



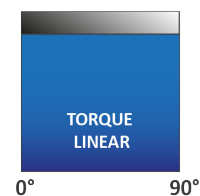
|                               |                                                                                                                                                                                                                                                                                                     |                                              |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Design</b>                 | Pneumatic double-piston rotary actuator in rack and pinion design                                                                                                                                                                                                                                   |                                              |
| <b>Function</b>               | Double and single-acting                                                                                                                                                                                                                                                                            |                                              |
| <b>Material</b>               | <b>Body</b>                                                                                                                                                                                                                                                                                         | Aluminum, powder-coated                      |
|                               | <b>Caps</b>                                                                                                                                                                                                                                                                                         | Aluminum, powder-coated                      |
|                               | <b>Pistons</b>                                                                                                                                                                                                                                                                                      | Aluminum                                     |
|                               | <b>Pinion shaft</b>                                                                                                                                                                                                                                                                                 | Carbon steel, nickel plated                  |
|                               | <b>Bearings</b>                                                                                                                                                                                                                                                                                     | POM                                          |
|                               | <b>Sealings</b>                                                                                                                                                                                                                                                                                     | Standard: NBR<br>Optional: HNBR/FPM/Silicone |
|                               | <b>Screws</b>                                                                                                                                                                                                                                                                                       | Stainless steel                              |
| <b>Temperature range</b>      | Standard                                                                                                                                                                                                                                                                                            | -20°C ... +80°C                              |
|                               | Low temperature                                                                                                                                                                                                                                                                                     | -40°C ... +80°C                              |
|                               | High temperature                                                                                                                                                                                                                                                                                    | -10°C ... +150°C                             |
| <b>ATEX marking</b>           | <div> <div>CE</div> <div>Ex</div> </div> <p> <b>Standard and low temperature</b><br/>           II 2 G Ex h IIC T6/T5 Gb<br/>           II 2 D Ex h IIIC 100°C Db<br/><br/> <b>High temperature</b><br/>           II 2 G Ex h IIC T6...T3 Gb<br/>           II 2 D Ex h IIIC 170°C Db         </p> |                                              |
| <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 both end positions +/-5°<br>(optional stroke adjustment up to 100%)                                                                                                                                                                                                            |                                              |
| <b>Standards</b>              | Interface actuator/<br>feedback-unit                                                                                                                                                                                                                                                                | VDI/VDE 3845<br>resp. NAMUR                  |
|                               | Interface actuator/<br>control media                                                                                                                                                                                                                                                                | VDI/VDE 3845<br>resp. NAMUR                  |
|                               | Interface actuator/<br>valve                                                                                                                                                                                                                                                                        | ISO 5211 and<br>DIN 3337                     |



### Torque diagram

#### Double-acting

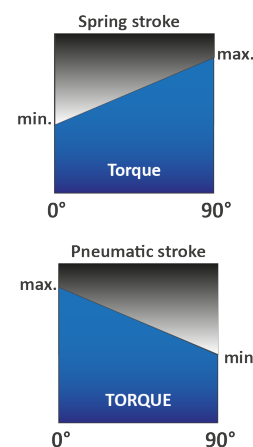
Provides a linear and constant torque through the complete pivoting angle in both pivoting directions.



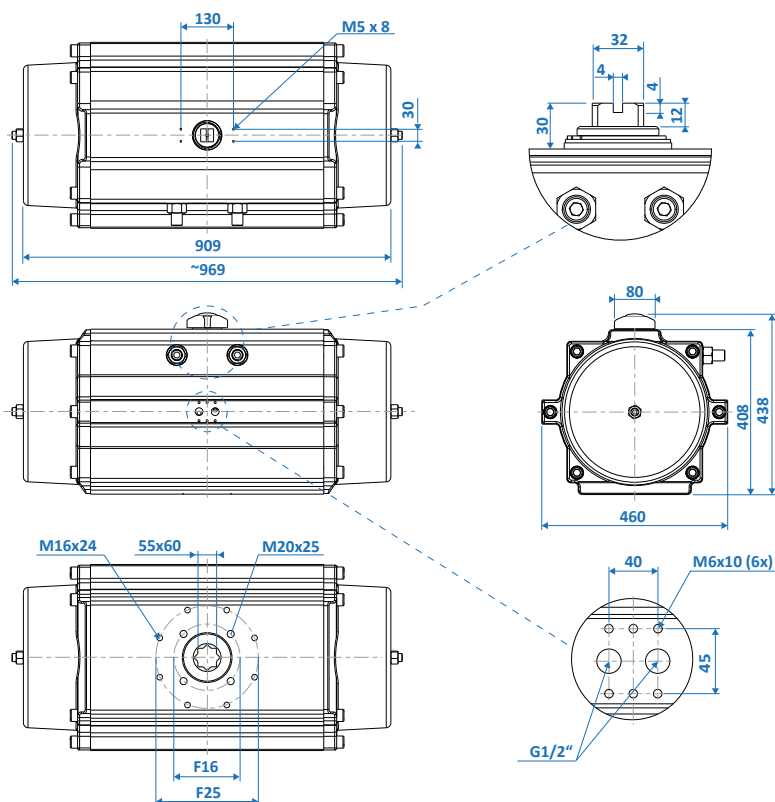
#### Single-acting

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

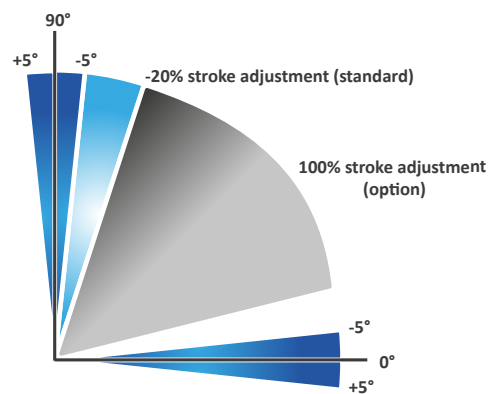
Offers the maximum torque at the beginning of each stroke to overcome the breakaway torque.



## Dimensions



## Angle adjustment



Both end positions 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.

## Torques double-acting

| Control pressure in bar (g) | 2    | 2,5  | 3    | 3,5  | 4    | 4,5  | 5    | 5,5  | 6    | 7    | 8    |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Torque in Nm                | 2387 | 2983 | 3580 | 4177 | 4773 | 5370 | 5967 | 6563 | 7160 | 8353 | 9546 |

## Torques single-acting

|                            |    |      |      | Control pressure in bar (g) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|----|------|------|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                            |    |      |      | 3                           |      | 3,5  |      | 4    |      | 4,5  |      | 5    |      | 5,5  |      | 6    |      | 7    |      | 8    |      |
| Torque spring stroke in Nm |    |      |      | max.                        | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. |
| Spring set                 |    | max. | min. |                             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Torque in Nm               | 5  | 1775 | 1223 | 2357                        | 1805 | 2953 | 2401 | 3550 | 2998 | 4146 | 3595 | 4743 | 4191 | 5340 | 4788 | 5936 | 5384 | 7129 | 6578 | 8323 | 7771 |
|                            | 6  | 2130 | 1468 | 2112                        | 1450 | 2709 | 2046 | 3305 | 2643 | 3902 | 3240 | 4498 | 3836 | 5095 | 4433 | 5692 | 5029 | 6885 | 6223 | 8078 | 7416 |
|                            | 7  | 2485 | 1712 | 1867                        | 1095 | 2464 | 1691 | 3061 | 2288 | 3657 | 2885 | 4254 | 3481 | 4850 | 4078 | 5447 | 4674 | 6640 | 5868 | 7833 | 7061 |
|                            | 8  | 2840 | 1957 | 1623                        | 740  | 2219 | 1336 | 2816 | 1933 | 3413 | 2530 | 4009 | 3126 | 4606 | 3723 | 5202 | 4319 | 6396 | 5513 | 7589 | 6706 |
|                            | 9  | 3195 | 2201 |                             |      | 1975 | 981  | 2571 | 1578 | 3168 | 2175 | 3765 | 2771 | 4361 | 3368 | 4958 | 3964 | 6151 | 5158 | 7344 | 6351 |
|                            | 10 | 3550 | 2446 |                             |      | 1730 | 627  | 2327 | 1223 | 2923 | 1820 | 3520 | 2416 | 4117 | 3013 | 4713 | 3610 | 5906 | 4803 | 7100 | 5996 |
|                            | 11 | 3905 | 2691 |                             |      |      |      | 2082 | 868  | 2679 | 1465 | 3275 | 2061 | 3872 | 2658 | 4469 | 3255 | 5662 | 4448 | 6855 | 5641 |
|                            | 12 | 4260 | 2935 |                             |      |      |      | 1838 | 513  | 2434 | 1110 | 3031 | 1706 | 3627 | 2303 | 4224 | 2900 | 5417 | 4093 | 6610 | 5286 |

## Weight, volume

| Function      | Weight (kg) | Volume (l) |
|---------------|-------------|------------|
| double-acting | 186,0       | 81,4       |
| single-acting | 234,0       | 35,1       |

## Air consumption

| Function      | Air consumption for pivoting angle 90° at control pressure in bar (g) in litres/cycle |       |       |       |       |       |       |       |       |
|---------------|---------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | 3                                                                                     | 3,5   | 4     | 4,5   | 5     | 5,5   | 6     | 7     | 8     |
| double-acting | 244,2                                                                                 | 284,9 | 325,6 | 366,3 | 407,0 | 447,7 | 488,4 | 569,8 | 651,2 |
| single-acting | 105,3                                                                                 | 122,9 | 140,4 | 158,0 | 175,5 | 193,1 | 210,6 | 245,7 | 280,8 |