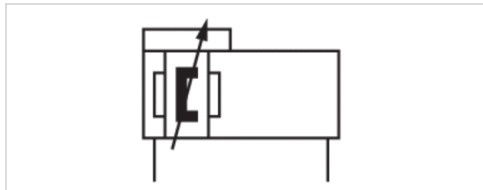


Rodless cylinders, Series RTC-BV

- Ø 16-80 mm
- Ports M7 G 1/8 G 1/4 G 3/8
- double-acting
- with magnetic piston
- integrated guide
- Basic Version
- Cushioning pneumatically adjustable



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m³
Pressure for determining piston forces	6.3 bar

Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Stroke 100	R480143252	R480141454	-	-	-	-	-
200	R480143255	R480141455	R480141462	-	-	-	-
300	R480143256	R480141456	R480141463	-	-	-	-
400	R480143257	R480141457	R480141464	R480141472	R480148854	R480147730	R480147731
500	R480143258	R480141458	R480141465	R480141473	R480146166	R480147713	R480147714
600	R480143259	R480141459	R480141466	R480141474	R480149081	R480146014	R480146210
700	R480143260	R480141460	R480141468	R480141475	R480145947	R480145948	R480155522
800	-	R480141461	R480141469	R480141476	R480148600	R480147223	R480147699
900	-	-	R480141470	R480141477	R480147023	R480146204	R480156948
1000	-	-	R480141471	R480141478	R480149199	R480147036	R480147700

Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Piston force	127 N	309 N	507 N	792 N	1237 N	1964 N	3146 N
Cushioning length	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J	15 J	25 J	40 J

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Speed max.	5,5 m/s	6,5 m/s	4 m/s	5 m/s	3 m/s	3 m/s	3 m/s
Weight 0 mm stroke	0,45 kg	0,82 kg	1,39 kg	2,09 kg	3,37 kg	5,65 kg	9,71 kg
+10 mm stroke	0,014 kg	0,023 kg	0,031 kg	0,044 kg	0,065 kg	0,098 kg	0,157 kg
Stroke max.	6600 mm	7000 mm	9900 mm	9900 mm	9900 mm	5800 mm	4800 mm

Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .

The delivered product is lubricated for lifetime.

thread depth: 9 mm for piston Ø 16–40 mm, 12 mm for piston Ø 50–63 mm

thread depth: 6 mm for piston Ø 16–25 mm, 10 mm for piston Ø 32–50 mm, 15 mm for piston Ø 63–80 mm

Further dimensions, referring to more than just the long slide, can be found in the section on the basic version of the RTC-BV.

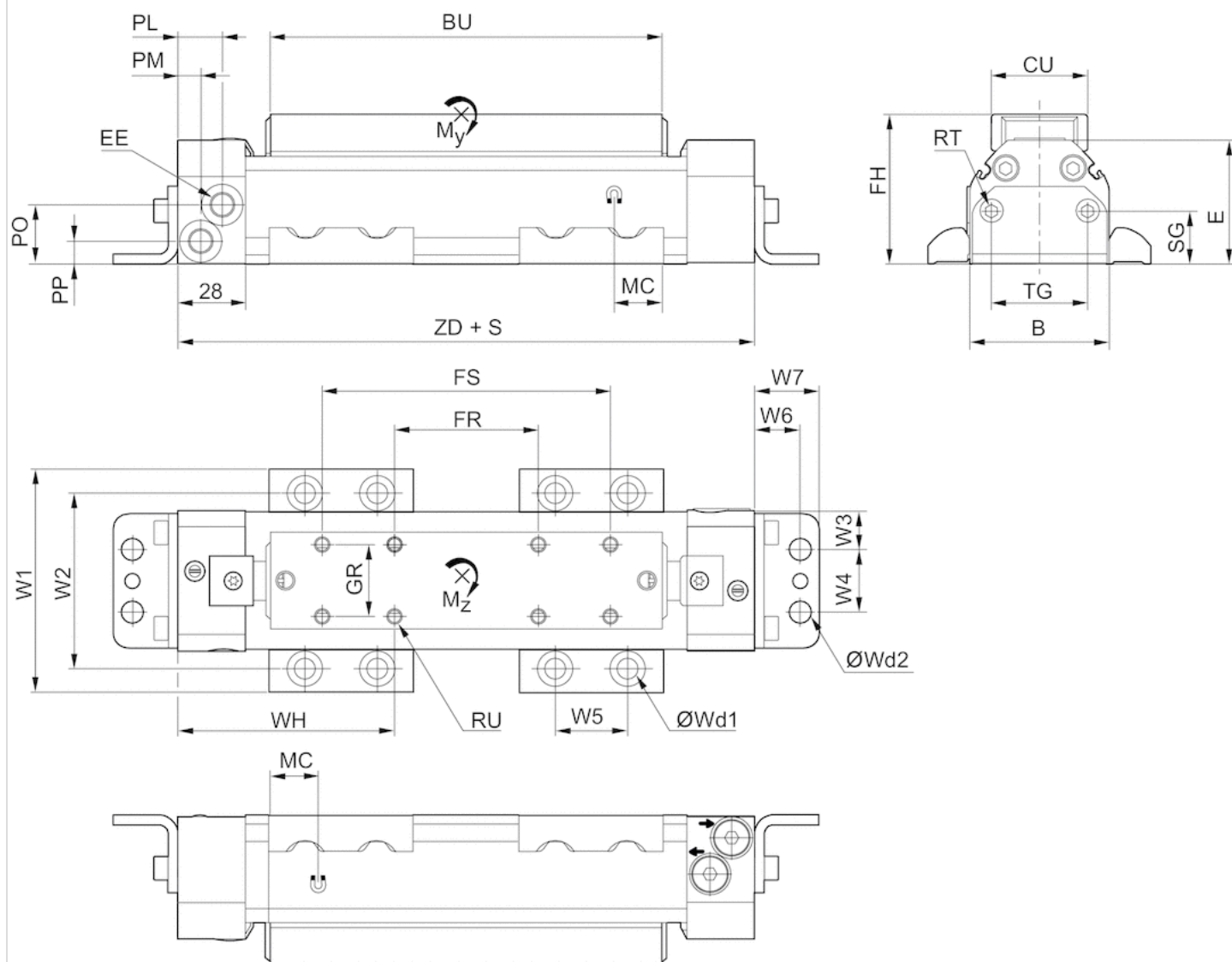
No second row for 1/4-20 UNC connections

Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized

Dimensions

Dimensions in mm



S = stroke

Dimensions

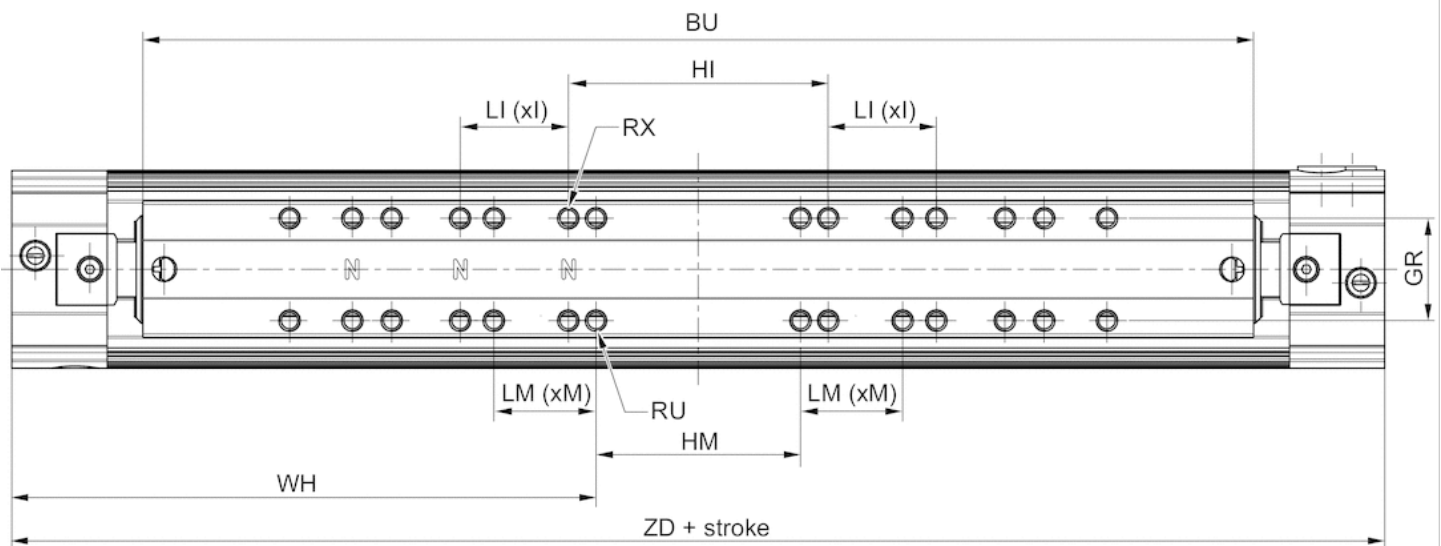
Piston Ø	B	BU	CU	E	EE	FH	FR	FS	GR	MC	PL	PM	PO	PP	RT 1)	RU 2)	SG	TG
16 mm	34	118	26	36	M7	41	60	100	20	12	21.5	9	13.1	7.5	M5	M4	17.3	19
25 mm	44	147	26	45.5	G 1/8	50.6	40	100	20	15	20	8	21.5	9.3	M5	M4	17.3	19
32 mm	58	163	40	51.5	G 1/8	62.1	60	120	30	20	18.5	9.5	24.5	9.5	M6	M6	22	40
40 mm	70	182	40	60.5	G 1/4	71.1	60	120	30	17	18	10	31.5	11	M6	M6	22	40
50 mm	92	205	40	67.5	G 1/4	78.3	60	140	30	23	16	16	35.5	12.5	M8	M6	22	40
63 mm	112	233	55	82.5	G 3/8	93.3	100	180	40	25	14	14	45.5	14.5	M8	M8	30	80

Piston Ø	B	BU	CU	E	EE	FH	FR	FS	GR	MC	PL	PM	PO	PP	RT 1)	RU 2)	SG	TG
80 mm	140	269	55	103.5	G 3/8	114.2	100	180	40	27	14	14	59.5	16.5	M8	M8	30	80

Piston Ø	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	WH	ZD	Moving mass kg
16 mm	63	45.5	8	18	30	13.5	19.8	M6	M6	63.5	187	0.08
25 mm	73	55.5	13	18	30	13.5	19.8	M6	M6	87.5	215	0.16
32 mm	93	72.5	16	26	30	19	26.8	M8	M8	90	240	0.32
40 mm	105	84.5	22	26	30	19	26.8	M8	M8	101.5	263	0.49
50 mm	140	114.5	11	70	40	22	32.7	M12	M12	117.1	294.2	0.73
63 mm	160	134.5	31	50	40	22	32.7	M12	M12	116.5	333.2	1.31
80 mm	188	162.5	45	50	40	22	32.7	M12	M12	130.5	361	2.14

Dimensions

Dimensions, For long slide



S = stroke

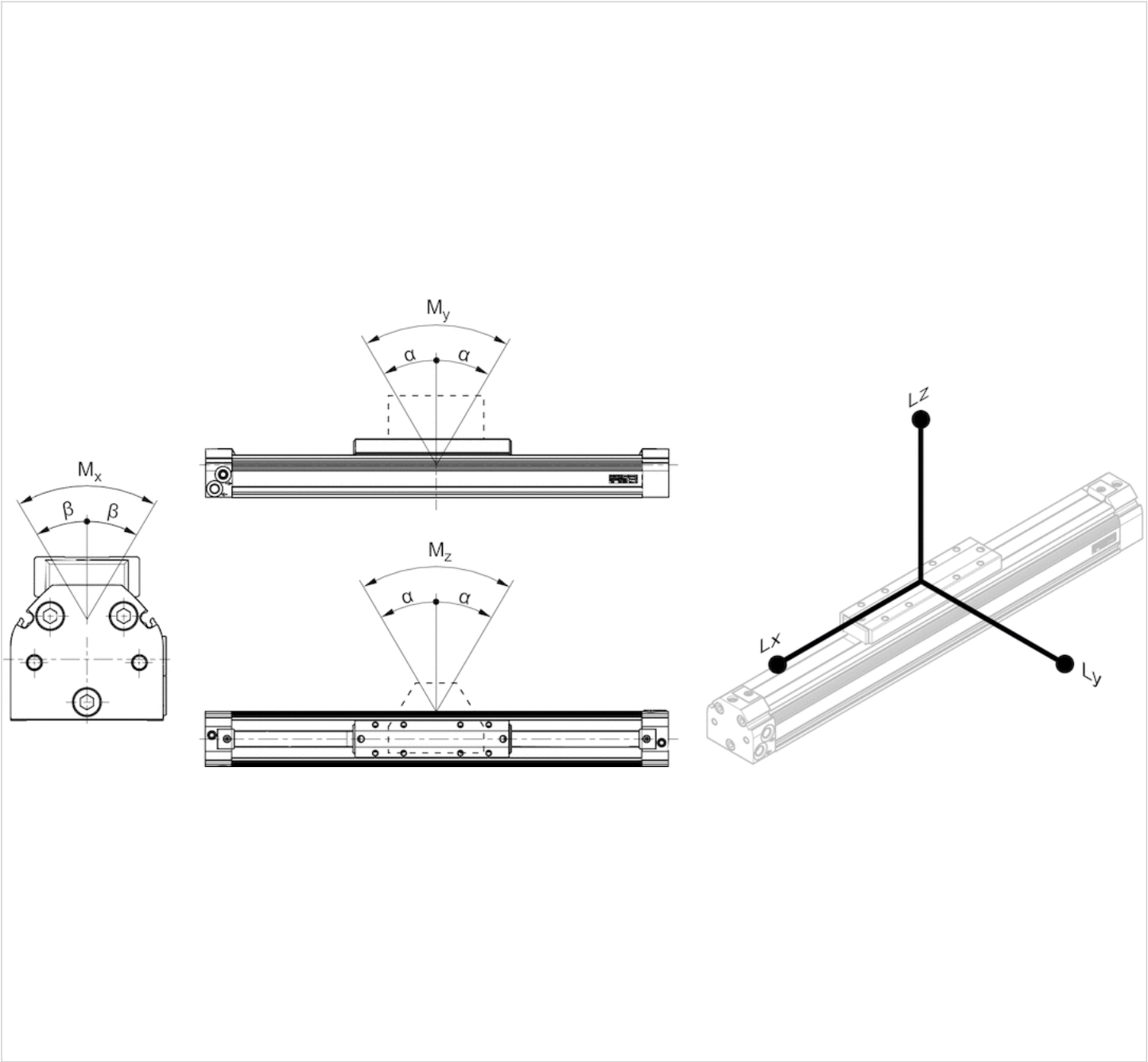
Dimensions

Piston Ø	BU	GR	HI	LI	I	HM	LM	M	RU	RX	MCF	WH	ZD
16 mm	236	20	50.8	38.1	2	60	20	3	M4	8-36 UNF	258	122.5	305
25 mm	294	20	76.2	31.75	2	40	30	3	M4	8-36 UNF	313	161	362
32 mm	326	30	76.2	31.75	2	60	30	3	M6	1/4-20 UNC	344	171.5	403
40 mm	364	30	76.2	31.75	3	60	30	4	M6	1/4-20 UNC	387	192.5	445
50 mm	410	30	76.2	31.75	3*	60	40	3	M6	1/4-20 UNC	431	219.6	499.2
63 mm	466	40	152.4	38.1	2	100	40	3	M8	5/16-18 UNC	492	233	566.2

Piston Ø	BU	GR	HI	LI	I	HM	LM	M	RU	RX	MCF	WH	ZD
80 mm	538	40	152.4	38.1	3	100	40	4	M8	5/16-18 UNC	557	265	630

Dimensions

Max. play and recommended max. lever arm length



L = lever arm
M = Torques

Max. play and recommended max. lever arm length

Piston Ø	α	β	Lx	Ly	Lz
16 mm	0,5°	2,0° ±1°	162	94	162
25 mm	0,5°	2,0° ±1°	217	123	217

Piston Ø	α	β	Lx	Ly	Lz
32 mm	0,6°	1,5° $\pm$ 0,5°	240	139	240
40 mm	0,4°	1,0° $\pm$ 0,3°	275	158	275
50 mm	0,4°	1,0° $\pm$ 0,3°	317	181	317
63 mm	0,3°	1,0° $\pm$ 0,3°	368	209	368
80 mm	0,3°	1,0° $\pm$ 0,3°	435	245	435

For long slide

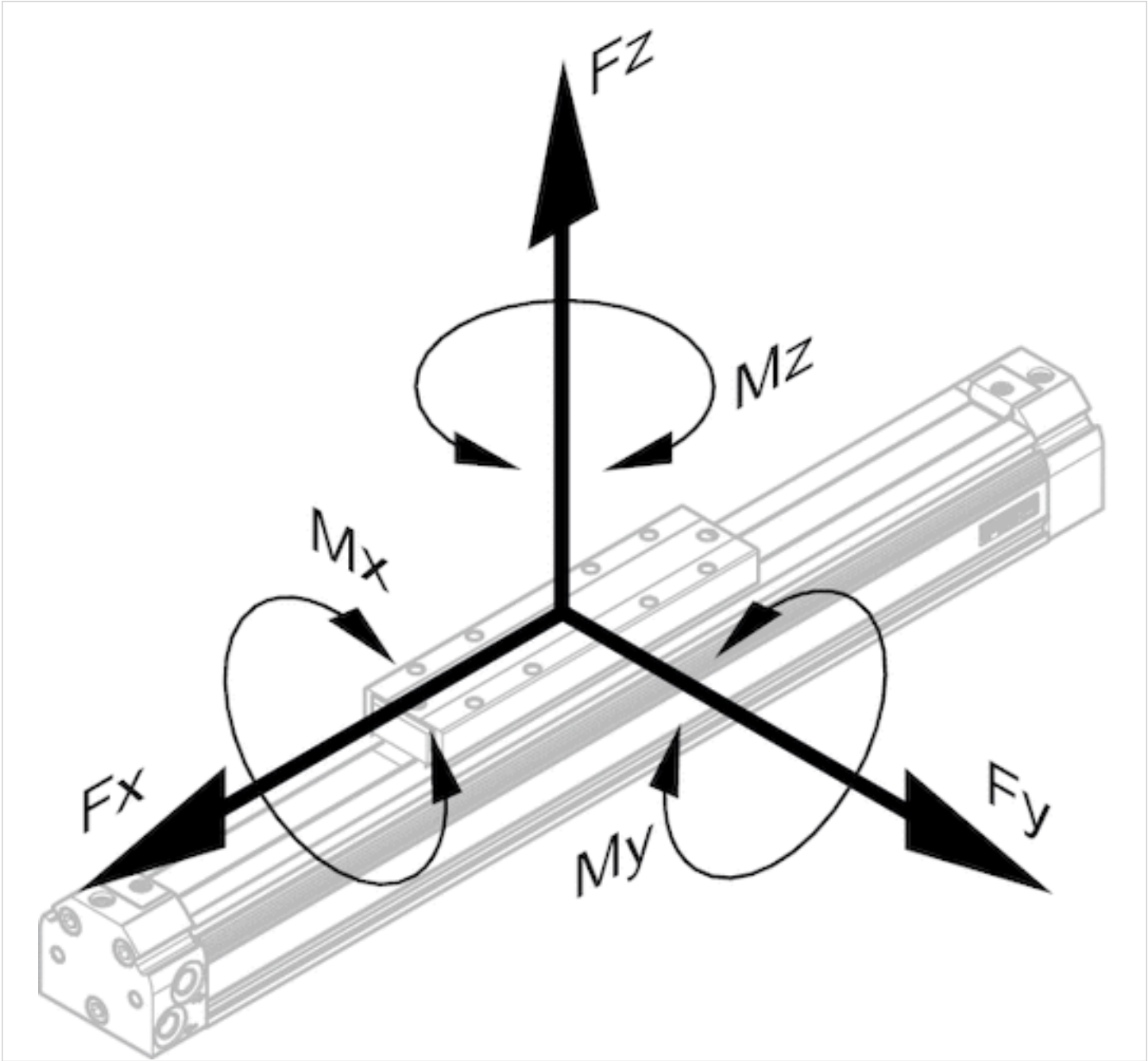
Piston Ø	α	β	Lx	Ly	Lz
16 mm	0,25°	2,0° $\pm$ 1°	324	188	324
25 mm	0,25°	2,0° $\pm$ 1°	434	246	434
32 mm	0,3°	1,5° $\pm$ 0,5°	480	278	480
40 mm	0,2°	1,0° $\pm$ 0,3°	550	316	550
50 mm	0,2°	1,0° $\pm$ 0,3°	634	362	634
63 mm	0,15°	1,0° $\pm$ 0,3°	736	418	736
80 mm	0,15°	1,0° $\pm$ 0,3°	870	490	870

Dimensions

Permissible forces F_x, F_y, F_z and torques M_x, M_y, M_z

$$\frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + \frac{M_z}{M_{z_{\max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



dynamic

Piston Ø	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	0.4	10	2
25 mm	1	24	3
32 mm	4	42	12
40 mm	6	75	15
50 mm	9	128	20
63 mm	15	195	24
80 mm	20	300	28

static

Piston Ø	F _x [N]	F _y [N]	F _z [N]	M _x [Nm]	M _y [Nm]	M _z [Nm]
16 mm	800	150	1100	2	25	8
25 mm	1800	210	3800	6	50	12
32 mm	2200	550	6600	18	80	43
40 mm	3500	650	8000	28	140	55
50 mm	5000	750	9000	35	230	70
63 mm	6800	850	13000	45	340	90
80 mm	9500	1000	13000	55	500	110

dynamic, for long slide

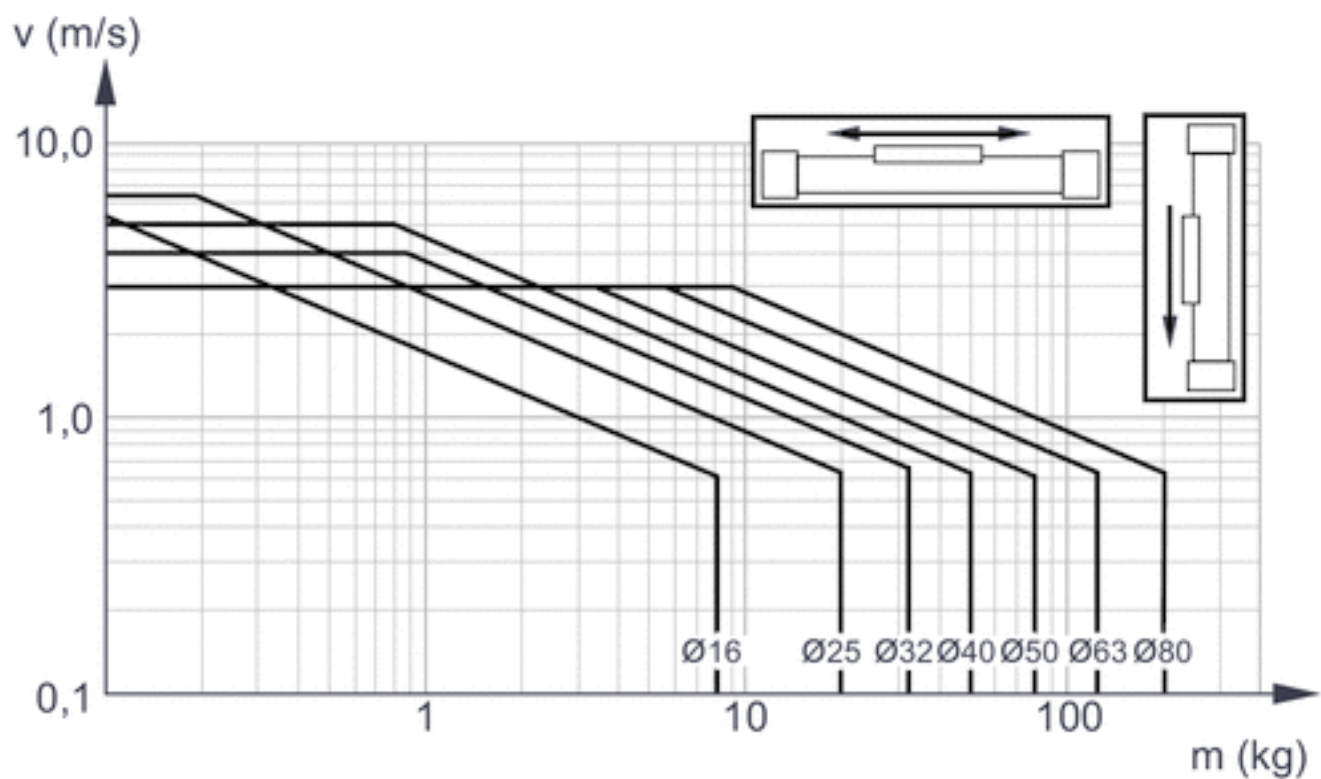
Piston Ø	M _x [Nm]	M _y [Nm]	M _z [Nm]
16 mm	0.4	20	4
25 mm	1	48	6
32 mm	4	84	24
40 mm	6	150	30
50 mm	9	256	40
63 mm	15	390	48
80 mm	20	600	56

static, for long slide

Piston Ø	F _x [N]	F _y [N]	F _z [N]	M _x [Nm]	M _y [Nm]	M _z [Nm]
16 mm	800	150	1100	4	50	16
25 mm	1800	210	3800	12	100	24
32 mm	2200	550	6600	36	160	86
40 mm	3500	650	8000	56	280	110
50 mm	5000	750	9000	70	460	140
63 mm	6800	850	13000	90	680	180
80 mm	9500	1000	13000	110	1000	220

Diagrams

Limit diagram for pneumatic cushioning with horizontal mounting

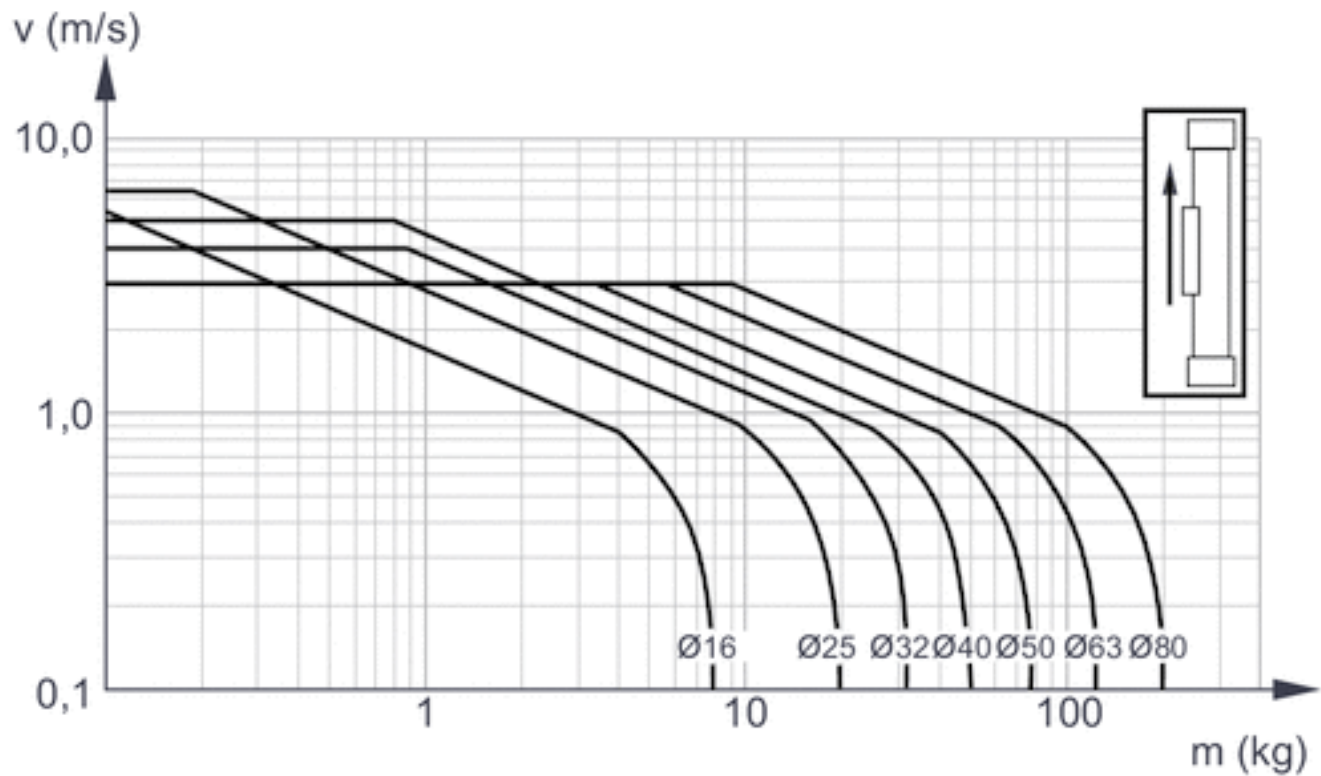


v = Piston velocity [m/s]

m = Cushionable mass [kg]

The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

Limit diagram for pneumatic cushioning with vertical mounting

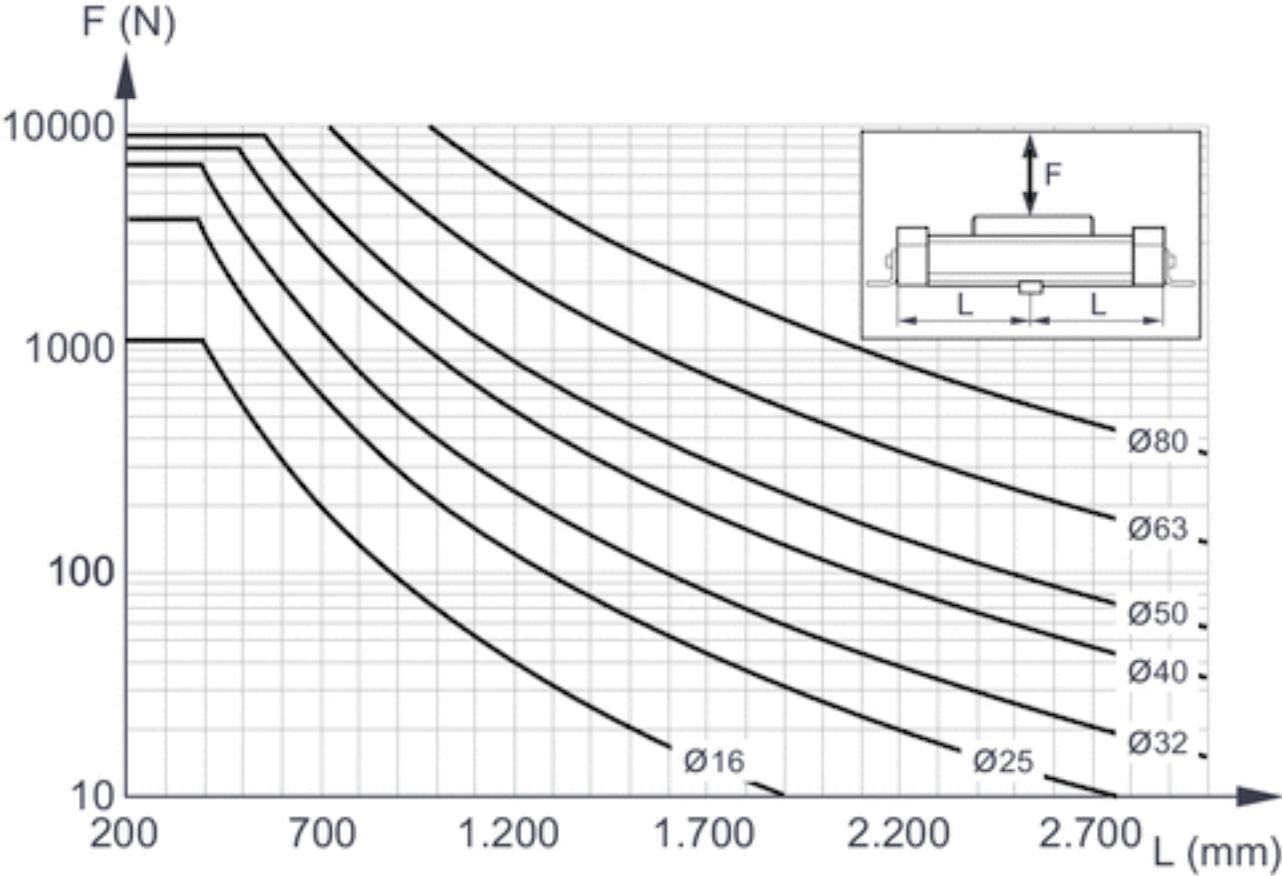


v = Piston velocity [m/s]

m = Cushionable mass [kg]

The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

Support span



Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

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