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Mini slide, Series MSC-MG-HM

- Ø 8 mm
- double-acting
- with magnetic piston
- Cushioning hydraulic
- Easy2Combine capable
- with double piston
- With integrated “Medium Performance” ball rail system
- Scope of delivery: incl. centering rings

Working pressure min./max.	See table
Ambient temperature min./max.	0 ... 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
Repetitive precision	0,02 mm
Weight	See table

Technical data

Piston Ø	8 mm	12 mm	16 mm	20 mm	25 mm
Stroke 20	R480640164	-	-	-	-
30	R480640165	R480640171	R480640178	R480640185	R480640192
40	R480640166	R480640172	R480640179	R480640186	R480640193
50	R480640167	R480640173	R480640180	R480640187	R480640194
80	R480640168	R480640174	R480640181	R480640188	R480640195
100	-	R480640175	R480640182	R480640189	R480640196

Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .
The oil content of compressed air must remain constant during the life cycle.
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

Repetitive precision after 100 consecutive strokes: 0,02 mm

Technical information

Material	
Housing	Aluminum, anodized
Piston rod	Stainless steel

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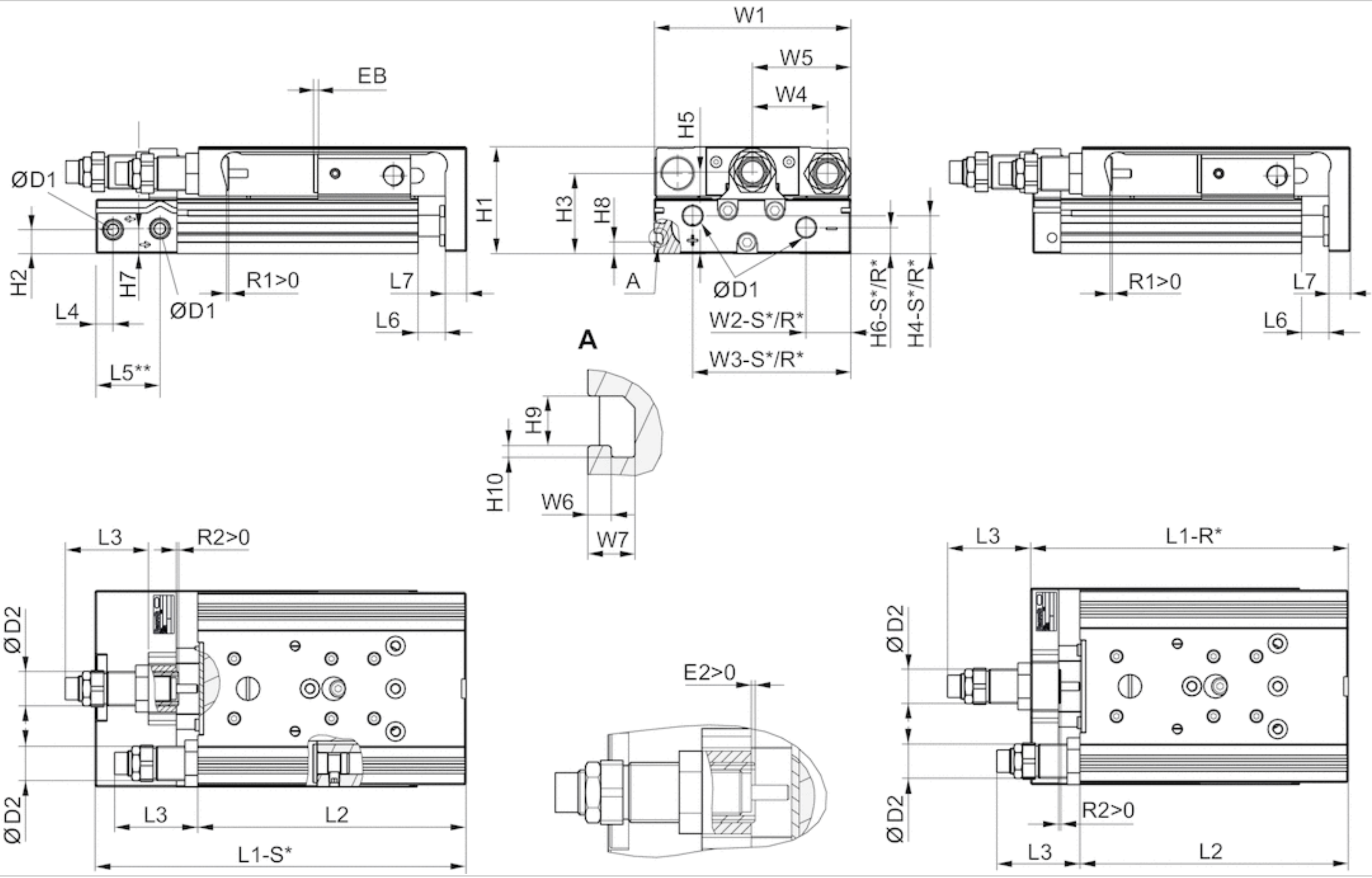
Material	
Front plate	Aluminum, anodized
Seal	Polyurethane
Ball rail table	Aluminum, anodized
Guide rail	Steel, hardened
Centering rings	Stainless steel

Retracting piston force, theoretical	48 N	107 N	218 N	297 N
Extracting piston force, theoretical	63 N	143 N	253 N	396 N
Speed max.	0,8 m/s	0,8 m/s	0,8 m/s	0,8 m/s
Cushioning length	5 mm	7 mm	7 mm	10 mm
Cushioning energy	0,6 J	1 J	1,2 J	3,1 J

Piston Ø 2x	25 mm
Working pressure min./max.	1 ... 10 bar
Retracting piston force, theoretical	520 N
Extracting piston force, theoretical	619 N
Speed max.	0,8 m/s
Cushioning length	14 mm
Cushioning energy	5,8 J

Dimensions

Dimensions



R*: base with air connections only at the back
S*: base with air connections at the back and sides

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** Ø 8 has a different reference plane.

Dimensions

Piston Ø	Ø D1	Ø D2	H1	H2	H3	H4-R	H4-S	H5	H6-R	H6-S	H7	H8	H9	H10	L3 1)	L4	L5 2)
8 mm	M5	M10x1	28	9.6	20.5	-	7.5	19.5	-	5.5	18	-	-	-	31	9.8	–
8 mm	M5	M10x1	28	9.6	20.5	-	7.5	19.5	-	5.5	18	-	-	-	31	9.8	–
12 mm	M5	M12x1	34	5.7	25	11.2	11.2	24.5	5.7	5.7	8.3	-	-	-	46.7	7.2	22.5
16 mm	M5	M12x1	40	7.2	29	12.2	12.2	31	7.7	7.7	11.2	-	-	-	44.9	6.5	17.7
20 mm	G 1/8	M16x1,5	50	11.2	37.5	17.3	17.3	38.2	11.7	12.2	11.7	5.5	4.2	1	48.9	8	30
25 mm	G 1/8	M18x1,5	60	14.2	44	15.5	22.9	46.5	13.2	21.7	16.2	6.9	5.2	1.5	67.7	9	31

Piston Ø	L6	L7	R2	W1	W2-R	W2-S	W3-R	W3-S	W4	W5	W6	W7
8 mm	1.9	6	1.9	50.2	–	19.3	–	30.5	18	W1/2	–	–
8 mm	1.9	6	1.9	50.2	–	19.3	–	30.5	18	W1/2	–	–
12 mm	2	8	2	66	28.8	28.8	53	53	24.5	W1/2	–	–
16 mm	2	10	2	76	31	31	60.5	60.5	30	W1/2	–	–
20 mm	2.1	10	2.1	92	10	21	74	74	35	W1/2	2	4
25 mm	2.1	12	2.1	112	11	14	92	92	44	W1/2	2.5	4.8

S = stroke

1) max.

2) Ø 8 has a different reference plane.

R2 = stroke setting range for return stroke

Stroke-dependent dimensions

Piston Ø	S=10EB	S=20EB	S=30EB	S=40EB	S=50EB	S=80EB	S=100EB	S=10L1-R	S=20L1-R	S=30L1-R
8 mm	32	22	12	2	2	2	–	–	–	–
8 mm	32	22	12	2	2	2	–	–	–	–
12 mm	32	22	12	2	2	2	2	109.3	109.3	109.3
16 mm	22	12	2	2	2	2	2	101.8	101.8	101.8
20 mm	22	12	2	2	2	2	2	112.9	112.9	112.9
25 mm	32	22	12	2	2	2	2	136.1	136.1	136.1

Piston Ø	S=40L1-R	S=50L1-R	S=80L1-R	S=100L1-R	S=10L1-S	S=20L1-S	S=30L1-S	S=40L1-S
8 mm	–	–	–	–	100.7	100.7	100.7	100.7
8 mm	–	–	–	–	100.7	100.7	100.7	100.7
12 mm	109.3	124.3	170.3	190.3	126.2	126.2	126.2	126.2
16 mm	111.8	126.8	172.8	192.8	112.7	112.7	112.7	122.7
20 mm	122.9	137.9	182.9	202.9	137.8	137.8	137.8	147.8
25 mm	136.1	149.1	195.1	215.1	159.8	159.8	159.8	159.8

Piston Ø	S=50L1-S	S=80L1-S	S=100L1-S	S=10L2	S=20L2	S=30L2	S=40L2	S=50L2	S=80L2	S=100L2
8 mm	120.7	170.7	–	93.5	93.5	93.5	93.5	113.5	163.5	–
8 mm	120.7	170.7	–	93.5	93.5	93.5	93.5	113.5	163.5	–
12 mm	141.2	187.2	207.2	98.8	98.8	98.8	98.8	113.8	159.8	179.8
16 mm	137.7	183.7	203.7	90.4	90.4	90.4	100.4	115.4	161.4	181.4
20 mm	162.8	207.8	227.8	100.5	100.5	100.5	110.5	125.5	170.5	190.5
25 mm	172.8	218.8	238.8	121.5	121.5	121.5	121.5	134.5	180.5	200.5

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Piston Ø	S=10R1 1)	S=20R1 1)	S=30R1 1)	S=40R1 1)	S=50R1 1)	S=80R1 1)	S=100R1 1)
8 mm	4.2	4.2	4.2	4.2	4.2	4.2	–
8 mm	4.2	4.2	4.2	4.2	4.2	4.2	–
12 mm	5.7	5.7	5.7	5.7	5.7	5.7	5.7
16 mm	8.7	8.7	8.7	8.7	8.7	8.7	8.7
20 mm	12.4	12.4	12.4	12.4	12.4	12.4	12.4
25 mm	11.5	11.5	11.5	11.5	10.5	11.5	11.5

S = stroke

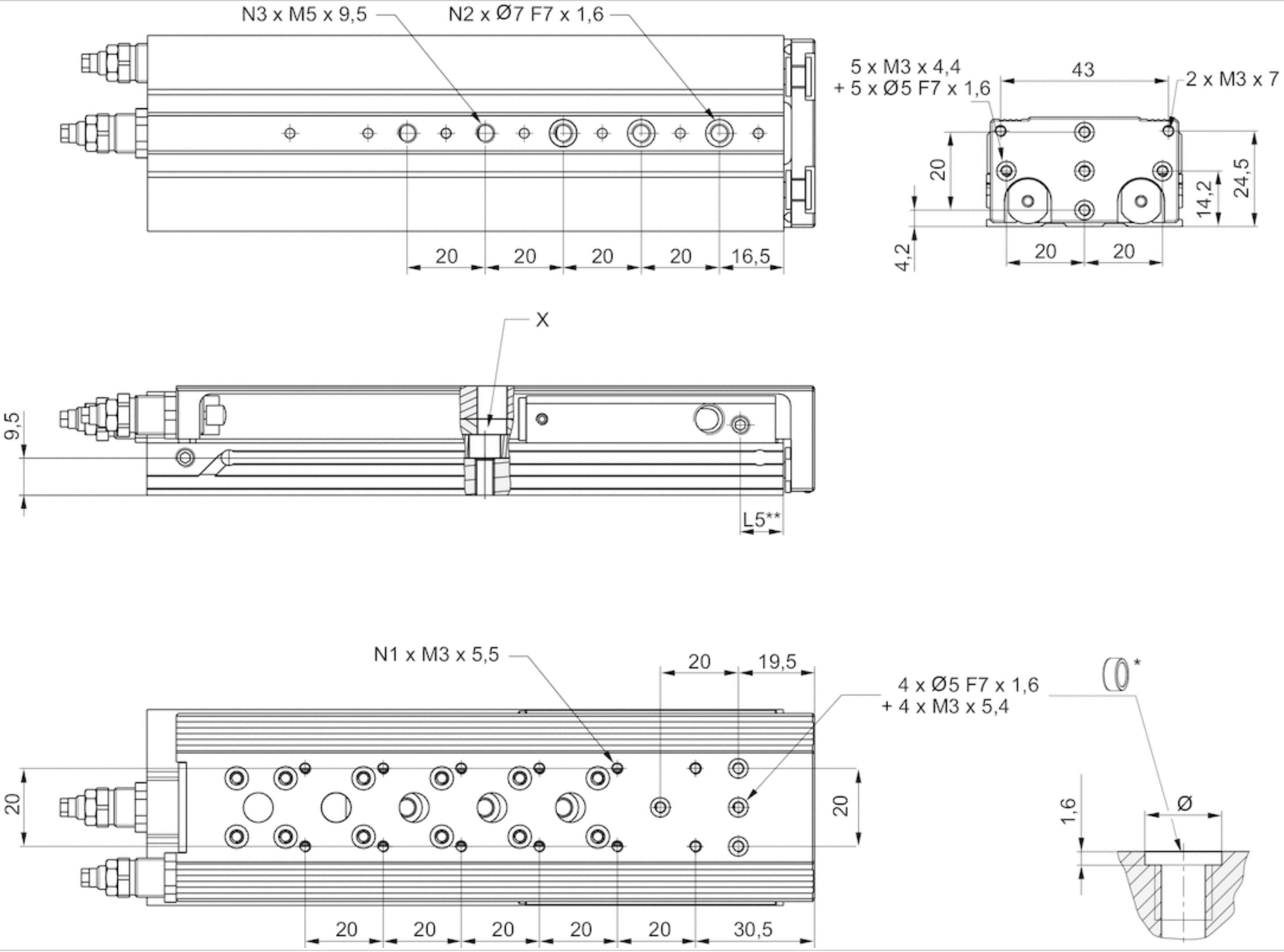
R1 = stroke setting range for forward stroke

R2 = stroke setting range for return stroke

1) max.

Dimensions

MSC-08



* = centering rings

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Dimensions

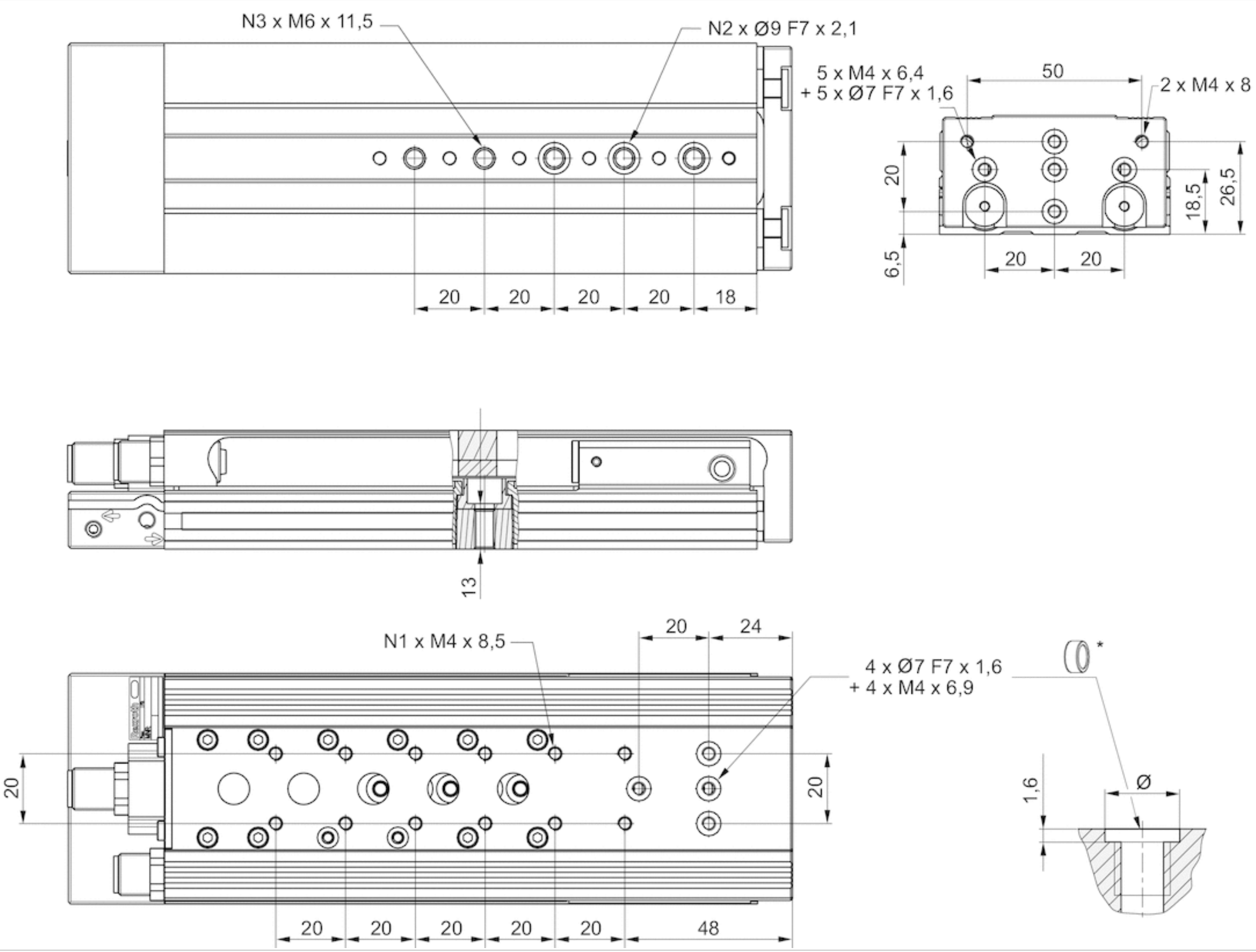
Piston Ø	S	N1	N2	N3	L5	X
8 mm	20	4	2	2	11	-
8 mm	30	4	2	2	11	-
8 mm	40	6	2	2	11	-
8 mm	50	8	3	3	11	1)
8 mm	80	12	3	5	11	-

S = stroke

1) Access to the through hole only after removal of the stroke limitation bolts

Dimensions

MSC-12



* = centering rings

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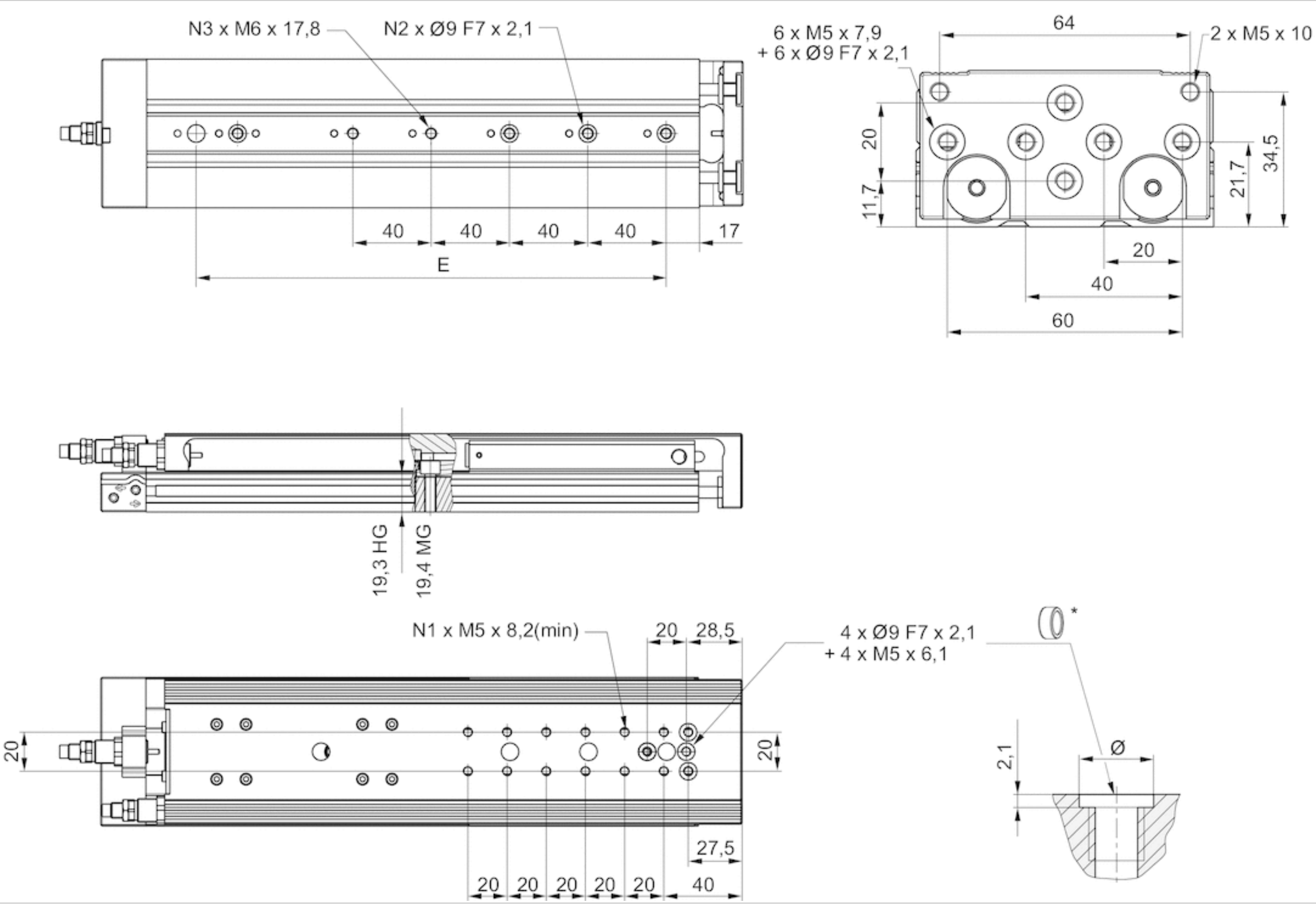
Dimensions

Piston Ø	S	N1	N2	N3
12 mm	30	2	2	2
12 mm	40	2	2	2
12 mm	50	4	3	3
12 mm	80	6	3	5
12 mm	100	8	3	5

S = stroke

Dimensions

MSC-16



* = centering rings

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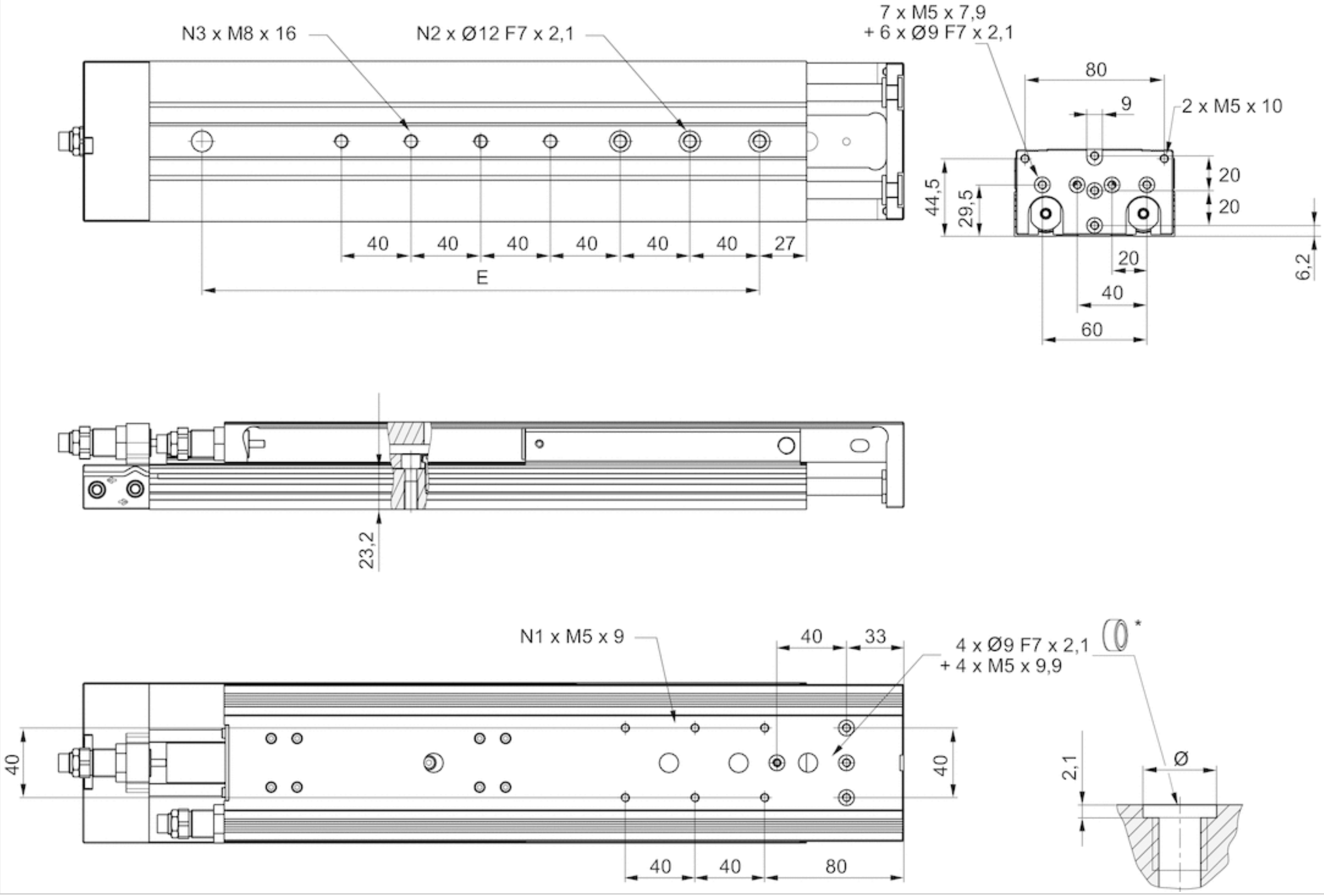
MSC-20



* = centering rings

Dimensions

Piston Ø	S	N1	N2	N3
8 mm	-	-	-	-
8 mm	-	-	-	-
12 mm	-	-	-	-
16 mm	-	-	-	-
20 mm	30	2	2	2
20 mm	40	2	2	2
20 mm	50	2	2	2
20 mm	80	4	3	3
20 mm	100	4	3	3
25 mm	-	-	-	-

S = stroke

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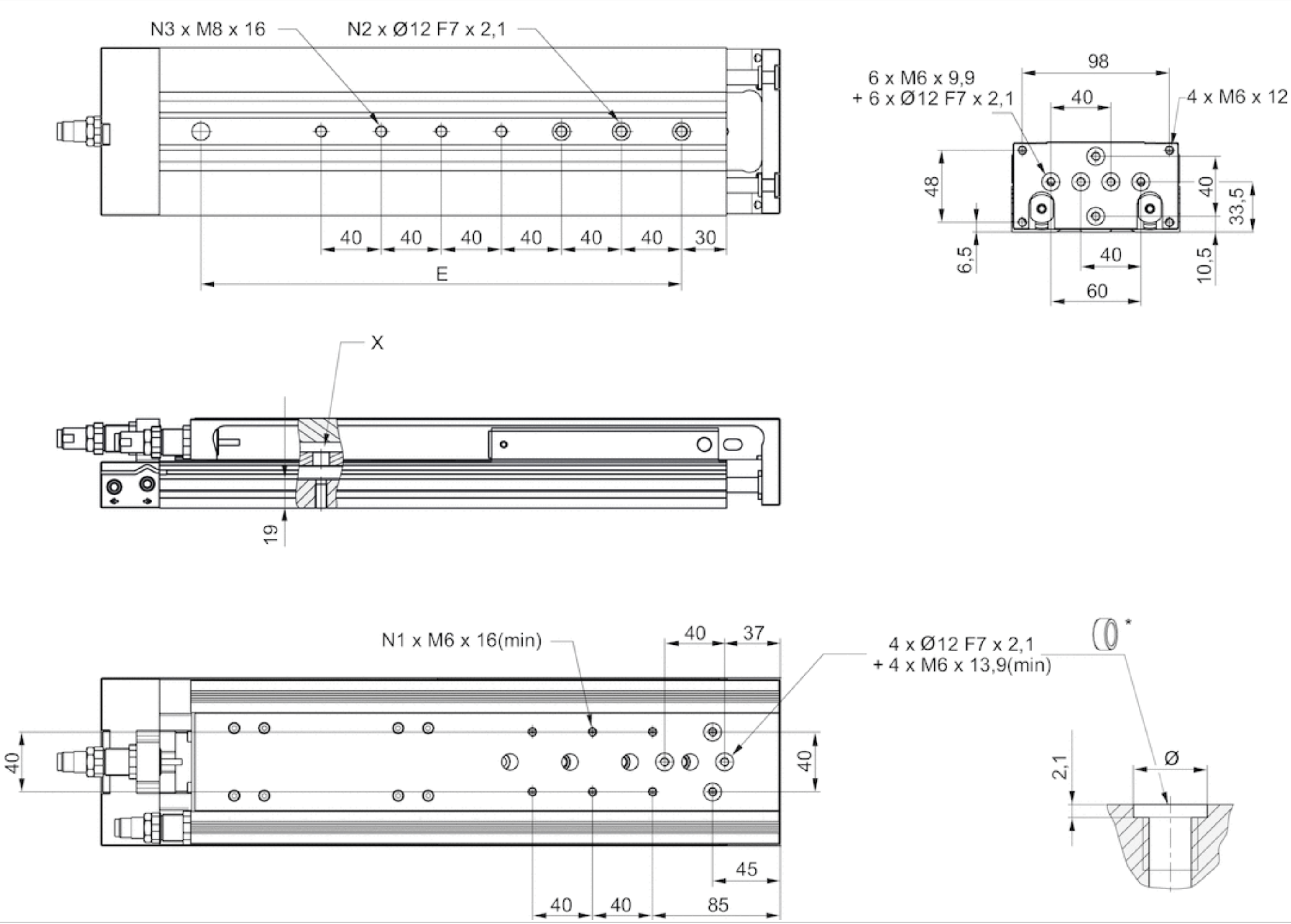
Dimensions

MSC-25



* = centering rings

Dimensions

Piston Ø	S	N1	N2	N3	X
25 mm	30	2	2	2	1)
25 mm	40	2	2	2	-
25 mm	50	4	2	2	-
25 mm	80	4	3	3	-
25 mm	100	4	3	3	-

S = stroke

1) Access to the through hole only after removal of the stroke limitation bolts

Weight of moving parts [kg]

Piston Ø	S=10	S=20	S=30	S=40	S=50	S=80	S=100	S=125	S=150	S=200
8 mm	0.165	0.165	0.165	0.165	0.195	0.265	–	–	–	–

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Piston Ø	S=10	S=20	S=30	S=40	S=50	S=80	S=100	S=125	S=150	S=200
8 mm	0.165	0.165	0.165	0.165	0.195	0.265	–	–	–	–
12 mm	0.28	0.28	0.28	0.28	0.315	0.403	0.46	–	–	–
16 mm	0.375	0.375	0.375	0.4	0.45	0.615	0.65	0.725	0.765	–
20 mm	0.655	0.655	0.655	0.69	0.765	0.985	1.035	1.2	1.29	1.54
25 mm	1.1	1.1	1.1	1.1	1.225	1.45	1.625	1.885	2.085	2.445

S = stroke

Weight [kg]

Piston Ø	S	Weight kg
8 mm	20	0,36 kg
8 mm	30	0,35 kg
8 mm	40	0,34 kg
8 mm	50	0,41 kg
8 mm	80	0,56 kg
12 mm	30	0,6 kg
12 mm	40	0,59 kg
12 mm	50	0,67 kg
12 mm	80	0,92 kg
12 mm	100	0,99 kg
16 mm	30	0,76 kg
16 mm	40	0,82 kg
16 mm	50	1,29 kg
16 mm	80	1,37 kg
16 mm	100	1,94 kg
20 mm	30	1,38 kg
20 mm	40	1,45 kg
20 mm	50	1,61 kg
20 mm	80	2,1 kg
20 mm	100	2,23 kg
25 mm	30	2,42 kg
25 mm	40	2,38 kg
25 mm	50	2,64 kg
25 mm	80	3,29 kg
25 mm	100	3,56 kg

S = stroke

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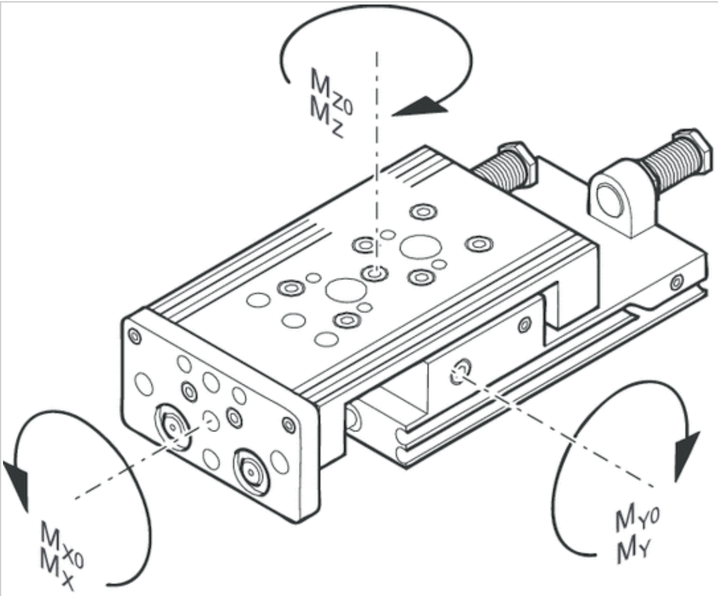
Dimensions

Load capacity



M = max. permissible torque

Dimensions

Piston Ø	S	a [mm] 1)	d [mm] 2)	Mx0 3)	My0 3)	Mz0 3)	Mx 4)	My 4)	Mz 4)
8 mm	20	69.5	12	5.8	5.9	5.9	1.1	1.7	1.7
8 mm	30	69.5	12	5.8	5.9	5.9	1.1	1.7	1.7
8 mm	40	69.5	12	5.8	5.9	5.9	1.1	1.7	1.7
8 mm	50	83	12	5.8	5.9	5.9	1.3	1.7	1.7
8 mm	80	121	12	8	14.6	14.6	1.3	3.7	3.7
12 mm	30	77	15	13.8	6.45	6.45	3.5	1.6	1.6
12 mm	40	77	15	13.8	6.45	6.45	3.5	1.6	1.6
12 mm	50	81	15	13.8	6.45	6.45	3.5	1.6	1.6
12 mm	80	117	15	17.3	15.6	15.6	5.2	3.5	3.5
12 mm	100	137	15	17.3	15.6	15.6	5.2	3.5	3.5
16 mm	30	65	15	31.6	11.95	11.95	6.5	3.2	3.2
16 mm	40	75	15	31.6	11.95	11.95	6.5	3.2	3.2
16 mm	50	86	15	31.6	11.95	11.95	7	3.2	3.2
16 mm	80	123	15	45	27.3	27.3	8.7	6.3	6.3
16 mm	100	144	15	45	27.3	27.3	8.7	6.3	6.3
20 mm	30	75	20	31.6	11.95	11.95	9.6	4	4
20 mm	40	75	20	31.6	11.95	11.95	9.6	4	4
20 mm	50	92	20	31.6	11.95	11.95	10	4	4
20 mm	80	125	20	45	27.3	27.3	11.7	8	8
20 mm	100	143	20	45	27.3	27.3	11.7	8	8
25 mm	30	85	24	87	24.5	24.5	22.9	6.6	6.6
25 mm	40	85	24	87	24.5	24.5	22.9	6.6	6.6
25 mm	50	102	24	87	24.5	24.5	15.3	6.6	6.6
25 mm	80	134	24	110	62.5	62.5	18.8	14.5	14.6

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Piston Ø	S	a [mm] 1)	d [mm] 2)	Mx0 3)	My0 3)	Mz0 3)	Mx 4)	My 4)	Mz 4)
25 mm	100	152	24	110	62.5	62.5	18.8	14.5	14.6

S = stroke

1) correction factor (a)

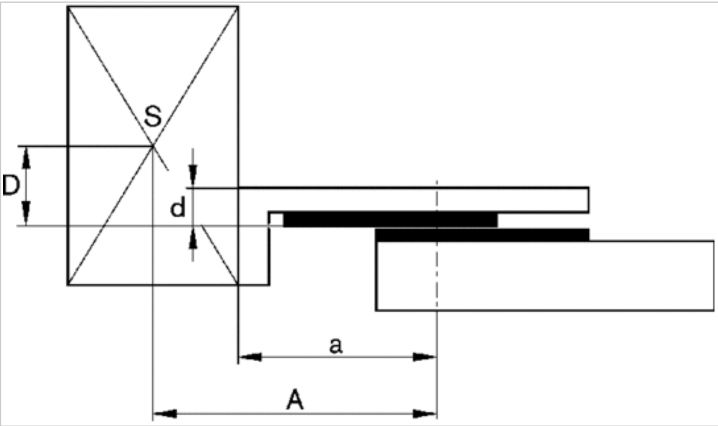
2) Correction factor (b)

3) Static moment M [Nm]

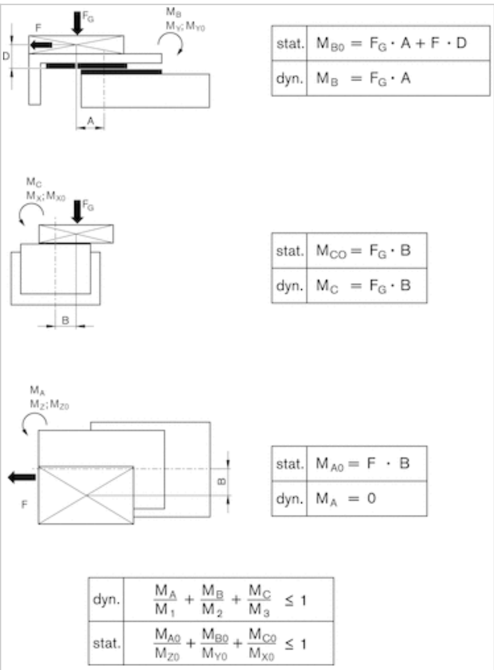
4) Dynamic moment M [Nm]

Dimensions

correction factor (a d)



horizontal



F = m • aFG = m • ga = 1250•V²/H

F = deceleration force [N]F= force due to weight [N]m = load mass [kg]a = deceleration [m/s²]g = gravitational acceleration 9,81 [m/s²]V = velocity [m/s]H = stroke length of shock absorber [mm]

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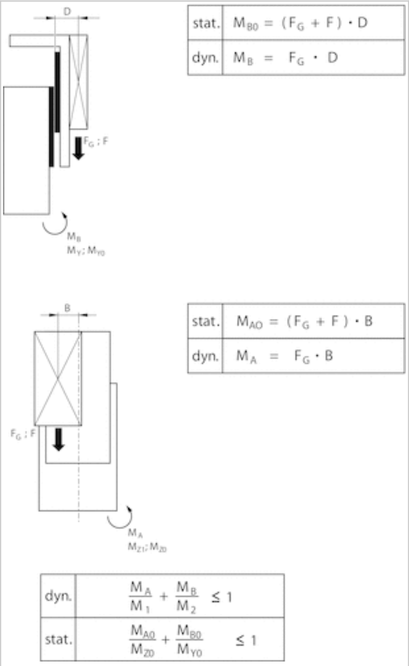
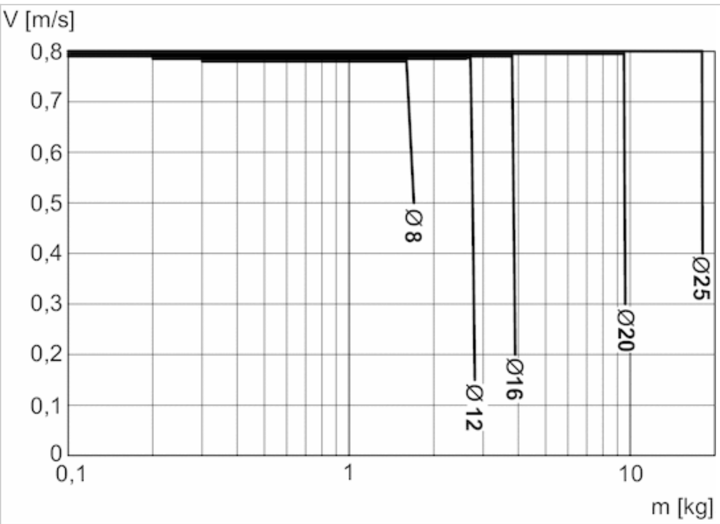
vertical



F = m • aFG = m • ga = 1250•V²/H
F = deceleration force [N]F= force due to weight [N]m = load mass [kg]a = deceleration [m/s²]g = gravitational acceleration 9,81 [m/s²]V = velocity [m/s]H = stroke length of shock absorber [mm]

Diagrams

Minimum and maximum moving mass



V = velocity [m/s]
m = mass

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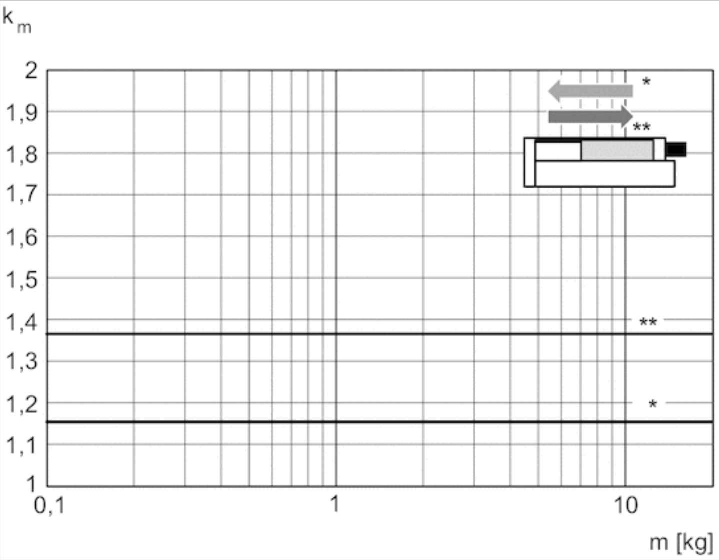
Correction factor for required speed: retracting and extending horizontal



* retracting
** extracting
V = s/1000 • t • km
V = velocity [m/s]
S = stroke

Max. additional moving mass horizontal

S = stroke [mm]
2 x S = 1 cycle
V = velocity [m/s]
m = mass

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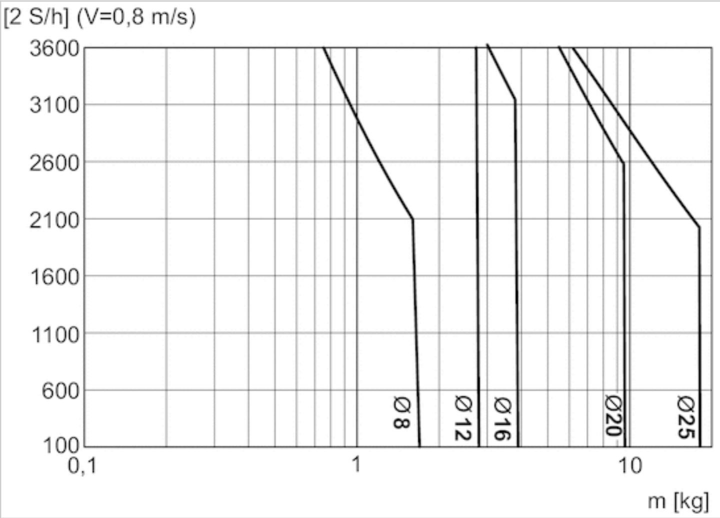
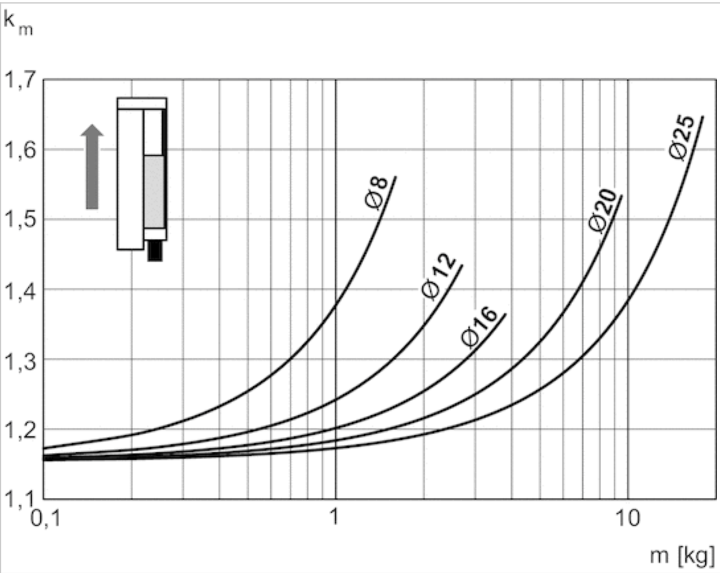
Max. additional moving mass vertical



S = stroke [mm]
2 x S = 1 cycle
V = velocity [m/s]
m = mass

Correction factor for required speed: extending vertical upwards



V = s/1000 • t • km
V = velocity [m/s]
S = stroke [mm]
t = time [s] for one stroke
m = mass

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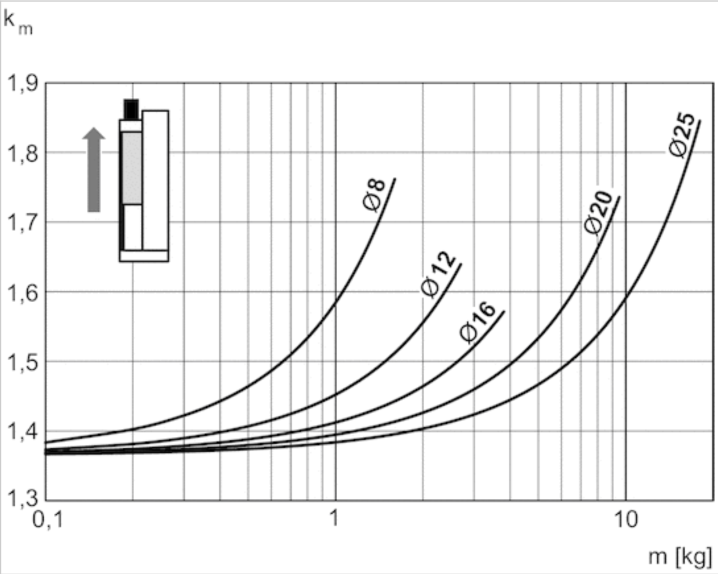
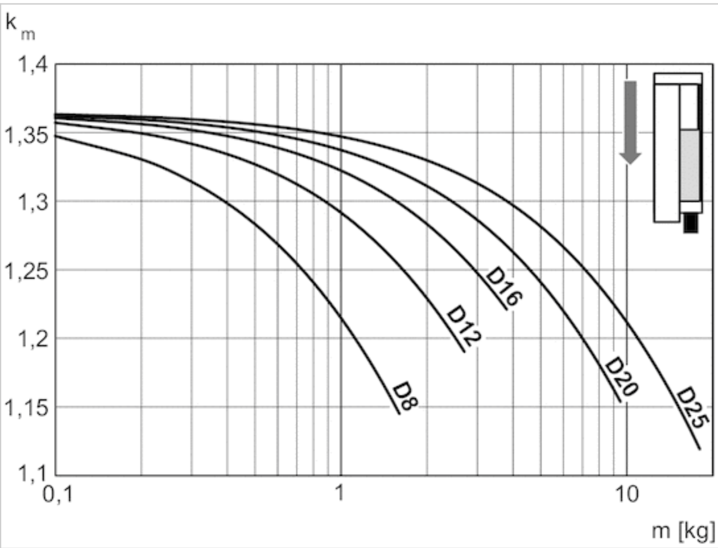
Correction factor for required speed: retracting vertical upwards



V = s/1000 • t • km
V = velocity [m/s]
S = stroke [mm]
t = time [s] for one stroke
m = mass

Correction factor for required speed: retracting vertical downwards



V = s/1000 • t • km
V = velocity [m/s]
S = stroke [mm]
t = time [s] for one stroke
m = mass

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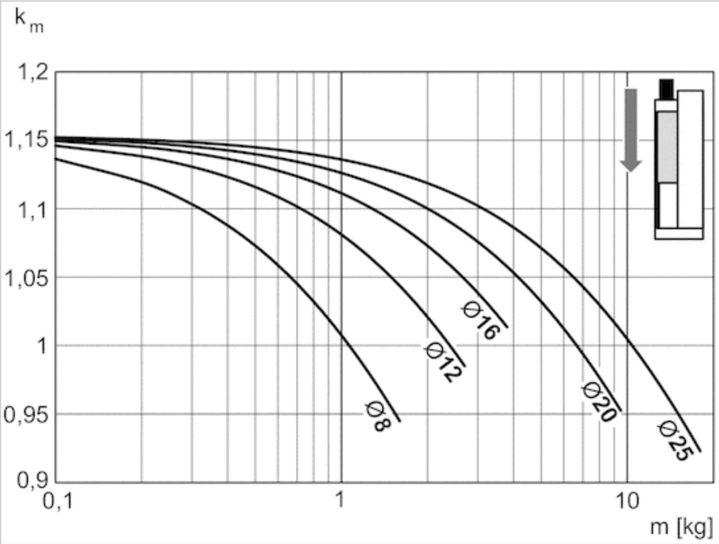
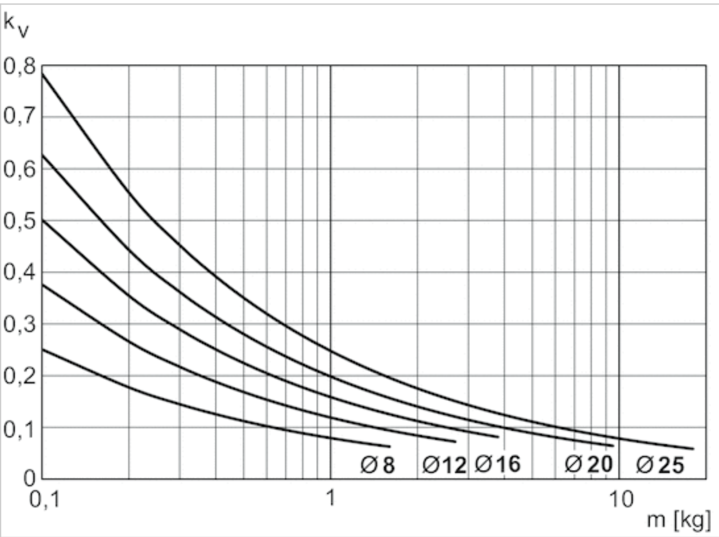
Correction factor for required speed: extending vertical downwards



V = s/1000 • t • km
V = velocity [m/s]
S = stroke [mm]
t = time [s] for one stroke
m = mass

Extracting speed max.



V = √s • kv
V = velocity [m/s]
S = stroke [mm]
m = mass