# Series CGPS self-centering parallel grippers with double ball bearing guide

New

Single and double acting, magnetic, self-centering
Bores: Ø 10, 16, 20, 25, 32 mm

**Thanks to the use of a high performing and precise force transmission system and to the double ball bearing guide, the Series CGPS grippers are able to provide high gripping forces while guaranteeing a very high repeatability and robustness (resistance to external static and dynamic loads).**

The wide range of sizes available allows you to find the best solution for any need of movement. The grippers can be supplied with bushes and centering plugs (tolerance H8) which, once positioned on the body and/or on the jaws, are able to guarantee, during maintenance, a high interchangeability of the gripper and of the extensions.

- Robust, compact and light design
- High closing/opening forces
- Fixing from below and from the side
- Supply on the side
- Self-centering jaws
- High closing and opening repeatability
- High interchangeability (bushes and centering plugs)
- Position detection (front and side) thanks to the use of Series CSD magnetic proximity switches
- In compliance with ROHS directive
- Finger types available: long with through-holes and flat with threaded holes
- High resistance to external loads thanks to the double ball bearing guide
- Variants available: for use in ATEX zones and for high temperatures

## GENERAL DATA

| | |
|---|---|
| **Type of construction** | Self-centering parallel gripper with double ball bearing guide |
| **Operation** | Single acting (NO, NC), double acting |
| **Bores** | Ø 10, 16, 20, 25, 32 mm |
| **Force transmission** | Lever |
| **Air connections** | M3-M5 (M3 for size 10 only) |
| **Working pressure** | 2 ÷ 8 bar (double acting), 4 ÷ 8 bar (single acting) |
| **Working temperature** | 5°C ÷ 60°C (standard); 5°C ÷ 150°C (high temperature version) |
| **Store temperature** | -10°C ÷ 80°C |
| **Maximum use frequency** | 3 Hz |
| **Repeatability** | 0.02 mm |
| **Interchangeability** | 0.1 mm |
| **Medium** | Filtered air in class 7.4.4 according to ISO 8573-1. In case lubricated air is used, we recommend ISOVG32 oil and to never interrupt lubrication. |
| **Compatibility** | ROHS Directive |
| **Certifications** | ATEX (II 2GD c IIC 120°C(T4)-20°C≤Ta≤80) |
| **Materials** | PTFE, Silicone and Copper free |
| **Suitable magnetic switches** | Series CSD |

NOTE: Pressurize the pneumatic system gradually in order to avoid uncontrolled movements

## CODING EXAMPLE

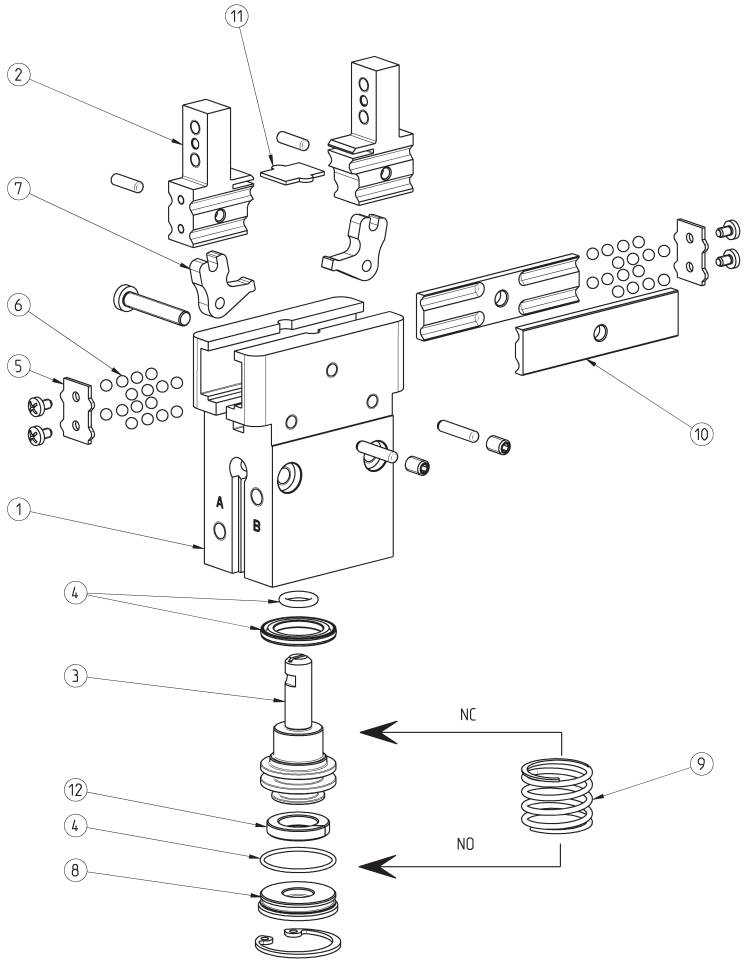
| CGPS | - | L | - | 16 | - | NO | - | W | EX |
|---|---|---|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| CGPS | SERIES | |
| L | DESIGN TYPE:<br>L = Long finger<br>F = Flat finger | |
| 16 | BORES:<br>10 = ø 10 mm<br>16 = ø 16 mm<br>20 = ø 20 mm<br>25 = ø 25 mm<br>32 = ø 32 mm | |
| NO | FUNCTIONING:<br>= double acting<br>NO = single acting, normally open<br>NC = single acting, normally closed | PNEUMATIC SYMBOLS<br>PNZ1<br>PNZ3<br>PNZ2 |
| W | VERSION:<br>= standard<br>W = high temperatures (150°C) | |
| EX | Add EX to order the certified ATEX version | |

## PNEUMATIC SYMBOLS

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.

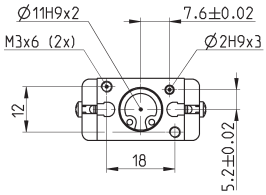
# Series CGPS grippers - construction

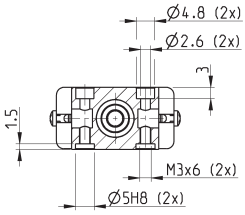


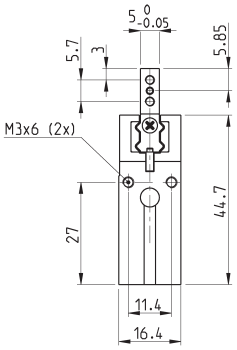

| LIST OF COMPONENTS | |
|---|---|
| PARTS | MATERIALS |
| **1 - Body** | Aluminium |
| **2 - Jaw** | Stainless steel |
| **3 - Piston** | Stainless steel |
| **4 - Seals** | HNBR / FKM |
| **5 - Ball bearings end cap** | Stainless steel |
| **6 - Slide ball bearings** | Steel |
| **7 - Levers** | Steel |
| **8 - Rear end-stroke** | Pom (Acetal) |
| **9 - Spring** | Stainless steel |
| **10 - Ball bearings guide** | Stainless steel |
| **11 - Jaws end cap** | Steel |
| **12 - Magnet** | Plastoferrite |

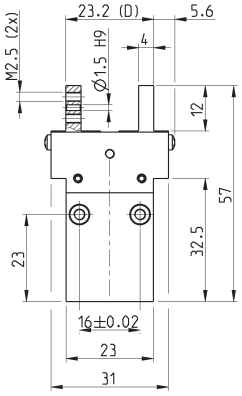
## CGPS gripper, size 10 mm - dimensions

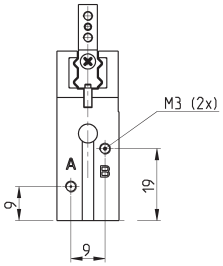
DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper

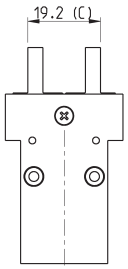


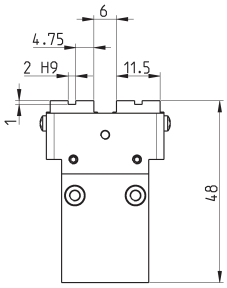



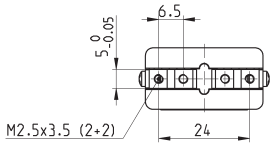



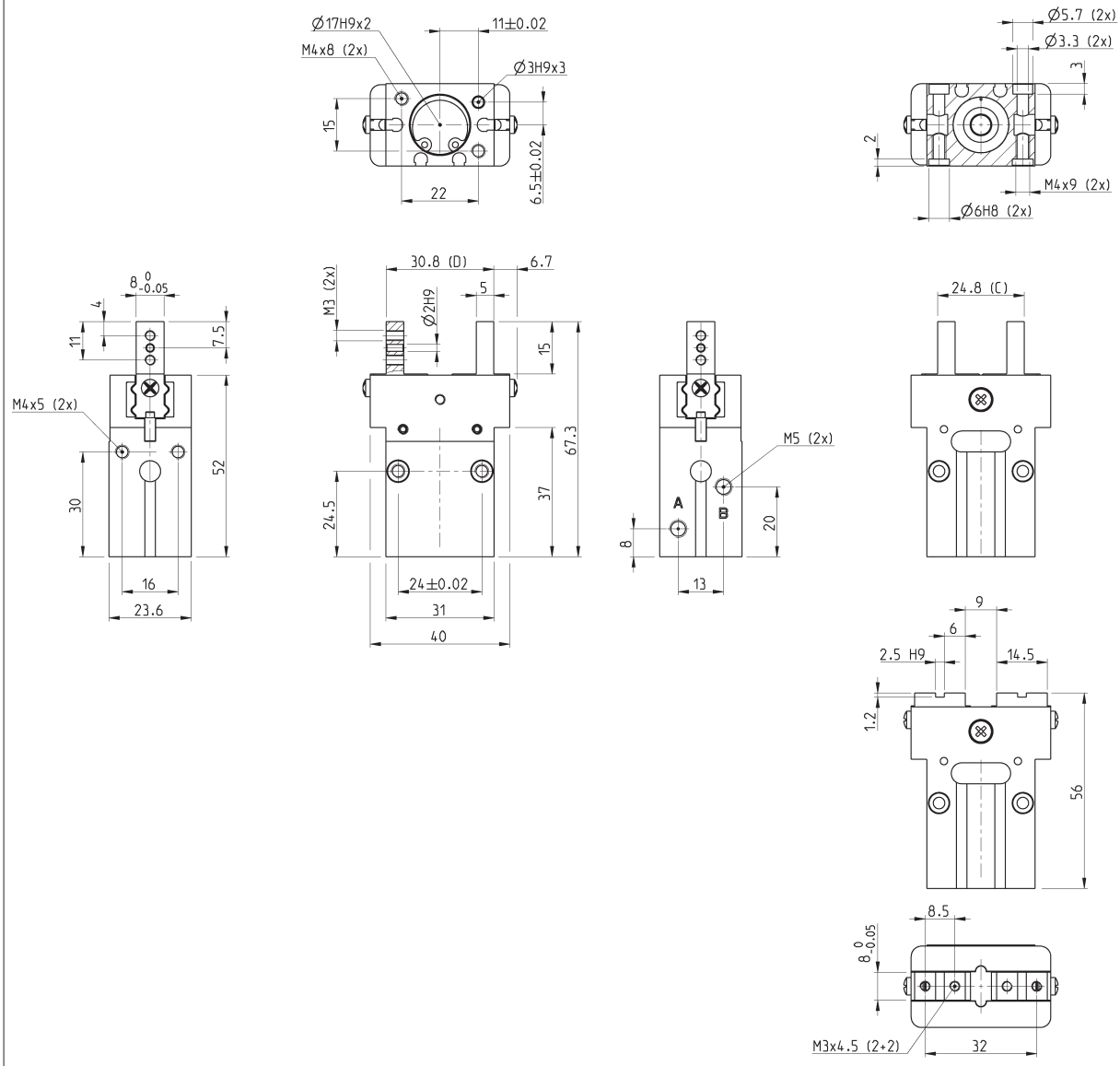




| Mod. | Closing gripping force each jaw at 6 bar (N) | Opening gripping force each jaw at 6 bar (N) | Stroke per jaw (mm) | Air consumption per cycle (Ncm³) | Working pressure (bar) | Working temperature (°C) | Repeatability (mm) | Max use frequency (Hz) | Weight (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CGPS-L-10** | 17 | 23 | 2 | 1.9 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.057 |
| **CGPS-F-10** | 17 | 23 | 2 | 1.9 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.058 |
| **CGPS-L-10-NC** | 21 | 16 | 2 | 1.1 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.058 |
| **CGPS-F-10-NC** | 21 | 16 | 2 | 1.1 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.059 |
| **CGPS-L-10-NO** | 10 | 27.5 | 2 | 0.8 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.058 |
| **CGPS-F-10-NO** | 10 | 27.5 | 2 | 0.8 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.059 |

# CGPS gripper, size 16 mm - dimensions

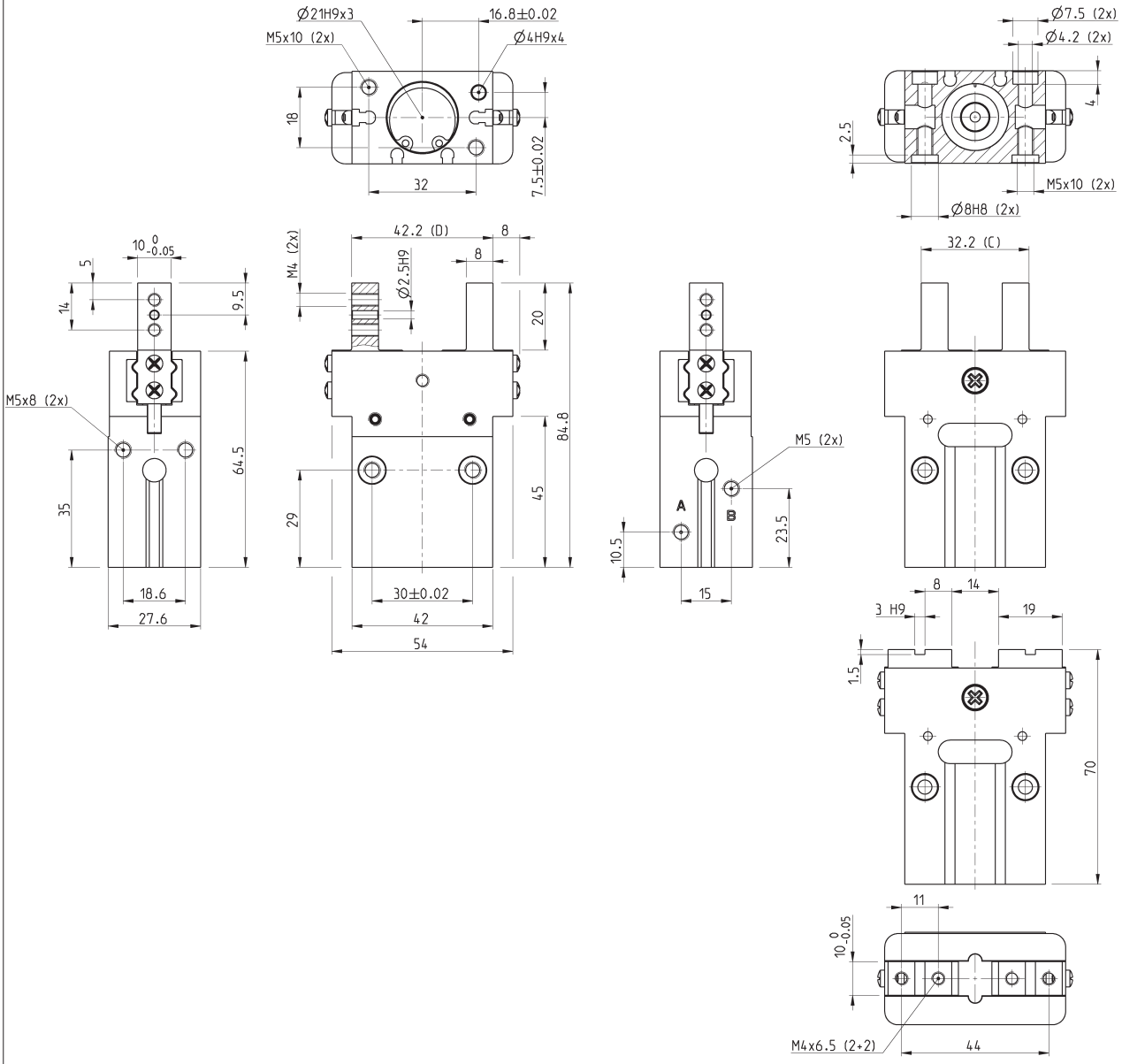
DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper




| Mod. | Closing gripping force each jaw at 6 bar (N) | Opening gripping force each jaw at 6 bar (N) | Stroke per jaw (mm) | Air consumption per cycle (Ncm³) | Working pressure (bar) | Working temperature (°C) | Repeatability (mm) | Max use frequency (Hz) | Weight (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CGPS-L-16** | 49 | 60 | 3 | 7.8 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.127 |
| **CGPS-F-16** | 49 | 60 | 3 | 7.8 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.130 |
| **CGPS-L-16-NC** | 57.7 | 47.5 | 3 | 4.2 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.129 |
| **CGPS-F-16-NC** | 57.7 | 47.5 | 3 | 4.2 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.133 |
| **CGPS-L-16-NO** | 35.5 | 68.5 | 3 | 3.6 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.129 |
| **CGPS-F-16-NO** | 35.5 | 68.5 | 3 | 3.6 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.133 |

## CGPS gripper, size 20 mm - dimensions

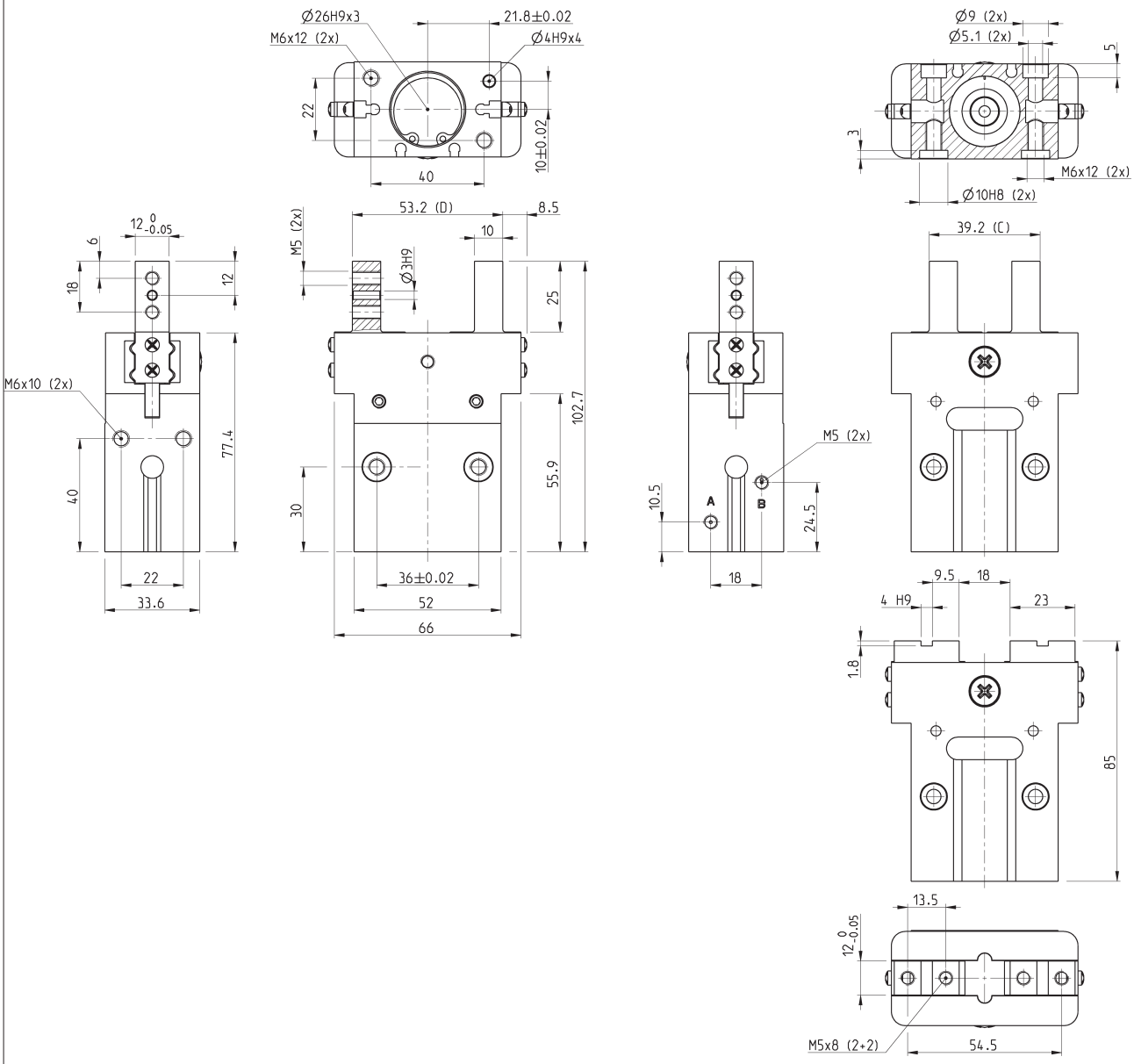
DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper




| Mod. | Closing gripping force each jaw at 6 bar (N) | Opening gripping force each jaw at 6 bar (N) | Stroke per jaw (mm) | Air consumption per cycle (Ncm³) | Working pressure (bar) | Working temperature (°C) | Repeatability (mm) | Max use frequency (Hz) | Weight (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CGPS-L-20** | 71 | 89 | 5 | 20.6 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.248 |
| **CGPS-F-20** | 71 | 89 | 5 | 20.6 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.258 |
| **CGPS-L-20-NC** | 84.5 | 70.5 | 5 | 10.9 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.252 |
| **CGPS-F-20-NC** | 84.5 | 70.5 | 5 | 10.9 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.262 |
| **CGPS-L-20-NO** | 51.5 | 102.5 | 5 | 9.6 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.252 |
| **CGPS-F-20-NO** | 51.5 | 102.5 | 5 | 9.6 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.262 |

## CGPS gripper, size 25 mm - dimensions

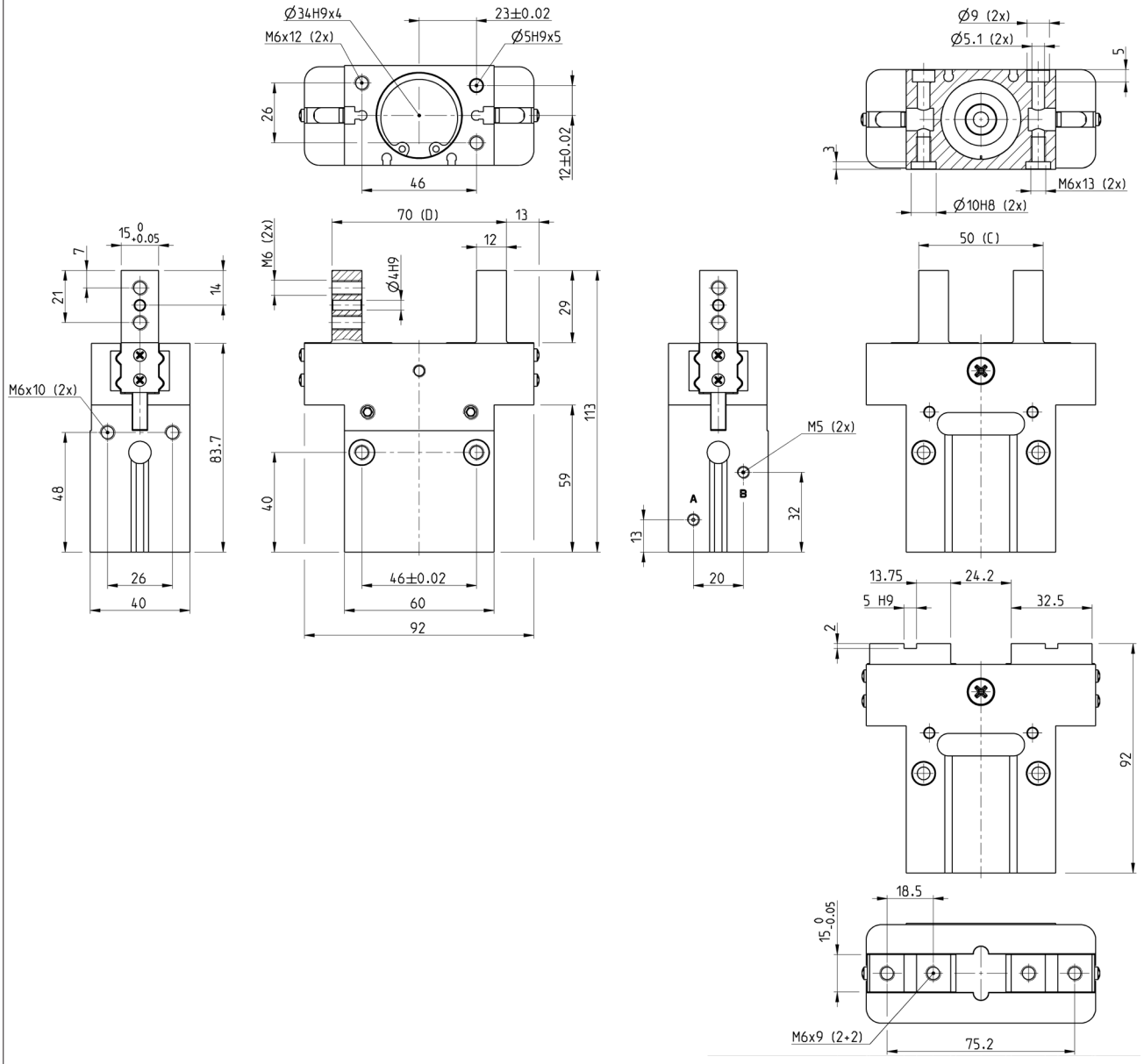
DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper




| Mod. | Closing gripping force each jaw at 6 bar (N) | Opening gripping force each jaw at 6 bar (N) | Stroke per jaw (mm) | Air consumption per cycle (Ncm³) | Working pressure (bar) | Working temperature (°C) | Repeatability (mm) | Max use frequency (Hz) | Weight (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CGPS-L-25** | 125 | 137 | 7 | 44.9 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.447 |
| **CGPS-F-25** | 125 | 137 | 7 | 44.9 | 2 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.464 |
| **CGPS-L-25-NC** | 143.2 | 111 | 7 | 24.1 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.456 |
| **CGPS-F-25-NC** | 143.2 | 111 | 7 | 24.1 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.471 |
| **CGPS-L-25-NO** | 100 | 152 | 7 | 20.9 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.456 |
| **CGPS-F-25-NO** | 100 | 152 | 7 | 20.9 | 4 ÷ 8 | 5 ÷ 60 | +/- 0.02 | 3 | 0.471 |

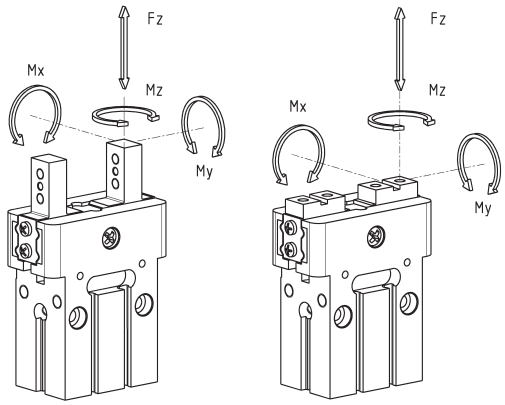
## CGPS gripper, size 32 mm - dimensions

DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper




| Mod. | Closing gripping force each jaw at 6 bar (N) | Opening gripping force each jaw at 6 bar (N) | Stroke per jaw (mm) | Air consumption per cycle (Ncm³) | Working pressure (bar) | Working temperature (°C) | Repeatability (mm) | Max use frequency (Hz) | Weight (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CGPS-L-32** | 195 | 237 | 10 | 104.6 | 2 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.729 |
| **CGPS-F-32** | 195 | 237 | 10 | 104.6 | 2 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.753 |
| **CGPS-L-32-NC** | 212 | 210 | 10 | 56.2 | 4 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.742 |
| **CGPS-F-32-NC** | 212 | 210 | 10 | 56.2 | 4 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.768 |
| **CGPS-L-32-NO** | 167 | 256 | 10 | 48.3 | 4 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.742 |
| **CGPS-F-32-NO** | 167 | 256 | 10 | 48.3 | 4 ÷ 8 | 5 ÷ 60 | +/-0 .02 | 2 | 0.768 |

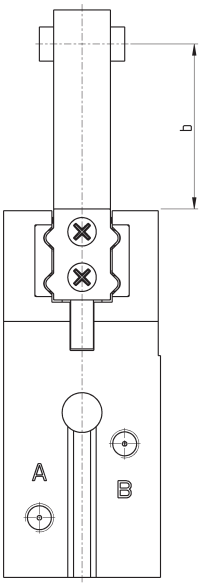
## Maximum admissible loads and torques on the gripper



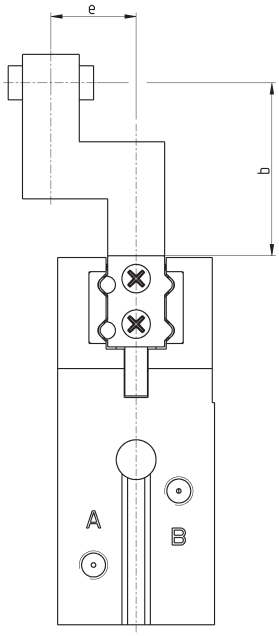

Maximum admissible loads and torques in static conditions

| Mod. | Fz (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|---|---|---|---|---|
| **CGPS-10** | 90 | 0.53 | 2 | 0.21 |
| **CGPS-16** | 160 | 1.2 | 3 | 0.6 |
| **CGPS-20** | 170 | 2.4 | 3.5 | 1.0 |
| **CGPS-25** | 190 | 3.5 | 4.5 | 1.4 |
| **CGPS-32** | 360 | 5.5 | 6 | 2.5 |

## GRIPPING POINT POSITION

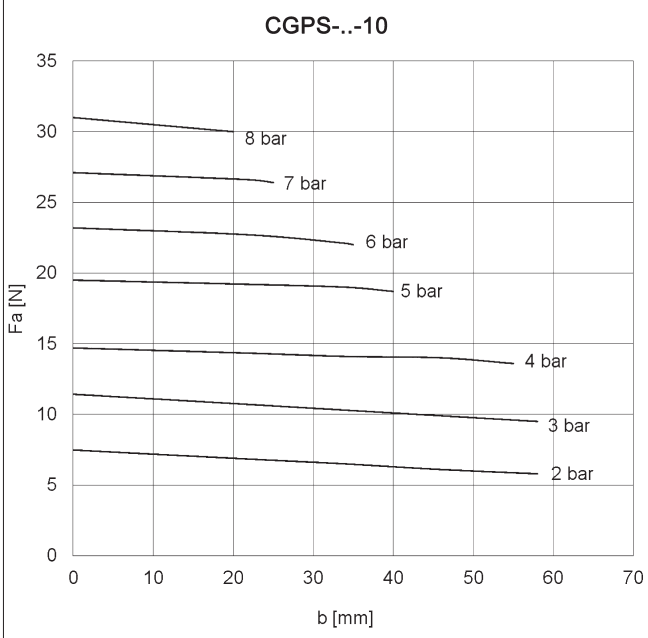



b = gripping point

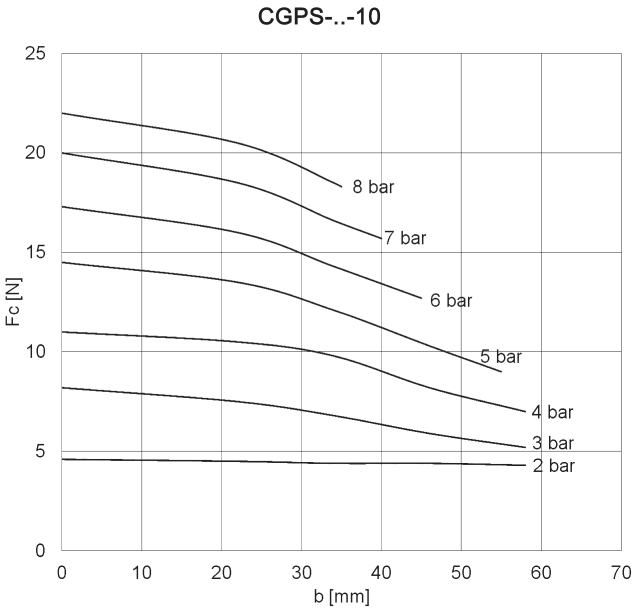



b = gripping point
e = arm

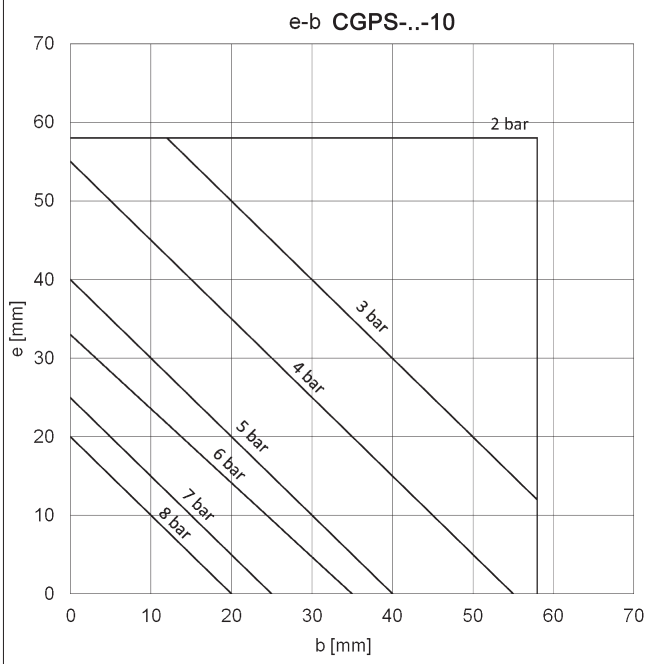
## GRIPPING FORCES Mod. CGPS-..-10




b = gripping point (mm)
Fa = opening gripping force (N)

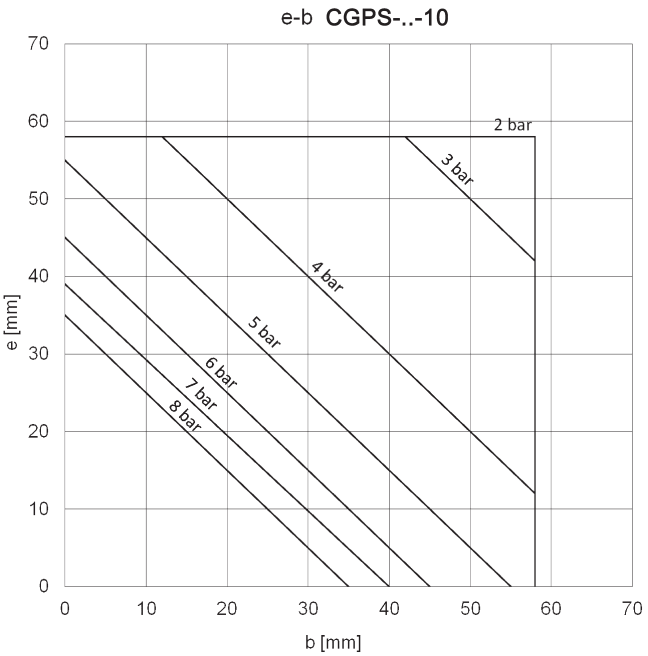



b = gripping point (mm)
Fc = Closing gripping force (N)




Opening gripping force

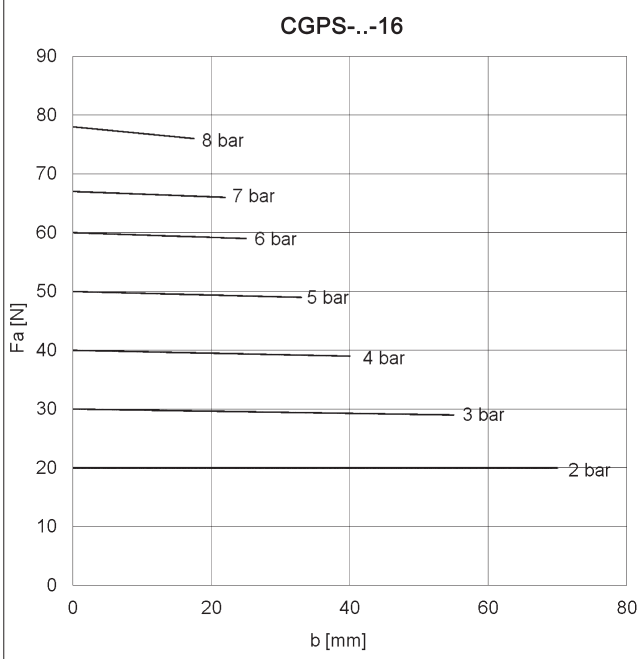
b = gripping point (mm)
e = arm (mm)



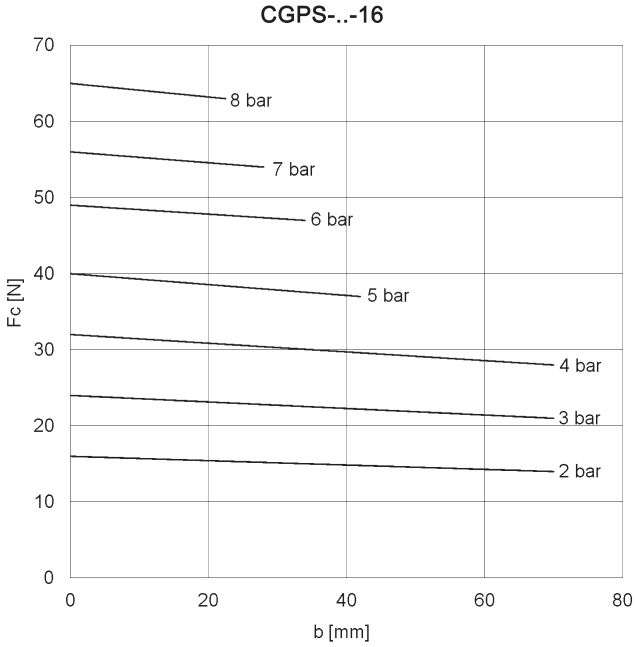

Closing gripping force

b = gripping point (mm)
e = arm (mm)

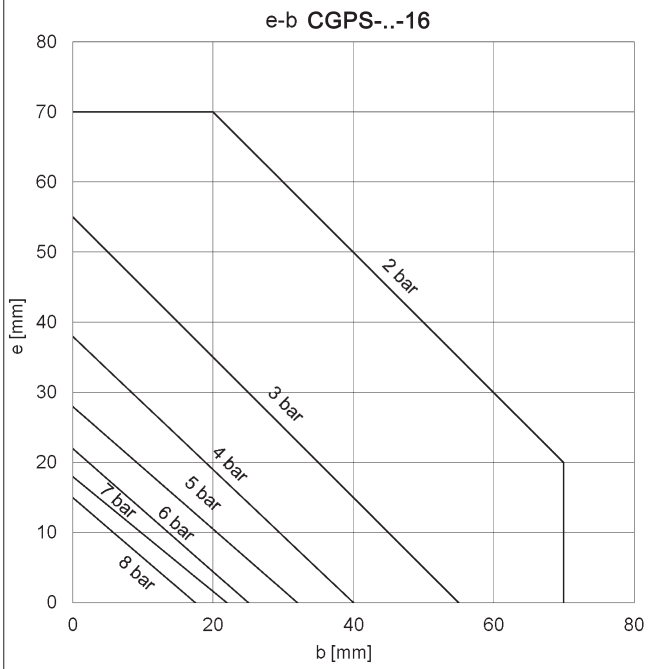
## GRIPPING FORCES Mod. CGPS-..-16




b = gripping point (mm)
Fa = opening gripping force (N)

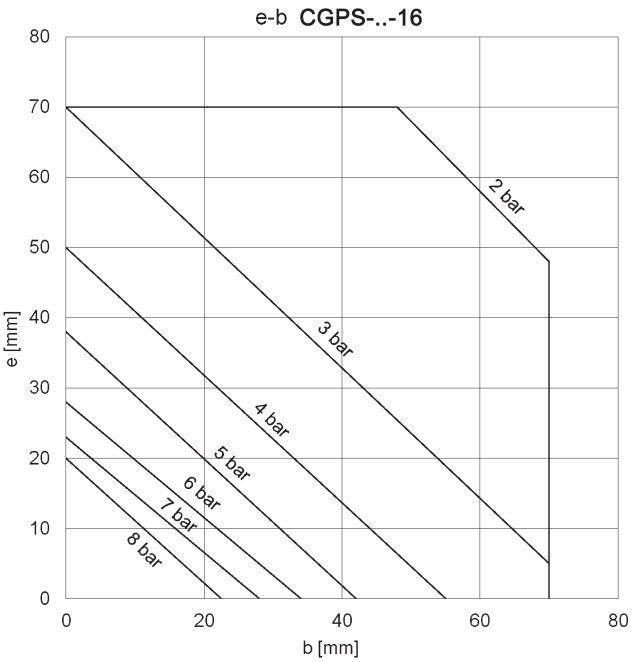



b = gripping point (mm)
Fc = closing gripping force (N)




Opening gripping force

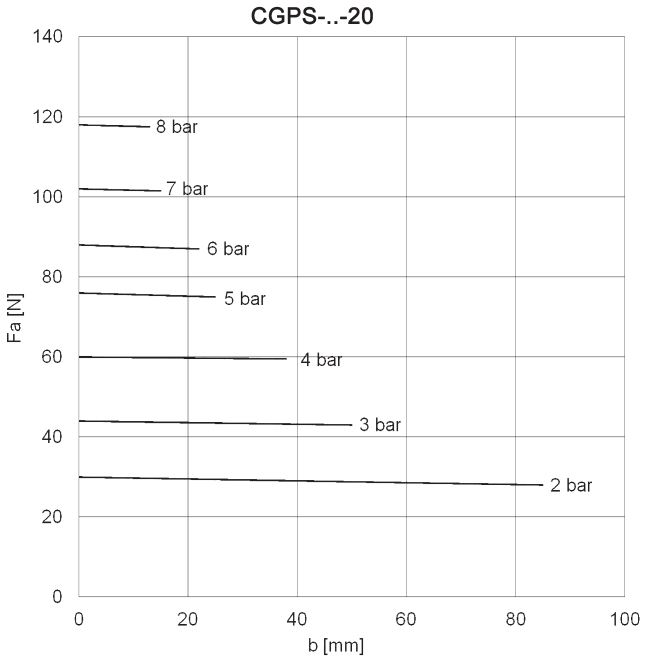
b = gripping point (mm)
e = arm (mm)



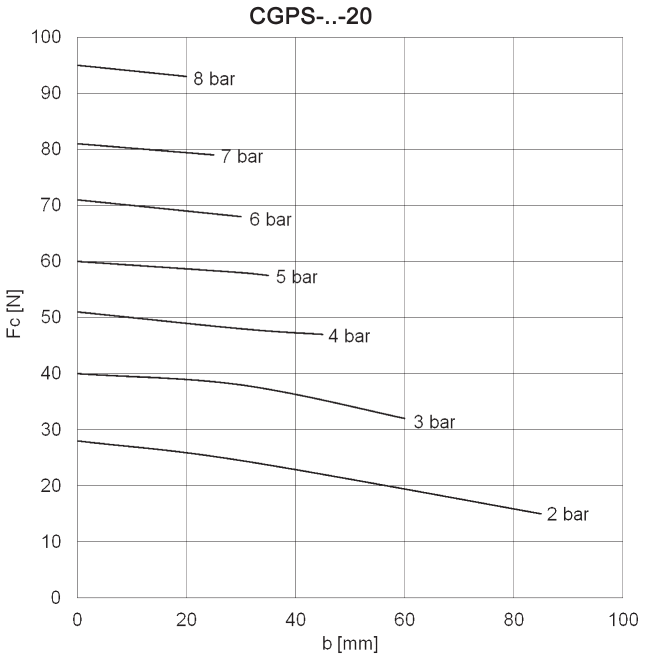

Closing gripping force

b = gripping point (mm)
e = arm (mm)

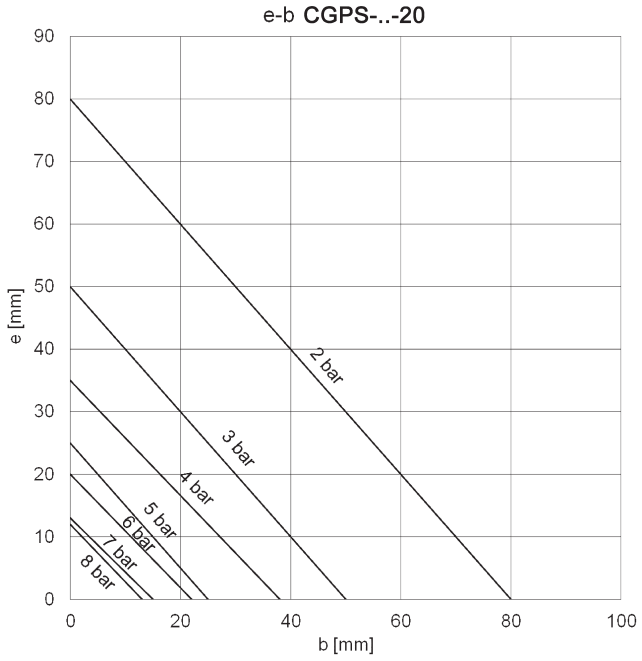
## GRIPPING FORCES Mod. CGPS-..-20




b = gripping point (mm)
Fa = opening gripping force (N)

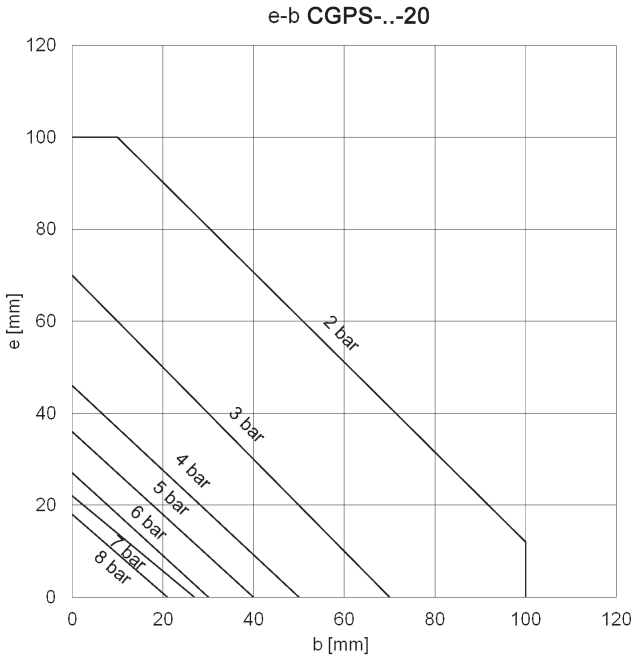



b = gripping point (mm)
Fc = closing gripping force (N)




Opening gripping force

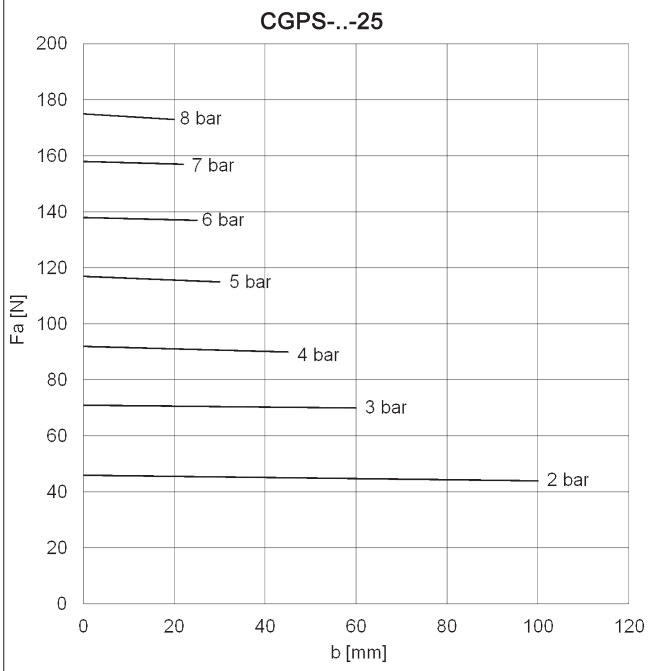
b = gripping point (mm)
e = arm (mm)



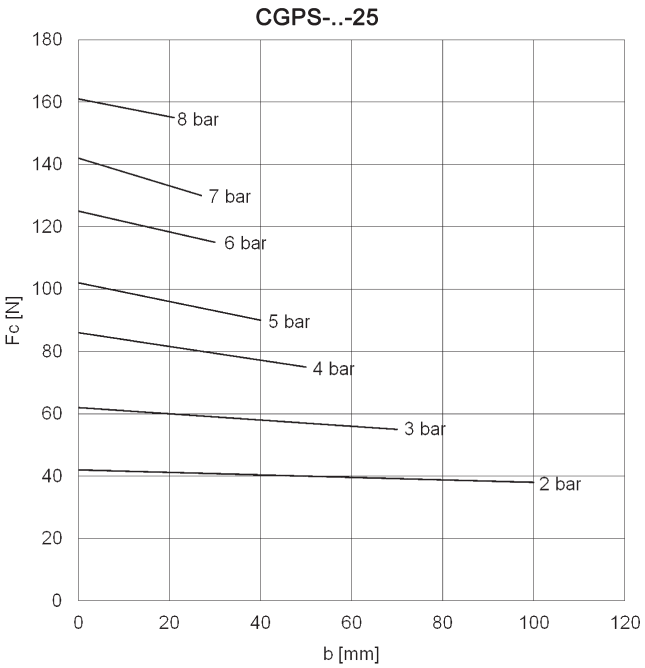

Closing gripping force

b = gripping point (mm)
e = arm (mm)

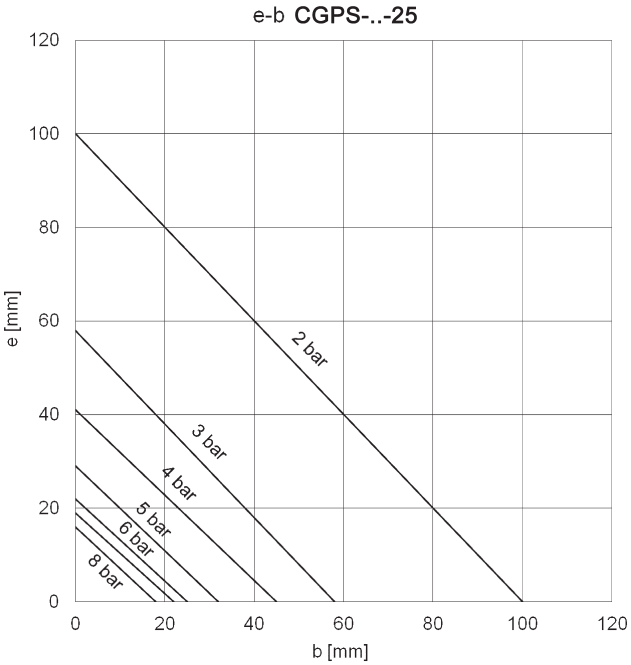
## GRIPPING FORCES Mod. CGPS-..-25




b = gripping point (mm)
Fa = opening gripping force (N)

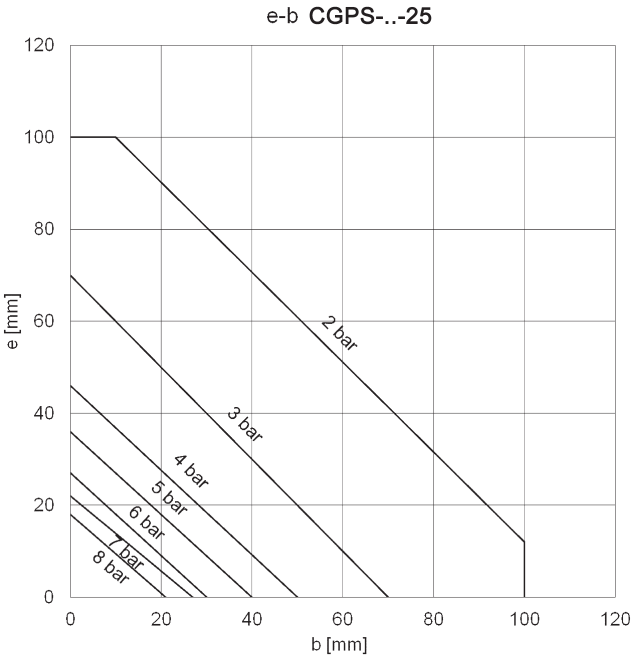



b = gripping point (mm)
Fc = closing gripping force (N)




Opening gripping force

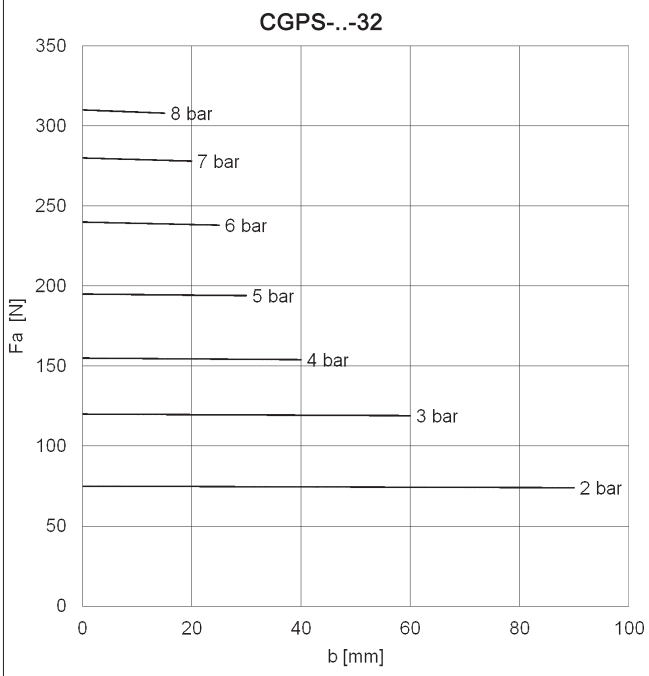
b = gripping point (mm)
e = arm (mm)



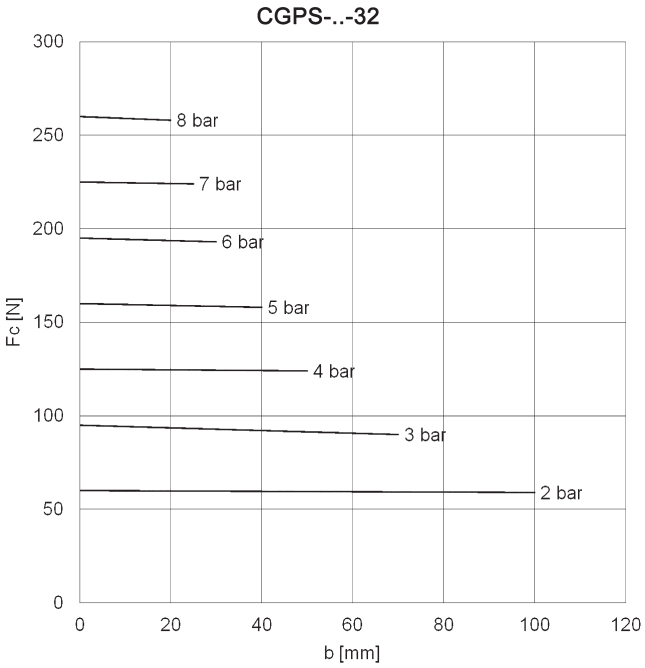

Closing gripping force

b = gripping point (mm)
e = arm (mm)

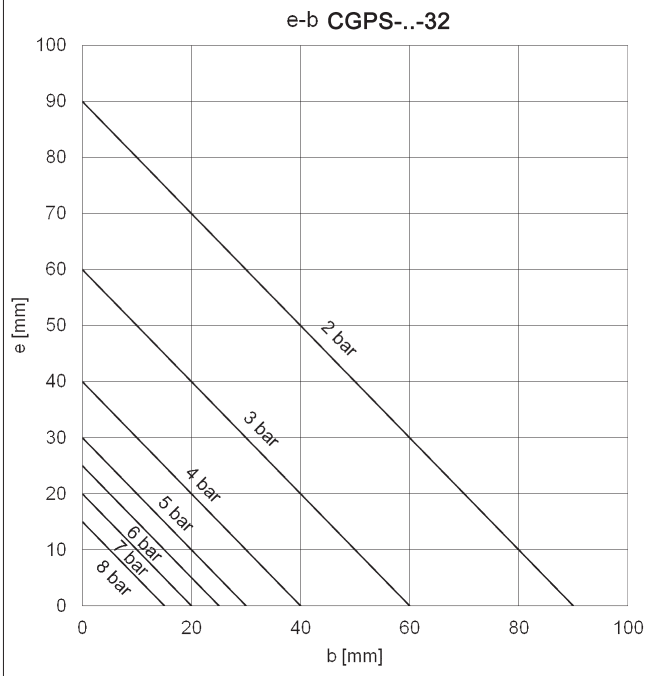
## GRIPPING FORCES Mod. CGPS-..-32




b = gripping point (mm)
Fa = opening gripping force (N)

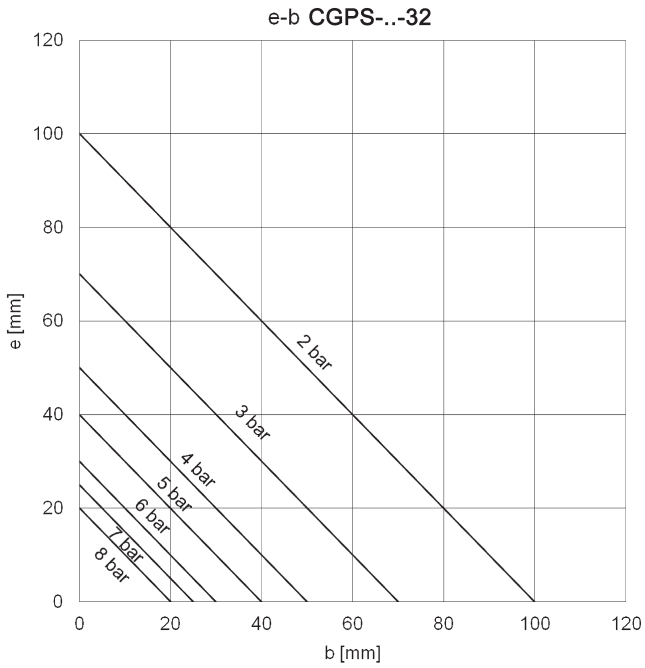



b = gripping point (mm)
Fc = closing gripping force (N)




Opening gripping force

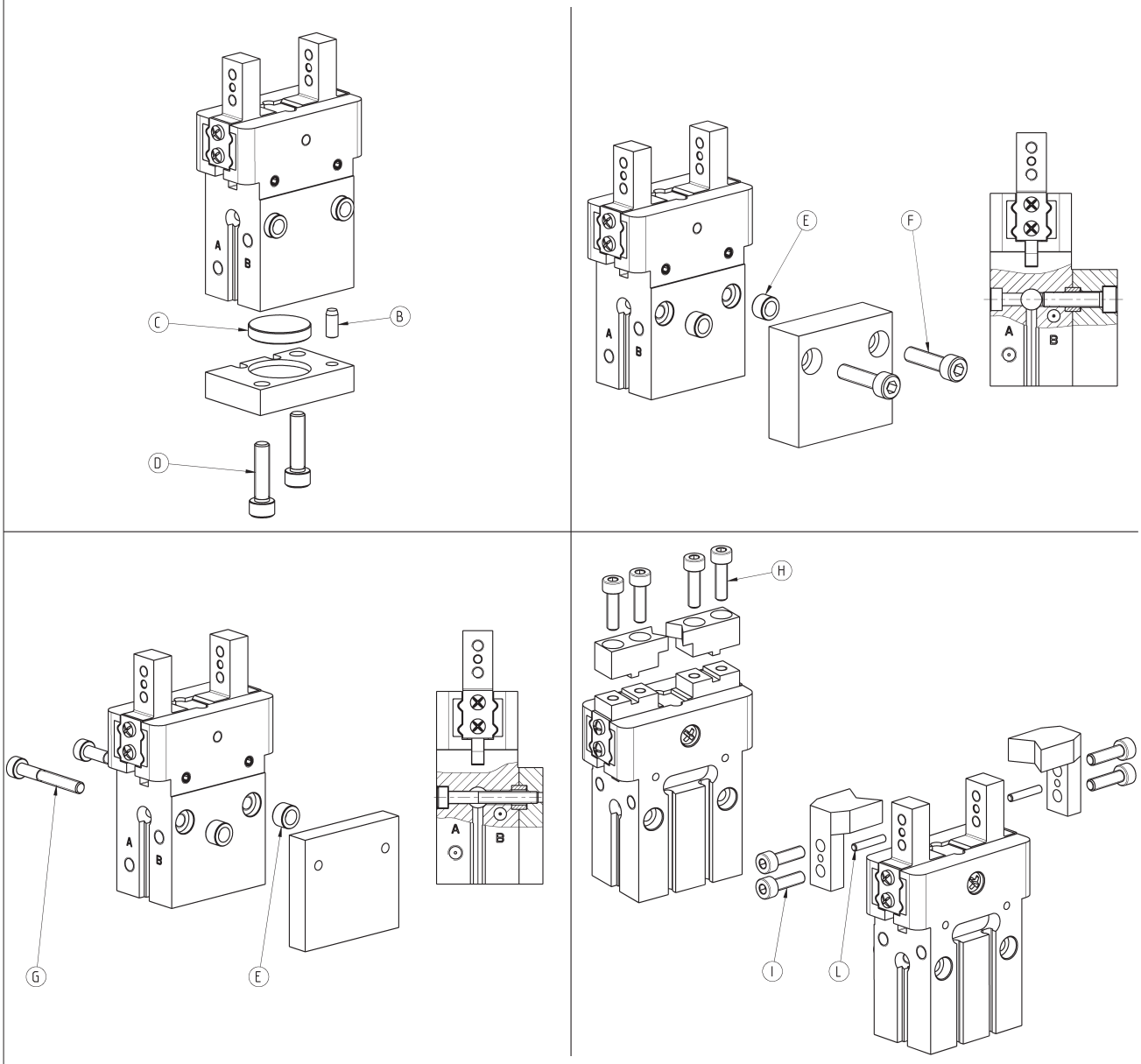
b = gripping point (mm)
e = arm (mm)




Closing gripping force

b = gripping point (mm)
e = arm (mm)

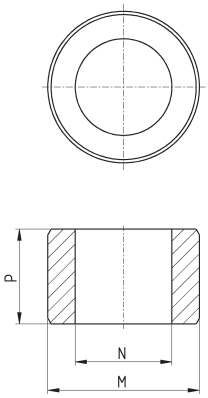
## Examples of mounting




| Mod. | B | C | D | E | Centering ring | F | G | H | I | L |
|---|---|---|---|---|---|---|---|---|---|---|
| **CGPS-..-10** | Ø2 | Ø11 | M3 | Ø5 | TR-CG-05 | M3 | M2.5 | M2.5 | M2.5 | Ø1.5 |
| **CGPS-..-16** | Ø3 | Ø17 | M4 | Ø6 | TR-CG-06 | M4 | M3 | M3 | M3 | Ø2 |
| **CGPS-..-20** | Ø4 | Ø21 | M5 | Ø8 | TR-CG-08 | M5 | M4 | M4 | M4 | Ø2.5 |
| **CGPS-..-25** | Ø4 | Ø26 | M6 | Ø10 | TR-CG-10 | M6 | M5 | M5 | M5 | Ø3 |
| **CGPS-..-32** | Ø5 | Ø34 | M6 | Ø10 | TR-CG-10 | M6 | M5 | M6 | M6 | Ø4 |

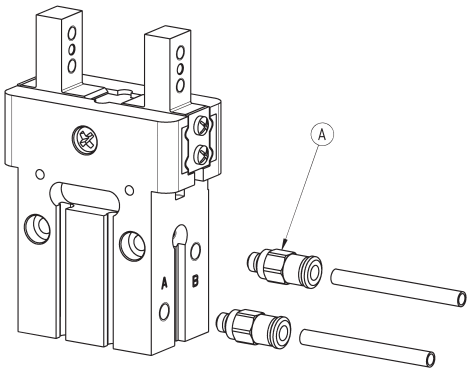
## Centering ring Mod. TR-CG

Supplied with:
2x centering rings in steel




| Mod. | M (h8) | N | P |
|---|---|---|---|
| **TR-CG-04** | Ø4 | Ø2.6 | 2.5 |
| **TR-CG-05** | Ø5 | Ø3.1 | 3 |
| **TR-CG-06** | Ø6 | Ø4.1 | 4 |
| **TR-CG-08** | Ø8 | Ø5.1 | 5 |
| **TR-CG-10** | Ø10 | Ø6.1 | 6 |

## Air supply ports

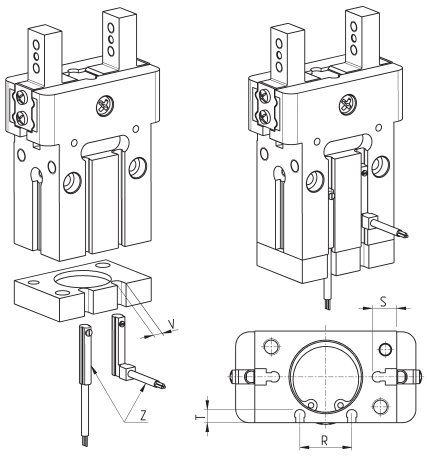



| Mod. | A |
|---|---|
| **CGPS-..-10** | M3 |
| **CGPS-..-16** | M5 |
| **CGPS-..-20** | M5 |
| **CGPS-..-25** | M5 |
| **CGPS-..-32** | M5 |

## Example of mounting: sensors

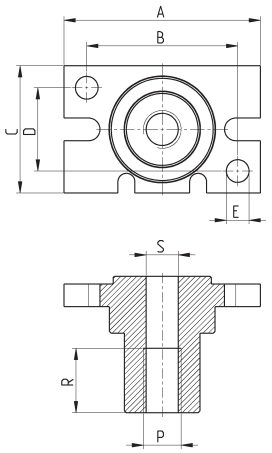
Z = sensor mod. CSD-332 or mod. CSD-362

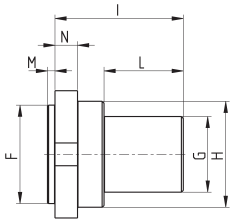
In order to position the sensor correctly, a channel must be created in the base.

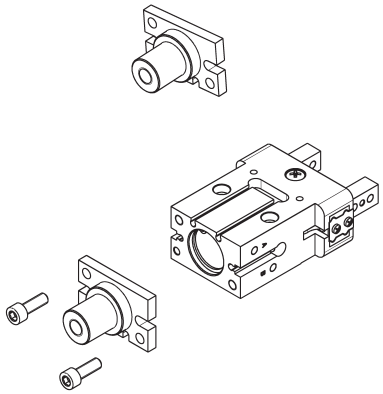



| Mod. | R | S | T | V |
|---|---|---|---|---|
| **CGPS-..-10** | - | 4.6 | - | 5 |
| **CGPS-..-16** | 11 | 4.8 | 3.8 | 5 |
| **CGPS-..-20** | 15 | 7 | 4.6 | 5 |
| **CGPS-..-25** | 19 | 9 | 4.8 | 5 |
| **CGPS-..-32** | 26 | 9 | 4.8 | 5 |

## Mounting accessories Mod. C-CGPS

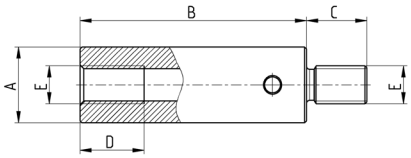


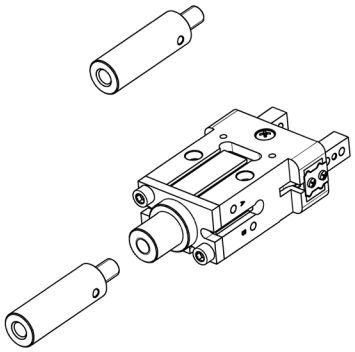



| Mod. | A | B | C | D | E | F | G | H | I | L | M | N | P | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C-CGPS-10** | 23 | 18 | 16.4 | 12 | Ø3 | Ø11 | Ø10 | Ø12.8 | 18.5 | 11 | 1.5 | 3.5 | M6 | 10 | Ø5 |
| **C-CGPS-16** | 31 | 22 | 23.6 | 15 | Ø4 | Ø17 | Ø14 | Ø17.8 | 25 | 16 | 1.5 | 4 | M8 | 13 | Ø6.8 |
| **C-CGPS-20** | 42 | 32 | 27.6 | 18 | Ø5 | Ø21 | Ø20 | Ø22 | 32 | 21 | 2 | 5 | M10 | 17 | Ø8.5 |
| **C-CGPS-25** | 52 | 40 | 33.6 | 22 | Ø6 | Ø26 | Ø20 | Ø28 | 34 | 21 | 2 | 6 | M10 | 17 | Ø8.5 |
| **C-CGPS-32** | 60 | 46 | 40 | 26 | Ø6 | Ø34 | Ø30 | Ø37 | 45 | 31 | 2 | 7 | M16 | 25 | Ø14 |

## Mounting accessories Mod. L-CGPS



| Mod. | A | B | C | D | E |
|---|---|---|---|---|---|
| **L-CGPS-10** | Ø10 | 40 | 9 | 10 | M6 |
| **L-CGPS-16** | Ø14 | 60 | 12 | 13 | M8 |
| **L-CGPS-20/25** | Ø20 | 60 | 16 | 17 | M10 |
| **L-CGPS-32** | Ø30 | 70 | 24 | 25 | M16 |