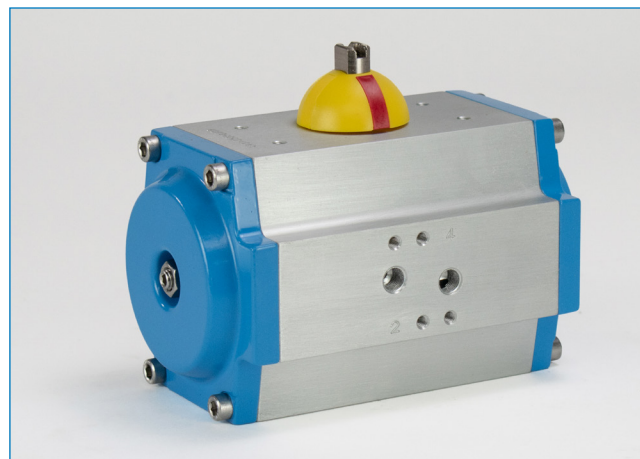


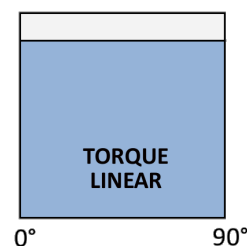
|                               |                                                                                                                                                                                                               |                                                  |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>Design</b>                 | Pneumatic double-piston rotary actuator in rack and pinion design                                                                                                                                             |                                                  |
| <b>Function</b>               | Double- and single-acting                                                                                                                                                                                     |                                                  |
| <b>Material</b>               | <b>Housing</b>                                                                                                                                                                                                | Anodised aluminum ASTM 6083, UNI 4522            |
|                               | <b>Caps</b>                                                                                                                                                                                                   | Aluminum UNI 5076, epoxy resin coated            |
|                               | <b>Pistons</b>                                                                                                                                                                                                | Aluminum UNI 5076                                |
|                               | <b>Pinion</b>                                                                                                                                                                                                 | Steel, nickel-plated (optional: stainless steel) |
|                               | <b>Bearings</b>                                                                                                                                                                                               | POM                                              |
|                               | <b>Sealings</b>                                                                                                                                                                                               | NBR, optional: FKM or silicone                   |
| <b>Temperature range</b>      | <b>Standard (NBR)</b>                                                                                                                                                                                         | -50°C...+70°C                                    |
|                               | <b>High temperature (Viton)</b>                                                                                                                                                                               | -15°C...+160°C                                   |
|                               | <b>Extended temperature (Silicone)</b>                                                                                                                                                                        | -60°C...+200°C                                   |
| <b>ATEX marking</b>           | CE Ex II 2 G Ex h IIC T5...T2 Gb<br>II 2 D Ex h IIIC 170°C Db                                                                                                                                                 |                                                  |
| <b>Control pressure</b>       | 2...8 bar                                                                                                                                                                                                     |                                                  |
| <b>Control media</b>          | dry, filtered air or inert gases in respect of remaining oil-, dust and water-content according to DIN ISO 8573-1 / class 4, maximum particle diameter 30µm, dew point minimum 10°C below ambient temperature |                                                  |
| <b>Mounting position</b>      | Any mounting position                                                                                                                                                                                         |                                                  |
| <b>Nominal rotation angle</b> | 90°<br>Adjustable in one end position +/-5° (optional 100% stroke adjustment)<br>Version BE: Adjustable in both end positions                                                                                 |                                                  |
| <b>Standards</b>              | <b>Interface actuator/ feedback-unit</b>                                                                                                                                                                      | VDI/VDE 3845 resp. NAMUR                         |
|                               | <b>Interface actuator/ control media</b>                                                                                                                                                                      | VDI/VDE 3845 resp. NAMUR                         |
|                               | <b>Interface actuator/ valve</b>                                                                                                                                                                              | ISO 5211 and DIN 3337                            |



## Torque diagram

### Double-acting

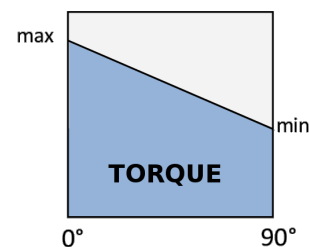
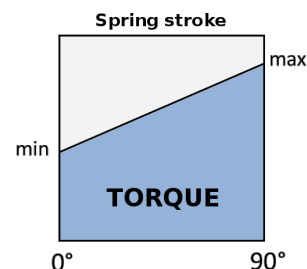
Provides a linear and constant torque through the complete pivoting angle in both pivoting directions.



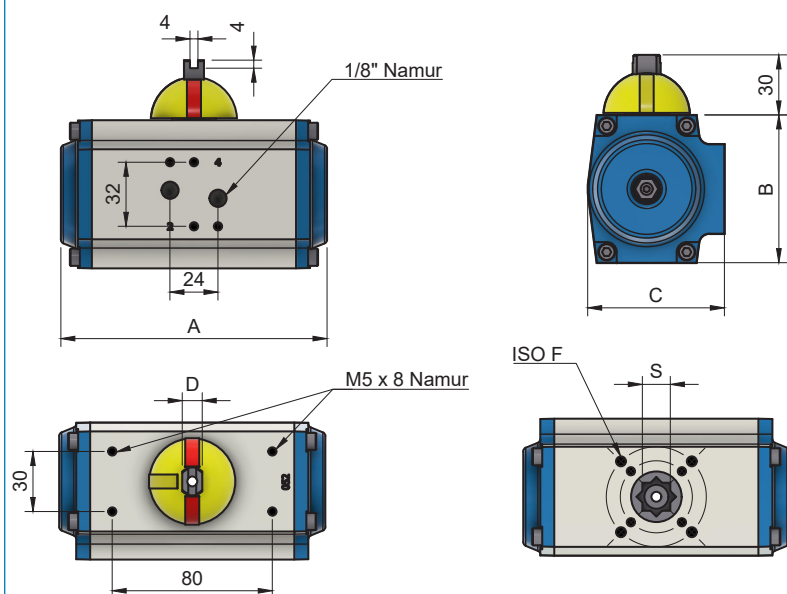
### Single-acting

Provides a linearly reducing torque through the complete pivoting angle in both pivoting directions.

Offers the maximum torque at the beginning of each stroke to overcome the breakaway torque.

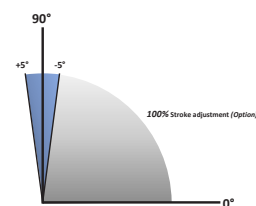


## Dimensions



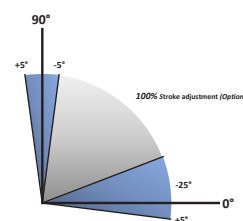
## Angle adjustment

### Variant „Standard“



The switch position can be adjusted by  $\pm 5^\circ$  for a precise setting of the final valve position. The optional stroke adjustment offers a 100% setting of the switched end position.

### Variant „BE“



With the “BE” option, both end position can be set independently of one another for fine adjustment.

## Dimension table

| Dimensions in mm |           |      |    |       |    |   |         |
|------------------|-----------|------|----|-------|----|---|---------|
| 90°              | A<br>120° | 180° | B  | C     | D  | S | ISO-F   |
| 116              | -         | -    | 65 | 61.50 | 10 | 9 | F03/F05 |

## Volume, weight

| Volume (l)           |                      |                       |                       | Weight (kg)          |                      |                       |                       |
|----------------------|----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|
| 90°<br>single-acting | 90°<br>double-acting | 120°<br>double-acting | 180°<br>double-acting | 90°<br>single-acting | 90°<br>double-acting | 120°<br>double-acting | 180°<br>double-acting |
| 0,10                 | 0,18                 | -                     | -                     | 0,66                 | 0,60                 | -                     | -                     |

## Torques double-acting

| Control Pressure in bar (g) | 2   | 2,5 | 3   | 3,5 | 4   | 4,5  | 5    | 5,5  | 6    | 6,5  | 7    | 8    |
|-----------------------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| Torque in Nm                | 4,7 | 5,8 | 7,0 | 8,2 | 9,4 | 10,5 | 11,7 | 13,1 | 14,0 | 15,2 | 16,4 | 18,7 |

## Torques single-acting

|                 |   | Torque pneumatic stroke in Nm at Control Pressure in bar (g) |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|-----------------|---|--------------------------------------------------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 |   | Torque spring<br>in Nm                                       |      | 2    |      | 3    |      | 4    |      | 5    |      | 5,5   |       | 6     |       | 7     |       | 8     |       |
| Spring set      |   | max.                                                         | min. | max. | min. | max. | min. | max. | min. | max. | min. | max.  | min.  | max.  | min.  | max.  | min.  | max.  | min.  |
| Torque<br>in Nm | 2 | 2,53                                                         | 1,68 | 2,97 | 2,09 | 5,31 | 4,43 | 7,64 | 6,77 | 9,98 | 9,11 | 11,39 | 10,51 | 12,32 | 11,45 | 14,66 | 13,79 | 17    | 16,12 |
|                 | 4 | 5,07                                                         | 3,36 |      |      | 3,59 | 1,85 | 5,93 | 4,18 | 8,27 | 6,52 | 9,68  | 7,93  | 10,61 | 8,86  | 12,95 | 11,2  | 15,29 | 13,54 |
|                 | 6 | 7,6                                                          | 5,03 |      |      |      |      | 4,22 | 1,6  | 6,56 | 3,94 | 7,96  | 5,34  | 8,9   | 6,28  | 11,24 | 8,61  | 13,58 | 10,95 |
|                 | 8 | 10,14                                                        | 6,71 |      |      |      |      |      |      | 4,85 | 1,35 | 6,25  | 2,75  | 7,19  | 3,69  | 9,53  | 6,03  | 11,87 | 8,37  |