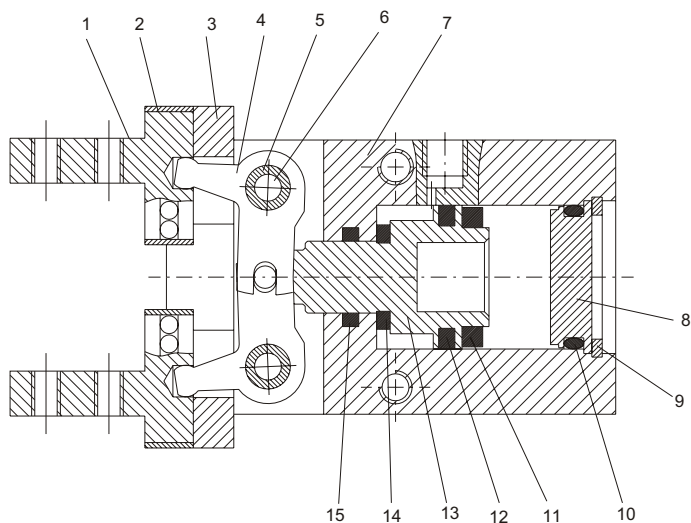
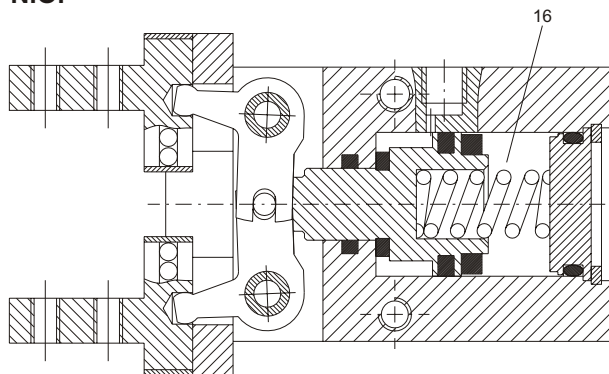
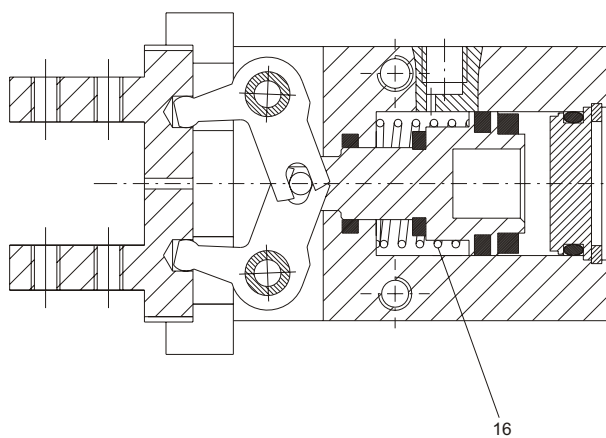


**Single acting version
N.O.**



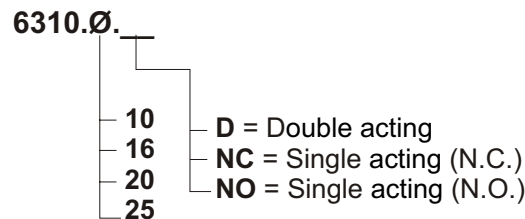
**Single acting version
N.C.**



Pos.	Item	Qty.	Pos.	Item	Qty.
1	Finger	2	10	End cover seal	1
2	Closing plate	4	11	Magnet	1
3	Guide	1	12	Piston seal	1
4	Lever	1	13	Piston	1
5	Bushing	2	14	Cushioning washer	1
6	Pin	2	15	Rod seal	1
7	Body	1	16	Spring	1
8	End cover	1			
9	Circlip	1			



Ordering code



Magnetic sensors : see page 3.38 - 3.39 e 3.40

Construction characteristics

Body	aluminium
Piston	aluminium or stainless steel (depending on the bore)
Fingers	steel
End cover	aluminium
Seals	oil resistant NBR rubber

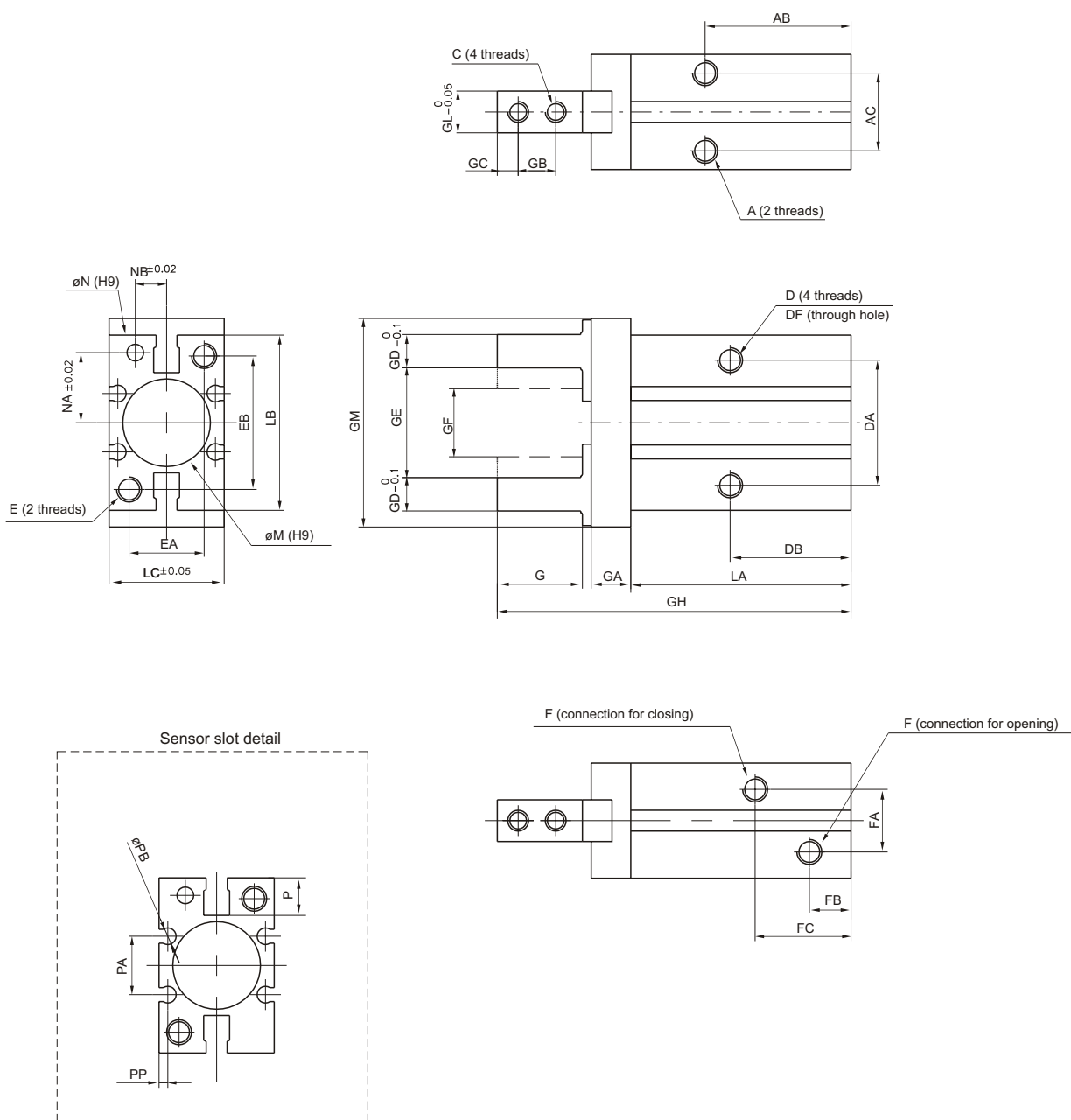
Construction characteristics

Fluid	filtered and non lubricated air
Working pressure	double acting : 2 ÷ 7 bar for ø10 - 1 ÷ 7 for other bores single acting : 3,5 ÷ 7 bar for ø10 - 2,5 ÷ 7 for other bores
Operating temperature	-5°C ÷ +70°C

Holding force per finger

Bore	Force (N)			
	e	i	e	i
ø10	9,8	17	6,3	12
ø16	30	40	24	31
ø20	42	66	28	56
ø25	65	104	45	83
double acting			N.O.	N.C.
			single acting	

e = external holding force
i = internal holding force

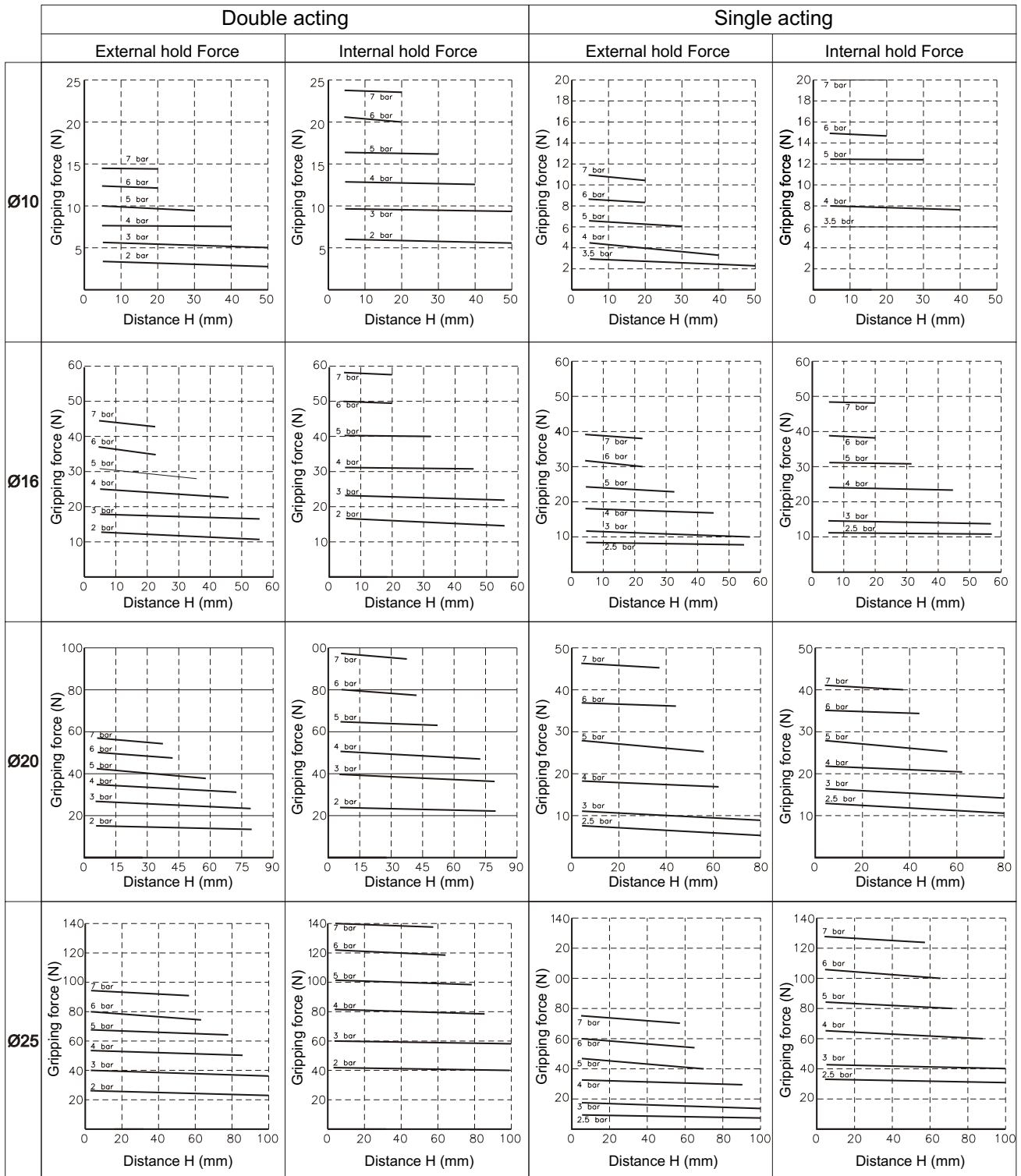
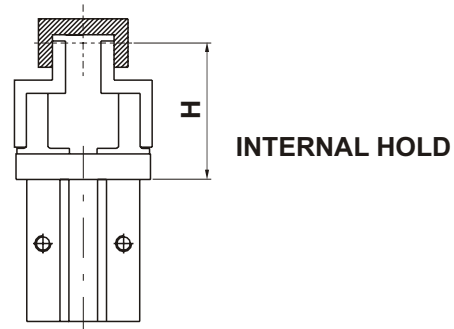
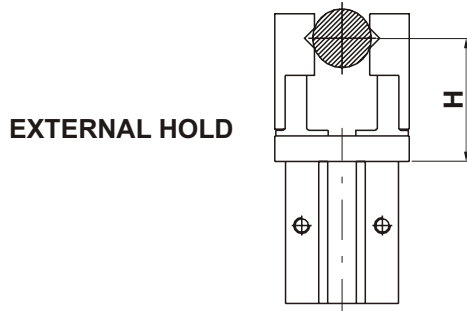


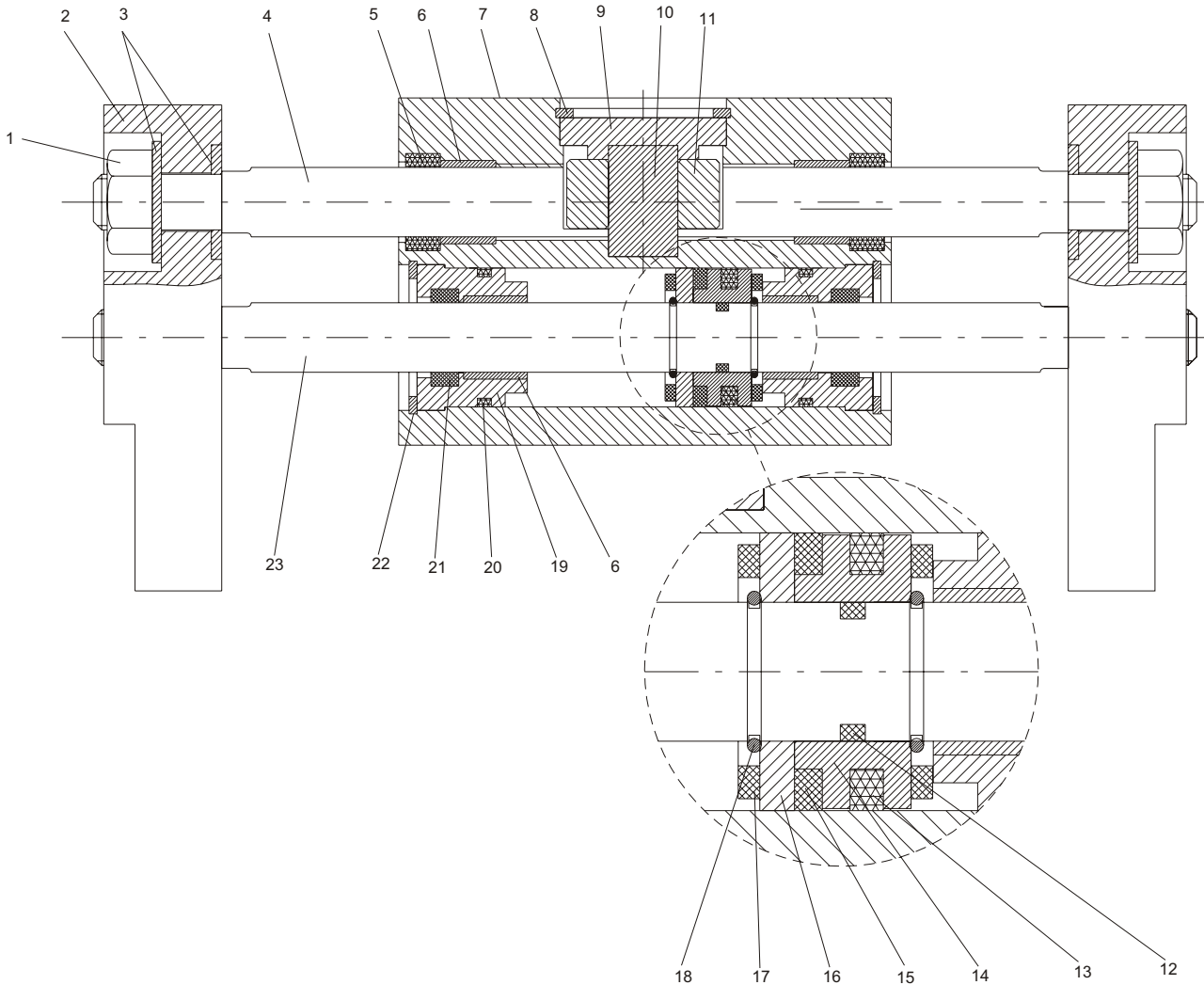
3

Bore	A	AB	AC	C	D	DA	DB	ØDF	E	EA	EB	F	FA
Ø10	M3x0,5 (useful depth 6)	27	11,4	M2,5x0,45	M3x0,5 (useful depth 5,5)	16	23	2,6	M3x0,5 (useful depth 6)	12	18	M3x0,5	11
Ø16	M4x0,7 (useful depth 4,5)	30	16	M3x0,5	M4x0,7 (useful depth 8)	24	24,5	3,4	M4x0,7 (useful depth 8)	15	22	M5x0,8	13
Ø20	M5x0,8 (useful depth 8)	35	18,6	M4x0,7	M5x0,8 (useful depth 10)	30	29	4,3	M5x0,8 (useful depth 10)	18	32	M5x0,8	15
Ø25	M6x1 (useful depth 10)	36,5	22	M5x0,8	M6x1 (useful depth 12)	36	30	5,1	M6x1 (useful depth 12)	22	40	M5x0,8	20

Bore	FB	FC	G	GB	GC	GA	GD	GE	GF	GH	GL	GM	LA	LB	LC	ØM (H9)	ØN (H9)	NA	NB	P
Ø10	9	19	12	5,7	3	6	4	15,2	11,2	57	5	29	37,8	23	16,4	11 (depth 2)	2 (depth 3)	7,6	5,2	5,4
Ø16	7,5	19	15,5	7	4	7,5	5	20,9	14,9	67,5	8	38	42,5	30,6	23,6	17 (depth 2)	3 (depth 3)	11	6,5	5,8
Ø20	10	23	20	9	5	9,5	8	26,3	16,3	84,8	10	50	52,8	42	27,6	21 (depth 3)	4 (depth 4)	16,8	7,5	9
Ø25	10,7	23,5	25	12	6	11	10	33,3	19,3	102,7	12	63	63,6	52	33,6	26 (depth 3,5)	4 (depth 4)	21,8	10	11,5

Bore	PA	ØPB	PP
Ø10	/	/	/
Ø16	11,6	4	2,1
Ø20	14	4	2,1
Ø25	19	4	3,5





Pos.	Item	Qty.	Pos.	Item	Qty.
1	Nut	4	13	Piston seal	2
2	Finger	2	14	Piston	2
3	Washer	8	15	Magnet	2
4	Rack	2	16	Piston closing washer	2
5	Rod seal	8	17	Cushioning washer	4
6	Rack guiding bush	4	18	Holding ring	4
7	Body	1	19	Bushing	4
8	Circlip	1	20	Bushing seal	4
9	End cover	1	21	Rod seal	4
10	Pinion axis	1	22	Circlip	4
11	Pinion	1	23	Piston rod	2
12	Seal	2			



Ordering Code

6311.Ø.D.	<ul style="list-style-type: none"> 16 20 25 32 40 	Ordering code options	Stroke				
			30	40	50	70	100
		1	60	80	100	120	160
		2	80	100	120	160	200
			Ø16	Ø20	Ø25	Ø32	Ø40
		Bore					

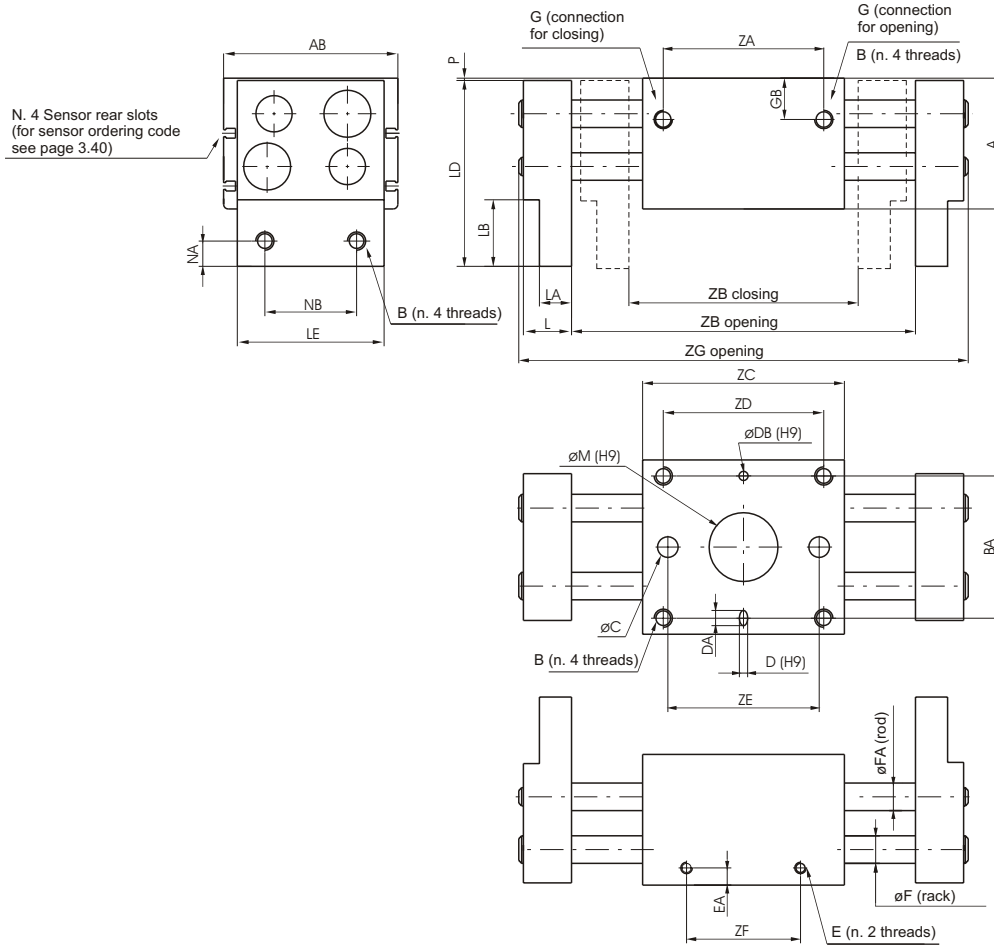
Magnet sensors: see page 3.40

Construction characteristics

Body	aluminium
Piston	brass
Fingers	aluminium
Rod	steel
Rack	steel
Pinion	steel

Technical characteristics

Fluid	filtered and non lubricated air
Function	double acting
Working pressure	1,6 bar
Working temperature	-5°C ÷ +70°C



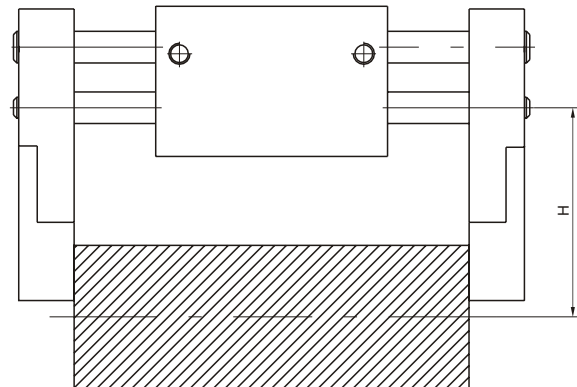
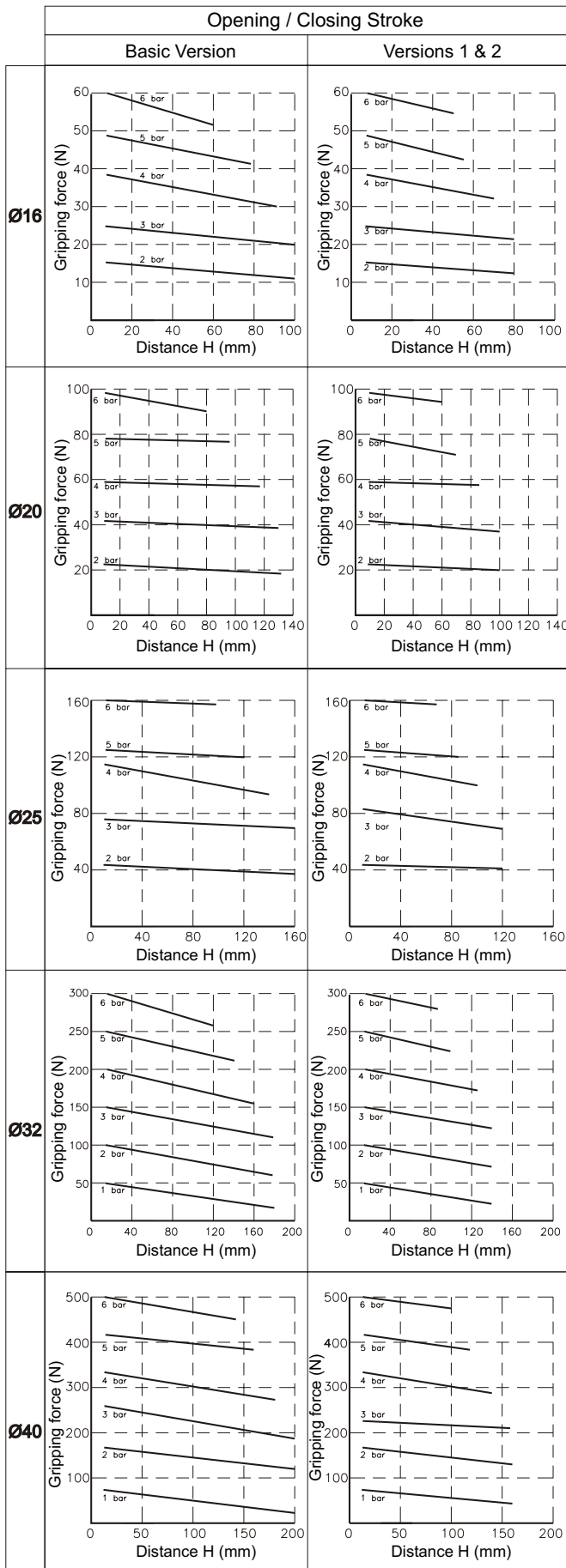
Bore	A	AB	B	BA	$\varnothing C$	D (H9)	DA	$\varnothing DB$ (H9)	E	EA	$\varnothing F$	FA	G	GB	L	LA
Ø16	39	55	M5x0,8 (useful depth 10)	42	5,5	3 (depth 3)	4	3 (depth 3)	M5x0,8 (useful depth 7)	10	8	8	M5x0,8	10	13	9
Ø20	46	65	M6x1 (useful depth 12)	52	6,6	4 (depth 4)	5	4 (depth 4)	M6x1 (useful depth 7)	11	10	10	M5x0,8	11	17	12,5
Ø25	57	76	M8x1.25 (useful depth 16)	62	9	4 (depth 4,5)	5	4 (depth 4,5)	M8x1.25 (useful depth 7)	12,5	12	12	M5x0,8	16	21	14
Ø32	68	82	M8x1.25 (useful depth 16)	64	/	6 (depth 8)	7	6 (depth 8)	M8x1.25 (useful depth 11)	22	14	16	G1/8	16	24	15
Ø40	79	98	M10x1.5 (useful depth 20)	76	/	6 (depth 8)	7	6 (depth 8)	M10x1.5 (useful depth 12)	28	16	20	G1/8	18	28	18

Bore	LB	LD	LE	$\varnothing M$ (H9)	N	NA	NB	P
Ø16	19	57,5	43	23 (depth 1,5)	M5x0,8	8	25	0,5
Ø20	24	69	54	27 (depth 1,5)	M6x1	10	30	1
Ø25	29	80	64	32 (depth 1,5)	M8x1,25	12	40	1
Ø32	32	99	70	35 (depth 2,5)	M10x1,5	15	50	1
Ø40	38	116	86	40 (depth 2,5)	M12x1,75	18	60	1

Bore	Opening/Closing Stroke	ZA	ZB		ZC	ZD	ZE	ZF	ZG	Weight (gr.)
			closing	opening					opening	
Ø16	30	26	68	98	60	45	40	28	128	600
	60	50	110	170	90	75	70	58	200	800
	80	70	130	210	110	95	90	78	240	950
Ø20	40	32	82	122	71	58	54	38	160	1000
	80	68	142	222	113	100	96	80	260	1500
	100	88	162	262	133	120	116	100	300	1700
Ø25	50	47	100	150	88	70	66	48	196	1700
	100	86	182	282	142	124	120	102	328	2500
	120	104	200	320	160	142	138	120	366	2800
Ø32	70	56	150	220	110	86	/	60	272	2900
	120	104	198	318	158	134	/	108	370	3800
	160	148	242	402	202	178	/	152	454	4700
Ø40	100	72	188	288	148	116	/	80	348	5300
	160	130	246	406	206	174	/	138	466	6850
	200	170	286	486	246	214	/	178	546	7900

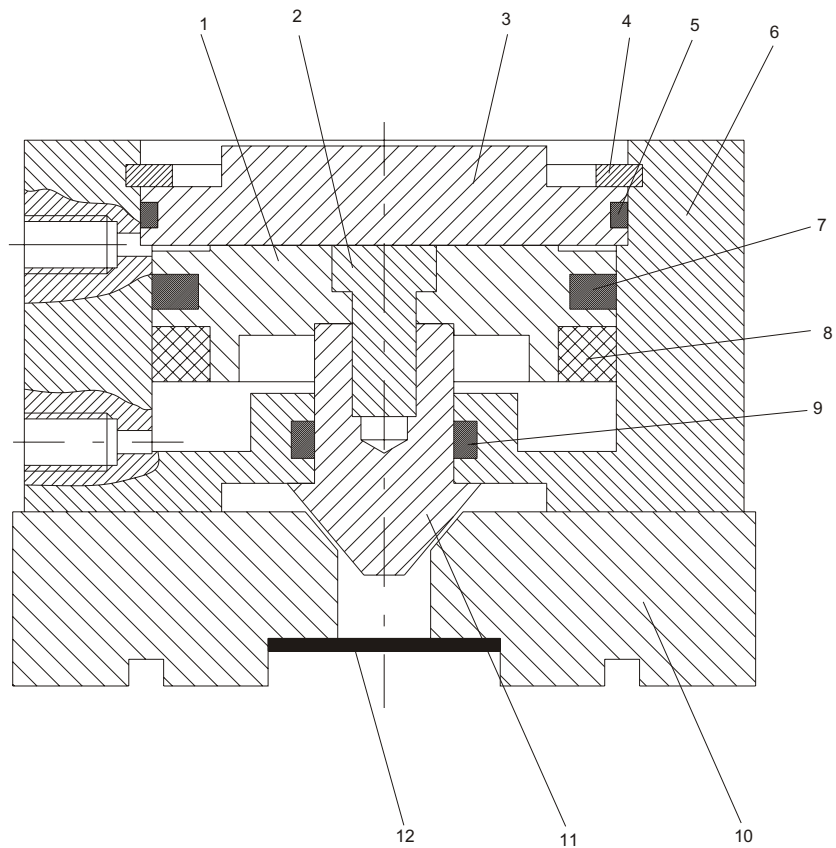


Holding force



3 Finger parallel style pneumatic grippers
 Component description

Series 6312



3

Pos.	Item	Qty.	Pos.	Item	Qty.
1	Piston	1	7	Piston seal	1
2	Piston nut	1	8	Magnet	1
3	End plate	1	9	Wedge seal	1
4	Circlip	1	10	Fingers	3
5	End plate seal	1	11	Wedge	1
6	Body	1	12	Cap	1



Ordering code

6312.Ø.D

- 16
- 20
- 25
- 32
- 40
- 50
- 63
- 80
- 100
- 125

For sensors P/N see page 3.38 e 3.39

Construction characteristics

Body	aluminium
Piston	aluminium
Wedge	steel
Fingers	steel

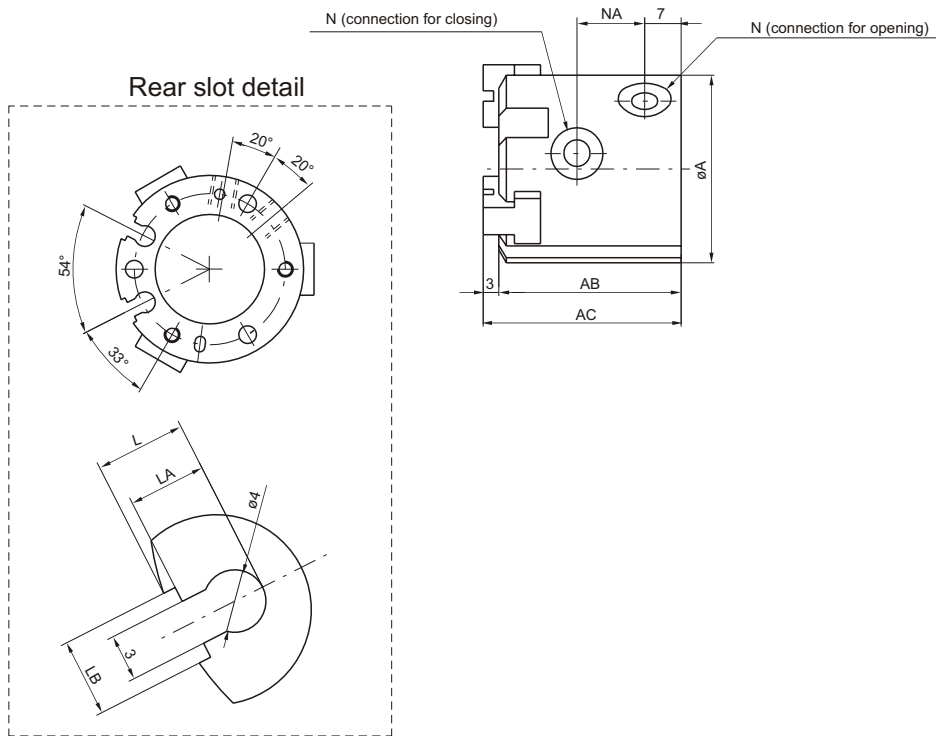
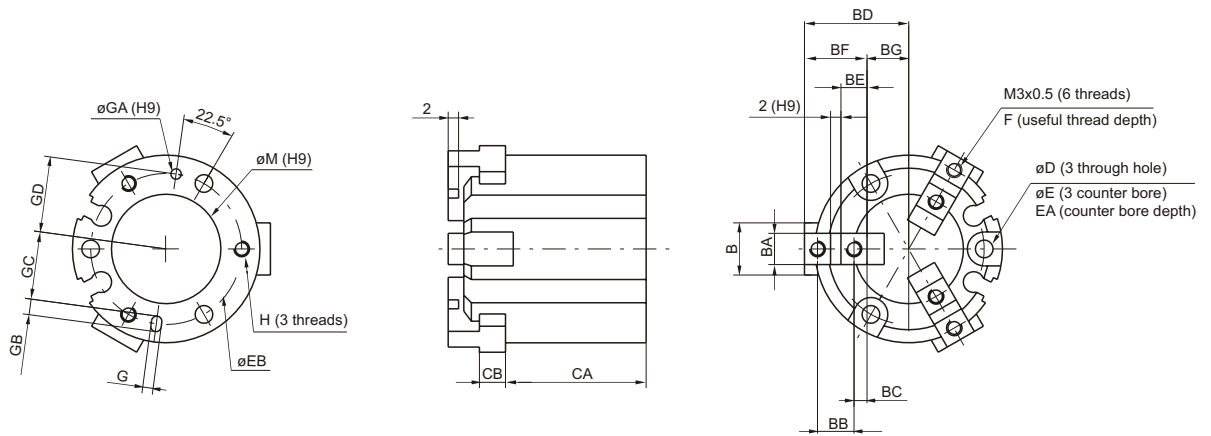
Technical characteristics

Fluid	filtered and non lubricated air
Function	double acting
Working pressure	2÷6 bar (ø16 - ø20 - ø25) - 1÷6 bar (ø32 ÷ ø125)
Working temperature	-5°C ÷ +70°C

3 Finger parallel style pneumatic grippers

Overall dimensions

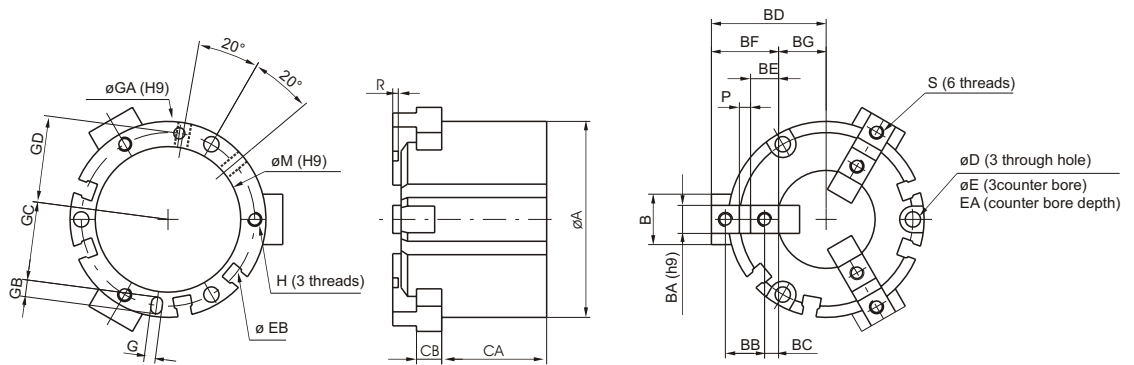
Series 6312



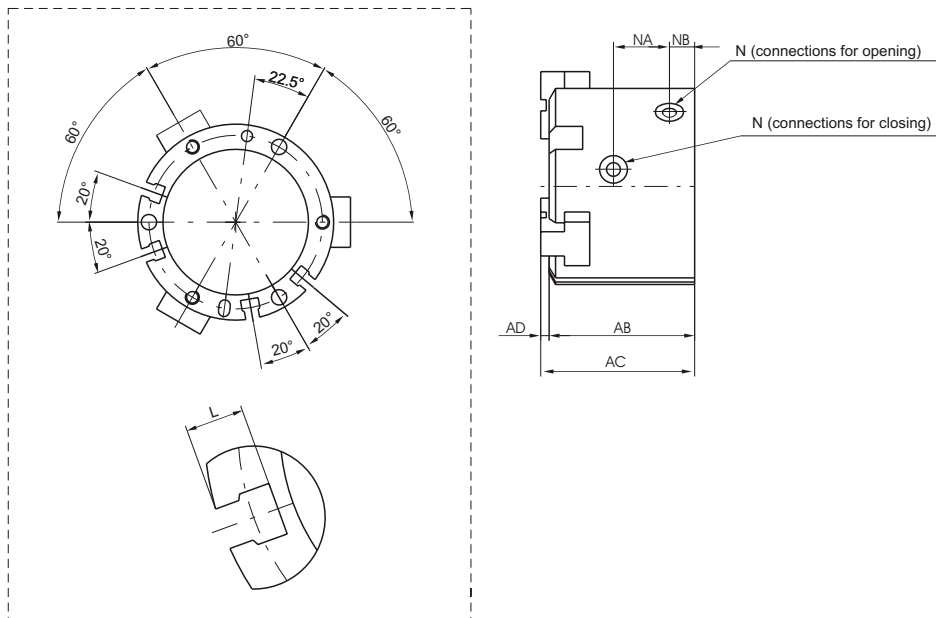
Bore	ØA	AB	AC	B	BA (h9)	BB	BC	BD	BE	BF	BG	CA	CB	D	E	EA	EB	F	G (H9)	ØGA (H9)	GB		
Ø16	30	32	35	8	5	6	2	17	15	4	10	7	5	25	4	3,4	6,5	8	25	5	2 (depth 2)	2 (depth 2)	3
Ø20	36	35	38	10	6	7	2,5	20	18	5	12	8	6	27	5	3,4	6,5	9,5	29	6	2 (depth 2)	2 (depth 2)	3
Ø25	42	37	40	12	6	8	3	24	21	6	14	10	7	28	5	4,5	8	10	34	6	3 (depth 3)	3 (depth 3)	5

open close open close

Bore	GC	GD	H	L	LA	LB	ØM (H9)	N	NA
Ø16	11	12,5	M3x0,5 (useful depth 4,5)	5	-	-	17 (depth 1,5)	M3x0,5	11
Ø20	13	14,5	M3x0,5 (useful depth 6)	6	5	5	21 (depth 1,5)	M5x0,8	13
Ø25	14,5	17	M4x0,7 (useful depth 6)	6,5	5	5	26 (depth 1,5)	M5x0,8	15



Sensor slots detail

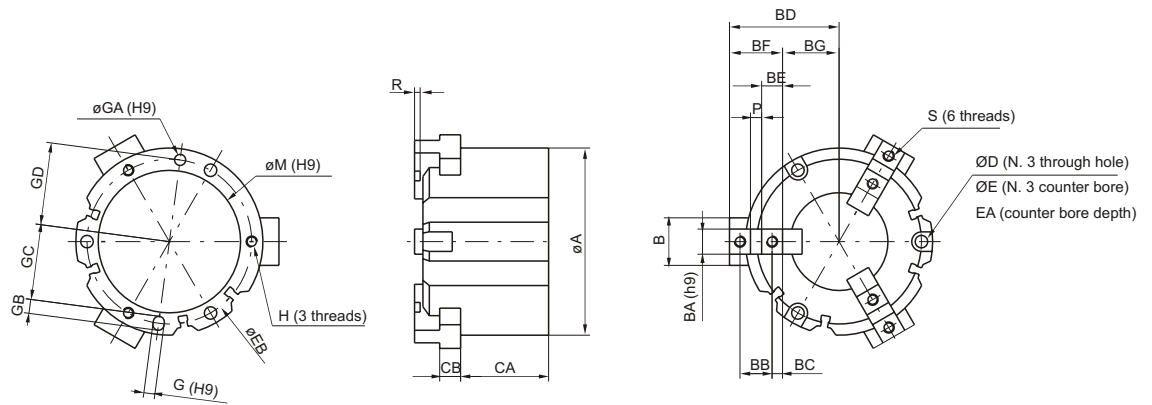


Bore	ØA	AB	AC	AD	B	BA (h9)	BB	BC	BD		BE	BF	BG		CA	CB	D	E	EA	EB	H
Ø32	52	41	44	3	14	8	11	4,5	32	28	9	20	12	8	30,5	6	4,5	8	9	44	M4x0,7 (useful depth 6)
Ø40	62	44	47	3	16	8	12	4,5	35	31	9	21	14	10	32	7	5,5	9,5	9	53	M5x0,8 (useful depth 7,5)
Ø50	70	52	55	3	18	10	14	5	41	35	10	24	17	11	37,5	9	5,5	9,5	12	62	M5x0,8 (useful depth 10)
Ø63	86	62	66	4	24	12	17	5,5	51	43	11	28	23	15	44	11	6,6	11	14	76	M6x1 (useful depth 9)
Ø80	106	77	82	5	28	14	20	6	63,5	53,5	12	32	31,5	21,5	56	12	6,6	11	19	95	M6x1 (useful depth 12)
									open	close											

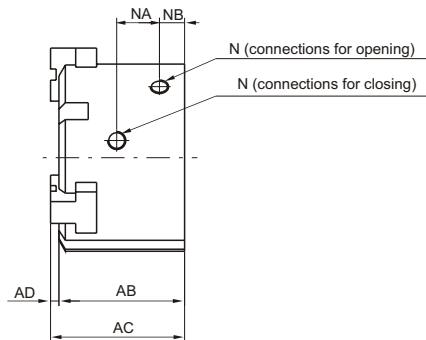
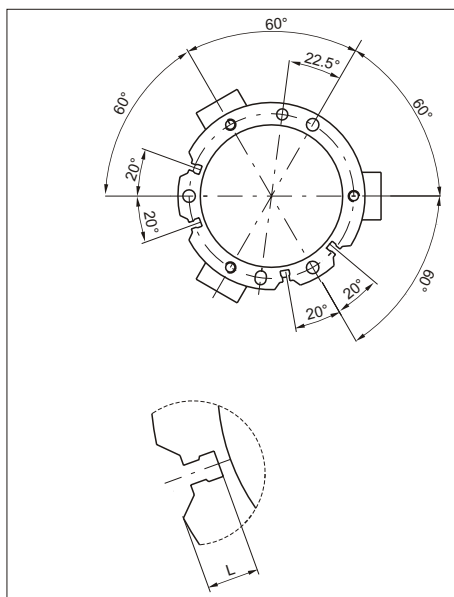
Bore	G (H9)	ØGA (H9)	GB	GC	GD	L	N	ØM (H9)	NA	NB	P (h9)	R	S
Ø32	3 (useful depth 3)	3 (useful depth 3)	5	19,5	22	6	M5x0,8	34 (useful depth 2)	16	8	2	2	M4x0,7 (useful depth 8)
Ø40	4 (useful depth 4)	4 (useful depth 4)	6	23,5	26,5	8	M5x0,8	42 (useful depth 2)	17	9	3	2	M4x0,7 (useful depth 8)
Ø50	4 (useful depth 4)	4 (useful depth 4)	6	28	31	7	M5x0,8	52 (useful depth 2)	20	9	4	2	M5x0,8 (useful depth 10)
Ø63	5 (useful depth 5)	5 (useful depth 5)	7	34,5	38	7,5	M5x0,8	65 (useful depth 2,5)	22	12	6	3	M5x0,8 (useful depth 10)
Ø80	6 (useful depth 6)	6 (useful depth 6)	8	43,5	47,5	9	G1/8	82 (useful depth 3)	27	13,5	8	4	M6x1 (useful depth 12)

3 Finger parallel style pneumatic grippers
Overall dimensions $\varnothing 100 \div 125$

Series 6312



Sensor slots detail



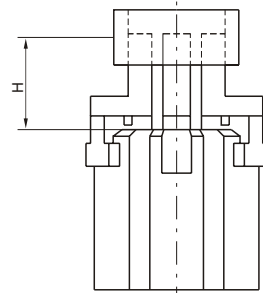
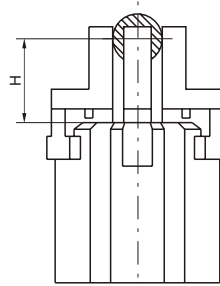
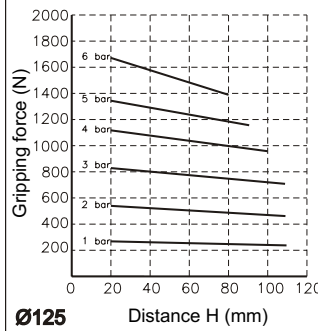
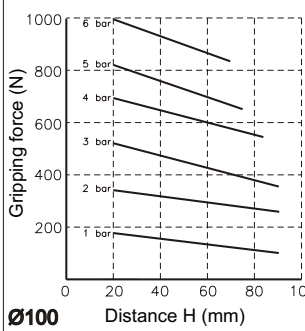
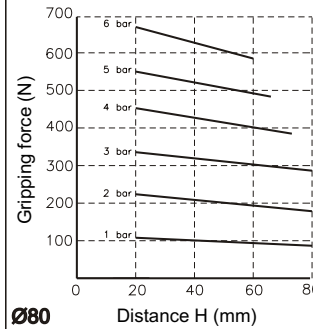
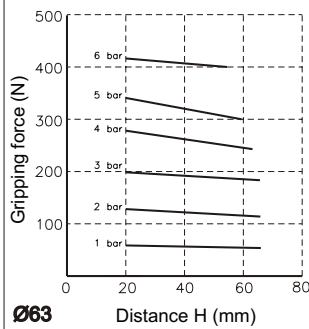
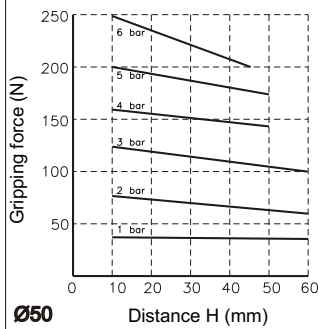
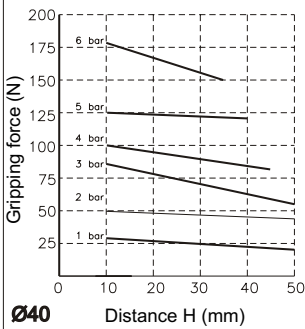
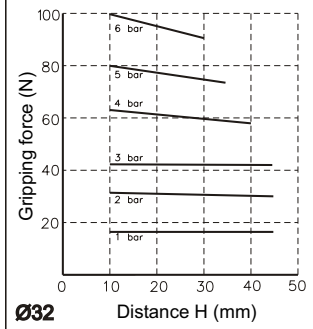
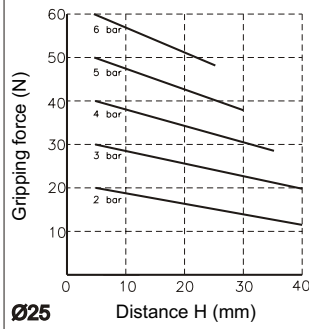
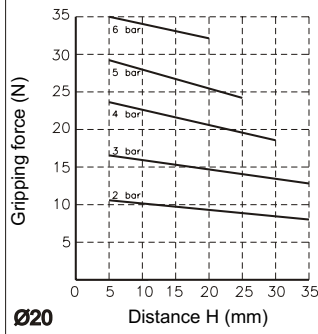
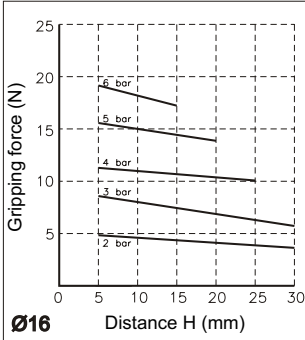
Bore	$\varnothing A$	AB	AC	AD	B	BA (h9)	BB	BC	BD	BE	BF	BG	CA	CB	$\varnothing D$	$\varnothing E$	EA	EB	G (H9)		
$\varnothing 100$	134	90	96	6	34	18	23	7,5	78	66	15	38	40	28	63	15	9	14	21	118	8 (useful depth 6)
$\varnothing 125$	166	114	122	8	40	22	31	10,5	98	82	21	52	46	30	84	18	11	17,5	34	148	10 (useful depth 8)
									open	close											

Bore	$\varnothing GA$ (H9)	GB	GC	GD	H	L	$\varnothing M$ (H9)	N	NA	NB	P (h9)	R	S
$\varnothing 100$	8 (useful depth 6)	10	54	59	M8x1,25 (useful depth 16)	13	102 (useful depth 4)	G1/4	30,6	18	8	4	M8x1,25 (useful depth 16)
$\varnothing 125$	10 (useful depth 8)	12	68	74	M10x1,5 (useful depth 20)	15	130 (useful depth 6)	G3/8	38	23,5	10	6	M10x1,5 (useful depth 20)



3 Finger parallel style pneumatic grippers Operating conditions

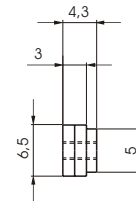
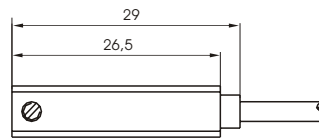
Series 6312



Sensor c/w 2,5 m. cable



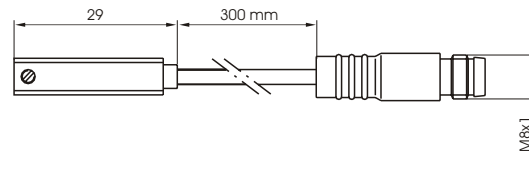
Weight gr. 27



Sensor c/w M8 connector (300 mm cable)



Weight gr. 15



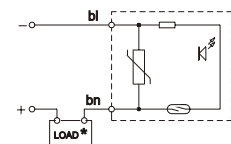
Ordering codes

1580.U	Reed bulb sensor with led and 2.5 m cable
1580.HAP	PNP sensor Hall effect with led and 2.5 m cable
MRS.U	Reed bulb sensor with led and connector
MHS.P	PNP sensor Hall effect with led and connector
MC1	M8 in line connector with 2.5 m cable (2 wires)
MC2	M8 in line connector with 5 m cable (2 wires)
MCH1	M8 in line connector with 2.5 m cable (3 wires)
MCH2	M8 in line connector with 5 m cable (3 wires)

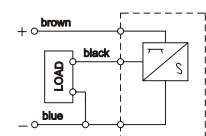
Technical characteristics

	1580.U	MRS.U	1580.HAP	MHS.P
Type of contact	N.O.			
Maximum current (pulses of 0.5 sec)	0,1A		0,2A	
Maximum permanent current	0,1A		0,2A	
Maximum permanent power	6VA		4W	
Voltage range A.C.	3 ÷ 30V		/	
Voltage range D.C.	3 ÷ 30V		12 ÷ 30V	
Working temperature	-20° C ÷ 70° C			
Maximum voltage drop	3V			
Cable section	2x0,14		3x0,14	
Degree of protection	IP 65			
Connecting time	0,5 ms		0,8 µs	
Disconnecting time	0,1 ms		0,3 µs	
Average life (operations)	10 ⁷		10 ⁹	
Repetition of intervention point	± 0,1			

Diagrams and connection



With Reed bulb



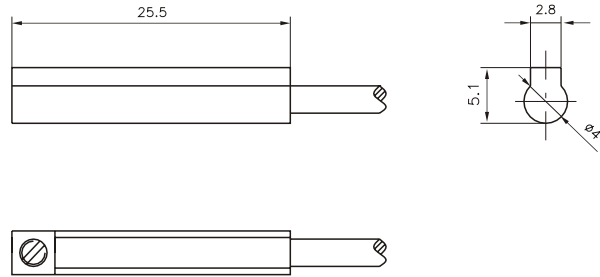
Hall effect

NOTE: Pay attention to the connected loads which should not exceed recommendations

*Reed bulb sensor: connection can be done either to negative or positive pole



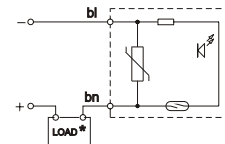
Sensor c/w 1 m. Cable



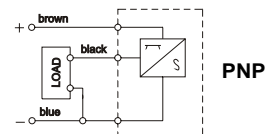
Ordering codes

1581.U	Reed bulb sensor with led and 1 m cable
1581.HAP	PNP sensor Hall effect with led and 1 m cable
1581.HAN	NPN sensor Hall effect with led and 1 m cable

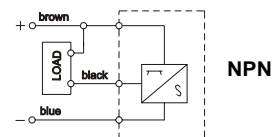
Diagrams and connection



With Reed bulb



PNP



NPN

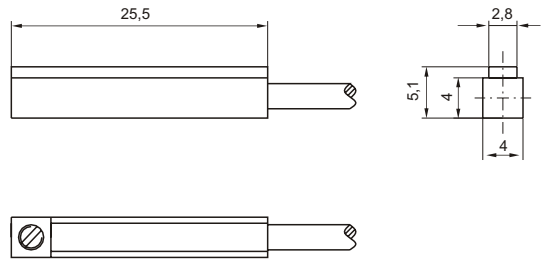
Hall effect

Technical characteristics

	1581.U	1581.HAP	1581.HAN
Type of contact	N.O.		
Maximum current	100mA	200mA	
Maximum permanent power	10W	6W	
Voltage range	5÷120VDC/AC	5 ÷ 30V DC	
Working temperature	-10° C + 70° C		
Maximum voltage drop	/	0,5V	
Cable section	2, ø2,8	3,ø2,8	
Degree of protection	IP 67		



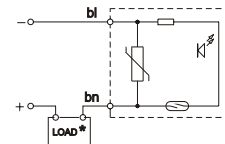
Sensor c/w 1 m. Cable



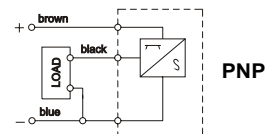
Ordering codes

1582.U	Reed bulb sensor with led and 1 m cable
1582.HAP	PNP sensor Hall effect with led and 1 m cable
1582.HAN	NPN sensor Hall effect with led and 1 m cable

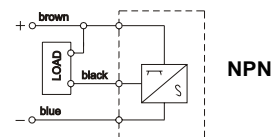
Diagrams and connection



With Reed bulb



PNP



NPN

Hall effect

Technical characteristics

	1582.U	1582.HAP	1582.HAN
Type of contact	N.O.		
Maximum current	100mA	200mA	
Maximum permanent power	10W	6W	
Voltage range	5÷120VDC/AC	5÷30V DC	
Working temperature	-10° C ÷ 70°C		
Maximum voltage drop	/	0,5V	
Cable section	2, ø2,8	3,ø2,8	
Degree of protection	IP 67		