

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 it's core.

The rod guide is available in two styles:

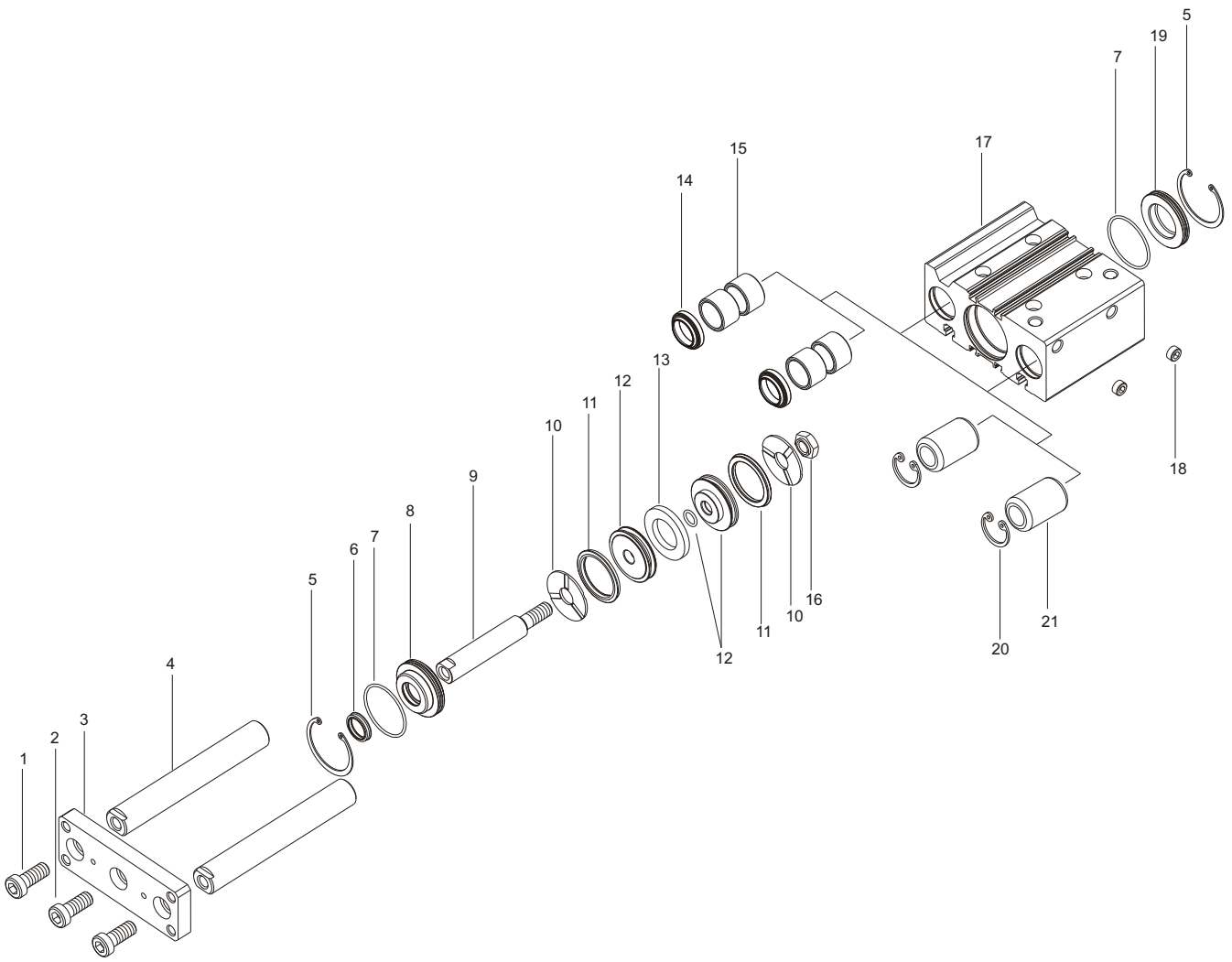
Self lubricating bronze bushes, useful for absorbing lateral loads and forces, especially as a stopper.

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.



5

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. _

20	B = Control unit with Bronze bush C = Control unit with Bearing bush
25	
32	
40	
50	
63	

Magnetic sensors: see page 6.7

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										
	20	25	30	40	50	75	100	125	150	175	200
Ø20	●		●	●	●	●	●	●	●	●	●
Ø25	●		●	●	●	●	●	●	●	●	●
Ø32		●			●	●	●	●	●	●	●
Ø40		●			●	●	●	●	●	●	●
Ø50		●			●	●	●	●	●	●	●
Ø63		●			●	●	●	●	●	●	●

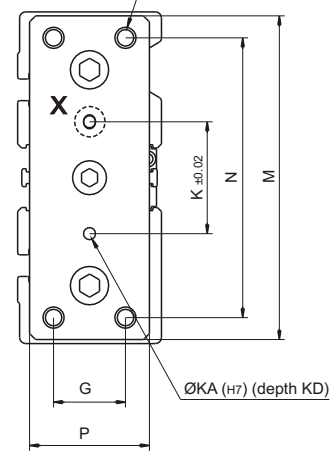
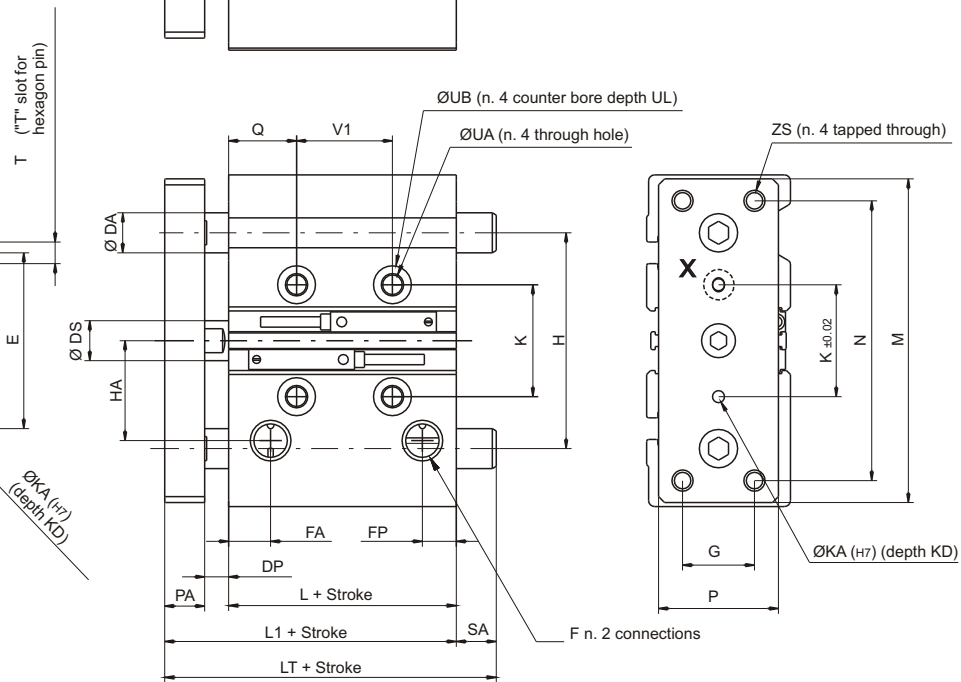
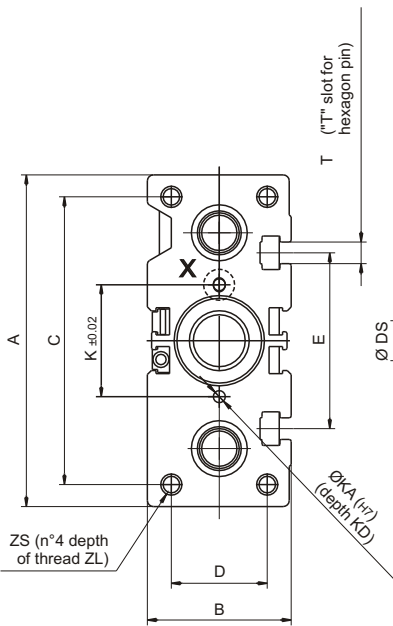
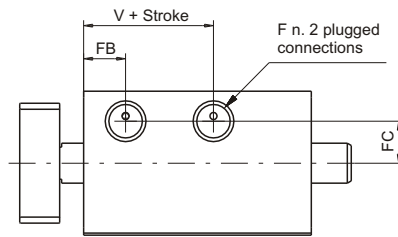
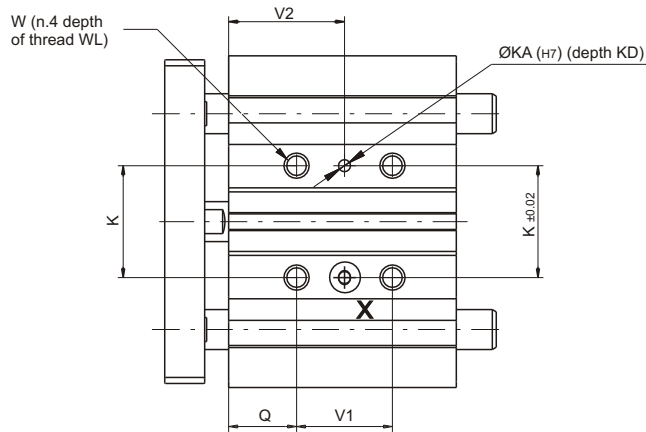
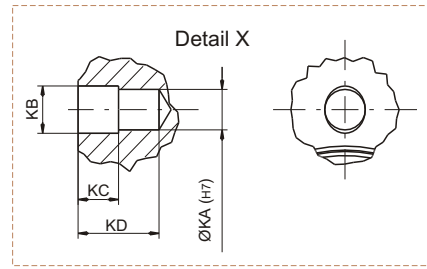
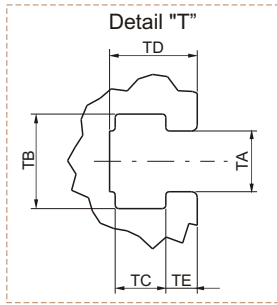
Intermediate strokes are obtaining using spacers with defined length (5,10,15,20 mm).

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.

Dimension of "T" slot





			Bore	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63								
Table of dimensions																	
			A	83	93	112	120	148	162								
			B	36	42	48	54	64	78								
			C	72	82	98	106	130	142								
			D	24	30	34	40	46	58								
Control unit with bronze bushes			DA	12	16	20	20	25	25								
				10	14	16	16	20	20								
			DP	5,5	5,5	9,5	10	13	13								
			DS	10	12	16	16	20	20								
			E	44	50	63	72	92	110								
			F	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4								
			FA	11	12	13	13	13	14								
			FB	11	12	13	13	13	14								
			FC	10,5	13,5	15	18	21,5	28								
			FP	9	10,5	9,5	11	11	12,5								
			G	18	26	30	30	40	50								
			H	54	64	78	86	110	124								
			HA	25	28,5	34	38	47	55								
			K	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	38	38,5	38,5	44	44	49								
			L1	53,5	54	60	66	72	77								
Control unit with bronze bushes		stroke ≤ 50															
										50<	stroke ≤ 200						
Control unit with bearing bushes		stroke ≤ 30															
										30<	stroke ≤ 100						
										100<	stroke ≤ 200						
											stroke ≤ 50						
	50<	stroke ≤ 100															
	100<	stroke ≤ 200															
			LT	53,5	54	97	97	106,5	106,5								
				84,5	85	102	102	118	118								
				63	69,5												
				80	85,5												
				104	104,5												
						81	81	93	93								
						98	98	114	114								
						118	118	134	134								
			M	81	91	110	118	146	158								
			N	70	78	96	104	130	130								
			PA	10	10	12	12	15	15								
			P	30	38	44	44	60	70								
			Q	17,5	17,5	21,5	22	24	24								
						37	31	34,5	29,5								
Control unit with bronze bushes		stroke ≤ 50															
										50<	stroke ≤ 200						
Control unit with bearing bushes		stroke ≤ 30															
										30<	stroke ≤ 100						
										100<	stroke ≤ 200						
											stroke ≤ 50						
	50<	stroke ≤ 100															
	100<	stroke ≤ 200															
			SA	31	31	42	36	46	41								
				9,5	15,5												
				26,5	31,5												
				50,5	50,5												
						21	15	21	16								
						38	32	42	37								
						58	52	62	37								
			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	5,6	5,6	6,6	6,6	8,6	8,6								
			UB	9,5	9,5	11	11	14	14								
			UL	5,5	5,5	7,5	7,5	9	9								
			V	13	13	7,5	13	9	14								
				24	24												
				44	44												
			V1	120	120												
						24	24	24	28								
						48	48	48	52								
						124	124	124	128								
				29,5	29,5												
				39,5	39,5												
			V2	77,5	77,5												
						33,5	34	36	38								
						45,5	46	48	50								
						83,5	84	86	88								
			W	M6x1	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5								
			WL	12	12	16	16	20	20								
			Z	M5x0,8	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5								
			ZL	13	15	20	20	22	22								
			ZS	M5x0,8	M6x1	M8x1,25	M8x1,25	M10x1,5	M10x1,5								



Stroke	Bore											
	Ø20		Ø25		Ø32		Ø40		Ø50		Ø63	
	Control unit with bronze bushes											Weights (gr)
20	670	950										
25					1690		1950		3360		4180	
30	750	1050										
40	830	1160										
50	910	1270			2070		2370		4000		4940	
75	1170	1650			2470		2830		4730		5780	
100	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											
20	330	520										
25					1070		1140		2150		2500	
30	350	560										
40	380	600										
50	400	640			1230		1300		2400		2750	
75	520	840			1420		1490		2750		3090	
100	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											
20	700	980										
25					1540		1790		3110		3930	
30	770	1070										
40	890	1250										
50	970	1340			1850		2150		3660		4590	
75	1140	1570			2300		2640		4410		5460	
100	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											
20	310	490										
25					820		890		1770		2110	
30	330	520										
40	370	580										
50	390	610			940		1010		1950		2300	
75	440	690			1110		1180		2240		2590	
100	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	63	47	98	76	161	121	251	211	393	330	623	561
3 bar	94	71	147	113	241	181	377	317	589	495	935	841
4 bar	126	94	196	151	322	241	503	422	785	660	1247	1121
5 bar	157	118	246	189	402	302	629	528	982	825	1559	1402
6 bar	188	142	295	227	482	362	754	634	1178	989	1870	1682
7 bar	220	165	344	265	563	422	880	739	1374	1154	2182	1962
8 bar	251	189	393	302	643	482	1006	845	1570	1319	2494	2242
9 bar	283	212	442	340	724	543	1131	950	1767	1484	2805	2523
10 bar	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
	314	236	491	378	804	603	1257	1056	1963	1649	3117	2803
	Maximum permissible Momentum											
J	0,1		0,2		0,3		0,5		0,9		1,55	

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

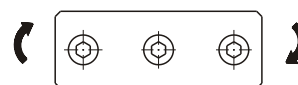
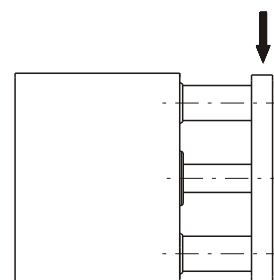
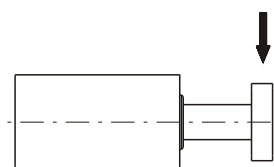
m = Total moving mass: weight of driven object added to weight of cylinder moving parts (kg).

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

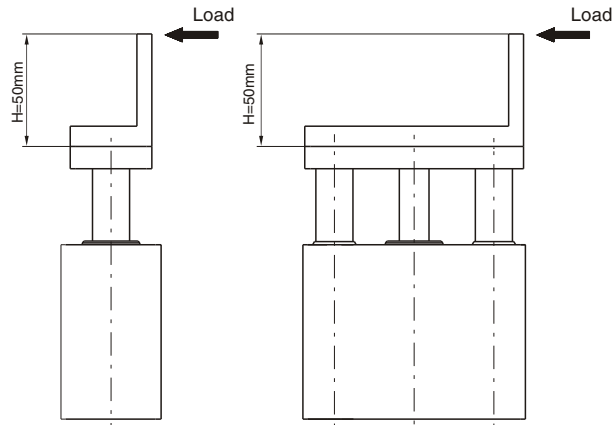
Permissible lateral load (applied on overall plate)

Version	stroke	Bore					
		Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
Control unit with bronze bushes	20	49	69				
	25			203	203	296	296
	30	43	60				
	40	38	54				
	50	35	49	164	164	245	245
	75	87	116	182	182	273	273
	100	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	20	58	69			
25				191	190	208	206
30		48	68				
40		101	132				
50		90	118	157	157	173	171
75		70	93	164	163	223	221
100		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	
Version	stroke	Recommended torque moments (Nm)					
Control unit with bronze bushes	20	1,1	1,8				
	25			6,4	7,0	13,0	14,7
	30	0,9	1,6				
	40	0,8	1,4				
	50	0,8	1,3	5,1	5,7	10,8	12,1
	75	1,9	3,0	5,7	6,3	12,0	13,5
	100	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	20	1,3	2,1				
	25			6,0	6,6	9,2	10,2
	30	1,0	1,8				
	40	2,2	3,4				
	50	1,9	3,0	4,9	5,4	7,6	8,5
	75	1,5	2,4	5,1	5,6	9,8	11,0
	100	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)

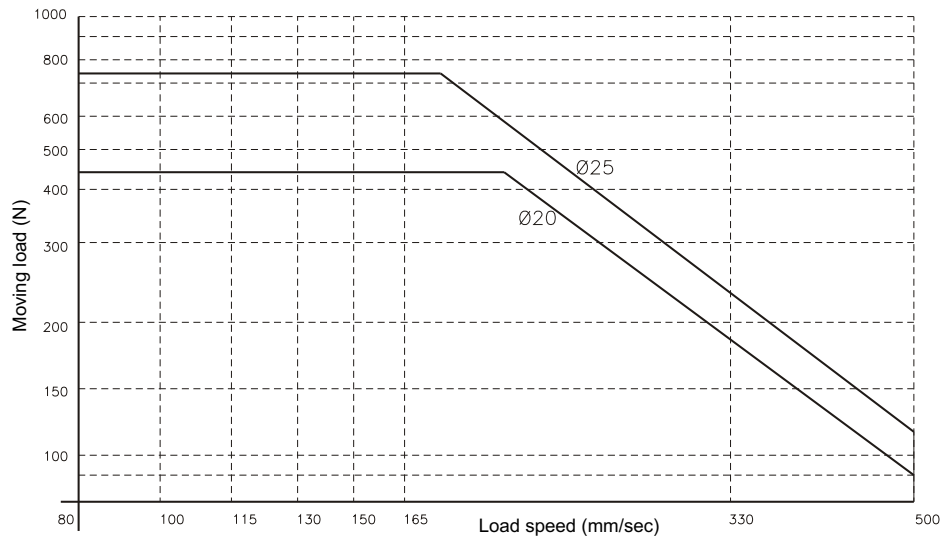


Stopper device applications

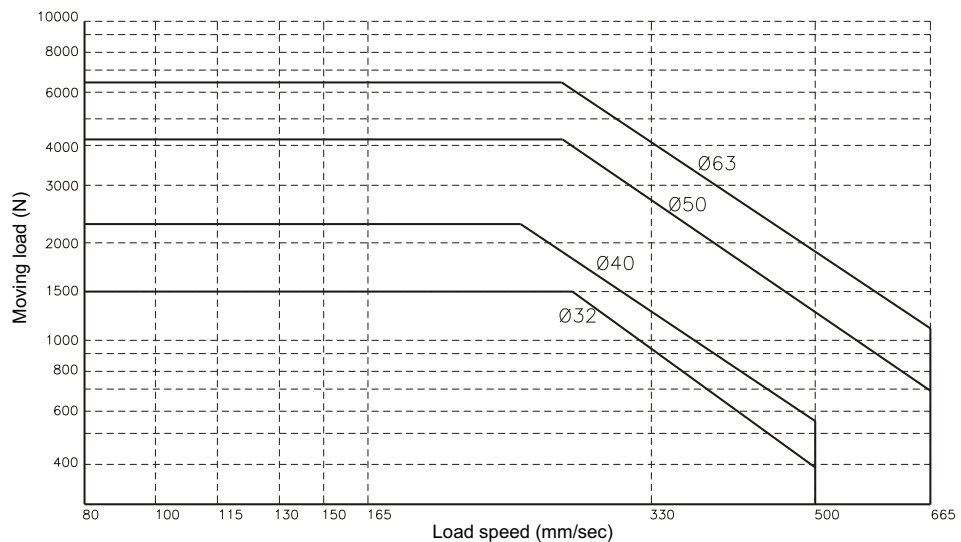


ATTENTION: if $H > 50$ mm use larger bore

Control unit with bronze bushes

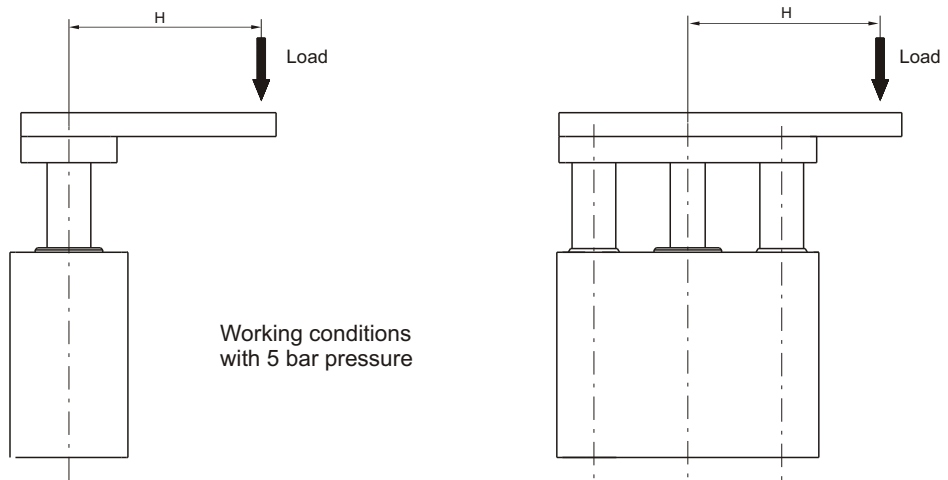


Ø20 - Ø25
ATTENTION: use with stroke ≤ 30 mm

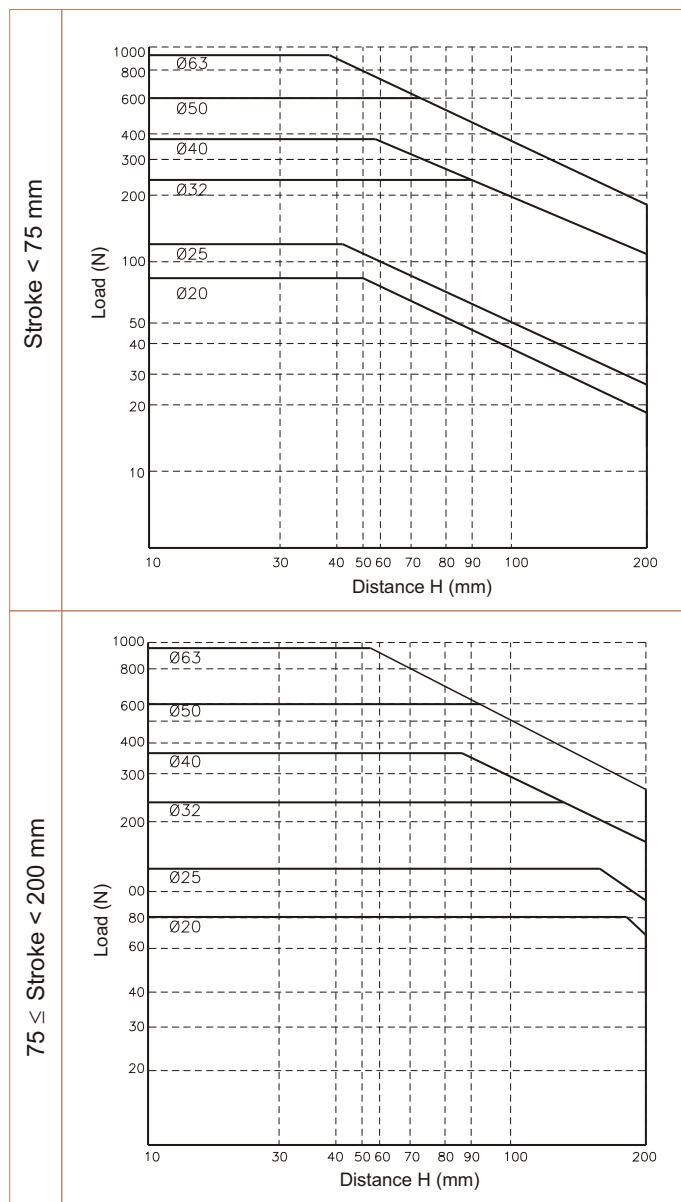


Ø32 - Ø40 - Ø50 - Ø63
ATTENTION: use with stroke ≤ 50 mm

Handling applications



Control unit with bronze bushes



Handling applications

Control unit with bearing bushes

