

THREE-JAW GRIPPERS WITH T-GUIDE

SERIES CGZT

Single and double acting, magnetic, self-centering
 Sizes: 40, 50, 64, 80, 100, 125, 160 mm



The new Series CGZT pneumatic grippers, thanks to the use of a high performing and precise force transmission system, are able to provide high gripping forces, while guaranteeing high repeatability in a compact and light design.

Available in 7 sizes (40, 50, 64, 80, 100, 125 and 160) and three different versions (double acting, single acting NO and single acting NC), allows you to find the best solution for every handling need. They are also available with a part retaining unit. This gripper series results particularly suitable to be combined with anthropomorphic or collaborative robots and gantry systems for applications in Pick and Place units, Material handling and the loading/unloading operations of machine tools.

- Robust and light
- 3 self-centering jaws
- IP 40
- Fixing from the top and from below
- Supply on the side or on the bottom (even without using tubes)
- Double position detection
- Variants available for use in ATEX zones and for high temperatures
- In compliance with ROHS directive
- High positioning repeatability
- High resistance and reliability to external loads thanks to T-guide
- PTFE, Silicone and Copper free

General Data

Type of construction	Three-jaw self-centering gripper with T-guide
Operation	Single acting (NO, NC) double acting
Sizes	40, 50, 64, 80, 100, 125, 160 mm
Force transmission	Lever
Air connections	M3 (40), M5 (50, 64, 80), G1/8 (100, 125, 160)
Working pressure	2 ÷ 8 bar (double acting), 4 ÷ 8 bar (single acting)
Working temperature	5°C ÷ 60°C (standard) - 5°C ÷ 130°C (high temperature version)
Store temperature	-10°C ÷ 80°C
Max. use frequency	5 Hz (40, 50, 64); 3 Hz (80); 2 Hz (100, 125); 1 Hz (160)
Repeatability [% FS]	≤ 0.02 mm
Interchangeability	0.1 mm
Medium	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	IP40
Compatibility	ROHS Directive
Certifications	ATEX (II2G Ex h IIC T4 Gb II2D Ex h IIIC T120° Db -20°C≤Tas70°C). Add EX at the end of the commercial code to order the ATEX version.
Materials	Free from Copper, PTFE and Silicone

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

THREE-JAW GRIPPERS WITH T-GUIDE
SERIES CGZT - CODING EXAMPLES

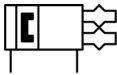
Coding example

CGZT	-	050	-	NC	-	W	EX
CGZT	SERIES						
050	SIZES 040 = Ø25 050 = Ø33 064 = Ø43 080 = Ø54 100 = Ø76 125 = Ø96 160 = Ø125						
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 (130°C) - non 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



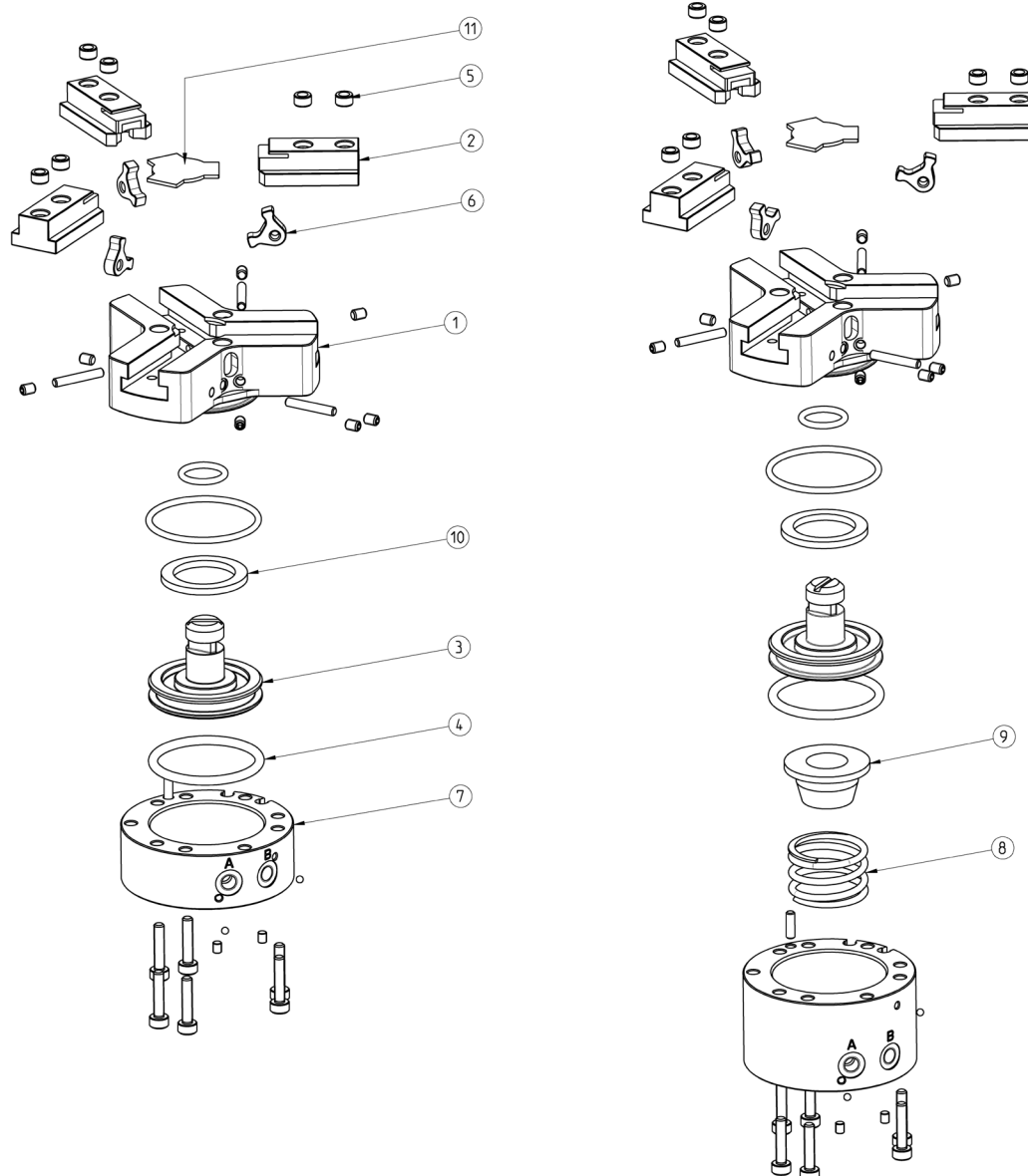
PNZ2



PNZ3

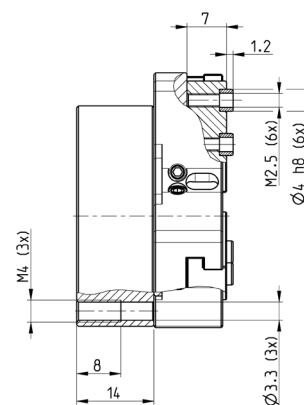
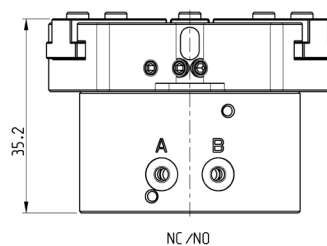
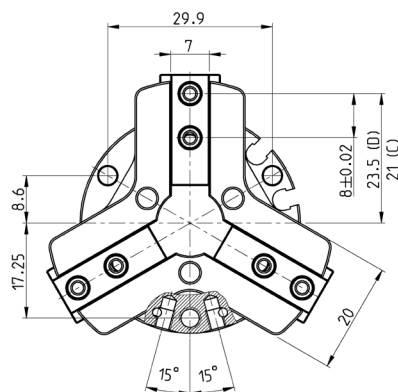
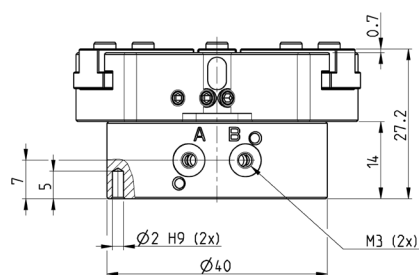
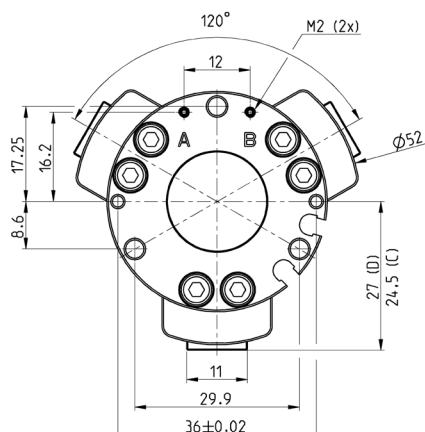


Series CGZT gripper - construction



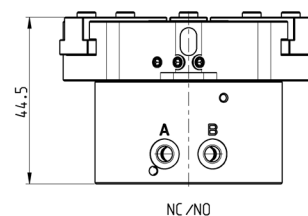
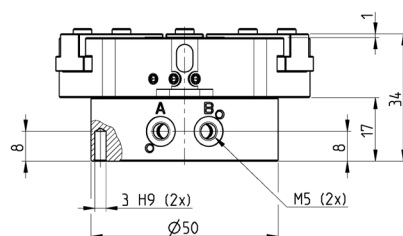
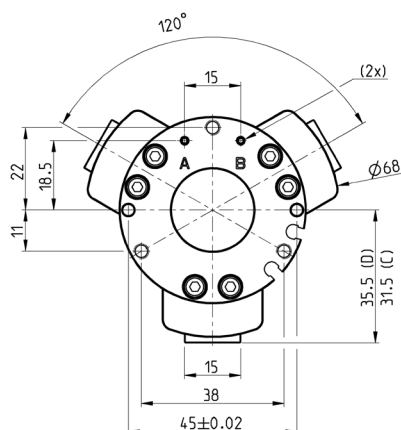
Parts	Materials
1 - Body	Aluminium
2 - Jaw	Stainless steel
3 - Piston	Stainless steel
4 - Seals	HNBR / FKM
5 - Centering bushes	Stainless steel
6 - Levers	Steel
7 - End cover	Aluminium
8 - Spring	Steel
9 - Spring guide	Aluminium
10 - Magnet	Neodymium
11 - Cover	Stainless steel

Gripper - size 40 mm

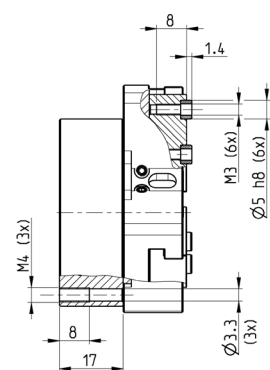
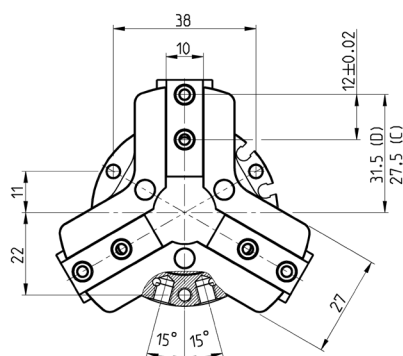


DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection
C = Closed gripper
D = Open gripper

Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening T (ms)	Closing T (ms)	Weight [kg]
CGZT-040	60	181	67	202	2.5	2 ÷ 8	5 ÷ 60	≤ 0.02	57	63	0.114
CGZT-040-NC	93	280	33	100	2.5	4 ÷ 8	5 ÷ 60	≤ 0.02	56	106	0.132
CGZT-040-NO	27	80	100	300	2.5	4 ÷ 8	5 ÷ 60	≤ 0.02	79	49	0.130

Gripper - size 50 mm


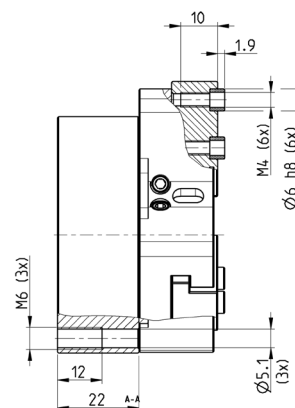
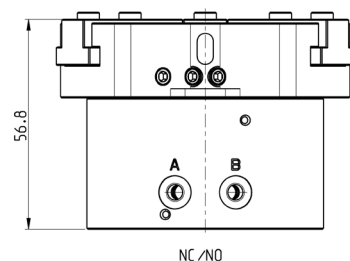
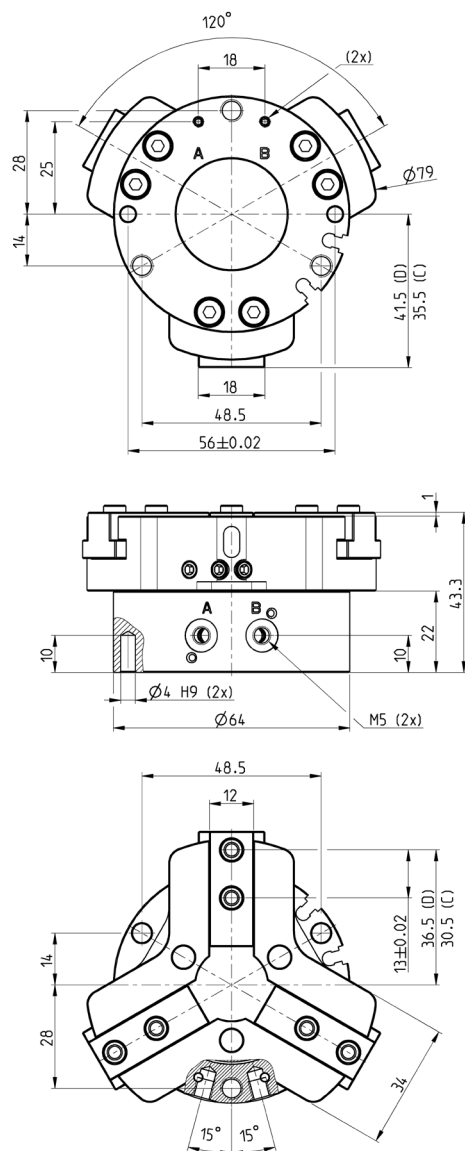
NC / NO



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

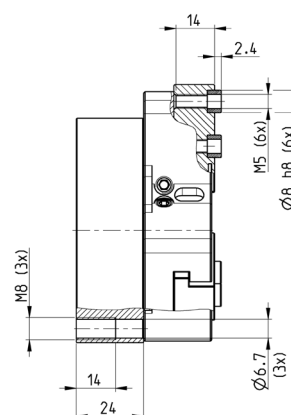
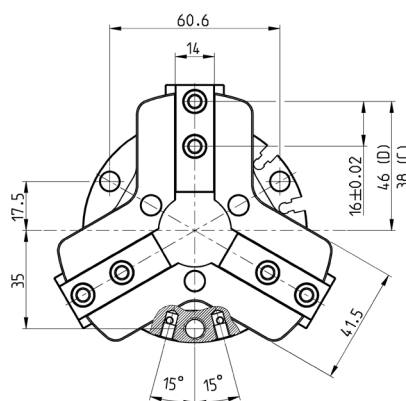
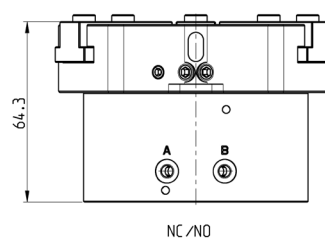
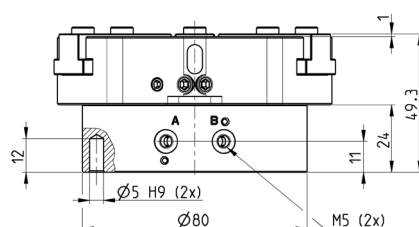
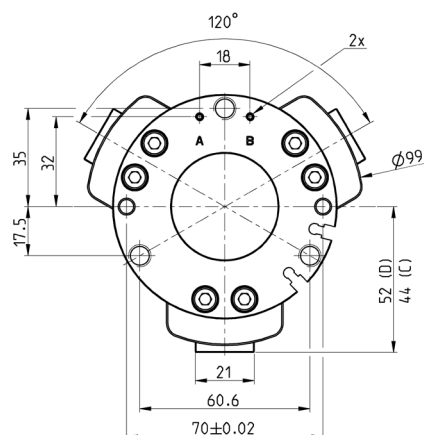
Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening (ms)	Closing T (ms)	Weight [kg]
CGZT-050	115	346	130	390	4	2 ÷ 8	5 ÷ 60	≤ 0.02	75	85	0.240
CGZT-050-NC	160	480	83	250	4	4 ÷ 8	5 ÷ 60	≤ 0.02	56	151	0.280
CGZT-050-NO	70	210	173	520	4	4 ÷ 8	5 ÷ 60	≤ 0.02	137	55	0.275

Gripper - size 64 mm



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

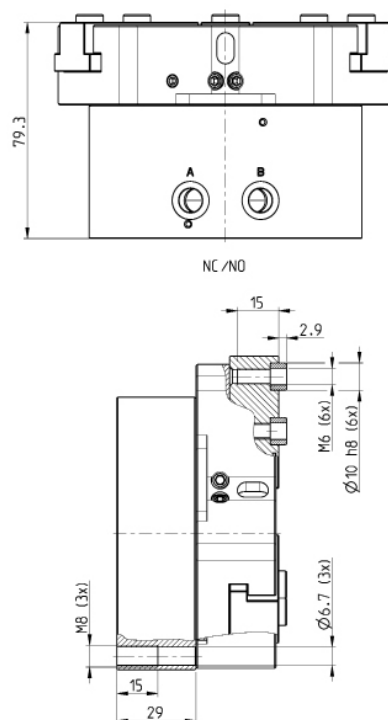
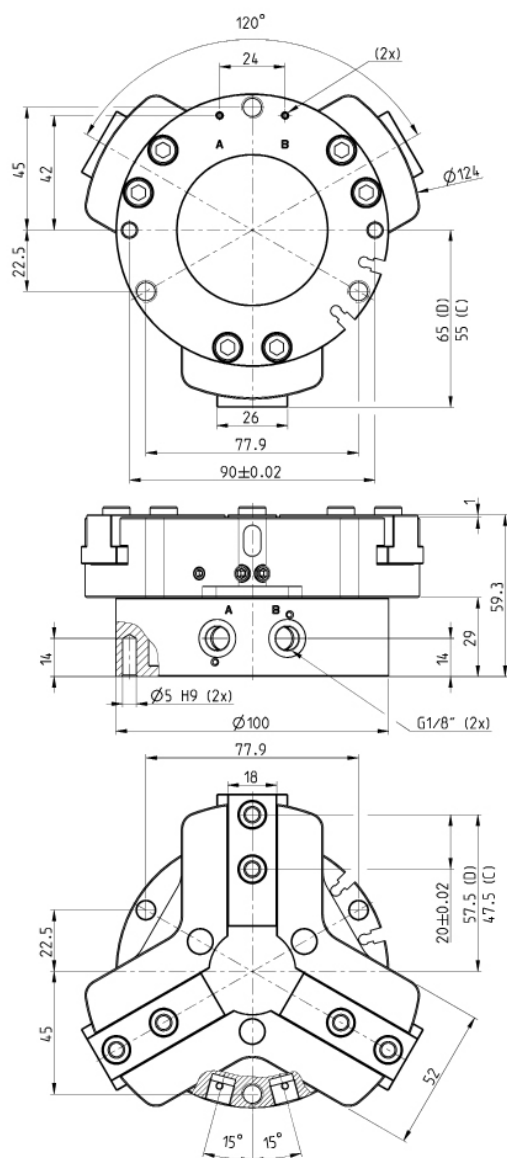
Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening TC (ms)	Closing TC (ms)	Weight [kg]
CGZT-064	223	670	242	726	6	2 ÷ 8	5 ÷ 60	≤ 0.02	85	104	0.461
CGZT-064-NC	320	960	147	440	6	4 ÷ 8	5 ÷ 60	≤ 0.02	88	158	0.560
CGZT-064-N0	127	380	323	970	6	4 ÷ 8	5 ÷ 60	≤ 0.02	153	71	0.537

Gripper - size 80 mm


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

Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening (ms)	T Closing (ms)	Weight [kg]
CGZT-080	327	980	359	1078	8	2 ÷ 8	5 ÷ 60	≤ 0.02	116	133	0.796
CGZT-080-NC	437	1310	247	740	8	4 ÷ 8	5 ÷ 60	≤ 0.02	88	258	0.987
CGZT-080-NO	213	640	450	1350	8	4 ÷ 8	5 ÷ 60	≤ 0.02	195	73	0.934

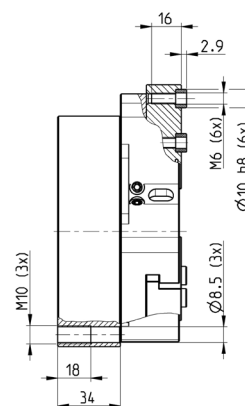
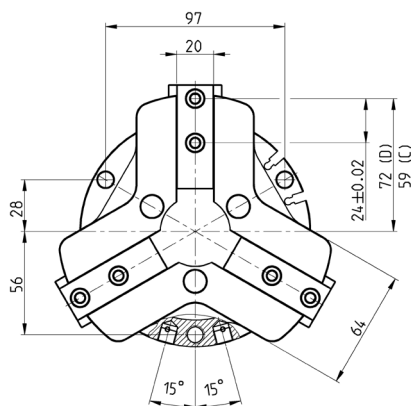
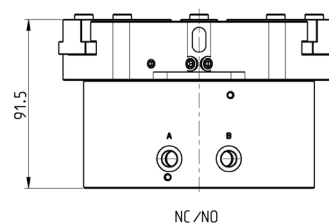
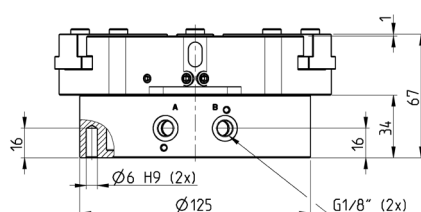
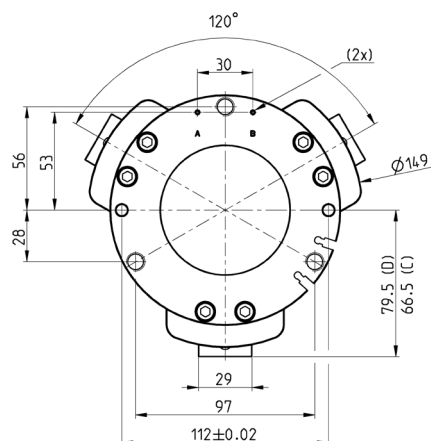
Gripper - size 100 mm



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

Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening T (ms)	Closing T (ms)	Weight [kg]
CG2T-100	677	2030	722	2165	10	2 ÷ 8	5 ÷ 60	≤ 0.02	135	155	1.483
CG2T-100-NC	873	2620	523	1570	10	4 ÷ 8	5 ÷ 60	≤ 0.02	74	254	1.790
CG2T-100-NO	480	1440	917	2750	10	4 ÷ 8	5 ÷ 60	≤ 0.02	282	75	1.755

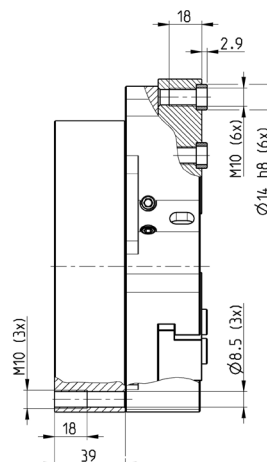
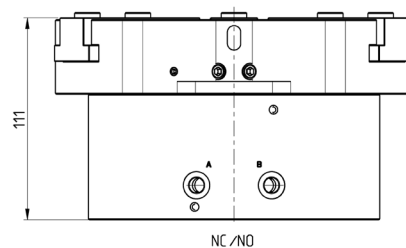
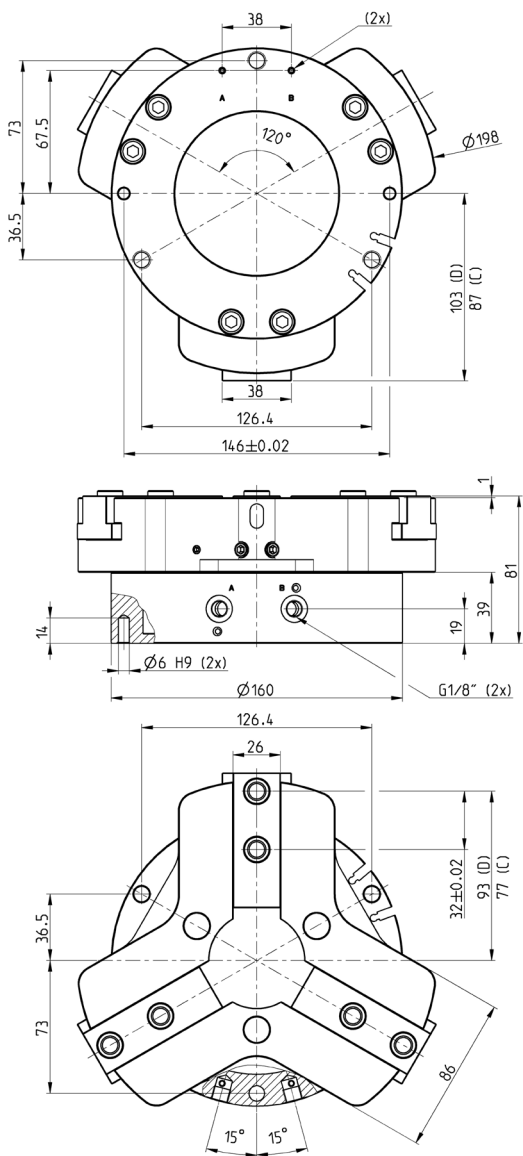
Gripper - size 125 mm



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

Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening T (ms)	Closing T (ms)	Weight [kg]
CGZT-125	1123	3370	1198	3594	13	2 ÷ 8	5 ÷ 60	≤ 0.02	198	227	2.220
CGZT-125-NC	1400	4200	920	2760	13	4 ÷ 8	5 ÷ 60	≤ 0.02	108	349	3.005
CGZT-125-NO	843	2530	1477	4430	13	4 ÷ 8	5 ÷ 60	≤ 0.02	329	119	2.752

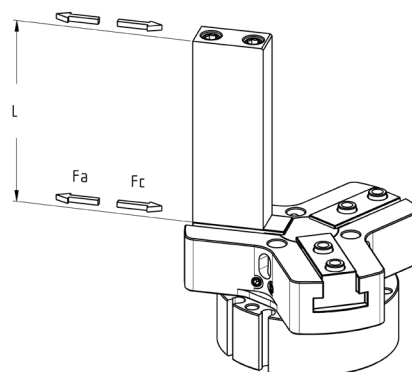
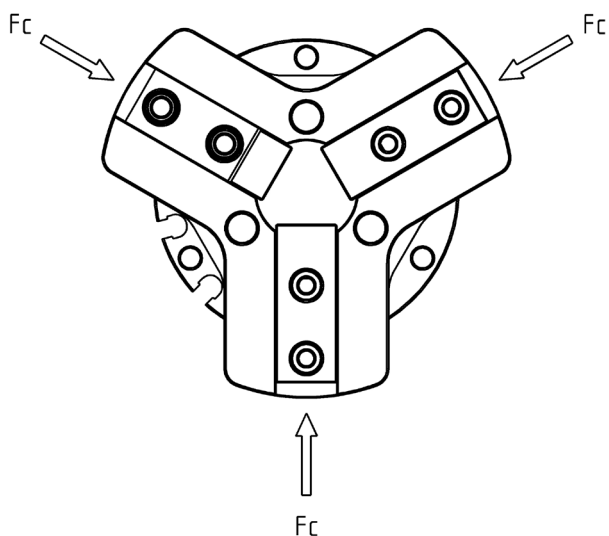
Gripper - size 160 mm



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

Mod.	Closing gripping force per jaw at 6 bar [N]	Total closing gripping force at 6 bar [N]	Opening gripping force per jaw at 6 bar [N]	Total opening gripping force at 6 bar [N]	Stroke per jaw [mm]	Working pressure [bar]	Working temperature [°C]	Repeatability [mm]	Opening (ms)	TClosing (ms)	TWeight [kg]
CGZT-160	1927	5300	1767	5780	16	2 ÷ 8	5 ÷ 60	≤ 0.02	239	304	4.714
CGZT-160-NC	2150	6450	1540	4620	16	4 ÷ 8	5 ÷ 60	≤ 0.02	150	791	6.504
CGZT-160-NO	1380	4140	2310	6930	16	4 ÷ 8	5 ÷ 60	≤ 0.02	418	129	5.851

Gripping force per single jaw



The total gripping force has to be calculated as follows:

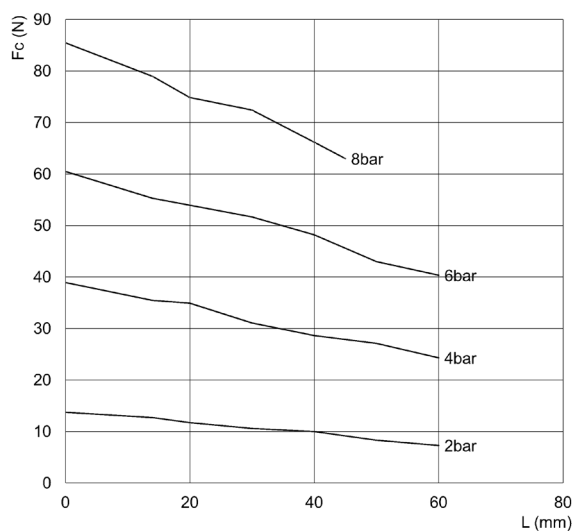
$$\text{Total } F_c = F_c \times 3$$

$$\text{Total } F_a = F_a \times 3$$

F_c = closing gripping force

F_a = opening gripping force

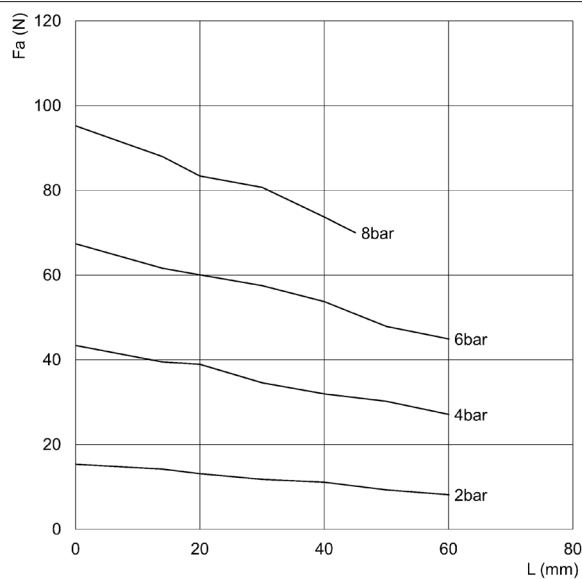
L = gripping point length



CGZT-040

F_c = closing gripping force

L = gripping point length

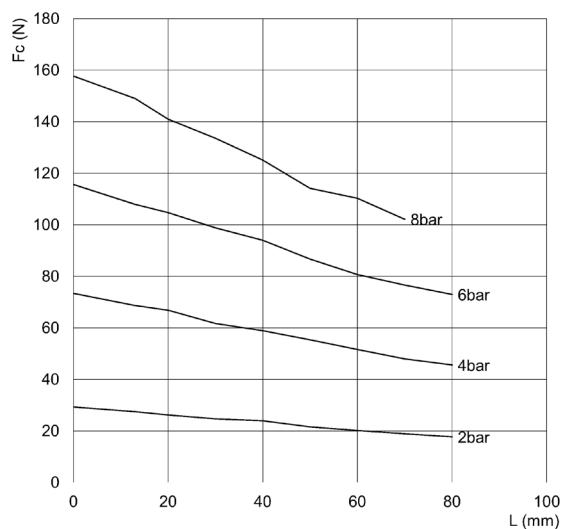


CGZT-040

F_a = opening gripping force

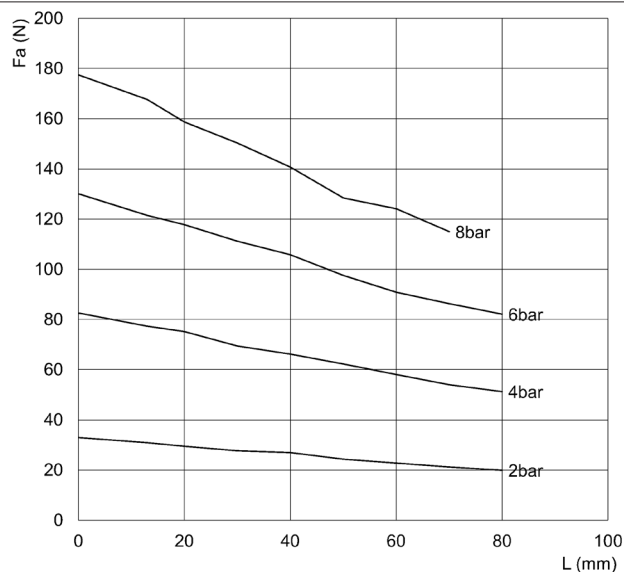
L = gripping point length

Gripping force per single jaw



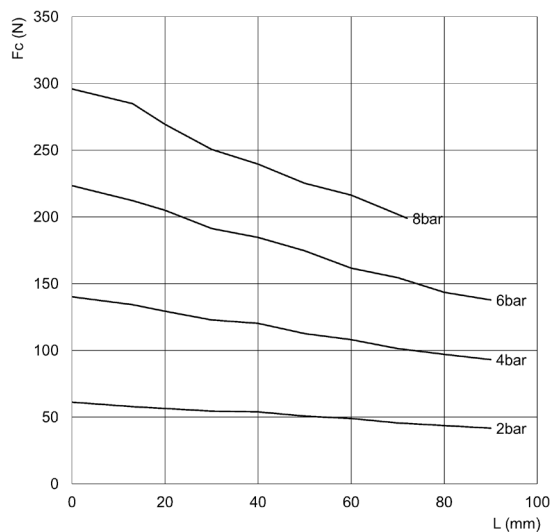
CGZT-050

F_c = closing gripping force
 L = gripping point length



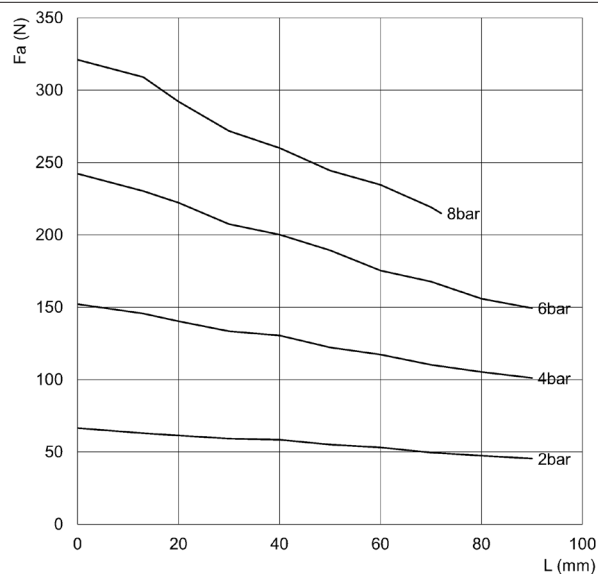
CGZT-050

F_a = opening gripping force
 L = gripping point length



CGZT-064

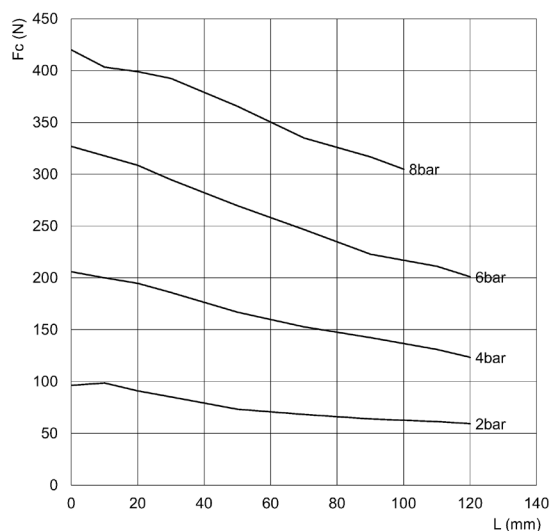
F_c = closing gripping force
 L = gripping point length



CGZT-064

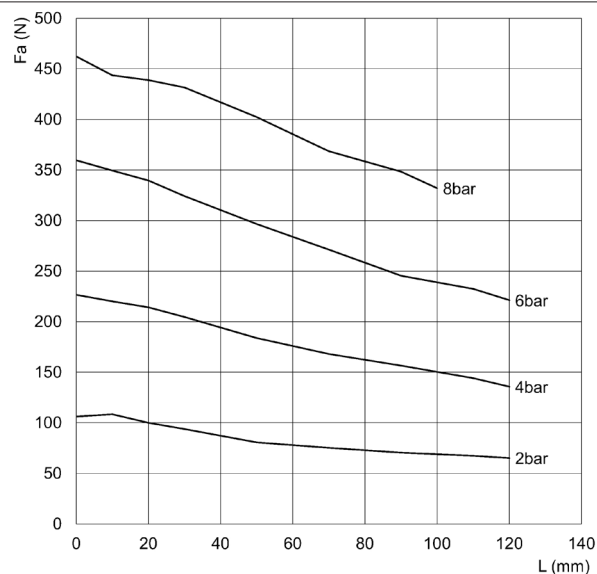
F_a = opening gripping force
 L = gripping point length

Gripping force per single jaw



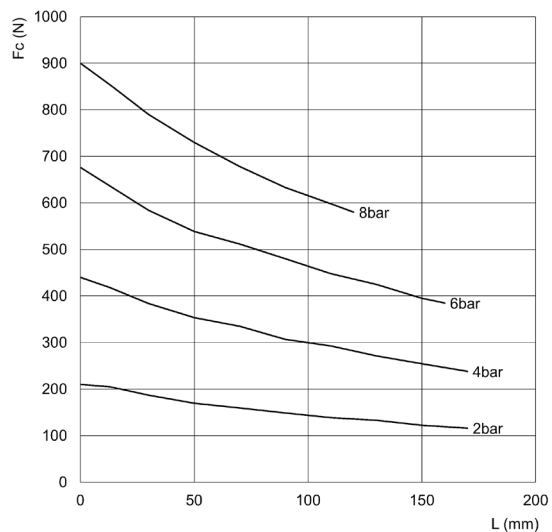
CGZT-080

F_c = closing gripping force
 L = gripping point length



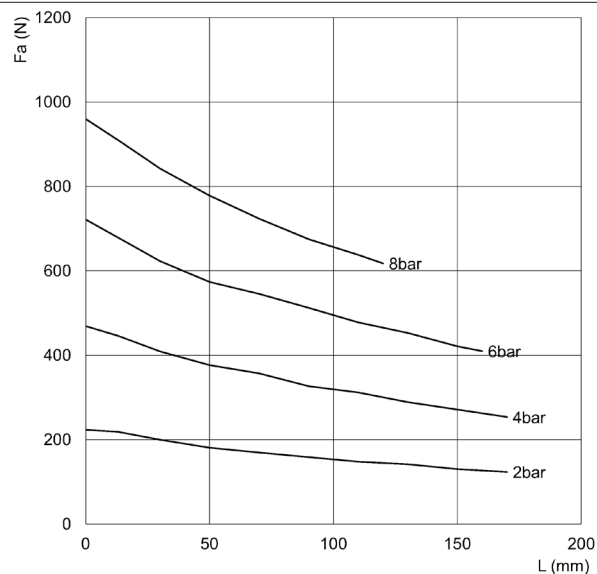
CGZT-080

F_a = opening gripping force
 L = gripping point length



CGZT-100

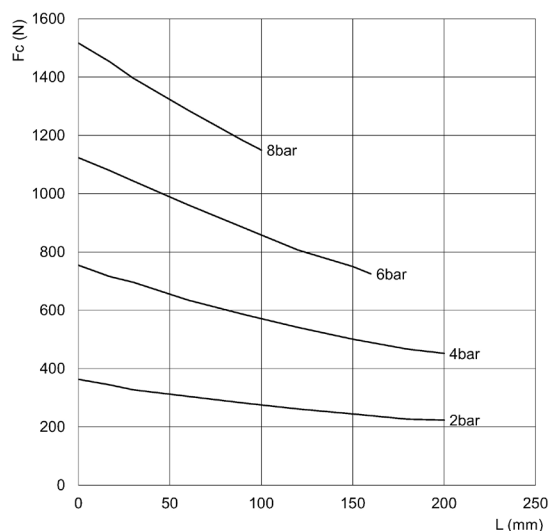
F_c = closing gripping force
 L = gripping point length



CGZT-100

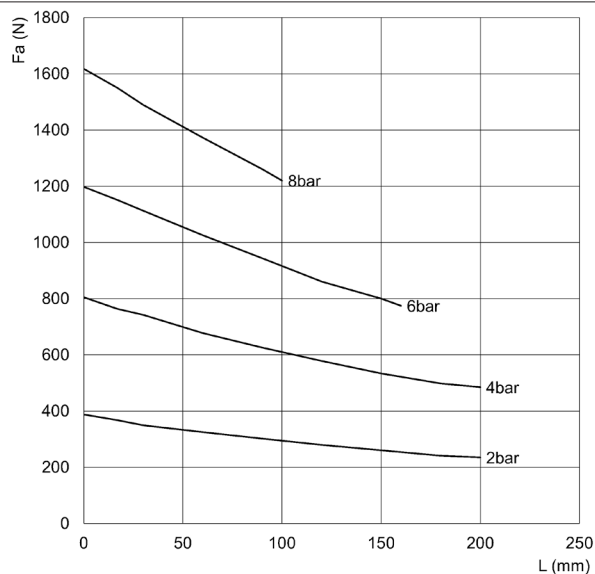
F_a = opening gripping force
 L = gripping point length

Gripping force per single jaw



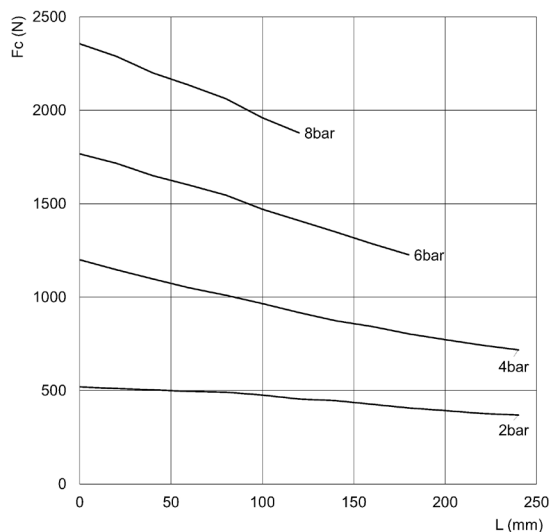
CGZT-125

F_c = closing gripping force
 L = gripping point length



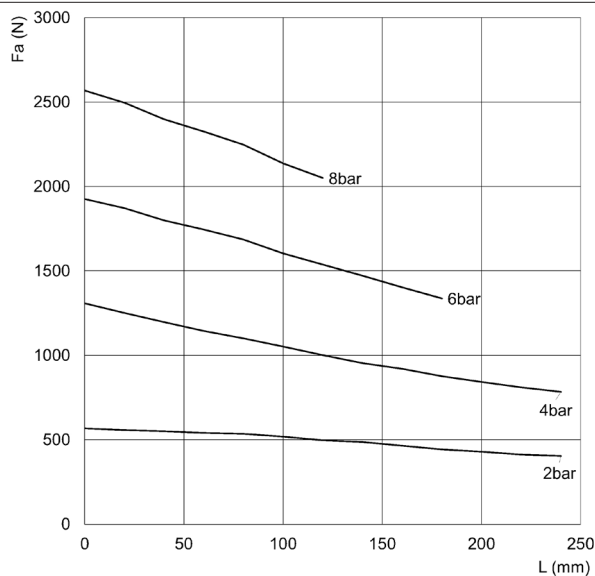
CGZT-125

F_a = opening gripping force
 L = gripping point length



CGZT-160

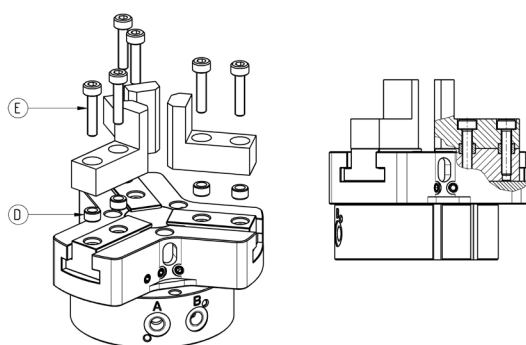
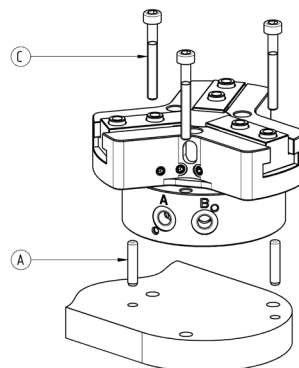
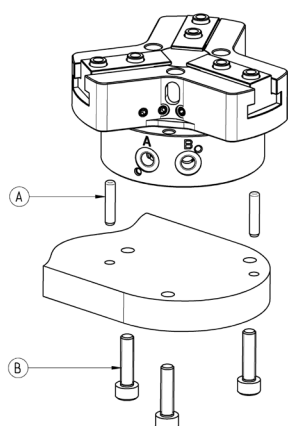
F_c = closing gripping force
 L = gripping point length



CGZT-160

F_a = opening gripping force
 L = gripping point length

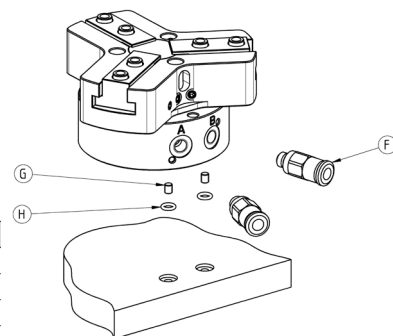
Examples of mounting



Mod.	A	B	C	D	E
CGZT-040	Ø2	M4	M3	Ø4	M2.5
CGZT-050	Ø3	M4	M3	Ø5	M3
CGZT-064	Ø4	M6	M5	Ø6	M4
CGZT-080	Ø5	M8	M6	Ø8	M5
CGZT-100	Ø5	M8	M6	Ø10	M6
CGZT-125	Ø6	M10	M8	Ø10	M6
CGZT-160	Ø6	M10	M8	Ø14	M10

Air supply ports

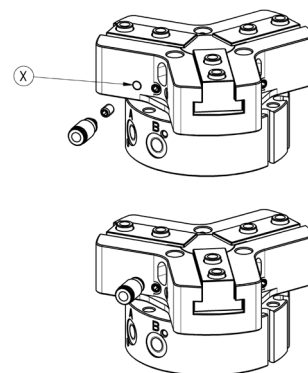
Mod.	F	G	H
CGZT-040	M3	M2	OR 1x2.5
CGZT-050	M5	M2.5	OR 1x3
CGZT-064	M5	M3	OR 1x3.5
CGZT-080	M5	M3	OR 1x3.5
CGZT-100	G1/8	M3	OR 1x3.5
CGZT-125	G1/8	M3	OR 1x3.5
CGZT-160	G1/8	M4	OR 1x4.5



Example of use of the pressurization/lubrication hole

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

- 1: grease the sliding zones using Molykote DX grease.
- 2: supply a pressure of max 1 bar in order to avoid the sudden ejection of grease.

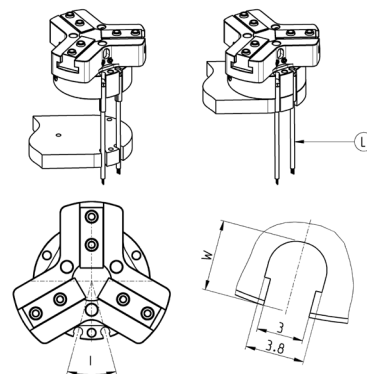


Mod.	X
CGZT-040	M3
CGZT-050	M3
CGZT-064	M5
CGZT-080	M5
CGZT-100	M5
CGZT-125	M5
CGZT-160	M5

Example of mounting: sensors

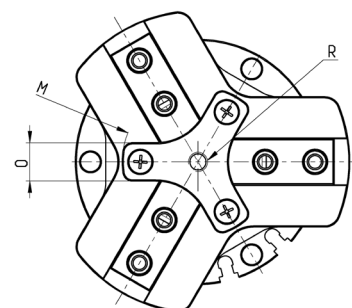
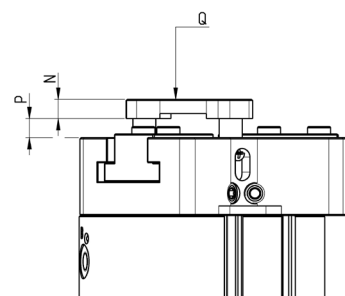
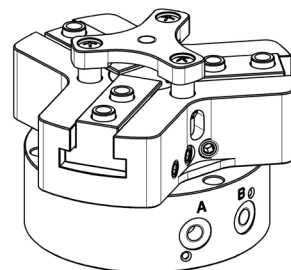
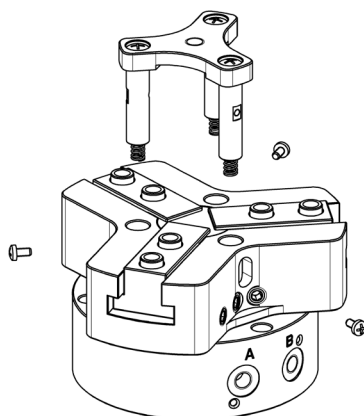
L = sensor Series CSD

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



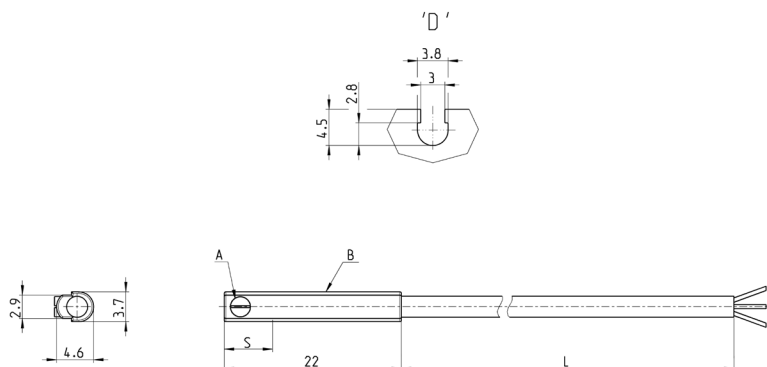
Mod.	I	W
CGZT-040	32°	4.5
CGZT-050	30°	4.6
CGZT-064	30°	6.5
CGZT-080	32°	8.7
CGZT-100	28°	9.3
CGZT-125	24°	11.5
CGZT-160	20°	12.5

Part retaining unit



Mod.	M	N	O	P	Q	R
P-CGZT-040	Ø24	3,5	6	0 ÷ 2,5	10N	M3
P-CGZT-050	Ø32,5	4,5	8	0 ÷ 3	14N	M4
P-CGZT-064	Ø39,5	5	10	0 ÷ 5	21N	M5
P-CGZT-080	Ø49	6	12,5	0 ÷ 5	32N	M6
P-CGZT-100	Ø59	7	14	0 ÷ 5	48N	M8
P-CGZT-125	Ø73	8	18	0 ÷ 6	85N	M10
P-CGZT-160	Ø99	9,5	25	0 ÷ 6	185N	M10

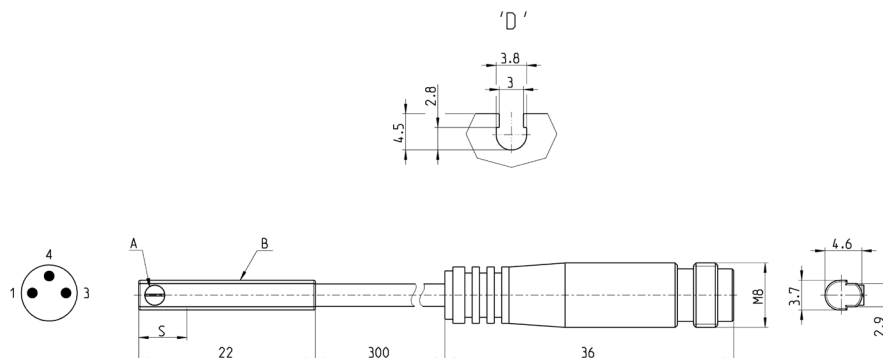
Magnetic proximity switches, 3-wire cable, D-slot



A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CSD-D-334	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	2 m	7,5 mm	Red
CSD-D-334-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	5 m	7,5 mm	Red
CSD-D-374	Magnetoresistive	3 wires	10 ÷ 27 V DC	NPN	200 mA	6W	Against polarity reversing and overvoltage	2 m	7,5 mm	Red
CSD-D-374-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	NPN	200 mA	6W	Against polarity reversing and overvoltage	5 m	7,5 mm	Red

Magnetic proximity switches, male M8 3-pin conn., D-slot, straight



A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CSD-D-364	Magnetoresistive	3 wires with M8 connector	10 ÷ 27 V DC	PNP	200 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Red
CSD-D-384	Magnetoresistive	3 wires with M8 connector	10 ÷ 27 V DC	NPN	200 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Red