecto - Funzionamento attuatore semplice effetto
Principe de fonctionnement de l'actionneur simple effet

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 "2", so that no dust or particles will get into the cylinder chamber.

Ohne Druckluft gehen die Kolben automatisch in die Ruhelage mit der Drehrichtung ist im Uhrzeigersinn (siehe Zeichnung). Beim Anschluss "2" ist ein Filterelement zu montieren, um Verschmutzungen zu vermeiden.

Sin presión de alimentación, el actuador vuelve automáticamente a su posición de reposo, cumpliendo una rotación en sentido horario y su posición final es la representada en la figura.
Montar un filtro sobre el orificio "2" a fin de evitar que pueda entrar polvo o partículas sólidas en la cámara del cilindro.

Senza pressione di alimentazione, l'attuatore torna automaticamente in posizione di riposo compiendo una rotazione oraria e la posizione finale è quella rappresentata nel disegno.
Sul foro "2" montare un filtrino onde evitare che polvere o particelle solide possano entrare nella camera del cilindro.

Sans pression d'alimentation, l'actionneur retourne automatiquement vers sa position de repos, faisant une rotation en sens horaire. La position finale est représentée sur le dessin.
Monter un filtre sur l'orifice "2" pour éviter que puisse entrer des particules solides ou de la poussière dans la chambre du vérin

Supplying the hole "4" with air, the pistons move outwards compressing the springs and there is a counter-clockwise rotation. The drawing shows the final position.

Fuehrt man Druckluft durch "4" ein, so bewegen sich die Kolben zu den Endkappen und drücken die Feder zusammen; die Drehrichtung ist gegen den Uhrzeigersinn (siehe Zeichnung).

Al aplicar aire en el orificio de alimentación "4", el pistón se desplaza hacia el exterior, comprimiendo el resorte; se origina una rotación en sentido antihorario y la posición final es la representada en la figura.

Immettendo aria nel foro "4" di alimentazione, i pistoni si muovono verso l'esterno comprimendo le molle, si ha una rotazione antioraria e la posizione finale è quella rappresentata nel disegno.

En mettant de l'air à l'orifice d'alimentation "4", le piston se déplace vers l'extérieur et produit une rotation en sens horaire. La position finale est représentée sur le dessin.

Adjustable Spring Return actuator
Einfachwirkender regelbarer Antrieb
Actuador de resorte por resorte, regulable
Attuatore semplice effetto regolabile
Actionneur simple effet réglable

The drawing shows an actuator which has already been adjusted
In der Zeichnung schon geregelt
En la figura, el actuador ya regulado
Nel disegno l'attuatore già regolato
Dans le dessin, l'actionneur est déjà réglé

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 "4".
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 "4" 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 sealing lock nut, cap and screw.

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 "4".
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 "4" with air, make sure that both screws (part no."3") are against the pistons (part no."5").
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A) Verificar que los resortes sean en su posición de reposo, observando que la llave del eje (part n."1") sea como en la figura, comprobando que no exista presión en el orificio "4".
B) Sacar las contratuercas (part n."2") actuando sobre el tornillo "K".
C) Con un destornillador, apretar los tornillos (part n."3") en sentido horario y efectuar la regulación deseada.
NOTA: El rango normal de regulación puede ser como máximo de 10%.
D) Introducir aire en el orificio "4" y verificar que ambos tornillos (part n."3") sean en contacto con los pistones (part n."5").
E) Colocar las contratuercas (part n."2") munidas de un joint torique para la perfecta estanqueidad entre la contratuercas, la tapa y el tornillo.

A) Mettre l'air à l'orifice "4", de manière à ce que le piston passe à la position de fin de course.
B) Enlever le contre écrou (pièce "2"), agissant sur l'écrou "K".
C) Avec un tournevis, ajuster les vis (pièce "3") en sens horaire, et régler à la position voulue.
NOTE: l'amplitude maximum de régulation est de 10%.
D) Mettre de l'air à l'orifice d'alimentation "4", et vérifier que chaque vis (pièce "3") est bien en contact avec chaque piston (pièce "5").
E) Bloquer i contradadi (part n."2") munis d'un joint torique pour assurer l'étanché

ADDITIONAL SAFETY INSTRUCTIONS FOR THE USE OF PNEUMATIC ACTUATORS IN POTENTIALLY EXPLOSIVE ATMOSPHERES

- 1) The maker carefully checks the integrity and functionality of every actuator. Just a few simple precautions will keep it working for a long time.
 - 2) Read the User's Manual supplied with the actuator and the instructions below for the use of actuators in potentially explosive atmospheres before proceeding in any way.
 - 3) Make sure the product supplied perfectly matches the application requirements.
 - 4) Upon receipt of the product, make sure the packaging is still in perfect condition and does not show any signs of damage due to transportation.
 - 5) If an actuator needs to be stored for extended periods of time, we suggest keeping it in its original packaging. Store it in a clean, not excessively humid and non-temperature fluctuating environment, with a temperature between +5 and +60°C.
- ### MARKING AND CLASSIFICATION
- 1) On the actuator body there is a laser marking or a label (depending on the mode) with the manufacturer's name and address, the model name, information about maximum and nominal control pressure and maximum and minimum room temperature values to which the actuator can be used.
 - 2) There are also laser markings or an additional label (depending on the mode) with the data relevant to the information for use in potentially explosive atmospheres:
 1.   Marking
 2. Symbol  (ATEX) or  (PNEUMATIC) (1,2,3).
 3. The symbol of the group equipment and explosive atmosphere for which it is intended (Group II including the GAS IIA-III-IBC or/and the DUST (IIA-III-IBB-III-C)).
 4. The symbol "Ex h" type of protection according to EN 80079-36
 5. The symbol "I" indicates the Class of protection.
 6. The symbol indicating the temp. Class or the Max surface temp. in °C or both.
 7. The EPL (Gb for GAS e Db for DUST).
 8. The symbol "X" if specific condition of use is applied.

The information about the max temperature of the pilot fluid/ max Ambient temperature are displayed on the EX label or are found on the body of the device or in the technical documents provided for the user/safety instructions.

- 3) The surface temperature class is determined as per TABLE A. The operating temperature normally goes from -20°C to +80°C. Special versions for applications from -50°C to +150°C are available on request; such versions are specially marked on the actuator bodies and properly coded.
- 4) The symbol  indicates the Class of protection.
- The maximum surface temperature of the equipment has been determined at the frequency of use of 1Hz, higher frequencies could cause an increase in this value.
- The temperature range indicated on the actuator is valid both for the room temperature and the ambient fluid temperature.
- The use of the equipment at temperature lower than the maximum value marked on the actuator case (TABLE A), can variate the Temperature Class (e.g. for actuators with marking - 20 °C / + 80 °C used at T. max 75 °C Temperature Class T5).

- 5) The actuators are suitable for being applied on equipment belonging to GROUP II Category 2, suitable for zones 1 / 2 GAS and 21 / 22 DUST (TABLE B)
Temperature Class: T6-T4-T3
Type protection: Ex h (with construction Safety "c")
GAS Group: "IIC" (Anstichstärke 0,2 mm) or version or coating thickness >0.2mm, "IIB" (coating thickness > 0.2mm and >2mm).

DUST Group IIC, EPL: Gb (for Gas), Db (for Dust).

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- 2) Always operate under safe conditions during all installation and/or maintenance operations.
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ZUSÄTZLICHE SICHERHEITSHINWEISE FÜR DIE ANWENDEUNG VON PNEUMATISCHEN AKTUALISIERERN IN POTENTIALLY EXPLOSIVEM ATMOSPHEREN

- 1) Jeder Aktuator ist genau in seine Integrität und Funktionalität durch den Hersteller kontrolliert werden ein paar einfache Schritte halten, arbeiten für eine lange Zeit.
 - 2) Lesen Sie die Anleitung für die Installation und die Verwendung mit dem Antrieb und dieser zusätzliche Anweisungen für den Einsatz in explosionsgefährdeten Bereichen vor der Durchführung von Arbeiten geliefert.
 - 3) Stellen Sie sicher, dass das gelieferte Produkt den Anforderungen der Leistung der Anwendung, die installiert werden soll entspricht.
 - 4) Überprüfen Sie, dass die Verpackung empfangen wird, intakt ist, ohne Schäden durch Stöße oder Stürze tragen während des Transports.
 - 5) Wenn der Antrieb für längere Zeit gelagert werden nicht entfernt es aus seiner Originalverpackung. Lagern Sie in einem sauberen, nicht übermäßig feucht mit Temperaturen zwischen -10 und +60°C.
- ### KENNZEICHNUNG UND KLASSIFIKATION
- 1) [AU] der Aktorkörper werden mittels Laserbeschriftung oder durch zusätzlichen Etikettierung vom Modell der Stahl: Name und Anschrift des Herstellers, das Modell des Antriebs, die Informationen in Bezug auf die nominale und maximale Maximaltemperatur und die Grenzen der Aufdruck Umgebungstemperatur, in der die Verwendung des Aktors.
 - 2) Durch Laserbeschriftung oder durch ein zusätzliches Etikett (je nach Antriebsmodell) mit folgenden Angaben für den Einsatz in explosionsgefährdeten Bereichen:
 1.   Kennzeichnung (Reg. CE 765/2008 Anhang II)
 2. Symbol  (ATEX) oder  (PNEUMATIC) (1,2,3,4)
 3. Kategorie/Gruppe (1,2,3).
 4. Symbol der Gruppe, für die das Gerät geeignet ist (Gruppe II GAS IIA-III-IBC und/ oder STALB (IIA-III-IBB-III-C)).
 5. Zündschutzart "Ex h" nach EN 80079-36
 6. Symbol für die Temperaturklasse oder die maximale Oberflächentemperatur in °C oder beides.
 - 7-EPL (Gb für GAS und Db für STAUB);
 - 8-Symbol "X" für besondere Nutzungsbedingungen.

Informationen zur maximalen Temperatur der Kontrollflüssigkeit/ i Raumentemperatur finden Sie in der ATEX-Kennzeichnung oder auf dem Gehäuse des Geräts, in der spezifischen Kennzeichnung oder in der technischen Dokumentation, die dem Aktuator beiliegt.

- 3) Die Temperaturklasse wird wie in TABELLE A angegeben bestimmt. Der Betriebstemperaturbereich beträgt -20 °C / + 80 °C. Sonderausführungen für den Einsatz von -50 °C bis 150 °C sind auf Anfrage erhältlich; Diese Ausführungen sind auf dem Antriebskörper entsprechend gekennzeichnet und ordnungsgemäß markiert.
- 4) Das Symbol  zeigt die Schutzart an.
- Die maximale Oberflächentemperatur des Gerätes wurde bei einer Einsatztiefe von 1 Hz ermittelt, höhere Frequenzen können einen Anstieg dieses Wertes bewirken.
- Der am Antrieb angegebene Temperaturbereich gilt sowohl für die Umgebungs-temperatur als auch für die Steuerflüssigkeit.
- 5) Stellen Sie sicher, dass das gelieferte Produkt den Anforderungen der Leistung der Anwendung, die installiert werden soll entspricht.

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- 5) Stellen Sie sicher, dass das gelieferte Produkt den Anforderungen der Leistung der Anwendung, die installiert werden soll entspricht.

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INSTRUCCIONES ADICIONALES DE SEGURIDAD PARA LA UTILIZACIÓN DE ACTUADORES PNEUMÁTICOS EN ATMÓSFERA POTENCIALMENTE EXPLOSIVA

- 1) El fabricante controla detenidamente el funcionamiento y la integridad de cada actuador. Siguiendo algunos simples pasos mantendrá el actuador en funcionamiento durante un largo periodo de tiempo.
 - 2) Lea detenidamente el manual de instrucciones para la instalación e instalación suministrado con el actuador y estas instrucciones adicionales para su uso en atmósferas potencialmente explosivas antes de realizar cualquier trabajo.
 - 3) Asegúrese de que el producto suministrado coincide con los requisitos de la aplicación que se va a instalar.
 - 4) Comprabar que el embalaje del actuador, está intacto, sin daños por golpes o caídas ocurridas durante el transporte.
 - 5) Si el actuador se va a almacenar durante largos periodos de tiempo, se recomienda que se mantenga en su original empaque y se seque con temperatura entre -10 y +60°C.
- ### MARCADO Y CLASIFICACIÓN
- 1) En el cuerpo del actuador se imprimen por medio de marcado por láser o por medio de una etiqueta adicional (dependiendo del modelo de actuador) el nombre y la dirección del fabricante, el modelo del actuador, la información sobre la presión nominal y máxima aplicable así como los rangos de temperatura ambiente en la que se permite el uso del actuador.
 - 2) Los datos relativos a la información para el uso en atmósferas potencialmente explosiva se especifican siempre mediante marcado láser o mediante etiqueta adicional (según el modelo del actuador):
 1.   Marcado (Reg. CE 765/2008 Anexo II)
 2. Símbolo  (Directiva 84/477 / CEE - Anexo II);
 3. Categoría de equipos (1,2,3).
 4. Símbolo del grupo para el que está adecuadamente el equipo (Grupo II GAS IIA-III-IBC y/o Polvo (IIA-III-IBB-III-C)).
 5. Símbolo "Ex h" Tipo de protección según EN 80079-36
 6. Símbolo que indica la clase de temperatura o la temperatura máxima superficial en °C o ambas.
 - 7-EPL (Gb para GAS y Db para Polver);
 - 8-Símbolo "X" para condiciones particulares de uso.

La información sobre la temperatura máxima del líquido de control / temperatura máxima ambiente se encuentra en el etiquetado del actuador o en la documentación técnica suministrada al Usuario / instrucciones de seguridad.

- 3) La clase de temperatura se determina como se indica en la TABLA A. El rango de temperatura de funcionamiento es de -20 °C / + 80 °C. Las versiones especiales para el uso desde -50 °C hasta 150 °C, están disponibles a pedido; estas ejecuciones están marcadas apropiadamente en el cuerpo del actuador y debidamente codificadas.
- 4) El símbolo  indica condiciones especiales de uso.
- La temperatura máxima superficial del dispositivo se ha determinado a la frecuencia de uso de 1Hz, frecuencias más altas podrían determinar un aumento de este valor.
- El rango de temperatura indicado en el actuador es válido tanto para la temperatura ambiente como para el fluido de control.
- 5) Stellen Sie sicher, dass das gelieferte Produkt den Anforderungen der Leistung der Anwendung, die installiert werden soll entspricht.

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COMPATIBILITY WITH OTHER EQUIPMENT

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