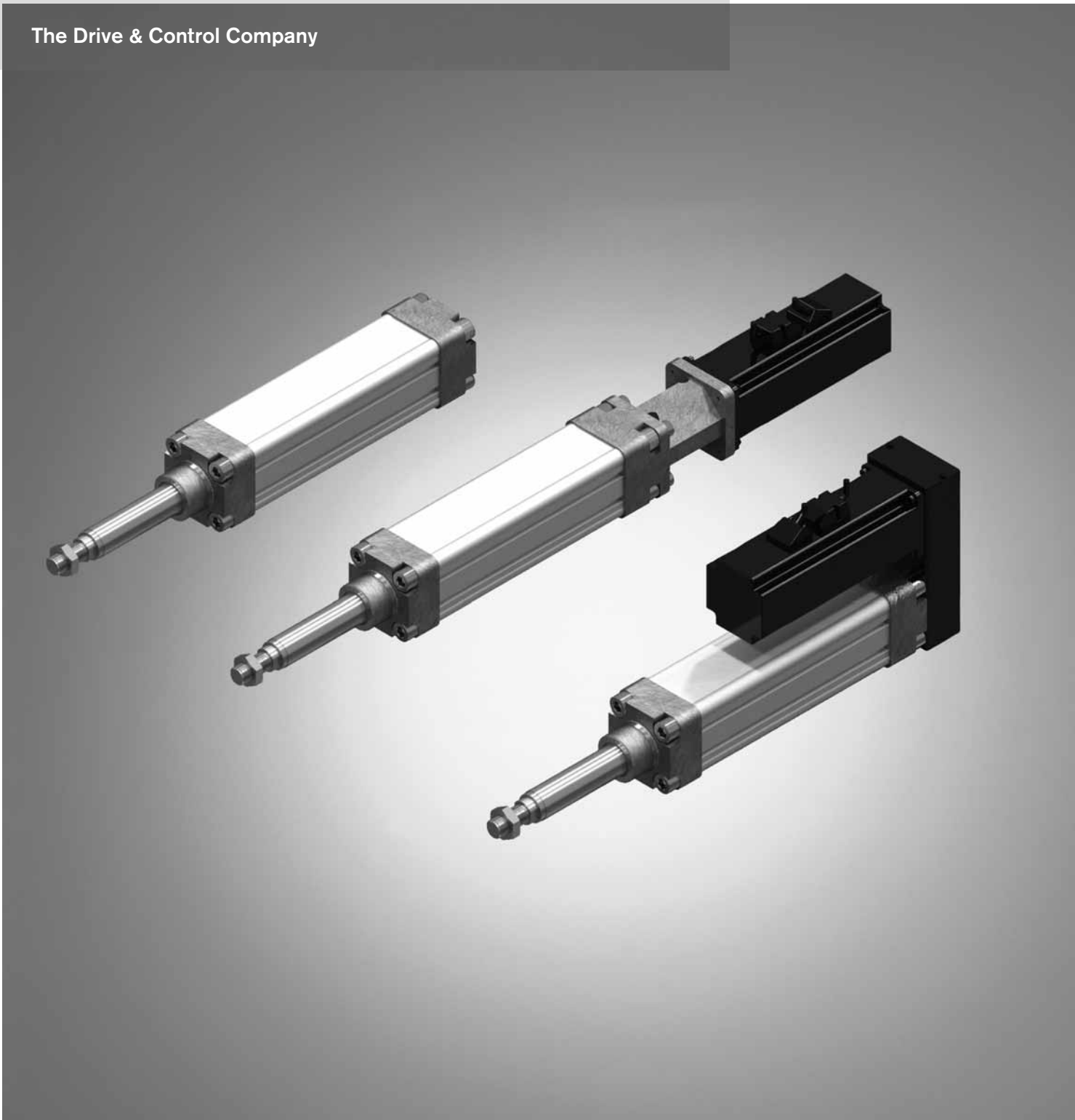
Electric Drives and Controls | Hydraulics | Linear Motion and Assembly Technologies | Pneumatics | Service

Rexroth
Bosch Group

Electromechanical Cylinder EMC

R310EN 3306 (2007.09)

The Drive & Control Company

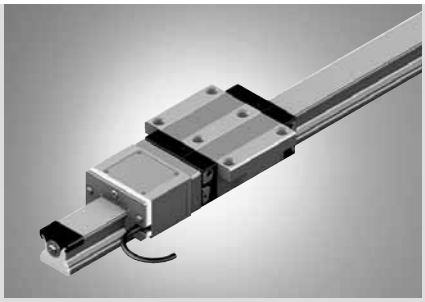
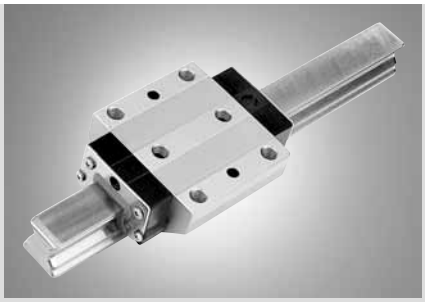


Linear Motion and Assembly Technologies

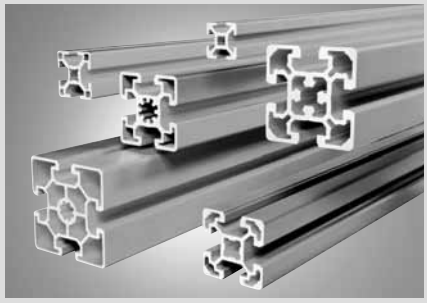
Ball Rail Systems
Roller Rail Systems
Linear Bushings and Shafts

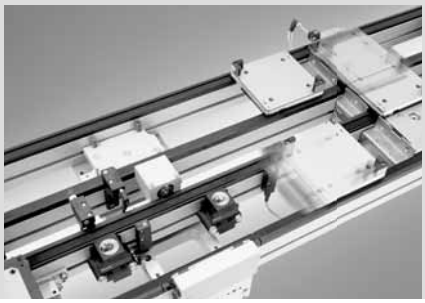
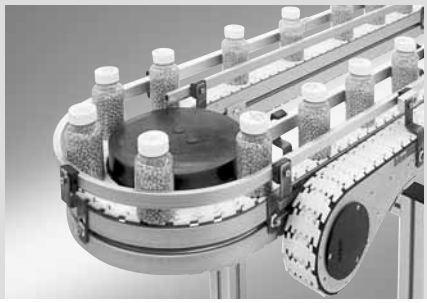
Ball Screw Drives
Linear Motion Systems

Basic Mechanical Elements
Manual Production Systems
Transfer Systems





Electromechanical Cylinder EMC

Product Overview

Electromechanical Cylinder EMC

Because of the actuator choices that electromechanical drive solutions have, they are becoming more and more popular as an alternative to fluid driven technology. Rexroth has released an Electromechanical Cylinder EMC that can in many cases efficiently replace pneumatic and hydraulic cylinders and result in conceptual advantages. Combinations of the various technologies can also result in new application possibilities.

The mechanics are based on established rolled precision ballscrew drives (KGT) available in all current diameter and lead combinations. According to the requirements of each application, performance characteristics such as position accuracy, axial force or speed can be optimized.

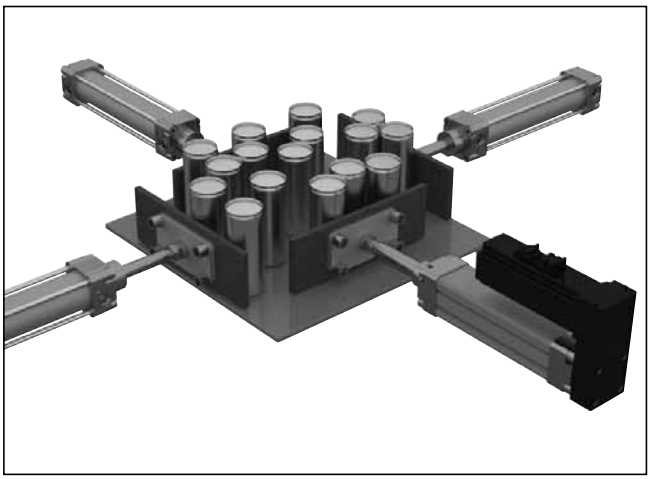
Through the use of generously sized angular-contact thrust ball bearings LAN, the load rating of the ball screw drive is used to its maximum potential. There are also many choices and possibilities when it comes to drive configurations and connecting parts.

System Advantages
- Many sizes to choose from
- Integrated ballscrew drive ensures exact positioning and powerful thrust capability
- Various motor mounts for direct or belt drives
- Compact construction - dynamic drive
- Extensive series of attachments fitting for every application area
- Quick assembly
- Compatible to more products from Bosch Rexroth

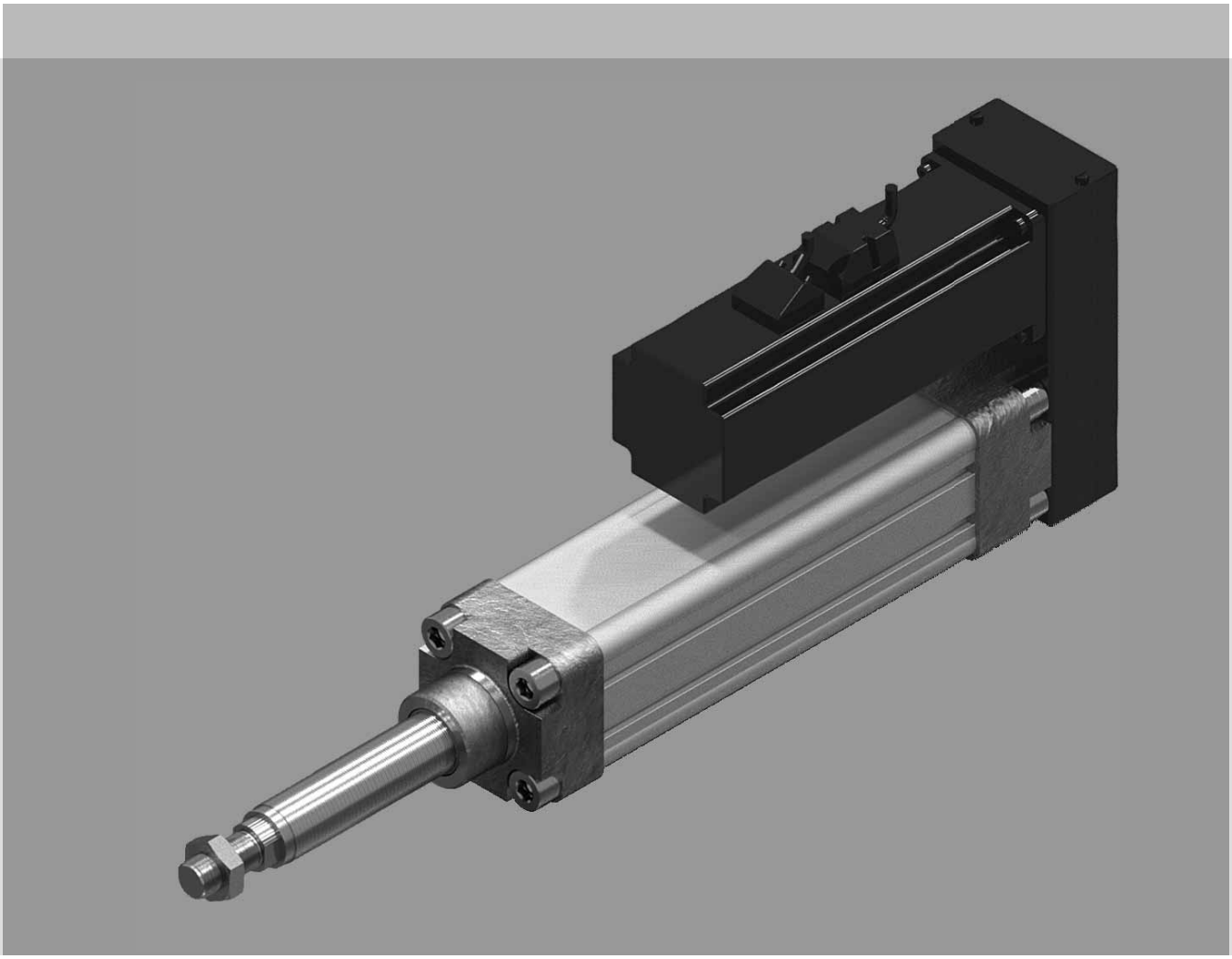
Inserted ball screw drive

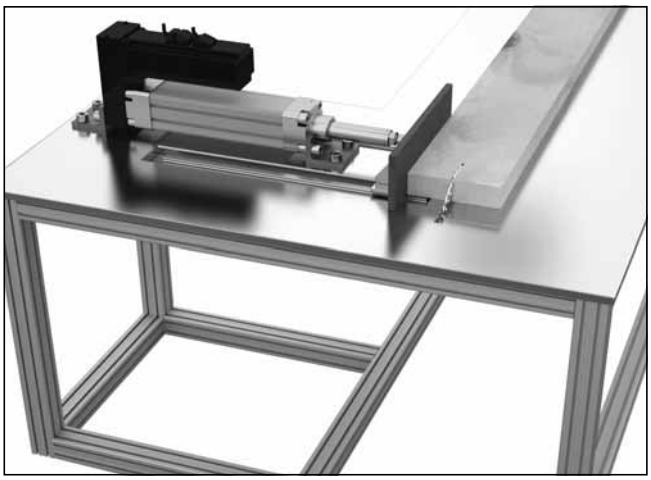
EMC-size	KGT							
		Lead P						
	d_0	5	10	16	20	25	32	40
32	12	■	■					
40	16	■	■	■				
50	20	■			■			
63	25	■	■			■		
80	32	■	■		■		■	
100	40	■	■		■			■

Application examples
There are many application areas that an EMC can be used, either as a replacement or in conjunction with pneumatic and hydraulic technology.

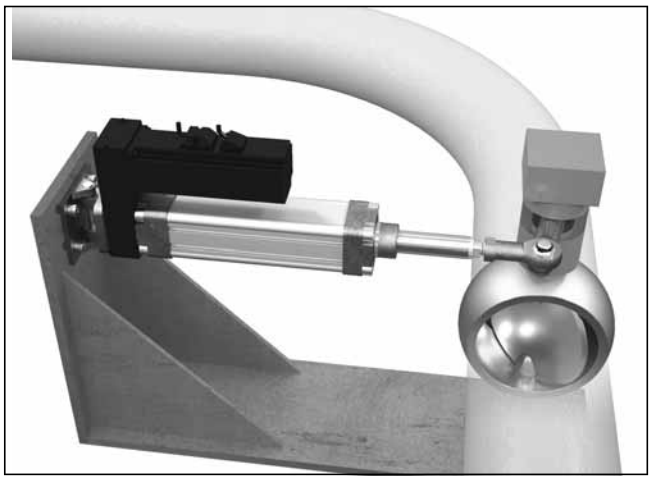


Packaging technology
Pallet table with three pneumatic and one EMC-Cylinder as an precise guide.





Tool or woodworking machine's adjustable mechanical stop for a saw

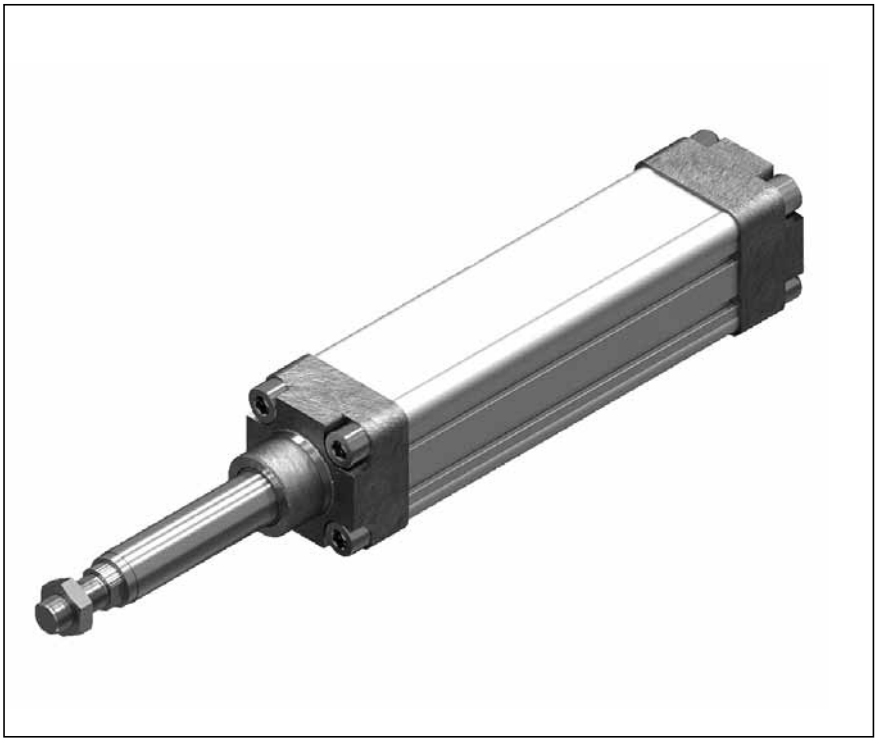


Valve timing for liquid dispensing systems technology

Technical Data and Dimensions EMC

Sizes 32 to 100 to follow the standard cylinder series according to ISO 15552

Built-in ballscrew drives have a diameter of 12mm to 40mm



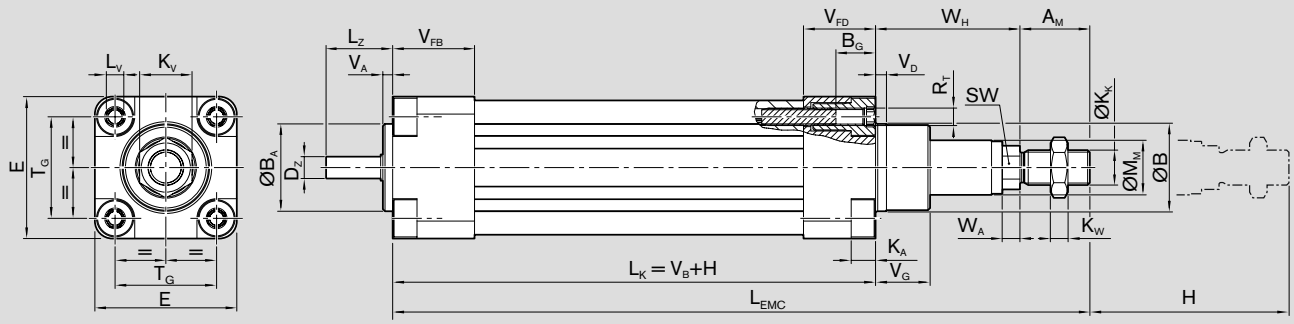
Stroke H per customer specifications (minimum stroke 100mm)
$L_K = V_B + H$
$L_{EMC} = L_K + W_H + A_M$

EMC Size	Ball srcew d_0 (mm)	Lead P (mm)	Load capacities C_{EMC} (N)	Max. axial force $F_{max\ EMC}$ (N)	Permissible drive torque at drive journal $M_{TA\ max}$ (Nm)	Speed v_{max} 1) (m/min)	Stroke H_{max} (mm)
32	12	5	3800	500	0.50	34.0	750
	12	10	2500	300	0.70	68.0	750
40	16	5	12300	3000	3.20	23.0	750
	16	10	9600	2800	5.00	46.0	750
	16	16	9600	2100	6.00	73.6	750
50	20	5	14300	6000	5.70	19.0	900
	20	20	13300	3400	12.30	76.0	900
63	25	5	15900	10000	14.80	16.5	1200
	25	10	15700	10000	26.10	33.0	1200
	25	25	14700	9400	41.70	82.5	1200
80	32	5	21600	17000	18.60	15.0	1500
	32	10	26000	17000	33.80	30.0	1500
	32	20	19700	14700	52.00	60.0	1500
	32	32	19500	10800	61.60	96.0	1500
100	40	5	29000	21000	54.10	11.0	2000
	40	10	29000	21000	58.40	22.0	2000
	40	20	29000	21000	94.90	44.0	2000
	40	40	29000	17600	124.60	88.0	2000

1) v_{max} is dependent on the stroke, see speed diagram

All dimensions for stroke H = 0mm
KV = Key width of the nut
SW = Key width of the bolt

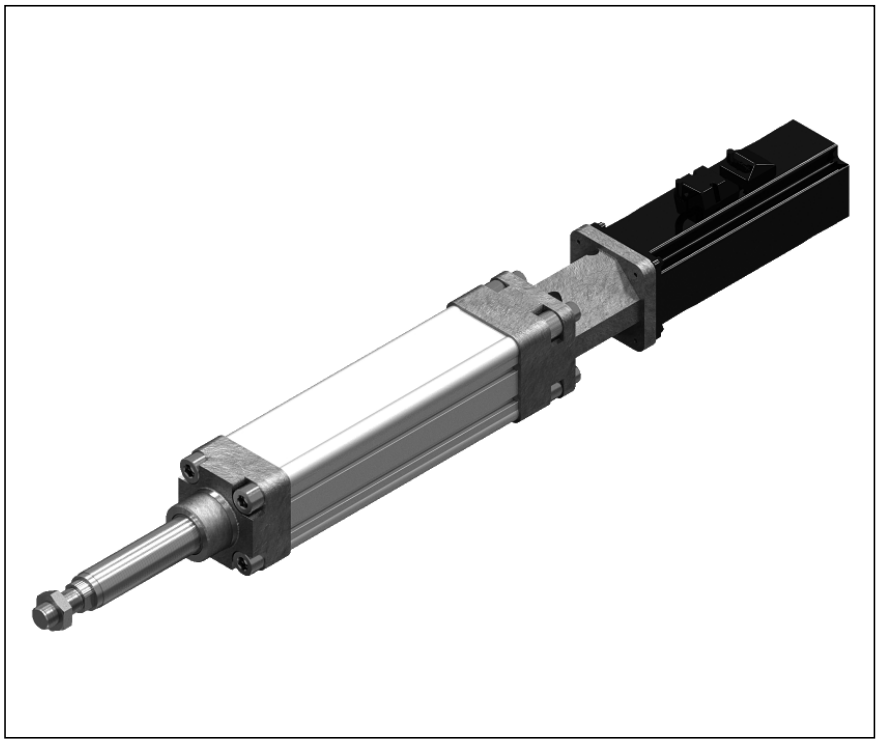
Shown in a retracted position



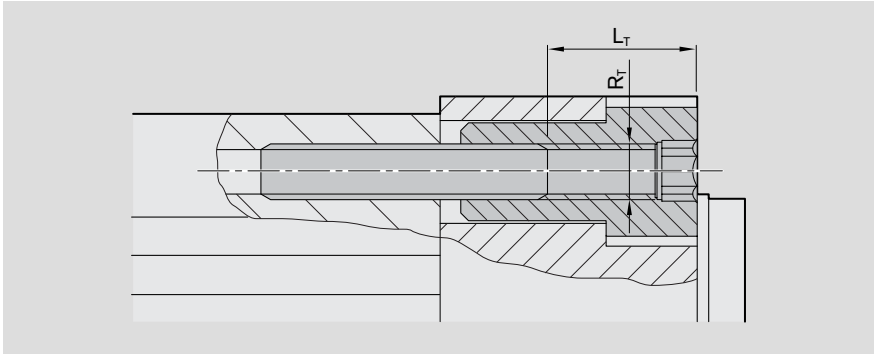
EMC size	KGT size	Dimensions (mm)											
		A_M −0,1	B e11	B_A e11	B_G	D_Z h7	E ± 0,1	K_K	K_A	K_V	L_V	L_Z	K_W
32	12x5Rx3-4	22	30	30	16	5	47	M10x1.25	6.65	17	6 E11	17	6
	12x10Rx2-2	22	30	30	16	5	47	M10x1.25	6.65	17	6 E11	17	6
40	16x5Rx3-4	24	35	35	16	8	53	M12x1.25	6.65	19	6 E11	21	7
	16x10Rx3-3	24	35	35	16	8	53	M12x1.25	6.65	19	6 E11	21	7
	16x16Rx3-3	24	35	35	16	8	53	M12x1.25	6.65	19	6 E11	21	7
50	20x5Rx3-4	32	40	40	16	10	65	M16x1.5	11.15	24	8 E11	26	8
	20x20Rx3.5-3	32	40	40	16	10	65	M16x1.5	11.15	24	8 E11	26	8
63	25x5Rx3-4	32	45	45	16	15	75	M16x1.5	11.15	24	8 E11	31	8
	25x10Rx3-4	32	45	45	16	15	75	M16x1.5	11.15	24	8 E11	31	8
	25x25Rx3.5-3	32	45	45	16	15	75	M16x1.5	11.15	24	8 E11	31	8
80	32x5Rx3.5-4	40	55	55	16	18	95	M20x1.5	15.15	30	15 −0.05/−0.2	42	10
	32x10Rx3.969-5	40	55	55	16	18	95	M20x1.5	15.15	30	15 −0.05/−0.2	42	10
	32x20Rx3.969-3	40	55	55	16	18	95	M20x1.5	15.15	30	15 −0.05/−0.2	42	10
	32x32Rx3.969-3	40	55	55	16	18	95	M20x1.5	15.15	30	15 −0.05/−0.2	42	10
100	40x5Rx3.5-5	40	65	65	16	25	115	M20x1.5	15.15	30	15 −0.05/−0.2	53	10
	40x10Rx6-4	40	65	65	16	25	115	M20x1.5	15.15	30	15 −0.05/−0.2	53	10
	40x20Rx6-3	40	65	65	16	25	115	M20x1.5	15.15	30	15 −0.05/−0.2	53	10
	40x40Rx6-3	40	65	65	16	25	115	M20x1.5	15.15	30	15 −0.05/−0.2	53	10

EMC size	KGT size	Dimensions (mm)											
		M_M f8	R_T	SW	T_G	V_A ± 0,1	V_B	V_{FB}	V_{FD}	V_G ± 0,1	V_D	W_A	W_H
32	12x5Rx3-4	18	M6	10	32.5 ±0.35	4	132	30	30	16	5	6	26
	12x10Rx2-2	18	M6	10	32.5 ±0.35	4	136	30	30	16	5	6	26
40	16x5Rx3-4	20	M6	10	38.0 ±0.35	4	134	33	30	20	5	6	30
	16x10Rx3-3	20	M6	10	38.0 ±0.35	4	143	33	30	20	5	6	30
	16x16Rx3-3	20	M6	10	38.0 ±0.35	4	159	33	30	20	5	6	30
50	20x5Rx3-4	25	M8	16	46.5 ±0.45	4	142	38	33	25	5	8	37
	20x20Rx3.5-3	25	M8	16	46.5 ±0.45	4	180	38	33	25	5	8	37
63	25x5Rx3-4	30	M8	16	56.5 ±0.55	4	148	40	33	25	5	8	37
	25x10Rx3-4	30	M8	16	56.5 ±0.55	4	167	40	33	25	5	8	37
	25x25Rx3.5-3	30	M8	16	56.5 ±0.55	4	199	40	33	25	5	8	37
80	32x5Rx3.5-4	38	M10	22	72.0 ±0.60	4	158	44	35	33	5	10	46
	32x10Rx3.969-5	38	M10	22	72.0 ±0.60	4	187	44	35	33	5	10	46
	32x20Rx3.969-3	38	M10	22	72.0 ±0.60	4	195	44	35	33	5	10	46
	32x32Rx3.969-3	38	M10	22	72.0 ±0.60	4	230	44	35	33	5	10	46
100	40x5Rx3.5-5	50	M10	22	89.0 ±0.60	4	166	48	35	38	5	10	51
	40x10Rx6-4	50	M10	22	89.0 ±0.60	4	185	48	35	38	5	10	51
	40x20Rx6-3	50	M10	22	89.0 ±0.60	4	203	48	35	38	5	10	51
	40x40Rx6-3	50	M10	22	89.0 ±0.60	4	258	48	35	38	5	10	51

Dimensions EMC with Flange and Motor

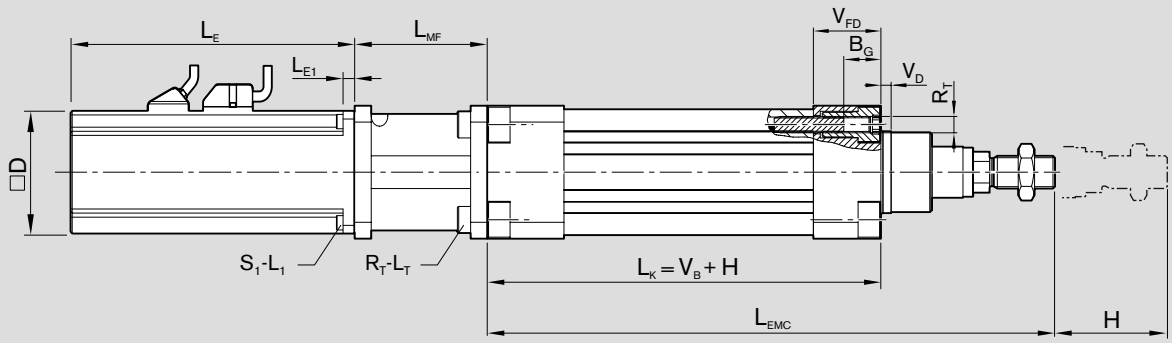


Attaching the accessories
The accessory parts are screwed into the internal thread of the end cap nut. These screws are included in the delivery of the EMC and are identical regardless of EMS size.



L_T = Depth of the screw in the end cap nut
R_T = Thread diameter

Shown in a retracted position

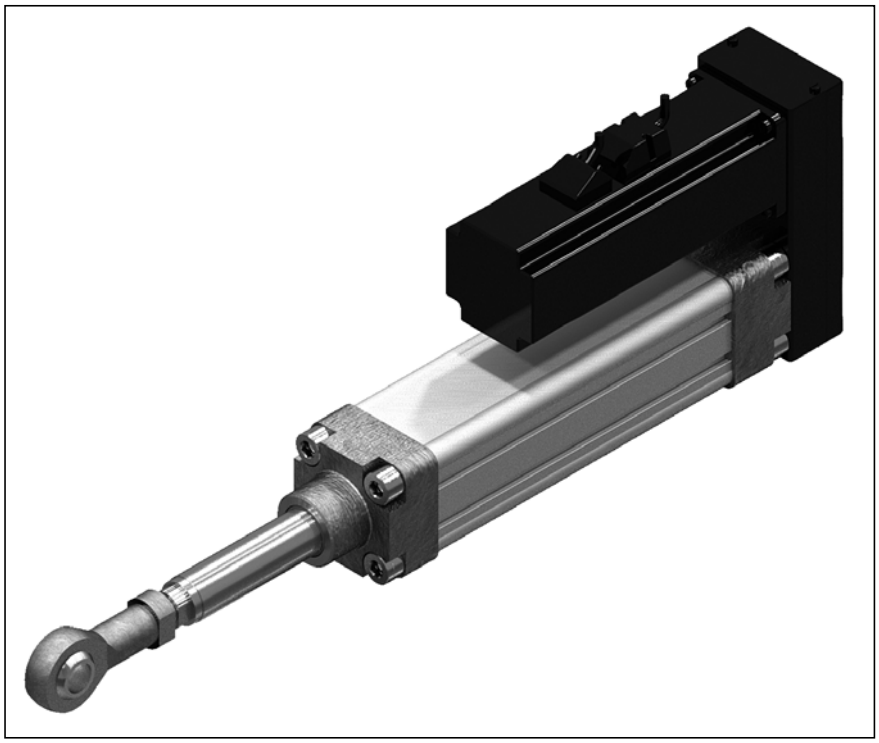


$L_{MF0} = L_{EMC} + L_{MF} + L_E$

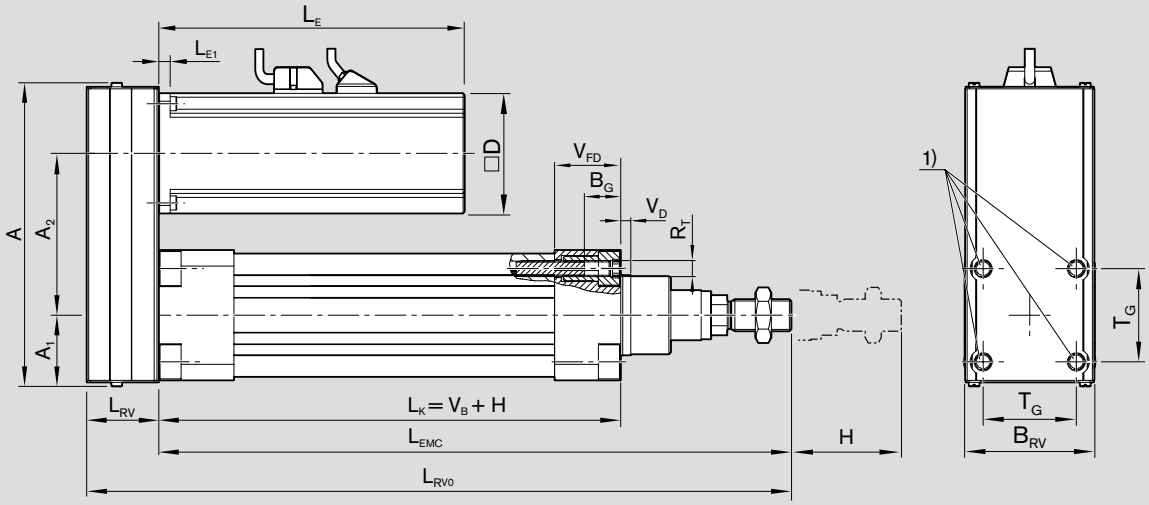
EMC size	Motor	Dimensions (mm)											
		B_G	D	L_{MF}	L_E without brake	L_E with brake	L_{E1}	L_T	L_1	R_T	S_1	V_D	V_{FD}
32	**MSM020B**	16	42.0	45	109.0	140.5	7.0	25	12	M6	M3	5	30
	MSM030B	16	60.0	55	111.0	144.0	7.0	25	18	M6	M4	5	30
	MSK030C	16	54.0	55	188.0	213.0	7.0	25	18	M6	M4	5	30
	VRDM368	16	57.2	45	116.0	157.0	5.0	25	18	M6	M4	5	30
40	**MSM020B**	16	42.0	45	109.0	145.5	7.0	25	12	M6	M3	5	30
	MSM030B	16	60.0	61	111.0	144.0	7.0	25	18	M6	M4	5	30
	MSK030C	16	54.0	61	188.0	213.0	7.0	25	18	M6	M4	5	30
	VRDM368	16	57.2	45	116.0	157.0	5.0	25	18	M6	M4	5	30
50	**MSM030C**	16	60.0	73	138.5	171.5	7.0	25	18	M8	M4	5	33
	MSK030C	16	54.0	73	188.0	213.0	7.0	25	18	M8	M4	5	33
	MSK040C	16	82.0	73	185.5	215.0	8.0	25	22	M8	M6	5	33
	VRDM397	16	85.0	73	110.0	157.0	10.0	25	25	M8	M6	5	33
63	**MSM040B**	16	80.0	73	157.5	191.5	8.0	25	22	M8	M5	5	33
	MSK040C	16	82.0	73	185.5	215.0	8.0	25	22	M8	M6	5	33
	MSK050C	16	98.0	73	203.0	257.0	9.0	25	25	M8	M8	5	33
	VRDM3910	16	85.0	73	140.0	186.5	10.0	25	25	M8	M6	5	33
80	**MSK040C**	16	82.0	73	185.5	215.0	8.0	25	22	M10	M6	5	35
	MSK050C	16	98.0	95	203.0	257.0	9.0	25	25	M10	M8	5	35
	MSK060C	16	116.0	95	226.0	282.0	9.5	25	25	M10	M8	5	35
	MSK076C	16	140.0	95	–	292.5	–	25	25	M10	M10	5	35
	VRDM3910	16	85.0	73	140.0	186.5	10.0	25	25	M10	M6	5	35
100	**MSK060C**	16	116.0	108	226.0	282.0	9.5	25	25	M10	M8	5	35
	MSK076C	16	140.0	108	–	292.5	–	25	25	M10	M10	5	35

Dimensions EMC with belt side drive

This configuration of the EMS results in the shortest possible installation length
The reduction gear ration is 1:1.



Shown in a retracted position



$L_{RV0} = L_{EMC} + L_{RV}$

EMC size	Motor	Dimensions (mm)												
		B_G	A	A_1	A_2	B_{RV}	L_E		L_{E1}	L_{RV}	T_G	R_T	V_D	V_{FD}
							without brake	with brake						
32	**MSM020B**	16	152.0	32.5	71.8	64.5	109.0	140.5	7.0	37.0	32.5	M6	5	30
	MSM030B	16	152.0	32.5	71.8	64.5	111.0	144.0	7.0	37.0	32.5	M6	5	30
	MSK030C	16	152.0	32.5	71.8	64.5	188.0	213.0	7.0	37.0	32.5	M6	5	30
	VRDM368	16	152.0	32.5	71.8	64.5	116.0	157.0	5.0	37.0	32.5	M6	5	30
40	**MSM020B**	16	141.0	32.5	64.3	64.5	140.5	140.5	7.0	37.0	38.0	M6	5	30
	MSM030B	16	141.0	32.5	64.3	64.5	111.0	144.0	7.0	37.0	38.0	M6	5	30
	MSK030C	16	141.0	32.5	64.3	64.5	188.0	213.0	7.0	37.0	38.0	M6	5	30
	VRDM368	16	141.0	32.5	64.3	64.5	116.0	157.0	5.0	37.0	38.0	M6	5	30
50	**MSM030C**	16	158.0	38.5	80.8	64.5	138.5	171.5	7.0	37.0	46.5	M8	5	33
	MSK030C	16	158.0	38.5	80.8	64.5	188.0	213.0	7.0	37.0	46.5	M8	5	33
	MSK040C	16	172.0	38.5	80.8	88.0	185.5	215.5	8.0	51.0	46.5	M8	5	33
	VRDM397	16	172.0	38.5	80.8	88.0	110.0	157.0	10.0	51.0	46.5	M8	5	33
63	**MSM040B**	16	212.0	54.0	89.7	116.0	157.5	191.5	8.0	66.0	56.5	M8	5	33
	MSK040C	16	212.0	54.0	89.7	116.0	185.5	215.5	8.0	66.0	56.5	M8	5	33
	MSK050C	16	212.0	54.0	89.7	116.0	203.0	233.0	9.0	66.0	56.5	M8	5	33
	VRDM3910	16	212.0	54.0	89.7	116.0	140.0	186.5	10.0	66.0	56.5	M8	5	33
80	**MSK040C**	16	252.0	54.0	132.2	116.0	185.5	215.5	8.0	66.0	72.0	M10	5	35
	MSK050C	16	252.0	54.0	132.2	116.0	203.0	233.0	9.0	66.0	72.0	M10	5	35
	MSK060C	16	252.0	54.0	132.2	116.0	226.0	259.0	9.5	66.0	72.0	M10	5	35
	MSK076C	16	289.0	54.0	132.2	160.0	–	292.5	10.0	90.0	72.0	M10	5	35
	VRDM3910	16	252.0	54.0	132.2	116.0	140.0	186.5	10.0	66.0	72.0	M10	5	35
100	**MSK060C**	16	272.0	63.5	134.7	116.0	226.0	259.0	9.5	66.0	89.0	M10	5	35
	MSK076C	16	289.0	64.5	134.7	160.0	–	292.5	10.0	90.0	89.0	M10	5	35

1) Accessories are attached at the rear end of the belt drive. The fasteners are included in the scope of delivery.

Motors

Type

The IndraDyn S – **Servomotors MSK** have a wide ranging capacity and are a very precise line of servo motors. The high torque density of this synchronized servomotor allows even very compact constructions their maximum torque.

Specification:
- Smooth shaft with shaft seal ring
- Multi-turn absolute encoder (Hiperface), 128 bits with 4096 revolutions. With this encoder type, the absolute axis position is saved even after the power is switched off.
- Cooling System: Natural convection
- Protection Class IP65
- With or without holding brake

Product Advantages:
- High operational reliability
- Compact construction
- High-performance and dynamic
- High torque density
- High protection rating IP65
- Maximum precisionthrough optical encoder

The maintenance-free Ecodrive Cs – **Servomotors MSM** complete the product portfolio of digital drive technology in the lower capacity range. Its high-power density coupled with short installation length and minimized inertia makes this motor especially suitable for machine concepts with high dynamic processes. Model specifications: Smooth shaft, cooling: natural convection, protection type IP65 with or without holding brake.

Specification:
- Smooth shaft
- Multi-turn absolute encoder (Hiperface)
- Cooling System: Natural convection
- Protection Class IP65
- With or without holding brake

Product Advantages:
- High operational reliability
- Maintenance-free operation (through brushless design and the use of long-lasting grease-lubricated bearings)
- High performance data
- High dynamics (through favorable torque-inertia mass ratio)
- Simple cable management and quick start-up

VRDM step motors are designed to be sturdy and have maintenance-free operation. High performance density is achieved through optimized internal geometry of the motor i.e. up to 50 % more torque than conventional step motors in similar sizes. Model specifications: With encoder, with or without stop brake.

Specification:
- With Encoder
- With or without holding brake

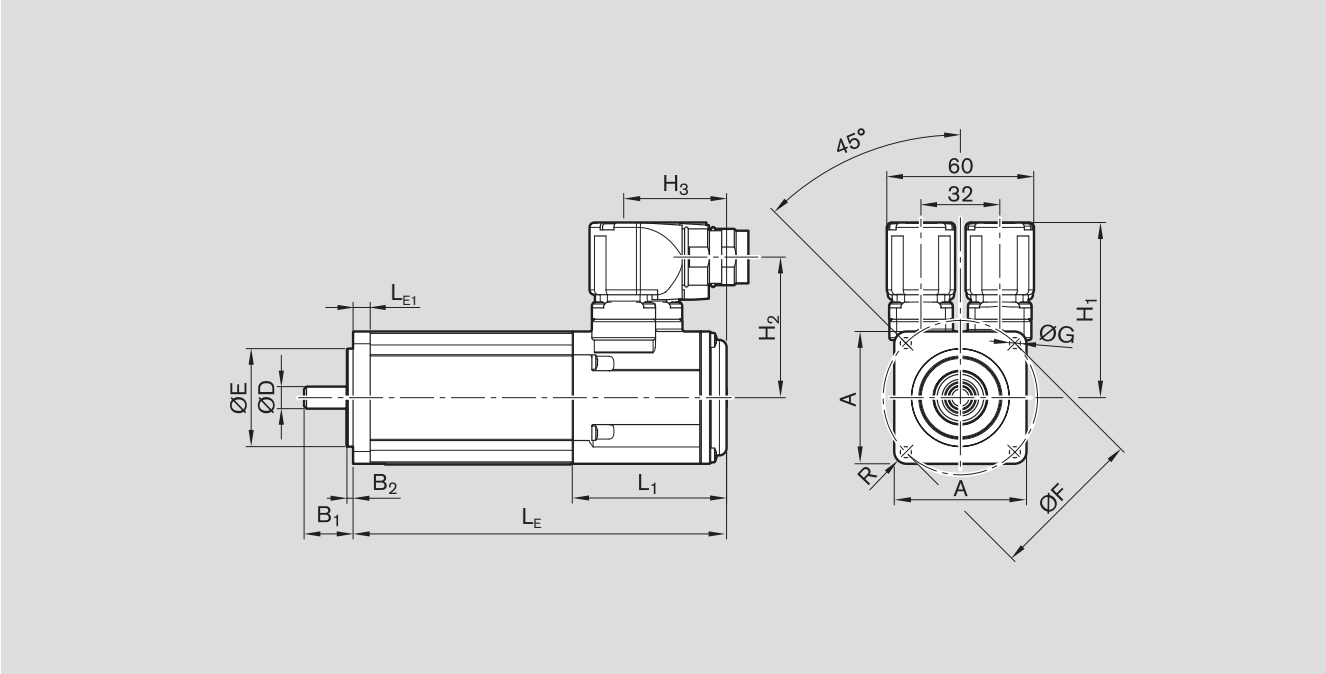
Product advantages:
- High perfromance density
- Integrated thermal coil-control per EN-requirements for „Safe detachment“
- Very quiet and almost resonance free run

Motor	Recommended controller	Electromechanical Cylinder EMC					
		32	40	50	63	80	100
MSK 030 C	HCS02.1E-W0012	■	■	■			
MSK 040 C	HCS02.1E-W0028			■	■	■	
MSK 050 C	HCS02.1E-W0028				■	■	
MSK 060 C	HCS02.1E-W0028					■	■
MSK 076 C	HCS02.1E-W0054					■	■
MSM 020B	DKC**.3-004	■	■				
MSM 030B	DKC**.3-008	■	■				
MSM 030C	DKC**.3-012			■			
MSM 040B	DKC**.3-018				■		
VRDM 368	TLD 011F	■	■				
VRDM 397	TLD 011F			■			
VRDM 3910	TLD 011F				■	■	
VRDM 3913	TLD 011F						

Motors

AC-Servo motors MSK

Dimensions



Motor type	Dimensions (mm)														
	A	B_1	B_2	ØD k6	ØE j6	ØF	ØG	H_1	H_2	H_3	L_E without brake	L_E with brake	L_{E1}	L_1	R
MSK 030C	54	20	2.5	9	40	63	4.5	71.5	57.4	42.0	188.0	213.0	7.0	–	R5
MSK 040C	82	30	2.5	14	50	95	6.6	83.5	69.0	31.0	185.5	215.5	8.0	42.5	R8
MSK 050C	98	40	3.0	19	95	115	9.0	85.5	71.0	43.5	203.0	233.0	9.0	55.5	R8
MSK 060C	116	50	3.0	24	95	130	9.0	98.0	84.0	37.0	226.0	259.0	9.5	48.0	R9
MSK 076C	140	50	4.0	24	110	165	11.0	110.0	95.6	57.5	292.5	292.5	10.0	79.0	R12

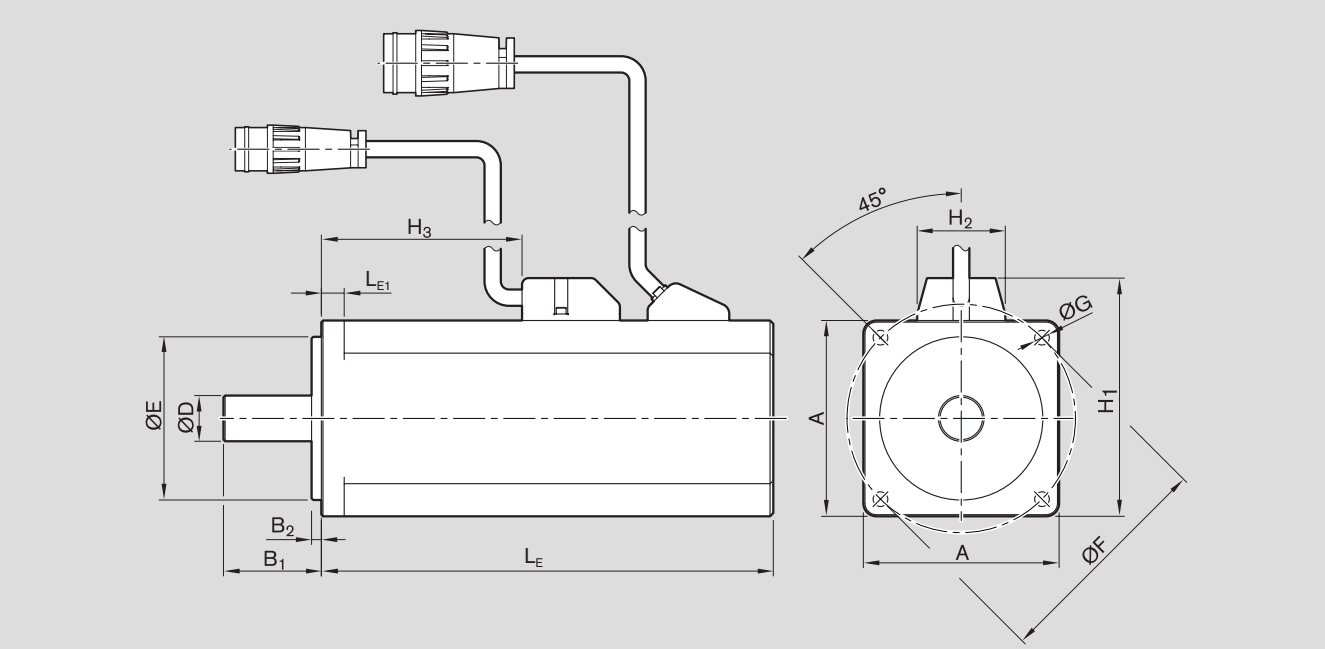
Motor data independent of EMC

Description		Symbol	Unit	MSK030C-0900	MSK040C-0600	MSK050C-0600	MSK060C-0600	MSK076C-0450
Part number	with brake			R347108503	R347108603	R347108903	R347109003	R347109303
	without brake			R347108403	R347108703	R347108803	R347109103	R347109203
Maximum rotational speed		n_{max}	(min^{-1})	9000	5600	5700	5200	5000
Maximum torque		M_{max}	(Nm)	4	8.1	15	24	43.5
Nominal torque		M_N	(Nm)	0.8	2.7	5.0	8.0	12.0
Rotor moment of inertia		J_{rot}	($10^{-6}kgm^2$)	30	140	330	800	4300
Mass without brake		m	(kg)	2.1	3.6	5.4	8.4	13.8
Holding brake								
Holding torque		M_{Br}	(Nm)	1.0	4.0	5.0	10.0	11.0
Moment of inertia		J_{Br}	($10^{-6}kgm^2$)	7	23	107	55	360
Mass Brake		m_{Br}	(kg)	0.25	0.32	0.7	0.45	1.1

Note
The motors are delivered complete with controllers.
More information about Motors and controllers can be found in the catalogs.

Servo motors MSM

Dimensions



Motor type	Dimensions (mm)												
	A	B_1	B_2	ØD h6	ØE h7	ØF	ØG	H_1	H_2	H_3	L_E without brake	L_E with brake	L_{E1}
MSM 020B	42	24	2	8	22	48	34	55	27	38.8	109.0	140.5	7
MSM 030B	60	30	3	11	50	70	45	73	27	34.0	111.0	144.0	7
MSM 030C	60	30	3	14	50	70	4.5	73	27	61.5	138.5	171.5	7
MSM 040B	80	35	3	19	70	90	6.0	93	27	76.0	157.5	191.5	8

Motor data independent of EMC

Description		Symbol	Unit	MSM 020B	MSM 030B	MSM 030C	MSM 040B
Part number	with brake			R347106903	R347107103	R347107303	R347107503
	without brake			R347106803	R347107003	R347107203	R347107403
Maximum rotational speed		n_{max}	(min^{-1})	3000	3000	3000	3000
Maximum torque		M_{max}	(Nm)	0.95	1.91	3.8	7.1
Nominal torque		M_N	(Nm)	0.30	0.64	1.2	2.4
Rotor moment of inertia		J_{rot}	($10^{-6}kgm^2$)	3.20	10.00	17.00	67.00
Mass without brake		m	(kg)	0.50	0.96	1.5	3.1
Holding brake							
Holding torque		M_{Br}	(Nm)	0.29	1.27	1.27	2.45
Moment of inertia		J_{Br}	($10^{-6}kgm^2$)	0.40	3.00	3.00	8.00
Mass Brake		m_{Br}	(kg)	0.20	0.40	0.4	0.7

Note

The motors are delivered complete with controllers.
More information about Motors and controllers can be found in the catalogs.

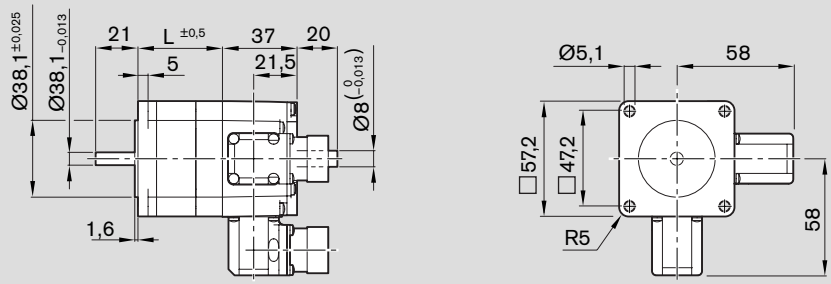
Motors

3 phase step motor VRDM

Dimensions

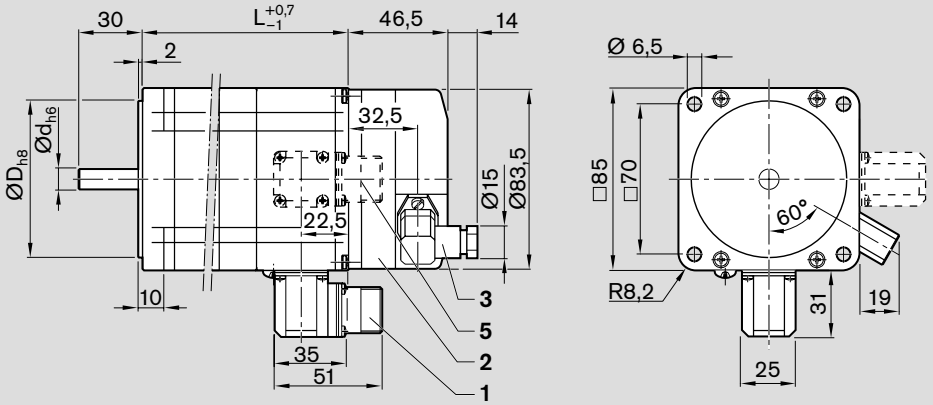
VRDM 368

spring mounted
axial rotor



VRDM 397, 3910, 3913

1) Motor connection
2) Brake
3) Brake connection
4) Fitted key
5) Encoder connection



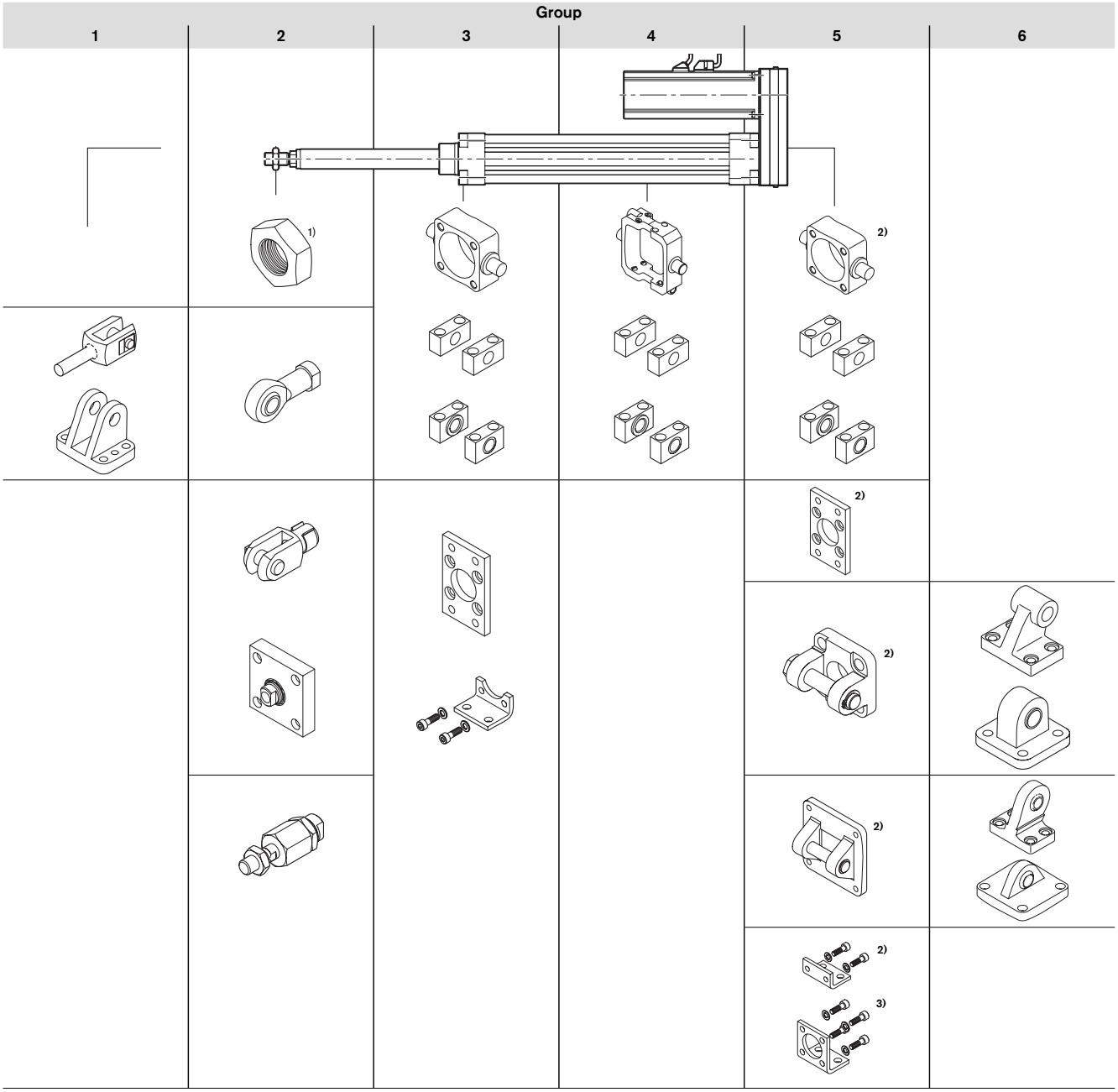
Motor type	Part number	Model holding brake without	Model holding brake with	Shaft diameter d (mm)	Overall length L (mm)	Pilot diameter D (mm)
VRDM 368	R3471 035 06	X		8 –0.013	116	38.1 ±0.025
	R3471 036 06		X			
VRDM 397	R3471 037 06	X		12 h6	110	60.0 h8
	R3471 038 06		X			
VRDM 3910	R3471 039 06	X		12 h6	140	60.0 h8
	R3471 040 06		X			
VRDM 3913	R3471 041 06	X		14 h6	170	60.0 h8
	R3471 042 06		X			

Motor data independent of EMC

Description	Symbol	Unit	VRDM 368	VRDM 397	VRDM 3910	VRDM 3913
Nominal torque	M_N	(Nm)	1.5	2.0	4.0	6.0
Holding torque	M_H	(Nm)	1.7	2.26	4.52	6.78
Rotor moment of inertia without brake	J_{rot}	(10^{-4}kgm^2)	0.38	1.10	2.20	3.30
Step count	z		200/400/500/1000/2000/4000/5000/10000			
Step angle per step	a	(°)	1.8/0.9/0.72/0.36/0.18/0.09/0.072/0.036			
Encoder resolution			1000 increments/revolution			
Mass without brake	m	(kg)	1.00	2.05	3.10	4.20
Holding brake						
Holding torque	M_{Br}	(Nm)	1.0			6.0
Moment of inertia	J_{Br}	(10^{-4}kgm^2)	0.016			0.200
Mass brake	m_{Br}	(kg)	0.5			1.5

Note
The motors are delivered complete with controllers.
More information about Motors and controllers can be found in the catalogs.

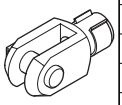
Accessories



1) Nut is included in the scope of delivery. Can be ordered as an accessory 2) for RV0 3) only for MF0

Group	Description	Size	Part number
1	female clevis	32	R3499 361 00
		40	R3499 362 00
		50	R3499 363 00
		63	R3499 364 00
		80	R3499 365 00
		100	R3499 366 00
1	counter support block	32	R3499 373 00
		40	R3499 374 00
		50	R3499 375 00
		63	R3499 376 00
		80	R3499 377 00
		100	R3499 378 00

Group	Description	Size	Part number
2	nut	32	R1823 300 020
		40	R1823 300 021
		50	R1823 300 030
		63	R1823 300 030
		80	R1823 300 031
		100	R1823 300 031
2	swivel head	32	R3499 385 00
		40	R3499 386 00
		50	R3499 387 00
		63	R3499 388 00
		80	R3499 389 00
		100	R3499 390 00

Group	Description	Size	Part number
2	female clevis 	32	R3499 391 00
		40	R3499 392 00
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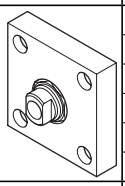
		63	R3499 394 00
		80	R3499 395 00
		100	R3499 396 00
2	balance coupling with attachment plate 	32	R3499 397 00
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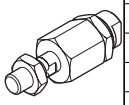
		63	R3499 400 00
		80	R3499 401 00
		100	R3499 402 00
2	flex-coupling 	32	R3499 379 00
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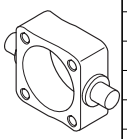
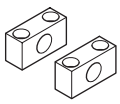
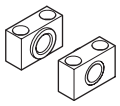
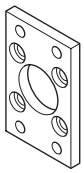
		50	R3499 381 00
		63	R3499 382 00
		80	R3499 383 00
		100	R3499 384 00
3, 5	rotating journal 	32	R3499 403 00
		40	R3499 404 00
		50	R3499 405 00
		63	R3499 406 00
		80	R3499 407 00
		100	R3499 408 00
3, 4, 5	bearing for rotating journal 	32	R3499 409 00
		40	R3499 410 00
		50	R3499 411 00
		63	R3499 412 00
		80	R3499 413 00
		100	R3499 414 00
3, 4, 5	bearing for rotating journal - plastic 	32	R3499 415 00
		40	R3499 416 00
		50	R3499 417 00
		63	R3499 418 00
		80	R3499 419 00
		100	R3499 420 00
3, 5	head/floor attachment 	32	R3499 421 00
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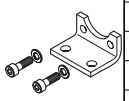
		63	R3499 424 00
		80	R3499 425 00
		100	R3499 426 00
3	flange mount attachment A 	32	R3499 427 00
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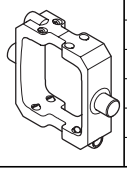
4	pivot attachment 	32	R3499 433 00
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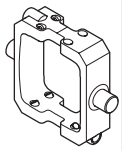
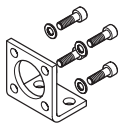
		63	R3499 436 00
		80	R3499 437 00
		100	R3499 438 00

Group	Description	Size	Part number
4	pivot attachment 	32	R3499 433 00
		40	R3499 434 00
		50	R3499 435 00
		63	R3499 436 00
		80	R3499 437 00
		100	R3499 438 00
5	flange mount attachment 	32	R3499 439 00
		40	R3499 440 00
		50	R3499 441 00
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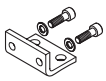
		80	R3499 443 00
		100	R3499 444 00
5	flange mount attachment B 	32	R3499 445 00
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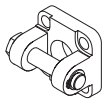
		100	R3499 450 00
5	counter support bearing D 	32	R3499 457 00
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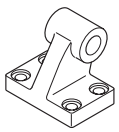
6	bearing block CETOP 	32	R3499 475 00
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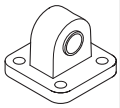
		80	R3499 479 00
		100	R3499 480 00
6	swivel mount 	32	R3499 481 00
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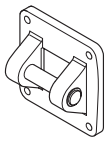
5	fork head swivel joint attachment for hinge bearing 	32	R3499 451 00
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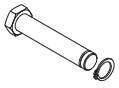
5	bolt 	32	R3499 367 00
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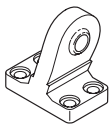
6	counter support C 	32	R3499 463 00
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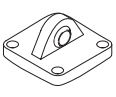
		80	R3499 467 00
		100	R3499 468 00
6	counter support B 	32	R3499 469 00
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		63	R3499 472 00
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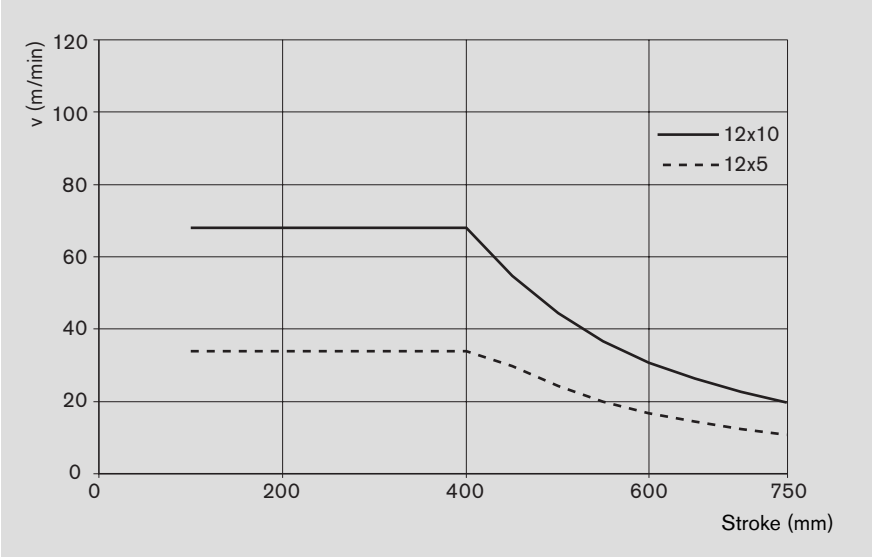
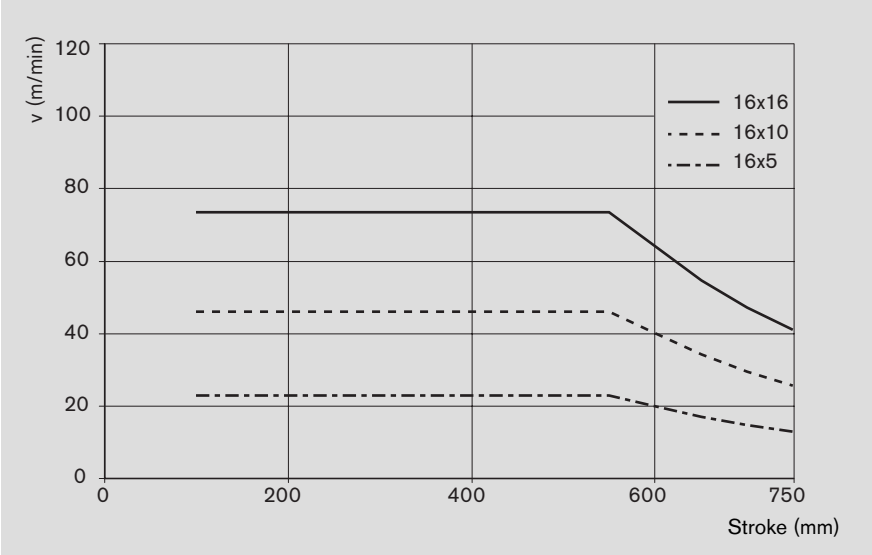
		100	R3499 474 00

Permissible Speeds

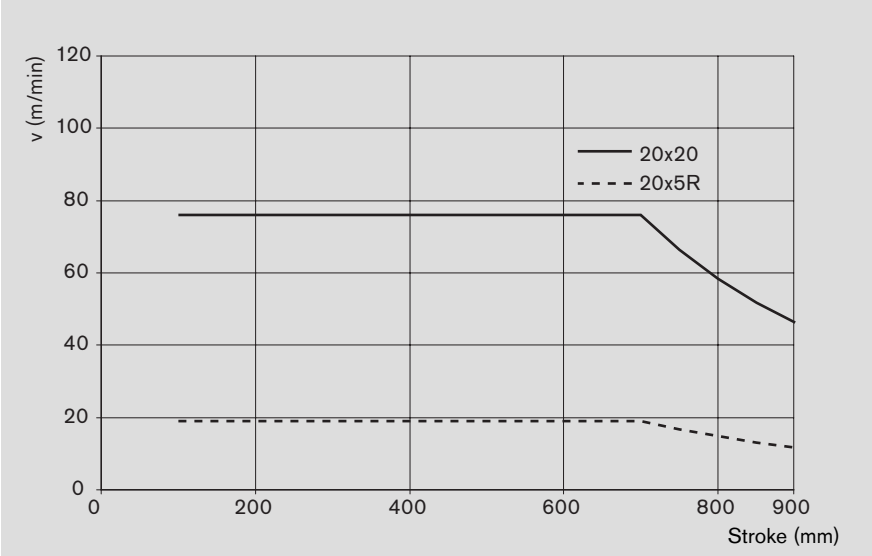
EMC 32



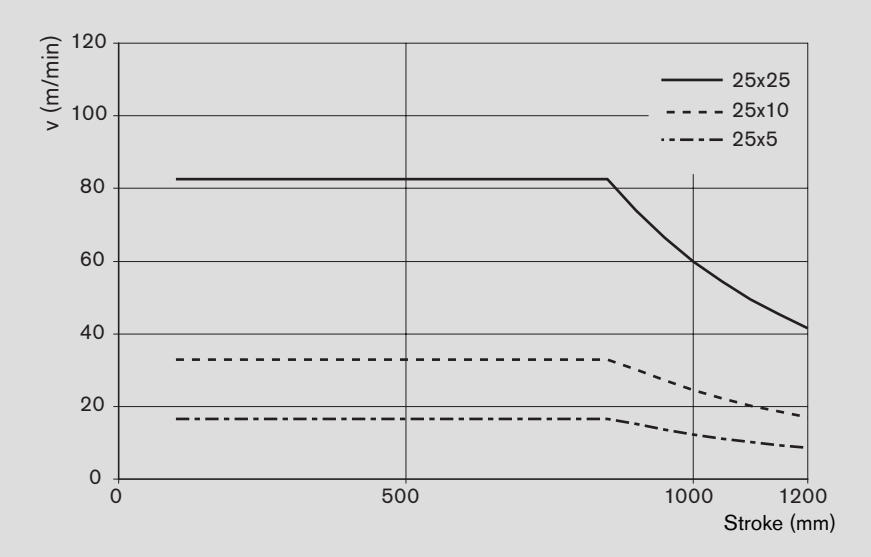
EMC 40



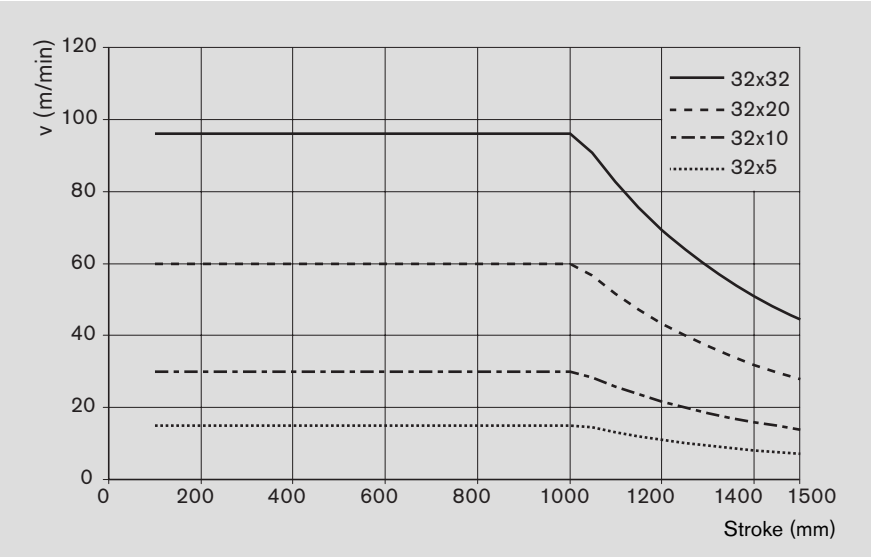
EMC 50



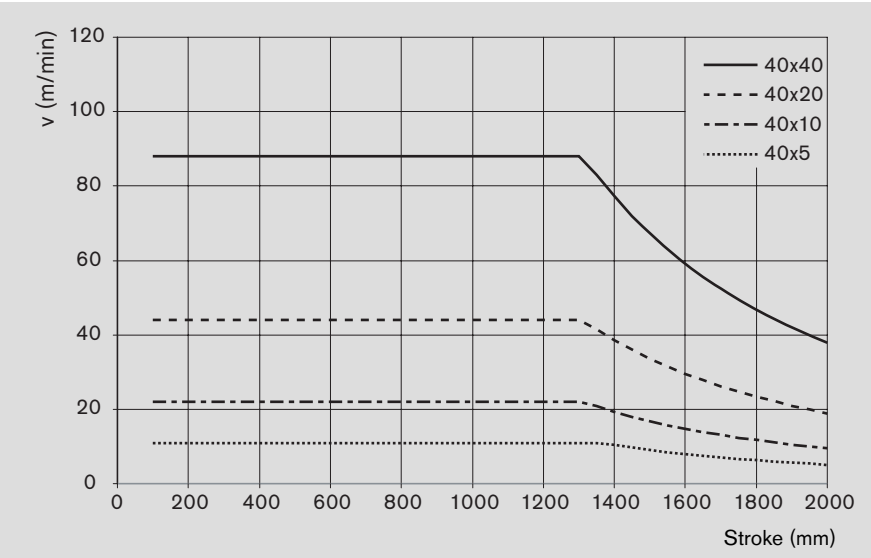
EMC 63



EMC 50

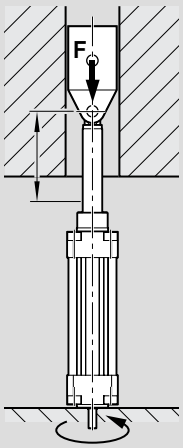


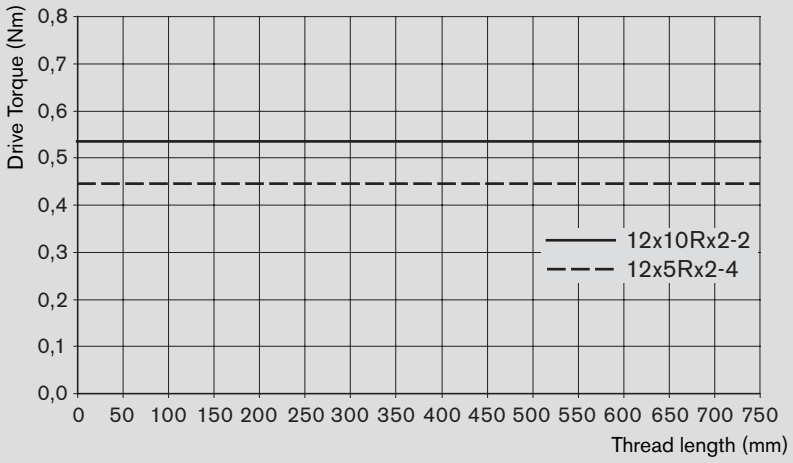
EMC 100



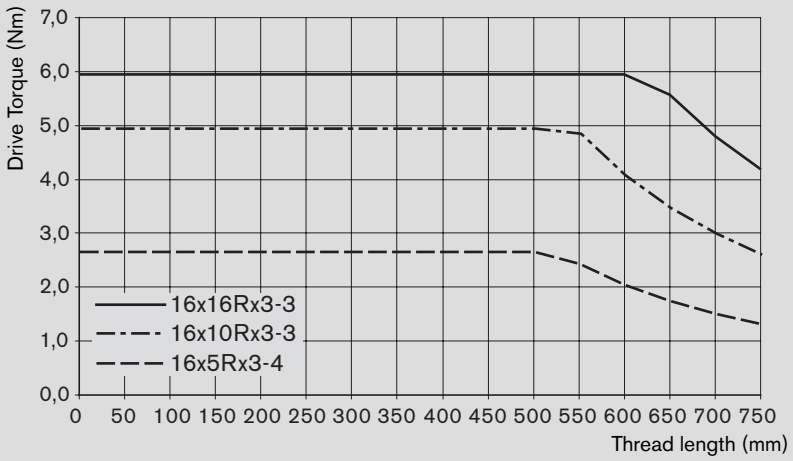
Permissible Drive Torque

EMC 32

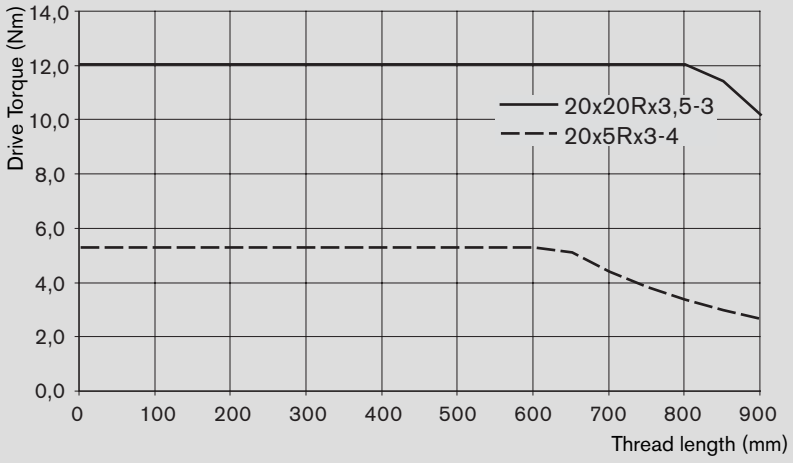




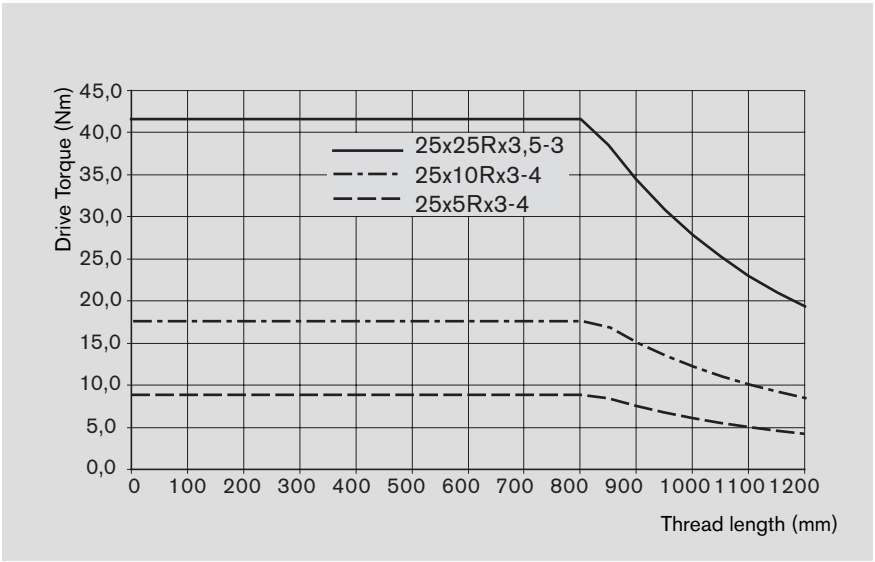
EMC 40



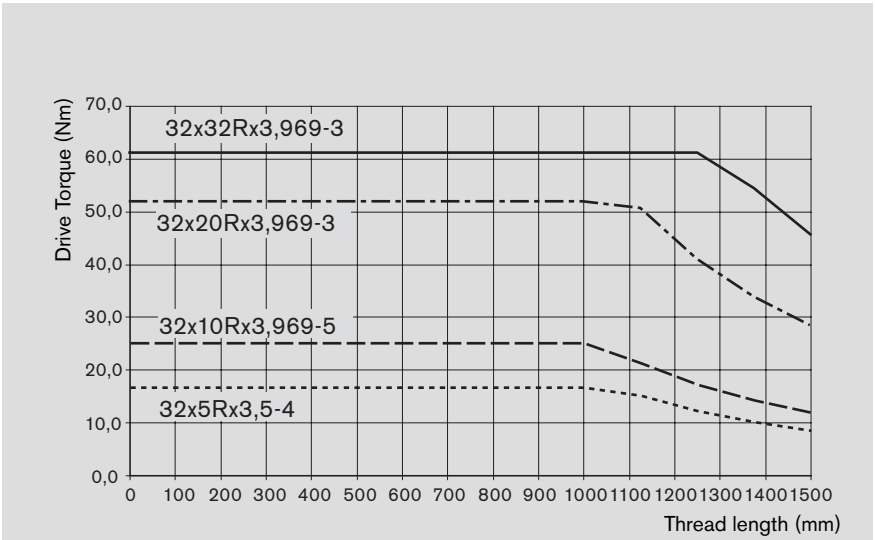
EMC 50



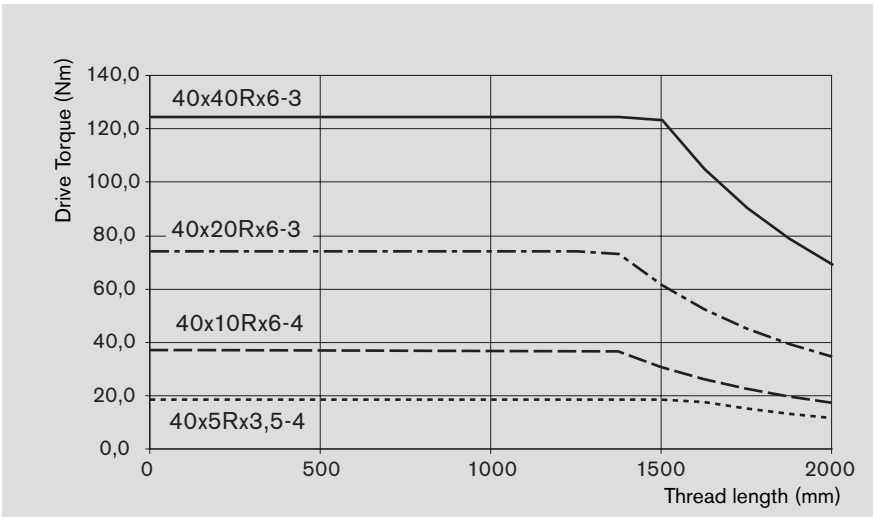
EMC 63



EMC 50

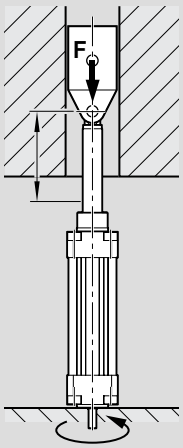


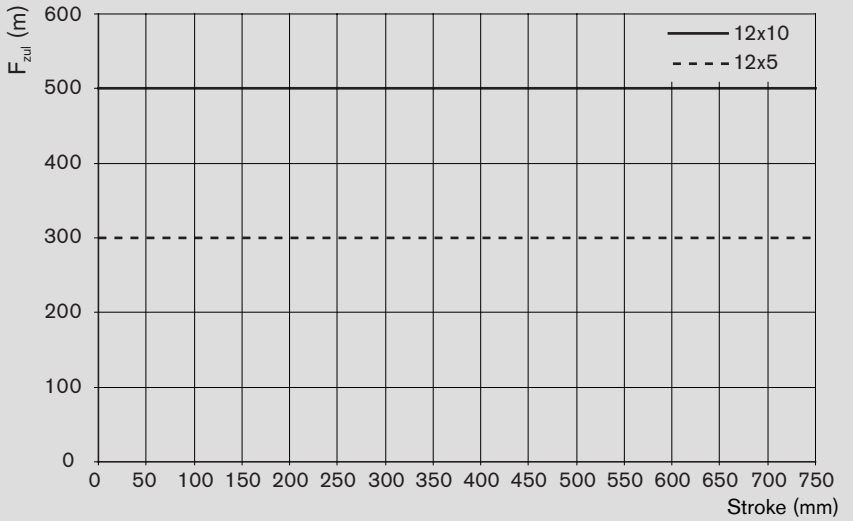
EMC 100



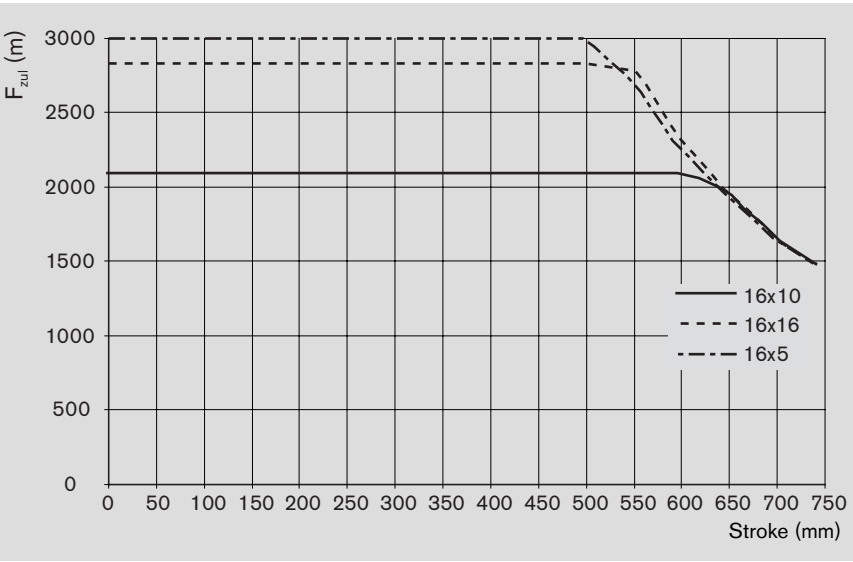
Permissible Axial Force

EMC 32

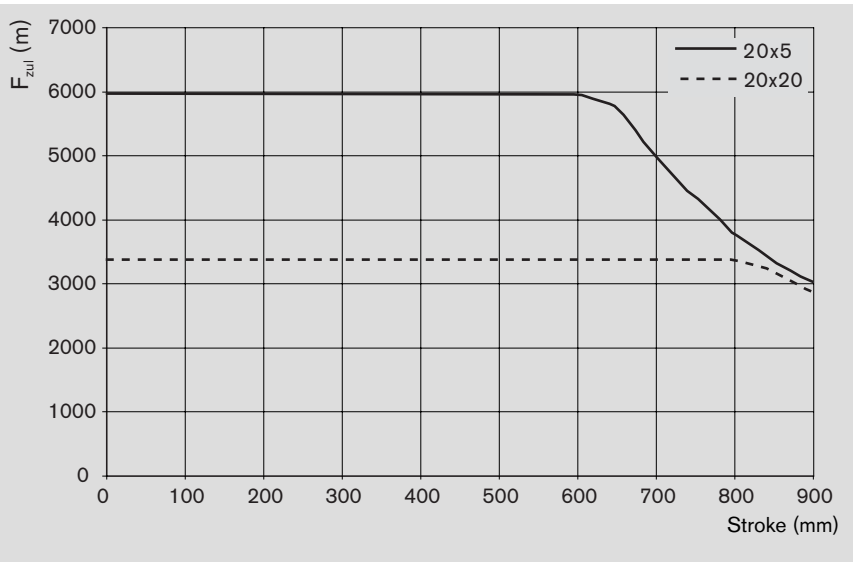




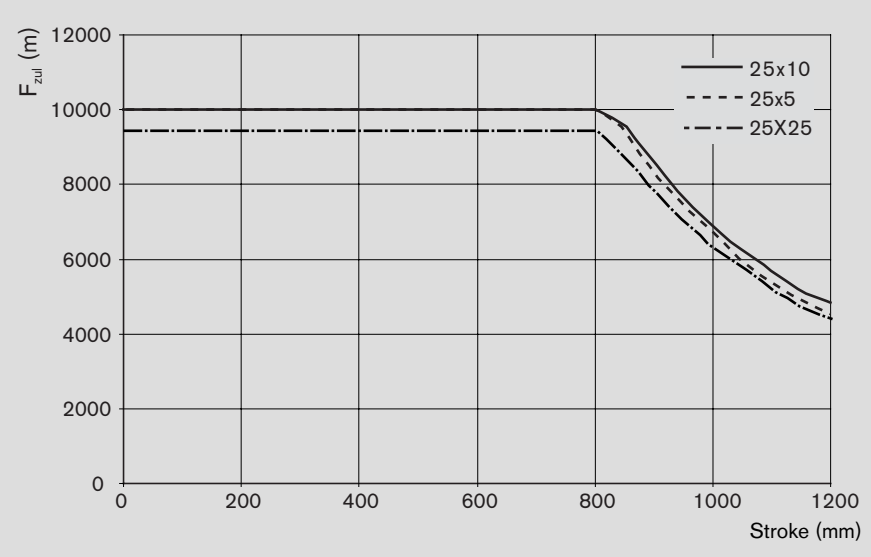
EMC 40



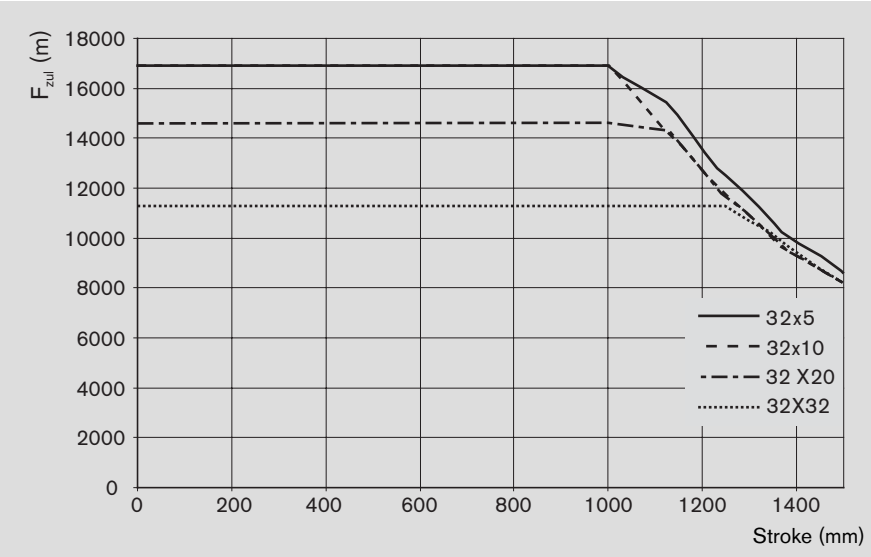
EMC 50



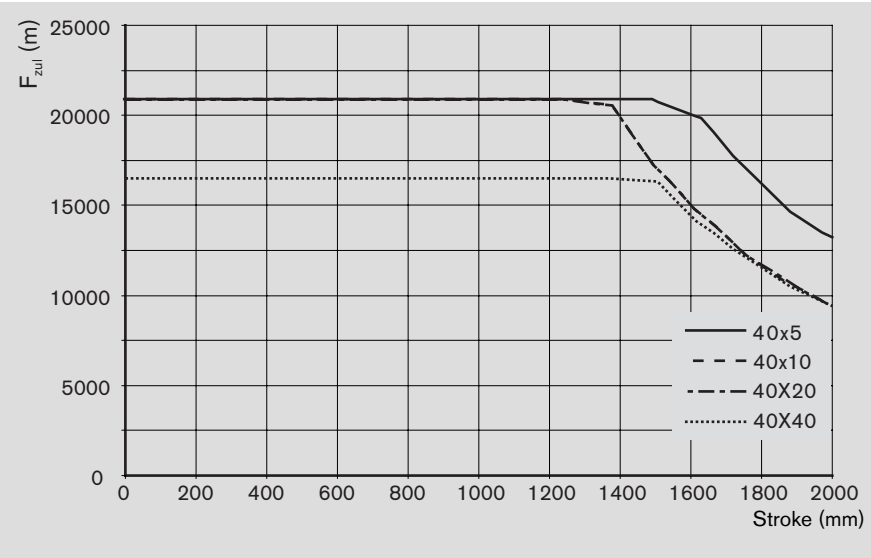
EMC 63



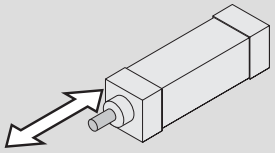
EMC 50



EMC 100



Configuration and Ordering

Size	Ballscrew drive 						
	Lead (mm)	**Stroke** (mm)	**Seal system**	**Preload**	**Accuracy class**	**KGT-nut**	**Journal**
EMC32	5 10	...	standard 01	reduced axial play 01	T7	standard 00	standard 00
EMC40	5 10 16	...	standard 01	reduced axial play 01	T7	standard 00	standard 00
EMC50	5 20	...	standard 01	reduced axial play 01	T7	standard 00	standard 00

Order example:

Ordering information		
Option	**Option code**	**Description**
EMC	EMC50	Electromechanical Cylinder size 50
Lead	5	lead 5 mm
Stroke	200	given stroke 200 mm
KGT-nut	00	standard
Journal	00	standard
Motor mount	RV02	belt driven position 2
Adaptor kit for motor	23	adaptor kit for belt drive for Motor MSM 030C
Motor	73	motor MSM 030C with brake
Documentation	000	standard documentation
Accessories 1	Group 1	female clevis
Accessories 2	Group 2	female clevis
Accessories 3	Group 5	head/floor attachment

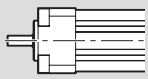
Ordering Tip:
Show the option numbers in the boxes (i.e. 01) when ordering these options

Motor mount			Motor		Documentation
Picture1, Picture 2	Gear reduction	Adaptor kit for motor	without brake	with brake	
OF01		00 00	00		
MF01		00 01 MSM020B	68	69	
		02 MSM030B	70	71	
		05 MSK030C	84	85	
		10 VRDM368	35	36	
RV01	standard i=1	00 21 MSM020B	68	69	
RV02		22 MSM030B	70	71	
RV03		25 MSK030C	84	85	
RV04		30 VRDM368	35	36	
OF01		00 00	00		
MF01		00 01 MSM020B	68	69	
		02 MSM030B	70	71	
		05 MSK030C	84	85	
		10 VRDM368	35	36	standard documentation 000
RV01	standard i=1	00 21 MSM020B	68	69	(standard certification)
RV02		22 MSM030B	70	71	
RV03		25 MSK030C	84	85	
RV04		30 VRDM368	35	36	
OF01		00 00	00		
MF01		00 03 MSM030C	72	73	
		05 MSK030C	84	85	
		06 MSK040C	86	87	
		11 VRDM397	37	38	
RV01	standard i=1	00 23 MSM030C	72	73	
RV02		25 MSK030C	84	85	
RV03		26 MSK040C	86	87	
RV04		31 VRDM397	37	38	

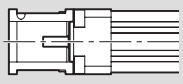
Motor mount / Adaptor kit

Picture 1

without flange OF01



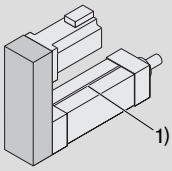
with flange MF01



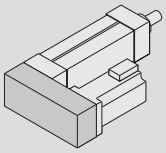
Belt driven

Picture 2

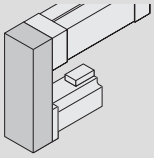
RV04



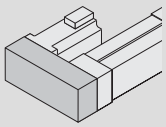
RV02



RV03

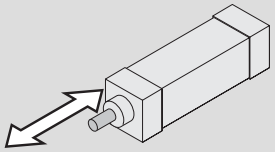


RV01



1) switch groove

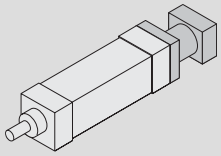
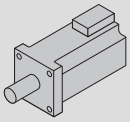
Configuration and ordering

Size	Ballscrew drive 							
	Lead (mm)	**Stroke** (mm)	**Seal system**	**Preload**	**Accuracy class**	**KGT-nut**	**Journal**	
EMC63	5 10 25	...	standard 01	reduced axial play 01	T7	standard 00	standard 00	
EMC80	5 10 20 32	...	standard 01	reduced axial play 01	T7	standard 00	standard 00	
EMC100	5 10 20 40	...	standard 01	reduced axial play 01	T7	standard 00	standard 00	

Order example:

Ordering information		
Option	**Option code**	**Description**
EMC	EMC80	Electromechanical Cylinder EMC size 80
Lead	5	lead 5 mm
Stroke	200	given stroke 200 mm
KGT-nut	00	standard
Journal	00	standard
Motor mount	RV02	belt driven position 2
Adaptor kit for motor	27	adaptor kit for belt drive for Motor MSK050C
Motor	89	motor MSK050C with brake
Documentation	000	standard documentation
Accessories 1	Group 1	female clevis
Accessories 2	Group 2	female clevis
Accessories 3	Group 5	head/floor attachment

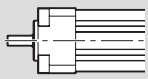
Ordering Tip:
Show the option numbers in the boxes (i.e. 01) when ordering these options

Motor mount  Picture1, Picture 2	Gear reduction	Adaptor kit for motor	Motor  without brake	with brake	Documentation 
OF01	00	00	00		
MF01	00	04 MSM040B	74	75	
		06 MSK040C	86	87	
		07 MSK050C	88	89	
		11 VRDM3910	39	40	
RV01	standard i=1 00	24 MSM040B	74	75	
RV02		26 MSK040C	86	87	
RV03		27 MSK050C	88	89	
RV04		31 VRDM3910	39	40	
OF01	00	00	00		
MF01	00	04 MSM040B	74	75	
		07 MSK050C	88	89	
		08 MSK060C	90	91	
		09 MSK076C	92	93	standard documentation 000
		12 VRDM3913	39	40	(standard certification)
RV01	standard i=1 00	24 MSM040B	74	75	
RV02		27 MSK050C	88	89	
RV03		28 MSK060C	90	91	
RV04		29 MSK076C	92	93	
		32 VRDM3913	39	40	
OF01	00	00	00		
MF01	00	08 MSK060C	90	91	
		09 MSK076C	92	93	
		13 VRDM31117	43	44	
RV01	standard i=1 00	28 MSK060C	90	91	
RV02		29 MSK076C	92	93	
RV03		33 VRDM31117	43	44	
RV04					

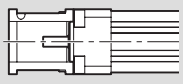
Motor mount / Adaptor kit

Picture 1

without flange OF01



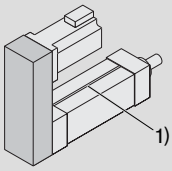
with flange MF01



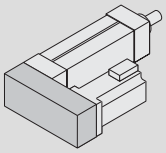
Belt driven

Picture 2

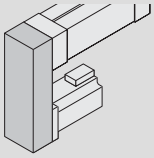
RV04



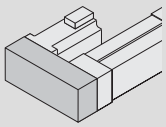
RV02



RV03



RV01



1) switch groove

Inquiry and order

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For an explanation of ordering parameters, see pages 26/28 “Configuration and Ordering”

ordering example: EMC63

ordering description		**explanation**
size	= EMC80	
lead	= 5	lead 5 mm
stroke	= 200	given stroke 200 mm
nut	= 00	standard
journal	= 00	standard
motor mount	= RV02	belt drive position 2
adaptor kit	= 27	adaptor kit: belt drive for motor MSK050C
motor	= 89	motor MSK050C with brake
documentation	= 000	standard documentation
accessories 1	= group 1	female clevis
accessories 2	= group 2	swivel head
accessories 3	= group 5	Khead/floor attachment

To be filled out by the customer ☐ / ordering ☐

Electromechanical Cylinder EMC	
size	= _____
lead	= _____
stroke	= _____
nut	= 00
journal	= 00
motor mount	= _____
adaptor kit	= _____
motor	= _____
documentation	= _____
accessories 1	= _____
accessories 2	= _____
accessories 3	= _____

quantities purchased by: _____ piece, _____ monthly, _____ annually, per order, or _____
notes:

shipper

company: _____ person responsible: _____
address: _____ department: _____
_____ telephon: _____
_____ telefax: _____

Rexroth
Bosch Group

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