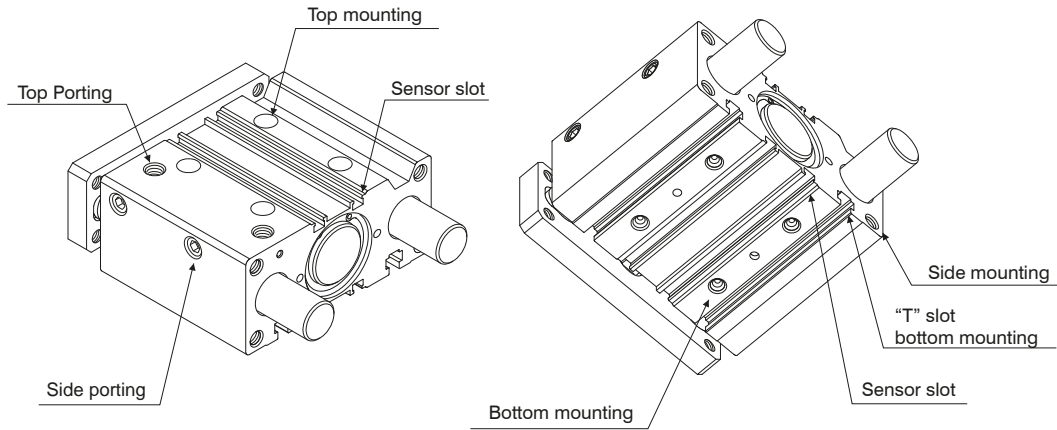


Series 6100 - 6101 - 6110 - Guided compact cylinder



3

PNEUMATIC ACTUATION

These guided compact cylinders, characterised by reduced overall dimensions, can be used for the compression, conveyance and manipulation of objects in many industrial sectors; similarly they can also be used in pushing, lifting and stopping applications.

These cylinders are available in sizes 32mm to 63 mm diameter, and comprise a single compact cylinder with integral guide rods, making it a true guide cylinder designed with installation flexibility and space saving in mind.

The rod guide is available in two styles:

Self-lubricating bronze bushes - useful for absorbing lateral loads and forces, especially as a stopper.

Bearing bushes - guaranteeing high precision and uniform movement with low friction characteristics, useful with mis-aligned loads.

Guided compact cylinders are ideal for use in applications requiring a combination of reduced dimensions and anti-rotation features. Mounting can be achieved on three sides through holes or "T" slots.

Adjustable mounting holes in the front plate ensure safe and accurate assembly. Pneumatic connections can be made to either lateral or top ports (lateral ports plugged on standard units).

When sensors are required, there are special slots in the barrel extrusion where 1580 series miniaturised sensors are easily fitted.

► Guided compact cylinder



Ordering code

6100.Ø.stroke. . . .

12	}	Side supply ports closed
16		
20	}	L = Top supply ports closed
25		
32	}	B = Control unit with bronze bush
40		
50	}	C = Control unit with bearing bush
63		

Construction characteristics

Body	anodised aluminium
Guide rods	C43 chromed steel (control unit with bronze bush) tempered and chromed steel (control unit with bearing bush)
Piston	aluminium
Piston rod	stainless steel (for bores Ø12, Ø16, Ø20, Ø25) C43 chromed steel (for bores Ø32, Ø40, Ø50, Ø63)
Rods bushing	bronze or bearing bushing
End cap	anodised aluminium
Piston seal	oil resistant NBR rubber
Piston rod seal	PUR (NBR 12-16)
Wipers	PUR
Plate	nickel plated steel

Operational characteristics

Function	double acting
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Working pressure	max. 10 bar
Working temperature	-5°C - +70°C
Cushioning	elastic bumper on both ends

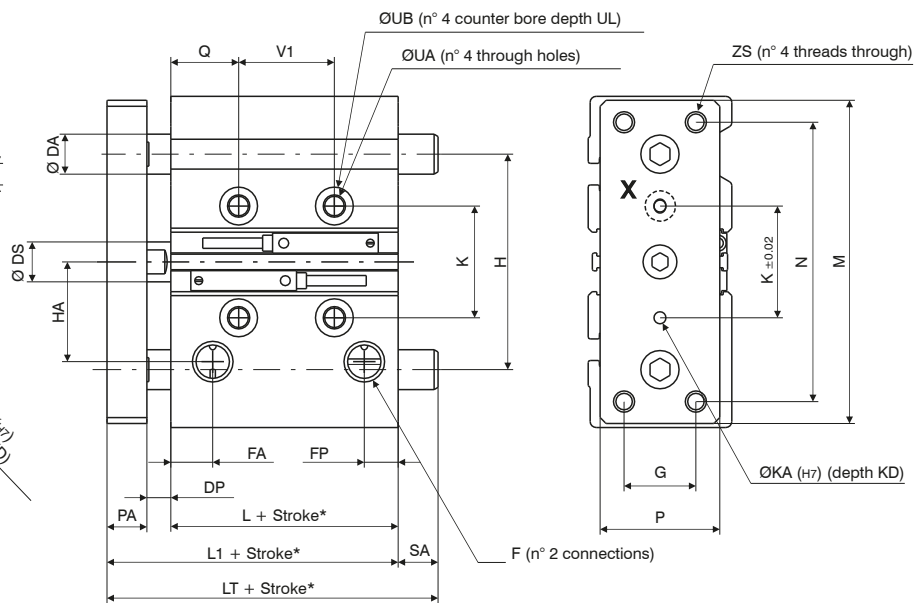
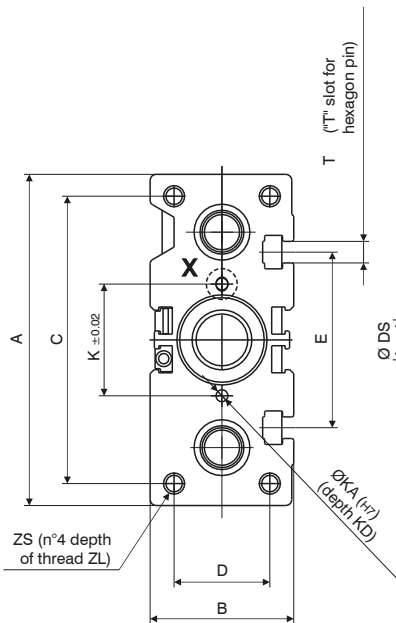
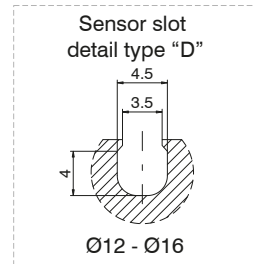
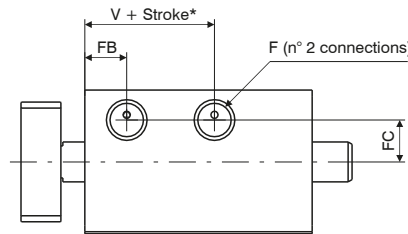
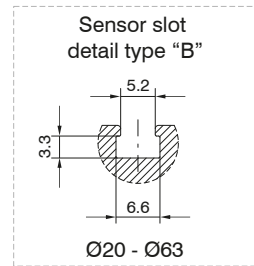
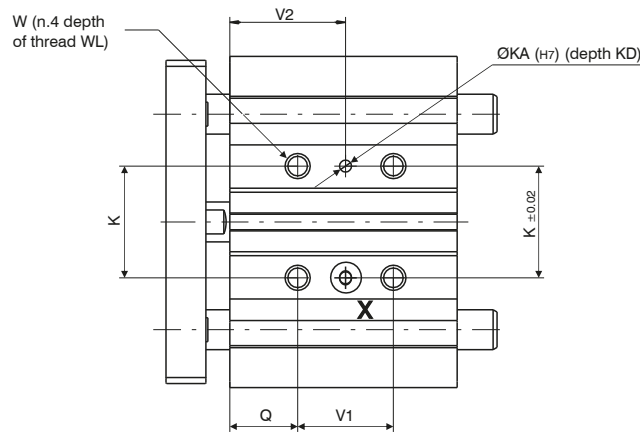
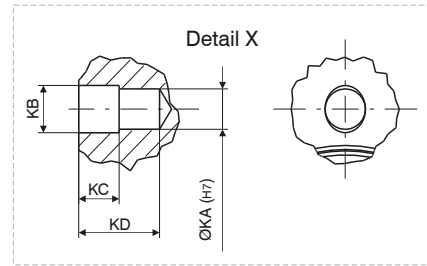
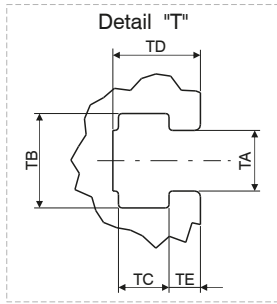
Standard stroke

Bore	Stroke											
	10	20	25	30	40	50	75	100	125	150	175	200
Ø12	●	●		●	●	●	●	●				
Ø16	●	●		●	●	●	●	●				
Ø20		●		●	●	●	●	●	●	●	●	●
Ø25		●		●	●	●	●	●	●	●	●	●
Ø32			●			●	●	●	●	●	●	●
Ø40			●			●	●	●	●	●	●	●
Ø50			●			●	●	●	●	●	●	●
Ø63			●			●	●	●	●	●	●	●

Intermediate strokes can be obtained using spacers with defined length (5, 10, 15, 20 mm).

Example: It is possible to obtain a **6100.32.45.B** cylinder from a **6100.32.50.B** cylinder by inserting a spacer with length of 5 mm. The intermediate strokes manufactured without the use of spacers are considered special executions.

Overall dimensions



*Dimensions only refer to the "standard stroke"



Overall dimensions

Bore		Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
Table of dimensions									
A		58	64	83	93	112	120	148	162
B		26	30	36	42	48	54	64	78
C		40	42	72	82	98	106	130	142
D		18	22	24	30	34	40	46	58
Control unit with bronze bushes	DA	8	10	12	16	20	20	25	25
	Control unit with bearing bushes	6	8	10	14	16	16	20	20
DP		2	2	5,5	5,5	9,5	10	13	13
DS		6	8	10	12	16	16	20	20
E		/	/	44	50	63	72	92	110
F		M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/4"
FA		11	11	11	12	13	13	13	14
FB		11	11	11	12	13	13	13	14
FC		8,5	10	10,5	13,5	15	18	21,5	28
FP		15	17	9	10,5	9,5	11	11	12,5
G		14	16	18	26	30	30	40	50
H		41,5	46	54	64	78	86	110	124
HA		19,5	23	25	28,5	34	38	47	55
K		23	24	28	34	42	50	66	80
KA		/	/	3	4	4	4	5	5
KB		/	/	3,5	4,5	4,5	4,5	6	6
KC		/	/	3	3	3	3	4	4
KD		/	/	6	6	6	6	8	8
L		29	31	38	38,5	38,5	44	44	49
Control unit with bronze bushes	L1	39	43	53,5	54	60	66	72	77
	Control unit with bearing bushes	39	43	53,5	54	97	97	106,5	106,5
Control unit with bearing bushes	LT	57	64	84,5	85	102	102	118	118
	See table 1								
M		56	62	81	91	110	118	146	158
N		48	52	70	78	96	104	130	130
PA		8	10	10	10	12	12	15	15
P		22	25	30	38	44	44	60	70
Q		5	5	17,5	17,5	21,5	22	24	24
Control unit with bronze bushes	SA	/	/	/	/	37	31	34,5	29,5
		Control unit with bearing bushes	18	21	31	31	42	36	46
See table 1									
T		/	/	M5	M5	M6	M6	M8	M10
TA		/	/	5,4	5,4	6,5	6,5	8,5	11
TB		/	/	8,4	8,4	10,5	10,5	13,5	17,8
TC		/	/	4,5	4,5	5,5	5,5	7,5	10
TD		/	/	7,8	8,2	9,5	11	13,5	18,5
TE		/	/	2,8	3	3,5	4	4,5	7
UA		4,3	4,3	5,6	5,6	6,6	6,6	8,6	8,6
UB		8	8	9,5	9,5	11	11	14	14
UL		4,5	4,5	5,5	5,5	7,5	7,5	9	9
V		14	14	13	13	7,5	13	9	14
V1		See table 2							
V2		See table 2							
W		M5	M5	M6x1	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5
WL		10	10	12	12	16	16	20	20
Z		M4	M5	M5x0,8	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5
ZL		9	11	13	15	20	20	22	22

Control unit with bearing bushes	Table 1	LT			SA		
	Bore	stroke ≤ 30	30 < stroke ≤ 100	100 < stroke ≤ 200	stroke ≤ 30	30 < stroke ≤ 100	100 < stroke ≤ 200
Ø12		39	53	53	/	14	/
Ø16		43	64	64	/	21	/
Ø20		47	72	72	/	18,5	49
Ø25		49	77	77	/	23	48
		stroke < 50	50 ≤ stroke ≤ 100	100 < stroke ≤ 200	stroke < 50	50 ≤ stroke ≤ 100	100 < stroke ≤ 200
Ø32		/	87	117	/	27	57
Ø40		/			/	21	51
Ø50		/	92	127	/	20	55
Ø63		/			/	15	50

Control unit with bearing bushes	Table 2	V1			V2		
	Bore	stroke ≤ 30	30 < stroke ≤ 100	100 < stroke ≤ 200	stroke ≤ 30	30 < stroke ≤ 100	100 < stroke ≤ 200
Ø12		4 + stroke			/	/	/
Ø16					/	/	/
Ø20		24	44	120	29,5	39,5	77,5
Ø25		stroke ≤ 25			stroke ≤ 25		
Ø32							
Ø40		stroke ≤ 25			stroke ≤ 25		
Ø50							
Ø63		stroke ≤ 25			stroke ≤ 25		
		stroke ≤ 25			stroke ≤ 25		



Weight - Cylinder force - kinetic energy

Stroke	Bore																
	Ø12		Ø16		Ø20		Ø25		Ø32		Ø40		Ø50		Ø63		
	Control unit with bronze bushes																Weight g
10	240		330		/		/		/		/		/		/		/
20	280		380		670		950		/		/		/		/		/
25	/		/		/		/		1690		1950		3360		4180		/
30	310		430		750		1050		/		/		/		/		/
40	350		480		830		1160		/		/		/		/		/
50	390		530		910		1270		2070		2370		4000		4940		/
75	500		680		1170		1650		2470		2830		4730		5780		/
100	5903		800		1370		1920		2850		3250		5370		6540		/
125	/		/		1570		2190		3240		3680		6010		7290		/
150	/		/		1760		2470		3620		4100		6650		8050		/
175	/		/		1960		2740		4000		4530		7290		8800		/
200	/		/		2160		3010		4380		4950		7930		9560		/
Stroke	Moving parts																
10	100		155		/		/		/		/		/		/		/
20	108		170		330		520		/		/		/		/		/
25	/		/		/		/		1070		1140		2150		2500		/
30	116		185		350		560		/		/		/		/		/
40	124		200		380		600		/		/		/		/		/
50	132		215		400		640		1230		1300		2400		2750		/
75	152		250		520		840		1420		1490		2750		3090		/
100	172		285		580		950		1580		1650		3000		3350		/
125	/		/		640		1050		1740		1810		3260		3600		/
150	/		/		700		1150		1910		1980		3510		3860		/
175	/		/		760		1250		2070		2140		3760		4110		/
200	/		/		820		1350		2230		2300		4020		4360		/
Stroke	Control unit with bearing bushes																
10	240		340		/		/		/		/		/		/		/
20	270		390		700		980		/		/		/		/		/
25	/		/		/		/		1540		1790		3110		3930		/
30	300		430		770		1070		/		/		/		/		/
40	350		510		890		1250		/		/		/		/		/
50	390		560		970		1340		1850		2150		3660		4590		/
75	470		670		1140		1570		2300		2640		4410		5460		/
100	560		790		1310		1810		2620		3000		4960		6120		/
125	/		/		1520		2080		2990		3420		5600		6880		/
150	/		/		1690		2310		3310		3780		6150		7540		/
175	/		/		1870		2540		3620		4140		6700		8210		/
200	/		/		2040		2770		3940		4500		7250		8870		/
Stroke	Moving parts																
10	95		145		/		/		/		/		/		/		/
20	100		153		310		490		/		/		/		/		/
25	/		/		/		/		820		890		1770		2110		/
30	105		161		330		520		/		/		/		/		/
40	110		169		370		580		/		/		/		/		/
50	120		177		390		610		940		1010		1950		2300		/
75	145		197		440		690		1110		1180		2240		2590		/
100	170		217		480		760		1230		1300		2430		2770		/
125	/		/		560		880		1410		1480		2710		3050		/
150	/		/		600		950		1530		1600		2890		3240		/
175	/		/		650		1020		1650		1720		3080		3420		/
200	/		/		700		1100		1770		1830		3270		3610		/
Working pressure	Cylinder theoretic force (N)																
2 bar	23	17	40	30	63	47	98	76	161	121	251	211	393	330	623	561	
3 bar	34	26	60	45	94	71	147	113	241	181	377	317	589	495	935	841	
4 bar	45	34	80	60	126	94	196	151	322	241	503	422	785	660	1247	1121	
5 bar	57	43	101	76	157	118	246	189	402	302	629	528	982	825	1559	1402	
6 bar	68	51	121	91	188	142	295	227	482	362	754	634	1178	989	1870	1682	
7 bar	79	60	141	106	220	165	344	265	563	422	880	739	1374	1154	2182	1962	
8 bar	90	68	161	121	251	189	393	302	643	482	1006	845	1570	1319	2494	2242	
9 bar	102	77	181	136	283	212	442	340	724	543	1131	950	1767	1484	2805	2523	
10 bar	113	85	201	151	314	236	491	378	804	603	1257	1056	1963	1649	3117	2803	
Piston area (mm ²)	out	in	out	in	out	in	out	in	out	in	out	in	out	in	out	in	
	113	85	201	151	314	236	491	378	804	603	1257	1056	1963	1649	3117	2803	
	Maximum permissible Momentum																
J	0,08		0,09		0,11		0,18		0,29		0,52		0,91		1,54		

How to calculate the Momentum: $E_c = \frac{1}{2} m V^2$ (J)

m = Total moving mass: weight of driven object added to weight of cylinder moving parts (kg)

V = max. speed: equal to average speed + 40% (m/sec)

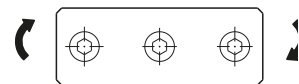
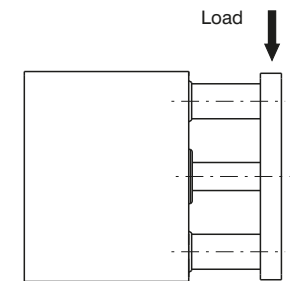
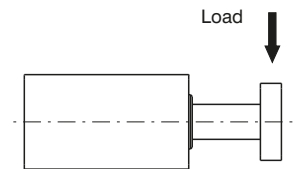
PNEUMATIC ACTUATION 3

Operating criteria

Permissible lateral load (applied on overall plate)

Version	Stroke	Bore							
		Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
		Permissible lateral load (N)*							
Control unit with bronze bushes	10	30	48						
	20	23	37	49	69				
	25					203	203	296	296
	30	19	30	43	60				
	40	16	25	38	54				
	50	14	20	35	49	164	164	245	245
	75	12	18	87	116	182	182	273	273
	100	10	15	75	100	159	159	241	241
	125			66	88	142	142	216	216
	150			59	79	127	127	195	195
	175			54	71	116	116	179	179
	200			49	65	106	106	164	164
	Control unit with bearing bushes	10	20	35					
20		15	28	58	69				
25						191	190	208	206
30		13	22	48	68				
40		11	18	101	132				
50		10	16	90	118	157	157	173	171
75		8	14	70	93	164	163	223	221
100		6	11	58	77	144	144	199	196
125				62	80	203	203	264	262
150				54	70	186	185	242	240
175				48	62	171	171	224	221
200				43	55	158	158	207	205
		Recommended torque moments (Nm)							
Control unit with bronze bushes	10	0,40	0,70						
	20	0,35	0,65	1,1	1,8				
	25					6,4	7,0	13,0	14,7
	30	0,28	0,48	0,9	1,6				
	40	0,25	0,45	0,8	1,4				
	50	0,21	0,39	0,8	1,3	5,1	5,7	10,8	12,1
	75	0,42	0,68	1,9	3,0	5,7	6,3	12,0	13,5
	100	0,40	0,60	1,6	2,6	5,0	5,5	10,6	11,9
	125			1,4	2,3	4,4	4,9	9,5	10,7
	150			1,3	2,0	4,0	4,4	8,6	9,7
	175			1,2	1,8	3,6	4,0	7,9	8,9
	200			1,1	1,7	3,3	3,7	7,2	8,2
	Control unit with bearing bushes	10	0,62	0,70					
20		0,41	0,65	1,3	2,1				
25						6,0	6,6	9,2	10,2
30		0,33	0,48	1,0	1,8				
40		0,30	0,45	2,2	3,4				
50		0,48	0,39	1,9	3,0	4,9	5,4	7,6	8,5
75		0,38	0,68	1,5	2,4	5,1	5,6	9,8	11,0
100		0,32	0,60	1,3	2,0	4,5	5,0	8,7	9,7
125				1,3	2,1	6,3	7,0	11,6	13,0
150				1,2	1,8	5,8	6,4	10,7	11,9
175				1,0	1,6	5,3	5,9	9,8	11,0
200				0,9	1,4	4,9	5,4	9,1	10,2

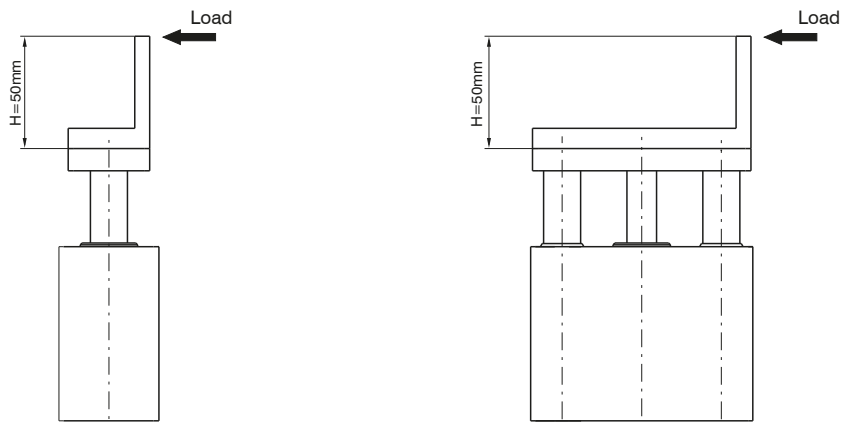
*(Applied on overall plate)



3
PNEUMATIC ACTUATION

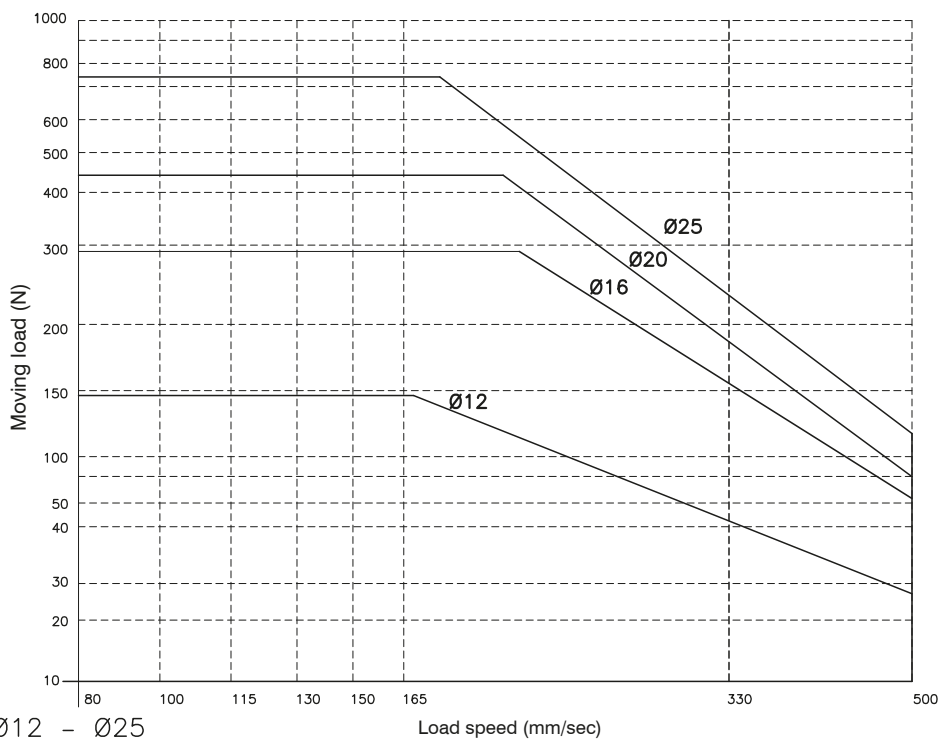
Operating criteria

Stopper device applications

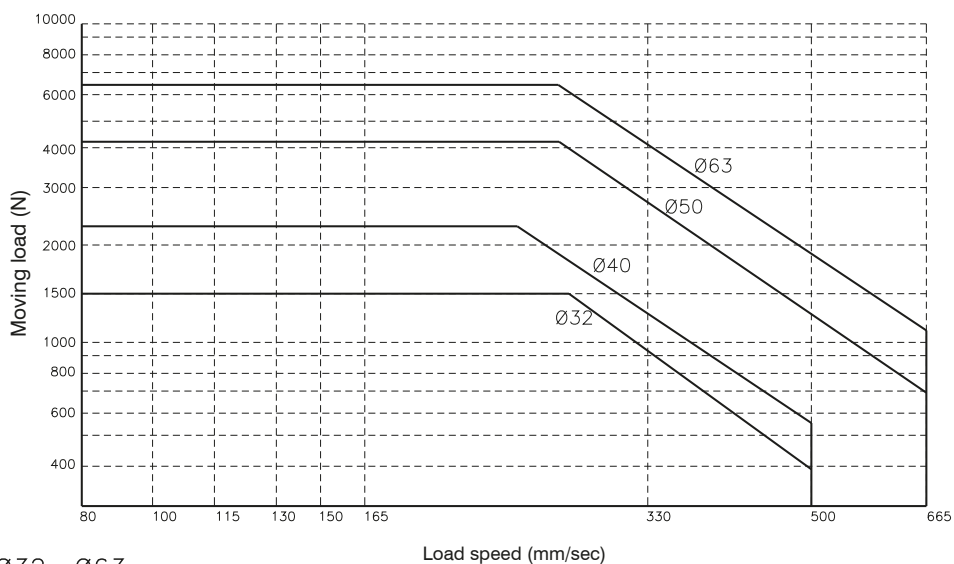


Control unit with
bronze bushes

ATTENTION: if H>50 mm use larger bore

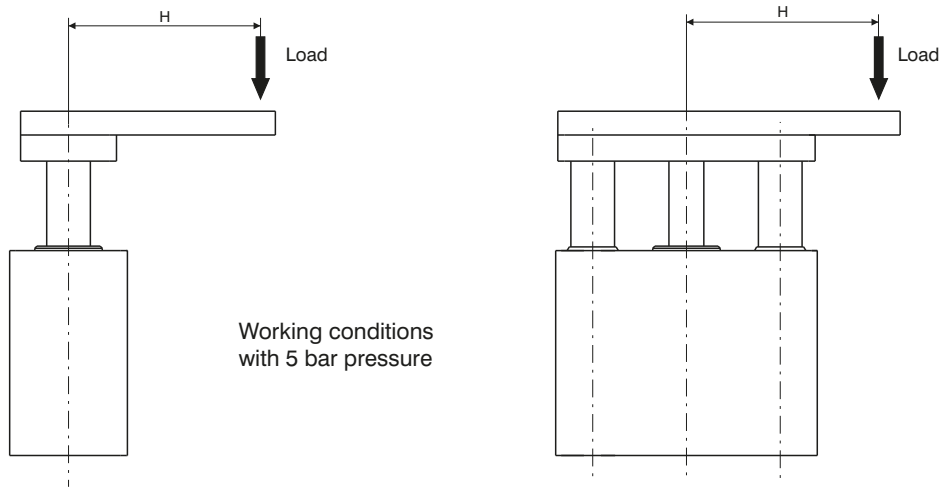


Ø12 - Ø25
ATTENTION: use with stroke £ 30 mm

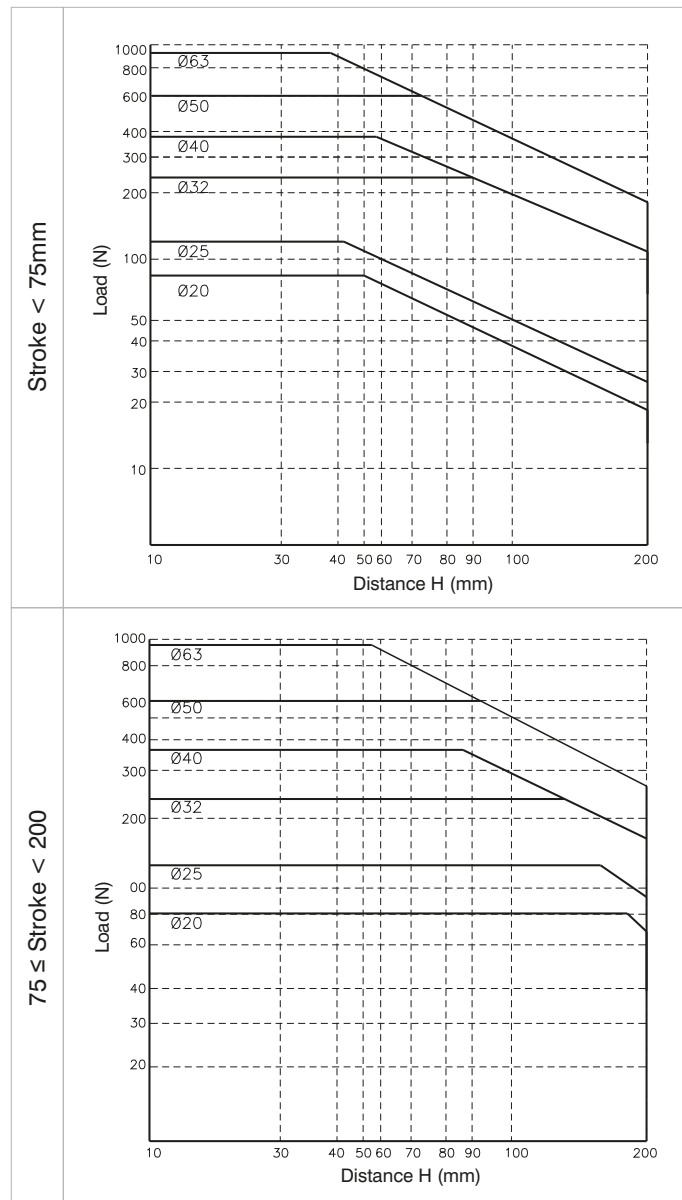


Ø32 - Ø63
ATTENTION: use with stroke £ 50 mm

Operating criteria
Handling applications



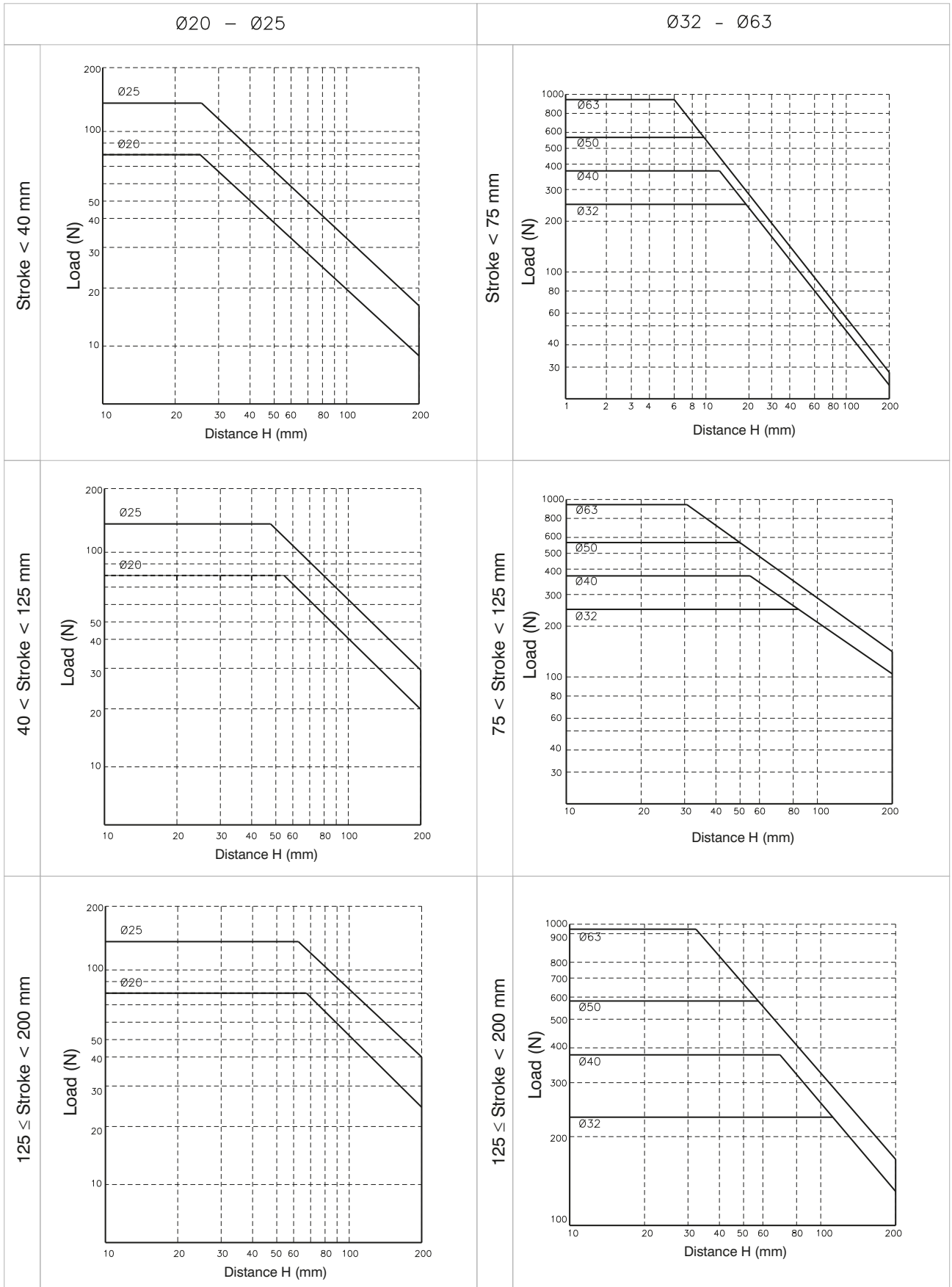
Control unit with bronze bushes



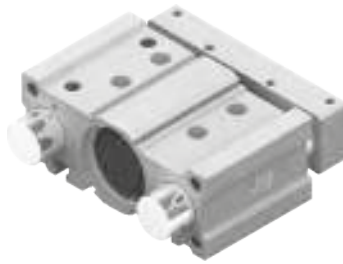
Operating criteria

Handling applications

Control unit with bearing bushes



► Heavy duty guided short stroke cylinder



Ordering code

6101.80.stroke. B .

— Side supply ports closed
L = Top supply ports closed

Construction characteristics

Body	anodised aluminium
Rods	C43 chromed steel
Piston	aluminium
Piston rod	C43 chromed steel
Piston rod bushing	sintered bronze
Rod bushing	teflon coated bush
End cap	aluminium
Piston seal	NBR oil-resistant rubber
Piston rod seal	PUR
Plate	anodised aluminium

Operational characteristics

Function	double acting
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Max. pressure	max. 10 bar
Working temperature	-5°C - +70°C
Cushioning	elastic bumper on both ends

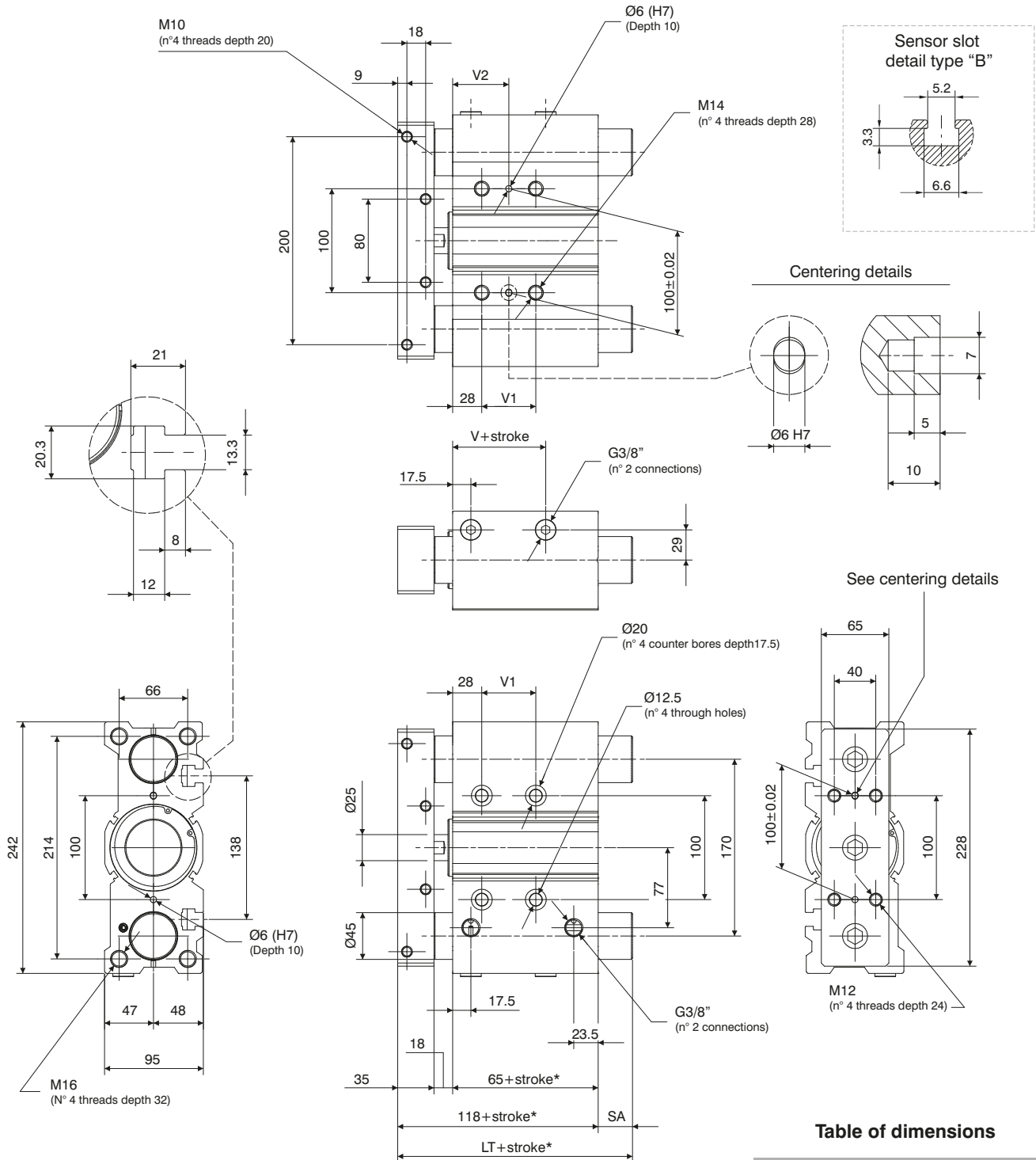
Standard strokes

Bore	Stroke							
	25	50	75	100	125	150	175	200
Ø80	●	●	●	●	●	●	●	●

Intermediate strokes can be obtained by adding specific spacers (5, 10, 15, 20mm).

Example: It is possible to obtain a **6101.80.45.B** cylinder from a **6101.80.50.B** cylinder by adding a 5mm spacer.
The Intermediate strokes manufactured without the use of spacers are considered special executions.

Overall dimensions



*Dimensions only refer to the "standard stroke"

Table of dimensions

	25		118
stroke	50	LT	118
	> 50		151
			V
stroke	25	V1	28
	50		52
	75		52
	100		52
	>100		128
stroke	25	V2	42
	50		54
	75		54
	100		54
	>100		92
stroke	25	SA	0
	50		
	> 50		33

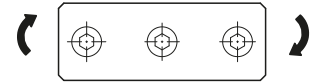
Operating criteria

Cylinder theoretic force (N)

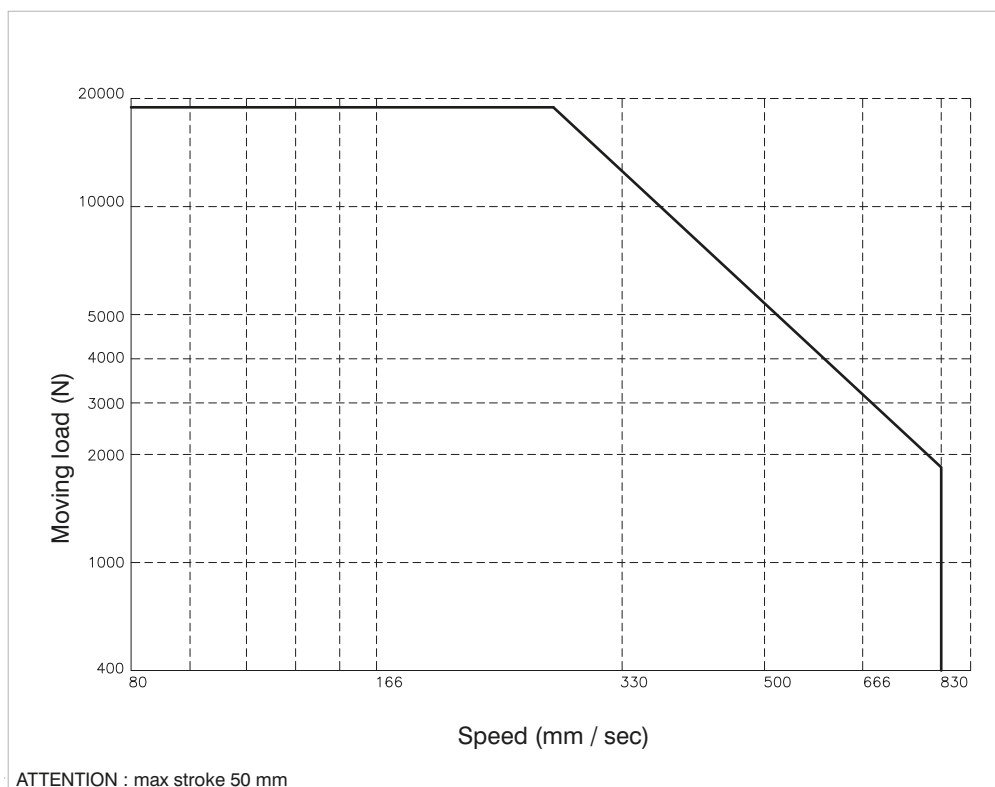
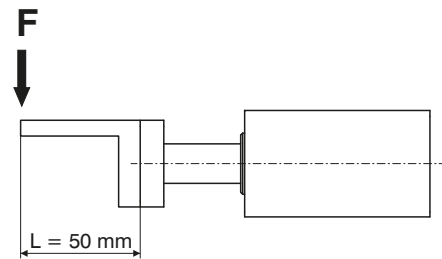
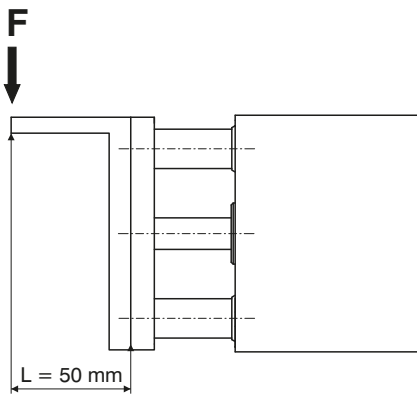
Working pressure		
2 bar	1005	907
3 bar	1508	1361
4 bar	2011	1814
5 bar	2513	2268
6 bar	3016	2721
7 bar	3519	3175
8 bar	4021	3629
9 bar	4524	4082
10 bar	5027	4536
Effective area (mm ²)	out	in
	5027	4536

Recommended torque moments

Stroke	N/m
25	49
50	41
75	51
100	45
125	41
150	38
175	35
200	32



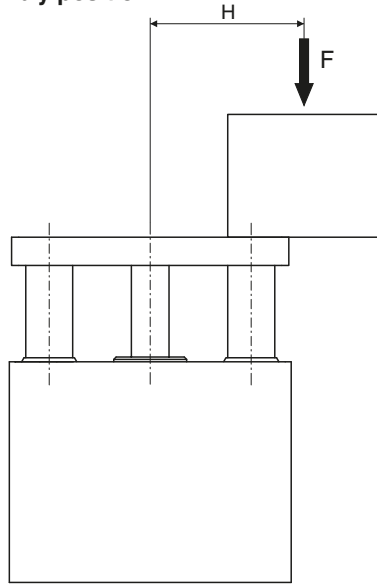
“Stopper” device applications



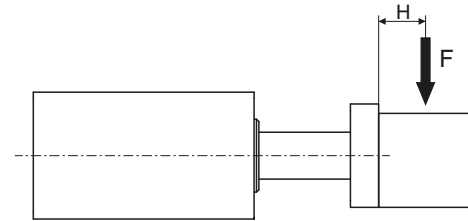
Operating criteria

Handling applications

VERTICAL assembly position

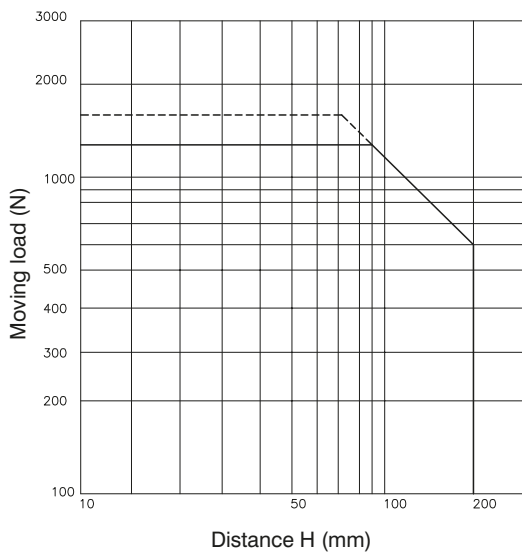


HORIZONTAL assembly position

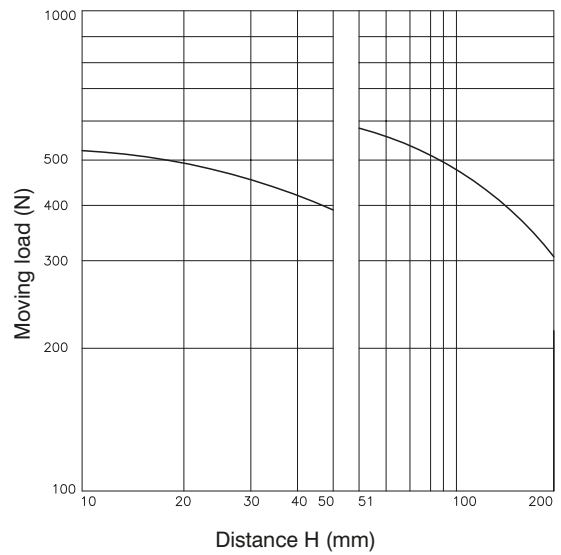


PNEUMATIC ACTUATION

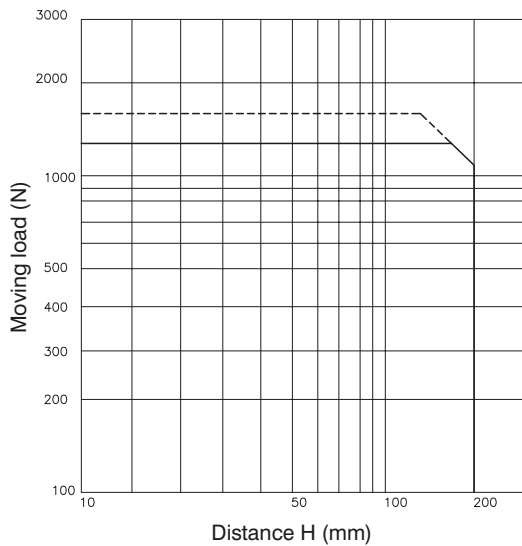
STROKE ≤ 50 mm / V = 200 mm/s



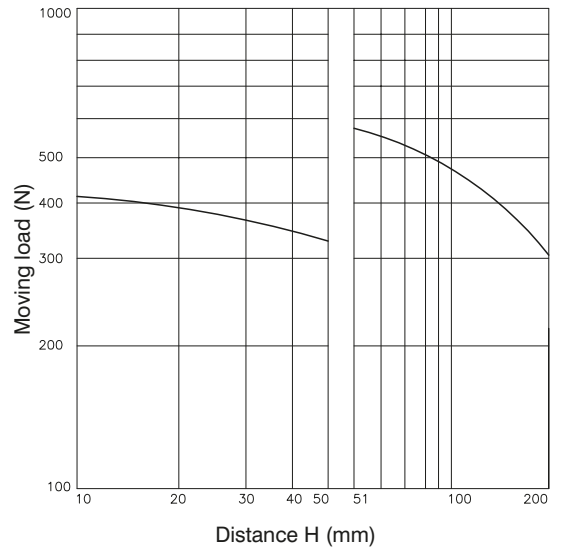
H = 50 mm / V = 200 mm/s



STROKE > 50 mm / V = 200 mm/s



H = 100 mm / V = 200 mm/s



———— Working pressure : 4 bar
- - - - - Working pressure : 5 bar

► Guided compact cylinder with additional metal rod scrapers



Ordering code

6110.Ø.stroke. C .

- 32
- 40
- 50
- 63

Side supply ports closed
L = Top supply ports closed

Construction characteristics

Body	anodised aluminium
Guide rods	tempered and chromed steel
Piston	aluminium
Piston rod	C43 chromed steel
Rods bushing	bearing bushing
End cap	anodised aluminium
Piston seal	oil resistant NBR rubber
Piston rod seal	PUR
External rod scraper	brass
Internal rod scraper	NBR
Plate	nickel plated steel

The cylinders are equipped with 4 rod scrapers on the guide rods and 1 rod scraper on the central piston rod

Operational characteristics

Function	double acting
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Working pressure	max. 10 bar
Working temperature	-5°C - +70°C
Cushioning	elastic bumper on both ends

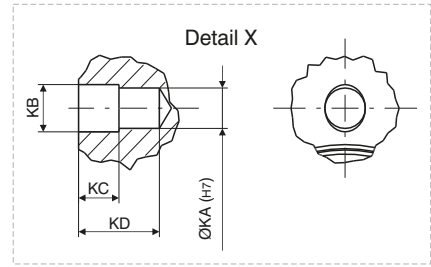
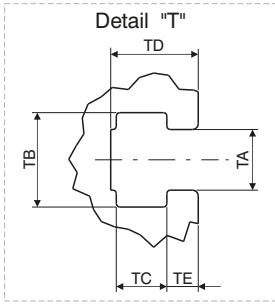
Standard strokes

Bore	Stroke									
	10	20	25	50	75	100	125	150	175	200
Ø32			●	●	●	●	●	●	●	●
Ø40			●	●	●	●	●	●	●	●
Ø50			●	●	●	●	●	●	●	●
Ø63			●	●	●	●	●	●	●	●

Intermediate strokes can be obtained using spacers with defined length (5, 10, 15, 20 mm).

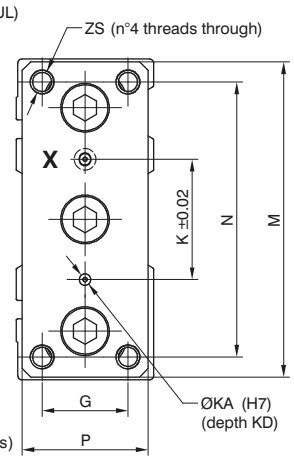
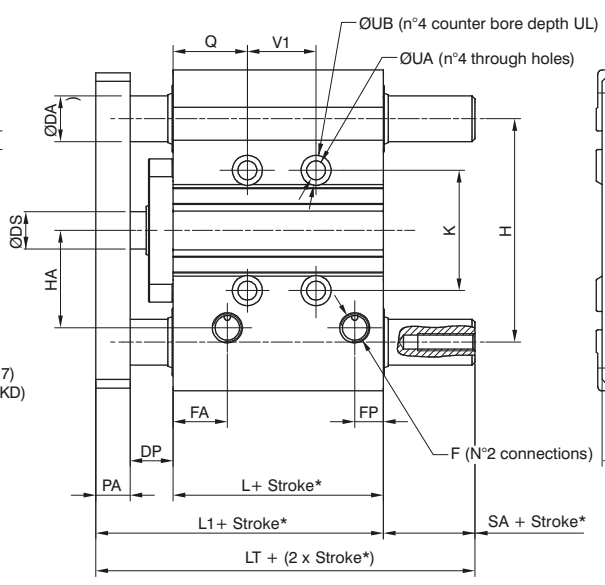
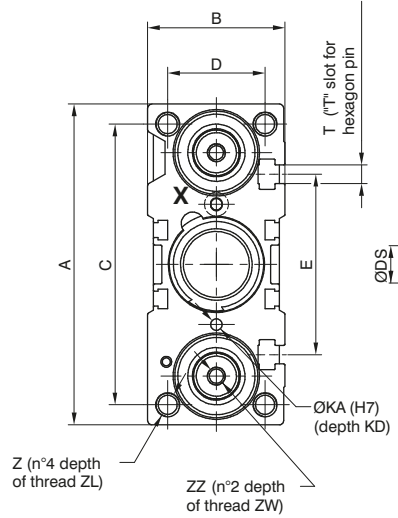
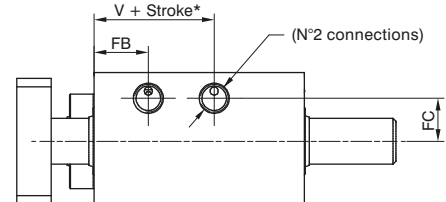
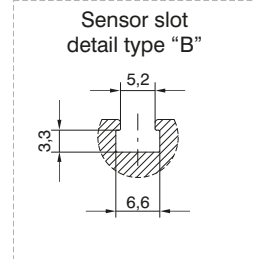
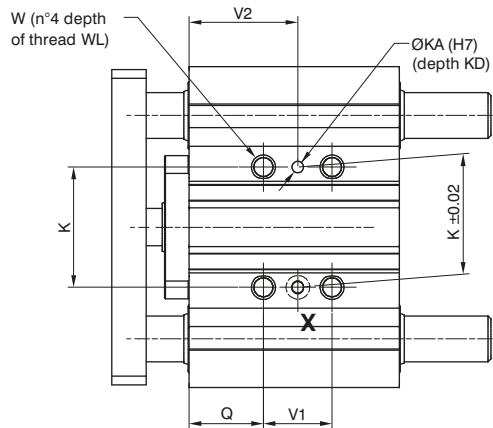
Example: It is possible to obtain a **6110.32.45.B** cylinder from a **6110.32.50.B** cylinder by inserting a spacer with length of 5 mm. The intermediate strokes manufactured without the use of spacers are considered special executions.

Overall dimensions



3

PNEUMATIC ACTUATION





Overall dimensions

Bore	Ø32	Ø40	Ø50	Ø63
Table of dimensions				
A	112	120	148	162
B	48	54	64	78
C	98	106	130	142
D	34	40	46	58
DA	16	16	20	20
DP	15	20	23	23
DS	16	16	20	20
E	63	72	92	110
F	G1/8"	G1/8"	G1/4"	G1/4"
FA	19	13	13	14
FB	19	13	13	14
FC	15	18	21,5	28
FP	10	11	11	12,5
G	30	30	40	50
H	78	86	110	124
HA	34	38	47	55
K	42	50	66	80
KA	4	4	5	5
KB	4,5	4,5	6	6
KC	3	3	4	4
KD	6	6	8	8
L	48,5	50	50	55
L1	75,5	82	88	93
LT	82,5	89	93	100
M	110	118	146	158
N	96	104	130	130
PA	12	12	15	15
P	44	44	60	70
Q	26	22	24	24
SA	7	7	5	7
T	M6	M6	M8	M10
TA	6,5	6,5	8,5	11
TB	10,5	10,5	13,5	17,8
TC	5,5	5,5	7,5	10
TD	9,5	11	13,5	18,5
TE	3,5	4	4,5	7
UA	6,6	6,6	8,6	8,6
UB	11	11	14	14
UL	7,5	7,5	9	9
V	17	19	15	20
V1	See table 1			
V2				
W	M8x1,25	M8x1,25	M10x1,5	M10x1,5
WL	16	16	20	20
Z	M8x1,25	M8x1,25	M10x1,5	M10x1,5
ZL	20	20	22	22
ZS	M8x1,25	M8x1,25	M10x1,5	M10x1,5
ZZ	M6	M8	M10	M10
ZW	20	20	25	25

Table 1 Bore	V1			V2		
	stroke ≤ 25	25 < stroke ≤ 100	100 < stroke ≤ 200	stroke ≤ 25	25 < stroke ≤ 100	100 < stroke ≤ 200
Ø32	24	48	124	38	50	88
Ø40				34	46	84
Ø50				36	48	86
Ø63	28	52	128	38	50	88

3 PNEUMATIC ACTUATION

Slide cylinders



Ordering code

6600.Ø.stroke. _ _ _

8	= Without accessories
12	A = Double regulation end stroke
16	AU = Regulation front end stroke
20	AR = Regulation rear end stroke
25	D = Double shock absorber
	DU = Front shock absorber
	DR = Rear shock absorber

Construction characteristics

Body	anodised aluminium
Piston rod	stainless steel
Piston	stainless steel
Piston rod bushing	sintered bronze
End cap	anodised aluminium
Cushioning washer	PUR
Seal	oil resistant NBR rubber
Flange	anodised aluminium
Upper plate	anodised aluminium

Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Working pressure	1.5 - 7 bar
Working temperature	-5°C - +70°C
Cushioning	with elastic bumper

Theoretical force

Bore	Effective area (mm ²)	Force (N)						
		2	3	4	5	6	7	
Ø8	Out	101	20	30	40	51	61	71
	In	75	15	23	30	38	45	53
Ø12	Out	226	45	68	90	113	136	158
	In	170	34	51	68	85	102	119
Ø16	Out	402	80	121	161	201	241	281
	In	302	60	91	121	151	181	211
Ø20	Out	628	126	188	251	314	377	440
	In	471	94	141	188	236	283	330
Ø25	Out	982	196	295	393	491	589	687
	In	756	151	227	302	378	454	529

Standard strokes

Bore	Stroke								
	10	20	30	40	50	75	100	125	150
Ø8	●	●	●	●	●	●			
Ø12	●	●	●	●	●	●	●		
Ø16	●	●	●	●	●	●	●	●	
Ø20	●	●	●	●	●	●	●	●	●
Ø25	●	●	●	●	●	●	●	●	●

Overall dimensions Ø8

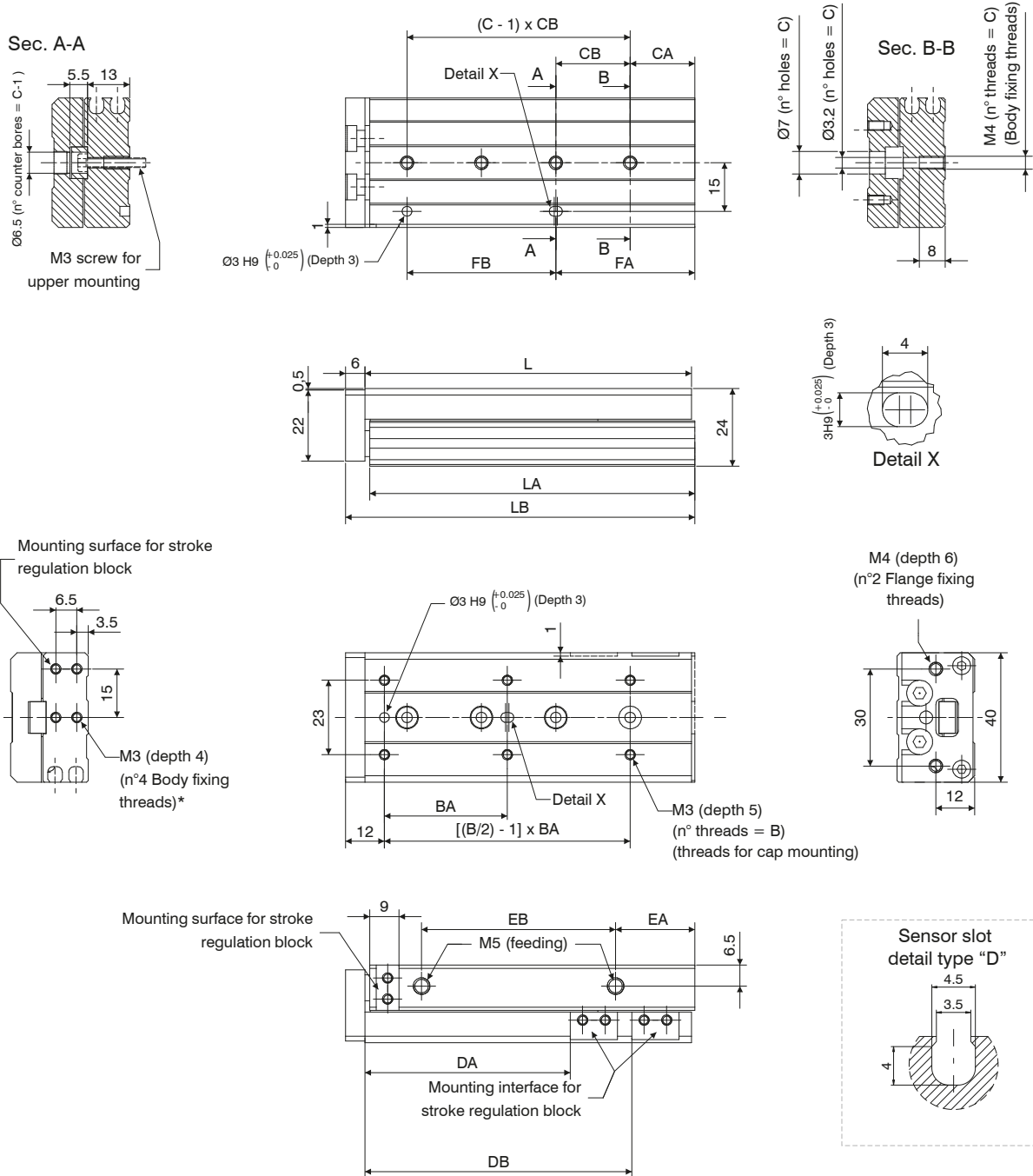


Table of dimensions

	Standard stroke					
	10	20	30	40	50	75
B	4	4	4	4	6	6
BA	25	25	40	50	38	50
C	2	2	3	3	4	5
CA	9	12	13	15	20	27
CB	28	30	20	28	23	28
DA	23,5	33,5	43,5	53,5	63,5	88,5
DB	/	/	/	/	82,5	132,5
FA	17	12	33	43	43	83
FB	20	30	20	28	46	56
EA	13	8,5	9,5	10,5	24,5	38,5
EB	19,5	29	39	56	60	96
L	49	54	65	83	101	151
LA	48,5	53,5	64,5	82,5	100,5	150,5
LB	56	61	72	90	108	158
Weight g	150	160	190	235	285	410

Overall dimensions Ø12

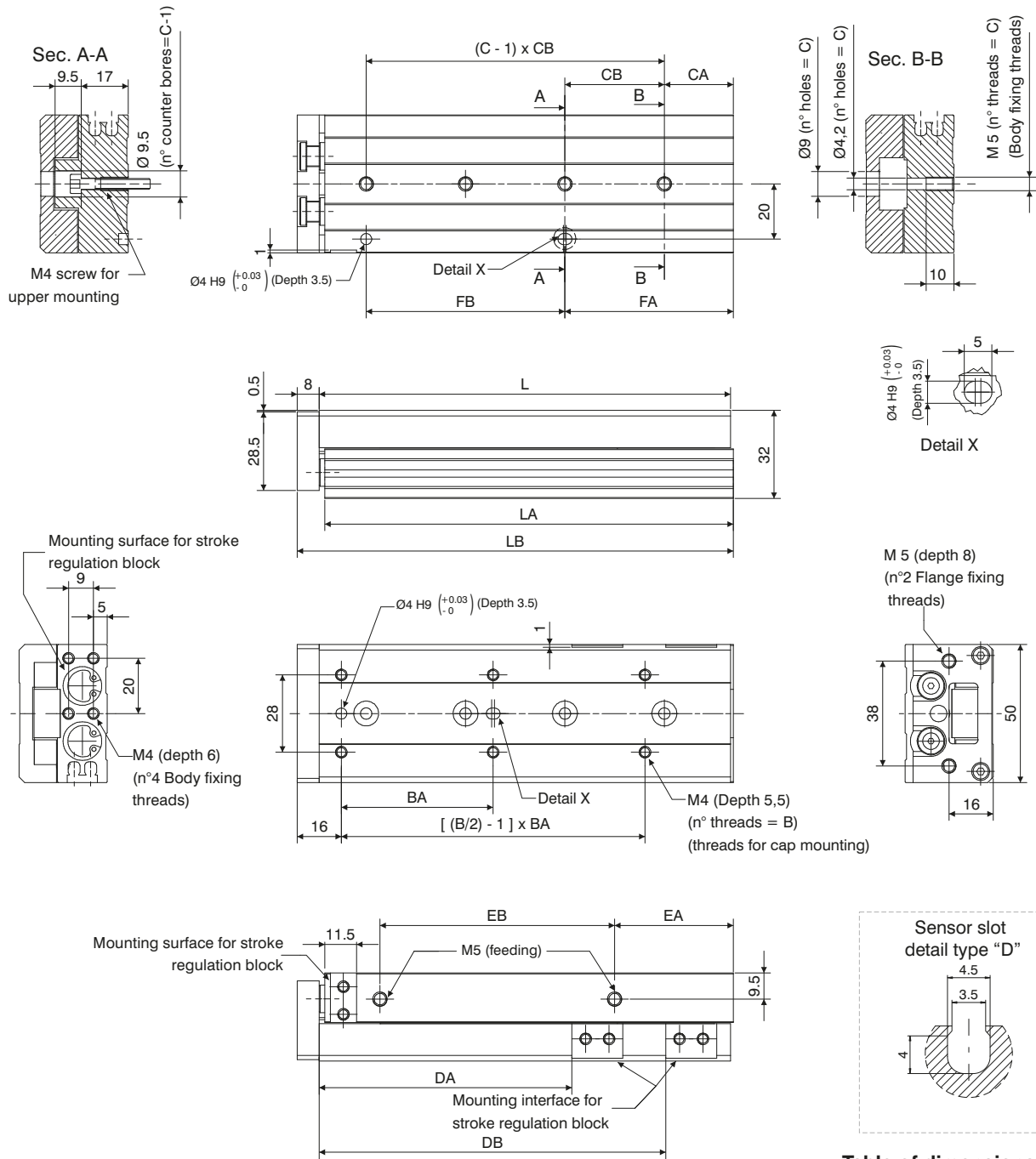


Table of dimensions

	Standard stroke						
	10	20	30	40	50	75	100
B	4				6		
BA		35		50	35	55	65
C		2		3	3	4	5
CA		15		17	15	25	35
CB		40		25	36	36	38
DA	26,5	36,5	46,5	56,5	66,5	91,5	116,5
DB	/	/	/	/	/	125,5	179,5
FA		15		42	51	61	111
FB		40		25	36	72	76
EA		10			22	43	52
EB		40		52	60	85	130
L		71		83	103	149	203
LA		70		82	102	148	202
LB		80		92	112	158	212
Weight (gr.)		325		385	480	660	890

Overall dimensions Ø16

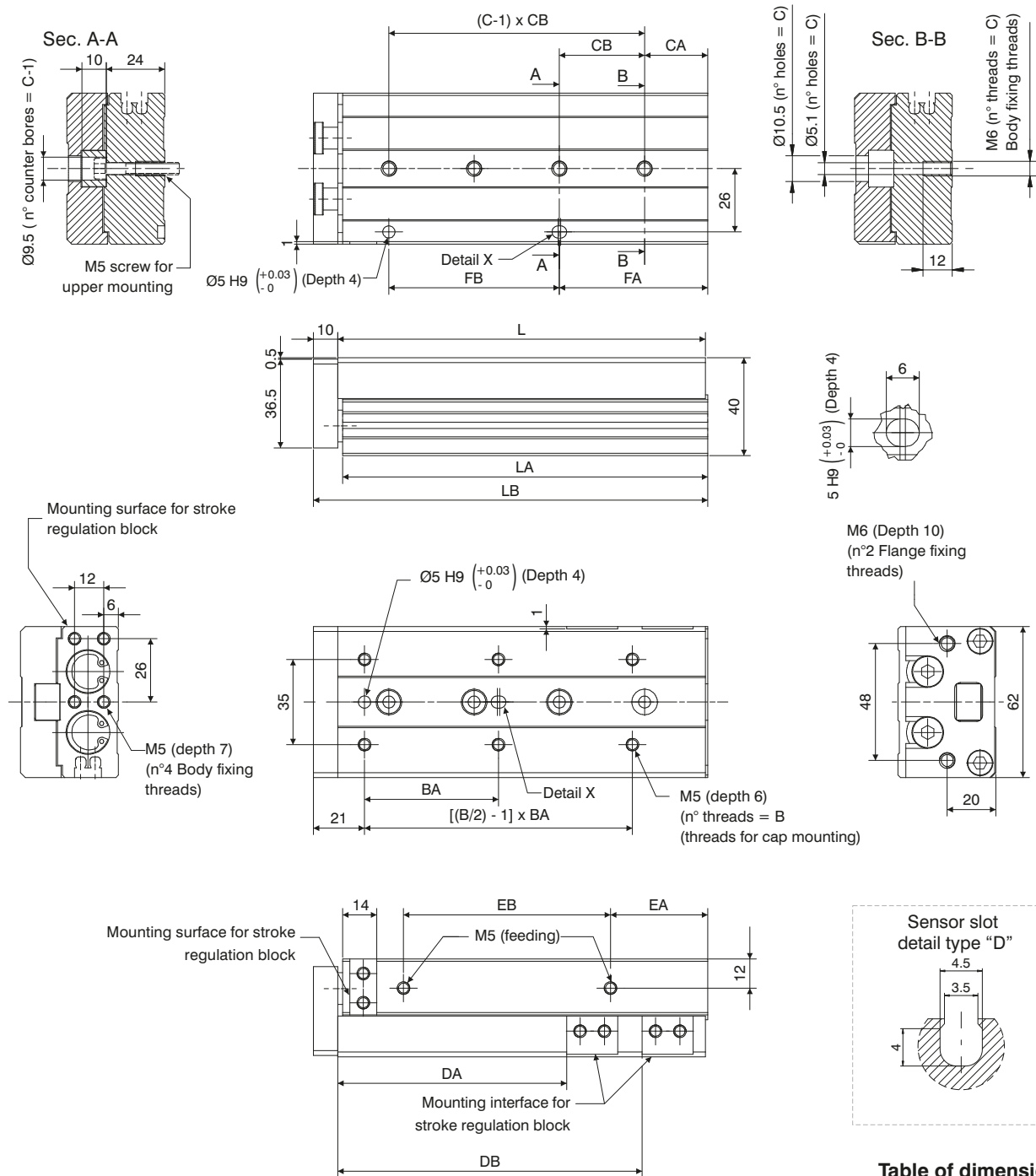


Table of dimensions

	Standard stroke							
	10	20	30	40	50	75	100	125
B	4	4	4	4	6	6	6	8
BA	35	35	35	40	30	55	65	70
C	2	2	2	2	3	4	5	7
CA	16	16	16	16	21	26	39	19
CB	40	40	40	50	30	35	35	35
DA	29	39	49	59	69	94	119	144
DB	/	/	/	/	/	125	173	223
FA	16	16	16	16	51	61	109	159
FB	40	40	40	50	30	70	70	70
EA	10	10	10	10	15	40	55	68
EB	40	40	40	50	60	85	118	155
L	76	76	76	86	101	151	199	249
LA	75	75	75	85	100	150	198	248
LB	87	87	87	97	112	162	210	260
Weight (gr.)	570	570	580	640	760	1090	1370	1700

Overall dimensions Ø20

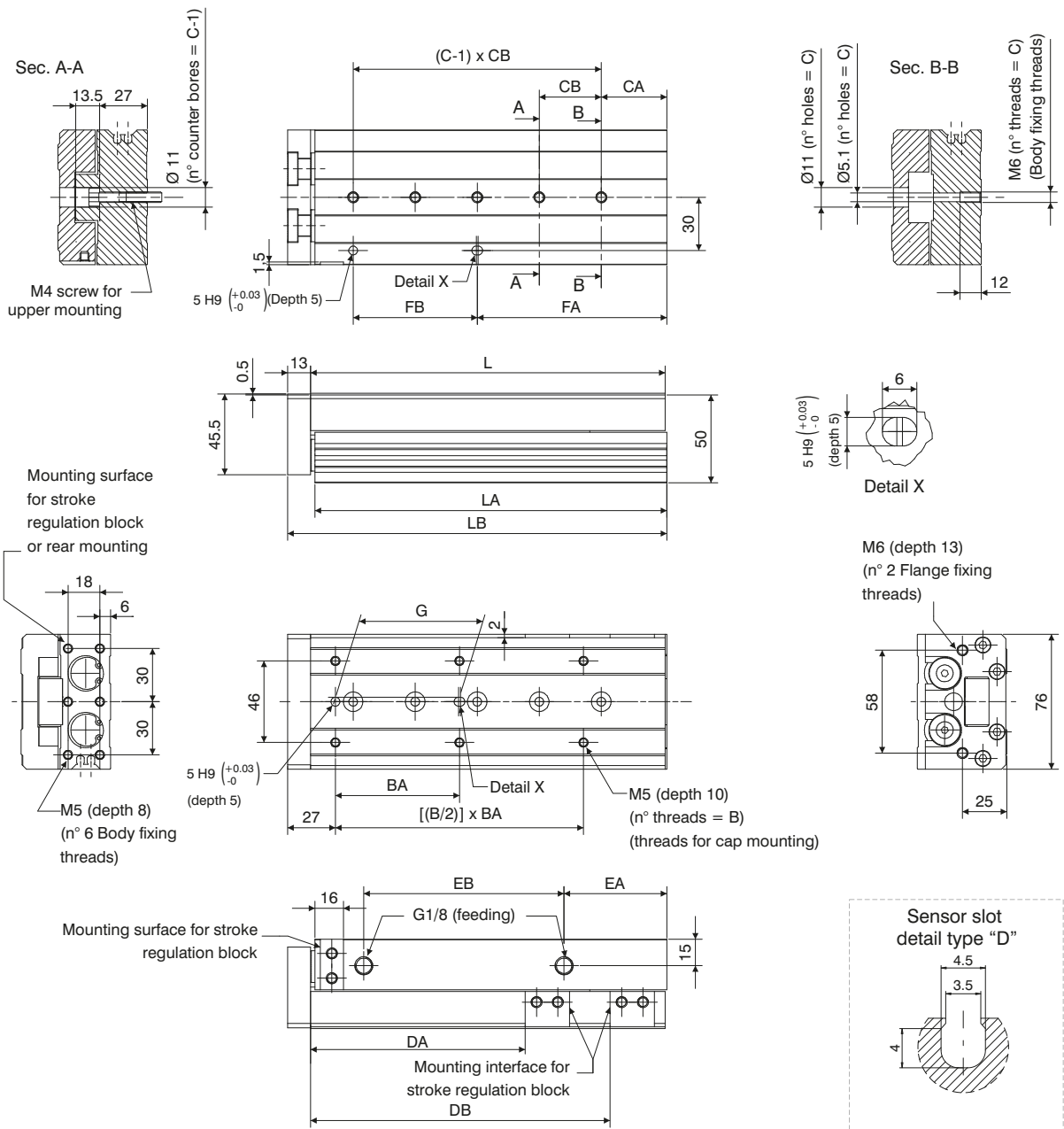


Table of dimensions

	Standard stroke								
	10	20	30	40	50	75	100	125	150
B	4	4	4	4	6	6	6	8	8
BA	50	50	50	60	35	60	70	70	80
C	2	2	2	2	3	4	5	6	7
CA	15	15	15	15	15	19	37	41	19
CB	45	45	45	55	35	35	35	38	44
DA	31	41	51	61	71	96	121	146	171
DB	/	/	/	/	/	/	169	223	275
EA	10	10	10	10	10	10	58	70	87
EB	44	44	44	54	69	108	113	155	190
FA	25	25	25	35	50	54	107	155	195
FB	35	35	35	35	35	70	70	76	88
G	40	40	40	50	35	60	70	70	80
L	83	83	83	93	108	147	200	254	306
LA	81,5	81,5	81,5	91,5	106,5	145,5	198,5	252,5	304,5
LB	97	97	97	107	122	161	214	268	320
Weight (gr.)	960	980	1010	1100	1250	1630	2150	2670	3190

Overall dimensions Ø25

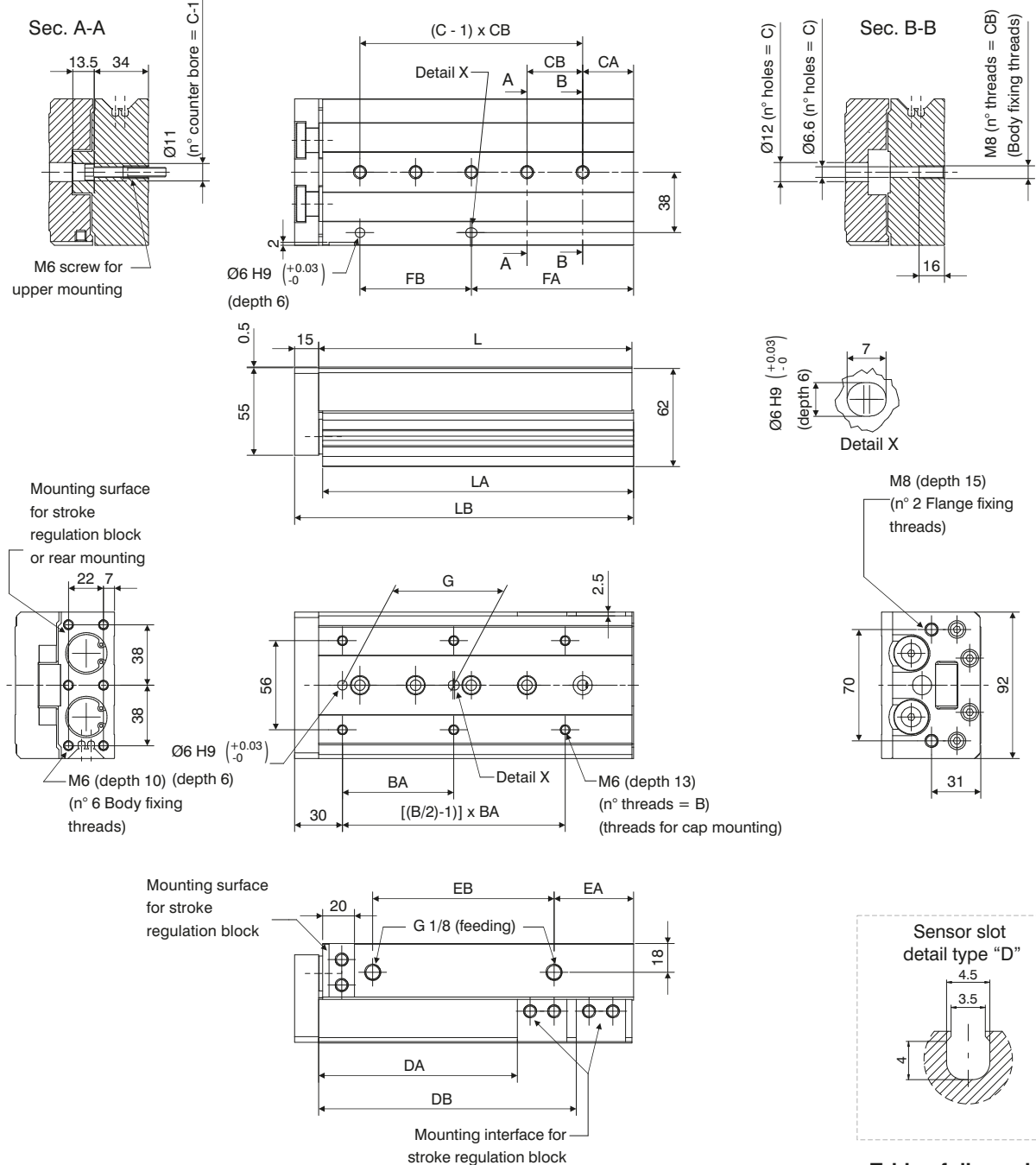
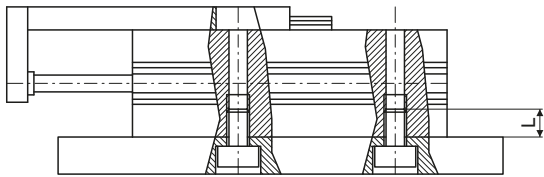


Table of dimensions

	Standard stroke									
	10	20	30	40	50	75	100	125	150	
B	4	4	4	4	6	6	6	8	8	
BA	50	50	50	60	35	60	70	75	80	
C	2	2	2	2	3	4	5	6	7	
CA	22	22	22	22	20	26	32	40	30	
CB	45	45	45	55	35	35	35	38	40	
DA	35	45	55	65	75	100	125	150	175	
DB	/	/	/	/	/	/	162	218	258	
EA	12	12	12	12	12	33	50	67	82	
EB	47	47	47	57	70	90	114	155	180	
FA	22	22	22	22	55	61	102	154	190	
FB	45	45	45	55	35	70	70	76	80	
G	40	40	40	50	35	60	70	75	80	
L	92	92	92	102	115	156	197	255	295	
LA	90,5	90,5	90,5	100,5	113,5	154,5	195,5	253,5	293,5	
LB	108	108	108	118	131	172	213	271	311	
Weight g	1660	1680	1690	1840	2090	2650	3270	4140	4710	

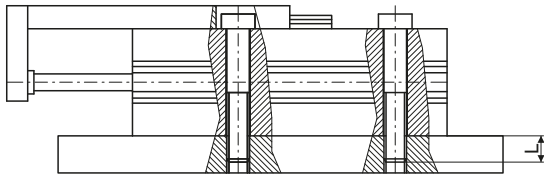
Mounting options

SIDE THREADED HOLES



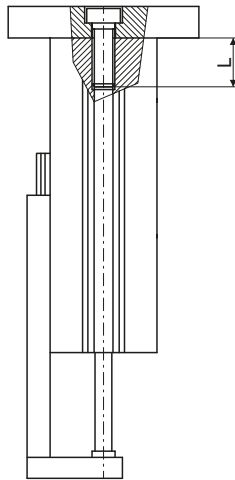
Bore	Screw	Torque (Nm)	Max. Length L (mm)
Ø8	M3	2,1	8
Ø12	M4	4,4	10
Ø16	M5	7,4	12
Ø20	M5	7,4	12
Ø25	M6	18	16

SIDE THROUGH HOLES



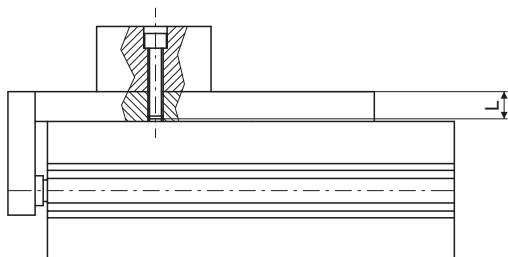
Bore	Screw	Torque (Nm)	Max. Length L (mm)
Ø8	M3	1,2	13
Ø12	M4	2,8	18,5
Ø16	M5	5,7	24
Ø20	M5	5,7	29
Ø25	M6	18	34

AXIAL THREADED HOLES

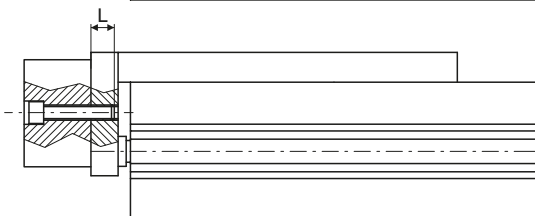


Bore	Screw	Torque (Nm)	Max. Length L (mm)
Ø8	M3	0,9	4
Ø12	M4	2,1	6
Ø16	M5	4,4	7
Ø20	M5	4,4	8
Ø25	M6	7,4	10

Mounting load



Bore	Screw	Torque (Nm)	Max. Length L (mm)
Ø8	M3	2,1	6
Ø12	M4	4,4	8
Ø16	M5	7,4	10
Ø20	M5	7,4	13
Ø25	M6	18	15

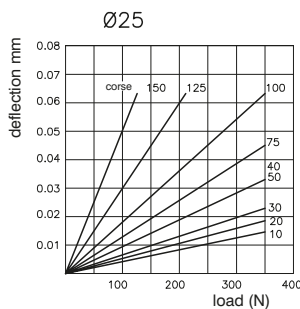
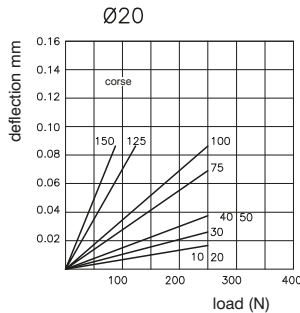
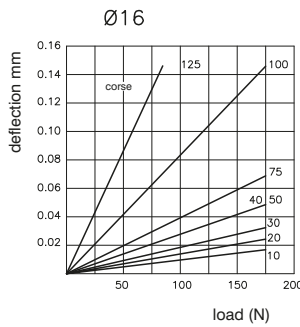
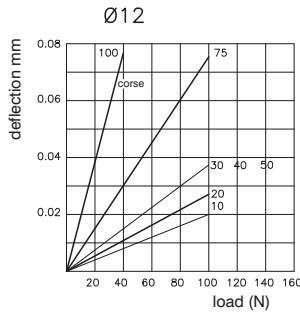
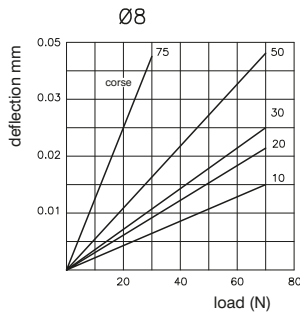
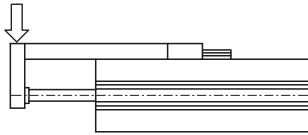


Bore	Screw	Torque (Nm)	Max. Length L (mm)
Ø8	M3	0,9	5
Ø12	M4	2,1	5,5
Ø16	M5	4,4	6
Ø20	M5	4,4	10
Ø25	M6	7,4	13

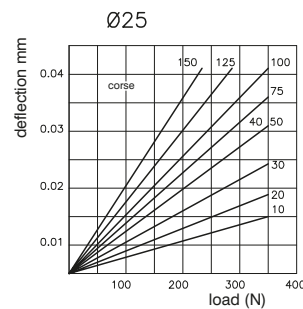
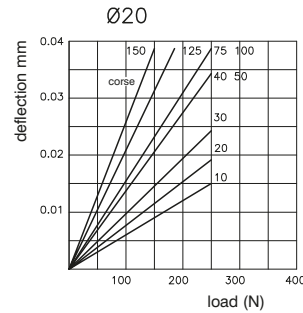
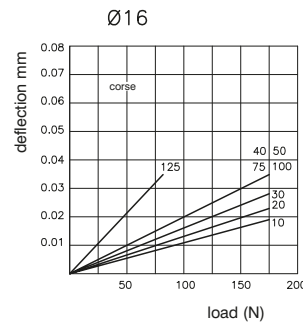
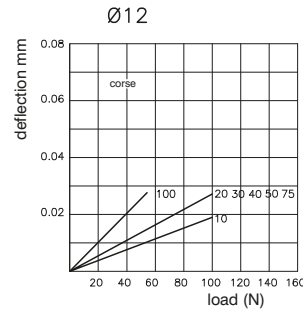
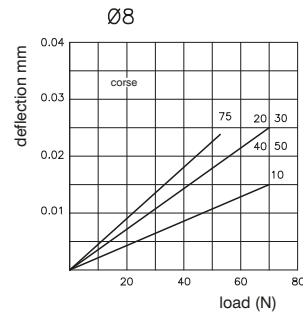
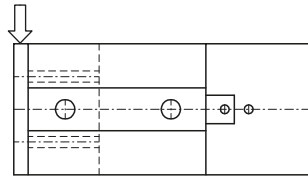
Kinetic energy (J)	Bore	With elastic bumper	With shock absorber
	Ø8	0,027	See Dampers 6900
	Ø12	0,055	
	Ø16	0,11	
	Ø20	0,16	
	Ø25	0,24	

Plate deflection

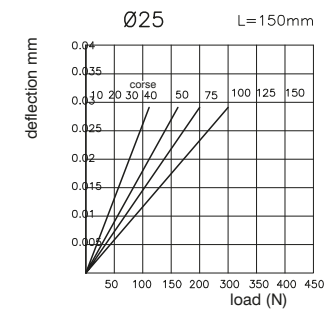
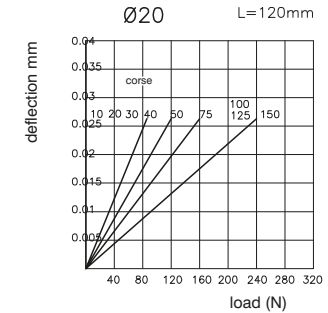
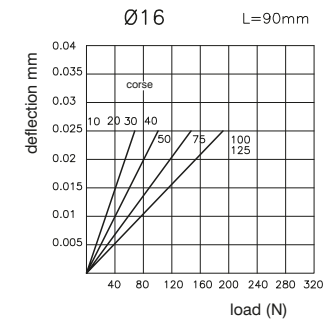
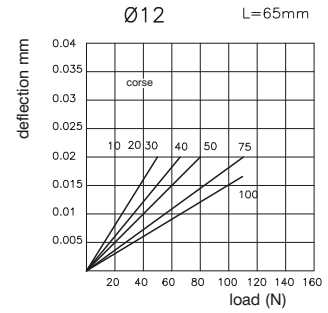
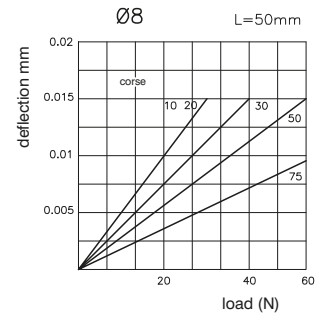
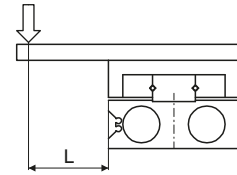
With front moment under static conditions completely extended and with load applied as indicated by the arrows.



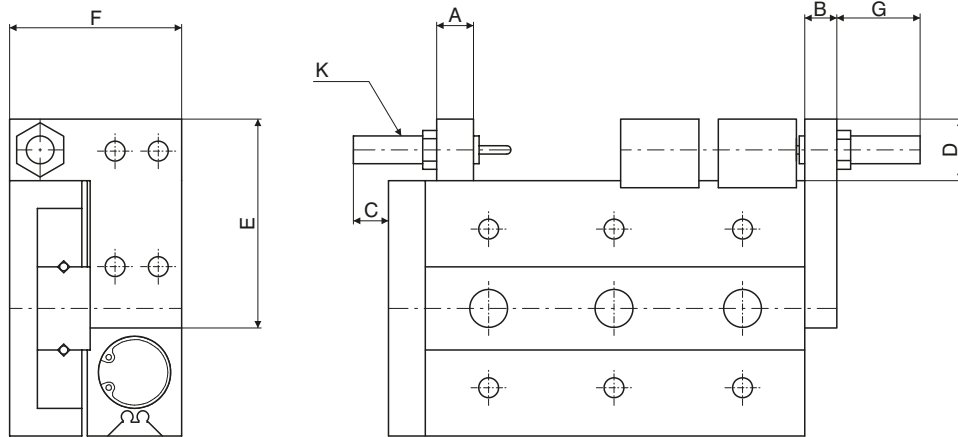
With side moment under static conditions completely extended and with load applied as indicated by the arrow



With misaligned side moment with load applied as indicated by the arrow at a distance "L" and with plate completely retracted.



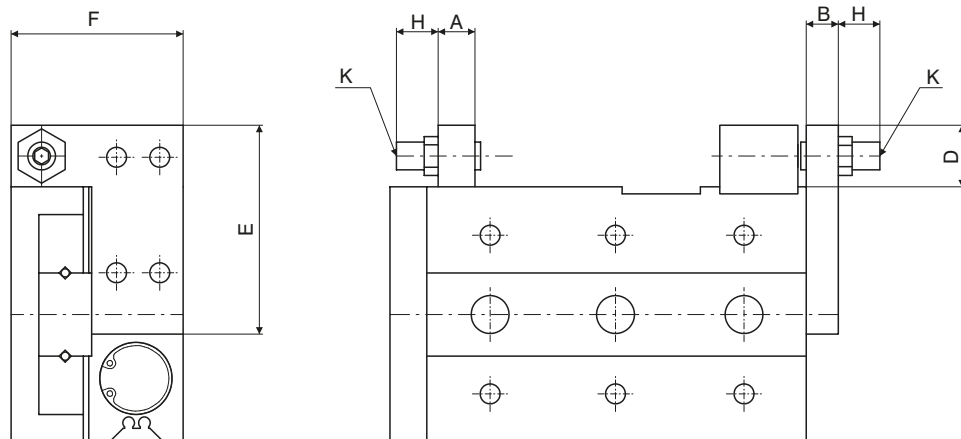
Accessories - Static moment
Dimensions with dampers



3

PNEUMATIC ACTUATION

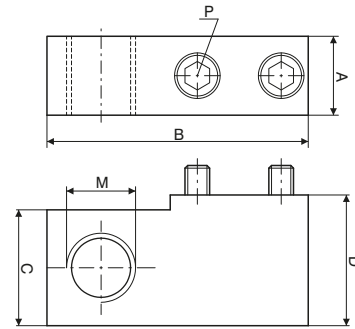
Dimensions with adjusting screw



Bore	A	B	C	D	E	F	G max.	H max.	K
Ø8	7	8	26	14,5	38,5	23	25,5	28,5	M8x1
Ø12	9,5	8	21	15	45	31,5	24,5	32	M8x1
Ø16	11	10	19	18	55	37,5	29	34,5	M10x1
Ø20	13	12	28	24,5	70	47,5	42,5	35,5	M14x1,5
Ø25	16	15	34	24,5	80	54,5	39,5	37,5	M14x1,5

► Shock absorber mounting block / front stroke adjusting screw

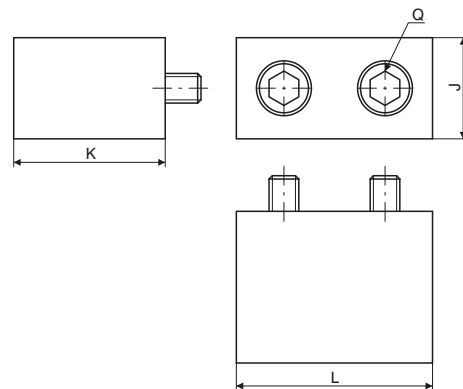
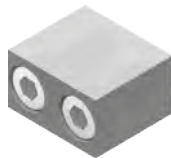
Ordering code
6600.Ø.SU



Bore	A	B	C	D	M	P
Ø8	7	23	14	15,5	M8x1	M3x16
Ø12	9,5	31	14,5	16		M4x16
Ø16	11	37	17,5	19	M10x1	M5x18
Ø20	13	45,5	23,5	26	M14x1,5	M6x25
Ø25	16	53,5		26,5		M8x25

► Reference block

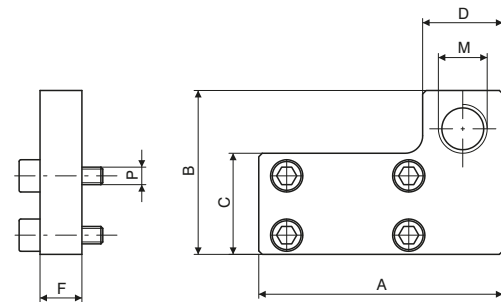
Ordering code
6600.Ø.SI



Bore	J	K	L	Q
Ø8	7	15,5	14,6	M3x16
Ø12	10	15	18,5	M4x14
Ø16	12	18,5	21	M5x18
Ø20	13	25,5	25	M6x25
Ø25	17		31	M8x25

► Shock absorber mounting block / rear stroke adjusting screw

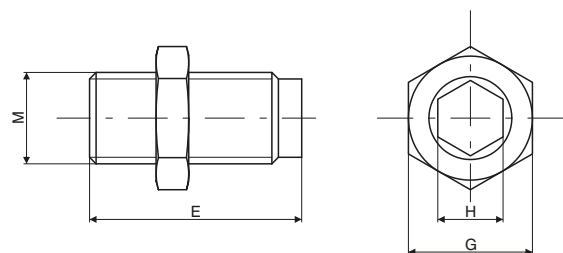
Ordering code
6600.Ø.SR



Bore	A	B	C	D	F	M	P
Ø8	38	23	12,5	14	8	M8x1	M3x12
Ø12	45	31	18				M4x12
Ø16	55	37	23,5	16	10	M10x1	M5x14
Ø20	70	47	29	23	12	M14x1,5	M5x16
Ø25	80	54	35		15		M6x20

► Adjusting screw

Ordering code
6600.Ø.VR



Bore	E	G	H	M
Ø8	36,5	12	4	M8x1
Ø12	40		5	
Ø16	44,5	14	5	M10x1
Ø20	47,5	22	8	M14x1,5
Ø25	52,5			



Series 6200 - Twin-rod slide units

General

TWIN-ROD SLIDE UNITS SERIES 6200 AND 6210

The 6200 series twin-rod linear guide units are wide cylinders used in manipulation applications and are characterised by their high force output thanks to their double piston design.

Bores range from 10mm to 32mm diameter, with sintered bronze bearings for standard applications and linear ball bearings for more rugged applications.

One major characteristic of these cylinders is the precision of their anti-rotational design, with the possibility of regulating the stroke to within 0.5mm.

When using magnetic sensors, the 1580 series sensor sits entirely within the extrusion, resulting in a smooth profile.

The liner guided units range includes , alongside the conventional two rod version with flange series 6200 , also the through rod version with twin flanges series 6210

Thanks to the twin-rod, double yoke design of the 6210 series it is possible to either fix the body and use the ends of the rods, or alternatively to fix the rod ends and use the body as the moving part. The cylinder can be piped through the body or through the rods depending on the application.

Stroke limiting screws are fitted at either end of the stroke. The substitution of these screws with shock absorbers makes it possible to use the cylinder on higher velocity applications (up to 500mm/sec.) Slots are provided along the edge of these units to accommodate 1580 series miniature sensors.

► Twin-rod slide units



Ordering code

6200.Ø.stroke.

- 10
- 15
- 20
- 25
- 32

B = Control unit with bronze bush
C = Control unit with bearing bush

Construction characteristics

Body	anodised aluminium
Rods	C43 chromed steel (control unit with bronze bush) tempered and chromed steel (control unit with bearing bush)
Piston	aluminium
Rod bushing	brass
End cap	anodised aluminium
Piston seal	oil resistant NBR rubber
Piston rod seal	PUR
Plate	anodised aluminium

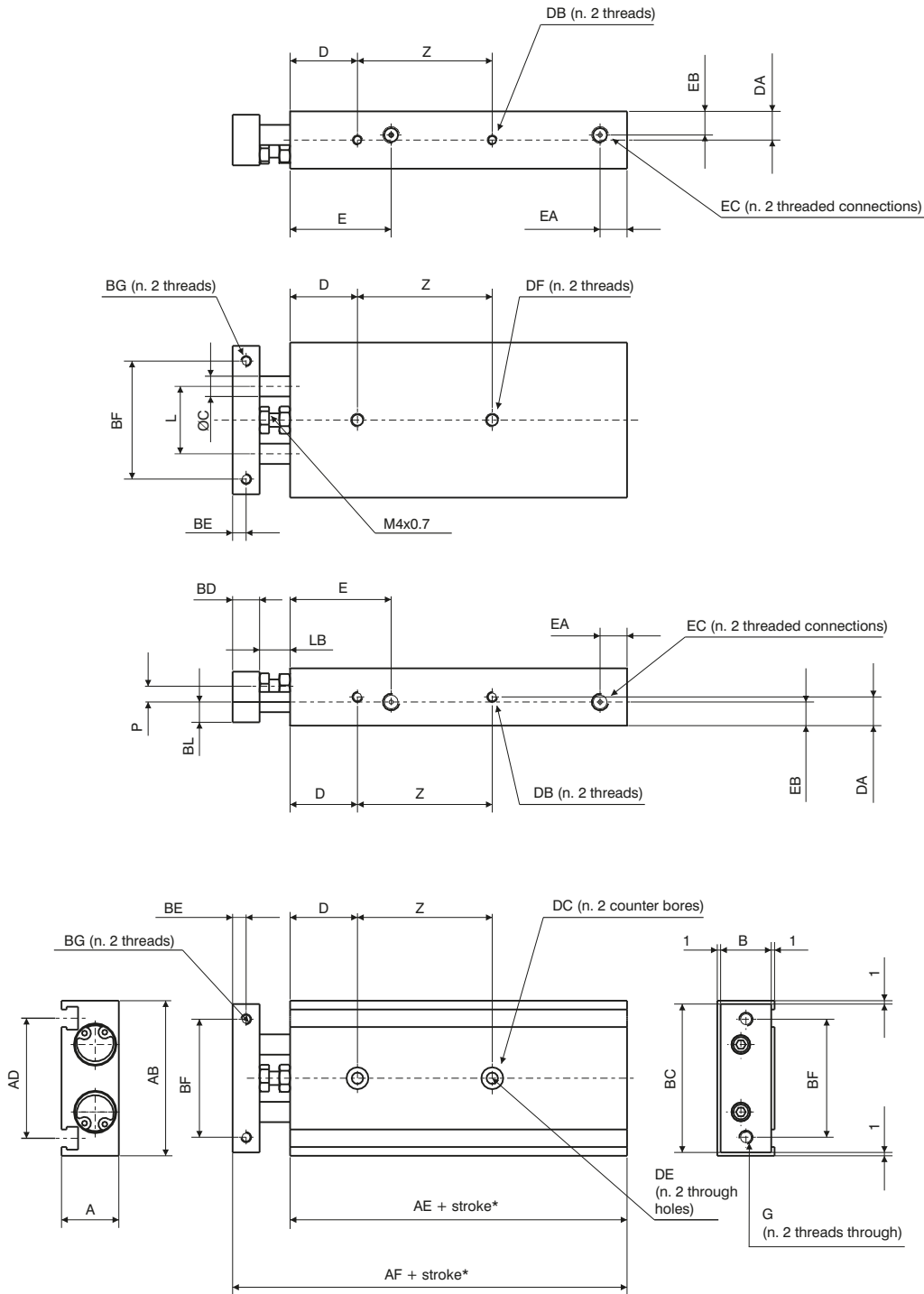
Operational characteristics

Function	double acting
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Max. pressure	7 bar
Working temperature	-5°C - +70°C
Cushioning	elastic bumper

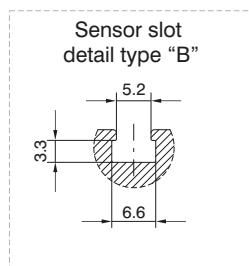
Standard strokes

Bore	Stroke														
	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
Ø10	●	●	●	●	●	●	●	●	●	●	●	●			
Ø15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Overall dimensions Ø10 - Ø15

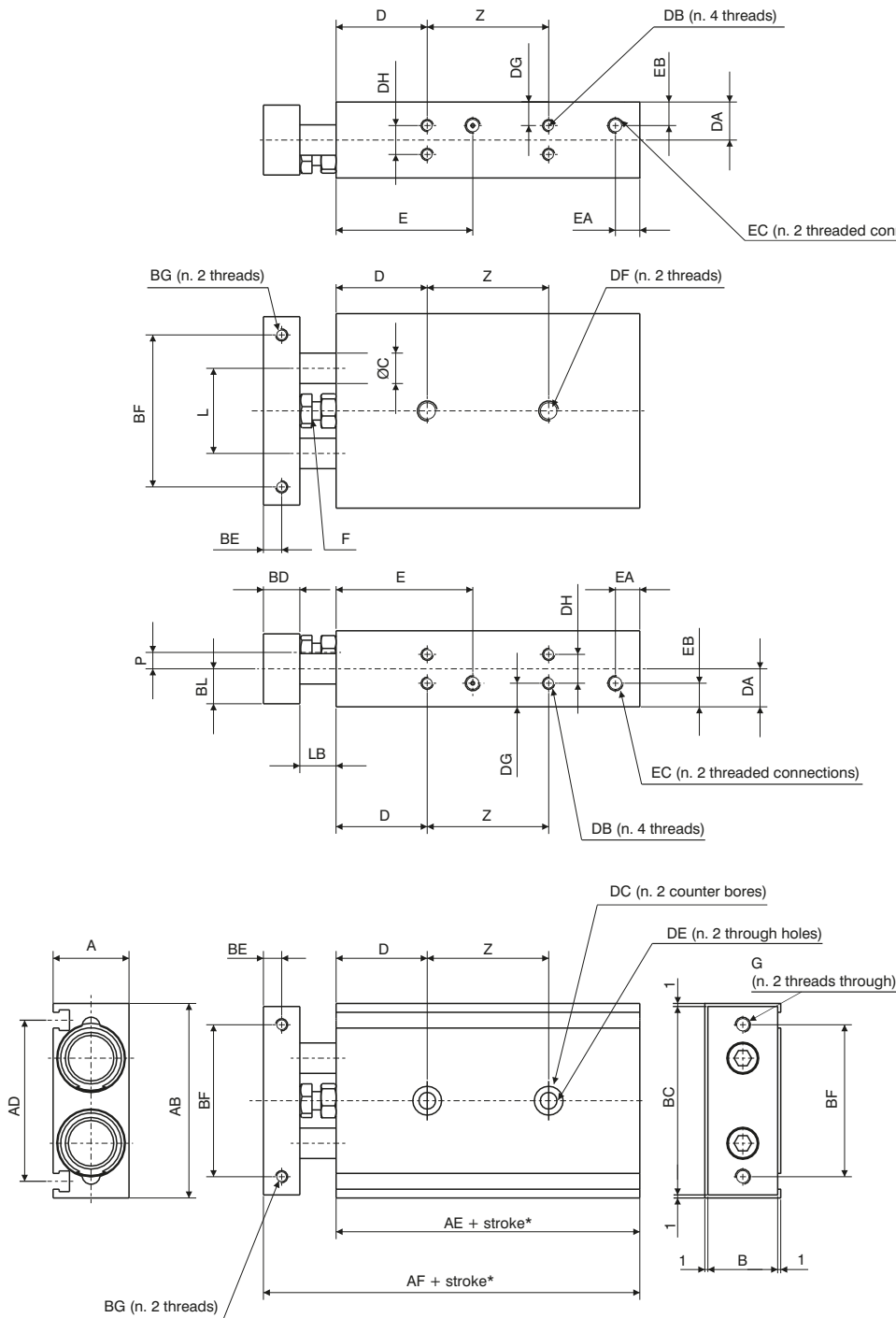


*Dimensions only refer to the "standard stroke"

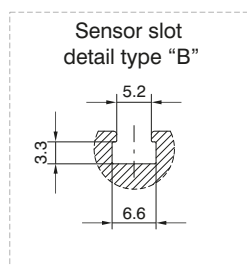


Bore		Ø10	Ø15	
A		17	20	
AB		46	58	
AD		35,6	48	
AE		55	60	
AF		72	79	
B		15	18	
BC		44	56	
BD		8	10	
BE		4	5	
BF		35	45	
BG		M3x0,5	M4x0,7	
	Useful depth	5	6	
BL		6	9	
C		6	8	
D		20	30	
DA		8,5	10	
DB		M3x0,5	M4x0,7	
	Useful depth	4,5	5	
DC		6,5	8	
	depth	3,3	4,4	
DE		3,4	4,3	
DF		M4x0,7	M5x0,8	
	Useful depth	7	8	
E		30	38,5	
EA		8	8	
EB		7	10	
EC		M5x0,8	M5x0,8	
	Useful depth	4,5	4,5	
F		M4x0,7	M4x0,7	
G		M4x0,7	M5x0,8	
L		20	25	
LB		9	9	
P		4,7	4,5	
Z	stroke	10 - 25	30	25
		30 - 50	40	35
		60 - 75	50	45
		80	-	45
		90-100	-	55

Overall dimensions Ø20 - Ø25 - Ø32



*Dimensions only refer to the "standard stroke"



Bore		Ø20	Ø25	Ø32	
A		25	30	38	
AB		64	80	98	
AD		53	64	76	
AE		70	72	82	
AF		94	96	112	
B		23	28	36	
BC		62	78	96	
BD		12	12	16	
BE		6	6	8	
BF		50	60	75	
BG		M4x0,7	M5x0,8	M5x0,8	
	Useful depth	6	7,5	8	
BL		11,5	14	18	
C		10	12	16	
D		30	30	30	
DA		12,5	15	19	
DB		M4x0,7	M5x0,8	M5x0,8	
	Useful depth	6	7,5	7,5	
DC		9,5	11	11	
	depth	5,3	6,3	6,3	
DE		5,5	6,9	6,9	
DF		M6x1	M8x1,25	M8x1,25	
	Useful depth	10	12	12	
DG		7,75	8,5	9	
DH		9,5	13	20	
E		45	46	56	
EA		8	9	10	
EB		7,75	15	19	
EC		M5x0,8	G1/8	G1/8	
	Useful depth	4,5	6,5	6,5	
F		M6x1	M6x1	M8x1,25	
G		M5x0,8	M6x1	M6x1	
L		28	35	44	
LB		12	12	14	
P		5,4	7,8	12	
Z	stroke	10 - 25	30	30	40
		30 - 50	40	40	50
		60 - 100	60	60	70



Operating instructions

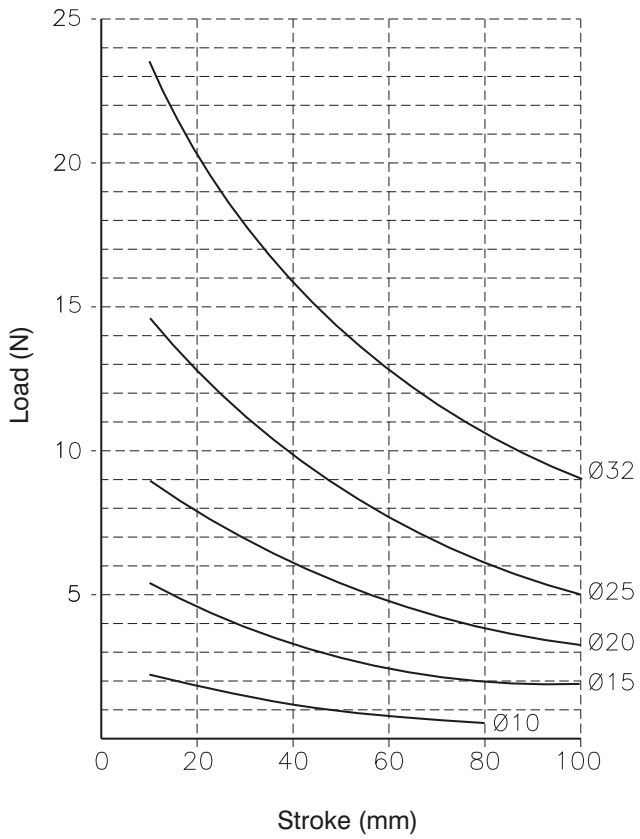
	Bore									
	Ø10	Ø15	Ø20	Ø25	Ø32					
Stroke	Control unit with bronze bush					Weight g				
10	150	250	400	610	1150					
15	160	265	420	635	1190					
20	170	280	440	660	1230					
25	180	290	460	690	1275					
30	190	300	480	720	1320					
35	200	315	495	745	1360					
40	210	330	510	770	1400					
45	220	345	530	800	1450					
50	230	360	550	830	1490					
60	250	390	585	890	1580					
70	270	420	620	950	1665					
75	280	435	640	970	1710					
80		450	660	995	1755					
90		480	700	1060	1840					
100		510	740	1000	1930					
Stroke	Control unit with bearing bush									
10	160	270	430	620	1160					
15	165	285	445	645	1205					
20	170	300	460	670	1250					
25	180	310	480	700	1295					
30	190	320	500	730	1340					
35	200	335	515	755	1380					
40	210	350	530	780	1420					
45	220	365	550	810	1465					
50	230	380	570	840	1510					
60	250	410	605	895	1595					
70	270	440	640	955	1680					
75	280	455	660	980	1720					
80		470	680	1005	1765					
90		500	715	1065	1855					
100		530	750	1110	1940					
Working pressure	Theoretical slide force									
1 bar	16	10	35.5	25	63	47	98	75.5	161	120.5
1.5 bar	23.5	15	53	38	94	62.5	147.5	113.5	241	181
2 bar	31.5	20.0	70.5	50.5	125.5	94	196.5	151	321.5	241
3 bar	47	30	106	75.5	188.5	141	294.5	227	482.5	362
4 bar	63	40	141	101	251	188	393	302.5	643	482.5
5 bar	78.5	50	176.5	126	314	236	491	378	804	603
6 bar	94	60	212	151	377	283	589	453.5	965	723.5
7 bar	110	70	247	176.5	440	330	687.5	529	1125.6	844
	Out	In	Out	In	Out	In	Out	In	Out	In

3 PNEUMATIC ACTUATION

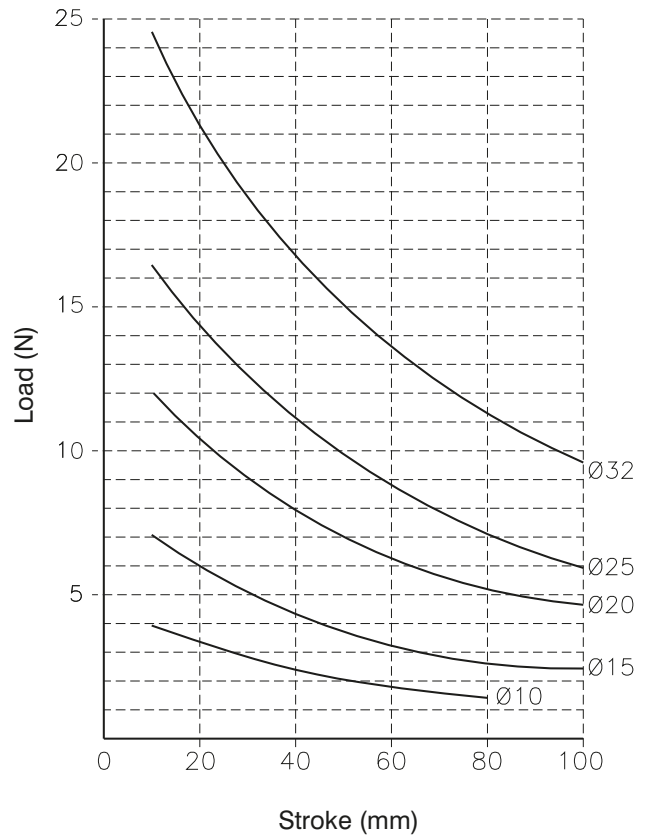
Operating instructions

Possible loads

Control unit with bronze bush



Control unit with bearing bush



Twin-rod slide units



Ordering code

6200.Ø.stroke.
 10
 15
 20
 25
 32
 B = Control unit with bronze bush
 C = Control unit with bearing bush

Construction characteristics

Body	anodised aluminium
Rods	C43 chromed steel (control unit with bronze bush) tempered and chromed steel (control unit with bearing bush)
Piston	aluminium
Rod bushing	brass
End plate	anodised aluminium
Piston seal	oil resistant NBR rubber
Piston rod seal	PUR
Plate	anodised aluminium

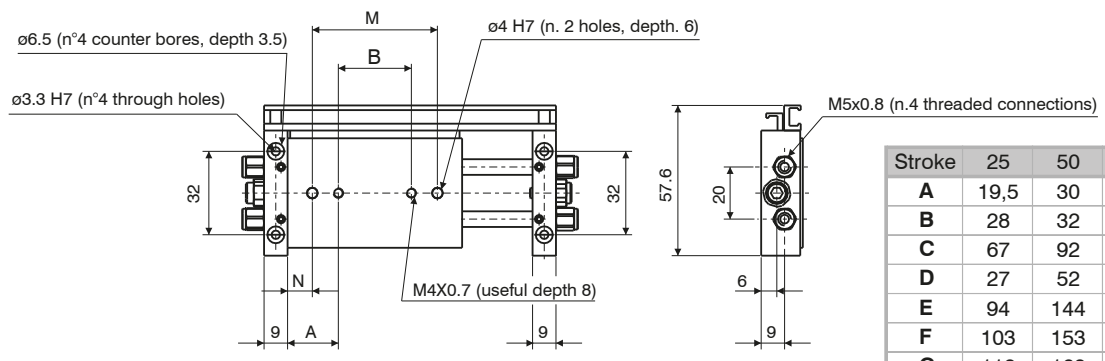
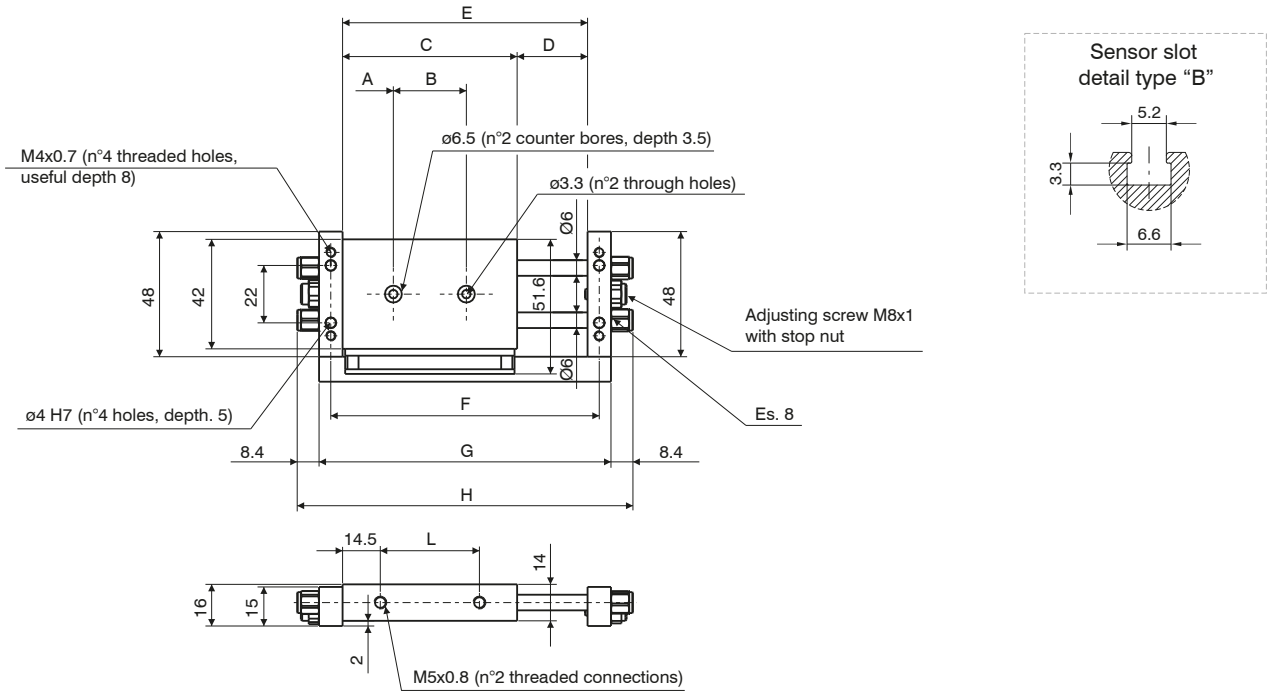
Technical characteristics

Function	double acting
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Max. pressure	7 bar
Working temperature	-5°C - +70°C
Cushioning	elastic bumper

Standard strokes

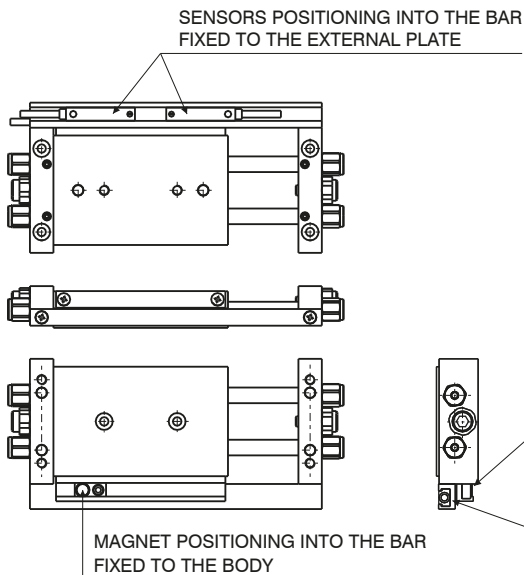
Bore	Stroke														
	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
Ø10	●	●	●	●	●	●	●	●	●	●	●	●			
Ø15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Ø32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Overall dimensions Ø10

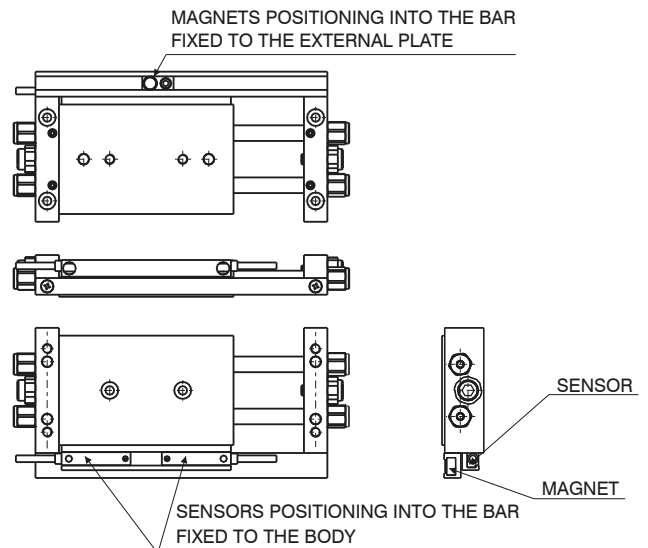


Stroke	25	50	75	100
A	19,5	30	35	35
B	28	32	47	72
C	67	92	117	142
D	27	52	77	102
E	94	144	194	244
F	103	153	203	253
G	112	162	212	262
H	129	179	229	279
L	38	63	88	113
M	48	52	67	92
N	9,5	20	25	25
Weight				
g	160	230	280	310

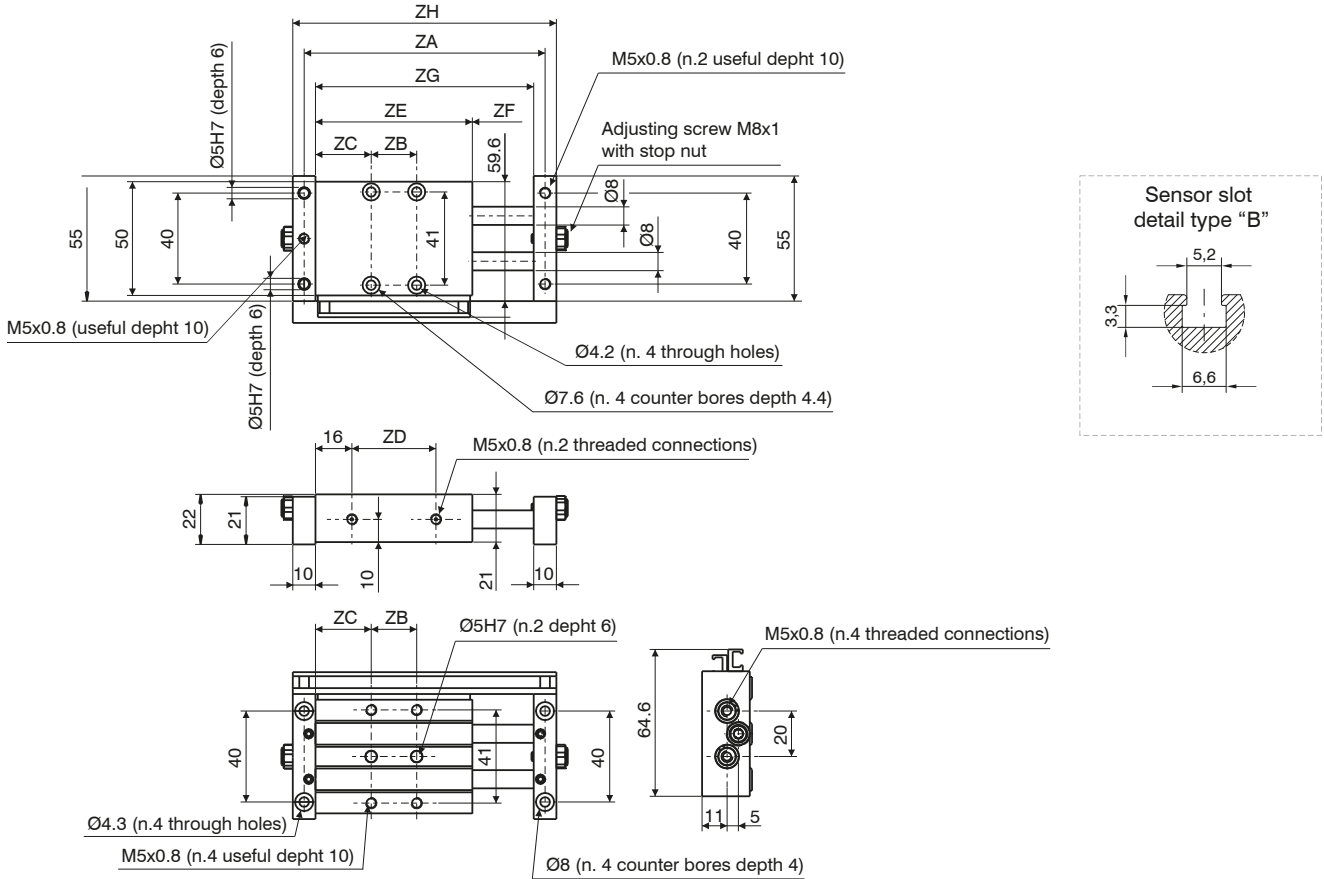
MOUNTING WITH FIXED PLATE



MOUNTING WITH A FIXED BODY

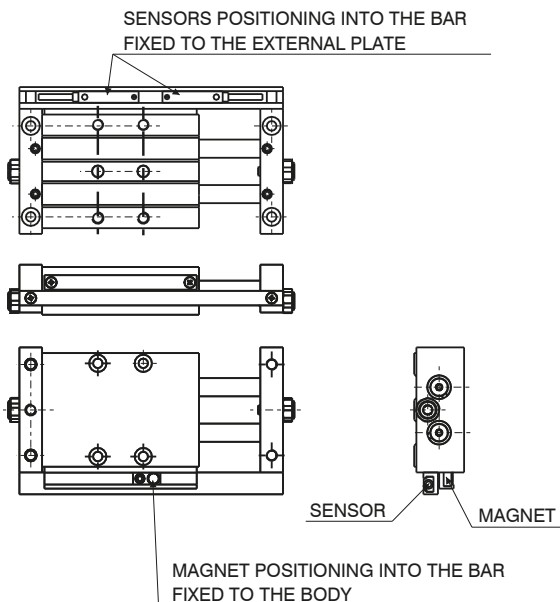


Overall dimensions Ø15

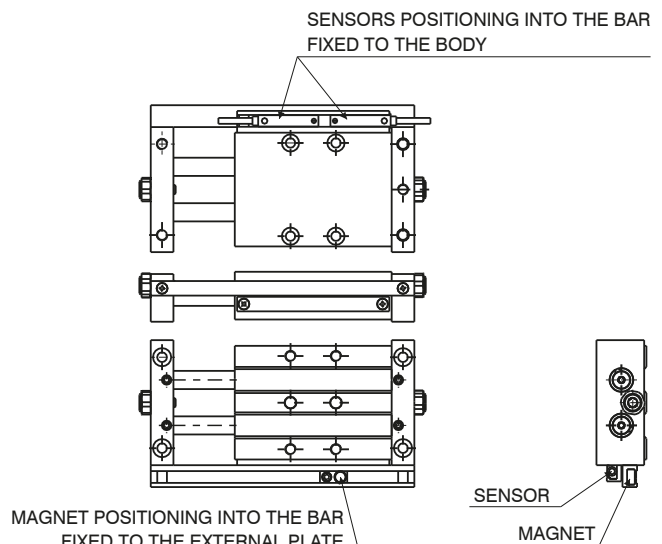


Stroke	25	50	75	100	125	150	175	200
ZA	106	156	206	256	306	356	406	456
ZB	20	45	65	90	90	90	90	90
ZC	24,5	24,5	27	27	39,5	52	64,5	77
ZD	37	62	87	112	137	162	187	212
ZE	69	94	119	144	169	194	219	244
ZF	27	52	77	102	127	152	177	202
ZG	96	146	196	246	296	346	396	446
ZH	116	166	216	266	316	366	416	466
Weight								
g	240	350	450	550	670	750	900	1000

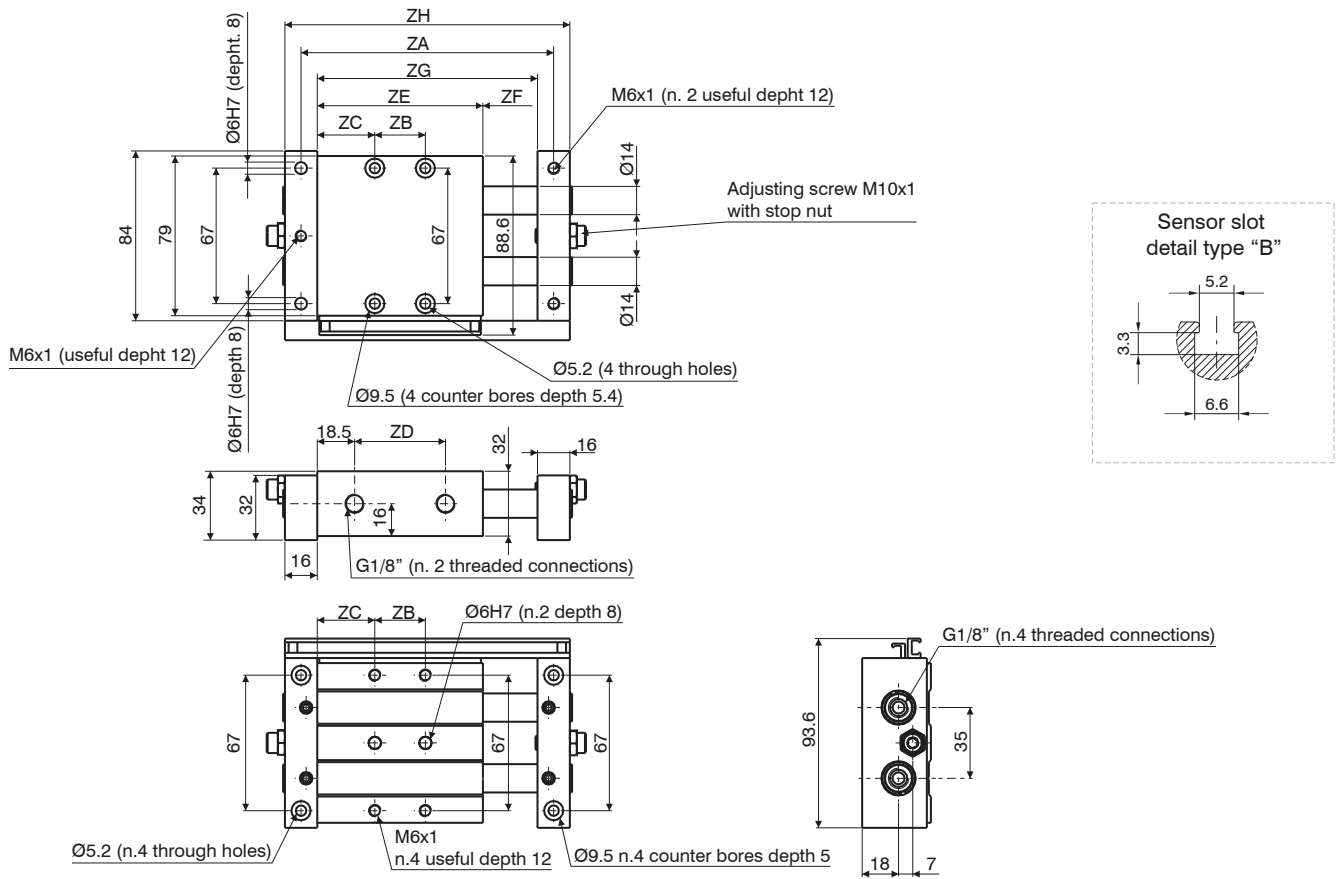
MOUNTING WITH FIXED PLATE



MOUNTING WITH FIXED BODY

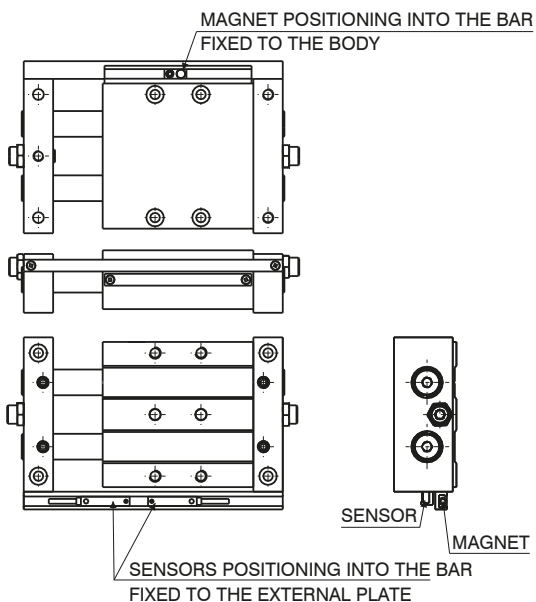


Overall dimensions Ø25

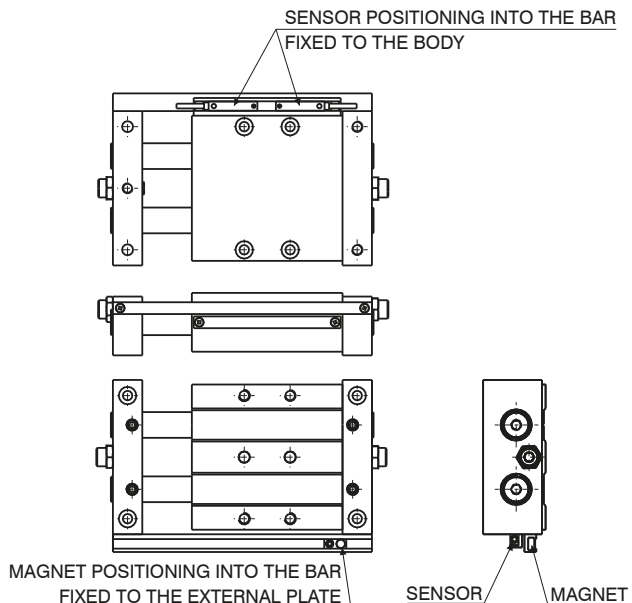


Stroke	25	50	75	100	125	150	175	200
ZA	125	175	225	275	325	375	425	475
ZB	25	45	65	90	90	90	90	90
ZC	28,5	31	33,5	33,5	46	58,5	71	83,5
ZD	45	70	95	120	145	170	195	220
ZE	82	107	132	157	182	207	232	257
ZF	27	52	77	102	127	152	177	202
ZG	109	159	209	259	309	359	409	459
ZH	141	191	241	291	341	391	441	491
Weight								
g	950	1140	1350	1600	1800	2000	2300	2500

MOUNTING WITH FIXED PLATE



MOUNTING WITH FIXED BODY



Operating conditions

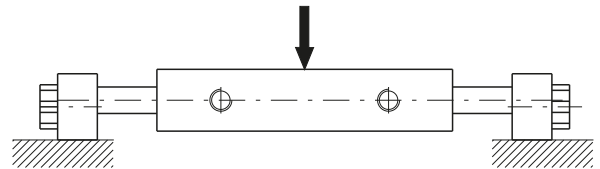
Theoretical force (N)

Working pressure	Bore		
	Ø10	Ø15	Ø25
2 bar	20	41	119
3 bar	30	62	179
4 bar	40	83	239
5 bar	51	104	299
6 bar	61	124	358
7 bar	71	145	418
8 bar	81	166	478
9 bar	91	186	537
	101	207	597
	Effective area (mm ²)		

Deflection of piston rods

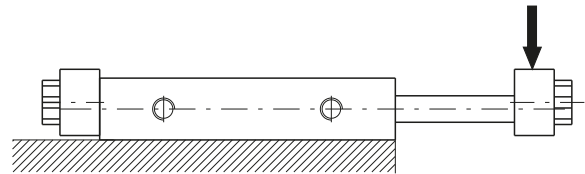
Applied load to body centre

Bore	Load	Deflection (mm)	
Ø10	10 N	0,07	/
Ø15	30 N	0,08	0,28
Ø25	60 N	0,02	0,08
		100	200
		Stroke	

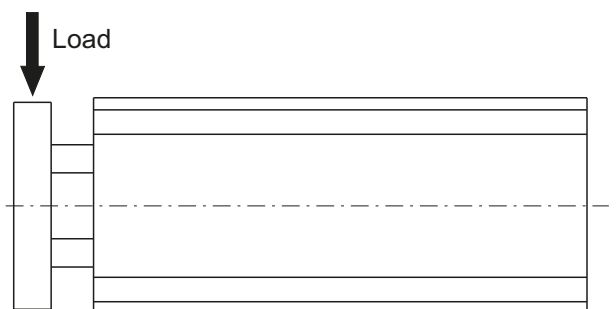
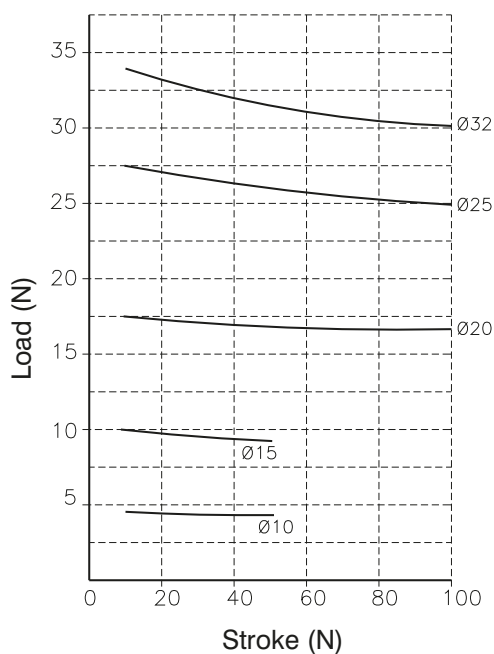


Applied load to body end

Bore	Load	Deflection (mm)			
Ø10	3 N	0,06	0,3	/	/
Ø15	5 N	0,1	0,2	0,5	1
Ø25	10 N	0,03	0,1	0,15	0,25
		50	100	150	200
		Stroke			



Control unit with bronze bushes



3

PNEUMATIC ACTUATION

► Guide cylinders



Ordering code

6700.Ø.stroke

- 10
- 16
- 20

Construction characteristics

Body	anodised aluminium
Piston rod	stainless steel
Piston	aluminium
Piston rod bushing	aluminium
End cap	anodised aluminium
Seals	oil resistant NBR rubber
Table	anodised aluminium

Standard strokes

Bore	Stroke								
	5	10	15	20	25	30	40	50	60
Ø10	●	●	●	●	●	●	●	●	●
Ø16	●	●	●	●	●	●	●	●	●
Ø20	●	●	●	●	●	●	●	●	●

Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Working pressure	1.2 - 7 bar
Working temperature	-5°C - +70°C
Cushioning	with elastic bumper

Theoretical force

Bore	Effective area (mm ²)	Force (N)						
		2	3	4	5	6	7	
Ø10	Out	28,3	5,7	8,5	11,3	14,2	17	19,8
	In	21,2	4,2	6,4	8,5	10,6	12,7	14,8
Ø16	Out	78,5	15,7	23,6	31,4	39,3	47,1	55
	In	66	13,2	19,8	26,4	33	39,6	46,2
Ø20	Out	314	62,8	94,2	125,6	157	188,4	219,8
	In	264	52,8	79,2	105,6	132	158,4	184,8

Overall dimensions - Ø10

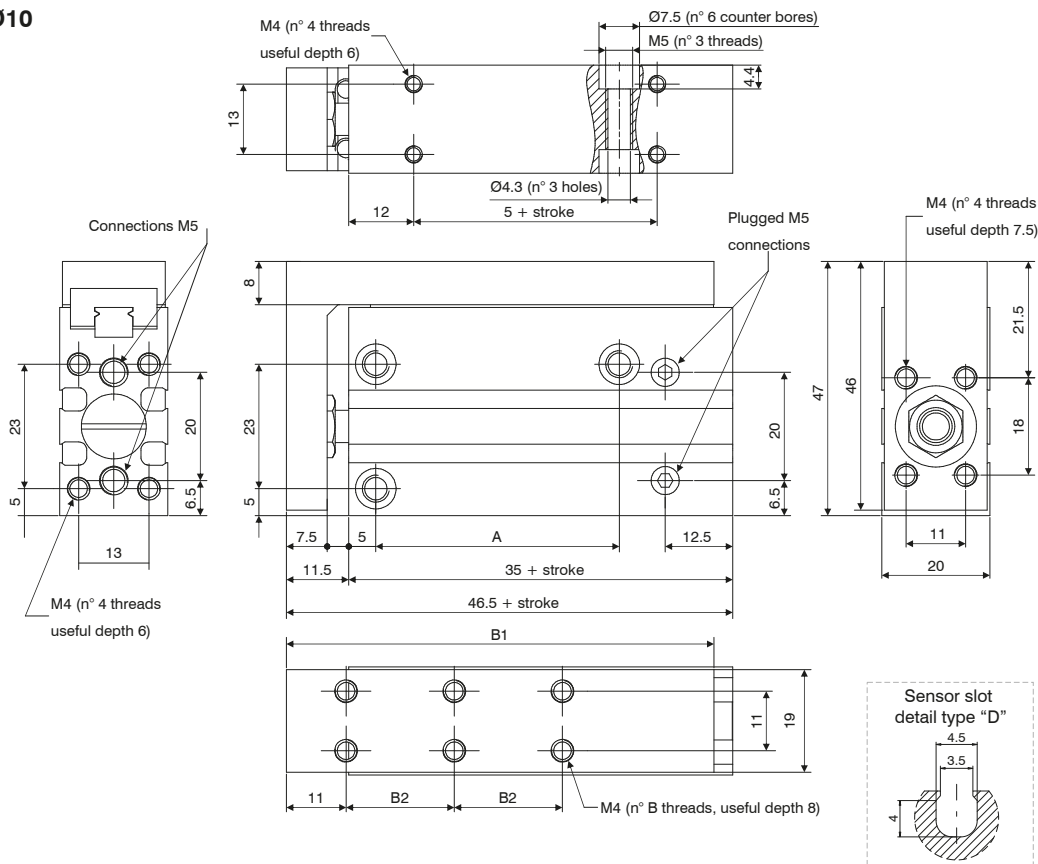


Table of dimensions

	Standard strokes								
	5	10	15	20	25	30	40	50	60
A	14	24	30	45	45	60			
B1	49	59	69	79	79	99			
B2	10	20	30	20	20	30			
B	4			6					
Weight (g)	117	125	140	148	162	170	192	215	238

Overall dimensions - Ø16

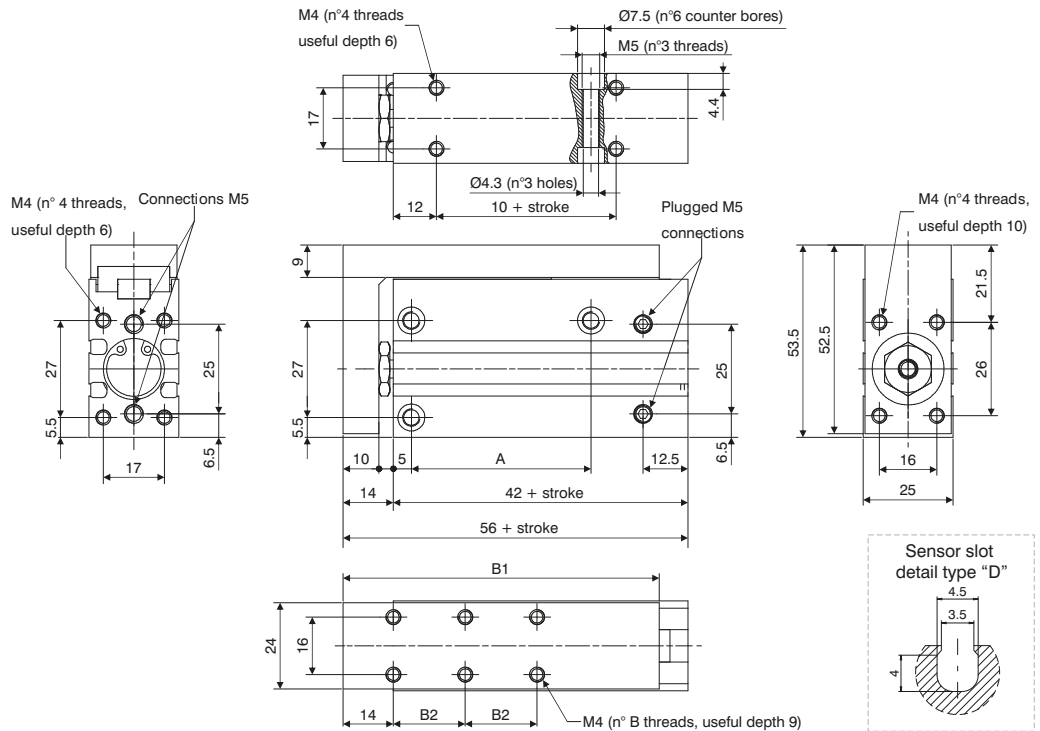


Table of dimensions

	Standard strokes								
	5	10	15	20	25	30	40	50	60
A	20	30	40	50	60				
B1	58	68	78	88	98	108			
B2	10	20	30	20	25	30			
B	4						6		
Weight (g)	215	230	250	260	280	290	325	350	390

Overall dimensions - Ø20

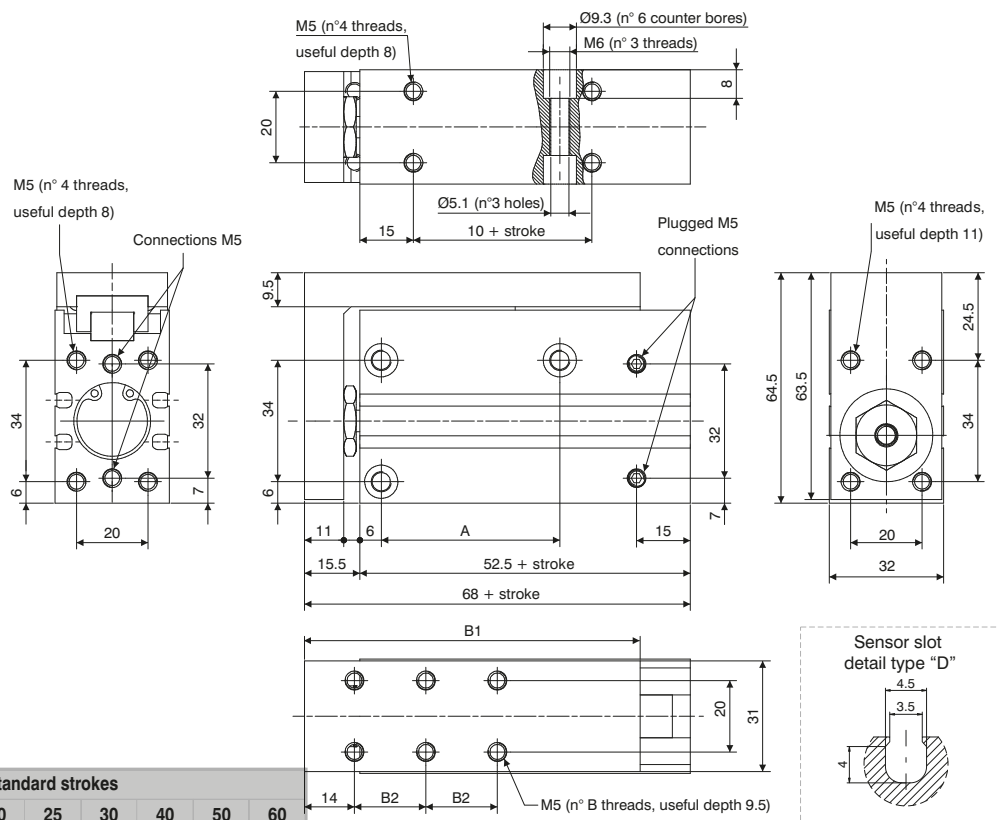


Table of dimensions

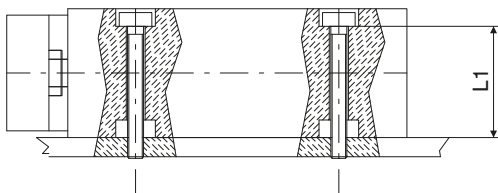
	Standard strokes								
	5	10	15	20	25	30	40	50	60
A	20	25	40	50	70				
B1	64	74	84	94	104	114			
B2	10	20	30	20	25	30			
B	4						6		
Weight (g)	440	455	490	505	540	560	600	660	700

PNEUMATIC ACTUATION

3

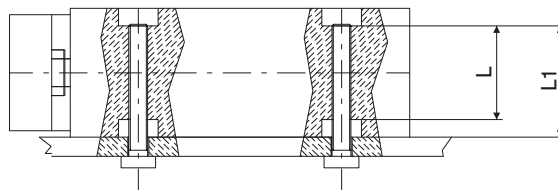
Fixing - Load

LATERAL (THROUGH SCREW)



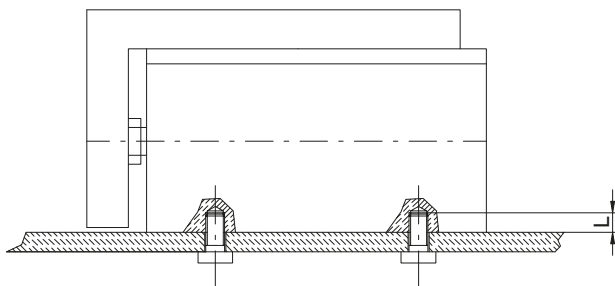
	SCREW	Maximum torque (Nm)	L1
Ø10	M4	2.5	15.6
Ø16	M4	2.5	20.6
Ø20	M5	5.1	24

LATERAL (THREADED HOLE)



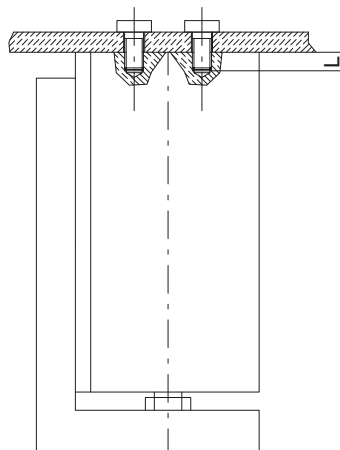
	SCREW	Maximum torque (Nm)	L1	L
Ø10	M5	5.1	15.6	11.2
Ø16	M5	5.1	20.6	16.2
Ø20	M6	8.1	24	16

VERTICAL (THREADED HOLE)



	SCREW	Maximum torque (Nm)	L
Ø10	M4	2.5	6
Ø16	M4	2.5	6
Ø20	M5	5.1	8

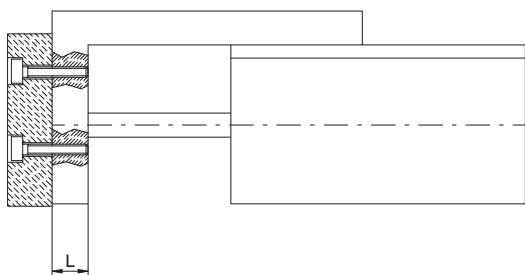
AXIAL (THREADED HOLE)



	SCREW	Maximum torque (Nm)	L
Ø10	M4	2.5	6
Ø16	M4	2.5	6
Ø20	M5	5.1	8

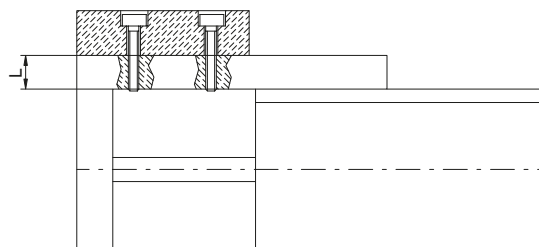
LOAD

FRONTAL MOUNTING



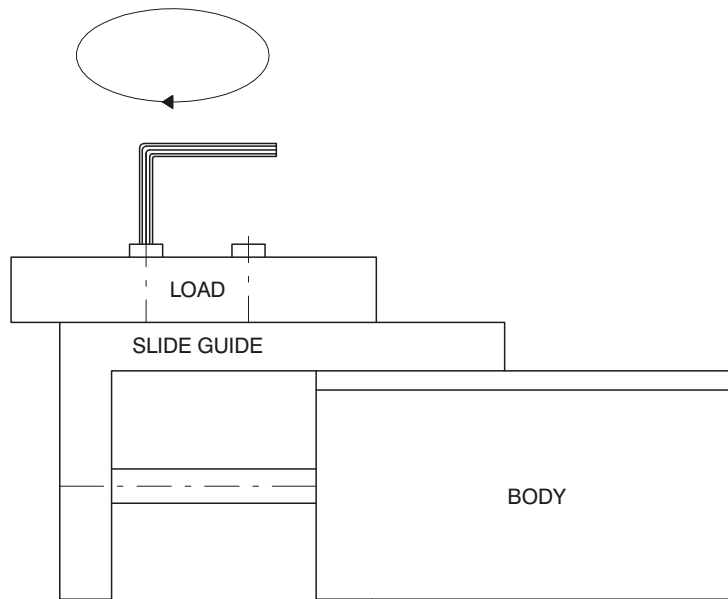
	SCREW	Maximum torque (Nm)	L
Ø10	M4	2.5	7.5
Ø16	M4	2.5	10
Ø20	M5	5.1	11

BACK MOUNTING



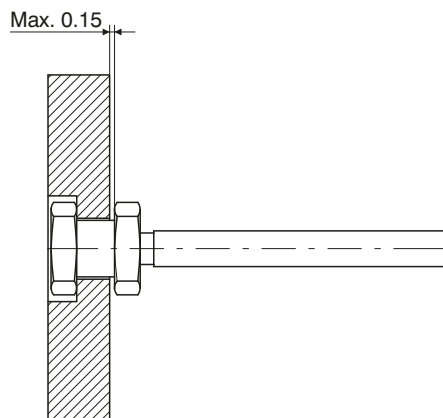
	SCREW	Maximum torque (Nm)	L
Ø10	M4	2.5	8
Ø16	M4	2.5	9
Ø20	M5	5.1	9.5

Fixing - Load



ATTENTION : Slide must be blocked before fixing the load
this operation should not be done by blocking the body as the
guide could get damaged.

CONNECTION BETWEEN PLATE AND ROD



The fluctuating connection, maximum clearance 0.15mm as indicated by the arrow



Plate deflection graphs

Plate deviation (arrow) when the load is applied on the spot indicated with the arrow and the unit completely extended

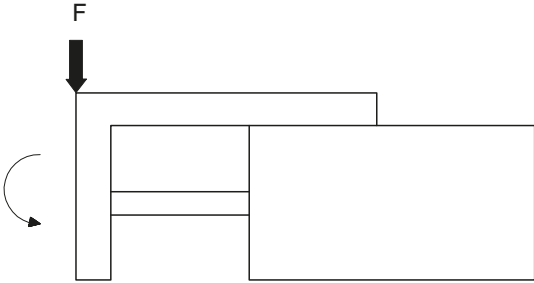
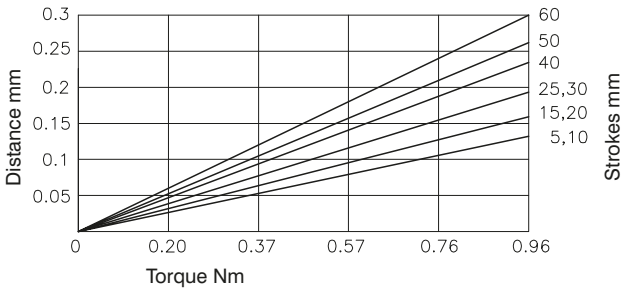


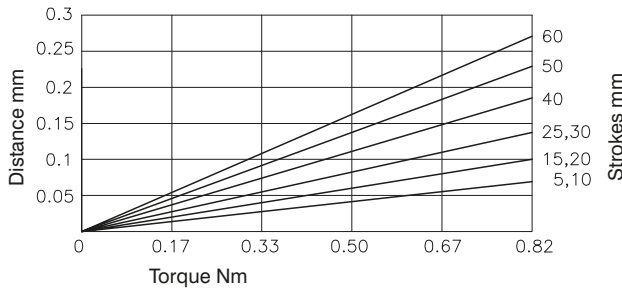
Plate deviation (arrow) when the load is applied on the spot indicated with the arrow and the unit completely extended



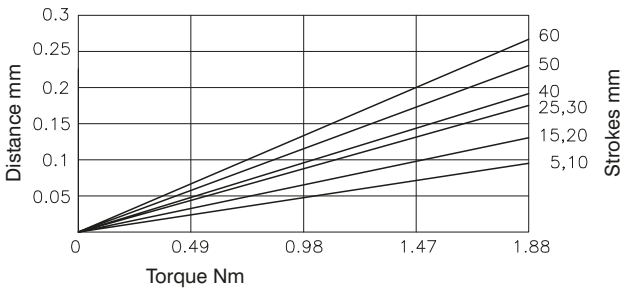
Ø10



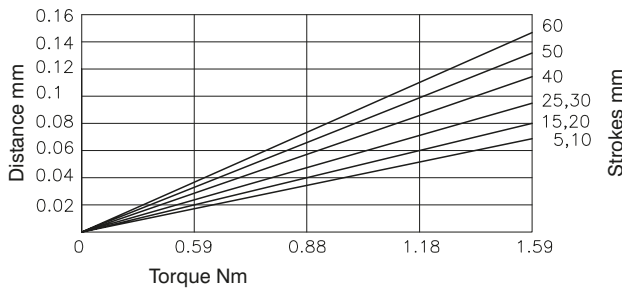
Ø10



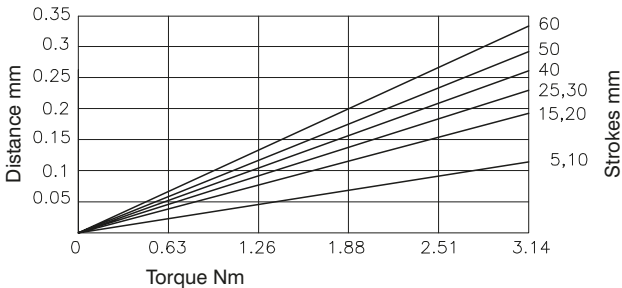
Ø16



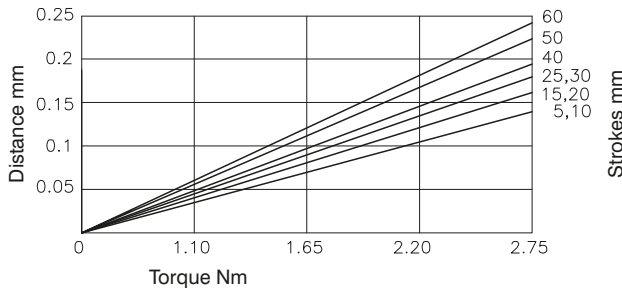
Ø16



Ø20



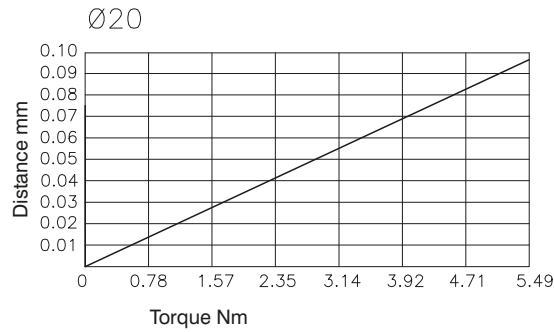
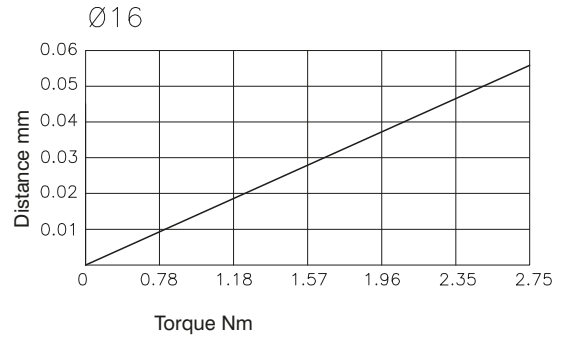
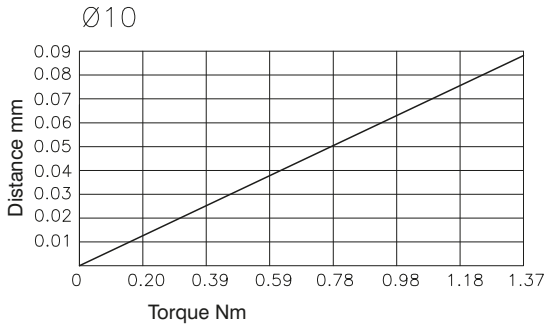
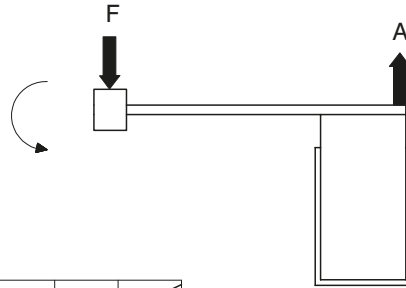
Ø20



3 PNEUMATIC ACTUATION

Plate deflection graphs outer stroke - selection graphs

Plate deviation (compared to A) when the load is applied on the spot indicated with the arrow and the unit completely extended

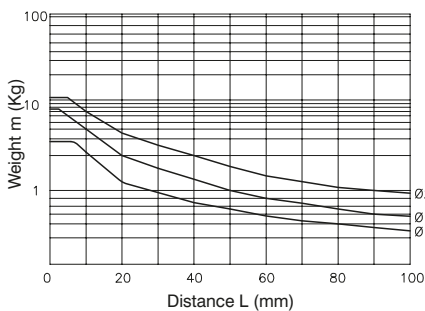


MOUNTING POSITION	VERTICAL			HORIZONTAL								
	100	200	300	100			200			300		
Load eccentricity				50	100	200	50	100	200	50	100	200
Selection graphs	1	2	3	4	5	6	7	8	9	10	11	12

Selection graphs 1 - 3 (vertical mounting)

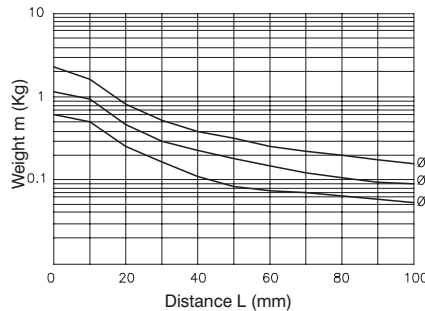
Drawing 1

Maximum speed 100 mm/s or lower



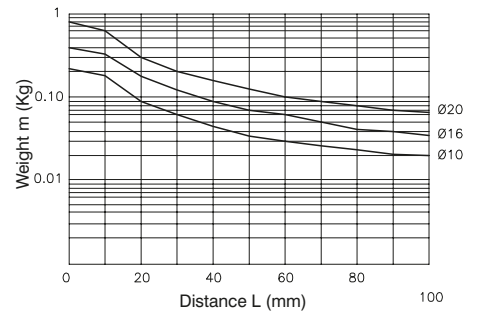
Drawing 2

Maximum speed 300 mm/s or lower



Drawing 3

Maximum speed 500 mm/s or lower

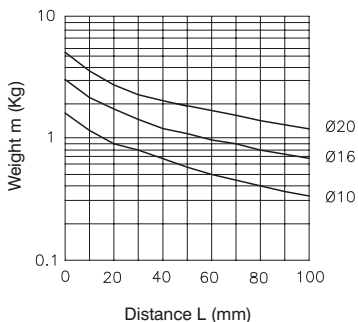




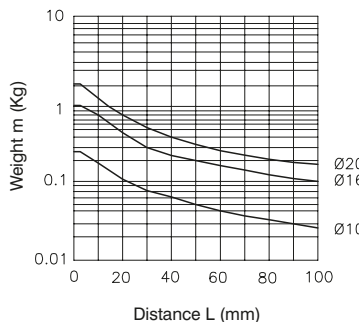
Selection graphs

Selection graphs 4 - 12 (horizontal mounting)

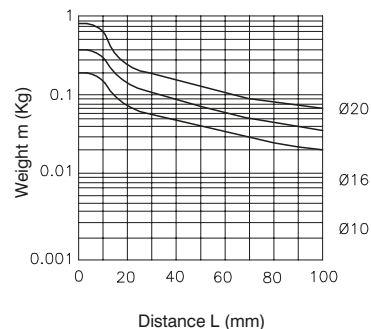
Drawing 4 load eccentricity 50mm
Maximum speed 100 mm/s or lower



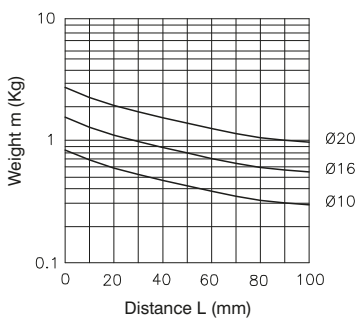
Drawing 7 load eccentricity 50mm
Maximum speed 300 mm/s or lower



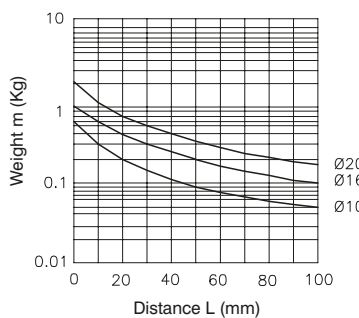
Drawing 10 load eccentricity 50mm
Maximum speed 500 mm/s or lower



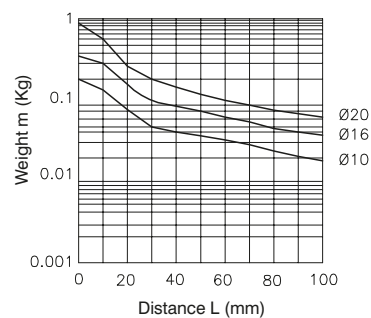
Drawing 5 load eccentricity 100mm
Maximum speed 100 mm/s or lower



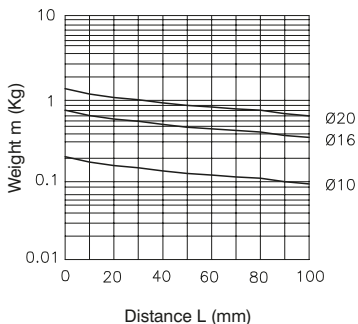
Drawing 8 load eccentricity 100mm
Maximum speed 300 mm/s or lower



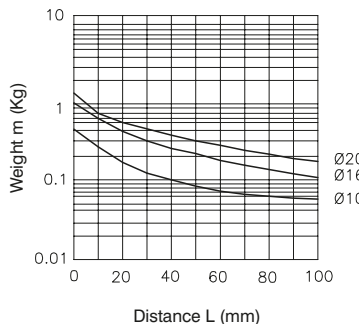
Drawing 11 load eccentricity 100mm
Maximum speed 500 mm/s or lower



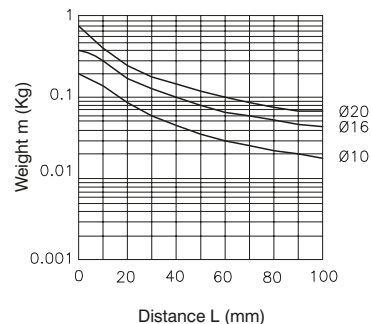
Drawing 6 load eccentricity 200mm
Maximum speed 100 mm/s or lower



Drawing 9 load eccentricity 200mm
Maximum speed 300 mm/s or lower



Drawing 12 load eccentricity 200mm
Maximum speed 500 mm/s or lower



3 PNEUMATIC ACTUATION