

Series CGPT self-centering 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

Type of construction	Self-centering parallel gripper with T-guide
Operation	Single acting (NO, NC), double acting
Bores	\varnothing 16, 20, 25, 32, 40 mm
Force transmission	Lever
Air connections	M3 (\varnothing 16), M5 (\varnothing 20, 25, 32), G1/8 (\varnothing 40)
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 (\varnothing 16, 20, 25, 32), 2 Hz (\varnothing 40)
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.
Lubrication	After 10 million cycles, grease the sliding zones using Molykote DX grease.
Protection class	IP 40
Compatibility	ROHS Directive
Certifications	ATEX (II 2GD c IIC 120°C(T4)-20°C≤Ta≤80)
Materials	PTFE, Silicone and Copper free

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

CODING EXAMPLE

CGPT	-	16	-	NC	-	W	EX
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CGPT SERIES

16

BORES:
 10 = ø 10 mm
 16 = ø 16 mm
 20 = ø 20 mm
 25 = ø 25 mm
 32 = ø 32 mm
 40 = ø 40 mm

NC

FUNCTIONING:
 = double acting
 NO = single acting, normally open
 NC = single acting, normally closed

PNEUMATIC SYMBOLS

PNZ1
 PNZ3
 PNZ2

W

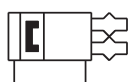
VERSION:
 = standard
 W = high temperatures (150 °C) - not magnetic

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.



PNZ1



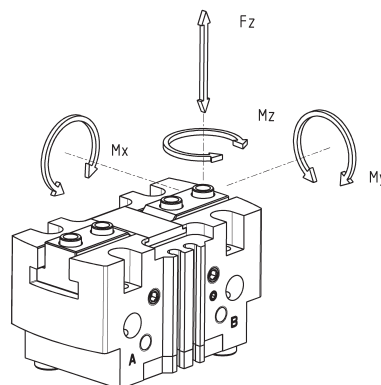
PNZ2



PNZ3

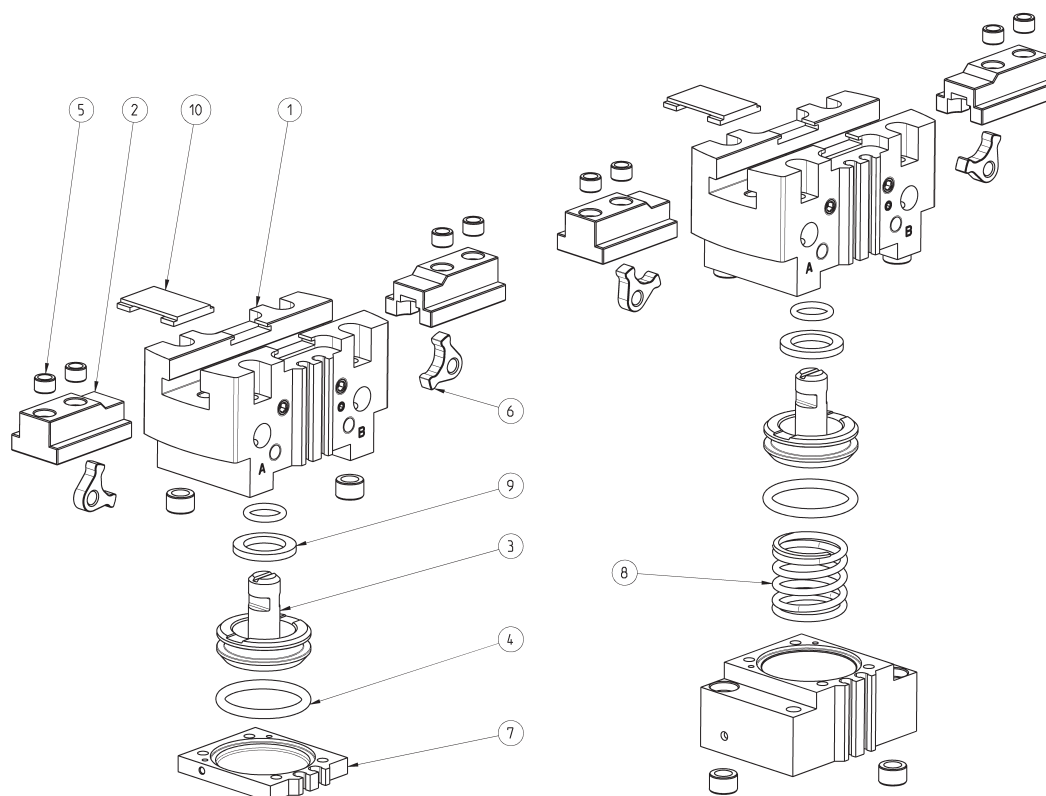
Maximum admissible loads and torques

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)
CGPT-16	200	2.5	2.5	2	2	0.06	0.06	0.06
CGPT-20	350	5	7.5	4	4	0.12	0.12	0.12
CGPT-25	600	8	13	6.5	6	0.25	0.25	0.25
CGPT-32	900	18	30	15	9	0.5	0.5	0.5
CGPT-40	1500	40	60	30	15	1	1	1

Series CGPT grippers - construction



LIST OF COMPONENTS

PARTS	MATERIALS
1 - Body	Aluminium
2 - Jaw	Stainless steel
3 - Piston	Stainless steel
4 - Seals	HNBR / FKM
5 - Centering bushes	Stainless steel
6 - Levers	Steel
7 - End cover	Aluminium
8 - Spring	Stainless steel
9 - Magnet	Neodymium
10 - Cover	Stainless steel

CGPT gripper, size 16 mm - dimensions



DRAWING LEGEND:

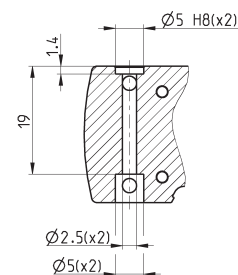
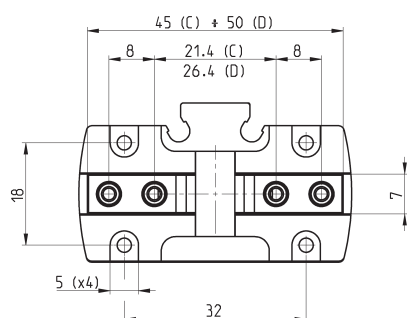
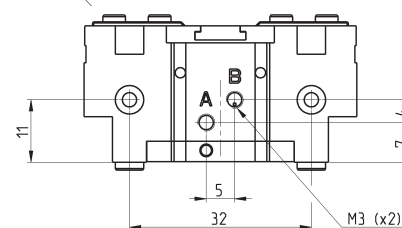
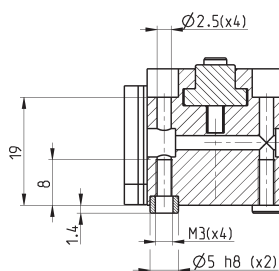
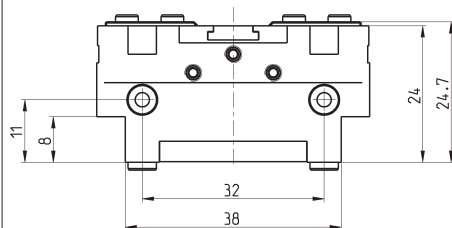
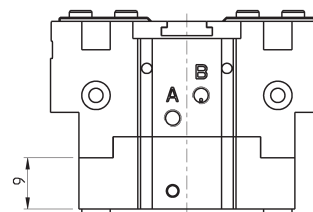
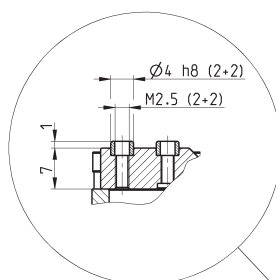
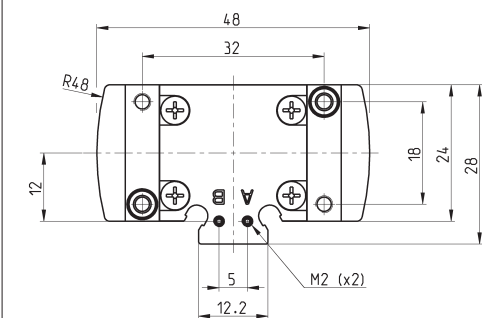
A = Opening of air connection

B = Closing of air connection

C = Closed gripper

D = Open gripper

CGPT-16-NO
CGPT-16-NC



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 (Ncm ³)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-16	57	65	2.5	9	2 + 8	5 + 60	0.02	3	0.09
CGPT-16-NC	71	45	2.5	5 (single-acting), 9 (double-acting)	4 + 8	5 + 60	0.02	3	0.11
CGPT-16-NO	37	80	2.5	5 (single-acting), 9 (double-acting)	4 + 8	5 + 60	0.02	3	0.1

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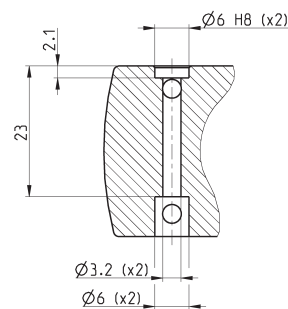
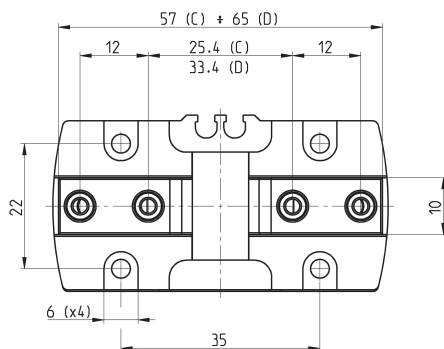
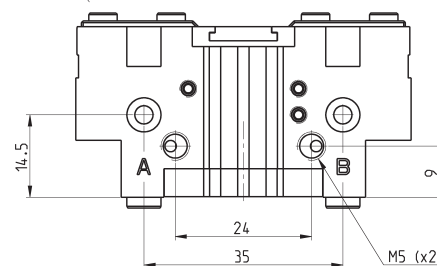
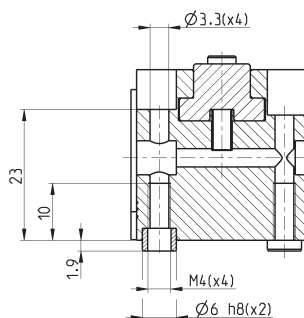
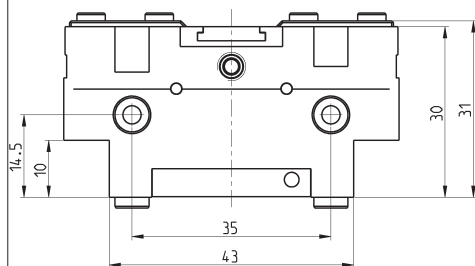
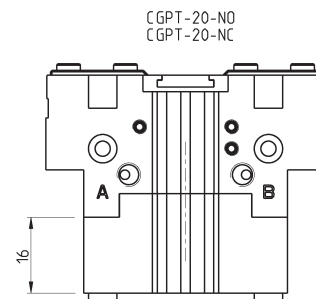
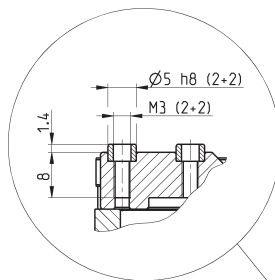
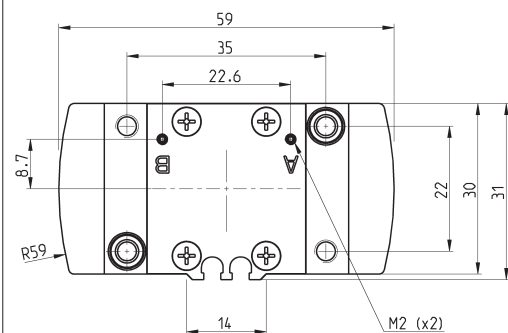
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CGPT gripper, size 20 mm - dimensions



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)
CGPT-20	83	94	4	20	2 + 8	5 + 60	0.02	3	0.15
CGPT-20-NC	104	51	4	10 (single-acting), 20 (double-acting)	4 + 8	5 + 60	0.02	3	0.2
CGPT-20-NO	51	123	4	10 (single-acting), 20 (double-acting)	4 + 8	5 + 60	0.02	3	0.18

CGPT gripper, size 25 mm - dimensions



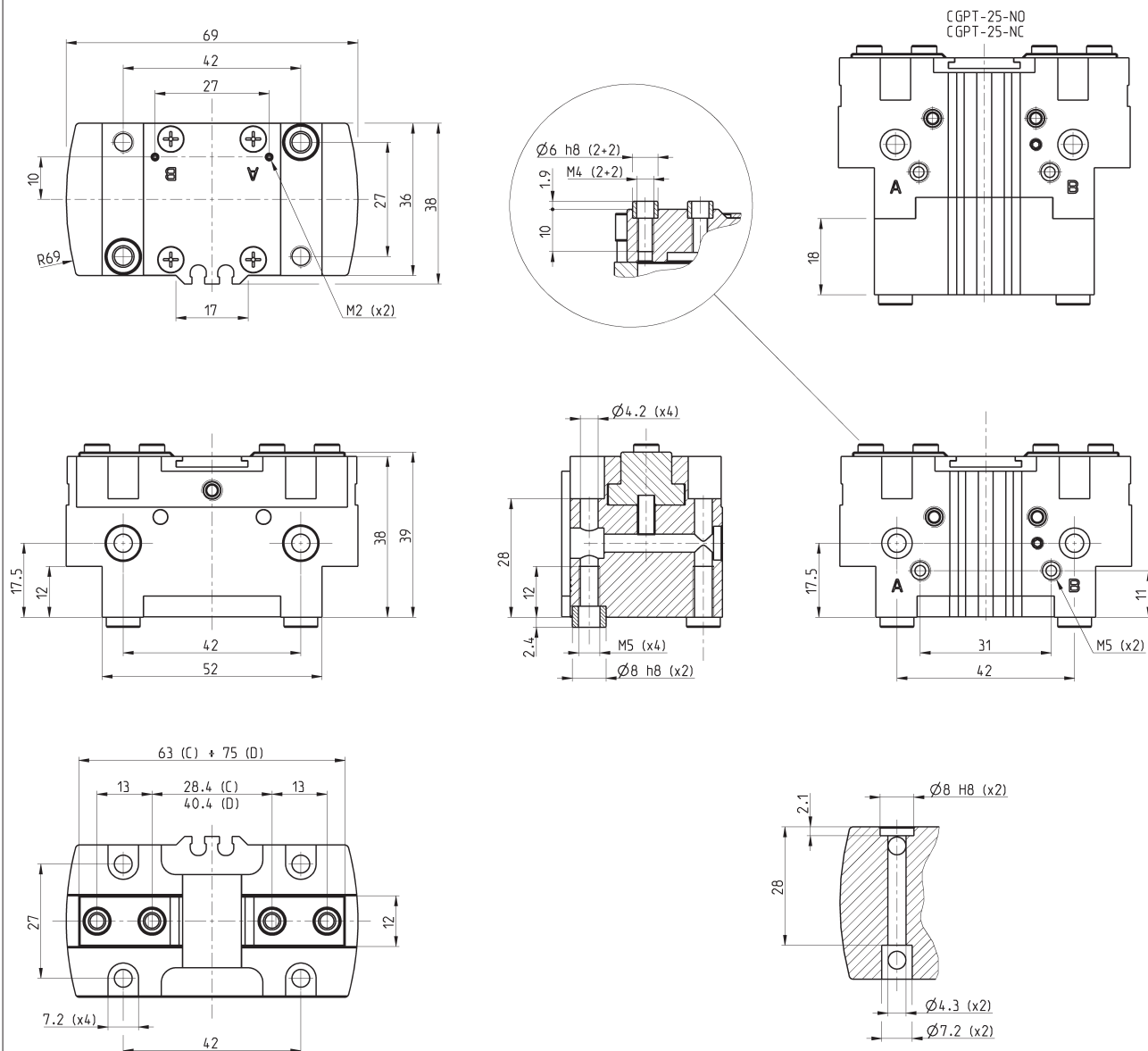
DRAWING LEGEND:

A = Opening of air connection

B = Closing of air connection

C = Closed gripper

D = Open gripper



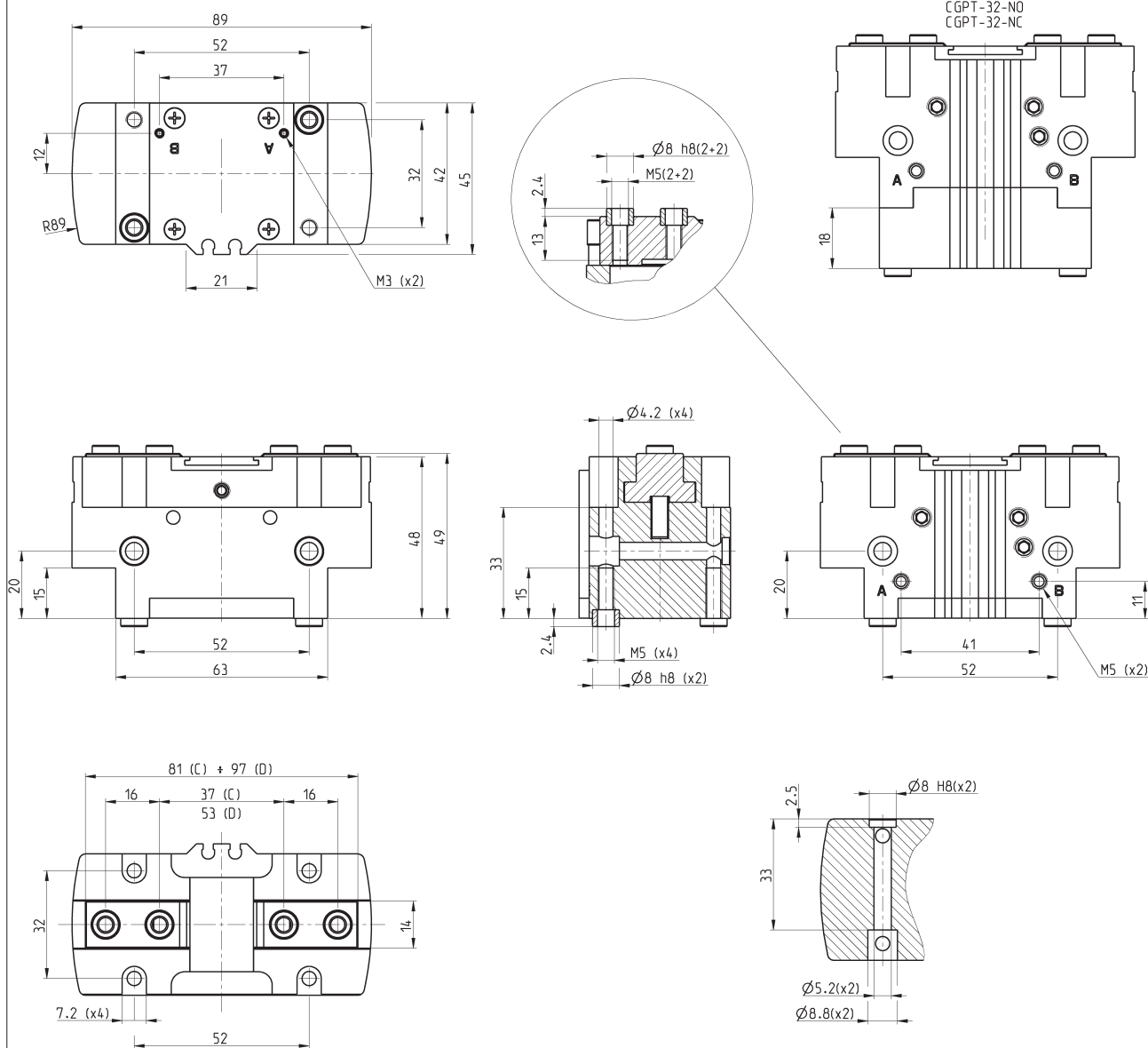
Mod.	Closing gripping force each jaw at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Air consumption per cycle (Ncm³)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-25	118	140	6	45	2 + 8	5 + 60	0.02	3	0.27
CGPT-25-NC	143	103	6	24 (single-acting), 45 (double-acting)	4 + 8	5 + 60	0.02	3	0.35
CGPT-25-NO	83	165	6	21 (single-acting), 45 (double-acting)	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



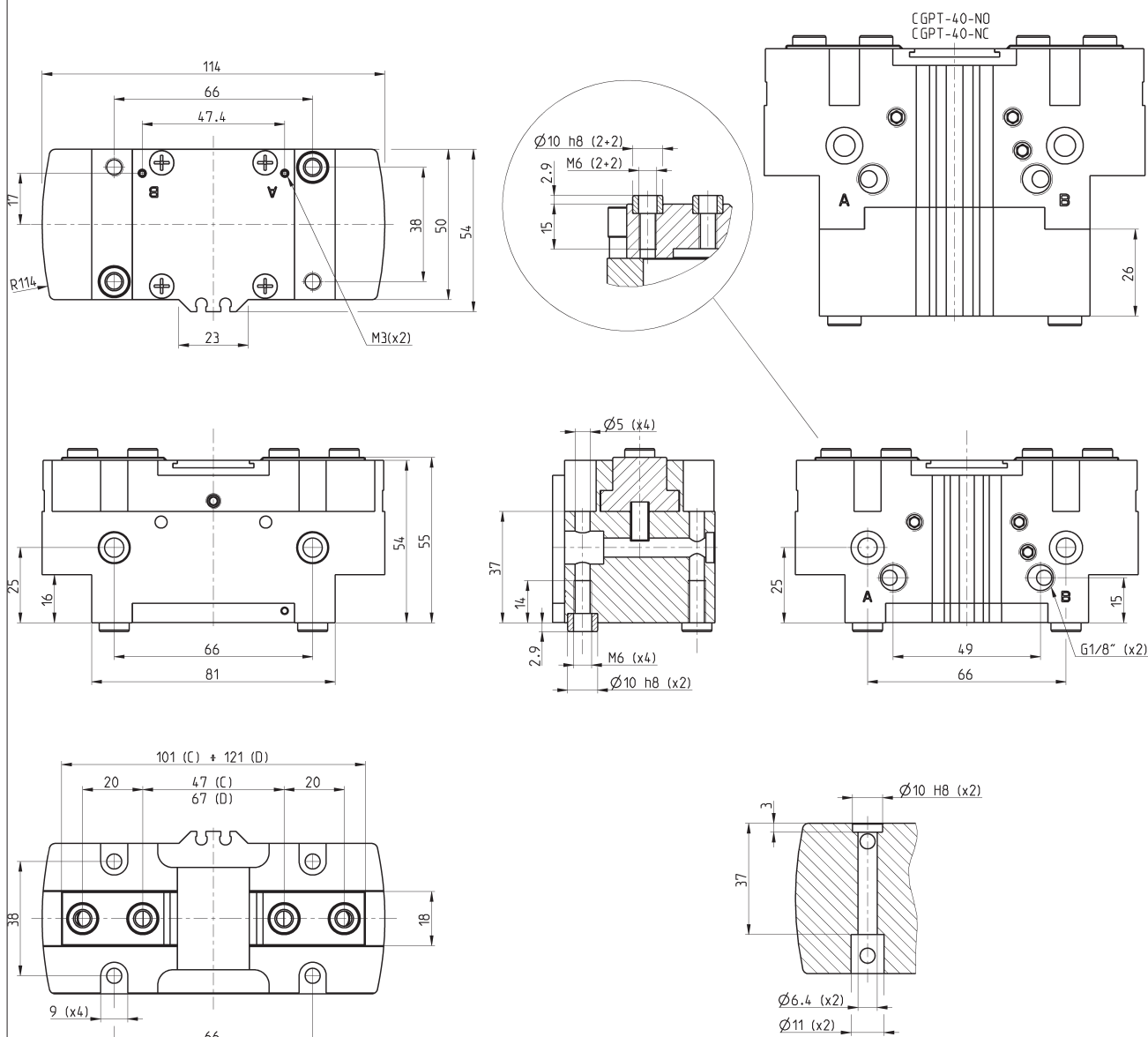
Mod.	Closing gripping force each jaw at 6 bar (N)	Opening gripping force each jaw at 6 bar (N)	Stroke per jaw (mm)	Air consumption per cycle (Ncm³)	Working pressure (bar)	Working temperature (°C)	Repeatability (mm)	Max use frequency (Hz)	Weight (Kg)
CGPT-32	193	225	8	101	2 + 8	5 + 60	0.02	3	0.5
CGPT-32-NC	227	177	8	53 (single-acting), 101 (double-acting)	4 + 8	5 + 60	0.02	3	0.61
CGPT-32-NO	147	260	8	47 (single-acting), 101 (double-acting)	4 + 8	5 + 60	0.02	3	0.59

CGPT gripper, size 40 mm - dimensions



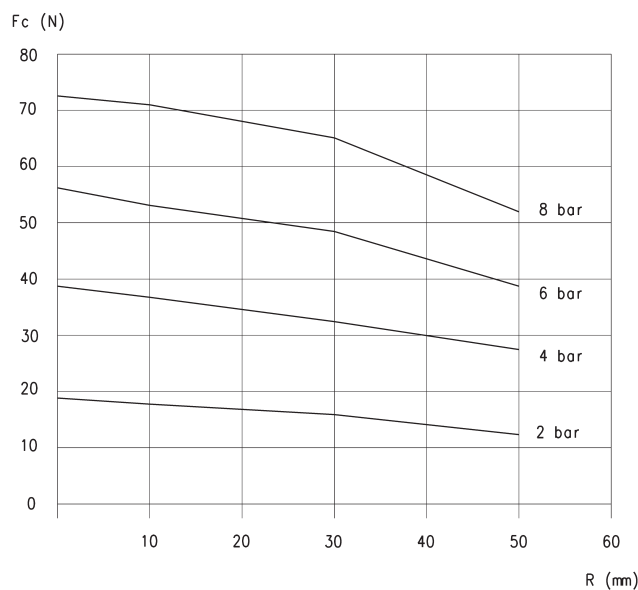
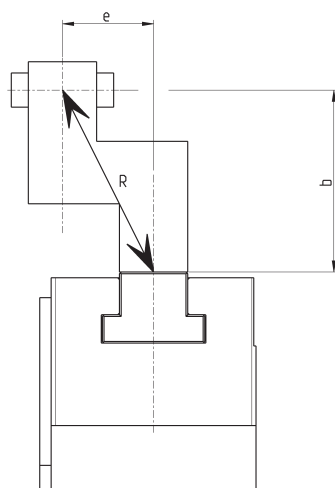
DRAWING LEGEND:

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



Mod.	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)
CGPT-40	335	360	10	202	2 + 8	5 + 60	0.02	2	0.83
CGPT-40-NC	390	252	10	106 (single-acting), 202 (double-acting)	4 + 8	5 + 60	0.02	2	1.2
CGPT-40-NO	223	413	10	95 (single-acting), 202 (double-acting)	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 $F_c = F_c \times 2$

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

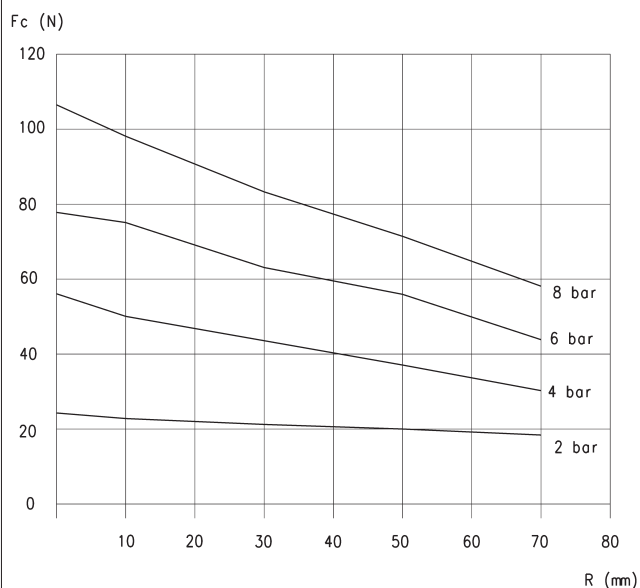
$$R = \sqrt{b^2 + e^2}$$

CGPT-16

R = lever arm

F_c = closing gripping force

$$F_a \text{ (opening gripping force)} = F_c + 10\%$$

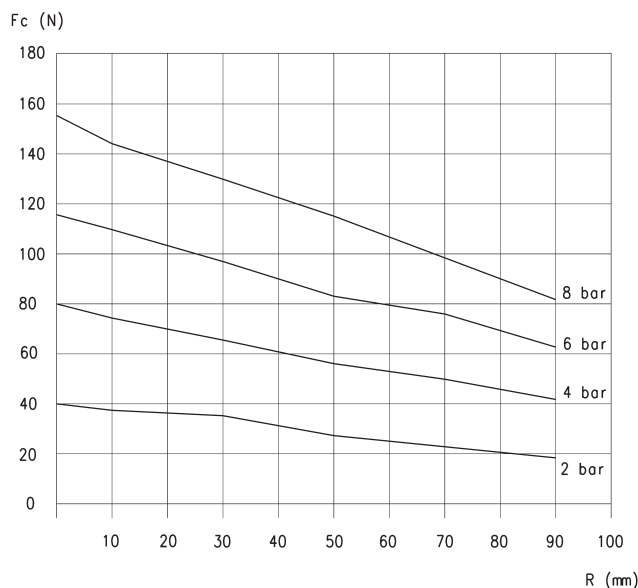


CGPT-20

R = lever arm

F_c = closing gripping force

$$F_a \text{ (opening gripping force)} = F_c + 10\%$$

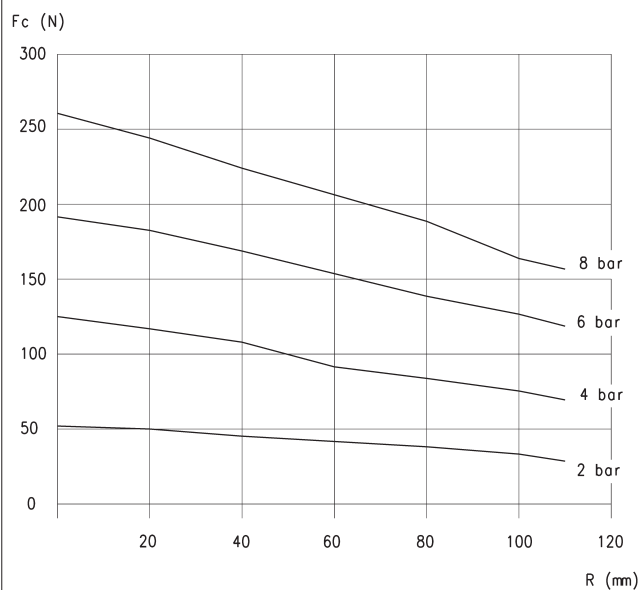


CGPT-25

R = lever arm

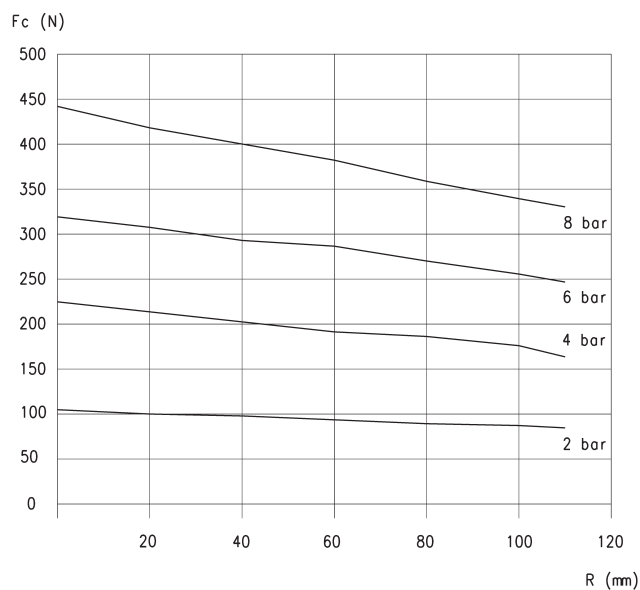
F_c = closing gripping force

$$F_a \text{ (opening gripping force)} = F_c + 10\%$$

GRIPPING FORCE (F_c) PER SINGLE JAW

CGPT-32

R = lever arm

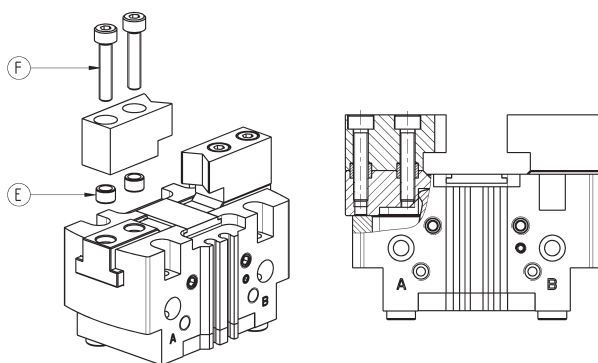
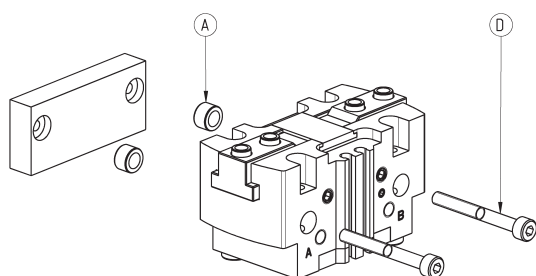
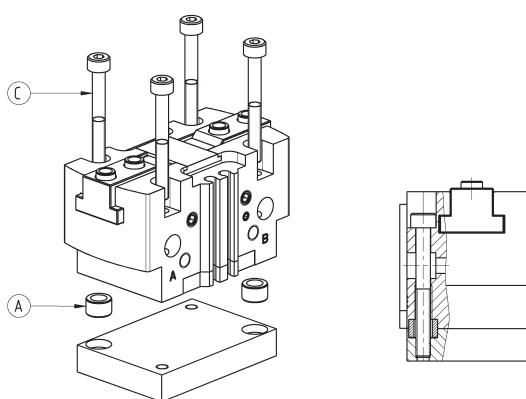
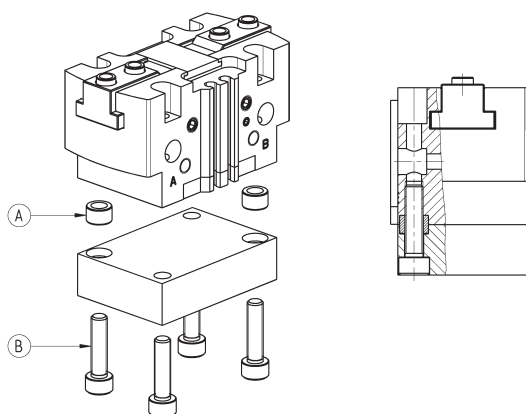
 F_c = closing gripping force F_a (opening gripping force) = $F_c + 10\%$ 

CGPT-40

R = lever arm

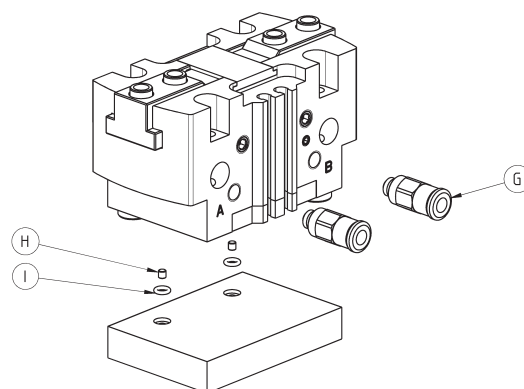
 F_c = closing gripping force F_a (opening gripping force) = $F_c + 10\%$

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



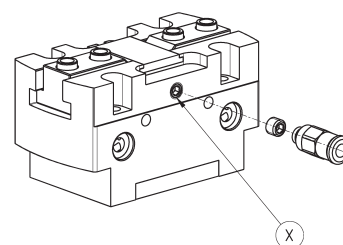
Mod.	G	H	I
CGPT-16	M3	M2	OR 1x2.5
CGPT-20	M5	M2	OR 1x2.5
CGPT-25	M5	M2	OR 1x2.5
CGPT-32	M5	M3	OR 1x3.5
CGPT-40	G1/8	M3	OR 1x3.5

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.

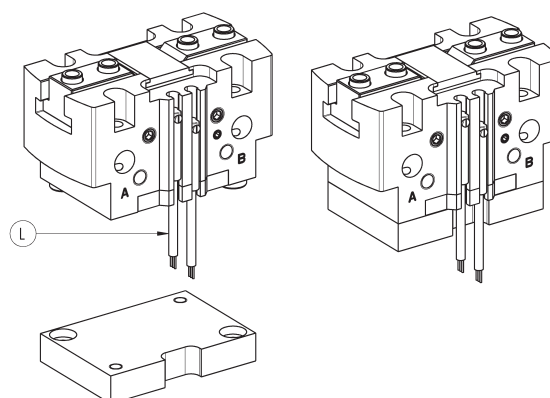


Mod.	X
CGPT-16	M3
CGPT-20	M5
CGPT-25	M5
CGPT-32	M5
CGPT-40	M5

Example of mounting: sensors

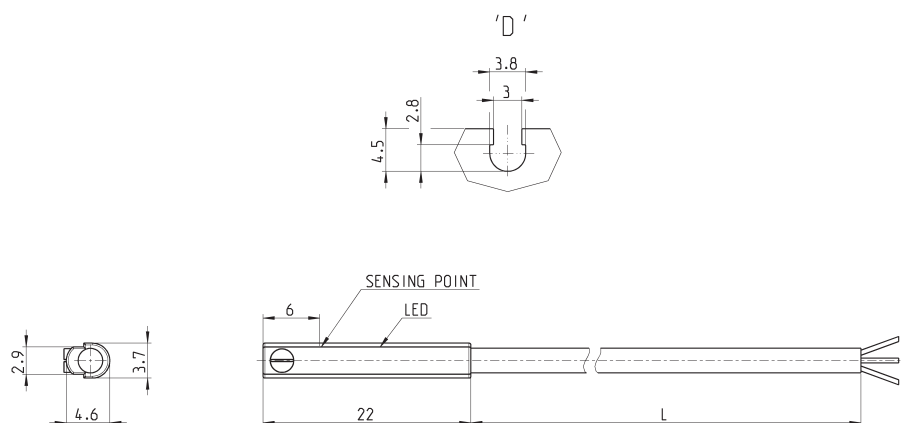
L = sensor mod. CSD-332 or mod. CSD-362

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

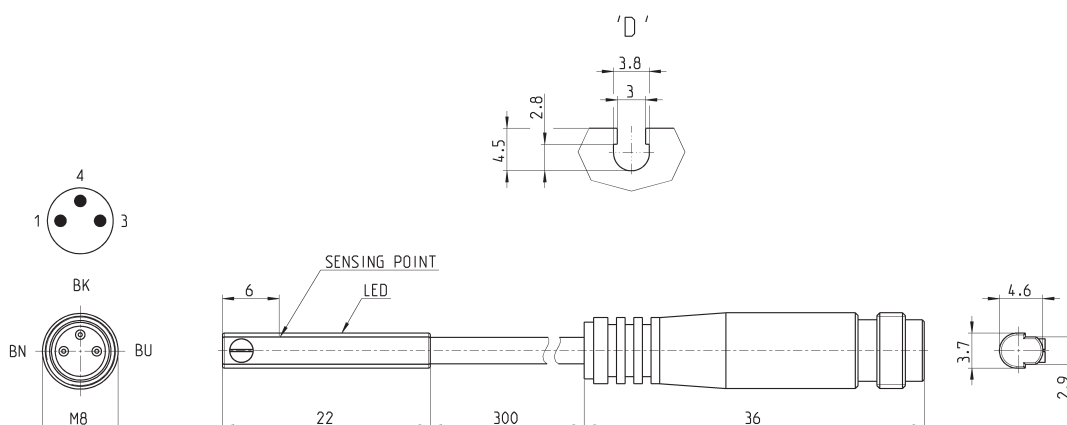
Series CSD magnetic proximity switches with 3-wire cable



Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L = length cable
CSD-332	Electronic	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	2 m

Series CSD magnetic proximity switches with male connector M8

Length of cable 0.3 metres



Mod.	Operation	Connection	Voltage	Output	Max. current	Max load	Protection
CSD-362	Electronic	3 wires with M8 connector	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage