

General

Pneumatic grippers from the 6300 series are typically used in complex systems such as assembly machines, robots, manipulators etc.

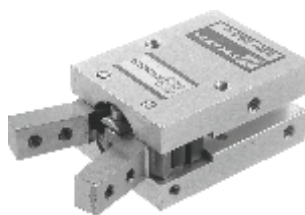
This series covers the wide range requirements of this sector, allowing a variety of applications.

The range includes grippers equipped with holding fingers operating from -10° to $+30^{\circ}$ degrees, with 180° degree opening, or a parallel guided gripper with great rigidity throughout the stroke.

The parallel grippers cater for larger openings (three different strokes for each diameter) with synchronised operation via a pinion-rack system with high strength thanks to a double piston mechanism.

For the typical application of supplying a piece upon to a machine tool, make provision for an automatic three-pronged movement carried along by a wedge mechanism, containing the elevated force dimensions.

The holding fingers can have a tolerance reference as a precise fixing device for the catching mechanism. Every type of "hand" offers different functional levels of performance at varying diameters and lengths, secondary to the application by the "fingers".



Ordering code

6301.Ø.

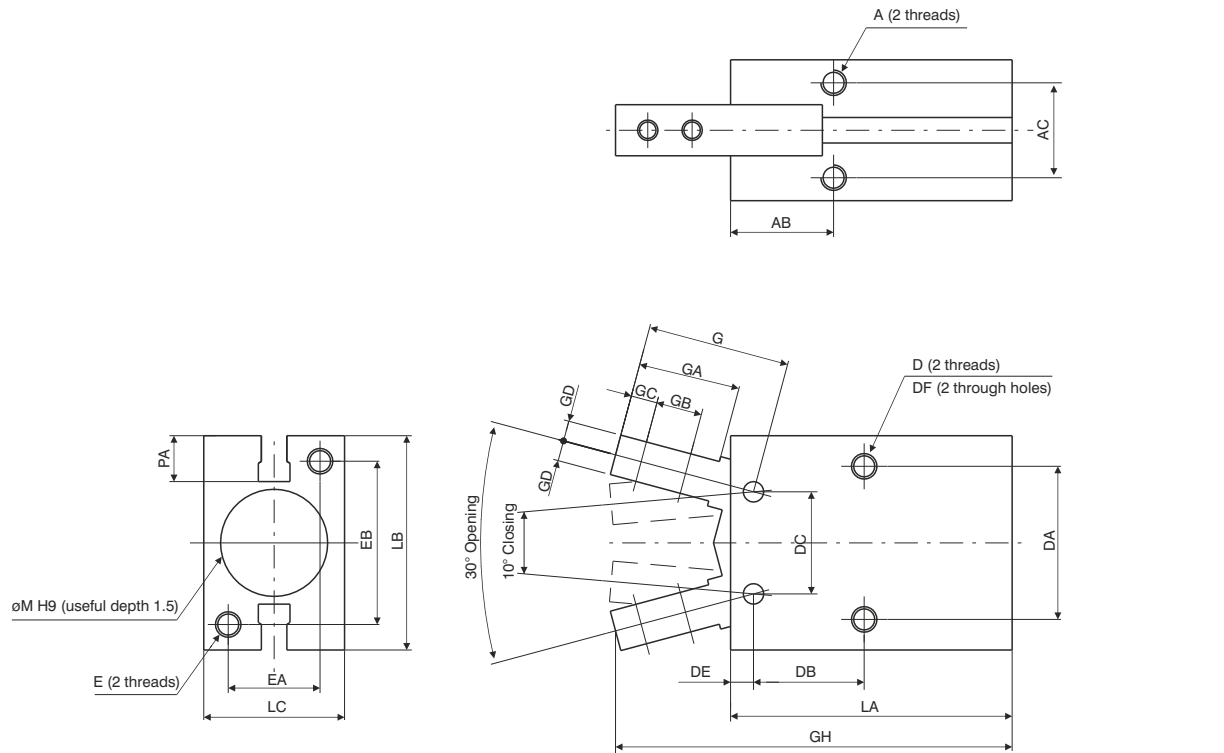
10 16 20 25	D = Double acting S = Single acting (N.O.)
---	--

Construction characteristics

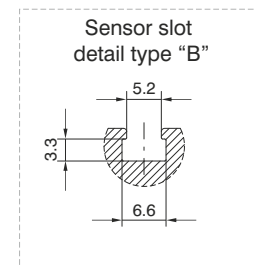
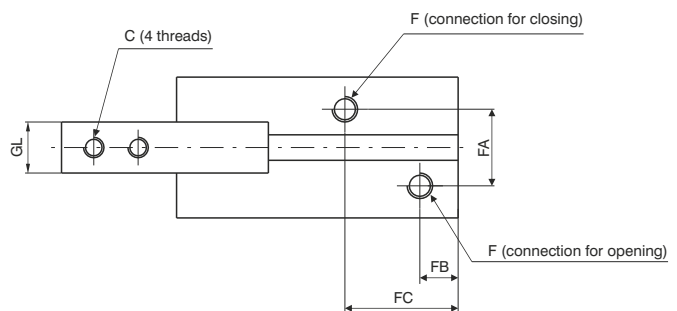
Body	anodised aluminium
Piston	AISI 303 stainless steel
Fingers	nitrate steel
End cover	anodised aluminium
Seals	oil resistant NBR rubber

Technical characteristics

Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)		
Working pressure	1 - 6 bar (double acting) - 2.5 - 6 bar (single acting)		
Operating temperature	-5°C - +70°C		
Opening total stroke	-10° - 30°		
Holding force (Nm) at 5 bar	Bore - Double acting - Single acting		
	Ø10	0.1	0.07
	Ø16	0.4	0.30
	Ø20	0.7	0.55
	Ø25	1.35	1.08
Maximum operating frequency	from Ø10 to Ø25, 190 cycles/minute		



Bore	Ø10	Ø16	Ø20	Ø25
A	M3x0,5	M4x0,7	M5x0,8	M6
Useful depth	6	6,5	8	10
AB	11,6	14,6	20,2	23,9
AC	11,4	16	18,6	22
C	M2,5x0,45	M3x0,5	M4x0,7	M5x0,8
D	M3x0,5	M4x0,7	M5x0,8	M6
Useful depth	5	8	10	12
DA	16	24	30	36
DB	12,8	16,2	21,7	25,8
DC	10	16	20	25
DE	2,8	3,9	4,5	4,6
DF	2,6	3,4	4,3	5,1
E	M3x0,5	M4x0,7	M5x0,8	M6
Useful depth	6	8	10	12
EA	12	15	18	22
EB	18	22	32	40
F	M3x0,5	M5x0,8	M5x0,8	M5x0,8
FA	11	13	15	20
FB	7,2	7	7,5	7,7
FC	18,8	18,3	22,2	23,5
G	17,2	22,6	28	37,5
GA	12	16	20	27
GB	5,7	7	9	12
GC	3	4	5,2	8
GD	2	3,5	4	5
GH	52,4	62,5	78,7	92
GL ^{0/-0,1}	6,4	8	10	12
LA	38,6	44,6	55,2	60,4
LB	23	30,6	42	52
LC	16,4	23,6	27,6	33,6
M ^{H9}	11	17	21	26
PA	5,4	5,8	9	11,5
Weight (gr.)	40	90	180	315

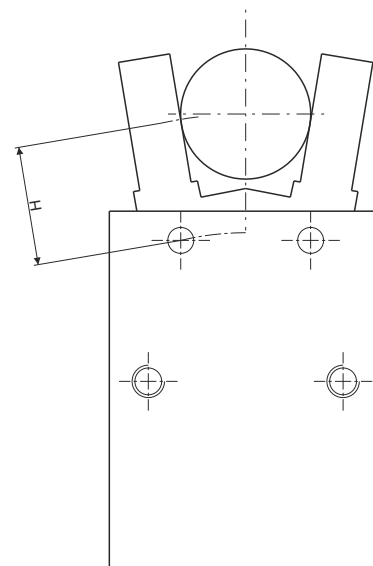
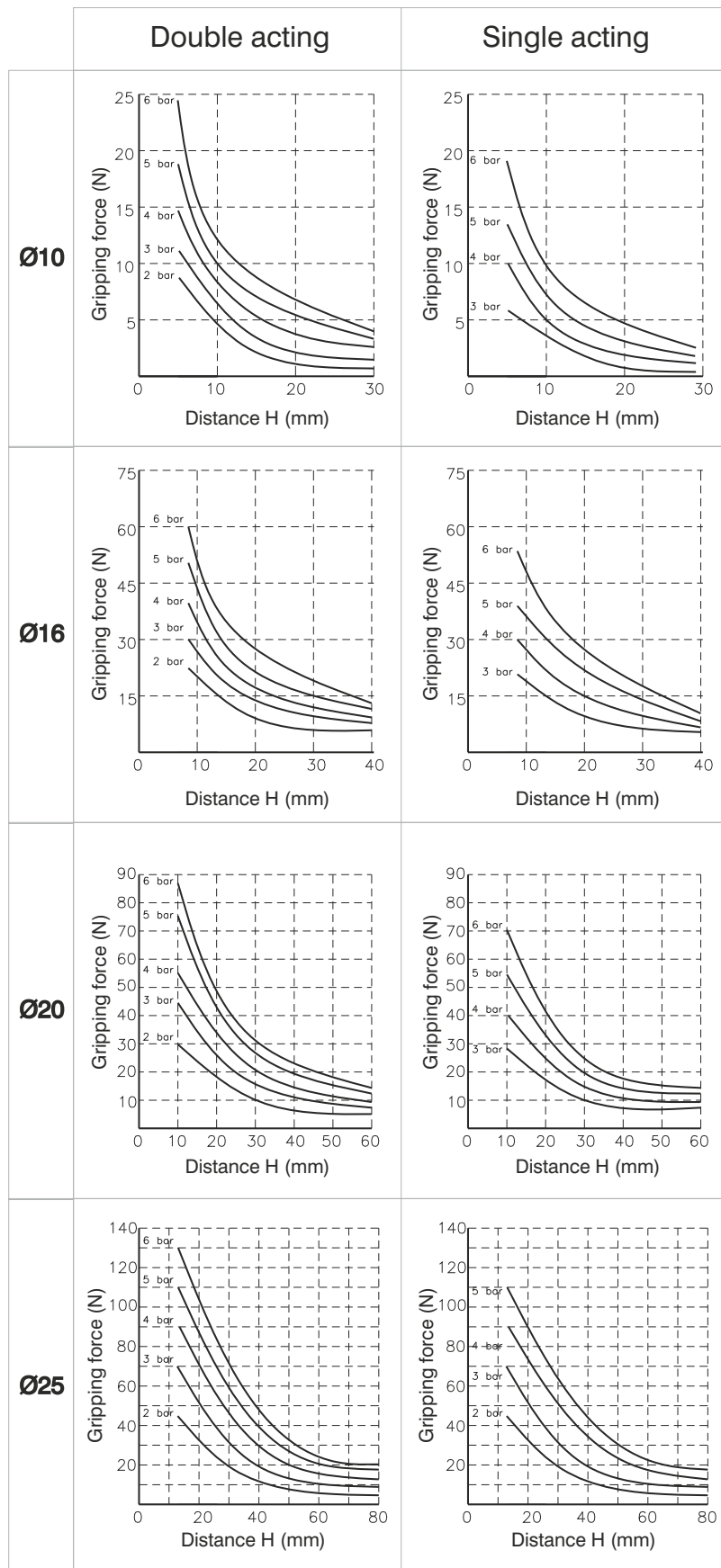


Gripping force 5 bar (Nm)

Bore	Ø10	Ø16	Ø20	Ø25
Double acting (Nm)	0,1	0,4	0,7	1,35
Single acting (Nm)	0,07	0,3	0,55	1,08

NOTE:

Bore selection should be made considering a holding force 10 to 20 times the component weight.
In case of acceleration/deceleration a further margin of safety should be considered.





Ordering code

6302.Ø.D

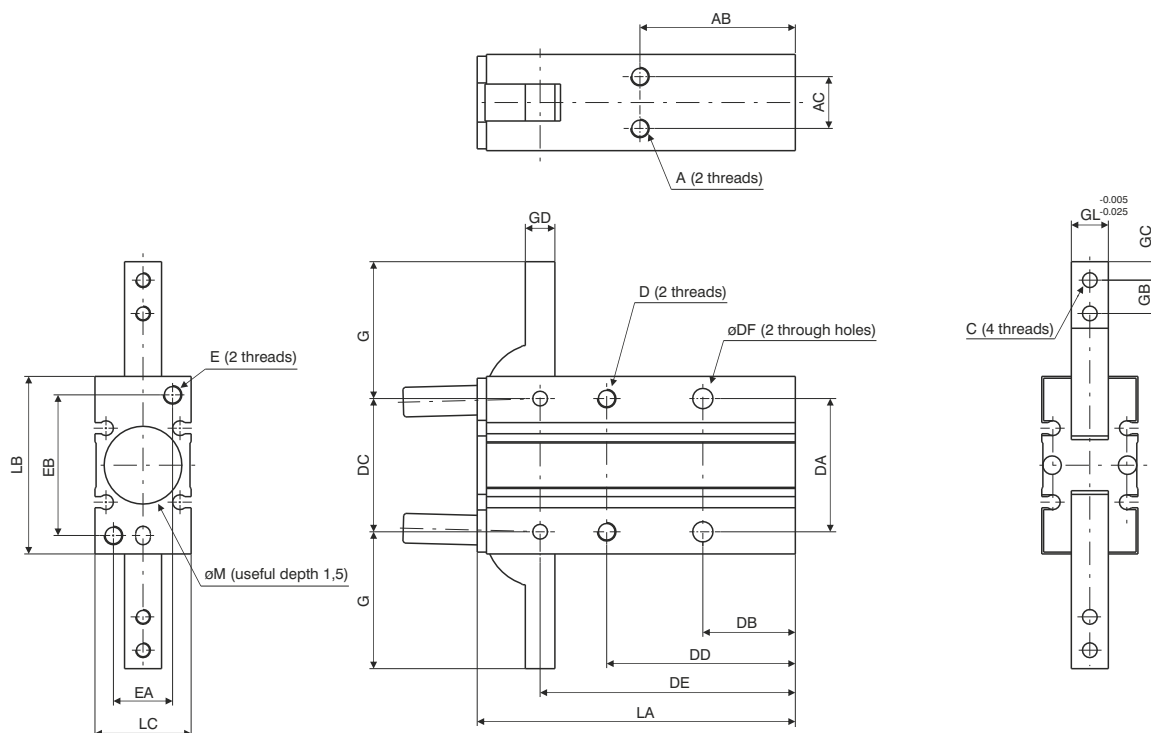
10
16
20
25

Construction characteristics

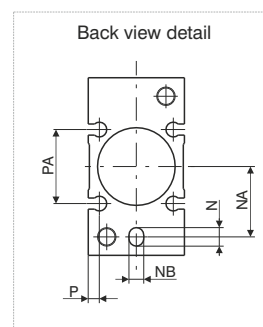
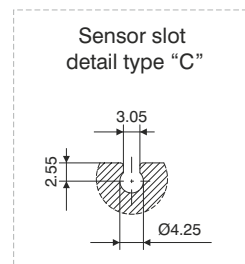
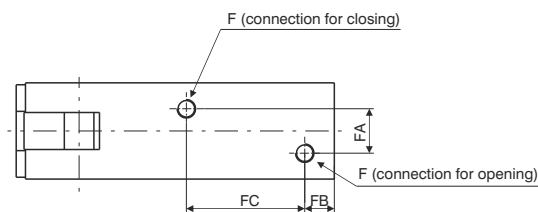
Body	anodised aluminium
Piston	aluminium
Fingers	steel
End cover	anodised aluminium

Technical characteristics

Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	1 - 6 bar
Working temperature	-5C° - +70C°
Opening total stroke	-3° - 180°
Maximum operating frequency	from Ø10 to Ø25, 60 cycles/minute

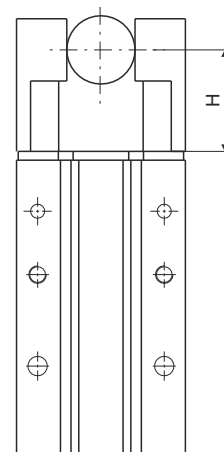
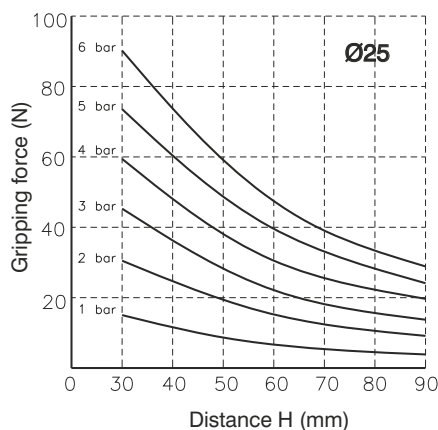
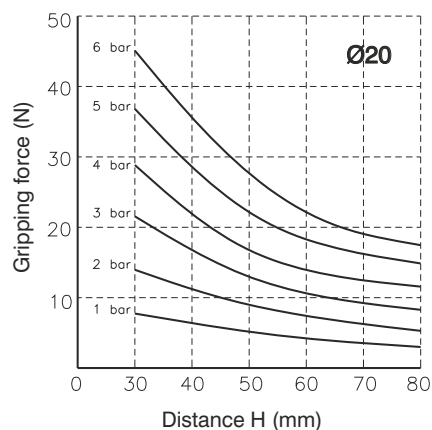
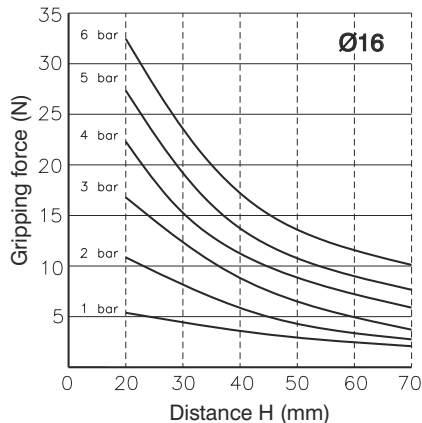
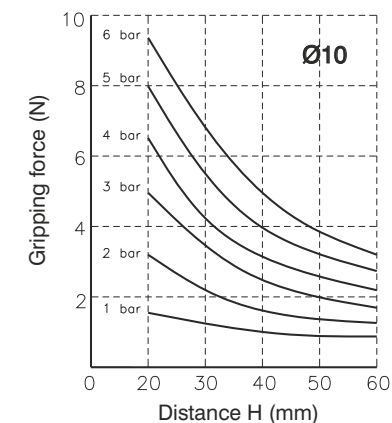


Bore	Ø10	Ø16	Ø20	Ø25
A	M3x0,5	M4x0,7	M5x0,8	M6x1
Useful depth	4	5	8	10
AB	30	33	42	50
AC	9	12	14	16
C	M3x0,5	M3x0,5	M4x0,7	M5x0,8
D	M3x0,5	M4x0,7	M5x0,8	M6x1
Useful depth	6	8	10	12
DA	24	30	36	42
DB	18	20	25	30
DC	22	28	36	45
DD	35	41	51	60
DE	47,5	55,5	69	86
DF	3,4	4,5	5,5	6,6
E	M3x0,5	M4x0,7	M5x0,8	M6x1
Useful depth	6	8	10	12
EA	9	12	16	18
EB	24	30	38	46
F	M5x0,8	M5x0,8	M5x0,8	M5x0,8
FA	3	8	2	14
FB	7	7	8	8
FC	23	25	32	42
G	23,5	28,5	37	45
GB	6	7	9	12
GC	3	4	5	6
GD	4	5	8	10
GL	6	8	10	12
LA	58	69	86	107
LB	30	38	48	58
LC	15	20	26	30
N	4	4	5	5
Useful depth	3	3	4	4
NA	9	15	19	23
ØM^{H9}	11	17	21	26
ØNB^{H9}	3	3	4	4
P	2	2,5	3	3
PA	13	18	20	24
Weight (gr.)	70	150	320	550

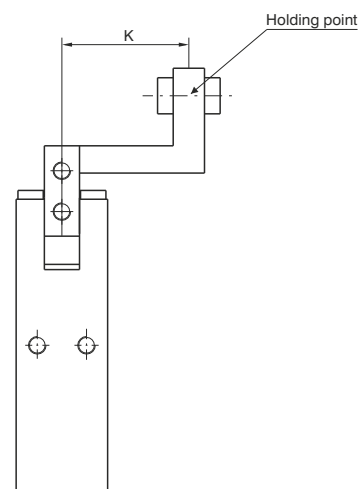
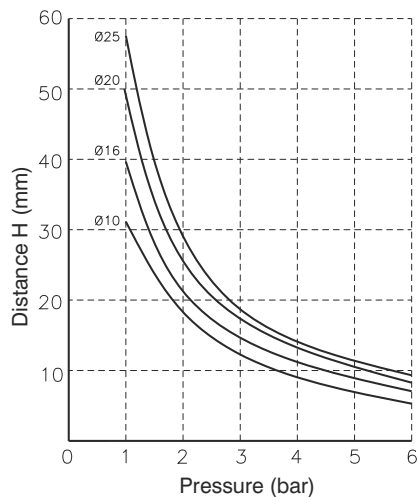


Gripping force 5 bar (Nm)

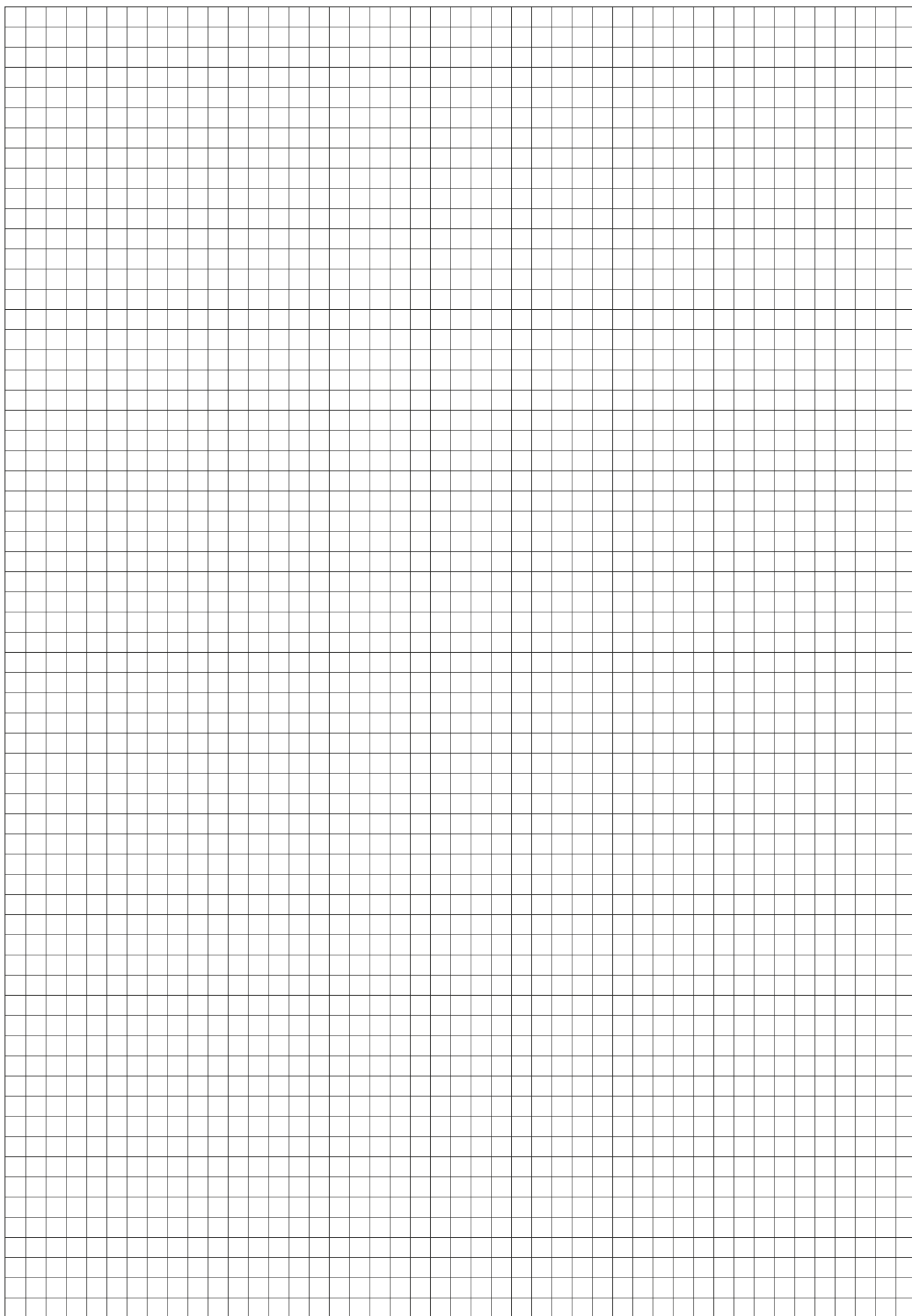
Bore	Ø10	Ø16	Ø20	Ø25
(Nm)	0,16	0,54	1,1	2,28

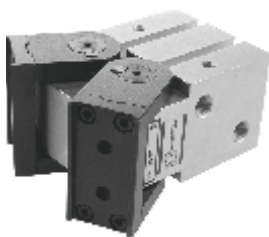


Confirmation of Holding point



Applications where the holding point is outside the recommended parameters shown on the above graph might affect the product life.





Ordering code

6303.Ø.D

- F** = Fingers, end fixing
- L** = Fingers, side fixing

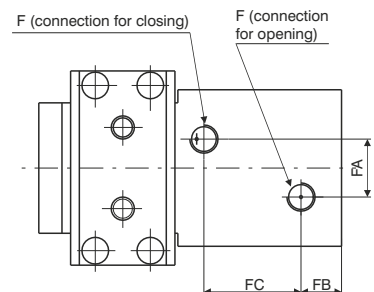
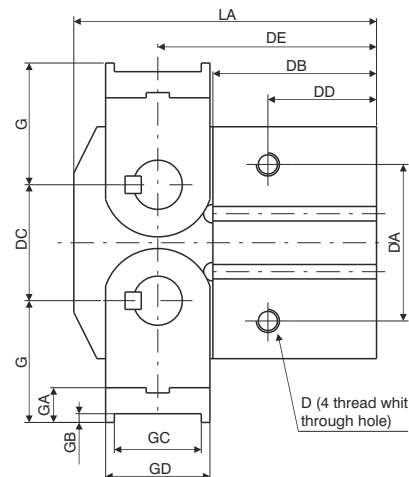
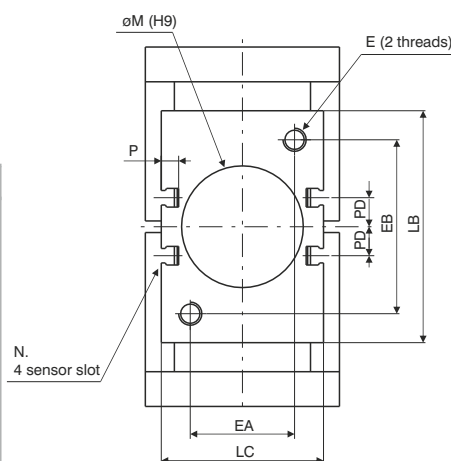
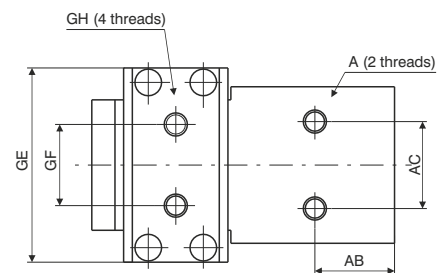
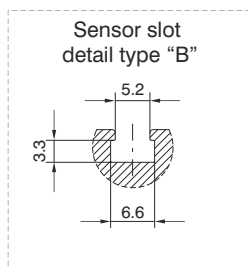
20
25
32
40
50

Construction characteristics

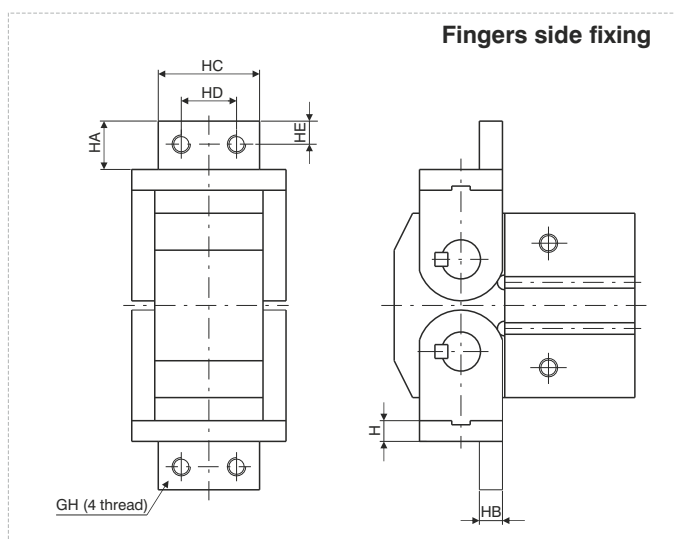
Body	anodised aluminium
Piston	aluminium
Fingers	steel
End cover	anodised aluminium

Technical characteristics

Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	1.5 - 7 bar
Working temperature	-50° - +70C°
Opening total stroke	-5° - 180°
Maximum operating frequency	from Ø20 to Ø25, 60 cycles/minute from Ø32 to Ø50, 30 cycles/minute



Bore		Ø20	Ø25	Ø32	Ø40	Ø50
A		M5	M6	M6	M8	M10
	Useful depth	7	10	10	15	20
AB		17	20	21	27,5	36
AC		20	24	24	30	40
D		M5	M6	M6	M8	M10
	Useful depth	10	12	12	16	20
DA		27	34	42	54	70
DB		35	40	47	56,5	69
DC		18	24	30	40	56
DD		23	27	29	37,5	48
DE		45	51	61,5	75,5	96
E		M5	M6	M6	M8	M10
	Useful depth	10	12	12	15	20
EA		26	30	30	36	40
EB		26	30	45	60	80
F		M5	M5	G1/8	G1/8	G1/4
FA		12	16	20	20	30
FB		9	10	13	14	16
FC		20	23	25	33,5	44
G		23	27	32	42	58
GA		7	8	9	12	17
GB		2	2	2	3	4
GC		12	17	23	30	44
GD		16	21	27	36	52
GE		41	45	51	67	85
GF		18	20	20	28	38
GH		M4	M5	M6	M8	M10
H		5	6	7	9	13
HA		10	12	14	21	24
HB		5	6	7	10	13
HC		28	30	34	44	58
HD		14	16	18	24	30
LA		60	69	83,5	104,5	136
LB		36	45	58	80	112
LC		36	40	45	56	66
ØM ^{H9}		21	26	34	42	52
	Useful depth	3	3	4	4	5
P		6	5,5	5,5	6	6
PD		4	4,5	11	10	13
Weight (gr.)		300	500	900	2100	5000

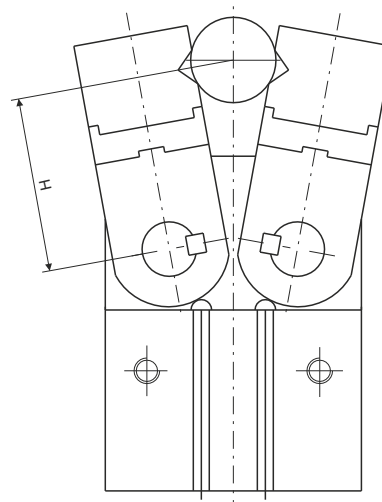
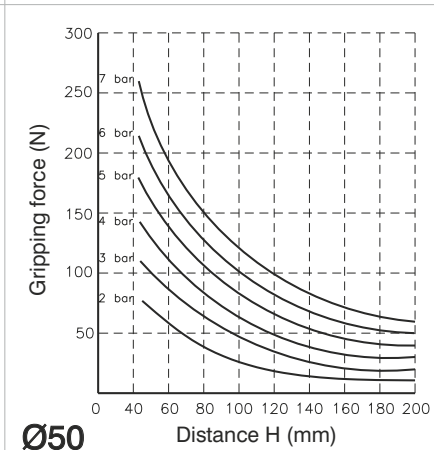
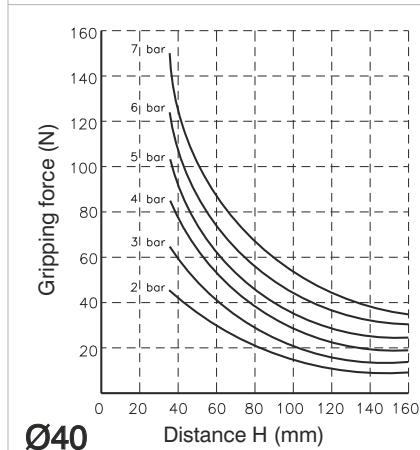
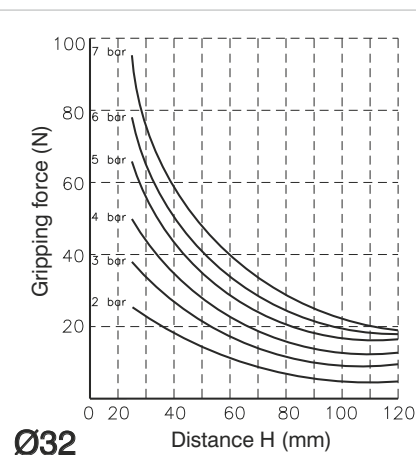
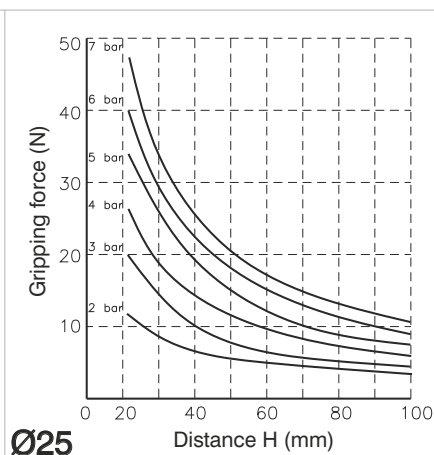
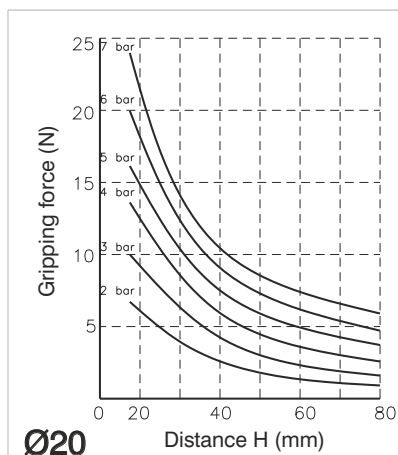


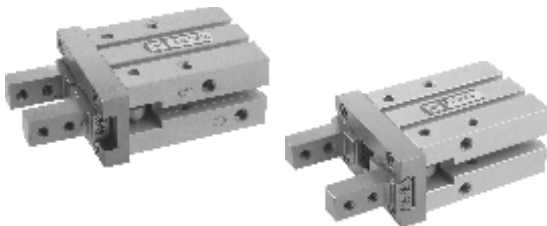
Gripping force

NOTE:

Bore selection should be made considering a holding force 10 to 20 times the component weight.
In case of acceleration/deceleration a further margin of safety should be considered.

Bore	Ø20	Ø25	Ø32	Ø40	Ø50
(Nm)	0,3	0,7	1,6	3,7	8,3





Ordering code

6310.Ø

10

16

20

25

D = Double acting

NC = Single acting (N.C.)

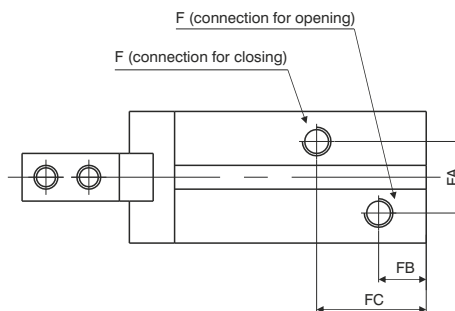
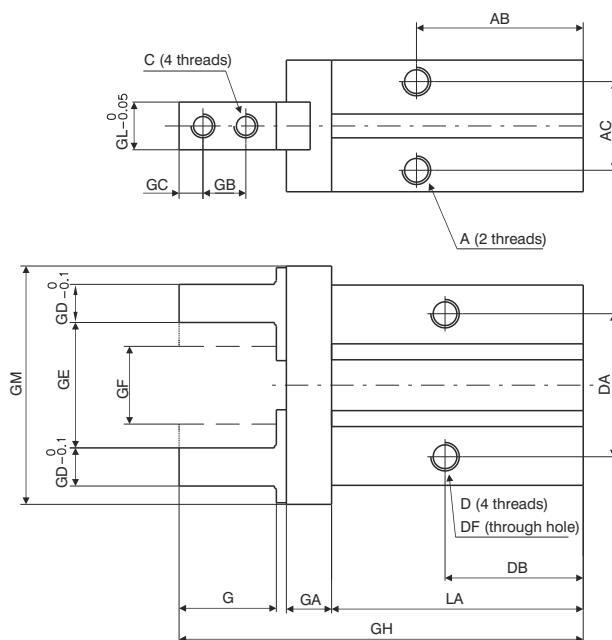
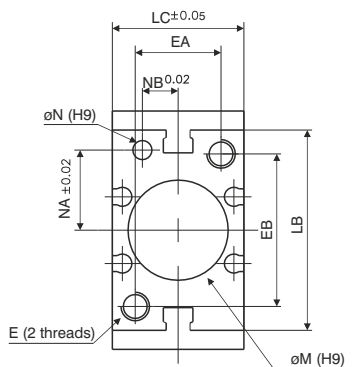
NO = Single acting (N.O.)

Construction characteristics

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

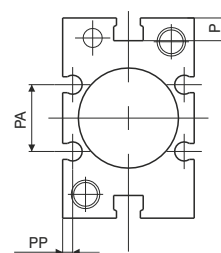
Technical characteristics

Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
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
Maximum operating frequency	from Ø10 to Ø25, 180 cycles/minute



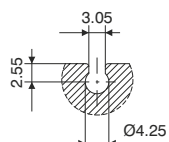
Bore		Ø10	Ø16	Ø20	Ø25
A		M3x0,5	M4x0,7	M5x0,8	M6x1
	Useful depth	6	4,5	8	10
AB		27	30	35	36,5
AC		11,4	16	18,6	22
C		M2,5x0,45	M3x0,5	M4x0,7	M5x0,8
D		M3x0,5	M4x0,7	M5x0,8	M6x1
	Useful depth	5,5	8	10	12
DA		16	24	30	36
DB		23	24,5	29	30
ØDF		2,6	3,4	4,3	5,1
E		M3x0,5	M4x0,7	M5x0,8	M6x1
	Useful depth	6	8	10	12
EA		12	15	18	22
EB		18	22	32	40
F		M3x0,5	M5x0,8	M5x0,8	M5x0,8
FA		11	13	15	20
FB		9	7,5	10	10,7
FC		19	19	23	23,5
G		12	15,5	20	25
GA		6	7,5	9,5	11
GB		5,7	7	9	12
GC		3	4	5	6
GD		4	5	8	10
GE		15,2	20,9	26,3	33,3
GF		11,2	14,9	16,3	19,3
GH		57	67,5	84,8	102,7
GL		5	8	10	12
GM		29	38	50	63
LA		37,8	42,5	52,8	63,6
LB		23	30,6	42	52
LC		16,4	23,6	27,6	33,6
ØM ^{H9}		11	17	21	26
	Useful depth	2	2	3	3,5
ØN ^{H9}		2	3	4	4
	Useful depth	3	3	4	4
NA		7,6	11	16,8	21,8
NB		5,2	6,5	7,5	10
P		5,4	5,8	9	11,5
PA		/	11,6	14	19
PP		/	2,1	2,1	3,5
Weight (gr.)		55	120	230	425

Sensor slot detail



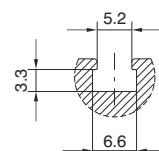
Ø16 - Ø25

Sensor slot detail type "C"



Ø10 - Ø25

Sensor slot detail type "B"

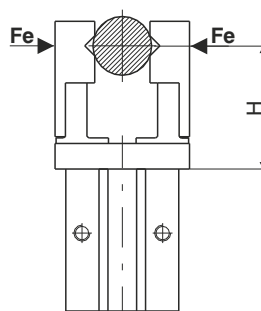


Holding force (N) (pressure 5 bar, holding point H=20 half stroke)

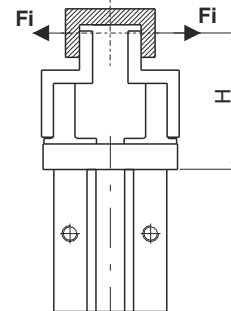
Version	Force	Bore			
		Ø10	Ø16	Ø20	Ø25
Double acting	Fe	9,8	30	42	65
	Fi	17	40	66	104
Single acting	N.O. Fe	6,3	24	28	45
	N.C. Fi	12	31	56	83

Fe = external holding force

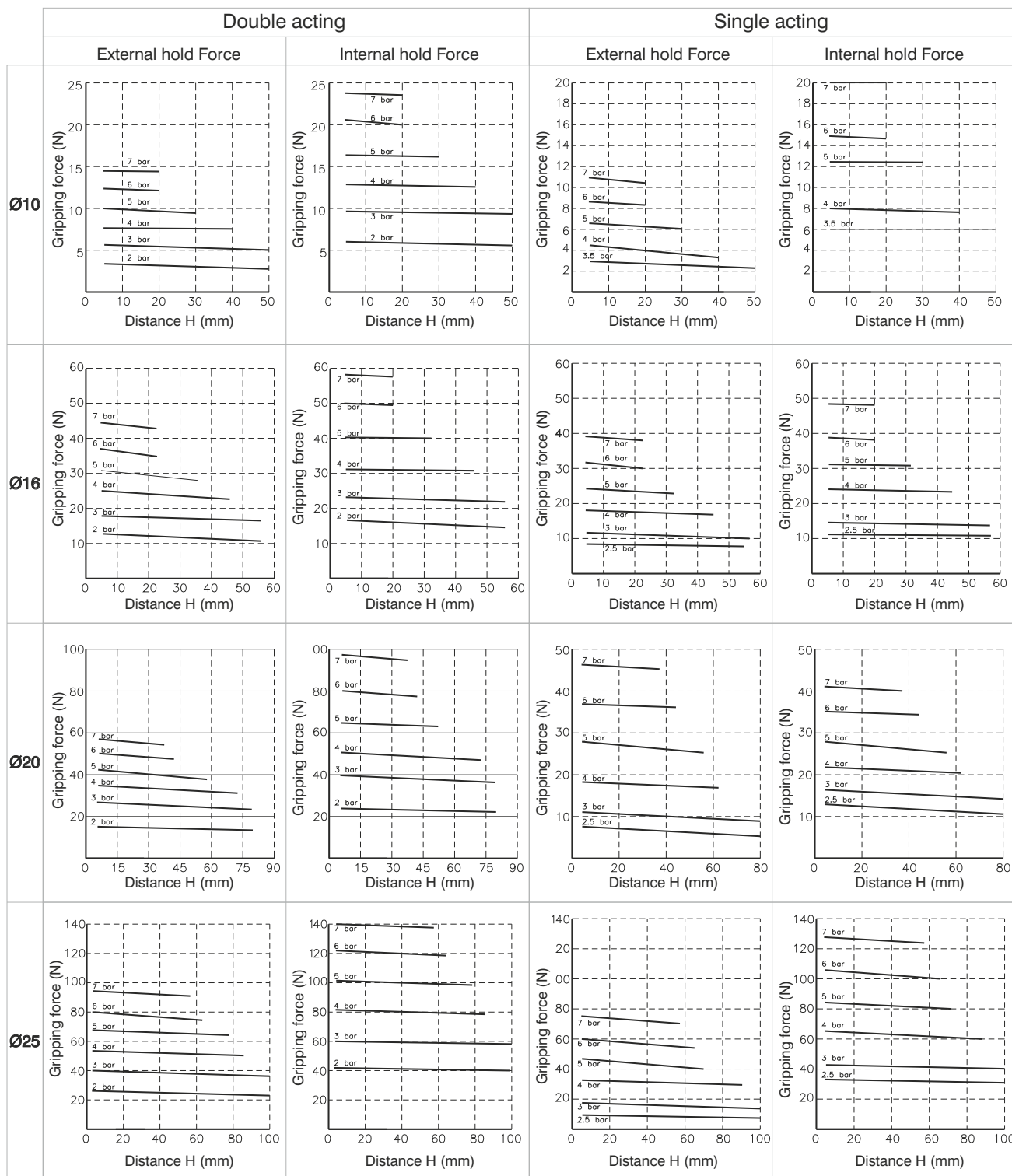
Fi = internal holding force



EXTERNAL HOLD



INTERNAL HOLD





Ordering Code

6311.Ø.D.

10
 16
 20
 25
 32
 40

Ordering code options	Stroke					
	20	30	40	50	70	100
1	40	60	80	100	120	160
2	60	80	100	120	160	200
	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40
	Bore					

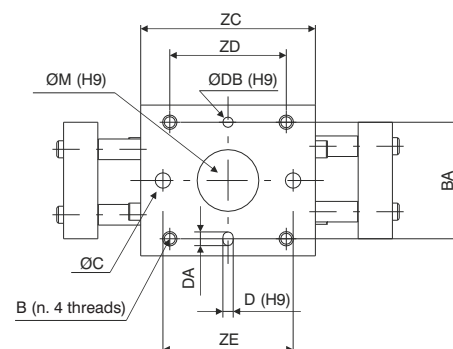
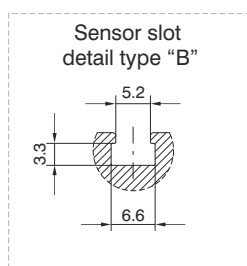
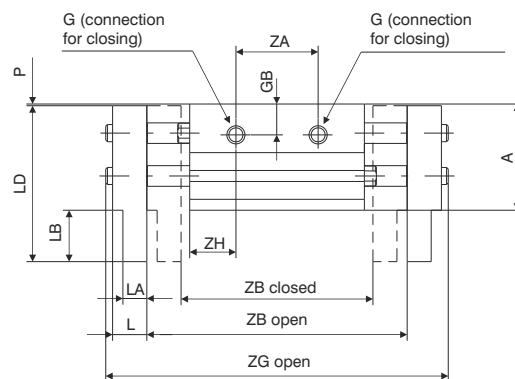
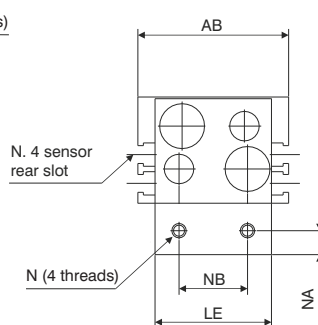
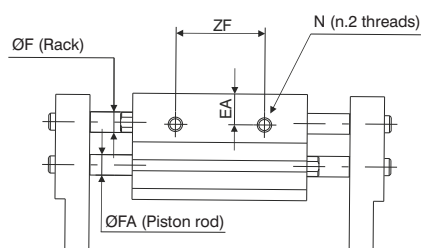
Construction characteristics

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

Technical characteristics

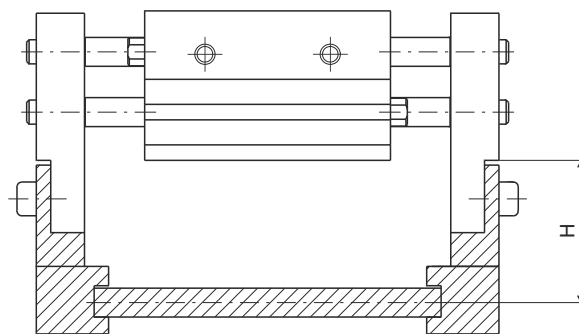
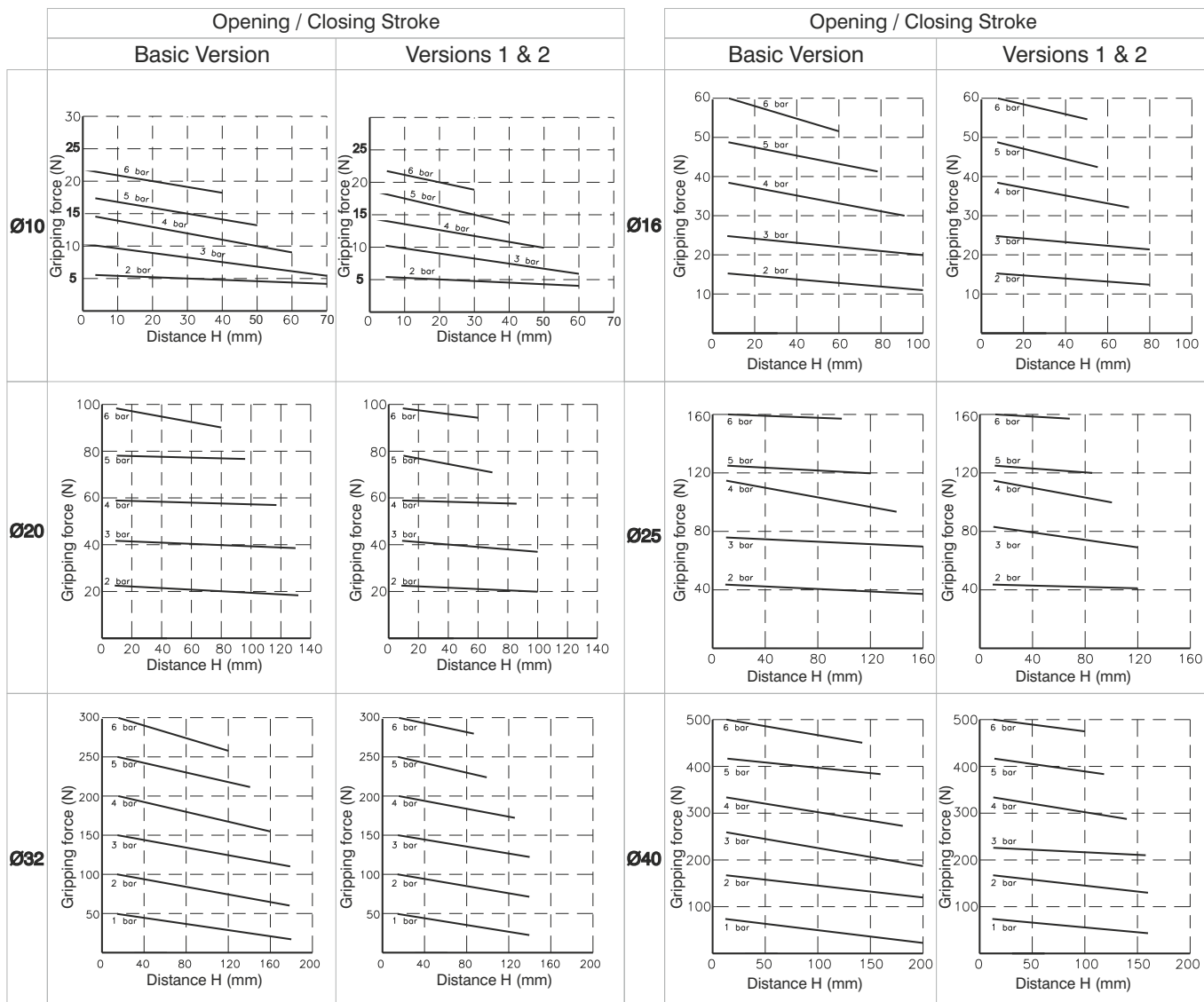
Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	Ø10: 1.5 - 6 bar - Ø16 - 40: 1 - 6 bar
Working temperature	-5°C - +70°C

Model	Diameter (mm)	Max.operating frequency cycles/min.	Model	Diameter (mm)	Max.operating frequency cycles/min.
6311.10.D	10	60	6311.25.D	25	60
6311.10.D.1		40	6311.25.D.1		40
6311.10.D.2			6311.25.D.2		
6311.16.D	16	60	6311.32.D	32	30
6311.16.D.1		40	6311.32.D.1		20
6311.16.D.2			6311.32.D.2		
6311.20.D	20	60	6311.40.D	40	30
6311.20.D.1		40	6311.40.D.1		20
6311.20.D.2			6311.40.D.2		



Bore	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40
A	31	39	46	52	68	79
AB	44	55	65	76	82	98
B	M4x0,7	M5x0,8	M6x1	M8x1.25	M8x1.25	M10x1.5
	Useful depth	8	10	12	16	20
BA	34	42	52	62	64	76
ØC	4,5	5,5	6,6	9	/	/
D ^{H9}	3	3	4	4	6	6
	Useful depth	3	3	4,5	8	8
DA	4	4	5	5	7	7
ØDB ^{H9}	3	3	4	4	6	6
	Useful depth	3	4	4,5	8	8
E	M4x0,7	M5x0,8	M6x1	M8x1.25	M8x1.25	M10x1.5
	Useful depth	5	7	7	11	16
EA	9	10	11	12,5	22	28
ØF	6	8	10	12	14	16
FA	6	8	10	12	16	20
G	M5x0,8	M5x0,8	M5x0,8	M5x0,8	G1/8	G1/8
GB	9	10	11	16	16	18
L	10	13	17	21	24	28
LA	7	9	12,5	14	15	18
LB	15	19	24	29	32	38
LD	45,5	57,5	69	80	100	117
LE	34	43	54	64	70	86
ØM ^{H9}	18	23	27	32	35	40
	Useful depth	1,5	1,5	1,5	1,5	1,5
N	M4x0,7	M5x0,8	M6x1	M8x1,25	M10x1,5	M10x1,5
NA	7	8	10	12	15	18
NB	20	25	30	40	50	60
P	0,5	0,5	1	1	1	1
ZA	24	39	57	26	50	70
ZB	32	68	88	38	86	104
	closed	56	78	96	68	110
ZC	130	82	142	162	100	182
	open	76	118	156	98	170
ZD	122	222	262	150	282	320
ZE	51	67	85	60	90	110
ZF	71	113	133	88	142	160
ZG	88	100	120	70	124	142
ZH	86	134	178	86	134	178
ZI	116	174	214	116	174	214
ZJ	38	54	72	40	70	90
ZK	54	96	116	66	120	138
ZL	120	138	156	120	138	156
ZM	60	108	152	60	108	152
ZN	80	138	178	80	138	178
ZO	100	142	180	128	200	240
ZP	160	260	300	196	328	366
ZQ	328	366	404	328	366	404
ZR	272	370	454	272	370	454
ZS	348	466	546	348	466	546
ZT	13,5	14	17	20	20	20
ZU	19,5	22,5	22,5	25	28	28
ZV	28	28	28	28	28	28
ZW	27	27	27	27	27	27
Weight (gr.)	280	350	430	600	800	950
Stroke	20	40	60	30	60	80

Holding force



Ordering code

6312.Ø.D

16
20
25
32
40
50
63
80
100
125



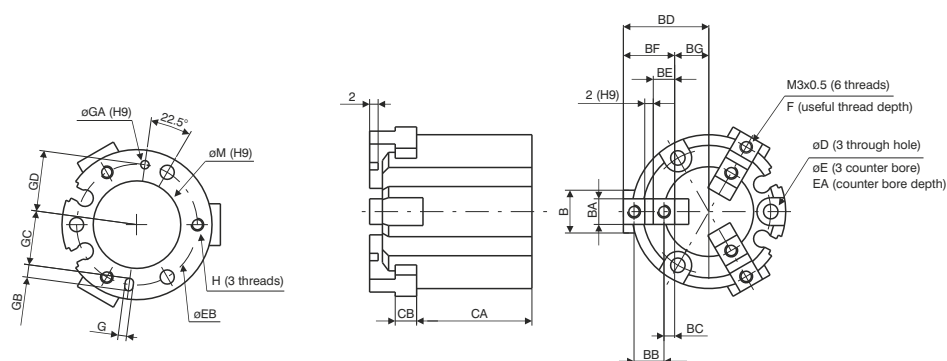
Construction characteristics

Body	aluminium
Piston	aluminium
Wedge	steel
Fingers	steel

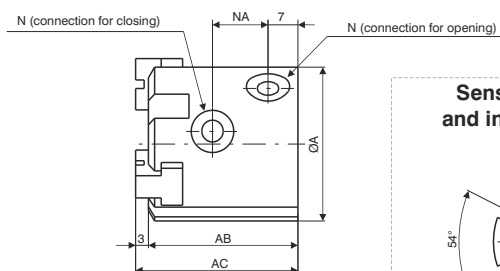
Technical characteristics

Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	2 - 6 bar (Ø16 - Ø20 - Ø25) - 1 - 6 bar (Ø32 - Ø125)
Working temperature	-5°C - +70°C
Maximum operating frequency	from Ø 16 to Ø 25, 120 cycles/minute from Ø 32 to Ø 63, 60 cycles/minute from Ø 80 to Ø 125, 30 cycles/minute

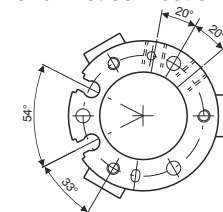
Overall dimensions Ø16 - Ø25



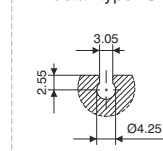
Bore	Ø16	Ø20	Ø25
ØA	30	36	42
AB	32	35	37
AC	35	38	40
B	8	10	12
BA ^{H9}	5	6	6
BB	6	7	8
BC	2	2,5	3
BD	open 17	20	24
	close 15	18	21
BE	4	5	6
BF	10	12	14
BG	open 7	8	10
	close 5	6	7
CA	25	27	28
CB	4	5	5
D	3,4	3,4	4,5
E	6,5	6,5	8
EA	8	9,5	10
EB	25	29	34
F	5	6	6
G ^{H9}	2	2	3
	Useful depth 2	2	3
ØGA ^{H9}	2	2	3
	Useful depth 2	2	3
GB	3	3	5
GC	11	13	14,5
GD	12,5	14,5	17
H	M3x0,5	M3x0,5	M4x0,7
	Useful depth 4,5	6	6
ØM ^{H9}	17	21	26
	Useful depth 1,5	1,5	1,5
N	M3x0,5	M5x0,8	M5x0,8
NA	11	13	15
Weight (gr.)	62	98	139



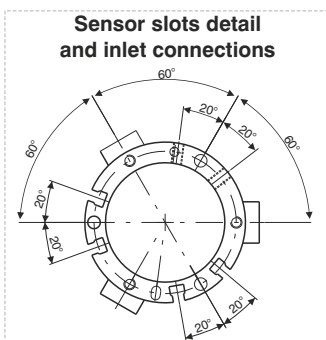
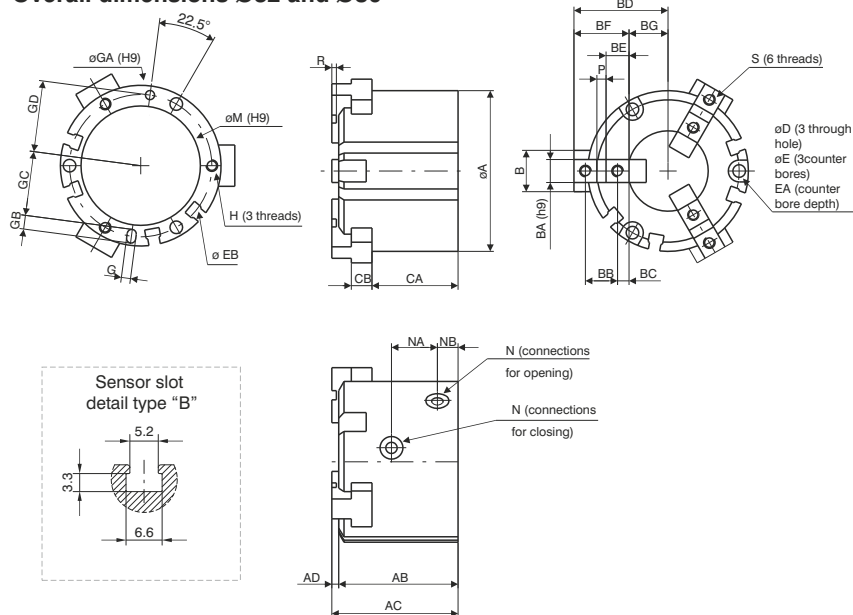
Sensor slots detail and inlet connections



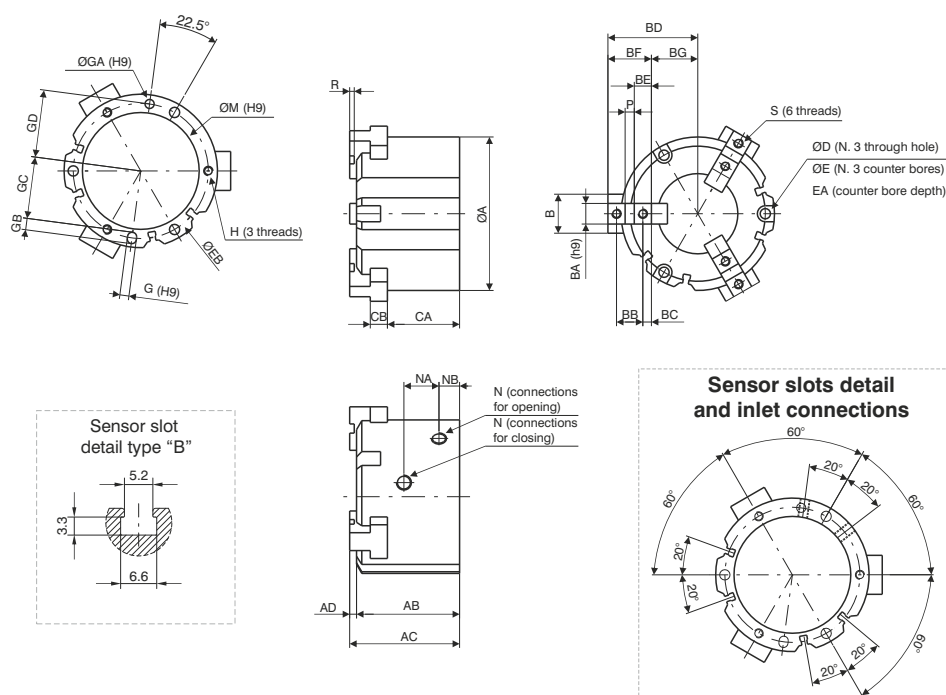
Sensor slot detail type "C"



Overall dimensions Ø32 and Ø80



Overall dimensions Ø100 and Ø125



Bore		Ø32	Ø40	Ø50	Ø63	Ø80
OA		52	62	70	86	106
AB		41	44	52	62	77
AC		44	47	55	66	82
AD		3	3	3	4	5
B		14	16	18	24	28
BA	^{H9}	8	8	10	12	14
BB		11	12	14	17	20
BC		4,5	4,5	5	5,5	6
BD	open	32	35	41	51	63,5
	close	28	31	35	43	53,5
BE		9	9	10	11	12
BF		20	21	24	28	32
BG	open	12	14	17	23	31,5
	close	8	10	11	15	21,5
CA		30,5	32	37,5	44	56
CB		6	7	9	11	12
D		4,5	5,5	5,5	6,6	6,6
E		8	9,5	9,5	11	11
EA		9	9	12	14	19
EB		44	53	62	76	95
H		M4x0,7	M5x0,8	M5x0,8	M6x1	M6x1
	Useful depth	6	7,5	10	9	12
G ^{H9}		3	4	4	5	6
	Useful depth	3	4	4	5	6
ØGA ^{H9}		3	4	4	5	6
	Useful depth	3	4	4	5	6
GB		5	6	6	7	8
GC		19,5	23,5	28	34,5	43,5
GD		22	26,5	31	38	47,5
N		M5x0,8	M5x0,8	M5x0,8	M5x0,8	G1/8
OM ^{H9}		34	42	52	65	82
	Useful depth	2	2	2	2,5	3
NA		16	17	20	22	27
NB		8	9	9	12	13,5
P ^{H9}		2	3	4	6	8
R		2	2	2	3	4
S		M4x0,7	M4x0,7	M5x0,8	M5x0,8	M6x1
	Useful depth	8	8	10	10	12
Gewicht (gr.)		240	354	542	1000	1850

Bore		Ø100	Ø125
ØA		134	166
AB		90	114
AC		96	122
AD		6	8
B		34	40
BA ^{H9}		18	22
BB		23	31
BC		7,5	10,5
BD	open	78	98
	close	66	82
BE		15	21
BF		38	52
BG	open	40	46
	close	28	30
CA		63	84
CB		15	18
ØD		9	11
ØE		14	17,5
EA		21	34
EB		118	148
G ^{H9}		8	10
	Useful depth	6	8
ØGA ^{H9}		8	10
	Useful depth	6	8
GB		10	12
GC		54	68
GD		59	74
H		M8x1,25	M10x1,5
	Useful depth	16	20
ØM ^{H9}		102	130
	Useful depth	4	6
N		G1/4	G3/8
NA		30,6	38
NB		18	23,5
P ^{H9}		8	10
R		4	6
S		M8x1,25	M10x1,5
	Useful depth	16	20
Gewicht (gr.)		3360	6430

Gripping force (N)

