

MSCE 45

Mini electric slider MSCE is a mini linear drive with an integrated linear guiding system and slide. By using an integrated precision ball screw drive, the rotary motion (rotation) of the drive shaft is converted to the linear motion (translation) of the slide with high mechanical efficiency and low internal friction.

A preassembled standard motor (in-line with a motor adapter and a coupling or in-parallel with a motor side drive and a timing belt) together with the standard drive, makes the system plug and play ready. Compact dimensions and optimally selected motor combinations cover a wide range of applications.

The aluminium base profile includes T-slots on the bottom for fixing the electric slider, as well as side slots for clamping fixtures and magnetic field sensors.

The aluminium slide and the front plate of the electric slider allow a wide range of options for mounting the working tools and attaching additional accessories. There are prepared connection holes on the slide and the front plate for an easy combination of the MSCEs to the multiaxis system, which makes this product highly flexible. There is also an option of the mini electric slider without the preassembled motor if an individual motor is required.

Positioning rod together with the rod seal ensures the protection of the ball screw drive from dust and other contamination.

Each MSCE is optimally pre-lubricated and ready for a maintenance-free operating process.

Note!

All the data of the dynamic load capacities (linear guiding system and ball screw drive) stated in the tables above are theoretical without considering any safety factor. The safety factor depends on the application and its requested safety and service life.

We recommend a minimum dynamic safety factor of 5,0 or more. Please refer to the Linear guiding and the Ball screw drive section, where the calculation of the safety factor of the ball screw drive and the linear guiding system and how the applied load affects the service life are presented.

Dimensions in mm.

Contact us for further information.

Axial backlash: $\leq 0,06$

Max. acceleration: 20 m/s

Protection class: IP40

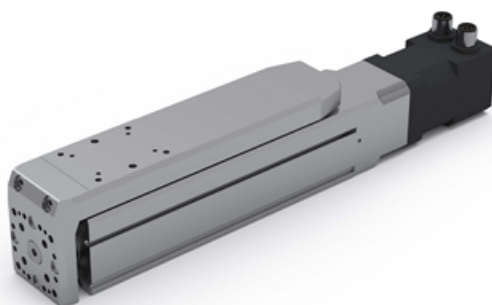
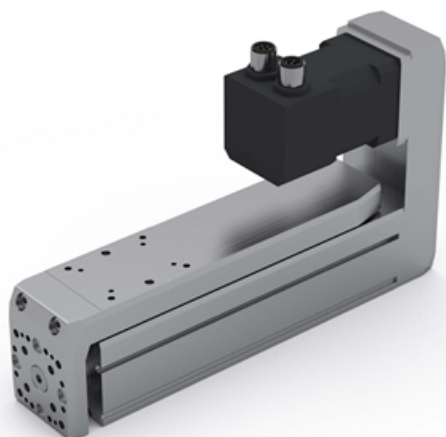
Ambient temperature: 0 °C – +50 °C

Duty cycle: 100%

Maintenance: Life-time pre-lubricated

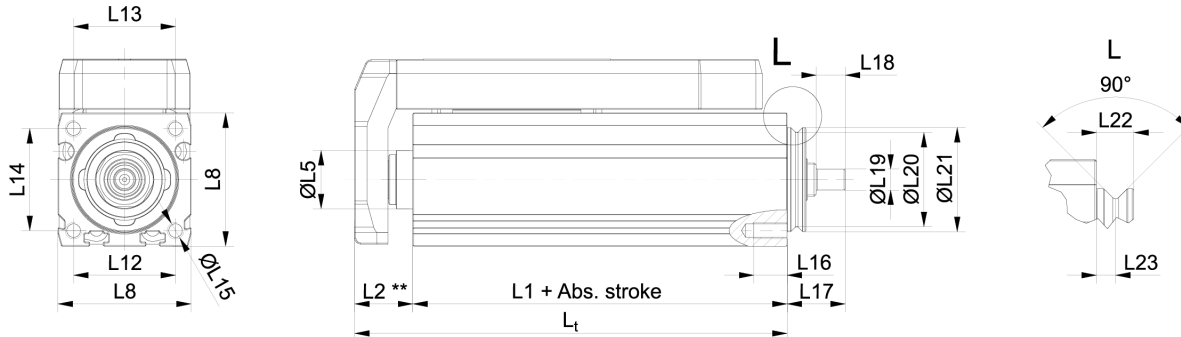


MSCE 45

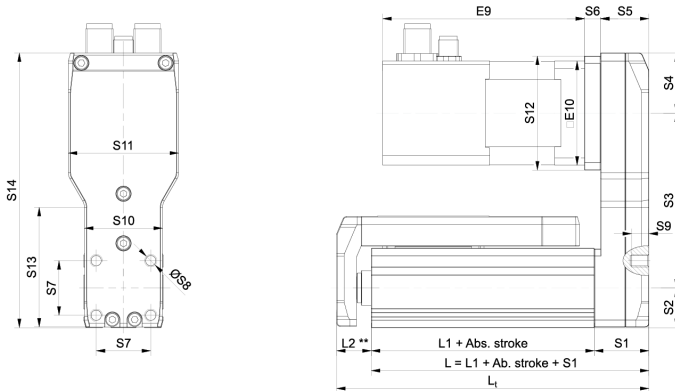


Variant Data

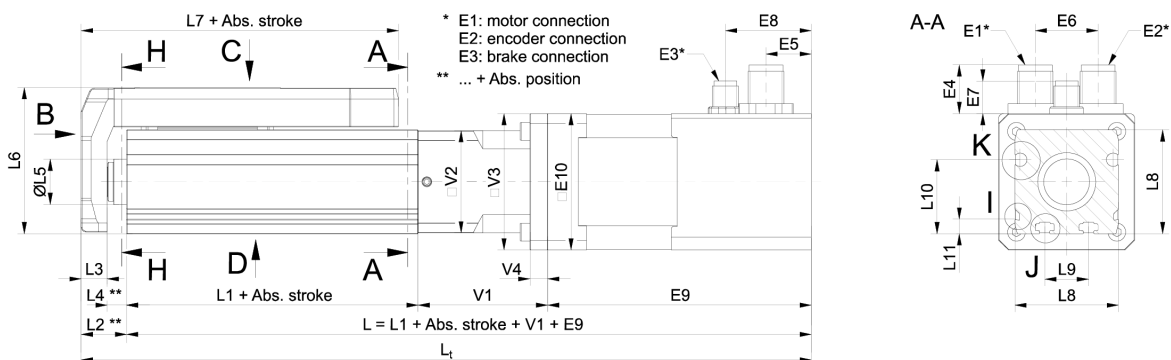
MSCE without a motor



MSCE with motor side drive MSD

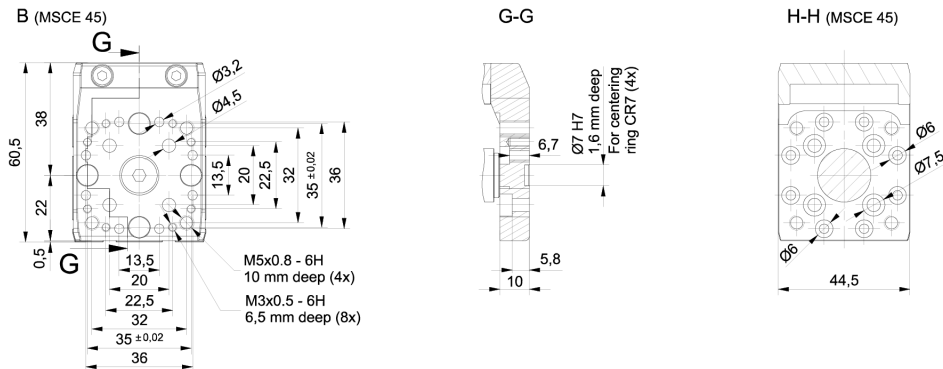


MSCE with motor adapter VK

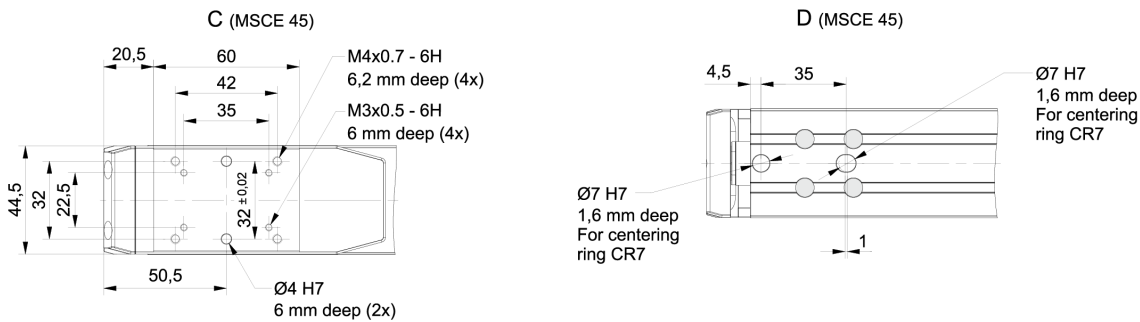


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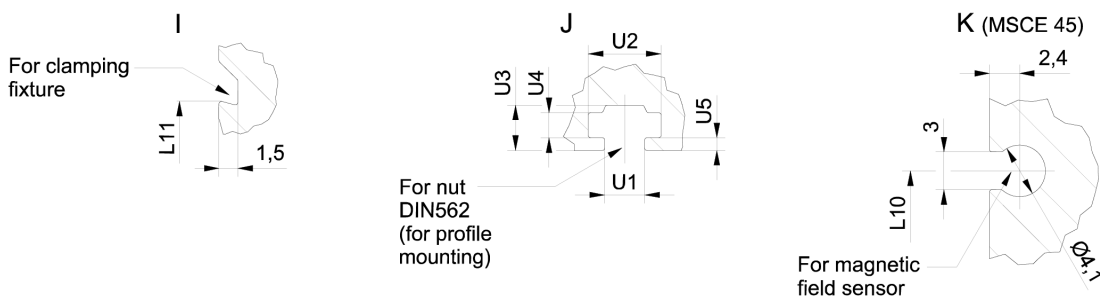
MSCE 45 with motor adapter VK



MSCE 45 with motor adapter VK



MSCE 45 with motor adapter VK



Designation	Description	Ball screw (d x l)	Dynamic Load Capacity C	Max. Drive Torque M_p	Max. Travel Speed V_{max}
MSCE 45 - 10x3	Without motor	10x3 mm	3240 N	0,37 Nm	0,225 m/s
MSCE 45 - 10x10	Without motor	10x10 mm	3240 N	1,23 Nm	0,750 m/s
MSCE 45 - VK - 42 - 10x3	With motor size 42 and motor adapter VK	10x3 mm	3240 N	-	0,149 m/s

Variant Data

Designation	Description	Ball screw (d x l)	Dynamic Load Capacity C	Max. Drive Torque M_p	Max. Travel Speed V_{max}
MSCE 45 - VK - 42 - 10x10	With motor size 42 and motor adapter VK	10x10 mm	3240 N	-	0,485 m/s
MSCE 45 - VK - 56 - 10x3	With motor size 56 and motor adapter VK	10x3 mm	3240 N	-	0,150 m/s
MSCE 45 - VK - 56 - 10x10	With motor size 56 and motor adapter VK	10x10 mm	3240 N	-	0,500 m/s
MSCE 45 - MSD - 42 - 10x3	With motor size 42 and motor side drive MSD	10x3 mm	3240 N	-	0,146 m/s
MSCE 45 - MSD - 42 - 10x10	With motor size 42 and motor side drive MSD	10x10 mm	3240 N	-	0,457 m/s
MSCE 45 - MSD - 56 - 10x3	With motor size 56 and motor side drive MSD	10x3 mm	3240 N	-	0,150 m/s
MSCE 45 - MSD - 56 - 10x10	With motor size 56 and motor side drive MSD	10x10 mm	3240 N	-	0,500 m/s

Designation	Max. Rotational Speed n_{max} (min^{-1})	No Load Torque M_0	Axial dynamic load capacity C_a	Max. repeatability	Max. permissible axial load F_{pa}	Absolute stroke
MSCE 45 - 10x3	4500 rev/min	0,08 Nm	3500 N	±0,015 mm	695 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - 10x10	4500 rev/min	0,10 Nm	3200 N	±0,015 mm	695 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - VK - 42 - 10x3	2980 rev/min	-	3500 N	±0,015 mm	450 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - VK - 42 - 10x10	2910 rev/min	-	3200 N	±0,015 mm	125 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - VK - 56 - 10x3	3000 rev/min	-	3500 N	±0,015 mm	695 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - VK - 56 - 10x10	3000 rev/min	-	3200 N	±0,015 mm	575 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - MSD - 42 - 10x3	2920 rev/min	-	3500 N	±0,015 mm	380 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - MSD - 42 - 10x10	2740 rev/min	-	3200 N	±0,015 mm	115 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - MSD - 56 - 10x3	3000 rev/min	-	3500 N	±0,015 mm	695 N	25, 50, 75, 100, 125, 150, 175, 200
MSCE 45 - MSD - 56 - 10x10	3000 rev/min	-	3200 N	±0,015 mm	450 N	25, 50, 75, 100, 125, 150, 175, 200

Designation	Max. permissible payload horizontal mph	Max. permissible payload vertical mpv	Max. permissible radial load on shaft Fpr	Dynamic moments Mx	Dynamic moments My	Dynamic moments Mz
MSCE 45 - 10x3	233 kg	58 kg	100 N	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - 10x10	233 kg	58 kg	100 N	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - VK - 42 - 10x3	150 kg	37 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - VK - 42 - 10x10	21 kg	10 kg	-	20,1 Nm	17,4 Nm	17,4 Nm

Variant Data

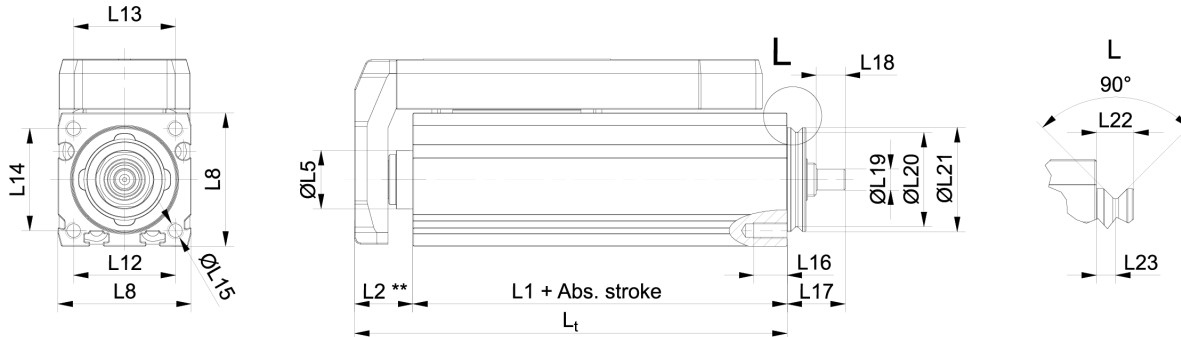
Designation	Max. permissible payload horizontal mph	Max. permissible payload vertical mpv	Max. permissible radial load on shaft Fpr	Dynamic moments Mx	Dynamic moments My	Dynamic moments Mz
MSCE 45 - VK - 56 - 10x3	233 kg	58 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - VK - 56 - 10x10	132 kg	48 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - MSD - 42 - 10x3	127 kg	31 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - MSD - 42 - 10x10	19 kg	9 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - MSD - 56 - 10x3	233 kg	58 kg	-	20,1 Nm	17,4 Nm	17,4 Nm
MSCE 45 - MSD - 56 - 10x10	132 kg	37 kg	-	20,1 Nm	17,4 Nm	17,4 Nm

Designation	Max. permissible loads Forces Fpy	Max. permissible loads Forces Fpz	Max. permissible loads Moments Mpx	Max. permissible loads Moments Mpy	Max. permissible loads Moments Mpz	Motor type
MSCE 45 - 10x3	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	-
MSCE 45 - 10x10	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	-
MSCE 45 - VK - 42 - 10x3	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - VK - 42 - 10x10	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - VK - 56 - 10x3	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - VK - 56 - 10x10	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - MSD - 42 - 10x3	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - MSD - 42 - 10x10	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - MSD - 56 - 10x3	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper
MSCE 45 - MSD - 56 - 10x10	1000 N	1000 N	16,3 Nm	16,3 Nm	16,3 Nm	Stepper

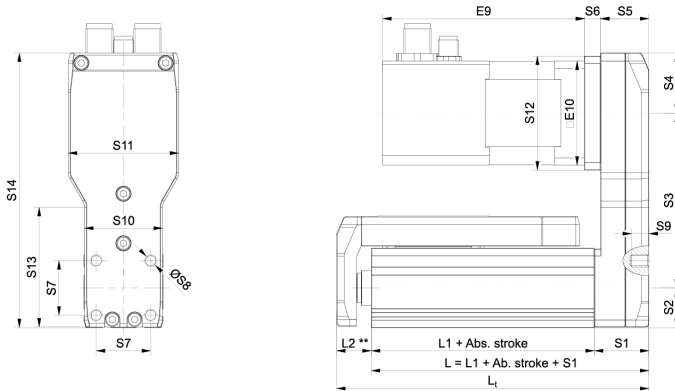
Designation	Motor size (mm)
MSCE 45 - 10x3	-
MSCE 45 - 10x10	-
MSCE 45 - VK - 42 - 10x3	42
MSCE 45 - VK - 42 - 10x10	42
MSCE 45 - VK - 56 - 10x3	56
MSCE 45 - VK - 56 - 10x10	56
MSCE 45 - MSD - 42 - 10x3	42
MSCE 45 - MSD - 42 - 10x10	42
MSCE 45 - MSD - 56 - 10x3	56
MSCE 45 - MSD - 56 - 10x10	56

Dimensions

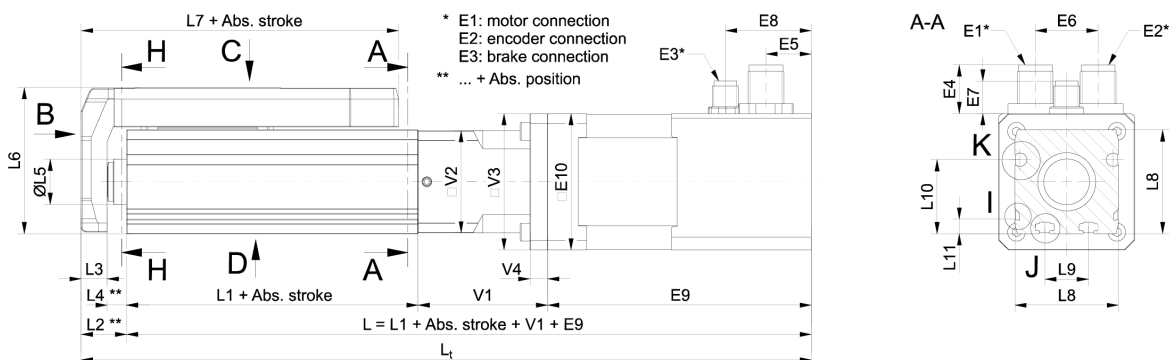
MSCE without a motor



MSCE with motor side drive MSD

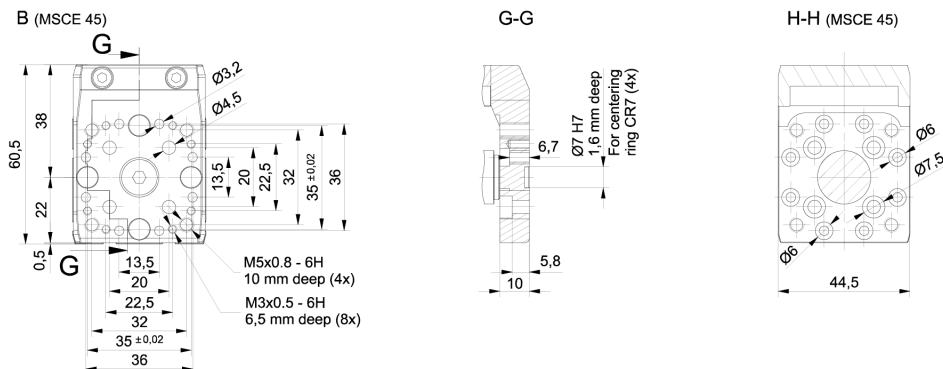


MSCE with motor adapter VK

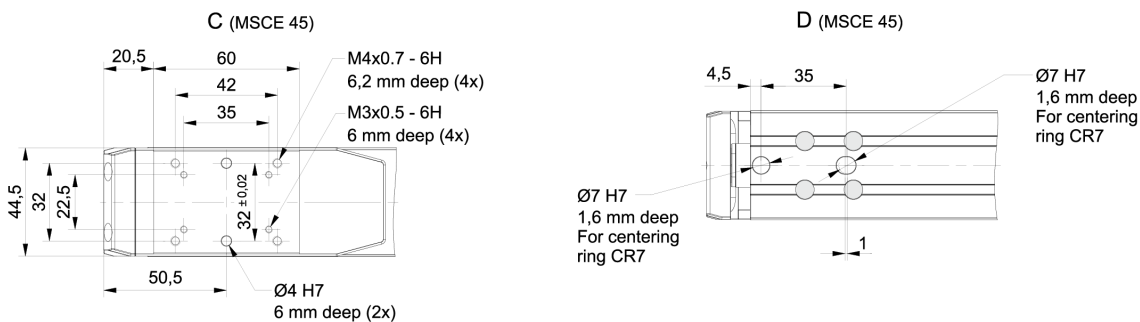


Dimensions

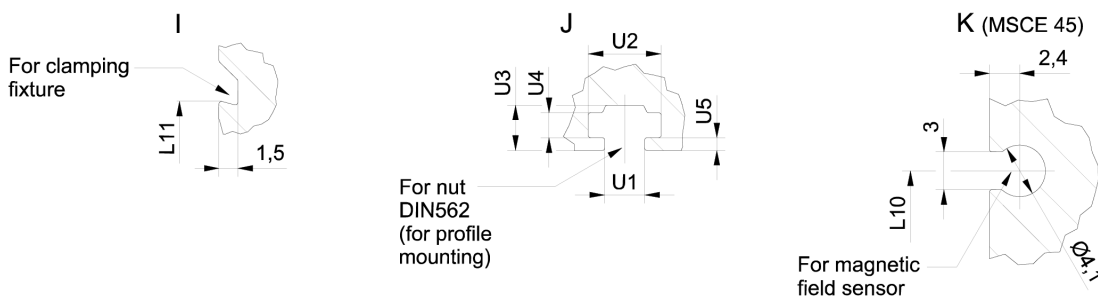
MSCE 45 with motor adapter VK



MSCE 45 with motor adapter VK



MSCE 45 with motor adapter VK



Designation	L1	L2	L3	L4	L5	L6	L7	L8	V1
MSCE 45 - 10x3	80	18	10	8	Ø 18	60,50	91	45	-
MSCE 45 - 10x10	80	18	10	8	Ø 18	60,50	91	45	-
MSCE 45 - VK - 42 - 10x3	80	18	10	8	Ø 18	60,50	91	45	42
MSCE 45 - VK - 42 - 10x10	80	18	10	8	Ø 18	60,50	91	45	42
MSCE 45 - VK - 56 - 10x3	80	18	10	8	Ø 18	60,50	91	45	46
MSCE 45 - VK - 56 - 10x10	80	18	10	8	Ø 18	60,50	91	45	46

Dimensions

Designation	L1	L2	L3	L4	L5	L6	L7	L8	V1
MSCE 45 - MSD - 42 - 10x3	80	18	10	8	Ø 18	60,50	91	45	42
MSCE 45 - MSD - 42 - 10x10	80	18	10	8	Ø 18	60,50	91	45	42
MSCE 45 - MSD - 56 - 10x3	80	18	10	8	Ø 18	60,50	91	45	46
MSCE 45 - MSD - 56 - 10x10	80	18	10	8	Ø 18	60,50	91	45	46

Designation	V2	V3	V4	L9	L10	L11	L12	L13	L14	L15
MSCE 45 - 10x3	-	-	-	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - 10x10	-	-	-	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - VK - 42 - 10x3	44,50	44,50	0	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - VK - 42 - 10x10	44,50	44,50	0	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - VK - 56 - 10x3	44,50	56,40	9,50	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - VK - 56 - 10x10	44,50	56,40	9,50	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - MSD - 42 - 10x3	44,50	44,50	0	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - MSD - 42 - 10x10	44,50	44,50	0	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - MSD - 56 - 10x3	44,50	56,40	9,50	20	30,50	4,40	34	34	34	Ø M4
MSCE 45 - MSD - 56 - 10x10	44,50	56,40	9,50	20	30,50	4,40	34	34	34	Ø M4

Designation	L16	L17	L18	L19	L20	L21	L22	L23	U1	U2
MSCE 45 - 10x3	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - 10x10	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - VK - 42 - 10x3	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - VK - 42 - 10x10	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - VK - 56 - 10x3	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - VK - 56 - 10x10	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - MSD - 42 - 10x3	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - MSD - 42 - 10x10	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - MSD - 56 - 10x3	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50
MSCE 45 - MSD - 56 - 10x10	10	16	8	Ø 8 (h7)	Ø 31,6	Ø 34 (h7)	4,50	2,30	4,20	7,50

Designation	U3	U4	U5	S1	S2	S3	S4	S5	S6	S7
MSCE 45 - 10x3	4,70	2,50	1,20	-	-	-	-	-	-	-
MSCE 45 - 10x10	4,70	2,50	1,20	-	-	-	-	-	-	-
MSCE 45 - VK - 42 - 10x3	4,70	2,50	1,20	27,50	22,50	81	24,75	24,50	6,50	32
MSCE 45 - VK - 42 - 10x10	4,70	2,50	1,20	27,50	22,50	81	24,75	24,50	6,50	32
MSCE 45 - VK - 56 - 10x3	4,70	2,50	1,20	27,50	22,50	88,50	33,25	24,50	6	32
MSCE 45 - VK - 56 - 10x10	4,70	2,50	1,20	27,50	22,50	88,50	33,25	24,50	6	32
MSCE 45 - MSD - 42 - 10x3	4,70	2,50	1,20	27,50	22,50	81	24,75	24,50	6,50	32
MSCE 45 - MSD - 42 - 10x10	4,70	2,50	1,20	27,50	22,50	81	24,75	24,50	6,50	32
MSCE 45 - MSD - 56 - 10x3	4,70	2,50	1,20	27,50	22,50	88,50	33,25	24,50	6	32
MSCE 45 - MSD - 56 - 10x10	4,70	2,50	1,20	27,50	22,50	88,50	33,25	24,50	6	32

Designation	S8	S9	S10	S11	S12	S13	S14	E1	E2	E3
MSCE 45 - 10x3	-	-	-	-	-	-	-	-	-	-

Dimensions

Designation	S8	S9	S10	S11	S12	S13	S14	E1	E2	E3
MSCE 45 - 10x10	-	-	-	-	-	-	-	-	-	-
MSCE 45 - VK - 42 - 10x3	Ø M6	7	44,50	44,50	46	0	128,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - VK - 42 - 10x10	Ø M6	7	44,50	44,50	46	0	128,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - VK - 56 - 10x3	Ø M6	7	44,50	59,50	59,50	64,50	144,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - VK - 56 - 10x10	Ø M6	7	44,50	59,50	59,50	64,50	144,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - MSD - 42 - 10x3	Ø M6	7	44,50	44,50	46	0	128,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - MSD - 42 - 10x10	Ø M6	7	44,50	44,50	46	0	128,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - MSD - 56 - 10x3	Ø M6	7	44,50	59,50	59,50	64,50	144,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)
MSCE 45 - MSD - 56 - 10x10	Ø M6	7	44,50	59,50	59,50	64,50	144,25	M12 5-pole	M12 8-pole	– (with brake: M8 3-pole)

Designation	E4	E5	E6	E7	E8	E9	E10
MSCE 45 - 10x3	-	-	-	-	-	-	-
MSCE 45 - 10x10	-	-	-	-	-	-	-
MSCE 45 - VK - 42 - 10x3	14 ± 1	14 ± 0,3	19,50	– (with brake: 9 ± 1)	– (with brake: 27 ± 0,3)	70,4 ± 1 (with brake: 106,4 ± 0,3)	42,30
MSCE 45 - VK - 42 - 10x10	14 ± 1	14 ± 0,3	19,50	– (with brake: 9 ± 1)	– (with brake: 27 ± 0,3)	70,4 ± 1 (with brake: 106,4 ± 0,3)	42,30
MSCE 45 - VK - 56 - 10x3	14 ± 1	13,4 ± 0,3	23	– (with brake: 9 ± 1)	– (with brake: 12 ± 0,3)	98 ± 1 (with brake: 138 ± 0,3)	56,40
MSCE 45 - VK - 56 - 10x10	14 ± 1	13,4 ± 0,3	23	– (with brake: 9 ± 1)	– (with brake: 12 ± 0,3)	98 ± 1 (with brake: 138 ± 0,3)	56,40
MSCE 45 - MSD - 42 - 10x3	14 ± 1	14 ± 0,3	19,50	– (with brake: 9 ± 1)	– (with brake: 27 ± 0,3)	70,4 ± 1 (with brake: 106,4 ± 0,3)	42,30
MSCE 45 - MSD - 42 - 10x10	14 ± 1	14 ± 0,3	19,50	– (with brake: 9 ± 1)	– (with brake: 27 ± 0,3)	70,4 ± 1 (with brake: 106,4 ± 0,3)	42,30
MSCE 45 - MSD - 56 - 10x3	14 ± 1	13,4 ± 0,3	23	– (with brake: 9 ± 1)	– (with brake: 12 ± 0,3)	98 ± 1 (with brake: 138 ± 0,3)	56,40
MSCE 45 - MSD - 56 - 10x10	14 ± 1	13,4 ± 0,3	23	– (with brake: 9 ± 1)	– (with brake: 12 ± 0,3)	98 ± 1 (with brake: 138 ± 0,3)	56,40

Mass and mass moment of inertia

Mass and mass moment of inertia

Additional mass of an electric cylinder when combining the motor with the motor adapter VK or the motor side drive MSD

Designation	Motor		Motor without a brake		Motor with a brake	
	Type	Size □ [mm]	Mass of the motor and motor adapter VK m_{VK+m} [kg]	Mass of the motor and motor side drive MSD m_{MSD+m} [kg]	Mass of the motor and motor adapter VK m_{VK+m} [kg]	Mass of the motor and motor side drive MSD m_{MSD+m} [kg]
MSCE 25	Stepper	28	Available soon	Available soon	Available soon	Available soon
MSCE 32	Stepper	28	Available soon	Available soon	Available soon	Available soon
MSCE 32	Stepper	42	0,52	0,62	0,65	0,75
MSCE 45	Stepper	42	0,57	0,71	0,70	0,84
MSCE 45	Stepper	56	1,31	1,49	1,50	1,68

Planar moment of inertia

Designation	Slide		Base profile	
	I_y [cm ⁴]	I_z [cm ⁴]	I_y [cm ⁴]	I_z [cm ⁴]
MSCE 25	0,08	0,88	2,10	1,98
MSCE 32	0,18	2,16	6,42	6,58
MSCE 45	0,40	7,34	25,37	25,16

Holding torque of a motor brake

Type	Motor	Holding torque (brake) [Nm]
	Size □ [mm]	
Stepper	28	Available soon
Stepper	42	0,4
Stepper	56	1,0

□ = Square cross section

Designation	Moved mass	Mass of the mini electric slider mMSCE	Mass moment of inertia JMSCE
MSCE 45 - 10x3	0,36 + 0,0025 x Abs. stroke (kg)	0,88 + 0,0059 x Abs. stroke (kg)	"2,81 + 0,0061 x Abs. stroke + 0,2280 x mload (10 ² B2 kg cm ²)"
MSCE 45 - 10x10	0,36 + 0,0025 x Abs. stroke (kg)	0,88 + 0,0059 x Abs. stroke (kg)	"3,63 + 0,0121 x Abs. stroke + 2,5330 x mload (10 ² B2 kg cm ²)"
MSCE 45 - VK - 42 - 10x3	-	-	-
MSCE 45 - VK - 42 - 10x10	-	-	-
MSCE 45 - VK - 56 - 10x3	-	-	-
MSCE 45 - VK - 56 - 10x10	-	-	-
MSCE 45 - MSD - 42 - 10x3	-	-	-
MSCE 45 - MSD - 42 - 10x10	-	-	-
MSCE 45 - MSD - 56 - 10x3	-	-	-
MSCE 45 - MSD - 56 - 10x10	-	-	-

