HEMA CLAMPING SYSTEMS

# RotoClamp/DiskClamp

RotoClamp Inside

RotoClamp Outside

DiskClamp

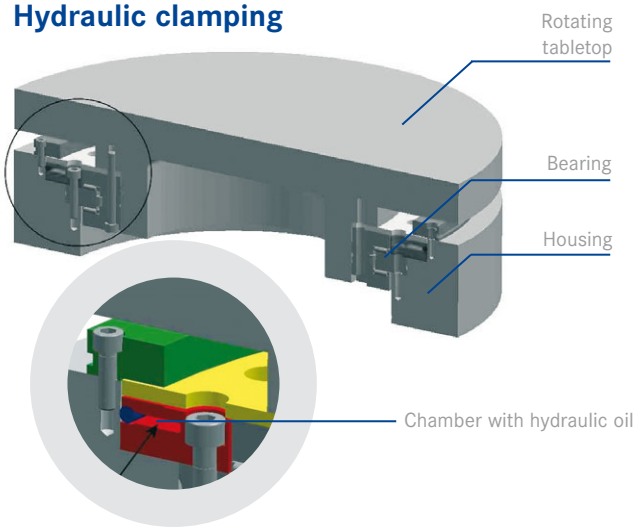
# Advantages



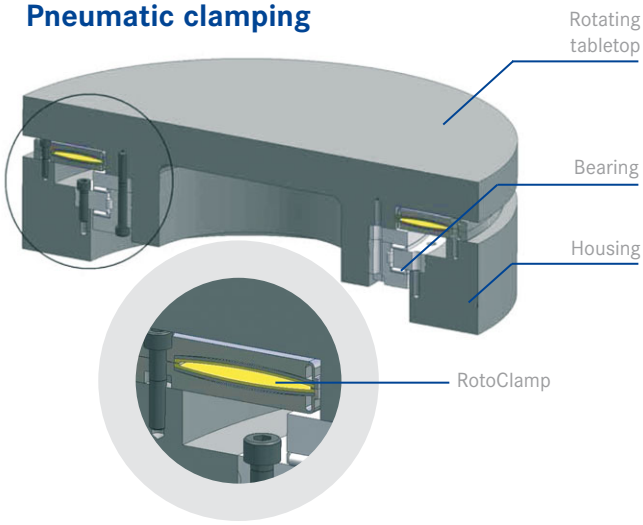
1. Pneumatic clamping with high forces
2. Safety clamping RotoClamp Standard – If the air supply fails then system clamps
3. The values of hydraulic clamping are reached and exceeded
4. Low system costs in comparison to hydraulics
5. Simple installation
6. Compact design
7. Suitable for all shaft sizes

# COMPARISON OF OPERATING PRINCIPLES

## Hydraulic clamping




## Pneumatic clamping




### Operating principle of hydraulic clamping

**Function** The chamber formed by the expansion ring and the O-ring is supplied with hydraulic oil. The upper ring of the expansion ring is pressed upwards and away elastically and clamps the rotating brake disk between the fixed expansion and counter rings. Standard table sizes with 500 x 500 mm pallets achieve approx. 3000 to 4000 Nm holding torque at 80 to 120 Bar hydraulic pressure.

**Safety** No safety clamping. If there is a power loss then this axis is no longer clamped.

**Reaction times** Long and short times with high effort can be achieved.

**Costs** Precisely manufactured mechanical parts, expensive hydraulic valves, hydraulic piping incl. assembly times, assembly and matching of the mechanical parts; replaceable in part. Safety clamping can only be realised at great effort. Extra material costs of hydraulic vis-à-vis pneumatic. (hydraulic valves, flexible hydraulic lines, piping and screwed joints, relays due to higher rate of power consumption).

**Cleanliness** hydraulic.

### Operating principle of the RotoClamp

**Function** Clamps with spring actuator. Depressurizing the inner spring diaphragm chamber and ventilating the outer spring diaphragm chamber relaxes the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is reformed elastically in the area of the clamping surface and presses on the shaft. Adding pressurized air to the inner spring diaphragm chamber (4 or 6 Bar) and venting the outer spring diaphragm chamber bends the diaphragm and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is shortened: The clamping surface lifts off from the shaft. You have the optional possibility of increasing the clamping force by extra loading of the outer spring diaphragm chamber with compressed air when clamped (4 or 6 Bar).

**Safety** Safety clamping by spring actuator. In case of a power loss, the axis is immediately clamped.

**Reaction times** Very short due to pneumatics. With quick air-vent valve and quick-acting gate valve attached directly to the clamping mechanism, you can realise extremely short clamping times.

**Costs** Low costs (in comparison to hydraulics), pneumatic valves and pneumatic piping, low installation costs, no cost for matching, easily replaceable, including safety clamp.

**Cleanliness** Very clean due to pneumatics.

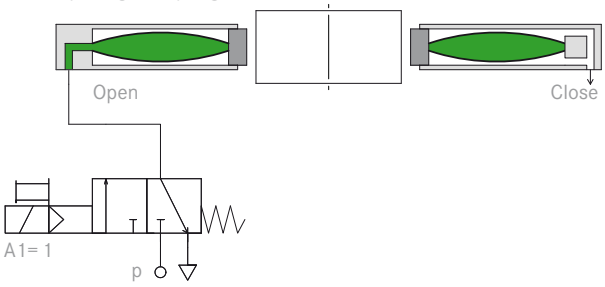
**Materials** Clamping-body housing hardened and tempered in fine grain mild steel, optional

- supported flange joint hardened with case-hardening steel,
- steel coated, alternative lining procedure possible.

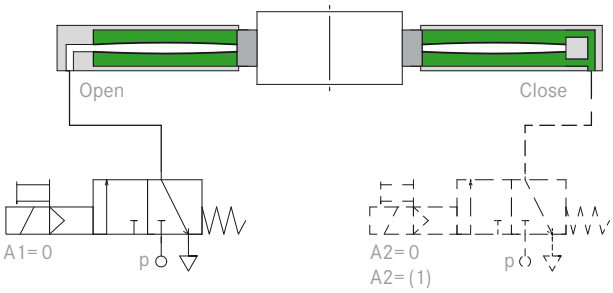
# Operating principle of the RotoClamp Inside

## Function of the RotoClamp Inside

RotoClamp standard inner clamping
Opening the spring actuator




RotoClamp standard inner clamping
Clamping optional with spring actuator and secondary air



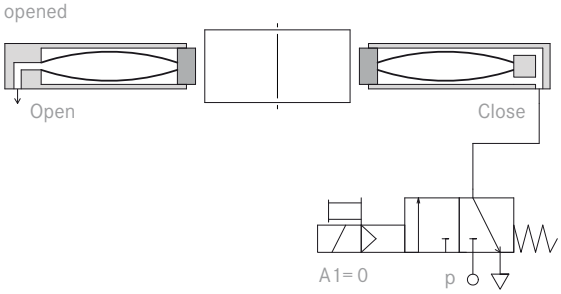

**Release RotoClamp Inside** Adding pressurized air to the inner spring diaphragm chamber (open, 4 or 6 Bar) and venting the outer spring diaphragm chamber (close) bends the diaphragm and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is shortened: The clamping element is opened in this state.

**Clamping RotoClamp Inside** Depressurizing the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) relaxes the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is re-formed in the area of the clamping surface. The clamping element is closed in this state.

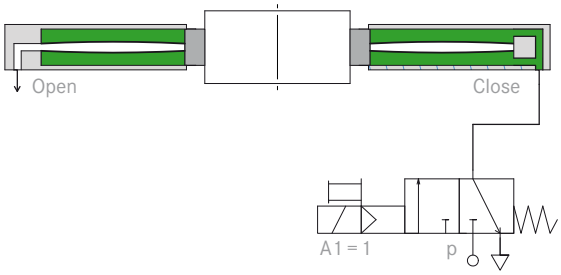
**RotoClamp Inside with secondary air** You have the optional possibility of increasing the clamping force by extra loading of the outer spring diaphragm chamber (close) with compressed air (4 or 6 Bar). The clamping element is closed in this state.

## Function of the RotoClamp Inside Active

RotoClamp standard inner clamping active
opened




RotoClamp standard inner clamping active
Clamping with secondary air




**Release RotoClamp Inside** The spring diaphragm is bent on assembly and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is reduced. The clamping element is opened in this state.

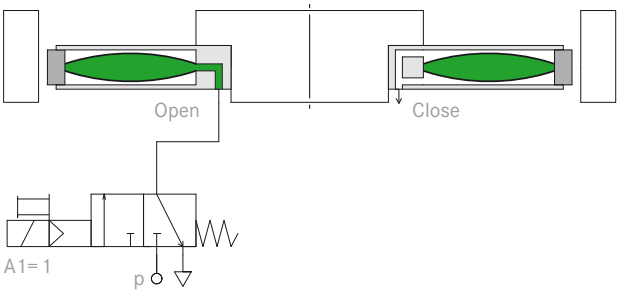
**Clamping RotoClamp Inside** Depressurizing the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close, 4 or 6 Bar) reforms the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is reformed in the area of the clamping surface. The clamping element is closed in this state.

Compressed air

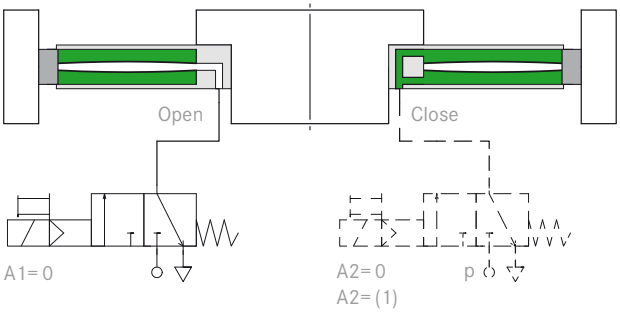
# OPERATING PRINCIPLE OF THE ROTOCLAMP OUTSIDE

## Function of the RotoClamp Outside

RotoClamp standard outer clamping
Opening the spring actuator




RotoClamp standard outer clamping
Clamping optional with spring actuator and secondary air



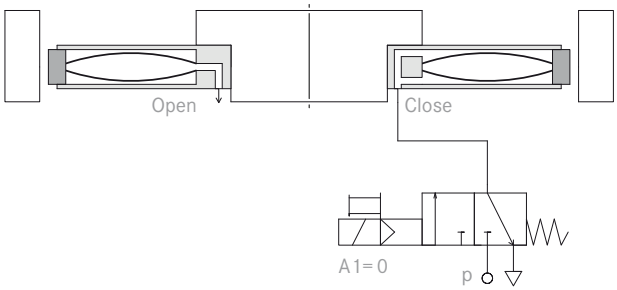

**Release RotoClamp Outside** Adding pressurized air to the inner spring diaphragm chamber (open, 4 or 6 Bar) and venting the outer spring diaphragm chamber (close) bends the diaphragm and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is shortened. The clamping element is opened in this state.

**Release (open) RotoClamp Outside** Depressurizing the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) relaxes the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is reformed in the area of the clamping surface. The clamping element is closed in this state.

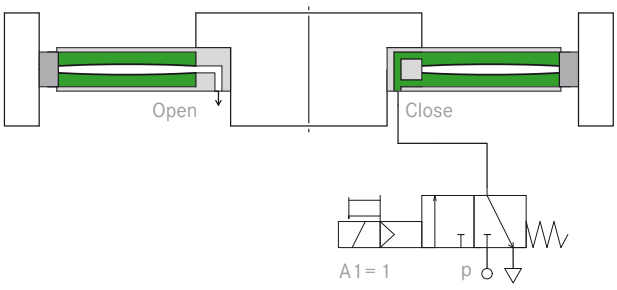
**Clamping RotoClamp Outside with secondary air** You have the possibility of increasing the clamping force by extra loading of the outer spring diaphragm chamber (close) with compressed air (4 or 6 Bar). The clamping element is closed in this state.

## Function of the RotoClamp Outside Active

RotoClamp standard outer clamping active
opened




RotoClamp standard outer clamping active
Clamping with secondary air




**Release RotoClamp Outside** The spring diaphragm is bent on assembly and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is reduced. The clamping element is opened in this state.

**Clamping (close) RotoClamp Outside** Depressurizing the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) with compressed air (4 or 6 Bar) reforms the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is reformed in the area of the clamping surface. The clamping element is closed in this state.

Compressed air

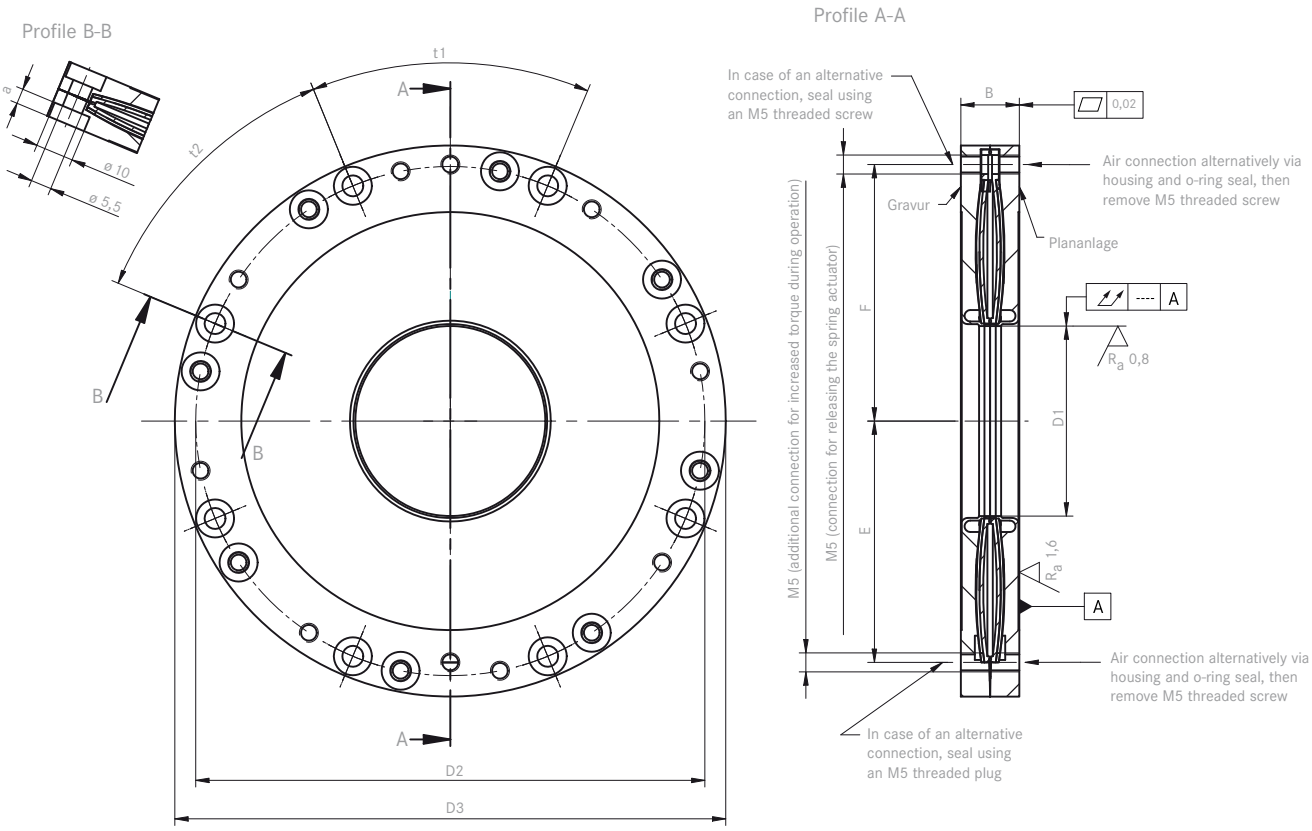
# Technical data

## Technical data of the RotoClamp S

| Size | D1 opened at rated pressure Pn-4/ 6 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws M5 | a | t1 | t2 | Elastic holding torque at 0 Bar Pn = 6 Bar | Elastic holding torque with secon-dary air at 6 Bar Pn = 6 Bar | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secon-dary air at 4 Bar Pn = 4 Bar | Max. mass | Air require-ments per max. stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [°] | [°] | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | +0,03/+0,05 | -0,01/-0,025 | ± 0,1 | | +0,4 | | | | | | | | | | | | |
| Round-ness | 0,01 | 0,01 | | | | | | | | | | | | | | | |
| Surface finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | | |
| RC 50 S | 50 | 50 | 134 | 145 | 15 | 63,5 | 67,5 | 8 | 4 | 45 | 45 | 60 | 108 | 42 | 76 | 1,7 | 20 |
| RC 60 S | 60 | 60 | 144 | 155 | 15 | 68,5 | 72,5 | 8 | 4 | 45 | 45 | 84 | 153 | 59 | 107 | 1,9 | 20 |
| RC 70 S | 70 | 70 | 154 | 165 | 15 | 73,5 | 77,5 | 12 | 4 | 30 | 30 | 114 | 210 | 80 | 147 | 2,1 | 20 |
| RC 80 S | 80 | 80 | 164 | 175 | 15 | 78,5 | 82,5 | 12 | 4 | 30 | 30 | 150 | 270 | 105 | 189 | 2,3 | 20 |
| RC 90 S | 90 | 90 | 174 | 185 | 15 | 83,5 | 87,5 | 12 | 4 | 30 | 30 | 189 | 342 | 132 | 239 | 2,5 | 20 |

This technical data applies to the RotoClamp S Standard. Data for the RotoClamp S Active is available on request.



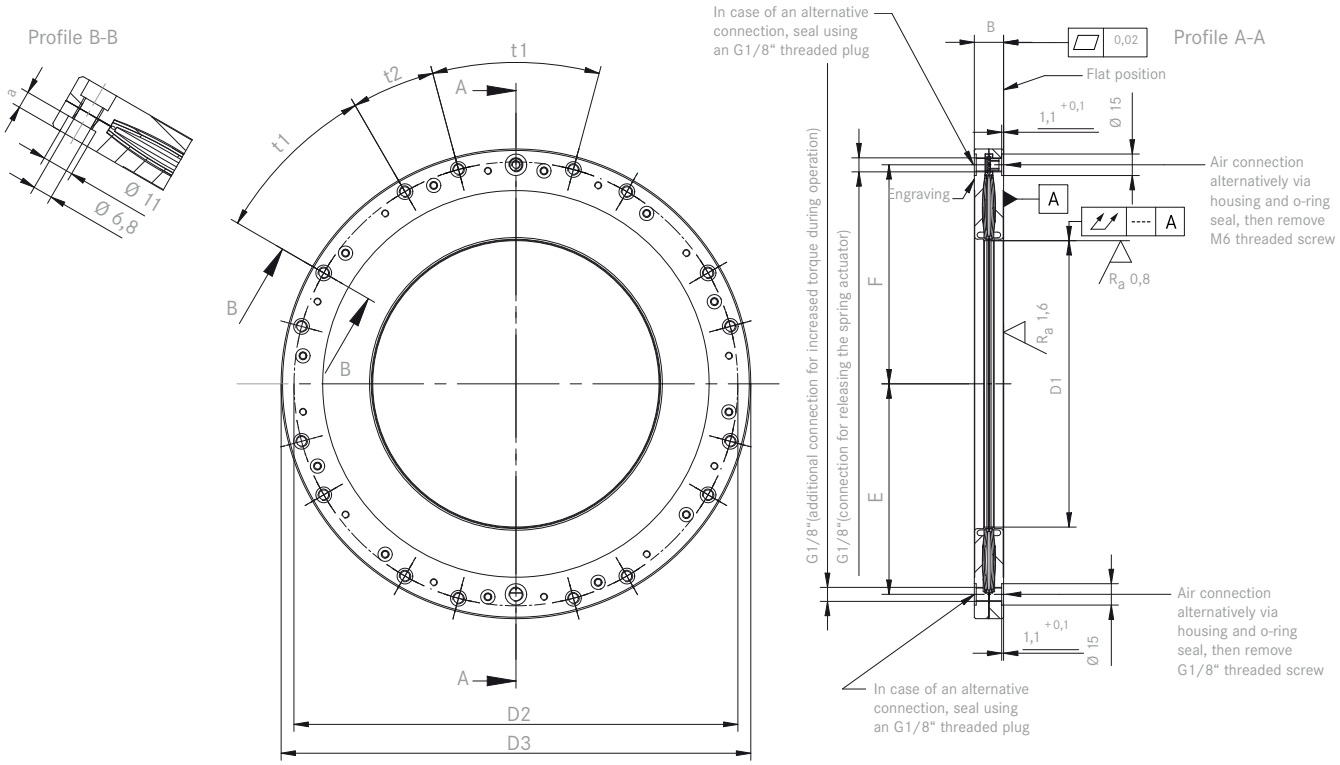


# TECHNICAL DATA

## Technical data of the RotoClamp N

| Size | D1 opened at rated pressure Pn = 4 / 6 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws M6 | a | t1 | t2 | Elastic holding torque at 0 Bar Pn = 6 Bar | Elastic holding torque with secondary air at 6 Bar Pn = 6 Bar | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secondary air at 4 Bar Pn = 4 Bar | Max. mass | Air requirements per max. stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [°] | [°] | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | +0,04/+0,06 | -0,01/-0,025 | ± 0,1 | | +0,4 | | | | | | | | | | | | |
| Roundness | 0,01 | 0,01 | | | | | | | | | | | | | | | |
| Surface finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | | |
| RC 100 N | 100 | 100 | 210 | 228 | 16 | 103 | 103 | 12 | 4 | 40 | 20 | 240 | 420 | 168 | 294 | 4,1 | 60 |
| RC 120 N | 120 | 120 | 230 | 248 | 16 | 113 | 113 | 12 | 4 | 40 | 20 | 336 | 600 | 235 | 420 | 4,6 | 60 |
| RC 140 N | 140 | 140 | 250 | 268 | 16 | 123 | 123 | 12 | 4 | 40 | 20 | 456 | 840 | 319 | 588 | 5,1 | 60 |
| RC 160 N | 160 | 160 | 270 | 288 | 16 | 133 | 133 | 12 | 4 | 40 | 20 | 600 | 1080 | 420 | 756 | 5,6 | 60 |
| RC 180 N | 180 | 180 | 290 | 308 | 20 | 137 | 143 | 16 | 6 | 30 | 15 | 750 | 1380 | 525 | 966 | 7,7 | 90 |
| Tolerance | +0,05/+0,07 | -0,01/-0,03 | ± 0,2 | | +0,4 | | | | | | | | | | | | |
| Roundness | 0,015 | 0,015 | | | | | | | | | | | | | | | |
| RC 200 N | 200 | 200 | 310 | 328 | 20 | 147 | 153 | 16 | 6 | 30 | 15 | 930 | 1680 | 651 | 1176 | 8,3 | 90 |
| RC 220 N | 220 | 220 | 330 | 348 | 20 | 157 | 163 | 16 | 6 | 30 | 15 | 1110 | 2040 | 777 | 1428 | 8,9 | 90 |
| RC 240 N | 240 | 240 | 350 | 368 | 20 | 167 | 173 | 24 | 6 | 20 | 10 | 1350 | 2400 | 945 | 1680 | 9,5 | 90 |
| RC 260 N | 260 | 260 | 370 | 388 | 22 | 177 | 183 | 24 | 6 | 20 | 10 | 1560 | 2820 | 1092 | 1974 | 11,2 | 120 |
| RC 280 N | 280 | 280 | 390 | 408 | 22 | 187 | 193 | 24 | 6 | 20 | 10 | 1800 | 3240 | 1260 | 2268 | 11,9 | 120 |
| RC 300 N | 300 | 300 | 410 | 428 | 22 | 197 | 203 | 24 | 6 | 20 | 10 | 2100 | 3720 | 1470 | 2604 | 12,6 | 120 |
| RC 320 N | 320 | 320 | 430 | 448 | 22 | 207 | 213 | 24 | 6 | 20 | 10 | 2340 | 4200 | 1638 | 2940 | 13,3 | 120 |
| RC 340 N | 340 | 340 | 450 | 468 | 22 | 217 | 223 | 24 | 6 | 20 | 10 | 2580 | 4680 | 1806 | 3276 | 14,0 | 120 |

This technical data applies to the RotoClamp N Standard. Data for the RotoClamp N Active is available on request.



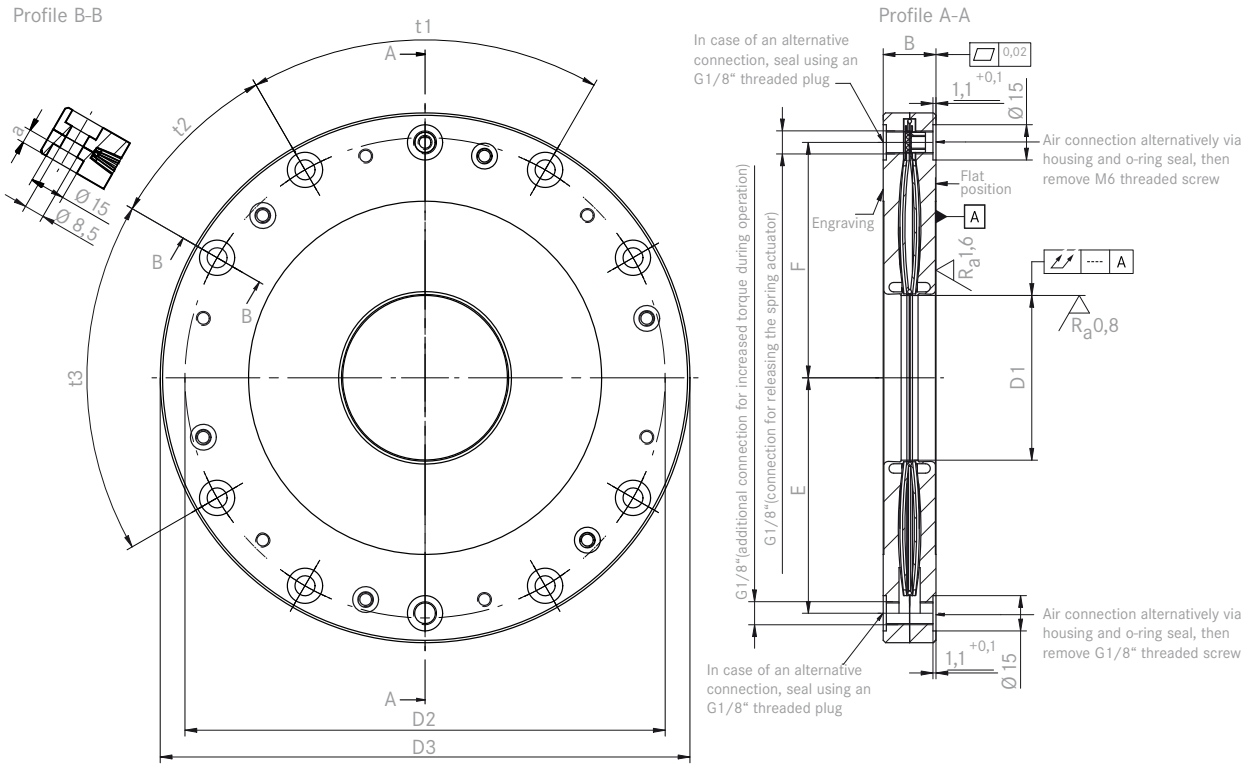
# Technical data



## Technical data of the RotoClamp L

| Size | D1 opened at rated pressure Pn = 4 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws M8 | a | t1 | t2 | t3 | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secondary air at 4 Bar Pn = 4 Bar | Max. mass | Air requirements per max. stroke. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [°] | [°] | [°] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | +0,04/+0,06 | -0,01/-0,025 | ± 0,1 | | +0,4 | | | | | | | | | | | |
| Roundness | 0,01 | 0,01 | | | | | | | | | | | | | | |
| Surface finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | |
| RC 70 L | 70 | 70 | 204 | 225 | 22 | 100 | 100 | 8 | 6 | 60 | 30 | 60 | 114 | 210 | 6,2 | 50 |
| RC 140 L | 140 | 140 | 274 | 295 | 22 | 135 | 135 | 16 | 6 | 30 | 15 | 30 | 456 | 840 | 9,1 | 100 |
| RC 180 L | 180 | 180 | 314 | 335 | 22 | 155 | 155 | 22 | 6 | 30 | 15 | 15 | 750 | 1380 | 10,8 | 100 |
| Tolerance | +0,05/+0,07 | -0,01/-0,03 | ± 0,2 | | +0,4 | | | | | | | | | | | |
| Roundness | 0,015 | 0,015 | | | | | | | | | | | | | | |
| RC 200 L | 200 | 200 | 334 | 355 | 22 | 165 | 165 | 22 | 6 | 30 | 15 | 15 | 930 | 1680 | 11,7 | 100 |
| RC 240 L | 240 | 240 | 374 | 395 | 22 | 185 | 185 | 34 | 6 | 20 | 10 | 10 | 1350 | 2400 | 13,3 | 150 |
| RC 280 L | 280 | 280 | 414 | 435 | 22 | 205 | 205 | 34 | 6 | 20 | 10 | 10 | 1800 | 3240 | 14,9 | 150 |
| RC 320 L | 320 | 320 | 454 | 475 | 22 | 225 | 225 | 34 | 6 | 20 | 10 | 10 | 2340 | 4200 | 16,7 | 150 |
| RC 340 L | 340 | 340 | 474 | 495 | 22 | 235 | 235 | 34 | 6 | 20 | 10 | 10 | 2580 | 4680 | 17,5 | 150 |

This technical data applies to the RotoClamp L Standard. Data for the RotoClamp L Active is available on request.



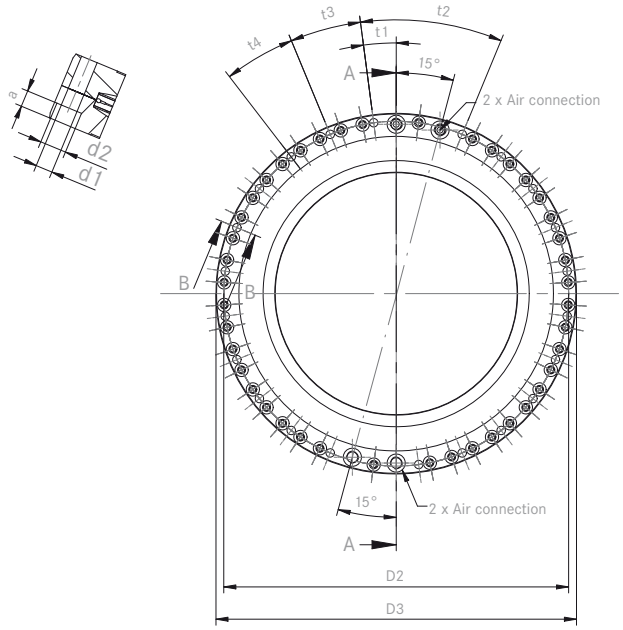
# TECHNICAL DATA

## Technical data of the RotoClamp Y

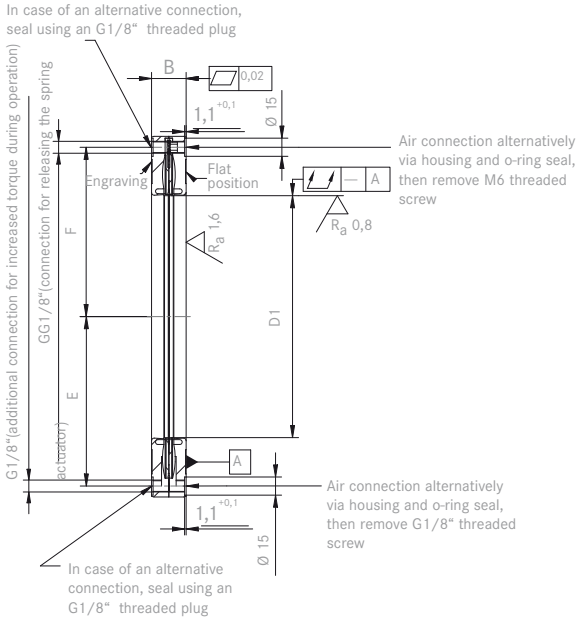
| Size | D1 opened at rated pressure Pn = 4 / 6 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws | a | d1 | d2 | t1 | t2 | t3 | t4 | Elastic holding torque at 0 Bar Pn = 6 Bar | Elastic holding torque with secon-dary air at 6 Bar Pn = 6 Bar | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secon-dary air at 4 Bar Pn = 4 Bar | Max. mass | Air require-ments per max. stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [mm] | [mm] | [°] | [°] | [°] | [°] | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | +0,05/+0,07 | -0,01/-0,03 | ± 0,2 | | +0,4 | | | | | | | | | | | | | | | | |
| Round-ness | 0,015 | 0,015 | | | | | | | | | | | | | | | | | | | |
| Surface finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | | | | | | |
| RC 200 Y | 200 | 200 | 285 | 298 | 28 | 140 | 140 | 22 x M6 | 6,8 | 7 | 11 | 7,5 | 30 | 15 | 15 | 600 | 1000 | 420 | 700 | 8,5 | 100 |
| RC 260 Y | 260 | 260 | 365 | 383 | 30 | 183 | 183 | 24 x M8 | 9,0 | 9 | 15 | 5 | 10 | 20 | 10 | 1600 | 2900 | 1120 | 2030 | 14,5 | 100 |
| RC 325 Y | 325 | 325 | 430 | 448 | 30 | 215 | 215 | 24 x M8 | 9,0 | 9 | 15 | 5 | 10 | 20 | 10 | 2300 | 4100 | 1610 | 2870 | 17,5 | 120 |
| Tolerance | +0,05/+0,07 | -0,01/-0,03 | ± 0,2 | | +0,4 | | | | | | | | | | | | | | | | |
| Round-ness | 0,020 | 0,015 | | | | | | | | | | | | | | | | | | | |
| RC 395 Y | 395 | 395 | 505 | 523 | 36 | 252,5 | 252,5 | 48 x M8 | 9 | 9 | 15 | 3,75 | 7,5 | 7,5 | 7,5 | 3300 | 6100 | 2310 | 4270 | 26 | 160 |
| Tolerance | +0,06/+0,08 | -0,01/-0,03 | ± 0,2 | | +0,4 | | | | | | | | | | | | | | | | |
| Round-ness | 0,020 | 0,015 | | | | | | | | | | | | | | | | | | | |
| RC 460 Y | 460 | 460 | 580 | 598 | 36 | 290 | 290 | 48 x M8 | 9 | 9 | 15 | 3,75 | 7,5 | 7,5 | 7,5 | 4600 | 8400 | 3220 | 5880 | 32 | 240 |

This technical data applies to the RotoClamp Y Standard. Data for the RotoClamp Y Active is available on request.

Profile B-B




Profile A-A



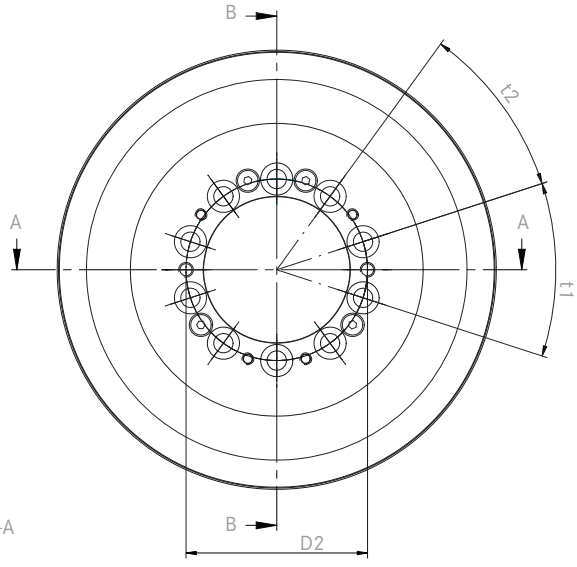
# Technical data

## Technical Data RotoClamp Outside S

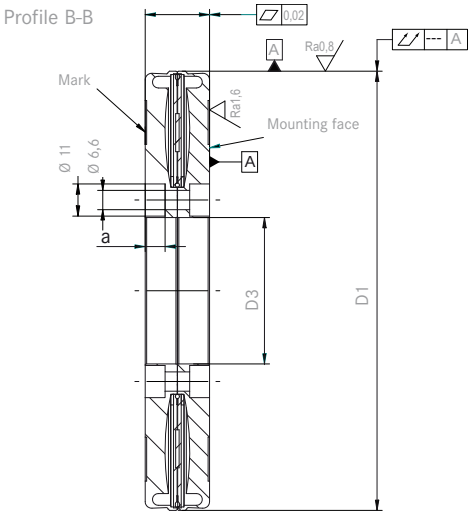
| Size | D1 opened at rated pressure Pn = 4/6 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws | a | t1 | t2 | Elastic holding torque at 0 Bar Pn = 6 Bar | Elastic holding torque with secondary air at 6 Bar Pn = 6 Bar | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secondary air at 4 Bar Pn = 4 Bar | max. Mass | Air require-ments per max stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [°] | [°] | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | -0,035/-0,05 | +0,01/+0,025 | ± 0,1 | | +0,4 | | | | | | | | | | | | |
| Round-ness | 0,01 | 0,01 | | | | | | | | | | | | | | | |
| Surface finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | | |
| RCO 150 S | 150 | 150 | 62 | 50 | 22 | 31 | 31 | 10 x M6 | 6,8 | 36 | 36 | 250 | 460 | 170 | 320 | 2 | 20 |
| RCO 170 S* | 170 | 170 | 82 | 20 | 22 | 41 | 41 | 12 x M6 | 6,8 | 30 | 30 | 359 | 650 | 251 | 454 | 2,2 | 25 |

This technical data applies to the RotoClamp S Standard. Data for the RotoClamp S Active is available on request.
*Preliminary data

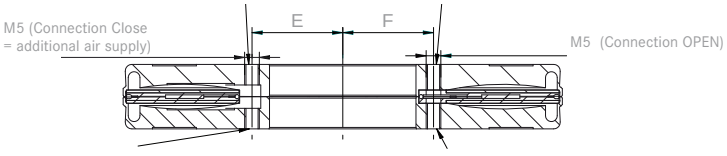





Profile A-A




In case of alternative connection, seal using M5 screw.



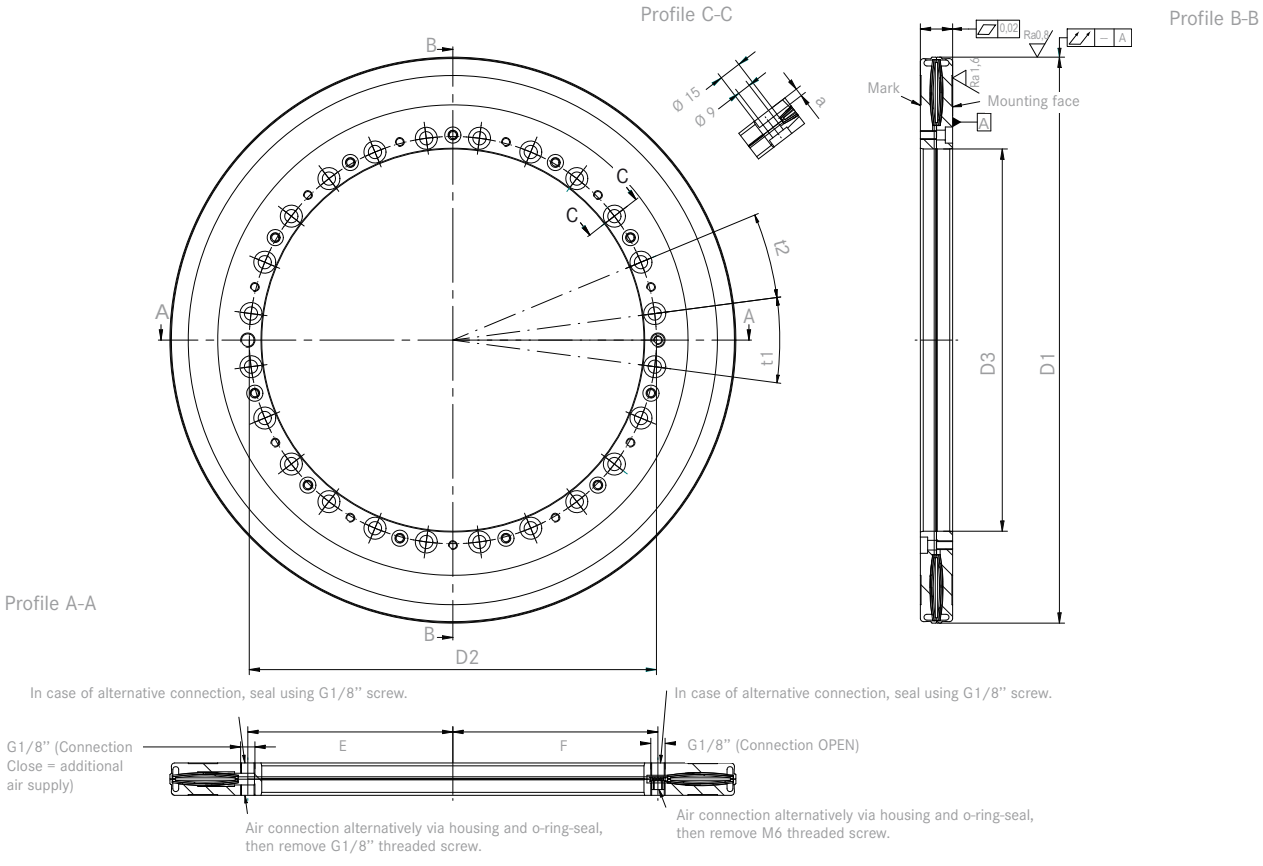

Air connection alternatively via housing and o-ring-seal, then remove M5 threaded screw.

# TECHNICAL DATA

## Technical Data RotoClamp Outside N

| Size | D1 opened at rated pressure Pn = 4/6 Bar | Required shaft diameter | D2 | D3 | B | E | F | n number of fixing screws | a | t1 | t2 | Elastic holding torque at 0 Bar Pn = 6 Bar | Elastic holding torque with secondary air at 6 Bar Pn = 6 Bar | Elastic holding torque at 0 Bar Pn = 4 Bar | Elastic holding torque with secondary air at 4 Bar Pn = 4 Bar | Mase max. | Air require-ments per max stroke |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | Quantity | [mm] | [°] | [°] | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [mL] |
| Tolerance | -0,045/-0,065 | +0,01/+0,03 | ± 0,1 | | +0,4 | | | | | | | | | | | | |
| Round-ness | 0,015 | 0,015 | | | | | | | | | | | | | | | |
| Surface-finish | $R_a$ 0,8 µm | $R_a$ 0,8 µm | | | | | | | | | | | | | | | |
| RCO 195 N* | 195 | 195 | 87 | 70 | 22 | 44,5 | 44,5 | 10 x M8 | 5,5 | 36 | 36 | 456 | 819 | 328 | 573 | 3,1 | 60 |
| RCO 255 N* | 255 | 255 | 147 | 130 | 22 | 74,5 | 74,5 | 16 x M8 | 5,5 | 22,5 | 22,5 | 1080 | 1944 | 756 | 1361 | 4,5 | 80 |
| RCO 315 N* | 315 | 315 | 207 | 190 | 22 | 104,5 | 104,5 | 18 x M8 | 5,5 | 20 | 20 | 1887 | 3468 | 1321 | 2428 | 6,1 | 100 |
| RCO 385 N | 385 | 385 | 277 | 260 | 22 | 139,5 | 139,5 | 24 x M8 | 5,5 | 15 | 15 | 3100 | 5500 | 2100 | 3800 | 7 | 120 |

This technical data applies to the RotoClamp N Standard. Data for the RotoClamp N Active is available on request.
*Preliminary data

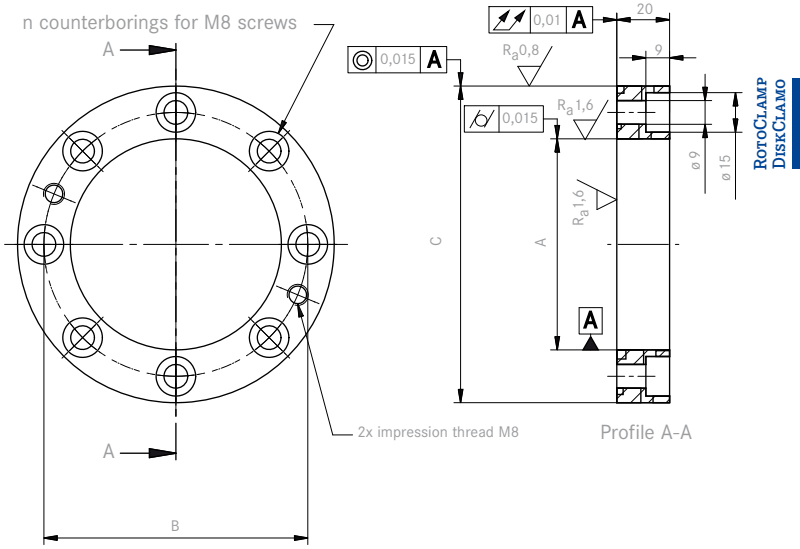


# Options/Installation

## RotoClamp with optional shaft flange

RotoClamp can also be delivered as a complete solution with the shaft flange manufactured to your specifications using various materials. The optional clamping flange is available in the following qualities: hardened with case-hardened steel or plasma-coated steel.

| Size | Ø A | Ø B | Ø C | n counter-sinkings |
|---|---|---|---|---|
| Tolerance | H7 | ±0,1 mm | - 0,010<br>- 0,030 | |
| 100 | 60 | 80 | 120 | 8 |
| 120 | 80 | 100 | 120 | 8 |
| 140 | 100 | 120 | 140 | 8 |
| 160 | 110 | 136 | 160 | 12 |
| 180 | 130 | 156 | 180 | 12 |
| 200 | 150 | 176 | 200 | 12 |
| 220 | 170 | 196 | 220 | 12 |
| 240 | 190 | 216 | 240 | 12 |
| 260 | 210 | 236 | 260 | 12 |
| 280 | 230 | 256 | 280 | 12 |
| 300 | 250 | 276 | 300 | 12 |
| 320 | 270 | 296 | 320 | 12 |




## Installation and assembly

### General

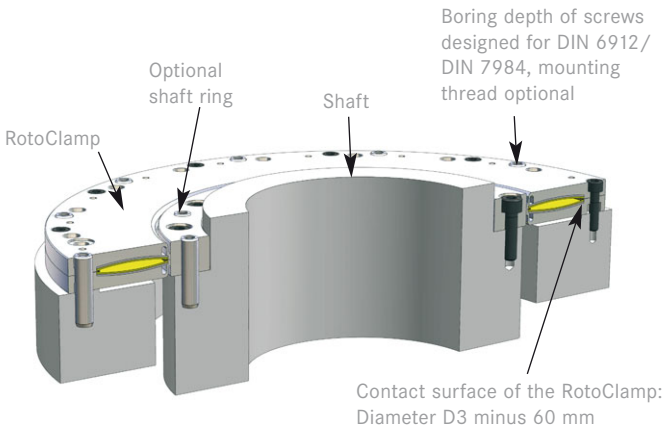
- To transfer the maximum clamping forces, the connection to the machine structure should be as rigid as possible.
- The characteristics indicated for the clamping elements can only be achieved by correct construction, manufacturing, assembly and use of the system.

### Assembly instructions of the shaft flange

- The seating at the shaft should be a g6-fit. The shaft flange is placed on the flat machined side, screwed down lightly and then aligned for smooth running.
- The required tightening torque for the tightening screws M8/12,9 is 44 Nm in order to transfer the maximum torque.

### Assembly instructions of the RotoClamp

- Compressed air is applied to the RotoClamp and it is opened. Clamping can then be initiated via the shaft. The RotoClamp is then placed on the flat matching side and screwed down with a reduced torque.
- The compressed air is then reduced to 0 Bar, thereby activating the clamping. This procedure centres the clamping mechanism relative to the shaft The RotoClamp must be free at the outer diameter (>1 mm) to ensure safe function.
- After the RotoClamp is centred in the intended position, the fixing screws are tightened cross-wise in several phases to the defined torque.
- After fixing, the clamping mechanism is opened and a check is made whether the shaft can be turned freely. Only this ensures correct function.

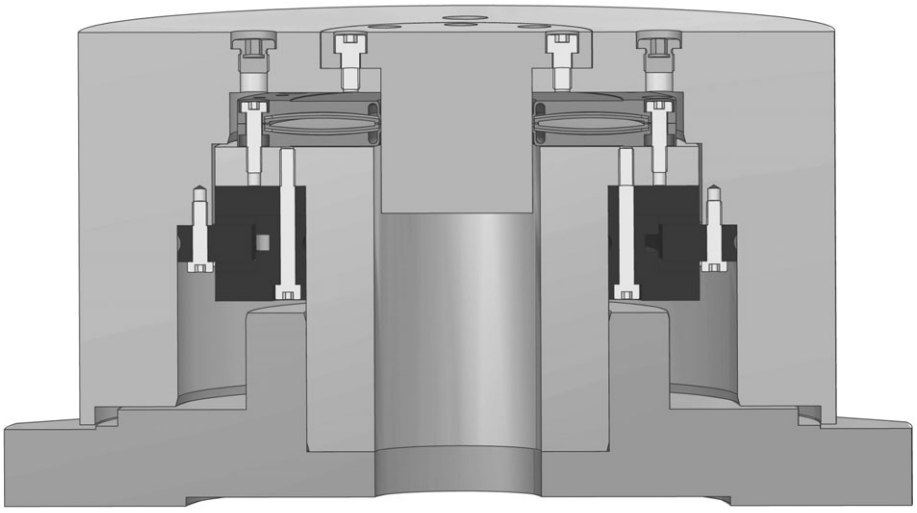



Make sure that there is a rigid connection and correct attachment to transmit the forces!

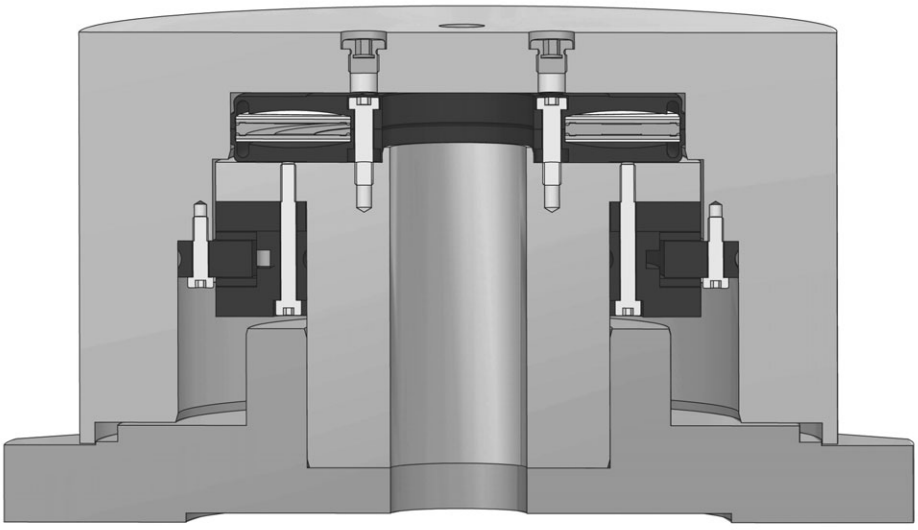
# DETAILS OF CONSTRUCTION

## Design recommendations

- The accuracy of the clamping surface is established by matching the precision ground inside diameter to the flat machined mounting surface of the RotoClamp. The total running tolerance of the clamping surface to the defined flat matching surface is smaller than 0.02 mm.
- The contact width of the clamping surface is between 2.5 and 4 mm, depending on the gap width. In this area, compressive stresses up to max. 180 N/mm² arise at the clamping diameter when using the secondary air function.
- Transferable torque (example): When using 12,9 M8 screws and at a prestressing force of 30700 N for each screw and a coefficient of friction of μ=0.1 and a radius of 100 mm, a transferable torque of 307 Nm is achieved for each screw.
- The roundness and radial eccentricity of the shaft in assembled state should be < 0.02 mm.
- The total running tolerance of the plane surface to the shaft for attaching the clamping mechanism should be < 0.02 mm.
- The flat attachment should not be wider than D3-60 mm.
- The RotoClamp must be free at the outer diameter (RotoClamp Inside) or at the inside diameter (RotoClamp Outside) to be able to centre itself.



View: RotoClamp Inside in mounting position (suggestion)



View: RotoClamp Outside in mounting position (suggestion)

# Technical Data

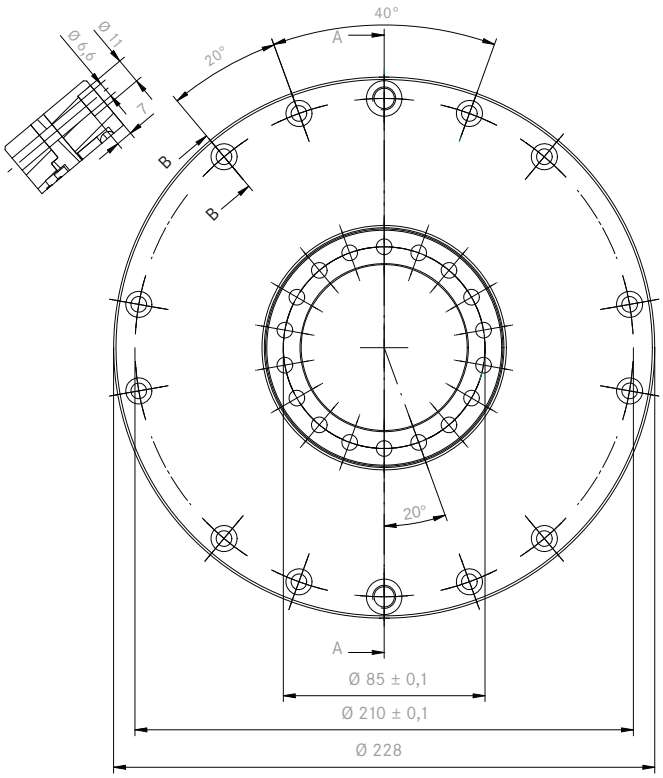
## DiskClamp - Security clamping system with Emergency brake

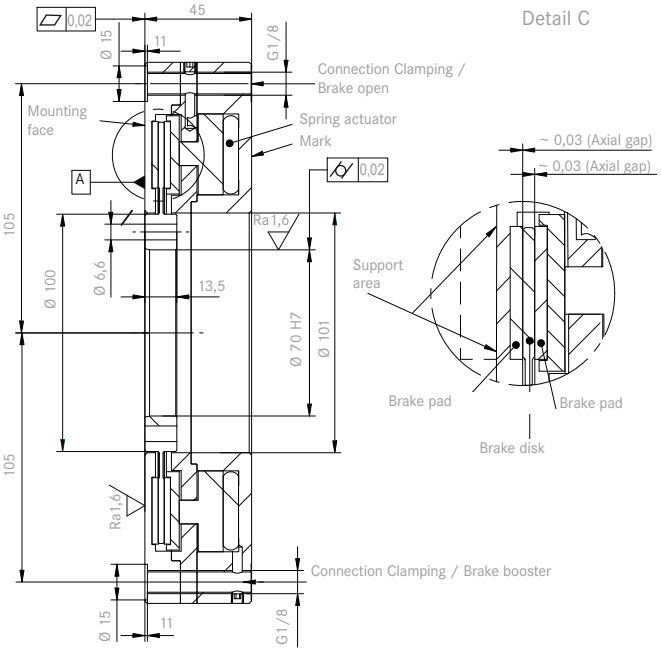
### Technical Data DiskClamp

| Size | Brake clamping torque at 0 Bar Pn = 6 Bar | Brake clamping torque with booster at 6 Bar Pn = 6 Bar | Brake clamping torque at 0 Bar Pn = 4 Bar | Brake clamping torque with booster at 4 Bar Pn = 4 Bar | Mass Brake disk | Mass max. | Air requirements per max stroke |
|---|---|---|---|---|---|---|---|
| Unit | [Nm] | [Nm] | [Nm] | [Nm] | [kg] | [kg] | [mL] |
| DC 100 | 240 | 420 | 160 | 290 | 0,65 | 10 | 60 |



Profile B-B




Profil A-A

HEMA CLAMPING SYSTEMS

# REQUEST FORM

Please send by fax to +49 6182 773-35

Company name:

Address: Country/Zip/Location:

Contact: Area/Department:

Telephone: DID: Fax: Direct:

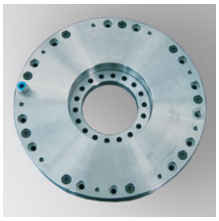
E-Mail: Internet:

**RotoClamp systems can be adjusted for various applications. The following criteria decide on the configuration of the system. Please enter the information as completely and detailed as possible.**

Model (please check):

☐ RotoClamp Outside
☐ S ☐ N

☐ RotoClamp Inside (A = Aktiv)
☐ S ☐ N ☐ L ☐ Y
☐ SA ☐ NA ☐ LA ☐ YA



☐ DiskClamp

Type designation according to the table:

Clamping cycles: per

special requirement:

Clamping torque: Nm

Planned connection pressure:

☐ 4 Bar ☐ 6 Bar

Dimensions:

Outer diameter D3: mm

Inside diameter D1: mm

Fixing diameter D2: mm

Overall height:

Standard bore according to drawing:

☐ Yes ☐ No

In case of deviation, please enclose the drawing for the application or mail to info@hema-schutz.de.

Optional shaft flange:

Required quantity:

Date of delivery:

☐ Please call back ☐ Please visit

Other:

You can also download this form at:
**www.hema-schutz.de.**

# RotoClamp / DiskClamp