

# bar

## Operating, mounting and adjusting instruction

### Pneumatic actuators type GTD / GTE



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## IMPORTANT NOTICE:

**In the case of high valve pivoting speeds, excessively high braking forces may appear in the end positions of the actuators!**

### Helpful tips:

#### 1. Throttling the exhaust air in double-acting actuators:

in the case of double-acting actuators type GTD in connection with 5/2-way solenoid valves, through screwing in an exhaust-air throttle type SDR and /or type FDS in the exhaust-air channel of the solenoid valve.

##### Data for ordering:

**Throttling damper for regulating the speed, Type SDR  
for solenoid valves with internal thread G1/8"**

SDR-1/8" Throttling damper, incl. 1x DI-1/8"-PV

**for solenoid valves with internal thread G1/4"**

SDR-1/4" Throttling damper, incl. 1x DI-1/4"-PV

##### Data for ordering:

**Fine throttle with damper for regulating the speed, Type FDS  
for solenoid valves with internal thread G1/8"**

FDS-C-1/8 for speed regulation

**for solenoid valves with internal thread G1/4"**

FDS-C-1/4 for speed regulation

#### 2. Throttling the exhaust-air in single-acting actuators:

in the case of single-acting actuators type GTE in connection with 3/2-way NAMUR solenoid valves through the fitting of a bar throttle plate type NDPE

##### Data for ordering:

**Throttle plate for setting the pivoting speed of single-acting  
actuators, type NDPE**

NDPE - 046 - 300 - R (NAMUR) anodised

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# Safety instructions



**The mounting, pneumatic connection and initial operation of the actuator may only be carried out by suitably qualified personnel, acting under direct the instructions laid down in this document.**

- Pneumatic actuators can possess very high torques. It is therefore necessary, to adhere exactly to the currently valid national and international safety regulations, in order to avoid accidents.
- The job of the standard actuator is to activate the movement between end positions on industrial valves automatically, with the help of compressed air. Other pressure mediums (fluids) and applications are to be agreed upon with the manufacturer. Only special versions are available with end-position or hydraulic damping, or enable positioning of the valve actuator between the end positions.
- In expl. protected areas, install actuator and valve in the pipework so that the electric potential of the plant as a whole is fully compensated, i.e. earthed/grounded.
- In expl. protected areas, it may be necessary to install sun-shading devices, to protect the surface from undesirable warming by sunshine.
- In expl. protected areas, avoid the use of ultrasonic devices for detecting leakages.
- When using in expl. protected areas, ensure the use of other expl.-protected products, especially in the selection of pneumatic valves and the end position indicator.  
When working in explosive areas, avoid the inadvertent production of sparks with tools.
- When operating in expl. protected areas, avoid the presence of large amounts of dust (layers > 5mm), remove them by using a vacuum cleaner or sweeping brush.
- Do not install in pits/channels/holes which have a tendency to collect dust.
- Always disconnect the compressed air supply before any work whatsoever is carried out on the actuator.
- Before installing and commissioning the actuator, check carefully the technical parameters, especially the pressure, torque and temperature data.
- Ensure yourself that the actuator does rotate in the desired rotational direction.
- It is important to ensure, that the maximum pivoting angle on the actuator is set, so that the seals on the valve are not contacted in any way, because this can lead to their destruction.
- Incorrect handling, or the incorrect usage thereof, results in the loss of the warranty.
- **Actuators of types GTD/GTE-046 are not allowed for use in Ex-proofed areas !**



**Take Care!**  
**Increased danger of injury!**



**For single-acting actuators,  
with standard pivoting angle larger than 90°  
(e.g. 120°, 135°, 180°),  
the covers are highly pre-stressed!**

**Do not open the screwed lids,  
send the units to the manufacturer bar GmbH  
for maintenance and repair!**

**These single-acting actuators  
are equipped with non-captive springs  
and with the following stickers:**



here e.g. with 8 non-captive springs

# Technical data

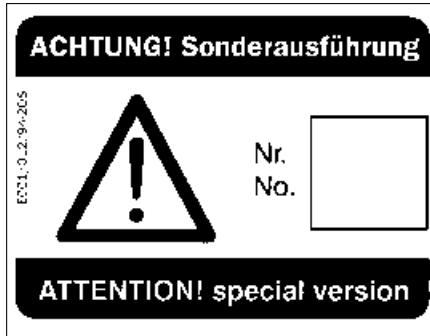
<b>Description:</b>	double-piston rotary actuator in single and double-acting models.																	
<b>Materials:</b>	casing:	aluminium alloy, anodized																
	caps:	aluminium alloy, epoxy-coated (size 046 in plastic)																
	pistons:	aluminium alloy, (size 046, 056 in plastic)																
	shaft:	steel, hard nickel-plated (size 046 in aluminium)																
	gaskets:	nitrile rubber (NBR, Perbunan)																
	bearings:	easy-sliding plastics																
<b>Install. position:</b>	random																	
<b>Ambient temperature:</b>	<table border="1"> <thead> <tr> <th>Ambient temperature range</th> <th>ATEX temperature class</th> <th>Valid for actuator model</th> </tr> </thead> <tbody> <tr> <td>-20°C to +70°C</td> <td>T6</td> <td>Standard</td> </tr> <tr> <td>-20°C to +90°C</td> <td>T5</td> <td>Standard (ab GTD/GTE-056)</td> </tr> <tr> <td>-20°C to +160°C</td> <td>T3</td> <td>High temperature (HT)</td> </tr> <tr> <td>-40°C to +70°C</td> <td>T6</td> <td>Low temperature (NT)</td> </tr> </tbody> </table>			Ambient temperature range	ATEX temperature class	Valid for actuator model	-20°C to +70°C	T6	Standard	-20°C to +90°C	T5	Standard (ab GTD/GTE-056)	-20°C to +160°C	T3	High temperature (HT)	-40°C to +70°C	T6	Low temperature (NT)
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<b>Nominal pivoting angle:</b>	single-acting: 90°, double-acting 90°, 120°, 180°, 240° adjustable nominal pivoting angle from +5° to -5°																	
<b>Control pressure:</b>	from 2 - 10 bar (GTD / GTE-046 from 2 - 8 bar)																	
<b>Control medium/ Quality:</b>	filtered air, minimum requirements of DIN ISO 8573-1/class 4 apply for residual oil, dust and water content.																	
<b>Activation:</b>	choice of direct mounting or separate 5/2 or 3/2-way valves, electric, pneumatic or manually operated.																	

### Note

bar actuators are low-maintenance.  
Difficult environmental conditions, impurities in the air or  
non-adherence to the intended usage  
can lead to premature wear on the seals !

# Explanation of special features

Actuators with special features are identified by special types of sticker:

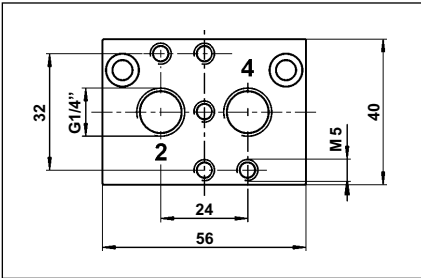


No.	Type of special feature
1	= for high temperatures up to +160°C
2	= for low temperatures down to -40°C
3	= casing, cover and pinion made from stainless steel AISI 316
4	= seals made from FPM (Viton)
5	= elongated stroke adjustment screws
6	= treated for freedom from silicon
7	= end position setting for both pivoting directions
8	= control valve without current: activator in switched position

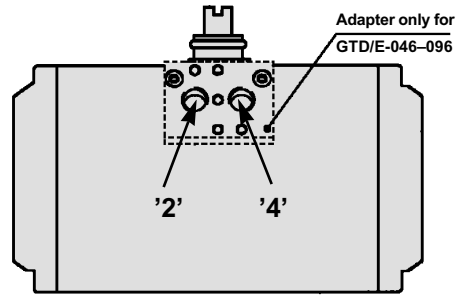
# Interface definition

## Connection for pneumatic valves

For actuator sizes 046 up to 096 the NAMUR interface is made via an adapter, which is an integral part of the actuator casing.



NAMUR adapter, type VPN

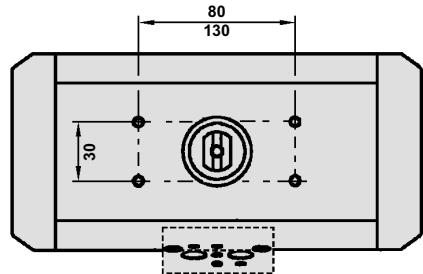


Single-acting bar actuators are factory fitted with a silencer in the '4' connection.

This silencer has to be removed when mounting on a NAMUR control valve.

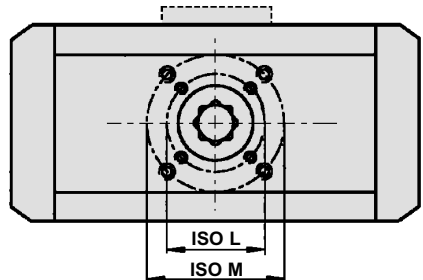
## Connection for signal units acc. to VDI/VDE 3845

- 4x threaded hole M5, 8 mm deep
- GTD/GTE-046 to 127 = 80 x 30 mm
- GTD/GTE-143 to 300 = 130 x 30 mm
- Shaft elongation 30mm, each with double-D



## Valve connection

- for GTD/GTE-046 up to 163  
2 ISO-F - bore layout "L" + "M"
- for GTD/GTE-185 up to 300  
1 ISO-F - bore layout

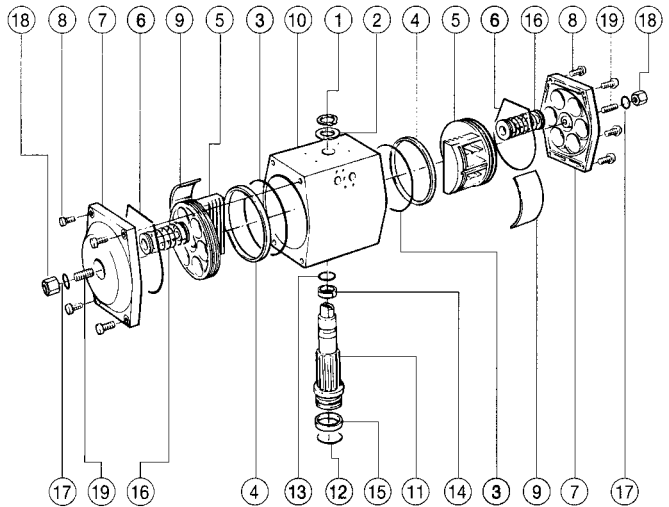




# Spare parts / standard actuators

## Positional diagram

- 1 Seeger circlip ring
- 2 Bearing ring
- 3 "O" ring
- 4 Piston guide ring
- 5 Piston
- 6 Cap gasket ring
- 7 Cap
- 8 Cap screw
- 9 Guide segment
- 10 Casing
- 11 Shaft
- 12 "O" ring
- 13 "O" ring
- 14 Upper sliding ring
- 15 Lower sliding ring
- 16 Spring
- 17 "O" ring
- 18 Nut
- 19 Set screw



## Spare part sets.....

- No. 1.: seal kit, consisting of 3, 6, 12, 13, 17\*)
- No. 2.: consumable kit, consisting of 4, 9, 14, 15\*)
- No. 3.: cap complete, consisting of 6, 7, 8, 17, 18, 19\*)
- No. 4.: piston complete, consisting of 3, 4, 5, 9\*)
- No. 5.: shaft complete, consisting of 1, 2, 11, 13, 14, 15

\*) for actuator size 046, sets do not contain 4, 9, 17, 18, 19

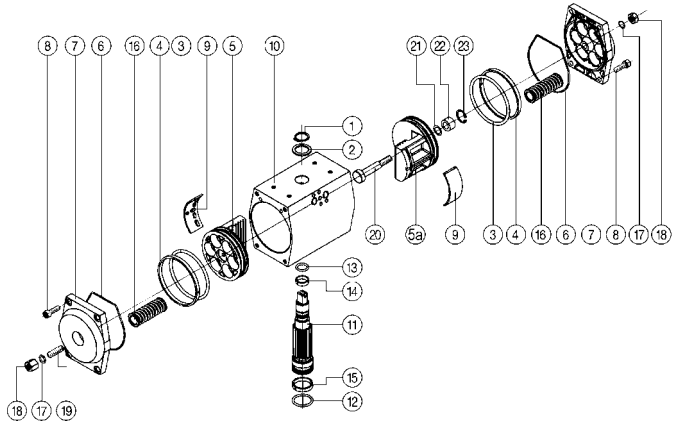
\*) for actuator size 056, sets do not contain 4, 9

# Spare parts / BE type

## (with double-sided end position adjustment)

### Positional diagram

- 1 Seeger circlip ring
- 2 Bearing ring
- 3 "O" ring
- 4 Piston guide ring
- 5 Piston
- 5a Piston for type "BE"
- 6 Cap gasket ring
- 7 Cap
- 8 Cap screw
- 9 Guide segment
- 10 Casing
- 11 Shaft
- 12 "O" ring
- 13 "O" ring
- 14 Upper sliding ring
- 15 Lower sliding ring
- 16 Spring
- 17 "O" ring
- 18 Nut
- 19 Set screw
- 20 Piston stopper rod
- 21 "O" ring
- 22 Guide bush
- 23 Seeger circlip ring



### Spare part sets...

- No. 1: seal kit, consisting of 3, 6, 12, 13
- No. 2: consumable kit, consisting of 4, 9, 14, 15\*)
- No. 3: cap complete, consisting of 6, 7, 8, 17, 18, 19\*)
- No. 4-BE: piston complete, consisting of 3, 4, 5, 9, 20, 21, 22, 23, 5a\*)
  - 23 not in sizes 046 to 096
  - 5a not in sizes 046 and 056
- No. 5: shaft complete, consisting of 1, 2, 11, 13, 14, 15

\*) for actuator size 046, sets do not contain 4, 9, 17, 18, 19

\*) for actuator size 056, sets do not contain 4, 9

# Mounting the actuator on the valve

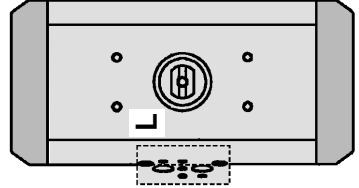
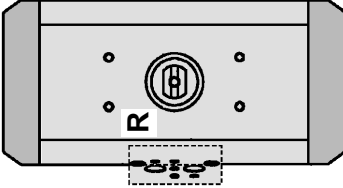
**Check the rotational direction and mounting variation before commissioning!**

➔ You will find the necessary information on the name plate of the actuator and various stickers:

**Explanation for the rotational direction of actuators:**

R = to the right

L = to the left



**Name-plate of double-acting actuators:**

(GTD-056 to GTD-300)

(GTD-046)

<b>bar</b>	Order number
	Designation
	Torque/ 1 bar
	Max. control pressure
	Tech. File. Ref. ZXS01E283r3
	⊗ II2GDc Date
	D-53547 Dattenberg • Tel. 02644/9607-0

<b>bar</b>	Order number	
	Designation	
	Torque/ 1 bar	
	Max. control pressure	
	Delivery date	
	D-53547 Dattenberg • Tel. 02644/9607-0	

**Name-plate of single-acting actuators:**

(GTE-056 to GTE-300)

(GTE-046)

<b>bar</b>	Order number
	Designation
	Number of springs
	Max. control pressure
	Tech. File. Ref. ZXS01E283r3
	⊗ II2GDc Date
	D-53547 Dattenberg • Tel. 02644/9607-0

<b>bar</b>	Order number
	Designation
	Minimum torque
	Number of springs
	Max. control pressure
	Delivery date
	D-53547 Dattenberg • Tel. 02644/9607-0

Plate with number of springs for **single-acting actuators** (GTE-046 to GTE-300) for example: 6 springs.




**Explanation of designation:**

GTE	-	066	/	090	-	08	-	Z11	-	A	-	BE
GTD	-	066	/	090	-	-	-	V14	-	F	-	-
function		type		pivoting angle (90°, 120°, 180°)		number of springs		shaft- version Z = double-D (with dimension) V = octagon		mounting version *) see page 10		double limit stop
E = single-acting D = double-acting												






# Mounting the actuator on the valve

Explanations to the general mounting variations:

**Mounting variations**  View from the top piston and shaft position.

Basic position ... of the pistons; shaft position from: the top		lower shaft version	Pivoting direction	Switched position ... of the pistons; shaft position from: the top		lower shaft version	MV
							A
							F
							B
							E
							C
							G
							D
							H

We recommend the following classification of the valve to function and mounting variation of the bar-actuators:

2/2 way valve	pinion type	mode of operation	mounting variant	2/2 way valve	pinion type	mode of operation	mounting variant
		double-acting air "closed + open"	D			double-acting air "closed + open"	A
		single-acting spring force "closed"	A *			single-acting spring force "closed"	A
		single-acting spring force "open"	D			single-acting spring force "open"	D *
		double-acting	H		double-acting air "open + closed"	F	
		single-acting spring force "closed"	F *		single-acting spring force "closed"	F	
		single-acting spring force "open"	H		single-acting spring force "open"	H *	
* We recommend type "BE"				* We recommend type "BE"			

Check the interface of the valve stem to the actuator shaft and mounting flange of valve to actuator casing for the eventual use of additional parts (shaft adapter, reductions, mounting bridges, centering).

Complete fitting connections.

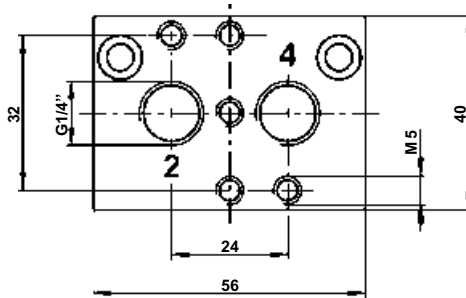
# Pneumatic connection of the actuator



Single acting bar actuators are factory fitted with a silencer in the '4' connection.

This silencer has to be removed when mounting on a NAMUR control valve.

For actuator sizes 046 up to 096 the NAMUR interface is made via an adapter, which is an integral part of the actuator casing



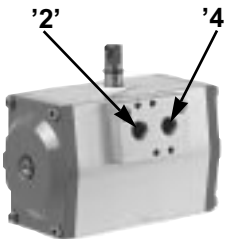
NAMUR adapter, type VPN

## – pneumatic connection of single-acting actuators:

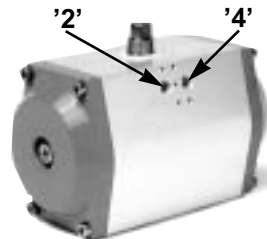
For single-acting actuators, connect the '2' to the compressed air.

## – pneumatic connection of double-acting actuators:

for double-acting actuators, connect the '2' and '4' to the compressed air.



GTD/GTE-046 to 096



GTD/GTE-110 to 300

# End position adjustment, Standard actuators



Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!

Make sure that the drive pinion moves in the correct rotational direction.

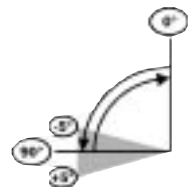
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for standard actuators

### Double-acting actuators:

#### Adjusting the outer stroke limiting screw for a double-acting actuator

1. move piston to the switching position via application of pressure to connection "2"
2. loosen the locking nuts D1 and D2 at the end position adjustment screws.
3. remove air from connections "2" and "4".
4. turn the adjustment screw D2 anti-clockwise ca. 5 rotations.  
- adjusting the screws D1 and D2 anti-clockwise increases the working angle.  
- adjusting the same in a clockwise direction decreases the working angle.
5. turn the adjustment screw D1 in one or the other direction to reach the desired setting point for the end position of the valve.
6. apply air to canal '2' and check the adjusted position. If required, repeat steps 3 and 5.
7. tighten the locking nut on adjusting screw D1 with the defined torque (see table 1 page 24).
8. turn the adjustment screw D2 clockwise against the piston.
9. tighten the locking nut on adjusting screw D2 with the defined torque (see table 1 page 24).



# End position adjustment, Standard actuators



**Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!**

Make sure that the drive pinion moves in the correct rotational direction.

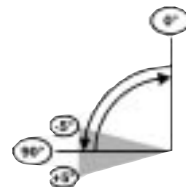
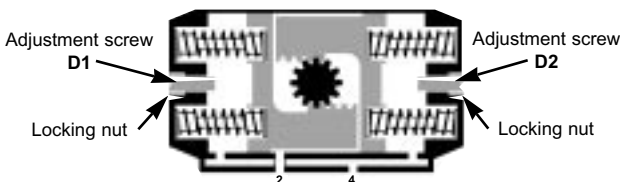
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for standard actuators

### Single-acting actuators:

#### Adjusting the outer stroke limiting screw for a single-acting actuator

1. move piston to the switching position via application of pressure to connection "2"
2. loosen the locking nuts D1 and D2 at the end position adjustment screws.
3. remove air from connection "2".
4. turn the adjustment screw D2 anti-clockwise ca. 5 rotations.  
- adjusting the screws D1 and D2 *anti-clockwise increases* the working angle.  
- adjusting the same *in a clockwise direction decreases* the working angle.
5. turn the adjustment screw D1 in one or the other direction to reach the desired setting point for the end position of the valve.
6. apply air to canal '2' and check the adjusted end position.
7. tighten the locking nut on adjusting screw D1 with the defined torque (see table 1 page 24).
8. turn the adjustment screw D2 clockwise against the piston.
9. tighten the locking nut on adjusting screw D2 with the defined torque (see table 1 page 24).



# End position adjustment, BE type



Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!

Make sure that the drive pinion moves in the correct rotational direction.

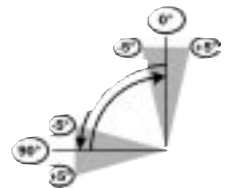
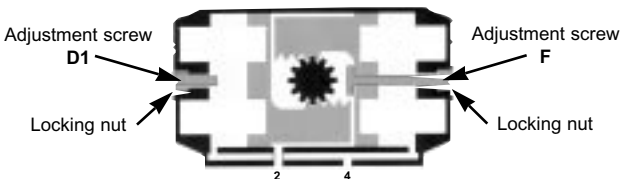
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for actuators with inner stroke limiting (BE type)

### Double-acting actuators:

#### Adjusting the *inner* stroke limiting screw for a double-acting actuator, type BE.

1. apply air to canal '4' to move to the adjusting end position.
2. loosen the locking nut F at the end position adjustment screw.
3. remove air pressure from the actuator.
4. turn the adjustment screw F either clockwise or anti-clockwise to obtain the desired and adjusted end position.
  - adjusting the screw F *anti-clockwise decreases* the working angle.
  - adjusting the screw F *clockwise increases* the working angle.
5. apply air to canal '4'.
6. check the end position, if required, repeat steps 3 and 4.
7. tighten the locking nut on adjusting screw F with the defined torque (see table 1 page 24).





# End position adjustment, BE type



Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!

Make sure that the drive pinion moves in the correct rotational direction.

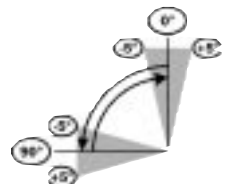
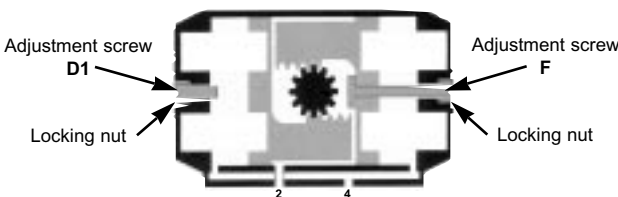
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for actuators with inner stroke limiting (BE type)

### Double-acting actuators:

#### Adjusting the *outer* stroke limiting screw for a double-acting actuator, type BE.

1. move piston to the switching position via application of pressure to connection "2"
2. loosen the locking nut D1 at the end position adjustment screws.
3. remove air pressure from the actuator.
4. turn the adjustment screw D1 either clockwise or anti-clockwise to obtain the desired and adjusted end position.
  - adjusting the screw D1 *clockwise increases* the working angle.
  - adjusting the screw D1 *anti-clockwise decreases* the working angle.
5. apply air to canal '2'.
6. check the end position, if required, repeat steps 3 and 4.
7. tighten the locking nut on adjusting screw D1 with the defined torque (see table 1 page 24).



# End position adjustment, BE type



Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!

Make sure that the drive pinion moves in the correct rotational direction.

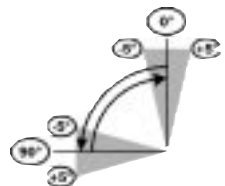
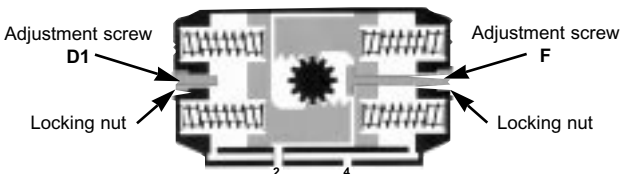
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for actuators with inner stroke limiting (BE type)

### Single-acting actuators:

#### Adjusting the inner stroke limiting screw for a single-acting actuator, type BE

1. loosen the locking nut F at the end position adjustment screw.
2. apply air to canal '2'.
3. turn the adjustment screw F either clockwise or anti-clockwise to obtain the desired and adjusted end position.
  - adjusting the screw F *anti-clockwise decreases* the working angle.
  - adjusting the screw F *clockwise increases* the working angle.
4. remove air pressure from the actuator.
5. check the valve setting, if required, repeat steps 2 and 3.
6. tighten the locking nut on adjusting screw F1 with the defined torque (see table 1 page 24).



# End position adjustment, BE type



Never turn the adjusting screws against the effecting pressure, i.e. when there is pressure on connection "2"!

Make sure that the drive pinion moves in the correct rotational direction.

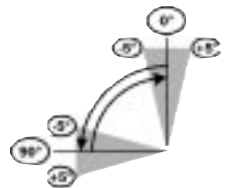
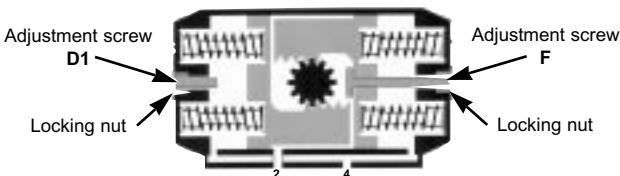
When using valves, where a certain pivoting angle may not be exceeded (e.g. metallic sealing flaps), take care to observe that the set pivoting angle on the actuator is not larger than the permitted pivoting angle for the valve.

## End position adjustment for actuators with inner stroke limiting (BE type)

### Single-acting actuators:

#### Adjusting the outer stroke limiting screw for a single-acting actuator, type BE

1. move piston to the switching position via application of pressure to connection "2"
2. loosen the locking nut D1 at the end position adjustment screws.
3. remove air pressure from the actuator.
4. turn the adjustment screw D1 either clockwise or anti-clockwise to obtain the desired and adjusted end position.
  - adjusting the screw D1 *clockwise increases* the working angle.
  - adjusting the screw D1 *anti-clockwise decreases* the working angle.
5. apply air to canal '2'.
6. check the end position, if required, repeat steps 3 and 4.
7. tighten the locking nut on adjusting screw D1 with the defined torque (see table 1 page 24).





**Take Care!**  
**Increased danger of injury!**



**For single-acting actuators,  
with standard pivoting angle larger than 90°  
(e.g. 120°, 135°, 180°),  
the covers are highly pre-stressed!**

**Do not open the screwed lids,  
send the units to the manufacturer bar GmbH  
for maintenance and repair!**

**These single-acting actuators  
are equipped with non-captive springs  
and with the following stickers:**



here e.g. with 8 non-captive springs

# Disassembly and assembly of components



**Warning – Danger of injury!**

**Never drive the piston out of the casing with compressed air.**

**Before working on the actuator, isolate from the compressed air supply.**

**For single-acting actuators, remove the returning springs.**

**The circlip must not be over-stretched when dismantling.**

## Disassembly of the piston

1. Remove the end cap on the actuator



2. Remove the return spring (single-acting actuators)



3. Press the piston out of the casing by rotating the shaft (use a suitable tool).



## Assembling the piston

1. Place the piston in the casing. Take care here that the piston gear rack fits correctly onto the teeth on the driving pinion, and the pistons run together symmetrically.



2. Insert the return springs according to table 2 page 24 and by following the instructions on the next page, section "Assembling the return springs" (for single-acting actuators).

3. Replace the end cap onto the actuator and screw in position, taking care to observe the prescribed torque for the fastening screws (see table 3 page 24).



Take care to observe the correct position (marker **UP** on the cap) and the state of the cap gasket ring.



**Take Care!**  
**Increased danger of injury!**



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# Disassembly and assembly of components



**Warning – Danger of injury!**  
**Never drive the piston out of the casing with compressed air.**  
**Before working on the actuator, isolate from the compressed air supply.**  
**For single-acting actuators, remove the returning springs.**  
**The circlip must not be over-stretched when dismantling.**

## Removing the shaft:

Remove the circlip and the sliding ring from the shaft.



**The circlip must not be over-stretched !**

Press the shaft downwards out of the casing.



## Installing the shaft:

Insert the shaft into the casing from below. Take care here to find the correct position of the driving shaft and piston!



Insert the sliding ring and set the circlip over the shaft with the appropriate tongs. Check that the circlip sits correctly.



**The circlip must not be over-stretched !**

With the single-acting actuator, insert the return springs (following the instructions laid down in "Assembling the return springs"), mount the end caps, taking care to observe the defined torque for the fastening screws (see table 3 page 24).

Take care to observe the correct position (marker **UP** on the cap) and the state of the cap gasket ring



**Take Care!**  
**Increased danger of injury!**



**For single-acting actuators,  
with standard pivoting angle larger than 90°  
(e.g. 120°, 135°, 180°),  
the covers are highly pre-stressed!**

**Do not open the screwed lids,  
send the units to the manufacturer bar GmbH  
for maintenance and repair!**

**These single-acting actuators  
are equipped with non-captive springs  
and with the following stickers:**



here e.g. with 8 non-captive springs



# Assembling the return springs



**Warning - Danger of injury !**

**Loosen the end caps only when the actuator is isolated from the compressed air supply.**

In order to achieve a symmetrical pressure distribution, it is necessary to insert the springs as shown in the diagrams below.

Remove the end cap on the actuator    Set the desired number of return springs in the round insets in the piston



Take care here to arrange an even distribution of the springs to spread the pressure evenly (see table 2).

Replace the end cap onto the actuator and screw in position, taking care to observe the prescribed torque for the screws (see table 3).

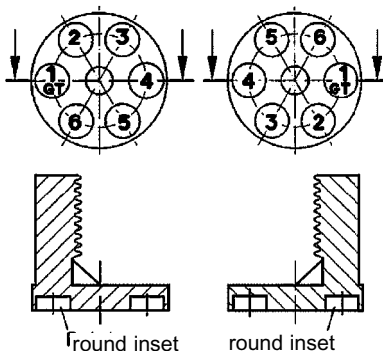
Take care to observe the correct position (marker **UP** on the cap) and the state of the cap gasket ring.

## Table 1 to 3

GTD/GTE	Torque [Nm]
056 - 066	2,0
076 - 096	3,0
110 - 115	4,5
127 - 163	8,0
185 - 210	13,0
250 - 254	20,0
300	30,0

GTD/GTE	Screws Ø	Torque [Nm]
046 + 056		
066	M 5	8
076 - 096	M 6	12
110 - 127	M 8	15
143 + 163	M 10	20
185 + 210	M 12	28
250 - 300	M 14	40

No. springs	Piston left side	Piston right side
2	1	1
3	1	1+4
4	1+4	1+4
5	1+4	2+4+6
6	2+4+6	2+4+6
7	2+4+6	2+3+5+6
8	2+3+5+6	2+3+5+6
9	2+3+5+6	1+2+3+5+6
10	1+2+3+5+6	1+2+3+5+6
11	1+2+3+5+6	all
12	all	all
>12	all	all



## Declaration of Conformity

Hereby we explain that this product agrees in accordance with the regulations of the EEC guideline 94/9/EG with the standards and normative documents specified down.

**Manufacturer:** **bar** GmbH  
Auf der Hohl 1  
53547 Dattenberg


**Name of Machine:** Pneumatic actuator

**Machine type:** **GTD-/GTE-series**  
056, 066, 076, 086, 096, 110, 115, 127  
143, 163, 185, 210, 250, 254, 300

**Appropriate EEC Guidelines:** EEC guideline explosion prevention 94/9/EG

**Used standard specifications:** EN 292, safety of machines  
DIN EN 13463-1 (04/2003)  
DIN EN 13463-5 (01/2001)

**Used national standard and technical specifications:** VDI/VDE 3845 draft  
(valve and fittings interfaces,  
rotary actuators, accessory implements)

**This product is marked with:**  II 2GD c

The adherence to operating procedure in the technical data and safety instructions provided is of primary importance.

Dattenberg, the 02.Dezember 2004

© by **bar**

**bar** Automatik-Armaturen GmbH



B. Scholz BSc. Eng.  
Quality Management



P. Willscheid  
Procurator

**This declaration is not valid for actuators type GTD-046 and GTE-046 !**

## European Community Manufacturer's Declaration acc. to European Community Directive for Machines 98/37/EG, Paragraph II B

We herewith declare that these goods, as mentioned below, are an incomplete component of a machine/component group.

The commissioning thereof is prohibited until this machine/component group conforms to the regulations of the European Community for machines.

Manufacturer:	<b>bar</b> GmbH Auf der Hohl 1 53547 Dattenberg / Germany
Description of the machine:	Pneumatic actuator
Type of machine:	<b>GTD-/GTE-046</b>
Corresponding instructions of the European Community:	European Community directive for machines (98/37/EG)
Used standard specifications:	EN 292, safety of machines
Used national standard and technical specifications:	VDI/VDE 3845- draft valve and fittings interfaces, rotary actuators, accessory implements


The adherence to operating procedure in the technical data and safety instructions provided is of primary importance.

**Damage, which results from the usage of other than original spare parts, is in no way the responsibility of, and therefore invalidates the warranty protection provided by bar GmbH!**

Dattenberg, the 10. October 2003

© by **bar**

**bar** Automatik-Armaturen GmbH

  
B. Scholz BSc. Eng.  
Quality Management

  
P. Willscheid  
Procurator

**This declaration is valid for actuators type GTD-046 and GTE-046 only !**

