

# Series CGPT Parallel grippers with T-guide

Single and double acting, magnetic, self-centering  
Bores:  $\varnothing$  16, 20, 25, 32, 40 mm



Thanks to the use of a high performing and precise force transmission system, the Series CGPT grippers are able to provide high gripping forces while guaranteeing a very high repeatability.

The wide range of sizes available allows you to find the best solution for any need of movement. The grippers are supplied with centering bushes (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 the top, from below and from the side
- » Supply on the side or on the bottom (even without using tubes)
- » Self-centering jaws
- » High closing and opening repeatability
- » High interchangeability (centering bushes)
- » Position detection thanks to the use of magnetic proximity switches.
- » In compliance with ROHS directive
- » PTFE, Silicone and Copper free
- » High reliability
- » High resistance to external loads thanks to the T-guide
- » Variants available for use in ATEX zones and for high temperatures

## GENERAL DATA

<b>Type of construction</b>	Self-centering parallel gripper with T-guide
<b>Operation</b>	Single acting (NO, NC), double acting
<b>Bores</b>	$\varnothing$ 16, 20, 25, 32, 40 mm
<b>Force transmission</b>	Lever
<b>Air connections</b>	M3 ( $\varnothing$ 16), M5 ( $\varnothing$ 20, 25, 32), G1/8 ( $\varnothing$ 40)
<b>Working pressure</b>	2 ÷ 8 bar (double acting), 4 ÷ 8 bar (single acting)
<b>Working temperature</b>	5°C ÷ 60°C (standard) - 5°C ÷ 150°C (high temperature version)
<b>Store temperature</b>	-10°C ÷ 80°C
<b>Maximum use frequency</b>	3 Hz ( $\varnothing$ 16, 20, 25, 32), 2 Hz ( $\varnothing$ 40)
<b>Repeatability</b>	0.02 mm
<b>Interchangeability</b>	0.1 mm
<b>Medium</b>	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.
<b>Lubrication</b>	After 10 million cycles, grease the sliding zones using Molykote DX grease.
<b>Protection class</b>	IP 40
<b>Compatibility</b>	ROHS Directive
<b>Certifications</b>	ATEX (II 2GD c IIC 120°C(T4)-20°C≤T <sub>a</sub> ≤80)
<b>Materials</b>	PTFE, Silicone and Copper free

N.B. Pressurize the pneumatic system gradually in order to avoid uncontrolled movements

**CODING EXAMPLE**

<b>CGPT</b>	<b>-</b>	<b>16</b>	<b>-</b>	<b>NC</b>	<b>-</b>	<b>W</b>	<b>EX</b>
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<b>CGPT</b>	SERIES	
<b>16</b>	SIZES: 16 20 25 32 40	
<b>NC</b>	FUNCTIONING: = double acting NO = single acting, normally open NC = single acting, normally closed	PNEUMATIC SYMBOLS PNZ1 PNZ3 PNZ2
<b>W</b>	VERSION: = standard W = high temperatures (150 °C) - not magnetic	
<b>EX</b>	Add EX to order the certified ATEX version	

SERIES CGPT PARALLEL GRIPPERS WITH T-GUIDE

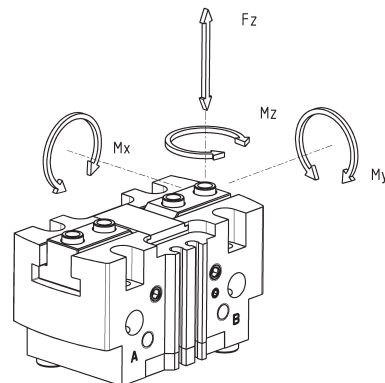
**PNEUMATIC SYMBOLS**

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



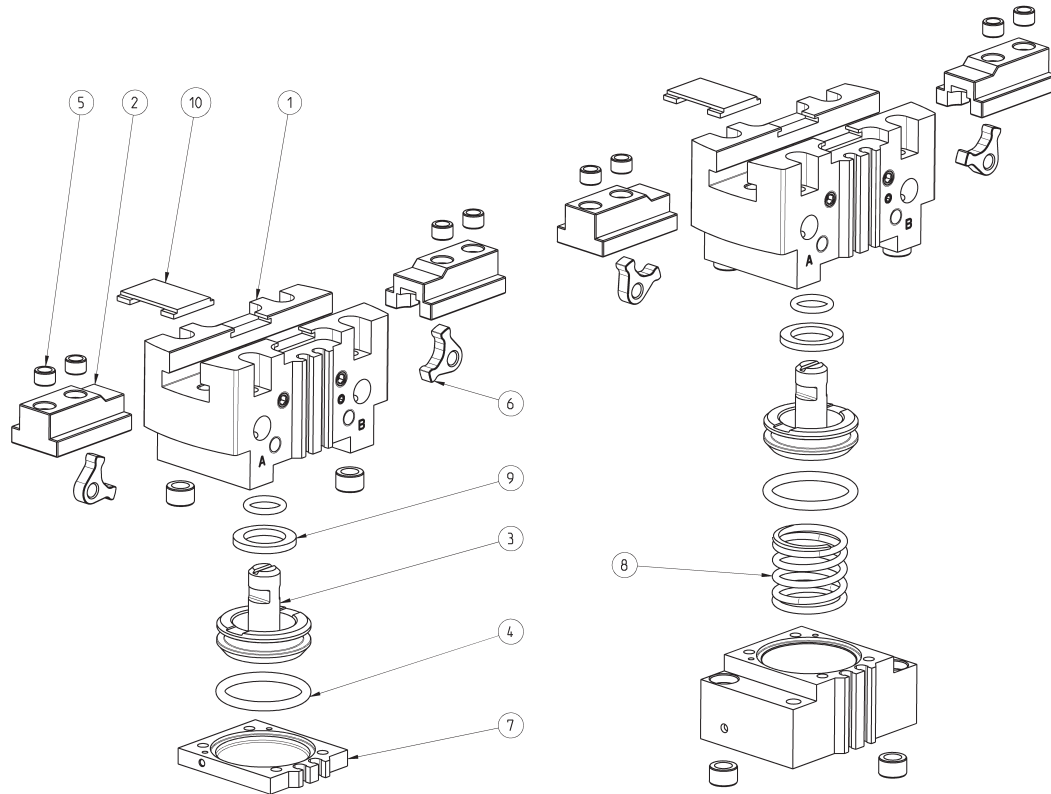
**Maximum admissible loads and torques**

Fz s, Mx s, My s, Mz s = maximum admissible loads and torques in static conditions  
Fz d, Mx d, My d, Mz d = maximum admissible loads and torques in dynamic conditions



Mod.	Fz s (N)	Mx s (Nm)	My s (Nm)	Mz s (Nm)	Fz d (N)	Mx d (Nm)	My d (Nm)	Mz d (Nm)
<b>CGPT-16</b>	200	2.5	2.5	2	2	0.06	0.06	0.06
<b>CGPT-20</b>	350	5	7.5	4	4	0.12	0.12	0.12
<b>CGPT-25</b>	600	8	13	6.5	6	0.25	0.25	0.25
<b>CGPT-32</b>	900	18	30	15	9	0.5	0.5	0.5
<b>CGPT-40</b>	1500	40	60	30	15	1	1	1

## Series CGPT grippers - construction



### LIST OF COMPONENTS

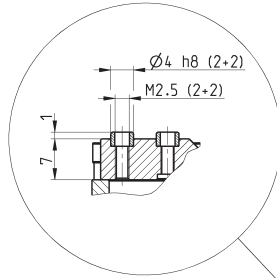
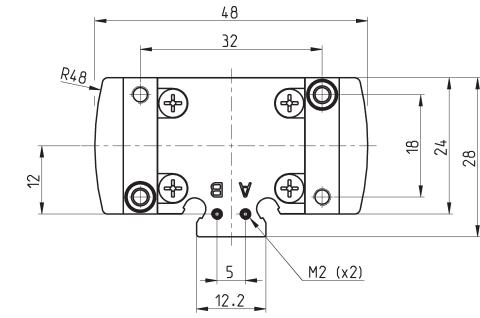
PARTS	MATERIALS
1 - Body	Aluminium
2 - Guide	Aluminium
3 - Cursor	Stainless steel
4 - Piston	Aluminium
5 - Jaw	Stainless steel
6 - Cover	Stainless steel
7 - Spring	Stainless steel
8 - Magnete	Neodymium
9 - Screws	Stainless steel
10 - Seals	NBR

**CGPT gripper, size 16 mm - dimensions**

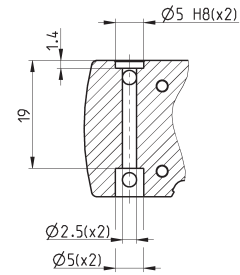
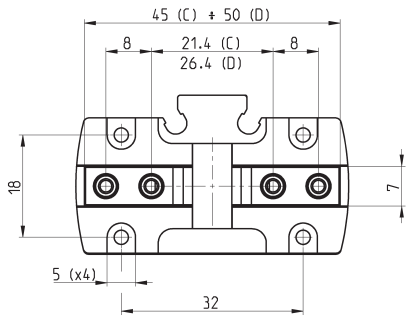
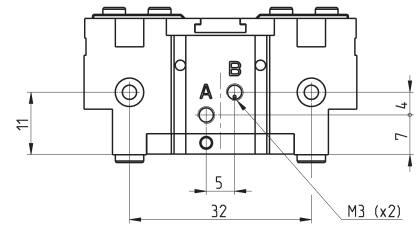
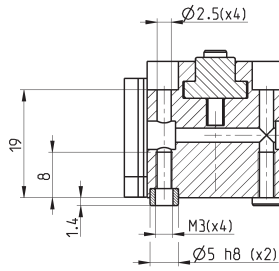
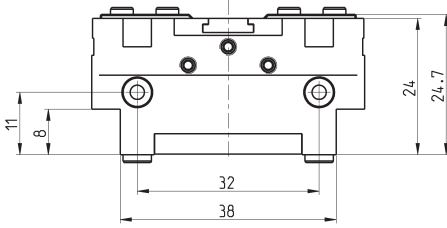
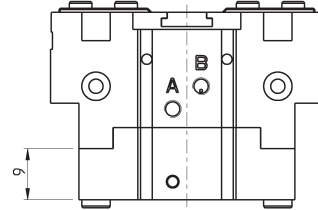


**DRAWING LEGEND:**  
A = Opening of air connection  
B = Closing of air connection  
C = Closed gripper  
D = Open gripper

SERIES CGPT PARALLEL GRIPPERS WITH T-GUIDE



CGPT-16-NO  
CGPT-16-NC

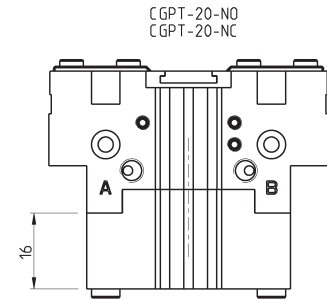
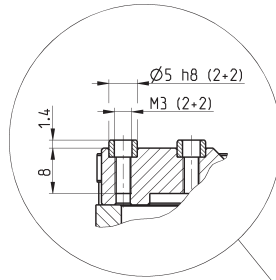
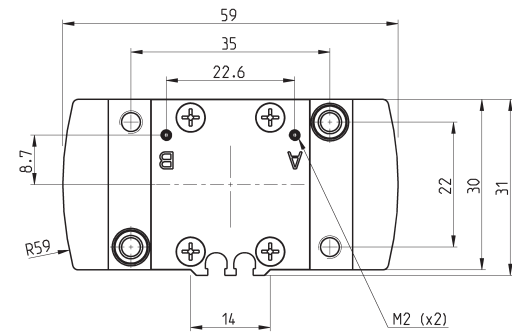


Mod.	Total closing gripping force at 6 bar (N)	Closing gripping force each jaw at 6 bar (N)	Total opening gripping force at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-16	114	57	130	65	2.5	2 ÷ 8	5 ÷ 60	0.02	3	0.09
CGPT-16-NC	142	71	90	45	2.5	4 ÷ 8	5 ÷ 60	0.02	3	0.11
CGPT-16-NO	74	37	160	80	2.5	4 ÷ 8	5 ÷ 60	0.02	3	0.1

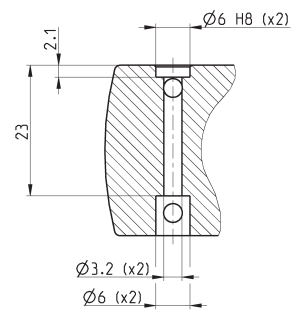
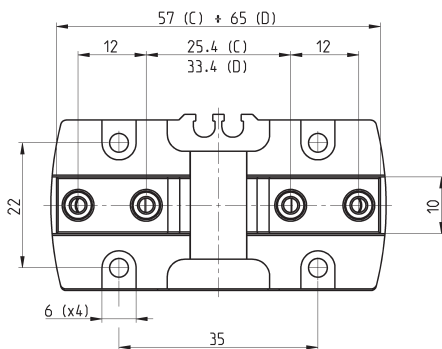
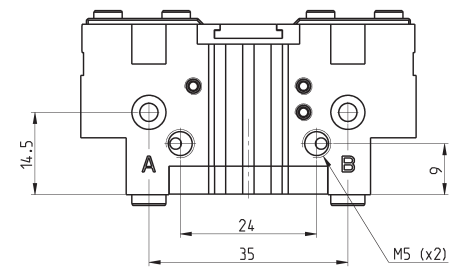
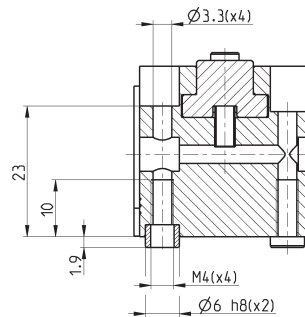
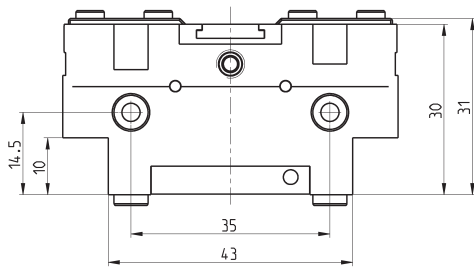
## CGPT gripper, size 20 mm - dimensions



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



CGPT-20-NO  
 CGPT-20-NC

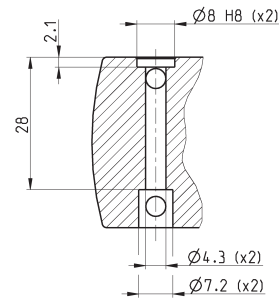
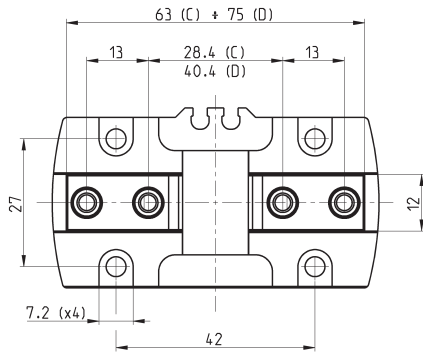
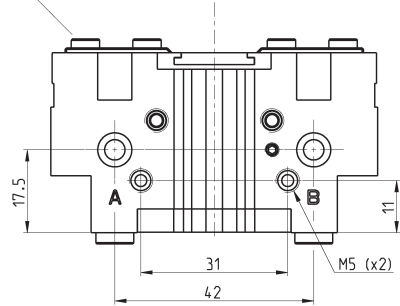
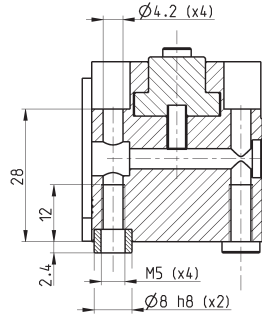
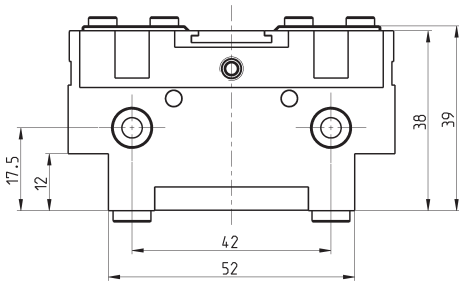
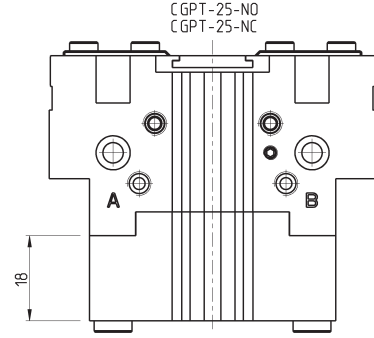
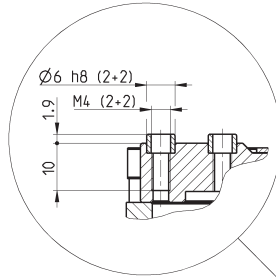
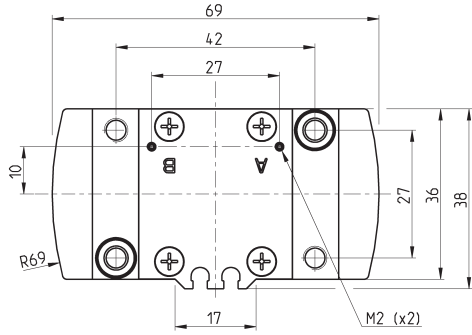


Mod.	Total closing gripping force at 6 bar (N)	Closing gripping force each jaw at 6 bar (N)	Total opening gripping force at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-20	166	83	188	94	4	2 ÷ 8	5 ÷ 60	0.02	3	0.15
CGPT-20-NC	208	104	102	51	4	4 ÷ 8	5 ÷ 60	0.02	3	0.2
CGPT-20-NO	102	51	246	123	4	4 ÷ 8	5 ÷ 60	0.02	3	0.18

**CGPT gripper, size 25 mm - dimensions**



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



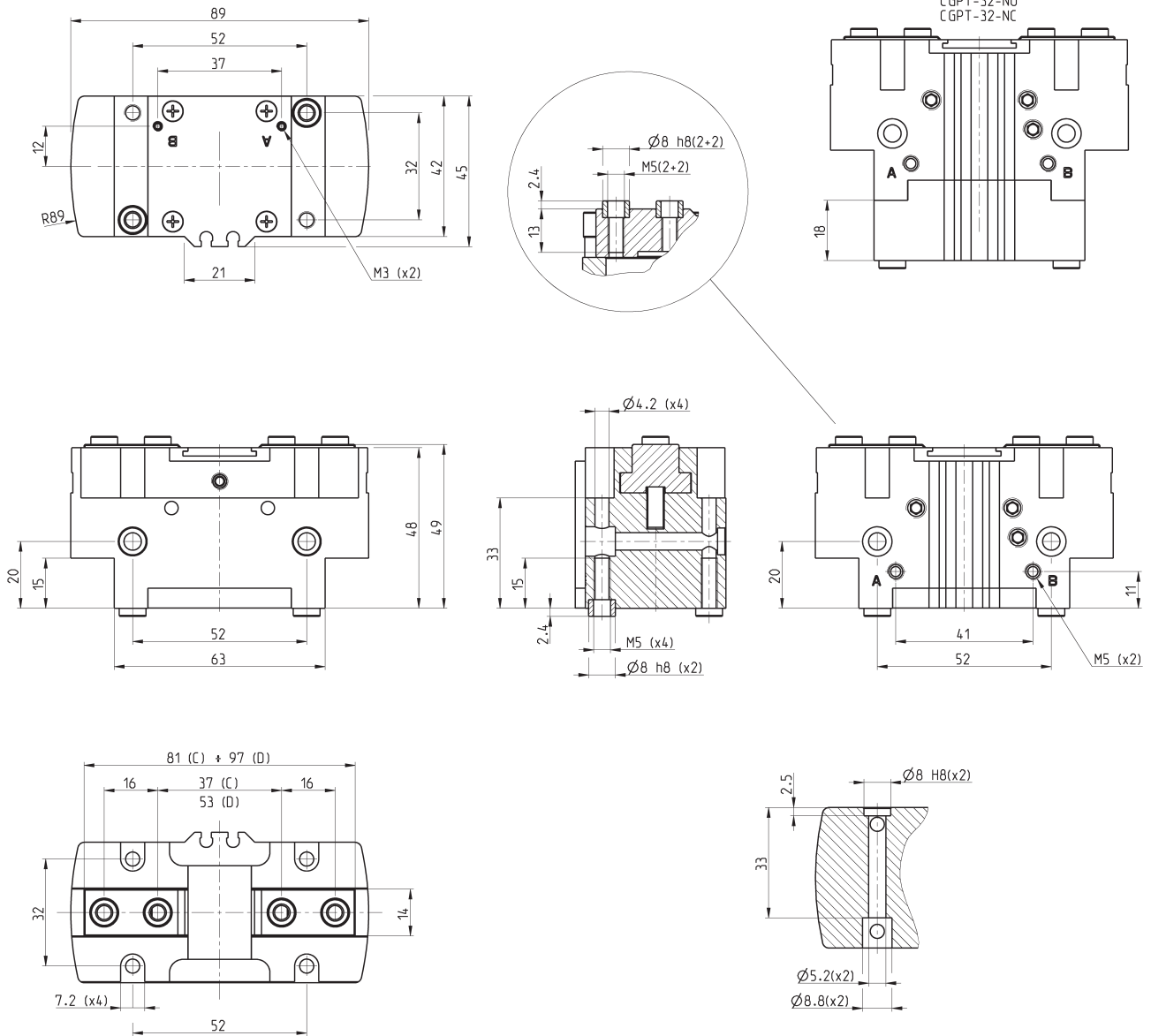
Mod.	Total closing gripping force at 6 bar (N)	Closing gripping force each jaw at 6 bar (N)	Total opening gripping force at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-25	236	118	280	140	6	2 ÷ 8	5 ÷ 60	0.02	3	0.27
CGPT-25-NC	286	143	206	103	6	4 ÷ 8	5 ÷ 60	0.02	3	0.35
CGPT-25-NO	166	83	330	165	6	4 ÷ 8	5 ÷ 60	0.02	3	0.33

## CGPT gripper, size 32 mm - dimensions



## DRAWING LEGEND:

- A = Opening of air connection
- B = Closing of air connection
- C = Closed gripper
- D = Open gripper

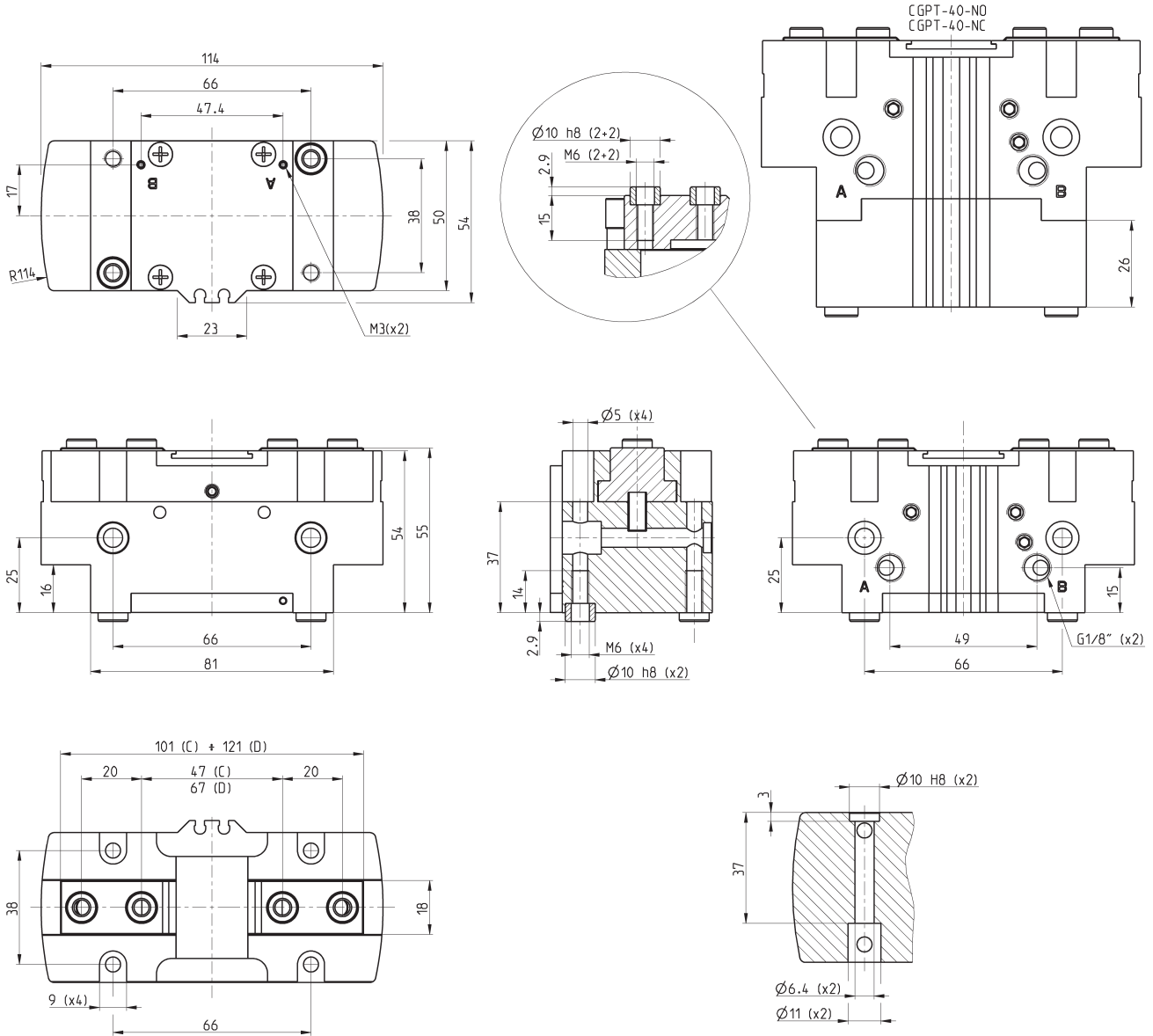


Mod.	Total closing gripping force at 6 bar (N)	Closing gripping force each jaw at 6 bar (N)	Total opening gripping force at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-32	386	193	450	225	8	2 ÷ 8	5 ÷ 60	0.02	3	0.5
CGPT-32-NC	454	227	354	177	8	4 ÷ 8	5 ÷ 60	0.02	3	0.61
CGPT-32-NO	294	147	520	260	8	4 ÷ 8	5 ÷ 60	0.02	3	0.59

**CGPT gripper, size 40 mm - dimensions**



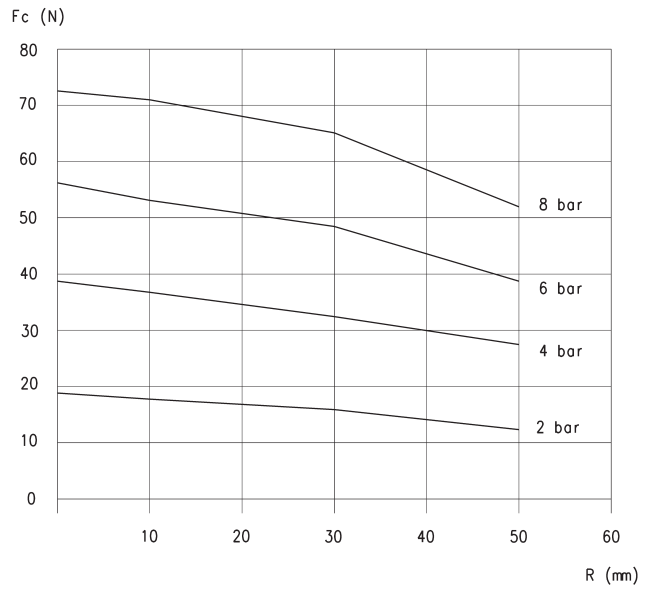
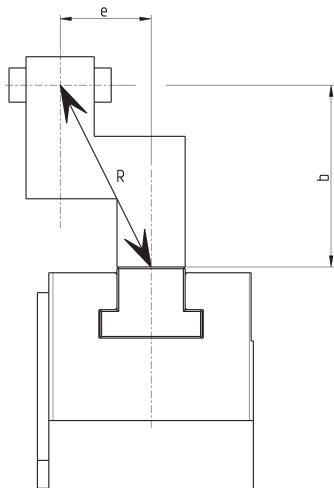
**DRAWING LEGEND:**  
A = Opening of air connection  
B = Closing of air connection  
C = Closed gripper  
D = Open gripper



Mod.	Total closing gripping force at 6 bar (N)	Closing gripping force each jaw at 6 bar (N)	Total opening gripping force at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-40	670	335	720	360	10	2 ÷ 8	5 ÷ 60	0.02	2	0.83
CGPT-40-NC	780	390	504	252	10	4 ÷ 8	5 ÷ 60	0.02	2	1.2
CGPT-40-NO	446	223	826	413	10	4 ÷ 8	5 ÷ 60	0.02	2	1.1



**GRIPPING FORCE (Fc) PER SINGLE JAW**



The total gripping force has to be calculated as follows:  
Total Fc = Fc x 2

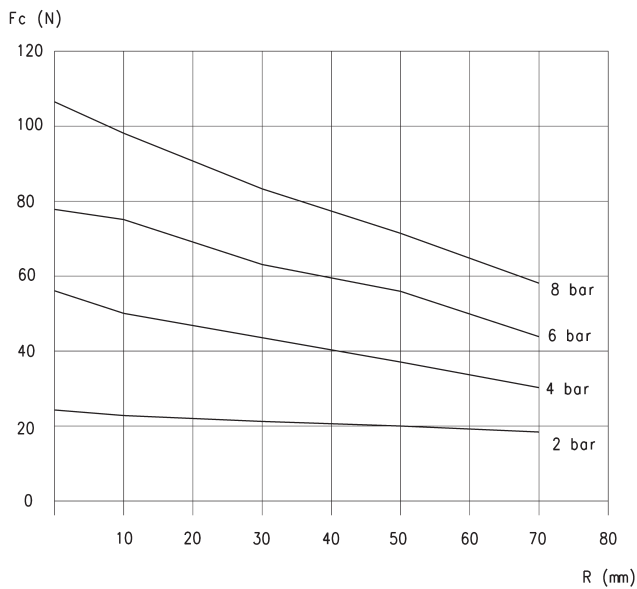
Gripping force in relation to the lever arm (R) and the eccentricity (b, e)

$$R = \sqrt{b^2 + e^2}$$

**CGPT-16**

R = lever arm  
Fc = closing gripping force

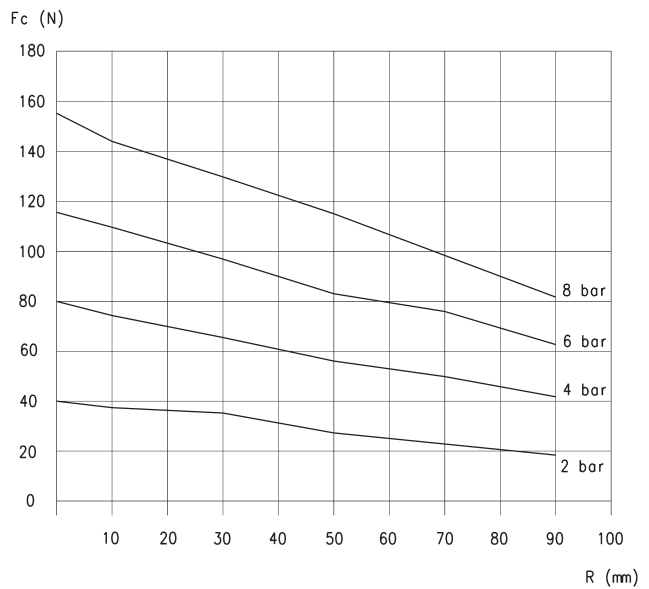
$$Fa \text{ (opening gripping force)} = Fc + 10\%$$



**CGPT-20**

R = lever arm  
Fc = closing gripping force

$$Fa \text{ (opening gripping force)} = Fc + 10\%$$



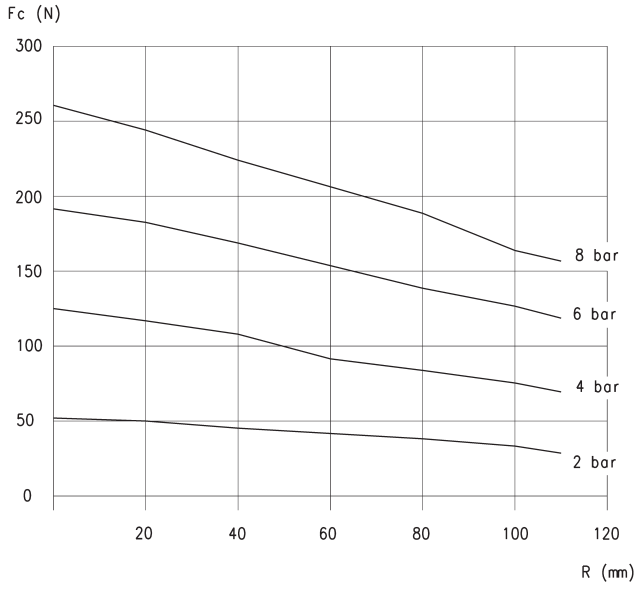
**CGPT-25**

R = lever arm  
Fc = closing gripping force

$$Fa \text{ (opening gripping force)} = Fc + 10\%$$

**GRIPPING FORCE (Fc) PER SINGLE JAW**

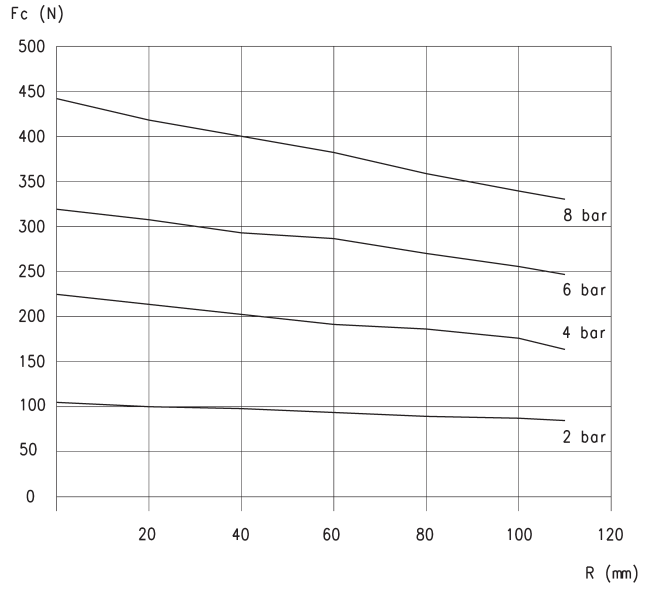
SERIES CGPT PARALLEL GRIPPERS WITH T-GUIDE



**CGPT-32**

R = lever arm  
Fc = closing gripping force

Fa (opening gripping force) = Fc + 10%

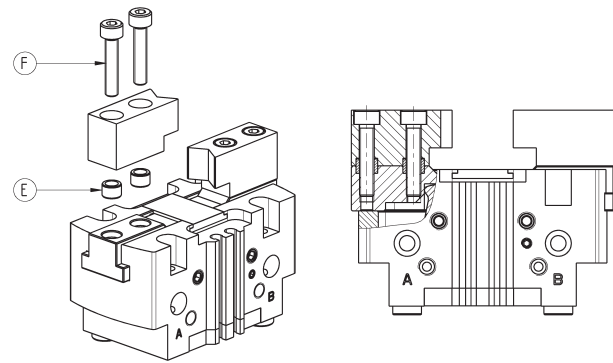
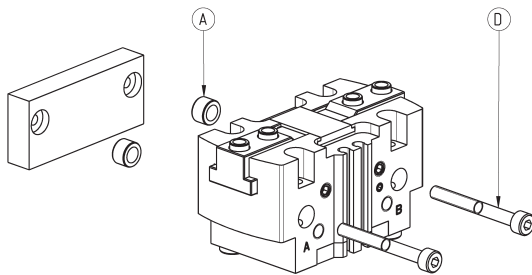
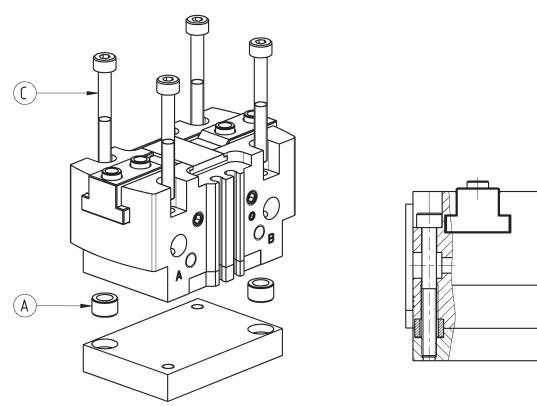
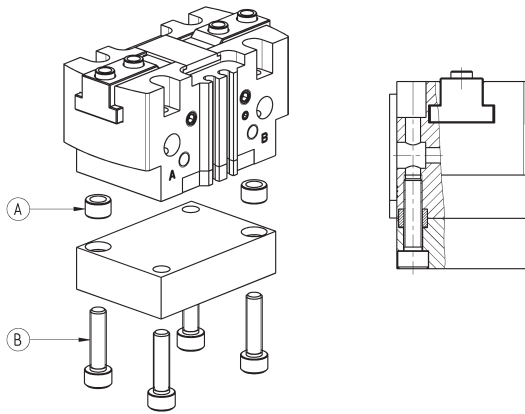


**CGPT-40**

R = lever arm  
Fc = closing gripping force

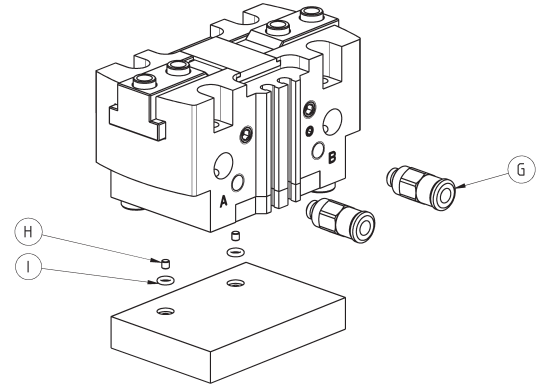
Fa (opening gripping force) = Fc + 10%

## Examples of mounting



Mod.	A	B	C	D	E	F
CGPT-16	Ø5	M3	M2.5	M2.5	Ø4	M2.5
CGPT-20	Ø6	M4	M3	M3	Ø5	M3
CGPT-25	Ø8	M5	M4	M4	Ø6	M4
CGPT-32	Ø8	M5	M4	M5	Ø8	M5
CGPT-40	Ø10	M6	M5	M6	Ø10	M6

## Air supply ports



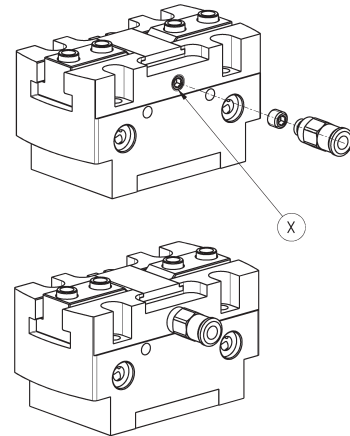
Mod.	G	H	I
CGPT-16	M3	M2	OR 1x2.5
CGPT-20	M5	M2	OR 1x2.5
CGPT-25	M5	M2	OR 1x2.5
CGPT-32	M5	M3	OR 1x3.5
CGPT-40	G1/8	M3	OR 1x3.5

## Example of use of the pressurization/lubrication hole

Example of use of the lubrication (greasing) or pressurization hole of the zone with moving items

NOTE 1: grease the sliding zones using Molykote DX grease.

NOTE 2: supply a pressure of max. 3 bar in order to avoid the sudden ejection of grease.

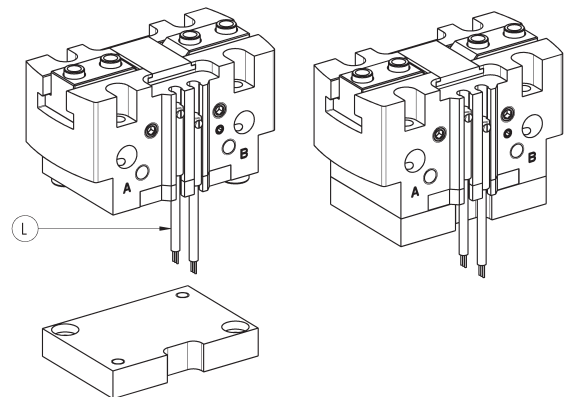


Mod.	X
CGPT-16	M3
CGPT-20	M5
CGPT-25	M5
CGPT-32	M5
CGPT-40	M5

## Example of mounting: sensors

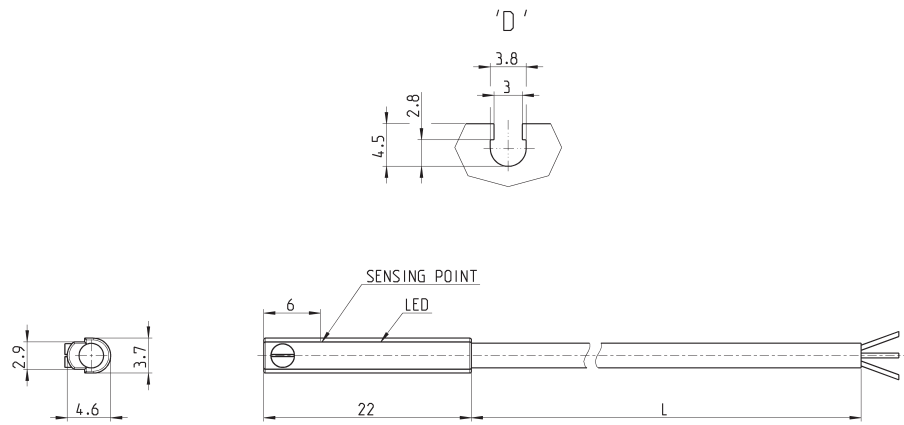
L = sensor mod. CSD-D-334 or mod. CSD-D-364

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



Mod.
CGPT-16
CGPT-20
CGPT-25
CGPT-32
CGPT-40

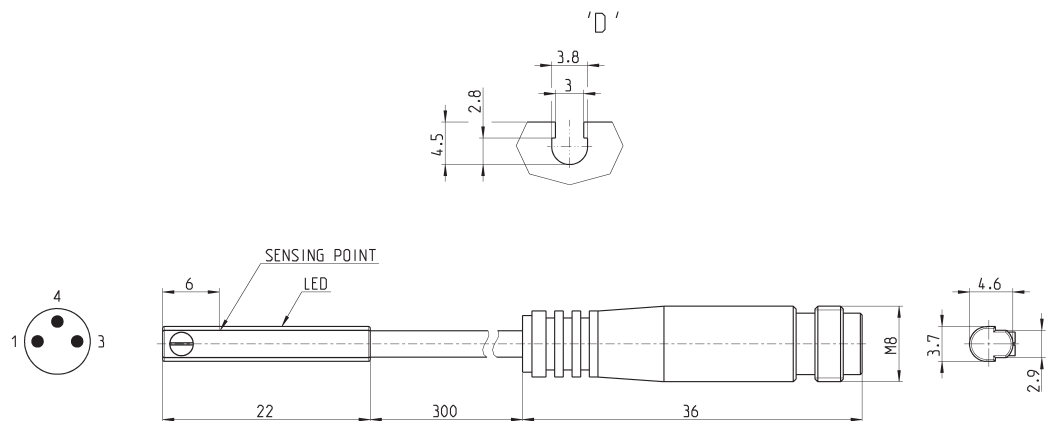
## Series CSD magnetic proximity switches, 3-wire cable, D-slot



Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L = length cable
CSD-D-334	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	2 m

## Series CSD magnetic switches, male M8 3-pin conn., D-slot, right

Length of cable 0.3 metres



Mod.	Operation	Connection	Voltage	Output	Max. current	Max load	Protection
CSD-D-364	Magnetoresistive	3 wires with M8 connector	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage