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° 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.)

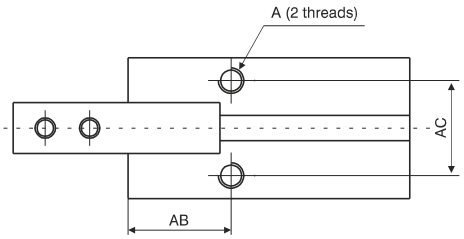
Construction characteristics

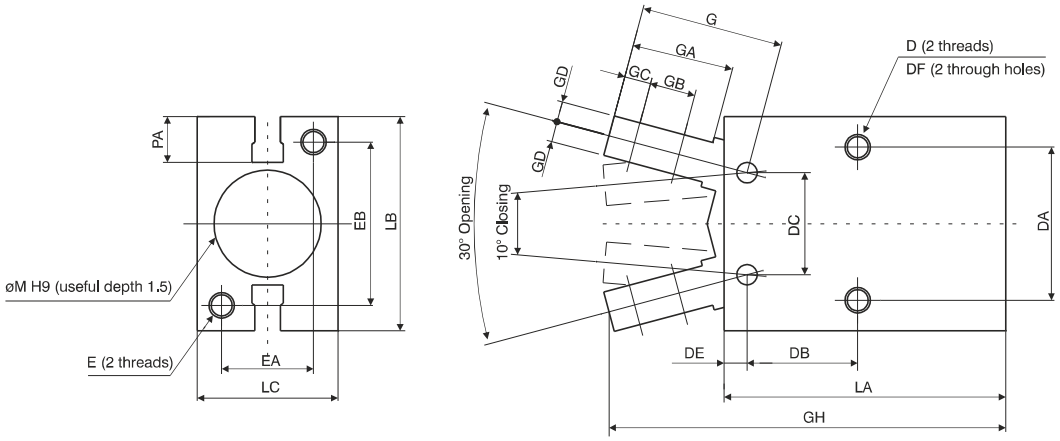
Body	oxidised aluminium
Piston	stainless steel
Fingers	nitrate steel
End cover	aluminium
Seals	oil resistant NBR rubber

Technical characteristics

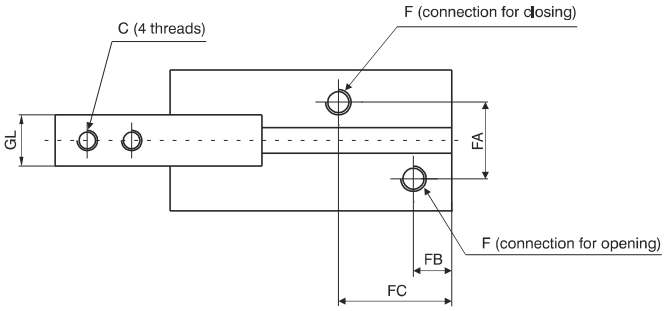
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)		
Working pressure	1 - 6 bar (double acting) - 2.5 - 6 bar (single acting)		
Operating temperature	-5°C - +70°C		
Opening total stroke	-10° - 30°		
Holding force (Nm) at 5 bar	Bore	- Double acting	- 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		

5

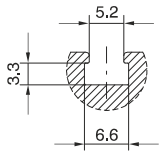




Bore		Ø10	Ø16	Ø20	Ø25
A		M3x0.5	M4x0.7	M5x0.8	M6
	Useful depht	6	6.5	8	10
AB		11.6	14,6	20.2	23.9
AC		11.4	16	18.6	22
C		M2.5x0.45	M3x0.5	M4x0.7	M5x0.8
D		M3x0.5	M4x0.7	M5x0.8	M6
	Useful depht	5	8	10	12
DA		16	24	30	36
DB		12.8	16.2	21.7	25.8
DC		10	16	20	25
DE		2.8	3.9	4.5	4.6
DF		2.6	3.4	4.3	5.1
E		M3x0.5	M4x0.7	M5x0.8	M6
	Useful depht	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



Sensor slot
detail type "B"

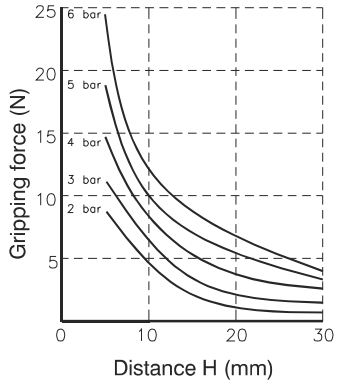
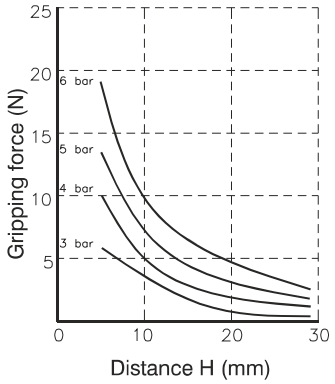
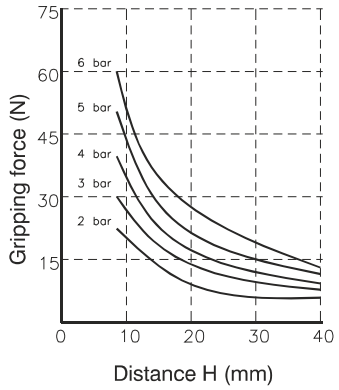
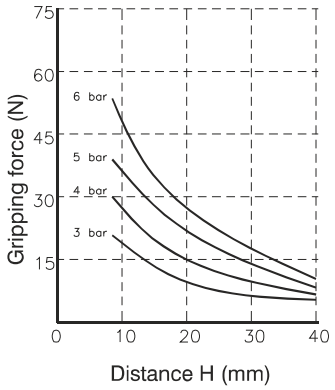
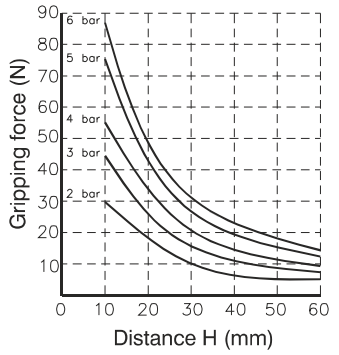
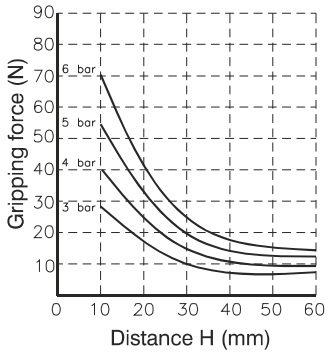
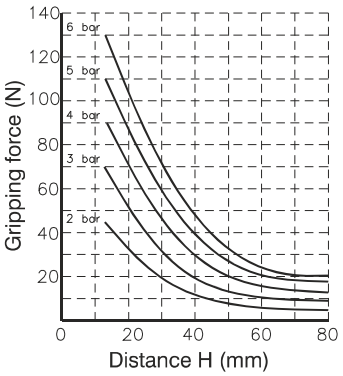
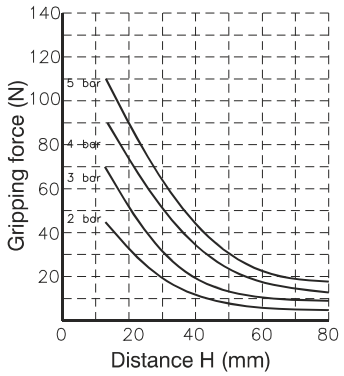


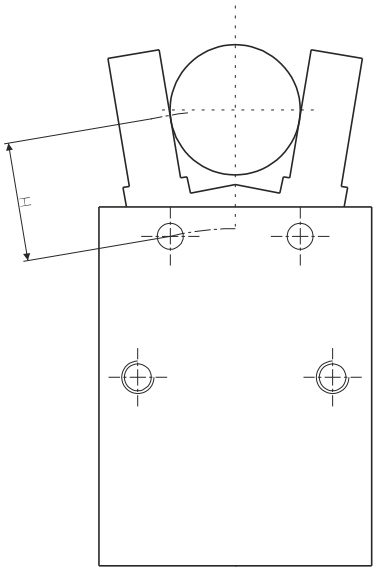
5

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.

	Double acting	Single acting
Ø10		
Ø16		
Ø20		
Ø25		



5

Ordering code

6302.Ø.D

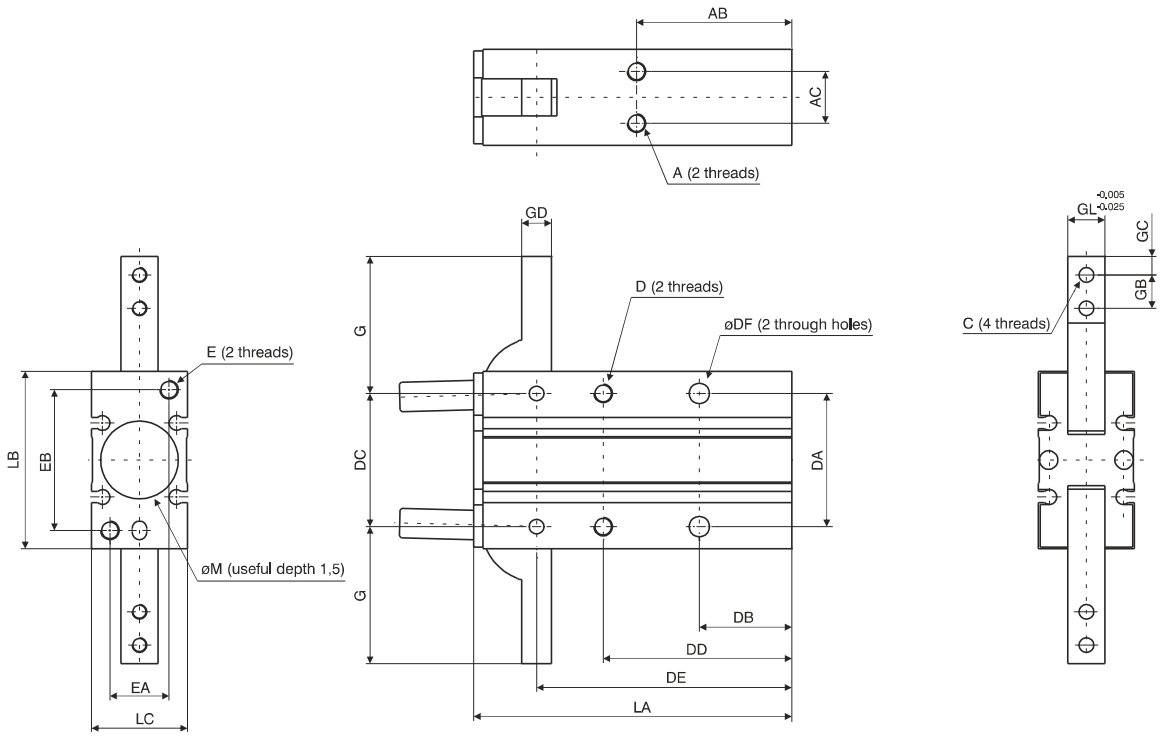
- **10**
- **16**
- **20**
- **25**

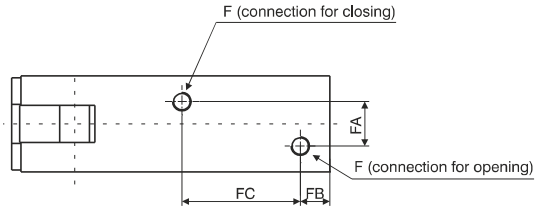
Construction characteristics

Body	aluminium
Piston	aluminium
Fingers	steel
End cover	aluminium

Technical characteristics

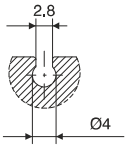
Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	1 - 6 bar
Working temperature	-5C° - +70C°
Opening total stroke	-3° - 180°
Maximum operating frequency	from Ø10 to Ø25, 60 cycles/minute



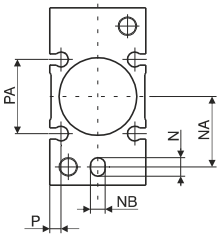


Bore		Ø10	Ø16	Ø20	Ø25
A		M3x0.5	M4x0.7	M5x0.8	M6x1
	Useful depth	4	5	8	10
AB		30	33	42	50
AC		9	12	14	16
C		M3x0.5	M3x0.5	M4x0.7	M5x0.8
D		M3x0.5	M4x0.7	M5x0.8	M6x1
	Useful depth	6	8	10	12
DA		24	30	36	42
DB		18	20	25	30
DC		22	28	36	45
DD		35	41	51	60
DE		47.5	55.5	69	86
DF		3.4	4.5	5.5	6.6
E		M3x0.5	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

Sensor slot detail type "C"



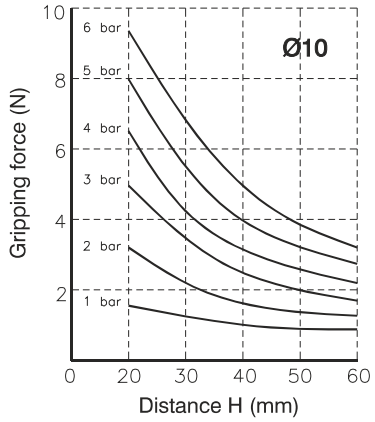
Back view detail

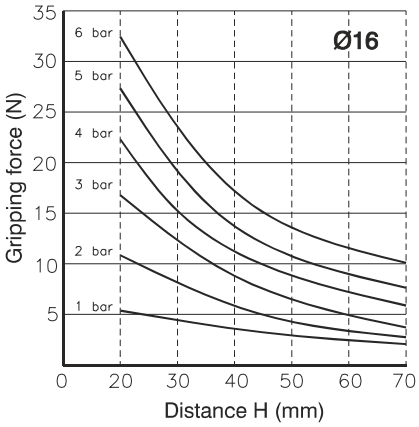


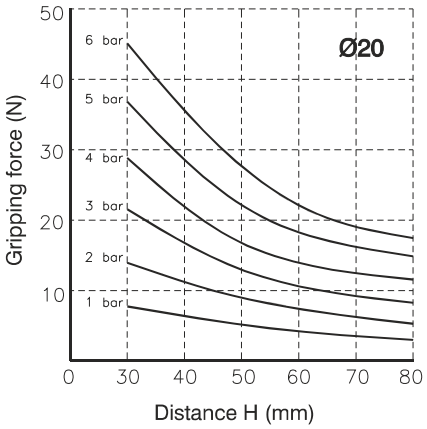
5

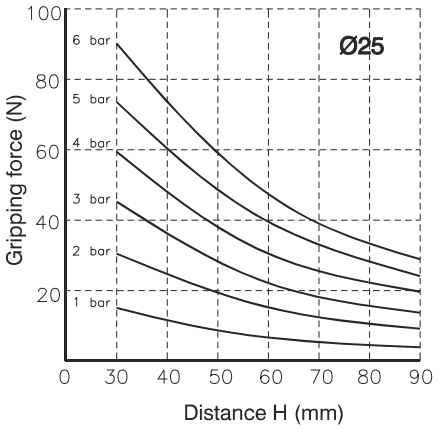
Gripping force 5 bar (Nm)

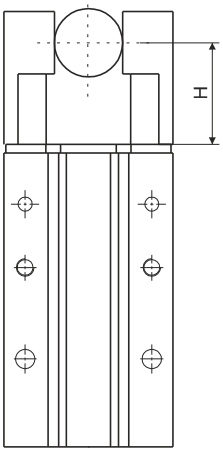
Bore	Ø10	Ø16	Ø20	Ø25
(Nm)	0.16	0.54	1.1	2.28



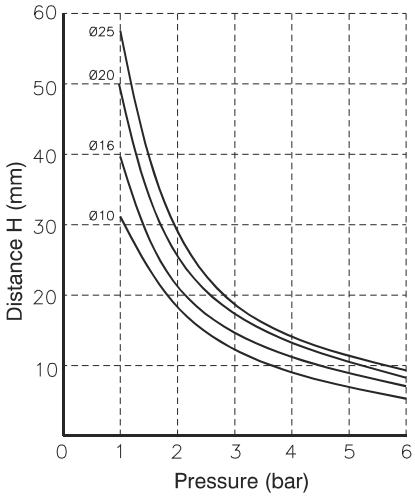


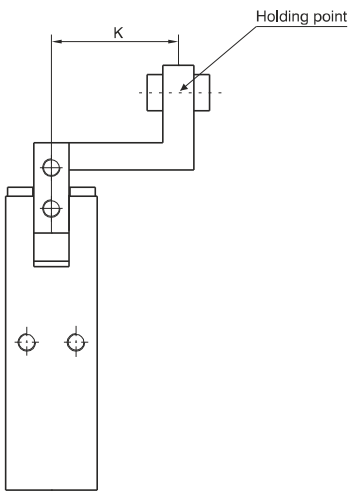






Confirmation of Holding point





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

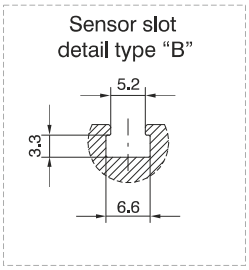
Ø:
- **20**
- **25**
- **32**
- **40**
- **50**

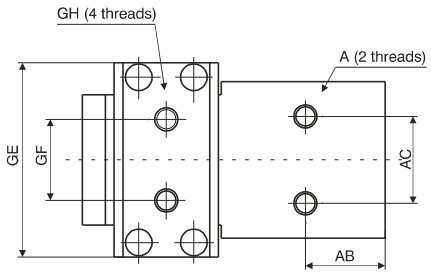
Construction characteristics

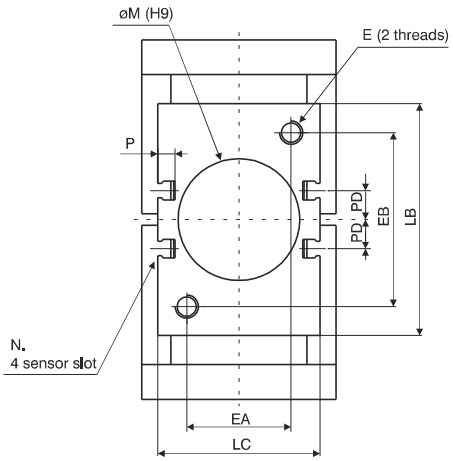
Body	aluminium
Piston	aluminium
Fingers	steel
End cover	aluminium

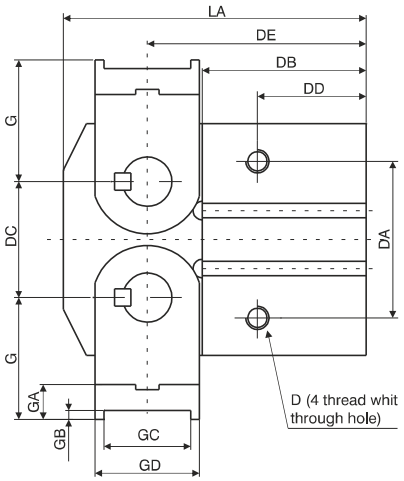
Technical characteristics

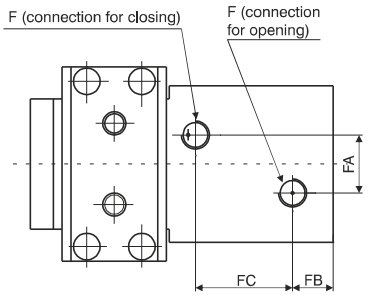
Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	1.5 - 7 bar
Working temperature	-5C° - +70C°
Opening total stroke	-5° - 180°
Maximum operating frequency	from Ø20 to Ø25, 60 cycles/minute from Ø32 to Ø50, 30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





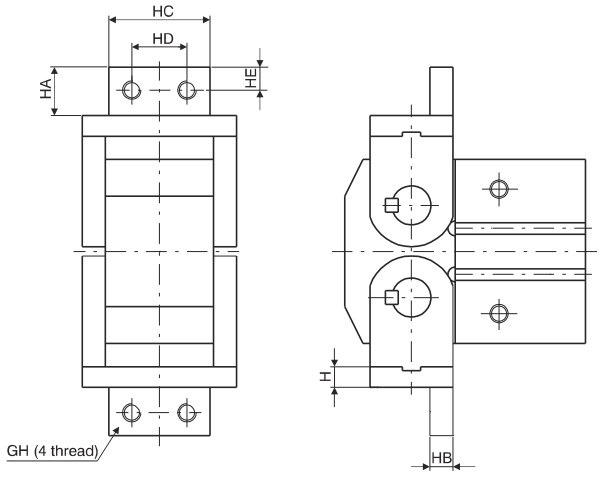






Bore		Ø20	Ø25	Ø32	Ø40	Ø50
A		M5	M6	M6	M8	M10
	Useful depth	7	10	10	15	20
AB		17	20	21	27.5	36
AC		20	24	24	30	40
D		M5	M6	M6	M8	M10
	Useful depth	10	12	12	16	20
DA		27	34	42	54	70
DB		35	40	47	56.5	69
DC		18	24	30	40	56
DD		23	27	29	37.5	48
DE		45	51	61.5	75.5	96
E		M5	M6	M6	M8	M10
	Useful depth	10	12	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

Fingers side fixing

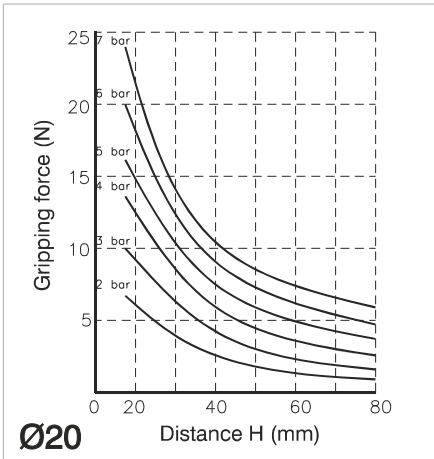


5

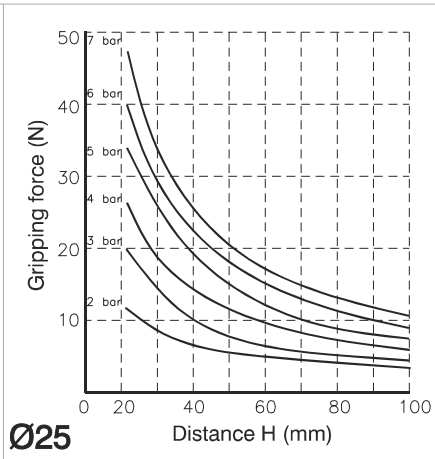
Gripping force

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.

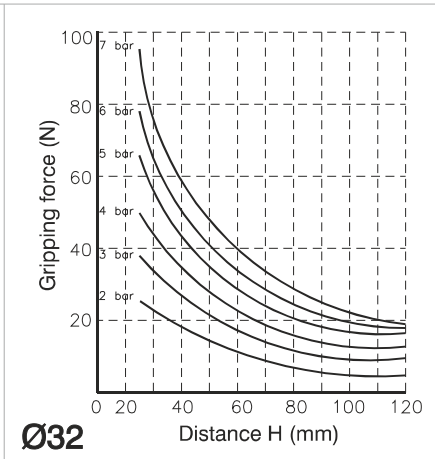
Bore	Ø20	Ø25	Ø32	Ø40	Ø50
(Nm)	0.3	0.7	1.6	3.7	8.3



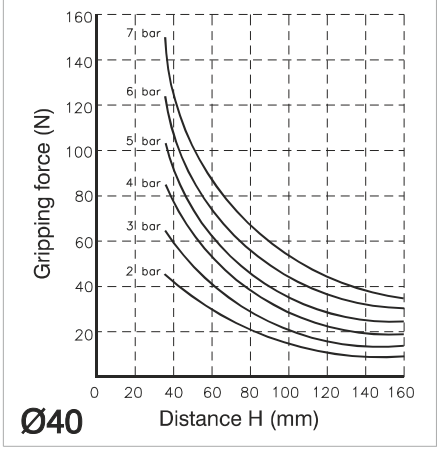
Ø20



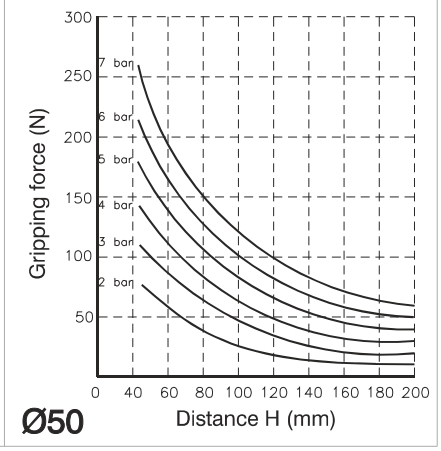
Ø25



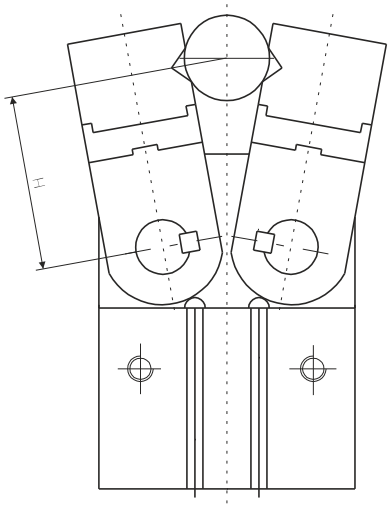
Ø32



Ø40



Ø50



5

Ordering code

6310.Ø — **10** / **16** / **20** / **25**

- **D** = Double acting
- **NC** = Single acting (N.C.)
- **NO** = Single acting (N.O.)

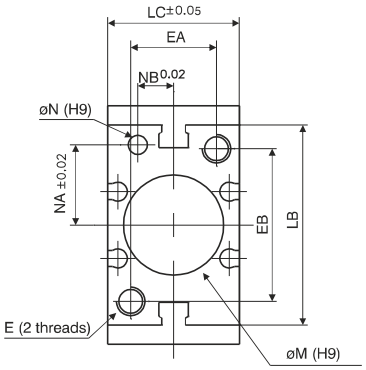
Construction characteristics

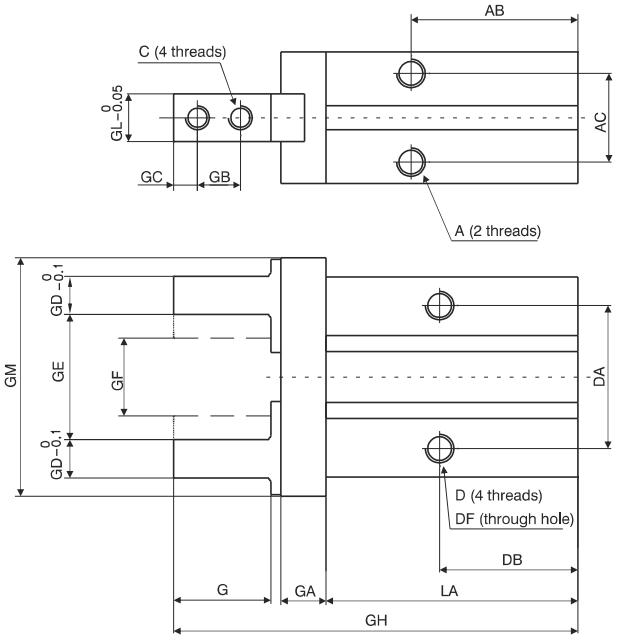
Body	aluminium
Piston	aluminium or stainless steel (depending on the bore)
Fingers	steel
End cover	aluminium
Seals	oil resistant NBR rubber

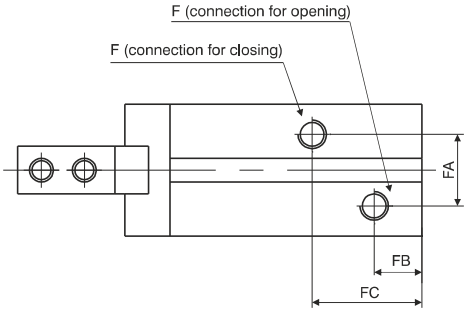
Technical characteristics

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

5

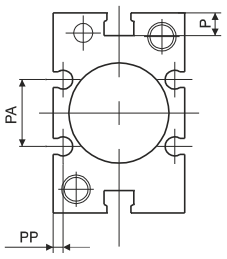






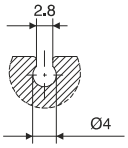
Bore		Ø10	Ø16	Ø20	Ø25
A		M3x0.5	M4x0.7	M5x0.8	M6x1
	Useful depth	6	4.5	8	10
AB		27	30	35	36.5
AC		11.4	16	18.6	22
C		M2.5x0.45	M3x0.5	M4x0.7	M5x0.8
D		M3x0.5	M4x0.7	M5x0.8	M6x1
	Useful depth	5.5	8	10	12
DA		16	24	30	36
DB		23	24.5	29	30
ØDF		2.6	3.4	4.3	5.1
E		M3x0.5	M4x0.7	M5x0.8	M6x1
	Useful depth	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
ØMH9		11	17	21	26
	Useful depth	2	2	3	3.5
ØNH9		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



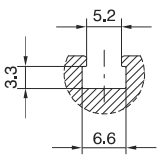
Ø16 - Ø25

Sensor slot detail type "C"



Ø10 - Ø25

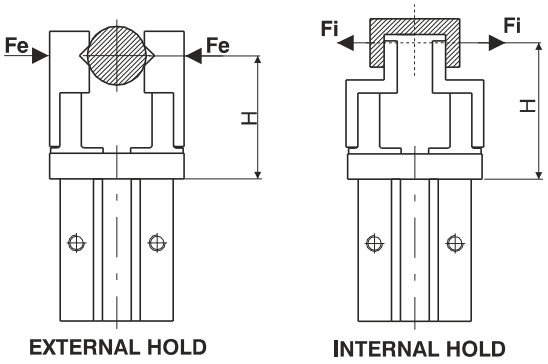
Sensor slot detail type "B"

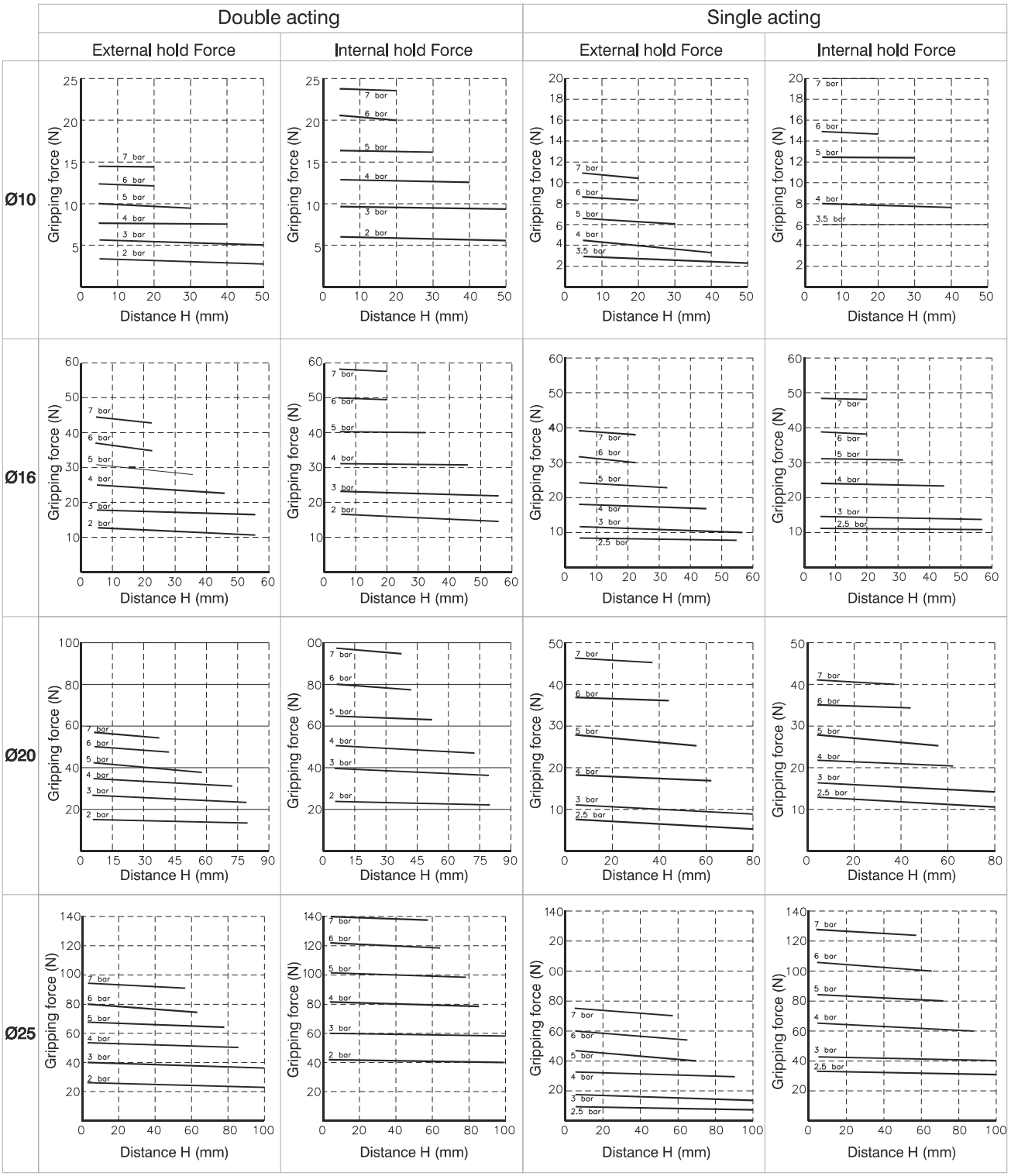


Holding force (N) (pressure 5 bar, holding point H=20 half stroke)

Version		Force	Bore Ø10	Ø16	Ø20	Ø25
Double acting		Fe	9.8	30	42	65
		Fi	17	40	66	104
Single acting	NO	Fe	6.3	24	28	45
	NC	Fi	12	31	56	83

Fe =external holding force **Fi** = internal holding force





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					

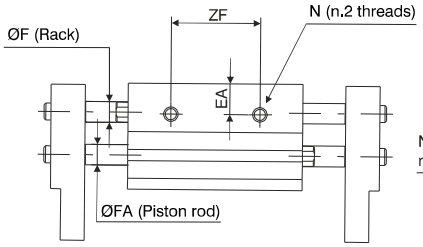
Construction characteristics

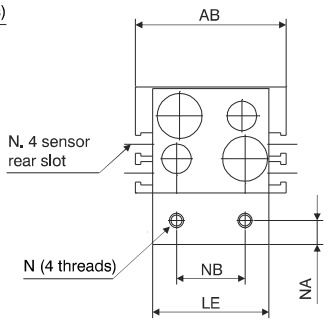
Body	aluminium
Piston	aluminium
Fingers	aluminium
Rod	steel
Rack	steel
Pinion	steel

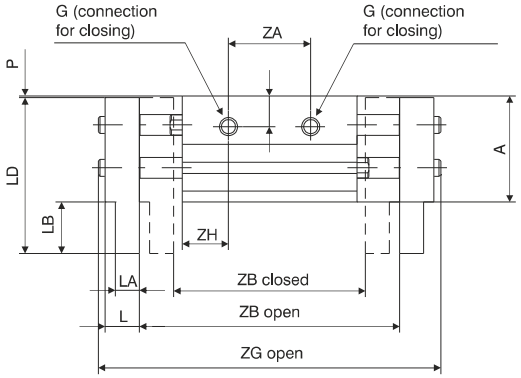
Technical characteristics

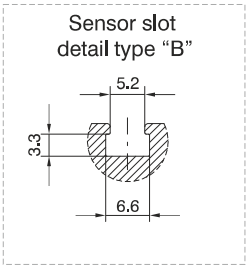
Function	double acting
Fluid	filtered and preferably lubricated air or not (If lubricated the lubrication must be continuous)
Working pressure	Ø10: 1.5 - 6 bar - Ø16 - 40: 1 - 6 bar
Working temperature	-5°C - +70°C

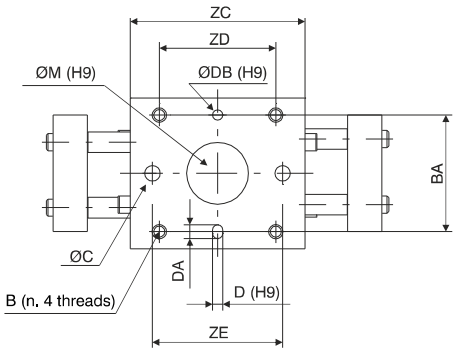
Model	Diameter (mm)	Max.operating frequence cicles/min.	Model	Diameter (mm)	Max.operating frequence cicles/min.
6311.10.D	10	60	6311.25.D	25	60
6311.10.D.1		40	6311.25.D.1		40
6311.10.D.2			6311.25.D.2		
6311.16.D	16	60	6311.32.D	32	30
6311.16.D.1		40	6311.32.D.1		20
6311.16.D.2			6311.32.D.2		
6311.20.D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







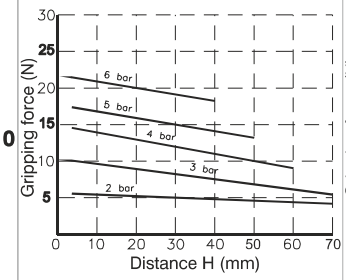
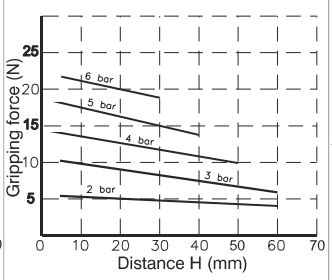
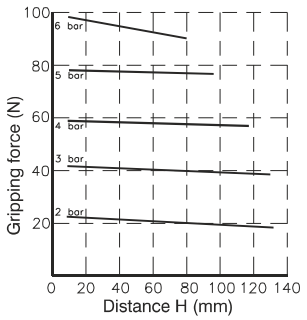
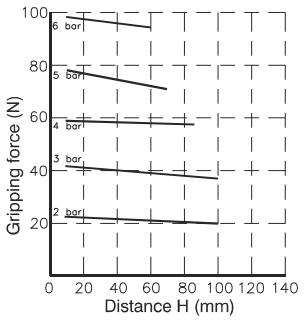
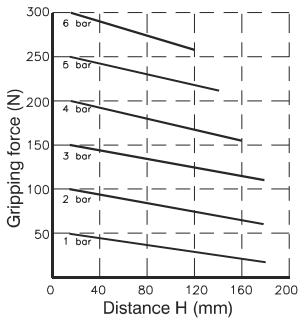
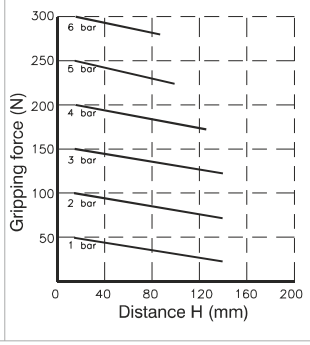


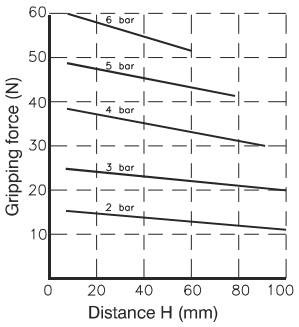
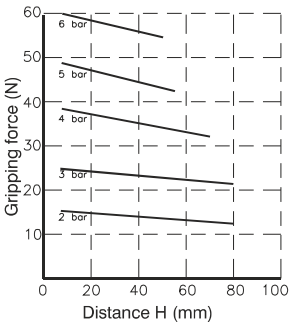
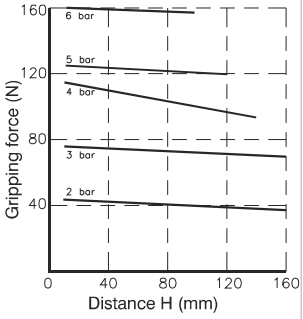
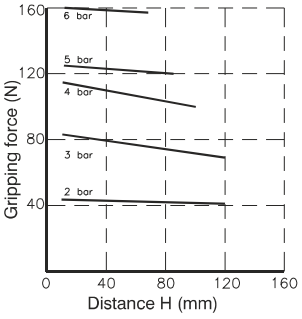
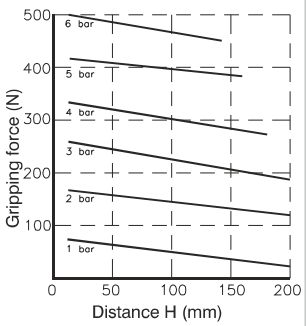
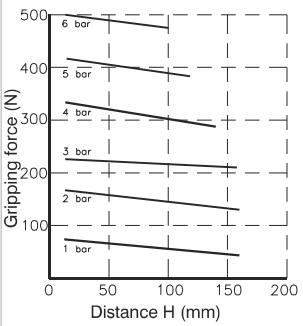


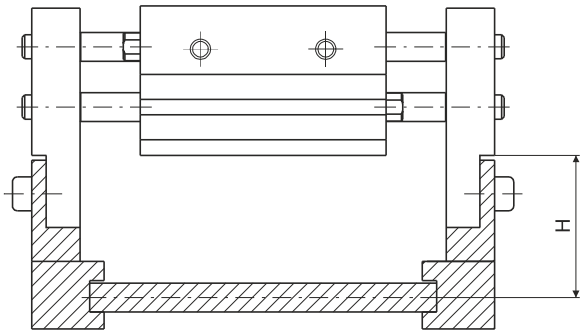
Bore		Ø10			Ø16			Ø20			Ø25			Ø32			Ø40		
A		31			39			46			52			68			79		
AB		44			55			65			76			82			98		
B		M4x0.7			M5x0.8			M6x1			M8x1.25			M8x1.25			M10x1.5		
	Useful depth	8			10			12			16			16			20		
BA		34			42			52			62			64			76		
ØC		4.5			5.5			6.6			9			/			/		
D H9		3			3			4			4			6			6		
	Useful depth	3			3			4			4.5			8			8		
DA		4			4			5			5			7			7		
ØDB H9		3			3			4			4			6			6		
	Useful depth	3			3			4			4.5			8			8		
E		M4x0.7			M5x0.8			M6x1			M8x1.25			M8x1.25			M10x1.5		
	Useful depth	5			7			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			1.5		
N		M4x0.7			M5x0.8			M6x1			M8x1.25			M8x1.25			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	32	68	88	38	86	104	54	104	148	72	130	170
ZB	closed	56	78	96	68	110	130	82	142	162	100	182	200	150	198	242	188	246	286
	open	76	118	156	98	170	210	122	222	262	150	282	320	220	318	402	288	406	486
ZC		51	67	85	60	90	110	71	113	133	88	142	160	110	158	202	148	206	246
ZD		34	52	70	45	75	95	58	100	120	70	124	142	86	134	178	116	174	214
ZE		38	54	72	40	70	90	54	96	116	66	120	138	/	/	/	/	/	/
ZF		26	42	60	28	58	78	38	80	100	48	102	120	60	108	152	80	138	178
ZG	open	100	142	180	128	200	240	160	260	300	196	328	366	272	370	454	348	466	546
ZH		13.5	14	14	17	20	20	19.5	22.5	22.5	25	28	28	28			37		
Weight (gr.)		280	350	430	600	800	950	1000	1500	1700	1700	2500	2800	2900	3800	4700	5300	6850	7900
		20	40	60	30	60	80	40	80	100	50	100	120	70	120	160	100	160	200
		Stroke																	

5

Holding force

	Opening / Closing Stroke	
	Basic Version	Versions 1 & 2
Ø10		
Ø20		
Ø32		

	Opening / Closing Stroke	
	Basic Version	Versions 1 & 2
Ø16		
Ø25		
Ø40		



Ordering code

6312.Ø.D

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

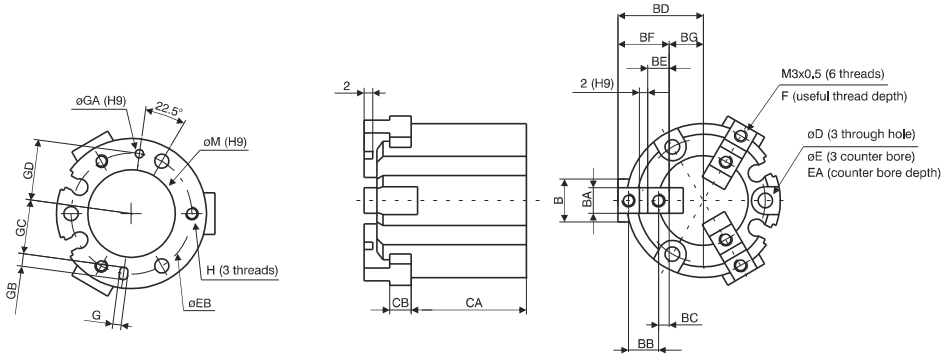
Construction characteristics

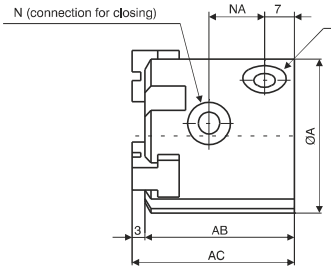
Body	aluminium
Piston	aluminium
Wedge	steel
Fingers	steel

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

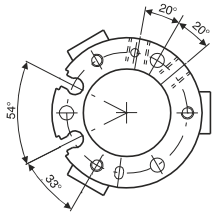
Overall dimensions Ø16 - Ø25



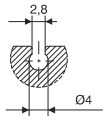


Bore		Ø16	Ø20	Ø25
ØA		30	36	42
AB		32	35	37
AC		35	38	40
B		8	10	12
BA H9		5	6	6
BB		6	7	8
BC		2	2.5	3
BD	open	17	20	24
	close	15	18	21
BE		4	5	6
BF		10	12	14
BG	open	7	8	10
	close	5	6	7
CA		25	27	28
CB		4	5	5
D		3,4	3,4	4,5
E		6.5	6.5	8
EA		8	9.5	10
EB		25	29	34
F		5	6	6
G H9		2	2	3
	Useful depth	2	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

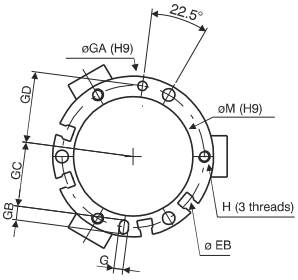


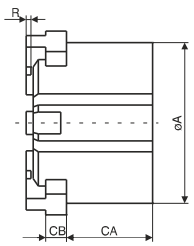
Sensor slot detail type "C"

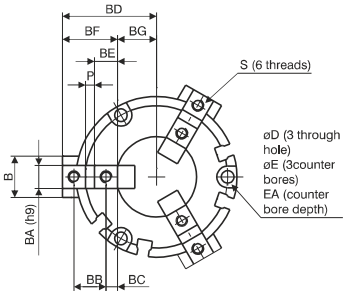


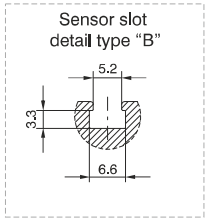
5

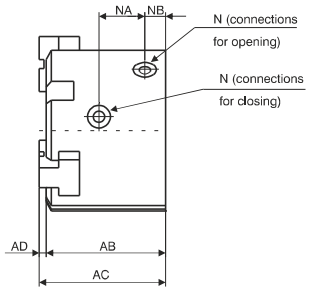
Overall dimensions Ø32 and Ø80

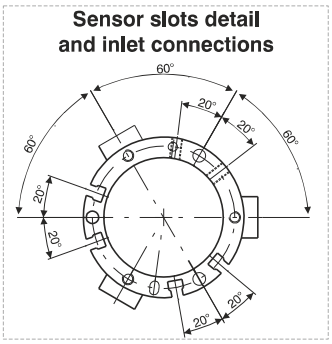






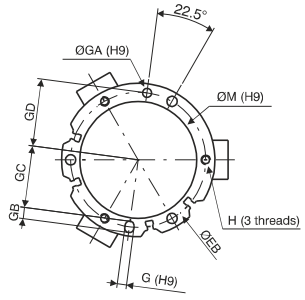


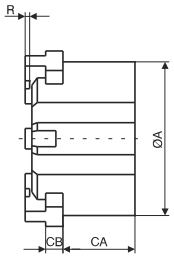


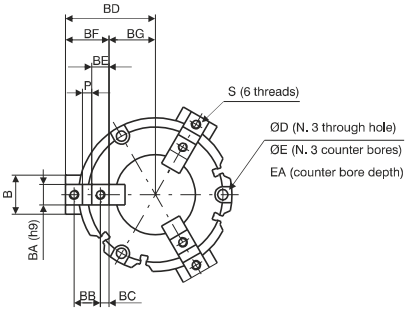


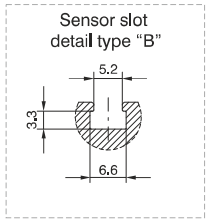
Bore		Ø32	Ø40	Ø50	Ø63	Ø80
ØA		52	62	70	86	106
AB		41	44	52	62	77
AC		44	47	55	66	82
AD		3	3	3	4	5
B		14	16	18	24	28
BA h9		8	8	10	12	14
BB		11	12	14	17	20
BC		4.5	4.5	5	5.5	6
BD	open	32	35	41	51	63.5
	closed	28	31	35	43	53.5
BE		9	9	10	11	12
BF		20	21	24	28	32
BG	open	12	14	17	23	31.5
	closed	8	10	11	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
ØM 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
Weight (gr)		240	354	542	1000	1850

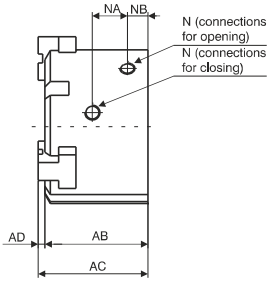
Overall dimensions Ø100 and Ø125

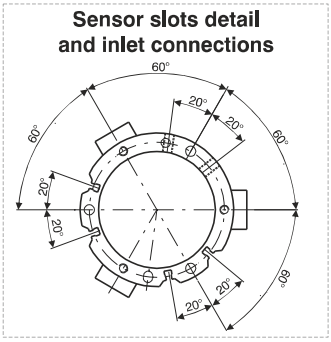






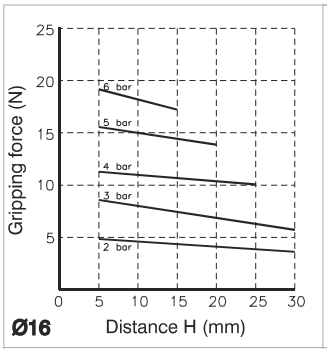




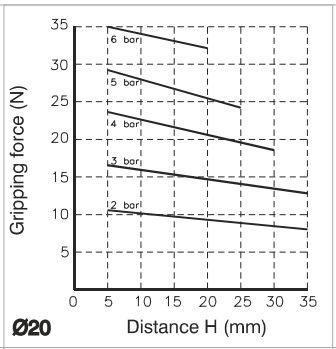


Bore		Ø100	Ø125
ØA		134	166
AB		90	114
AC		96	122
AD		6	8
B		34	40
BA h9		18	22
BB		23	31
BC		7.5	10.5
BD	open	78	98
	close	66	82
BE		15	21
BF		38	52
BG	open	40	46
	close	28	30
CA		63	84
CB		15	18
ØD		9	11
ØE		14	17.5
EA		21	34
EB		118	148
G H9		8	10
	Useful depth	6	8
ØGA H9		8	10
	Useful depth	6	8
GB		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
Weight (gr)		3360	6430

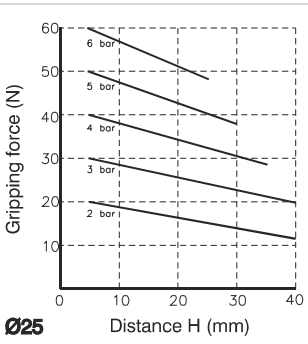
Gripping force (N)



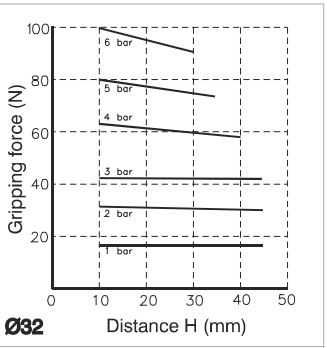
Ø16



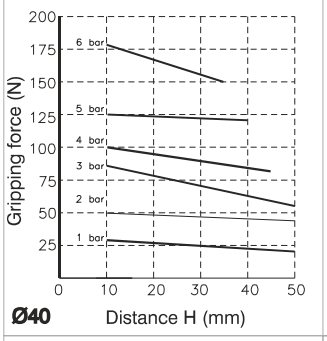
Ø20



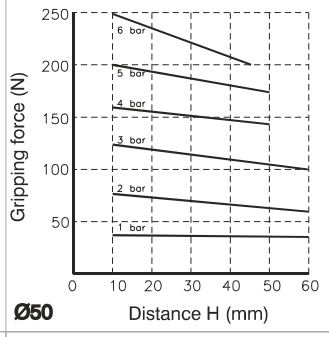
Ø25



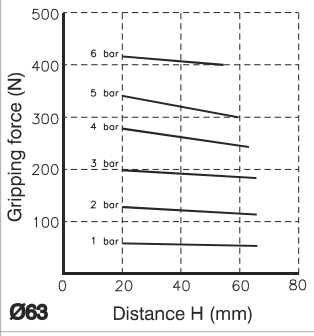
Ø32



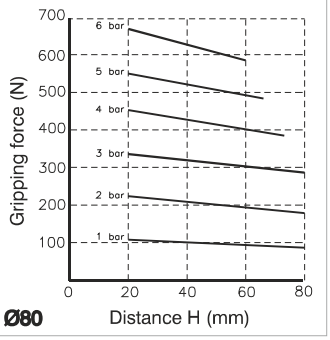
Ø40



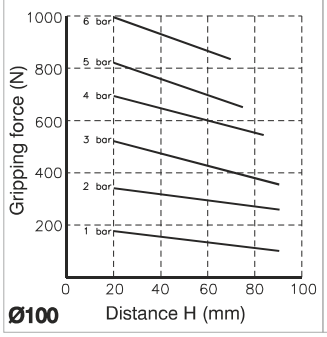
Ø50



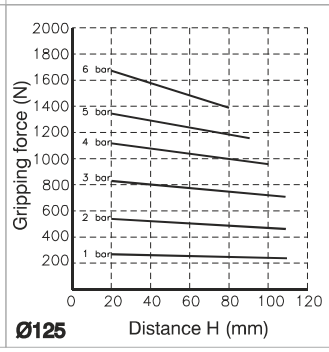
Ø63



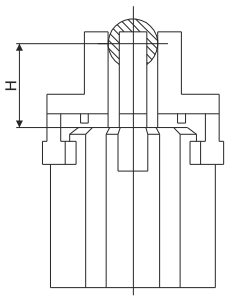
Ø80

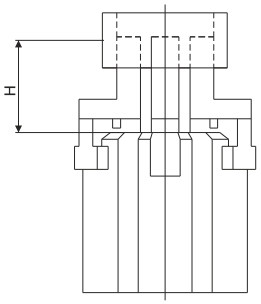


Ø100



Ø125





5