

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 at its core.

The rod guide is available in two styles:

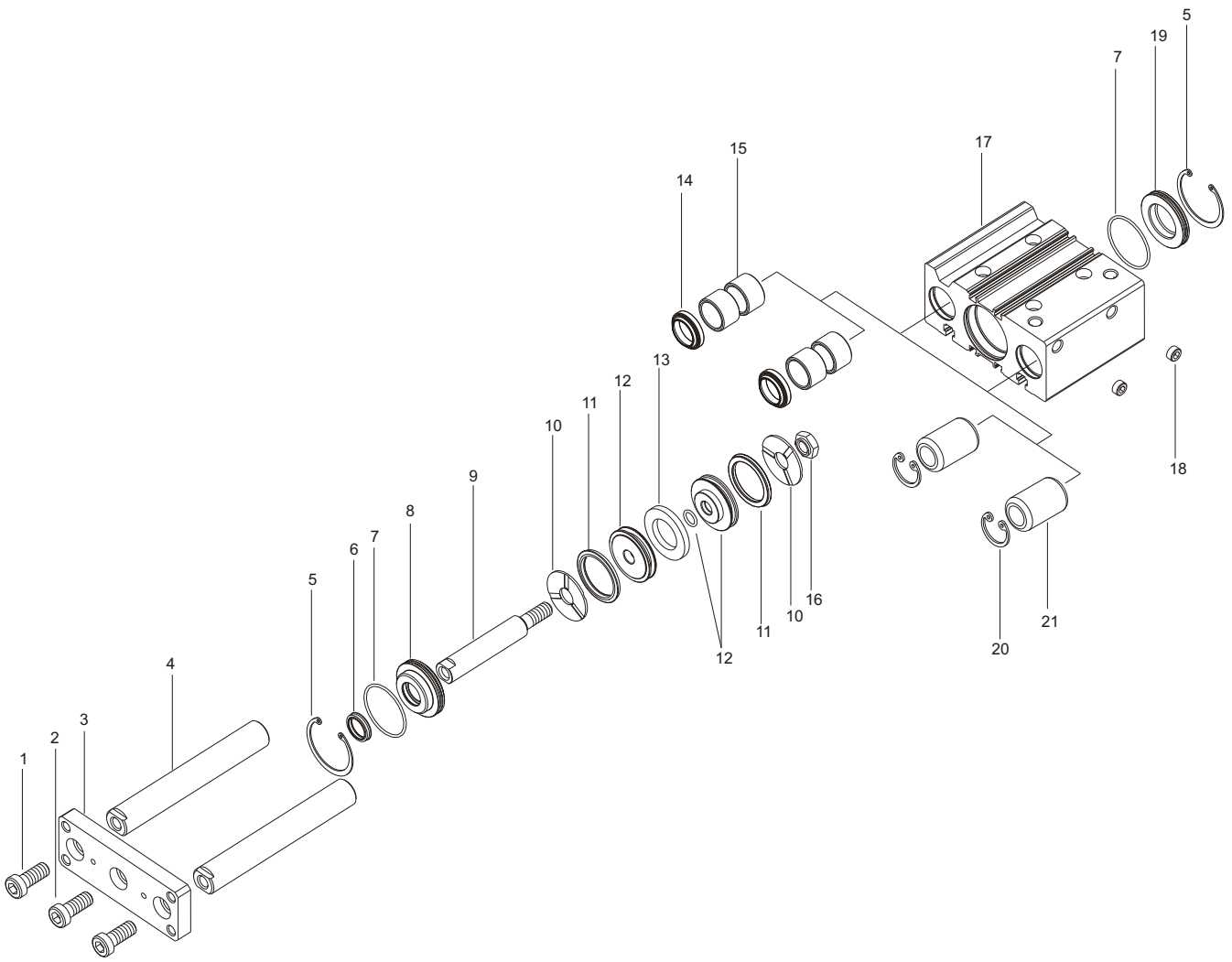
Self lubricating bronze bushes, useful for absorbing lateral loads and forces, especially as a stopper.

Bearing bushes, guaranteeing high precision and uniform movement with low friction characteristics, useful with misaligned 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 slot in the barrel extrusion where 1580 series miniaturized sensors are easily fitted.



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Pos.	Item	Qty.	Pos.	Item	Qty.
1	Guide rod screw	2	13	Magnet	1
2	Piston rod screw	1	14	Wiper	2
3	Plate	1	15	Bronze bush	4*
4	Rod	2	16	Piston rod nut	1
5	Circlip	2	17	Body	1
6	Piston rod seal	1	18	Plug	2
7	Seal	2	19	End plate	1
8	Bushing	1	20	Circlip	2
9	Piston rod	1	21	Bearing bush	4**
10	Cushioning washer	2	* N. 2 pieces for strokes under 50 mm (for bores ø20,25,32)		
11	Piston seal	2	** N. 2 pieces for strokes under 50 mm (for bores ø20,25,32)		
12	Half piston	2	N. 2 pieces for strokes under 50 mm (for bores ø40,50,63)		



Ordering code

6100.Ø.stroke. .

- 12
- 16
- 20
- 25
- 32
- 40
- 50
- 63

Side supply ports closed
L = Top supply ports closed

B = Control unit with Bronze bush
C = Control unit with Bearing bush

Construction characteristics

Body	oxidated aluminium alloy
Guide rods	C43 chromed steel (control unit with Bronze bush) tempered and chromed steel (control unit with Bearing bush)
Piston	aluminium
Piston rod	AISI303 chromed stainless steel (for bores ø20, ø25) C43 chromed steel (for bores ø32, ø40, ø50, ø63)
Rods bushing	bronze or bearing bushing
End plate	oxidated aluminium
Piston seal	oil resistant NBR rubber
Piston rod seal	self lubricating polyurethane compound
Wipers	oil resistant NBR rubber
Plate	nickel plated steel

Technical characteristics

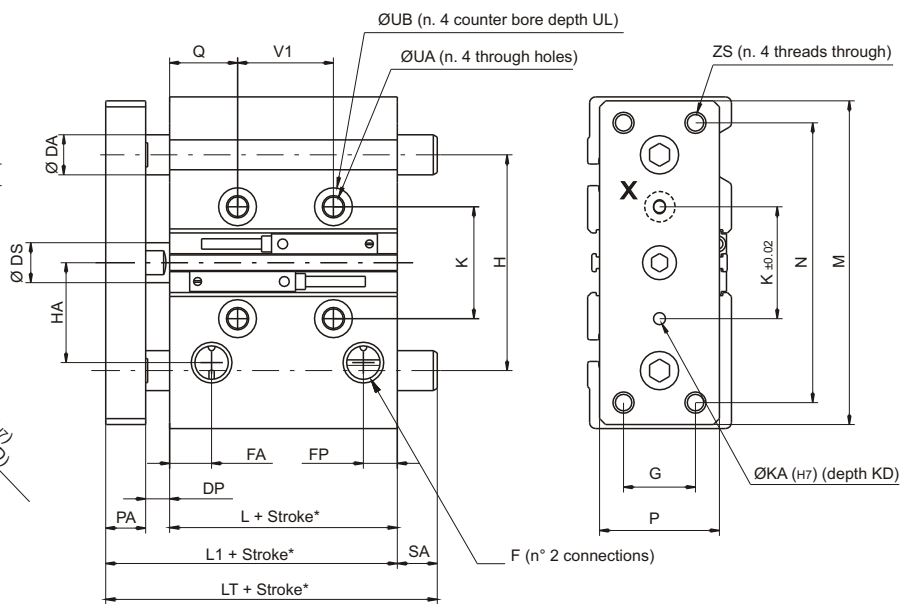
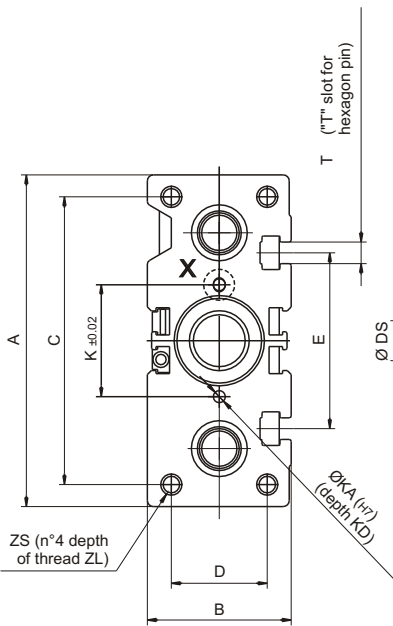
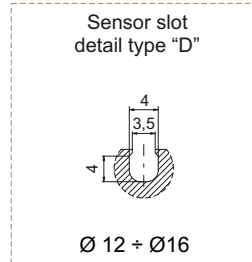
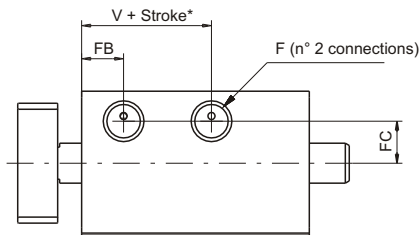
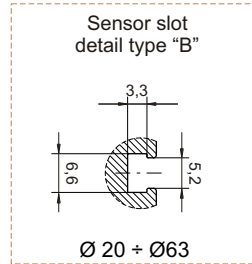
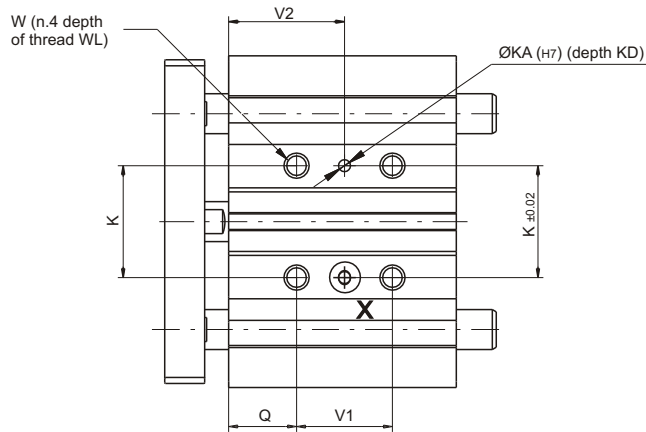
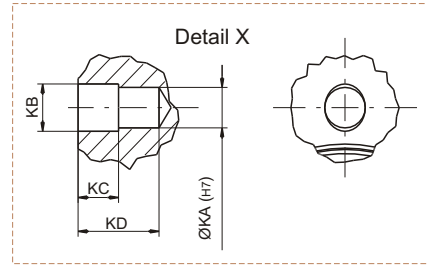
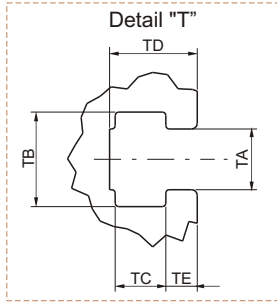
Function	double acting
Fluid	filtered and lubricated or non lubricated air
Working pressure	max. 10 bar
Working temperature	-5°C ÷ +70°C
Cushioning	elastic bumper on both ends

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 are obtaining using spacers with defined length (5,10,15,20 mm).

Example:It is possible obtaining a 6100.32.55B cylinder from a 6100.32.50B cylinder, inserting a spacer with length of 5 mm.
The strokes intermediate without using of spacers are considered special executions.



*Dimensions referred only to the "standard stroke"



Control unit with bronze bushes
Control unit with bearing bushes

Control unit with bronze bushes
Control unit with bearing bushes

Control unit with bronze bushes
Control unit with bearing bushes

stroke ≤ 30
30< stroke ≤ 100
100< stroke ≤ 200
stroke ≤ 25
25< stroke ≤ 100
100< stroke ≤ 200
stroke ≤ 30
30< stroke ≤ 100
100< stroke ≤ 200
stroke ≤ 25
25< stroke ≤ 100
100< stroke ≤ 200

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
DA	8	10	12	16	20	20	25	25
	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
L1	39	43	53,5	54	60	66	72	77
	39	43	53,5	54	97	97	106,5	106,5
LT	57	64	84,5	85	102	102	118	118
	39	43	63	69,5				
	53	64	80	85,5				
	/	/	104	104,5				
					81	81	93	93
					98	98	114	114
				118	118	134	134	
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
SA	/	/	/	/	37	31	34,5	29,5
	18	21	31	31	42	36	46	41
	/	/	9,5	15,5				
	14	21	26,5	31,5				
	/	/	50,5	50,5				
					21	15	21	16
				38	32	42	37	
				58	52	62	57	
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	4+stroke		24	24				
	4+stroke		44	44				
	4+stroke		120	120				
	4+stroke		/	/	24	24	24	28
	4+stroke		/	/	48	48	48	52
	4+stroke		/	/	124	124	124	128
V2	/	/	29,5	29,5				
	/	/	39,5	39,5				
	/	/	77,5	77,5				
					33,5	34	36	38
					45,5	46	48	50
					83,5	84	86	88
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
ZS	M4	M5	M5x0,8	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5



Stroke	Bore																
	Ø12		Ø16		Ø20		Ø25		Ø32		Ø40		Ø50		Ø63		
Stroke	Control unit with bronze bushes															Weights (gr)	
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	590	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)	uscita	rientro	uscita	rientro	uscita	rientro	uscita	rientro	uscita	rientro	uscita	rientro	uscita	rientro	uscita	rientro	
	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		

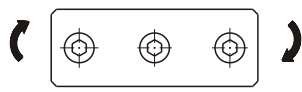
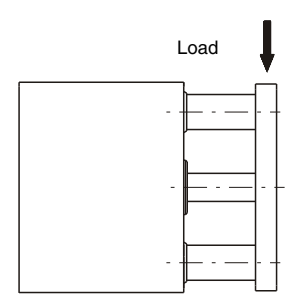
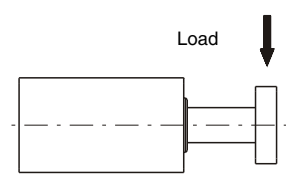
How to calculate the Momentum: $E_c = \frac{1}{2} m V$ (J)

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)

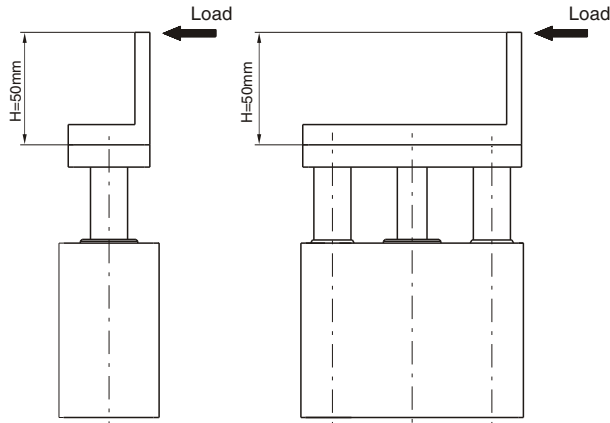
Permissible lateral load (applied on overall plate)

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			191	190	208	206
	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	



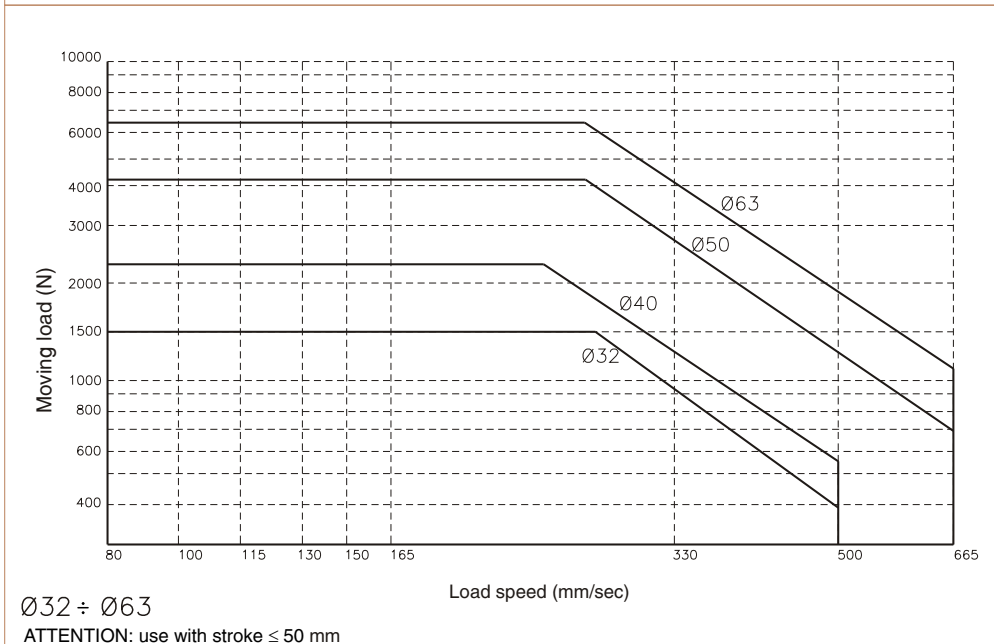
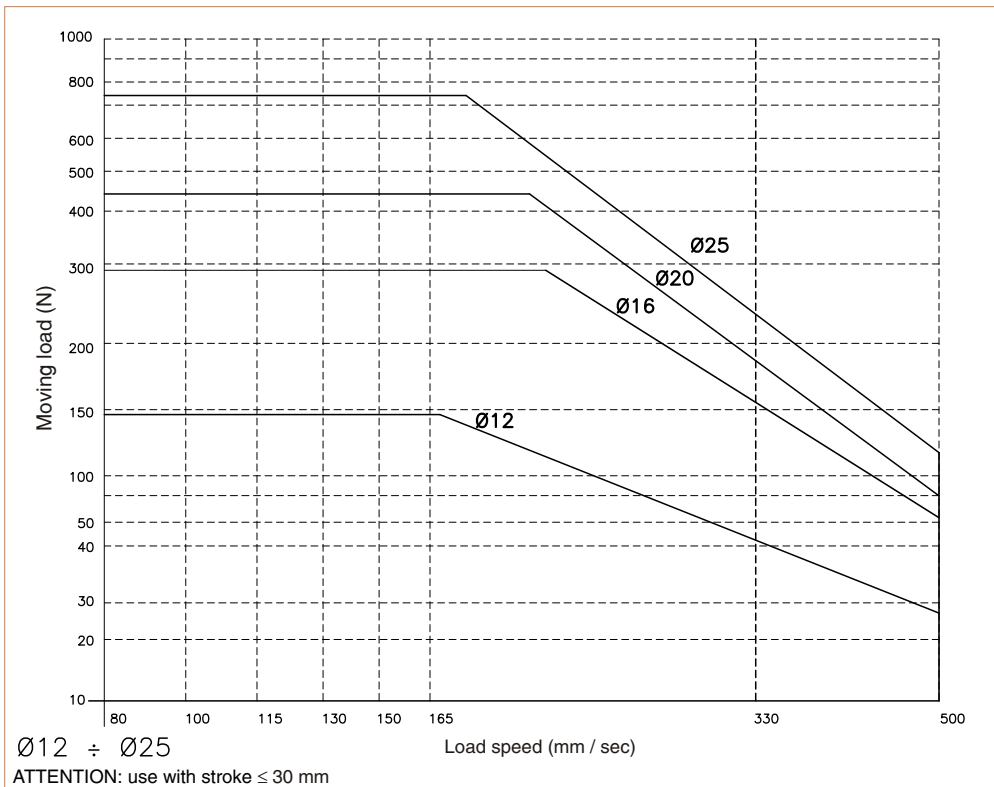
*(Applied on overall plate)

Stopper device applications



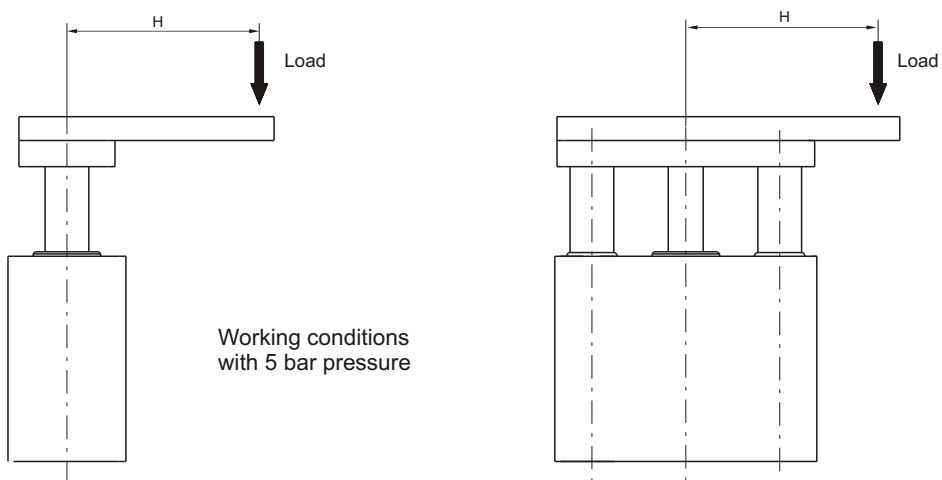
Control unit with bronze bushes

ATTENTION: if H>50 mm use larger bore

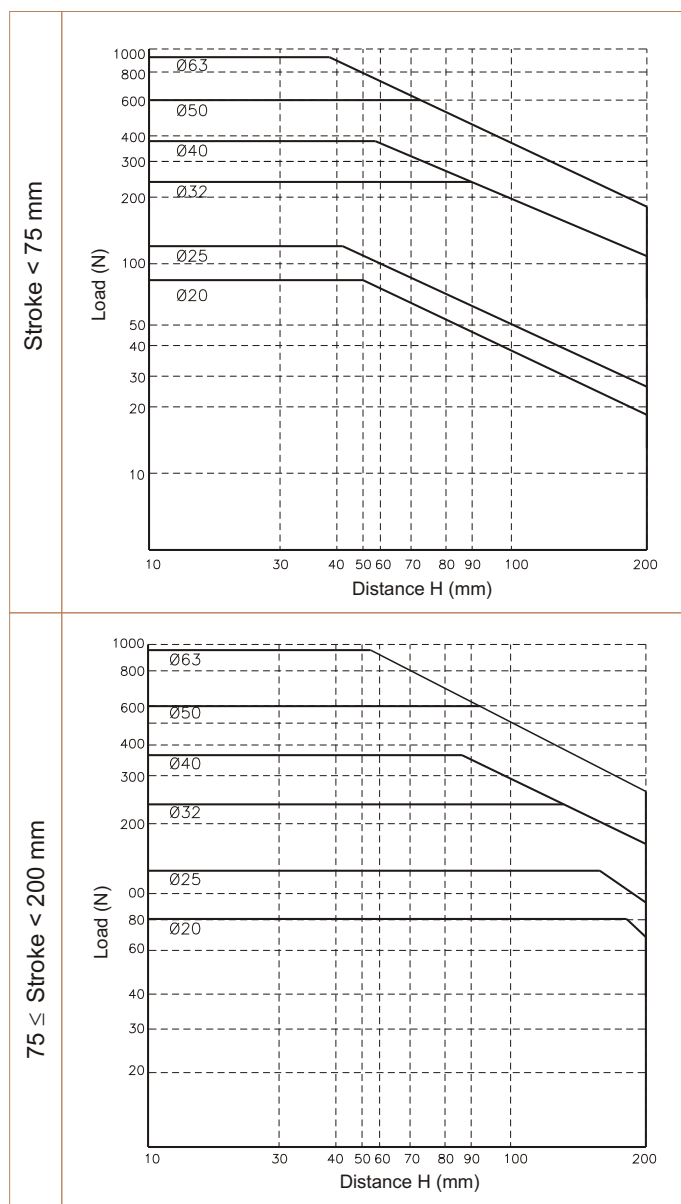


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Handling applications



Control unit with bronze bushes



Handling applications

Control unit with bearing bushes

