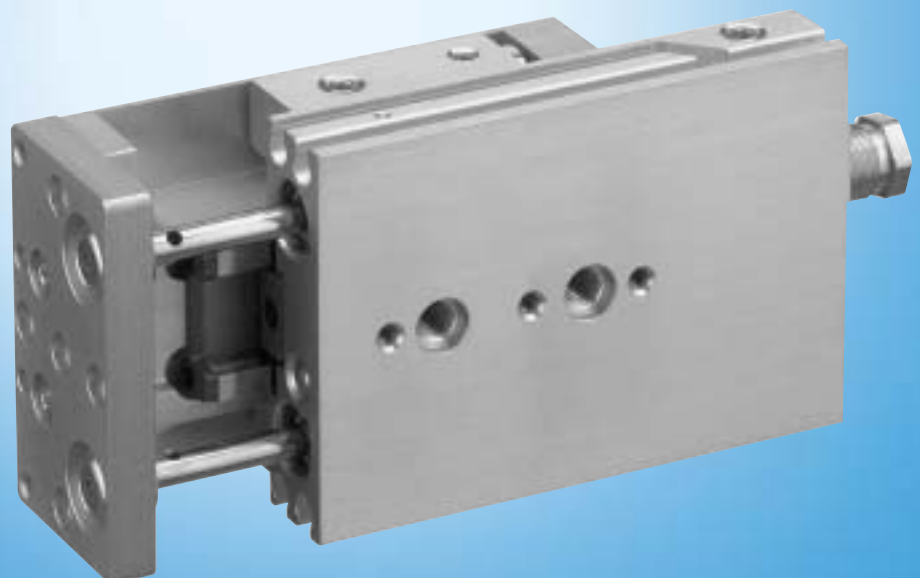


Mini slides compact Series MSC



Technical Data



Products

★ MSC

See page 3



Accessories

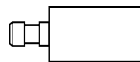
★ Cylinder switch

See page 15



★ Stroke limit bolts

See page 15



00117221

★ Locating ring

See page 15



Mini slides compact, MSC series

MSC

Rexroth
Bosch Group



Technical Data

Operating mode	Double-acting with two drive cylinders	
Operating temperature range	0 °C to +60 °C (32 °F to +122 °F)	
Cushioning	Elastomer (MSC-...-...-SE) Hydraulic (MSC-...-...-SH)	
Medium	Compressed air, lubricated or oil-free	
Lubrication	maintenance-free	
Material	Housing	Aluminum (anodized)
	Slide	Aluminum (anodized)
	Front plate	High-strength aluminum (anodized)
	Guide	Hardened steel
	Seals	NBR+PU



Application area

Suitable for precise applications in handling technology
Versatile mounting options on further handling components (grippers, rotary modules...)

Technical information

Model		MSC – 8	MSC – 12	MSC – 16	MSC – 20	MSC – 25
piston diameter [mm]		2 x 8	2 x 12	2 x 16	2 x 20	2 x 25
Equivalent piston		11	17	22	28	35
connection thread		M 5	M 5	M 5	G 1/8	G 1/8
Operating pressure [bar] (psi)		2 - 10	1 - 10	1 - 10	1 - 10	1 - 10
Theoretical useful force (6 bar) (87 psi)	Thrust [N]	60	136	241	377	589
	Retraction force [N]	52	102	181	283	496
Speed	Outward stroke [m/s]	0,8	0,8	0,8	0,8	0,8
	Retraction stroke [m/s]	0,8	0,8	0,8	0,8	0,8
Cushioning	Elastomer [Nm]	0,1	0,2	0,3	0,4	0,5
	Hydraulic [Nm/Stroke]	0,85	2,70	2,70	7,00	15,00
	Hydraulic [Nm/h]	2500	9000	9000	20000	39000
Max. perm. moving mass	Elastomer	1,1	1,8	2,6	4,3	5,7
	Hydraulic	1,5	2,8	3,7	8,9	17,0
Stroke-limiting range* [mm]	... 100 [mm]	0-7	0-11	0-11	0-15	0-15
	100 [mm]...	-	-5-0	0-9,5	0-9,5	0-9,5

* per end position

Code no. for MSC-...-...-SE elastically cushioning

		MSC – 8	MSC – 12	MSC – 16	MSC – 20	MSC – 25
	Stroke					
	10	0 821 406 300	0 821 406 306	0 821 406 313	0 821 406 322	0 821 406 332
	20	0 821 406 301	0 821 406 307	0 821 406 314	0 821 406 323	0 821 406 333
	30	0 821 406 302	0 821 406 308	0 821 406 315	0 821 406 324	0 821 406 334
	40	0 821 406 303	0 821 406 309	0 821 406 316	0 821 406 325	0 821 406 335
	50	0 821 406 304	0 821 406 310	0 821 406 317	0 821 406 326	0 821 406 336
	80	0 821 406 305	0 821 406 311	0 821 406 318	0 821 406 327	0 821 406 337
	100	-	0 821 406 312	0 821 406 319	0 821 406 328	0 821 406 338
	125	-	-	0 821 406 320	0 821 406 329	0 821 406 339
	150	-	-	0 821 406 321	0 821 406 330	0 821 406 340
	200	-	-	-	0 821 406 331	0 821 406 341

Code no. for MSC-...-...-SH hydraulically cushioning

		MSC – 8	MSC – 12	MSC – 16	MSC – 20	MSC – 25
	Stroke					
	20	0 821 406 343	-	-	-	-
	30	0 821 406 344	0 821 406 350	0 821 406 357	0 821 406 366	0 821 406 376
	40	0 821 406 345	0 821 406 351	0 821 406 358	0 821 406 367	0 821 406 377
	50	0 821 406 346	0 821 406 352	0 821 406 359	0 821 406 368	0 821 406 378
	80	0 821 406 347	0 821 406 353	0 821 406 360	0 821 406 369	0 821 406 379
	100	-	0 821 406 354	0 821 406 361	0 821 406 370	0 821 406 380
	125	-	-	0 821 406 362	0 821 406 371	0 821 406 381
	150	-	-	0 821 406 363	0 821 406 372	0 821 406 382
	200	-	-	-	0 821 406 373	0 821 406 383

Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

Drive weight for nominal stroke [g]

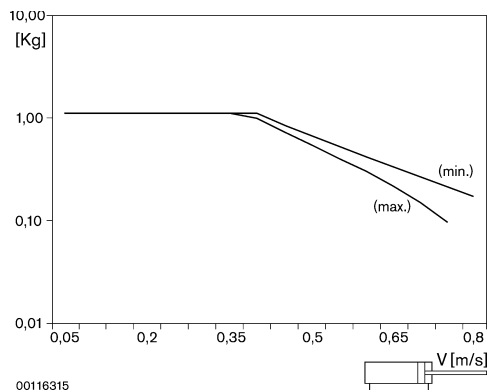
Stroke [mm]	MSC - 8	MSC - 12	MSC - 16	MSC - 20	MSC - 25
10	300	590	810	1360	2320
20	290	570	785	1415	2260
30	315	555	760	1375	2220
40	340	590	815	1450	2380
50	405	670	1285	1610	2635
80	555	915	1365	2100	3285
100	-	990	1940	2230	3560
125	-	-	1940	3015	4750
150	-	-	2075	3360	5370
200	-	-	-	4120	6455

Moving mass for nominal stroke [g]

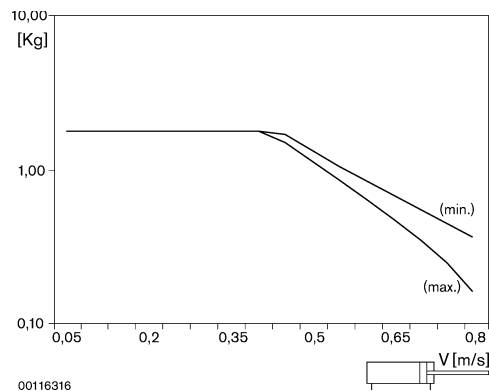
Stroke [mm]	MSC - 8	MSC - 12	MSC - 16	MSC - 20	MSC - 25
10	140	255	375	655	1000
20	140	255	375	655	1000
30	155	260	375	655	1000
40	165	280	400	690	1100
50	195	315	450	765	1225
80	265	403	615	985	1450
100	-	460	650	1035	1625
125	-	-	725	1200	1885
150	-	-	765	1290	2085
200	-	-	-	1540	2445

Max. perm. moving mass with elastically cushioning (min stroke, max stroke)

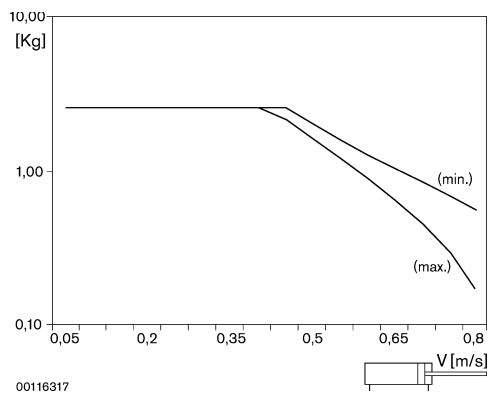
MSC - 8 - SE



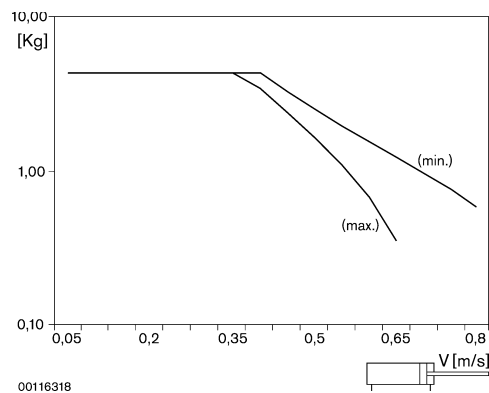
MSC - 12 - SE



MSC - 16 - SE



MSC - 20 - SE

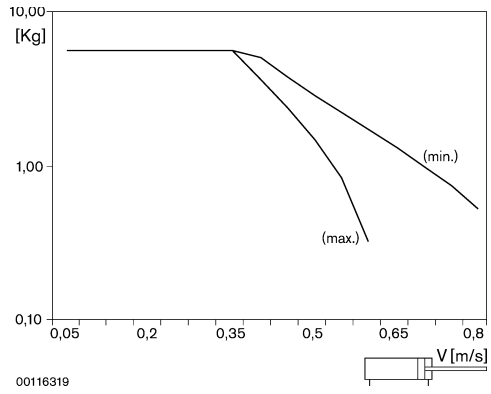


Mini slides compact, MSC series

MSC



MSC - 25 - SE

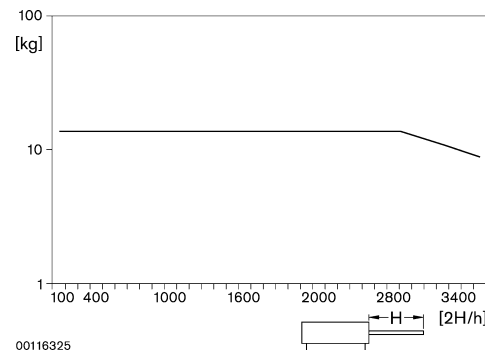
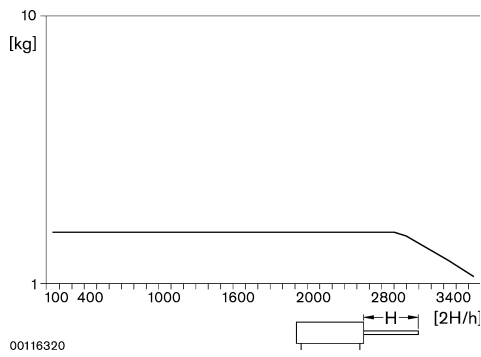


Max. perm. Moving mass with hydraulically cushioning (min stroke, max stroke)

MSC - 8 - SH

horizontal

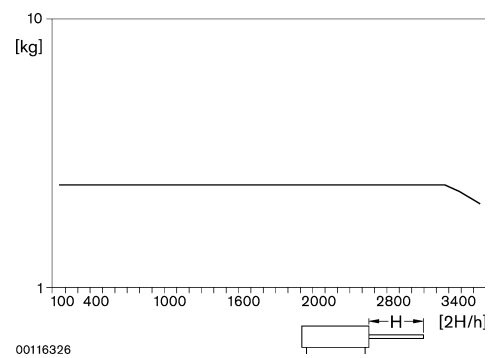
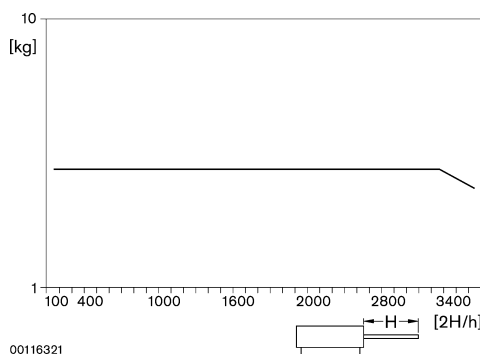
vertical



MSC - 12 - SH

horizontal

vertical



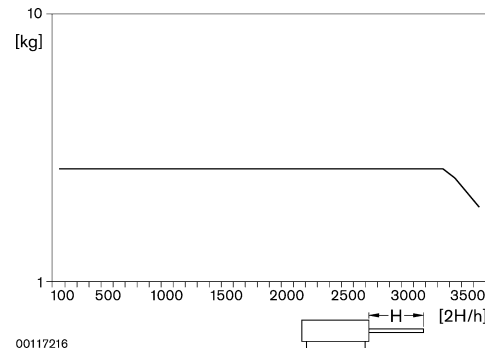
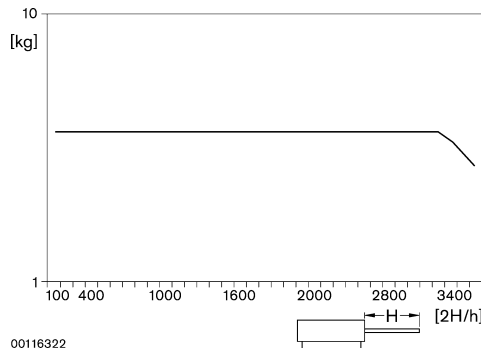
Mini slides compact, MSC series

MSC

MSC - 16 - SH

horizontal

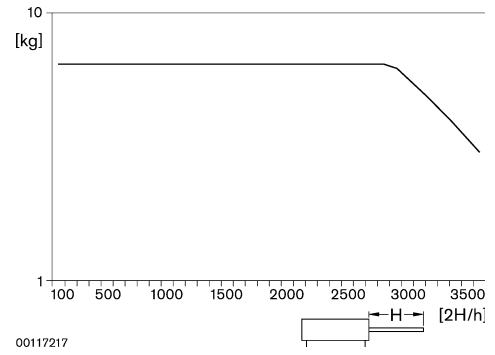
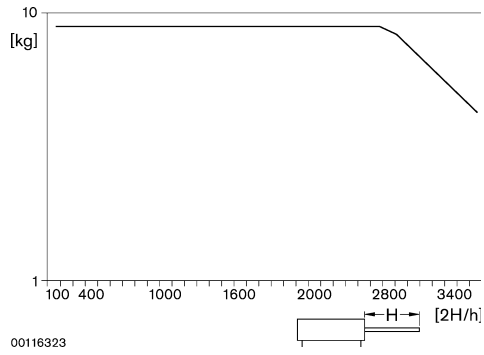
vertical



MSC - 20 - SH

horizontal

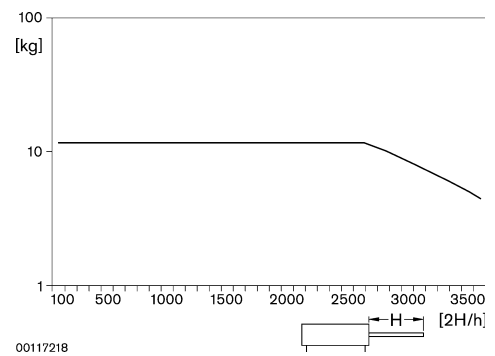
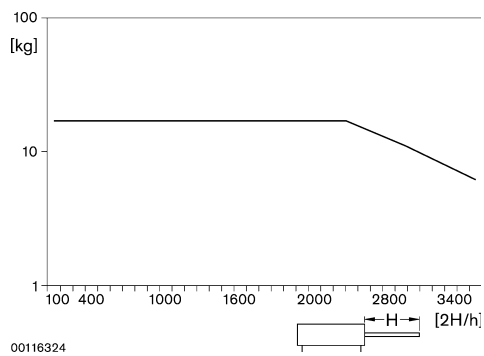
vertical



MSC - 25 - SH

horizontal

vertical

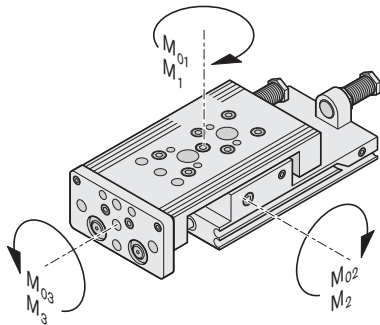


Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

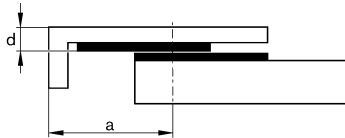
 Permissible loads



00116280

Type	Stroke	correction factor		Maximum permissible torque					
		a [mm]	d [mm]	static			dynamic		
				M 01	M 02	M 03	M 01	M 02	M 03
MSC – 8	10	44	14	7	7	7	1,9	1,9	1,1
	20	49		7	7	7	1,9	1,9	1,1
	30	59		7	7	7	1,9	1,9	1,1
	40	69		7	7	7	1,9	1,9	1,1
	50	84		13	13	9	2,9	2,9	1,3
	80	124		25	25	13	3,8	3,8	1,3
MSC – 12	10	53	16	14	14	20	4,4	4,4	4,2
	20	58		14	14	20	4,4	4,4	4,2
	30	63		14	14	20	4,4	4,4	4,2
	40	73		14	14	20	4,4	4,4	4,2
	50	85		19	19	13	5,6	5,6	4,6
	80	123		32	32	33	8,2	8,2	5,2
MSC – 16	10	55	15	22	22	35	4,7	4,7	4,6
	20	60		22	22	35	4,7	4,7	4,6
	30	65		22	22	35	4,7	4,7	4,6
	40	75		22	22	35	4,7	4,7	4,6
	50	87		26	26	38	5,6	5,6	5,1
	80	125		58	58	52	10,5	10,5	7,1
	100	145		58	58	52	10,5	10,5	7,1
	125	198		on request	on request	on request	on request	on request	on request
150	223	on request	on request	on request	on request	on request	on request		
MSC – 20	10	60	19	57	57	87	12,0	12,0	9,6
	20	65		57	57	87	12,0	12,0	9,6
	30	70		57	57	87	12,0	12,0	9,6
	40	80		57	57	87	12,0	12,0	9,6
	50	92		65	65	93	13,3	13,3	10,0
	80	130		99	99	116	19,0	19,0	11,7
	100	150		99	99	116	19,0	19,0	11,7
	125	200		on request	on request	on request	on request	on request	on request
	150	233		on request	on request	on request	on request	on request	on request
	200	295		on request	on request	on request	on request	on request	on request
MSC – 25	10	66	24	90	90	100	19,5	19,5	22,9
	20	71		90	90	100	19,5	19,5	22,9
	30	76		90	90	100	19,5	19,5	22,9
	40	86		90	90	100	19,5	19,5	22,9
	50	98		90	90	100	13,0	13,0	15,3
	80	136		129	129	110	20,8	20,8	18,8
	100	156		129	129	110	20,8	20,8	18,8
	125	202		on request	on request	on request	on request	on request	on request
	150	235		on request	on request	on request	on request	on request	on request
	200	297		on request	on request	on request	on request	on request	on request

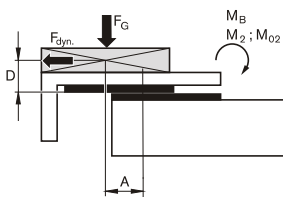
correction factor (a, d)



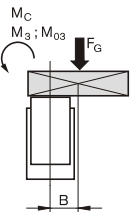
00116281

horizontal application

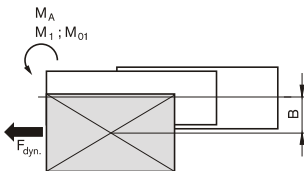
vertical application



dyn.	$M_B = F_G \cdot A + F_{dyn} \cdot D$
stat.	$M_{B0} = F_G \cdot A$



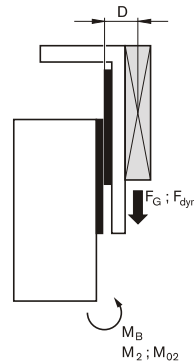
dyn.	$M_C = F_G \cdot B$
stat.	$M_{C0} = F_G \cdot B$



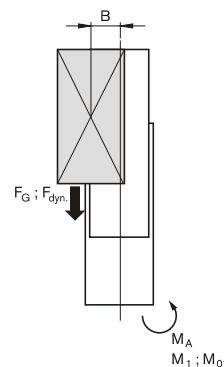
dyn.	$M_A = F_{dyn} \cdot B$
stat.	$M_{A0} = 0$

dyn.	$\frac{M_A}{M_1} + \frac{M_B}{M_2} + \frac{M_C}{M_3} \leq 1$
stat.	$\frac{M_{A0}}{M_{01}} + \frac{M_{B0}}{M_{02}} + \frac{M_{C0}}{M_{03}} \leq 1$

00116296



dyn.	$M_B = (F_G + F_{dyn}) \cdot D$
stat.	$M_{B0} = F_G \cdot D$



dyn.	$M_A = (F_G + F_{dyn}) \cdot B$
stat.	$M_{A0} = F_G \cdot B$

dyn.	$\frac{M_A}{M_1} + \frac{M_B}{M_2} \leq 1$
stat.	$\frac{M_{A0}}{M_{01}} + \frac{M_{B0}}{M_{02}} \leq 1$

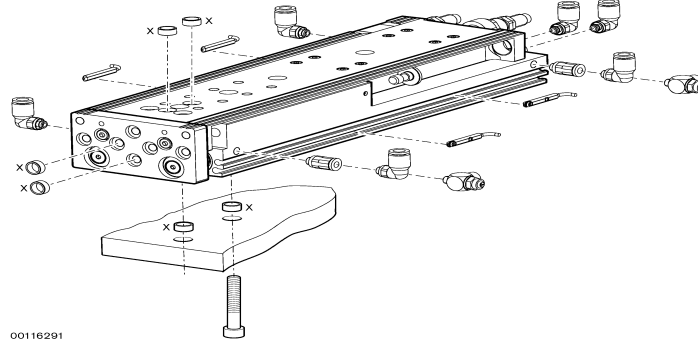
00116297

Mini slides compact, MSC series

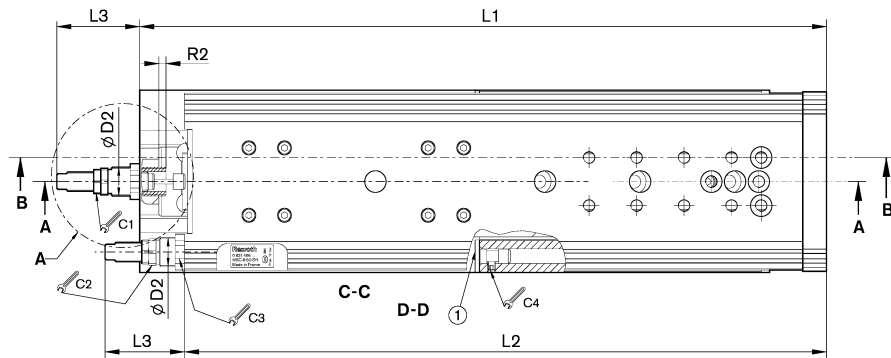
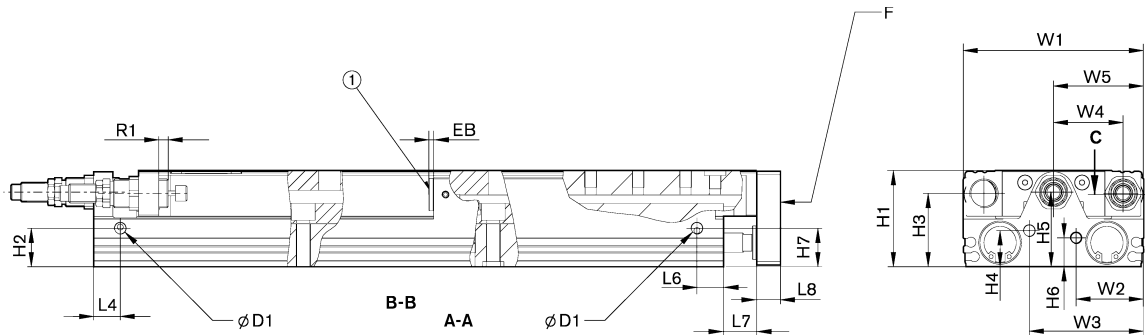
MSC

Rexroth
Bosch Group

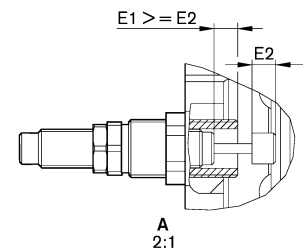
MSC 8 – 25 basic data (all sizes)



00116291



00116292

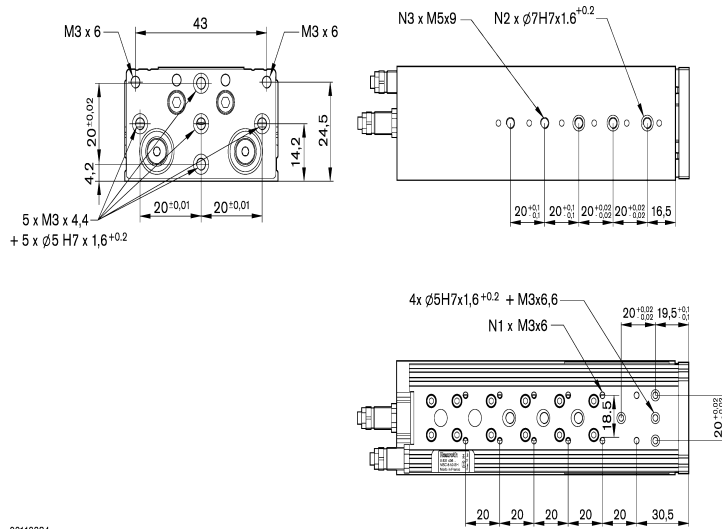


Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

MSC – 08



00116284

Stroke	N 1	N 2	N 3	L 1	L 2
10	2	2	2	73,5	81
20	2	2	2	73,5	81
30	2	2	2	83,5	91
40	3	2	2	93,5	101
50	4	3	3	113,5	121
80	6	3	5	163,5	171

	C 1	C 2	C 3	C 4
SW	8	10	12	1,5
MD [Nm]	1,4	–	7	0,4

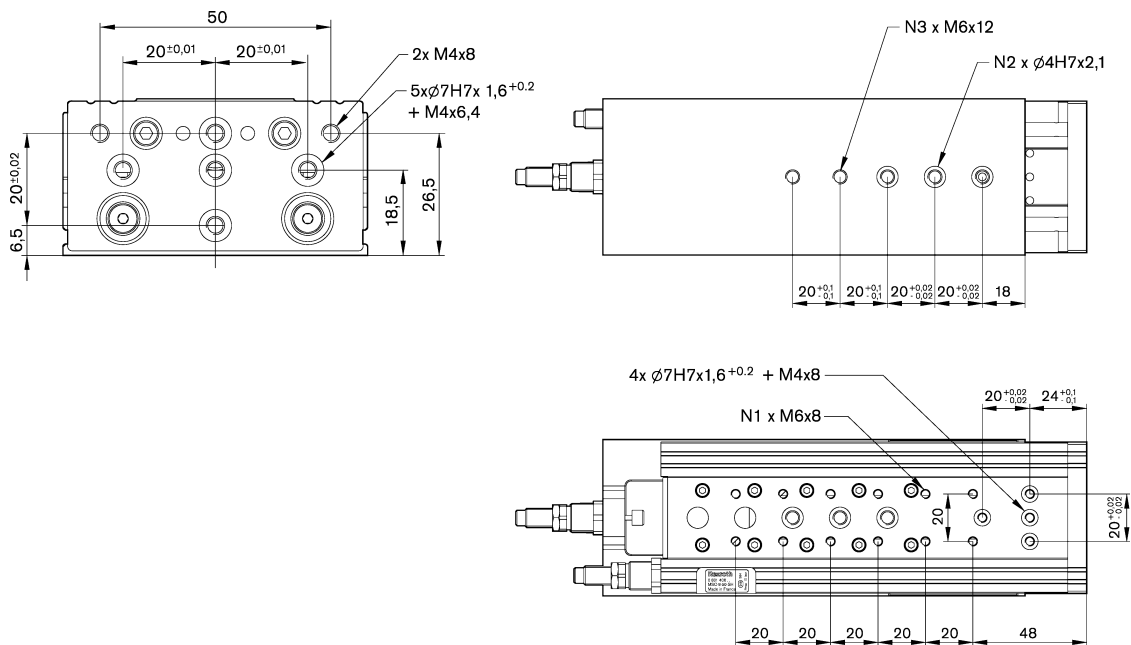
									MSC-SH	MSC-SE											
Ø D 1	Ø D 2	H 1	H 2	H 3	H 4	H 5	H 6	H 7	L 3	L 3	L 4	L 6	L 7	L 8	R 1	R 2	W 1	W 2	W 3	W 4	W 5
M 5	M 10x1	28	9,6	20,4	7	19	5,5	18	28 max	17.9max	9,8	12,4	2	6	–	–	50	19,2	30,5	18	25

Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

MSC – 12



00116285

Stroke	N 1	N 2	N 3	L 1	L 2
10,20,30	4	2	2	88,5	97
40	4	2	2	98,5	107
50	6	3	3	113,5	122
80	10	3	5	159,5	168
100	12	3	5	179,5	188

	C 1	C 2	C 3	C 4
SW	11	11	14	15
MD [Nm]	1,4	–	20	0,4

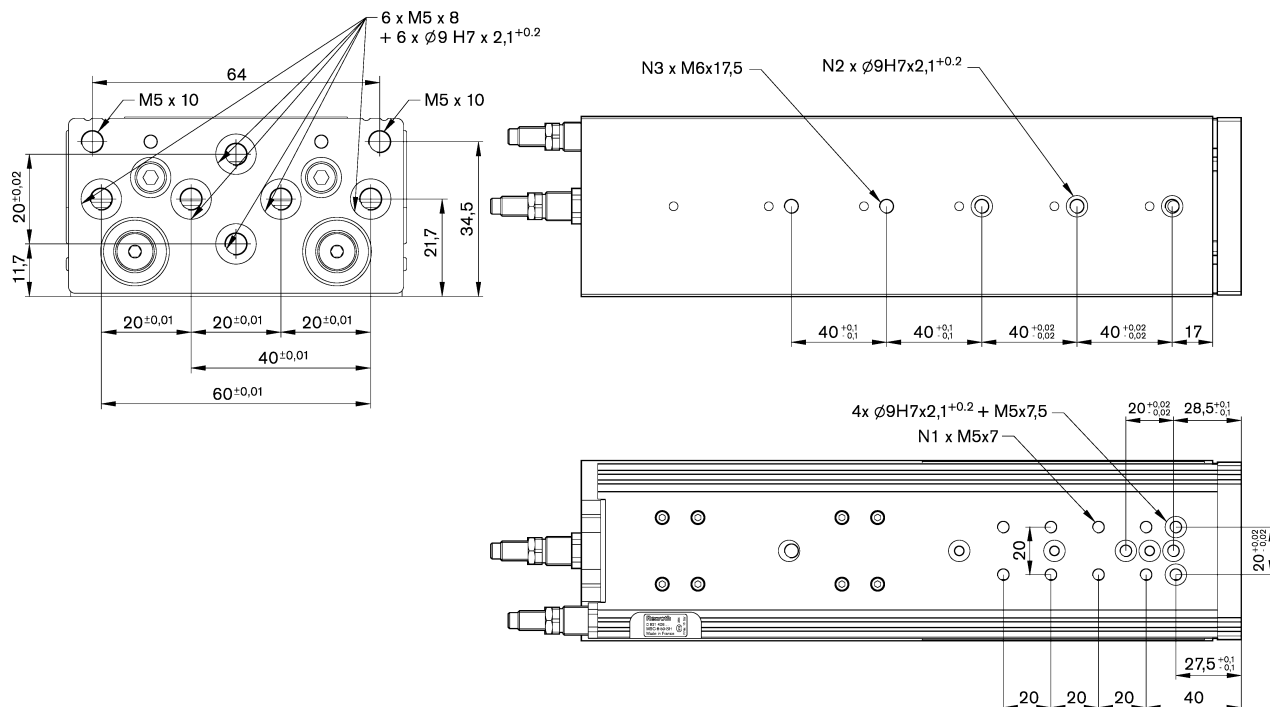
									MSC-SH	MSC-SE											
Ø D 1	Ø D 2	H 1	H 2	H 3	H 4	H 5	H 6	H 7	L 3	L 3	L 4	L 6	L 7	L 8	R 1	R 2	W 1	W 2	W 3	W 4	W 5
M 5	M 12x1	34	11	25,5	9	24,5	7	20	40 max	19 max	12	13	2	8	–	–	66	25	40	24,5	33

Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

MSC – 16



00116286

Stroke	N 1	N 2	N 3	L 1	L 2
10	2	2	2	90,5	98
20	2	2	2	90,5	98
30	2	2	2	90,5	98
40	2	2	2	100,5	108
50	2	2	2	115,5	123
80	3	3	3	161,5	169
100	3	3	3	181,5	189
125	4	3	5	270	278
150	4	3	5	295	303

	C 1	C 2	C 3	C 4
SW	11	11	14	1,5
MD [Nm]	1,4	–	20	0,4

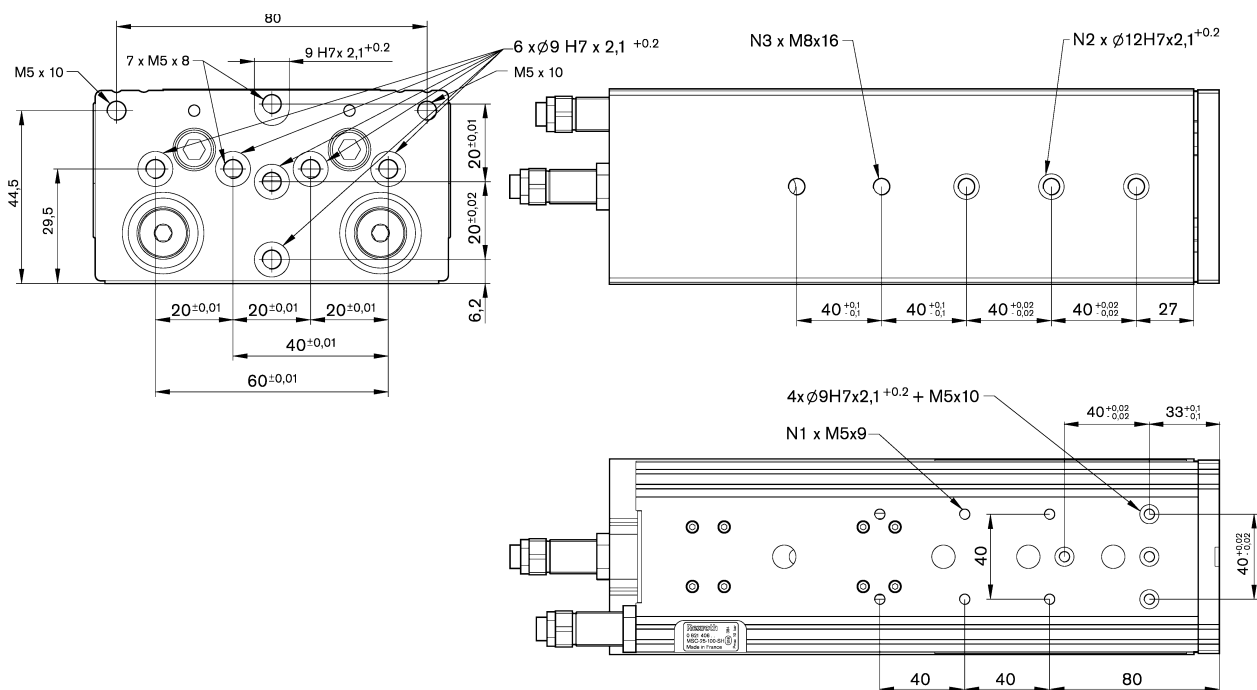
									MSC-SH		MSC-SE										
Ø D 1	Ø D 2	H 1	H 2	H 3	H 4	H 5	H 6	H 7	L 3	L 3	L 4	L 6	L 7	L 8	R 1	R 2	W 1	W 2	W 3	W 4	W 5
M 5	M 12x1	40	16	30,5	15	31	12,2	16	40max	19max	11,2	11,2	2	10	–	–	76	28,3	48	29	38

Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

MSC – 20



00116287

Stroke	N 1	N 2	N 3	L 1	L 2
10	2	2	2	100,5	113
20	2	2	2	100,5	113
30	2	2	2	100,5	113
40	2	2	2	110,5	123
50	2	2	2	125,5	138
80	4	3	3	170,5	183
100	4	3	3	190,5	203
125	6	3	5	275	288
150	6	3	5	315	328
200	6	3	5	390	403

	C 1	C 2	C 3	C 4
SW	14	17	19	2,5
MD [Nm]	5,2	–	20	3

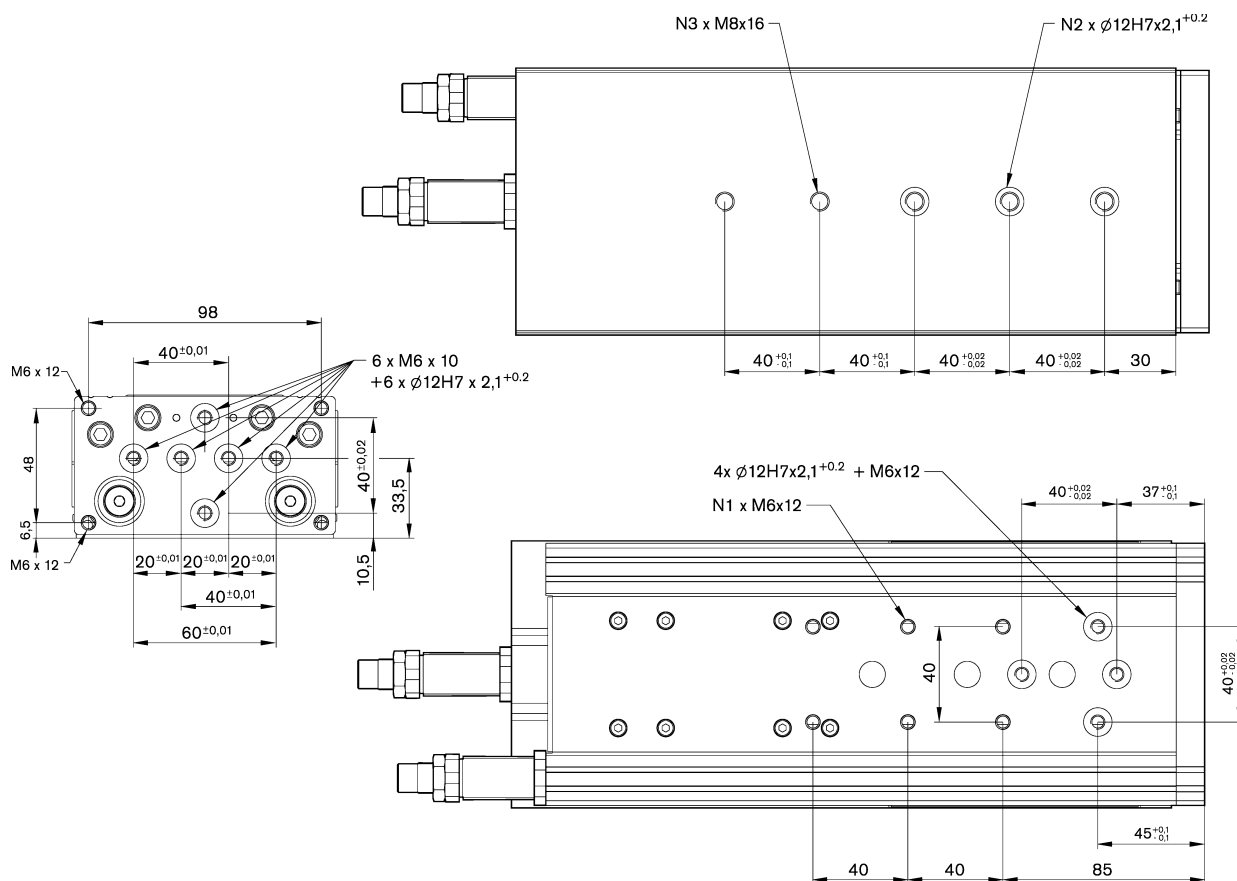
									MSC-SH	MSC-SE											
Ø D 1	Ø D 2	H 1	H 2	H 3	H 4	H 5	H 6	H 7	L 3	L 3	L 4	L 6	L 7	L 8	R 1	R 2	W 1	W 2	W 3	W 4	W 5
G1/8	M16x1,5	50	19	37,5	15	38	12,2	19	48max	29,5max	12	12	2	10	–	–	92	37	55	36	46

Mini slides compact, MSC series

MSC

Rexroth
Bosch Group

MSC – 25



00116288

Stroke	N 1	N 2	N 3	L 1	L 2
10	1	2	2	111,6	126,5
20	1	2	2	111,6	126,5
30	1	2	2	111,6	126,5
40	1	2	2	121,6	136,5
50	2	2	2	134,6	149,5
80	3	3	3	180,6	195,5
100	3	3	3	200,6	215,5
125	3	3	3	268,6	292,5
150	3	3	3	317,6	332,5
200	3	3	3	392,6	407,5

	C 1	C 2	C 3	C 4
SW	17	20	22	2,5
MD [Nm]	13,6	–	20	3

									MSC-SH		MSC-SE										
Ø D1	Ø D2	H 1	H 2	H 3	H 4	H 5	H 6	H 7	L 3	L 3	L 4	L 6	L 7	L 8	R 1	R 2	W 1	W 2	W 3	W 4	W 5
G 1/8	M18x1,5	60	22	44,5	16	46,5	12	22	72max	35max	18	18	2	12	–	–	112	45	67	43,5	56

Mini slides compact, MSC series

Accessories

Rexroth
Bosch Group

▲ ★ Cylinder switch



▲ ★ Accessories

Cylinder switches	Designation	Technical data	Code no.
	Series Pico, electrically (Reed contact) M8	UB = 10–30 V AC/DC	0 830 100 440
	Series Pico, electrically (Reed contact) with 3 m cable.	Pmax = 3 W/VA	0 830 100 640
	Series Pico, electrically (Reed contact) with 5 m cable.	I _{max} = 100 mA	0 830 100 641
	Series Pico, Inductive sensor with M8	UB = 10–30 V DC	0 830 100 441
	Series Pico, Inductive sensor with 3 m cable.	I _{max} = 70 mA	0 830 100 642
	Series Pico, Inductive sensor with 5 m cable.		0 830 100 643

▲ ★ Stroke limit bolts



00117221

Type	12	22	32
MSC - 8	7 472 000 616	–	–
MSC - 12	7 472 000 620	7 472 000 619	–
MSC - 16	7 472 000 620	7 472 000 619	–
MSC - 20	7 472 000 623	7 472 000 622	7 472 000 625
MSC - 25	7 472 000 623	7 472 000 622	7 472 000 625

▲ ★ Locating ring



	per pack	Code no.
∅ 5	6	R412000343
∅ 7	6	R412000344
∅ 9	6	R412000346
∅ 12	6	R412000347

Bosch Rexroth AG
Pneumatics
Ulmer Straße 4
D - 30880 Laatzen
Phone +49 (0) 5 11-21 36-0
Fax +49 (0) 5 11-21 36-2 69
sales-pneumatics@boschrexroth.de
www.boschrexroth.com/pneumatics

Your contact:

Subject to alteration. This edition
supersedes all previous ones.
No part of this edition may be
reproduced without our prior
permission.
Printed in Germany.
Order no.
R499050115/2003-12/EN