ELECTRIC LINEAR ACTUATORS

SECTION 2

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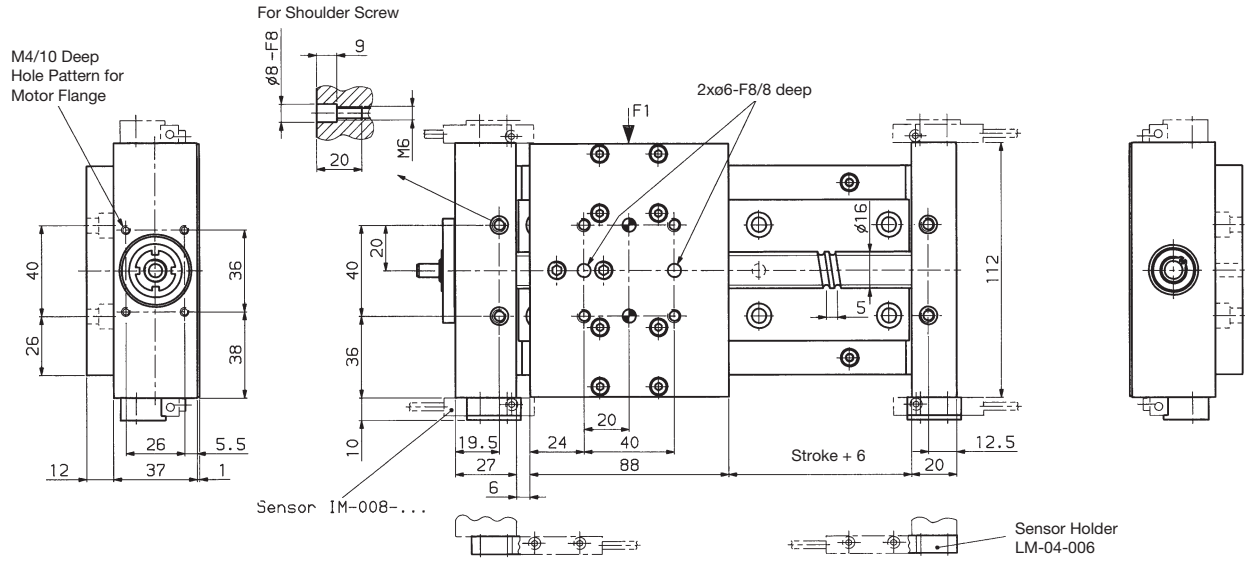
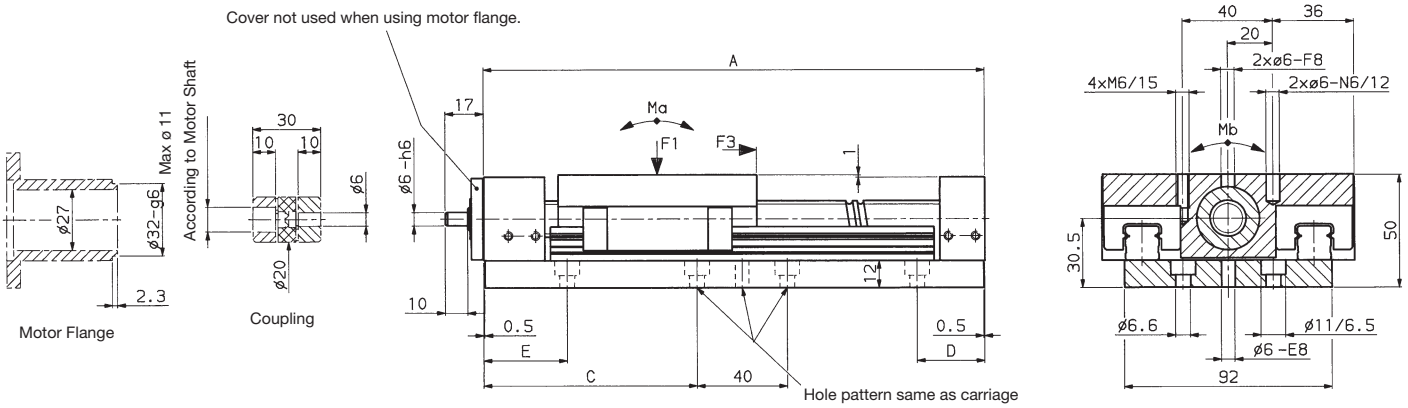
Linear Unit LM-26-RW Type S

Ball Screw, Twin Rail Positioning (Zero Backlash)





Stroke	A	C	D	E	F1 [N] (stat./dyn.)	F3 [N]	Ma [Nm]	Mb [Nm]	Weight [lb]	Weight (kg)
0-50	197	82	35	42	750	*	30	30	8.3	(3.8)
0-75	222	95	30	37	750	*	30	30	9.0	(4.1)
0-100	247	107	30	37	750	*	30	30	9.7	(4.4)
0-150	297	132	30	37	750	*	30	30	11.0	(5.0)
0-200	347	157	30	37	750	*	30	30	12.3	(5.6)
0-250	397	182	30	37	750	*	30	30	13.6	(6.2)
0-300	447	207	30	37	750	*	30	30	15.2	(6.9)
0-400	547	257	30	37	750	*	30	30	17.8	(8.1)

*see back page

Order No. LM26RW-5- . . . -S

- S = Type
- 02 = Stroke 50, 03 = Stroke 75, 04 = Stroke 100, 06 = Stroke 150, 08 = Stroke 200, 10 = Stroke 250, 12 = Stroke 300, 16 = Stroke 400
- 5 = Pitch 5mm
- Type

Note: Sensors, Flange and Coupling need to be ordered separately. See back page.

Linear Unit LM-26-RW Type S

Ball Screw, Twin Rail Positioning (Zero Backlash)

Sensor: IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Additional sensor and cables may be found in the Sensor Catalog.

Motor Flange:
The motor flange is mounted with four M4 screws and serves simultaneously to secure the double race thrust bearing. Standard flanges are available for stepper motors as accessories. Flanges for DC-Motors are manufactured upon request. Please include a sketch of the desired motor pattern.

Order No. Motor Flange for LM-26-RW

Coupling:
It is recommended to mount a high torque flex coupling between motor and unit.

Order No. Coupling for LM-26-RW Motor shaft ø . . . mm

Inertial mass "J"
The listed inertial mass "J" reflects the entire unit including the coupling (motor not included).
At a stroke of 25mm: J = 0.30 kgcm^2
J increases per additional 25mm stroke by 0.012 kgcm^2

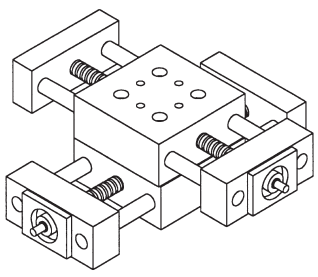
F5 is dependent upon motor torque Md:

By pitch 5mm: $\frac{\text{Md [Ncm]}}{0.08}$ = N max. allowed 1000 N

Ball Screw:
Rolled ball screw, ISO Class 7 (DIN 69051)
Zero clearance ball screw nut

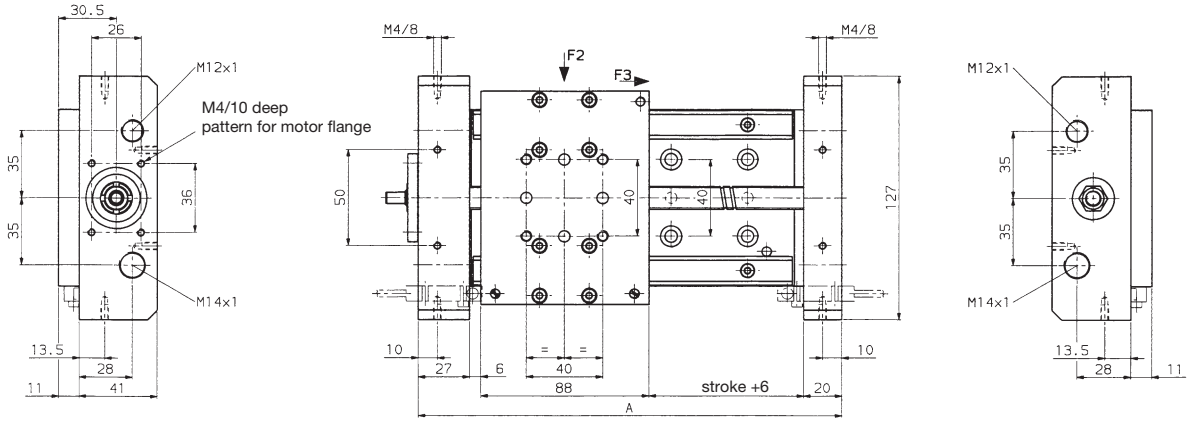
Bearing of the Ball Screw:
Precision ball bearing, axial play = 0.007 - 0.024mm.

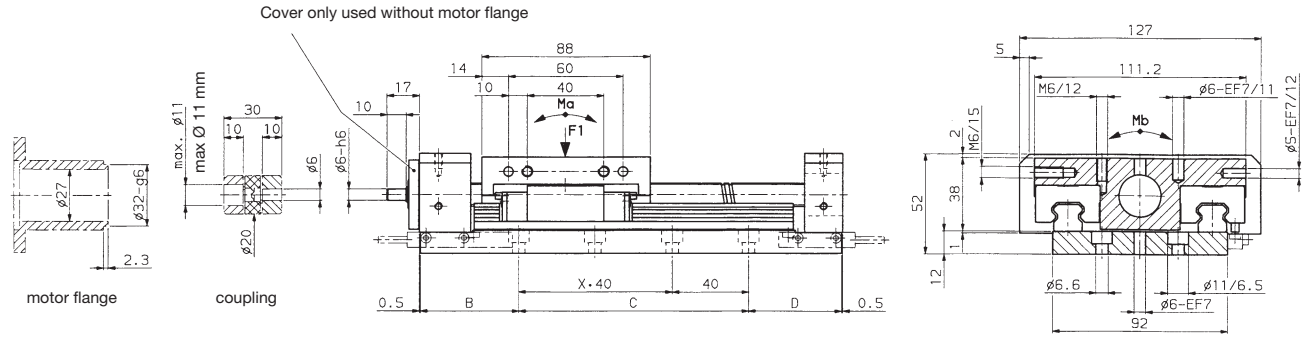
The units can be used as X-Y Tables:



Linear Unit LM-60-RW

Ball Screw (anti-backlash), Twin Rail





Stroke mm	A mm	B mm	C mm	D mm	X mm	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. in (Nm)	Mb lb. in (Nm)	Weight lb. (kg)
0-50	197	39.5	120	36.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	8.3 (3.8)
0-75	222	52.0	120	49.0	2	168 (750)	112 (500)	*	265 (30)	265 (30)	9.0 (4.1)
0-100	247	64.5	120	61.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	9.7 (4.4)
0-150	297	89.5	120	86.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	11.0 (5.0)
0-200	347	74.5	200	71.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	12.3 (5.6)
0-250	397	99.5	200	96.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	13.6 (6.2)
0-300	447	124.5	200	121.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	15.2 (6.9)
0-400	547	174.5	200	171.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	17.8 (8.1)

*see back page

Order No. LM-60-RW-5-. . .

Type

5 = Pitch 5mm

02=Stroke 50
03=Stroke 75
04=Stroke 100
06=Stroke 150
08=Stroke 200
10=Stroke 250
12=Stroke 300
16=Stroke 400
Custom strokes available

Note: Sensors, Flange, and Coupling need to be ordered separately-see back page.

Linear Unit LM-60-RW

Ball Screw, Twin Rail

Sensor Order No. IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Additional sensor and cables may be found in the Sensor Catalog.

Motor Flange:
The motor flange is mounted with M4 screws and secures the bearing. Standard flanges are available.
Please include a sketch of desired motor pattern.

Order No. Motor Flange for LM-26-60-RW

Coupling:
It is recommended to use a high torque flex coupling.

Order No. Coupling for LM-26-60-RW Motor shaft ø . . . mm

Inertial mass "J"
The listed inertial mass "J" reflects the entire unit including the coupling (motor not included).
At a stroke of 25mm: J = 0.23 kgcm^2
J increases per additional 25mm stroke by 0.005 kgcm^2

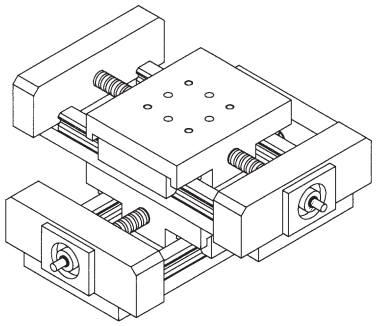
F5 is dependent upon motor torque Md:

By pitch 5mm: $\frac{\text{Md [Ncm]}}{0.08}$ = N max. allowed 1000 N

Ball Screw:
Rolled ball screw, ISO Class 7 (DIN 69051)
Ball screw nut (anti-backlash)

Ball Screw Bearing:
Precision ball bearing, axial play = 0

The units can be used as X-Y Tables:

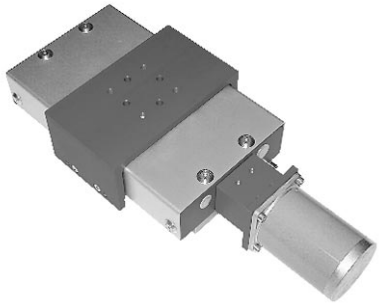


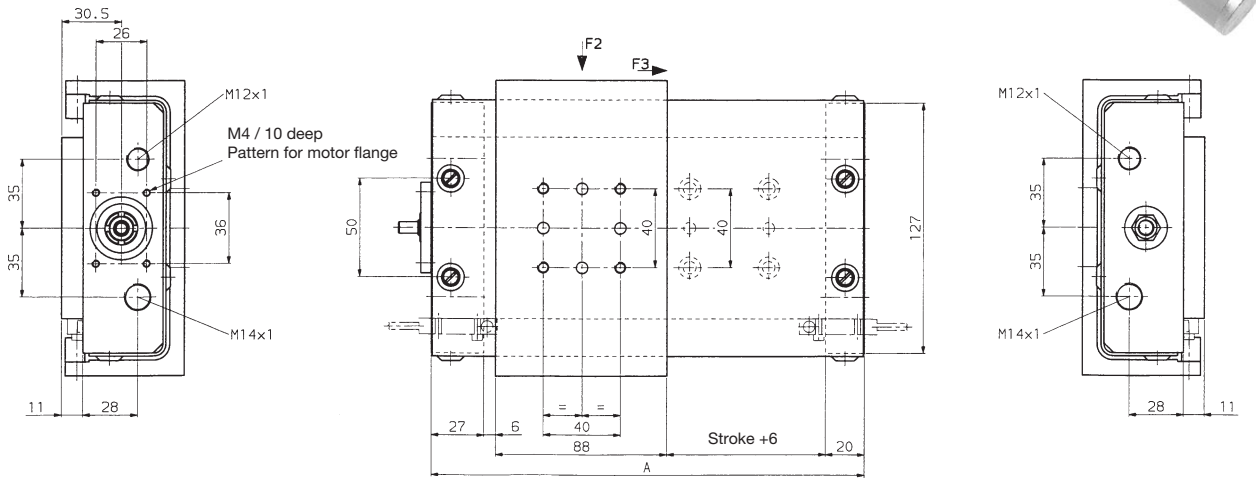
Easy mounting with the following units:

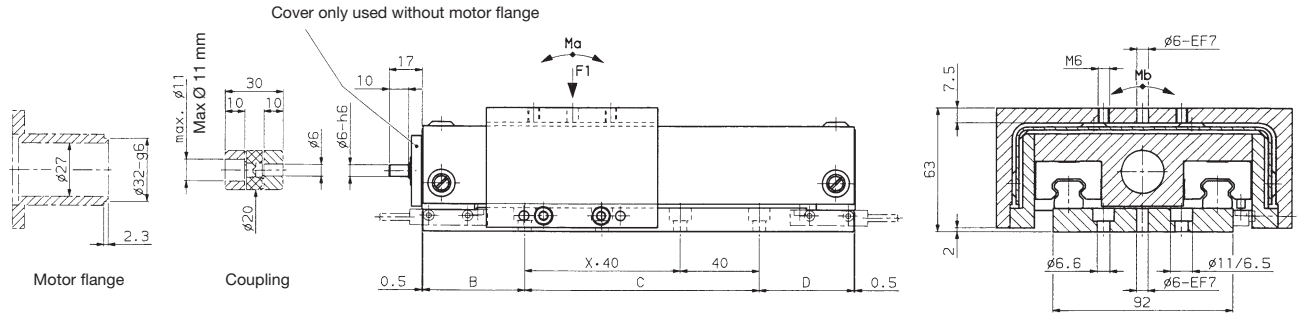
LMP-60
LMP-60A
LM-60-RW
LM-60-RWA

Linear Unit LM-60-RWA

Ball Screw (anti-backlash), Twin Rail, with cover







Stroke mm	A mm	B mm	C mm	D mm	X m	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. In (Nm)	Mb lb. In (Nm)	Weight lb. (kg)
0-50	197	39.5	120	36.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	11.0 (5.0)
0-75	222	52.0	120	49.0	2	168 (750)	112 (500)	*	265 (30)	265 (30)	11.6 (5.3)
0-100	247	64.5	120	61.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	12.3 (5.6)
0-150	297	89.5	120	86.5	2	168 (750)	112 (500)	*	265 (30)	265 (30)	13.8 (6.3)
0-200	347	74.5	200	71.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	15.2 (6.9)
0-250	397	99.5	200	96.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	16.5 (7.5)
0-300	447	124.5	200	121.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	18.3 (8.3)
0-400	547	174.5	200	171.5	4	168 (750)	112 (500)	*	265 (30)	265 (30)	21.1 (9.6)

*see back page

Order No. LM-60-RWA-5-. . .

02=Stroke 50
03= Stroke 75
04= Stroke 100
06=Stroke 150
08=Stroke 200
10=Stroke 250
12=Stroke 300
16=Stroke 400
Custom strokes available

5 = Pitch 5mm

Type

Note: Sensors, Flange, and Coupling need to be ordered separately-see back page.

Linear Unit LM-60-RWA

Ball Screw, Twin Rail, with cover

Sensor Order No. IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Additional sensors and cables may be found in the Sensor Catalog.

Motor Flange:
The motor flange is mounted with M4 screws and also secures the bearing. Standard flanges are available. Please include a sketch of the desired motor pattern.

Order No. Motor Flange for LM-60-RWA

Coupling:
It is recommended to use a high torque flex coupling between motor and LM.

Order No. Coupling for LM-60-RWA Motor shaft ø . . . mm

Inertial mass "J"
The listed inertial mass "J" reflects the entire unit including the coupling (motor not included).
At a stroke of 25mm: J = 0.23 kgcm^2
J increases per additional 25mm stroke by 0.005 kgcm^2

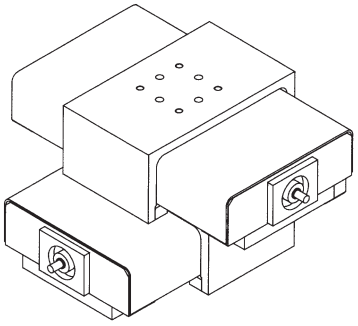
F5 is dependent upon motor torque Md:

By pitch 5mm: $\frac{\text{Md [Ncm]}}{0.08}$ = N max. allowed 1000 N

Ball Screw:
Rolled ball screw, ISO Class 7 (DIN 69051)
Ball screw nut (anti-backlash)

Ball Screw Bearing:
Precision ball bearing, axial play = 0

The units can be used as X-Y Tables:

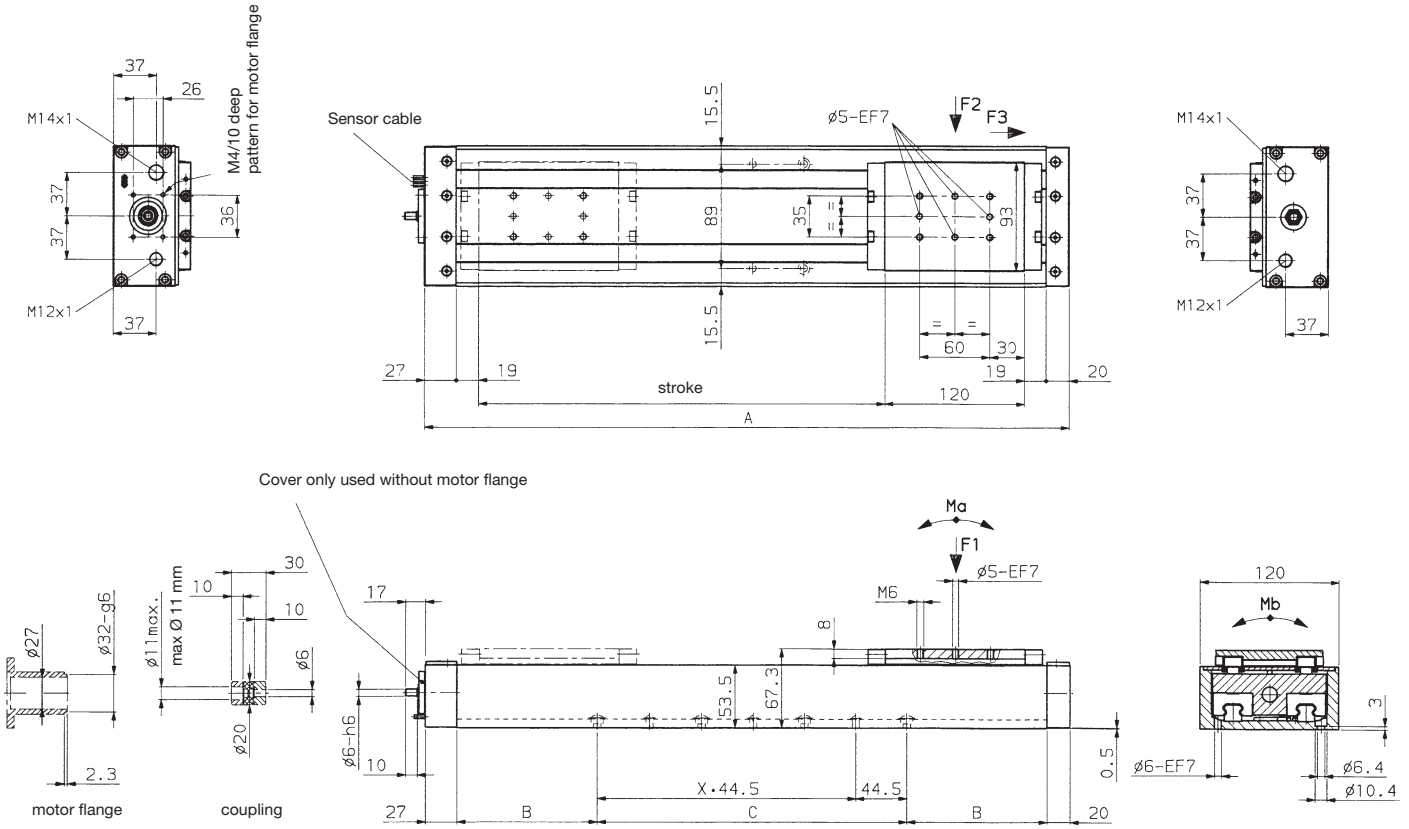


Easy mounting with the following units:

LMP-60
LMP-60A
LM-60-RW
LM-60-RWA

Linear Unit LK 100-RW

Ball Screw (anti-backlash), Twin Rail, with cover



Stroke mm	A mm	B mm	C mm	X mm	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. In (Nm)	Mb lb. In (Nm)	Weight lb. (kg)
0-200	405	134.5	89	1	168 (750)	112 (500)	*	265 (30)	265 (30)	17.6 (8.0)
0-250	455	70.5	267	5	168 (750)	112 (500)	*	265 (30)	265 (30)	18.7 (8.5)
0-300	505	95.5	267	5	168 (750)	112 (500)	*	265 (30)	265 (30)	19.8 (9.0)
0-350	555	120.5	267	5	168 (750)	112 (500)	*	265 (30)	265 (30)	20.9 (9.5)
0-400	605	145.5	267	5	168 (750)	112 (500)	*	265 (30)	265 (30)	21.8 (9.9)
0-500	705	195.5	267	5	168 (750)	112 (500)	*	265 (30)	265 (30)	24.0 (10.9)
0-600	805	245.5	267	5	146 (650)	89 (400)	*	265 (30)	265 (30)	26.0 (11.8)
0-800	1005	345.5	267	5	146 (650)	89 (400)	*	265 (30)	265 (30)	29.1 (13.2)
0-1000	1205	445.5	267	5	146 (650)	89 (400)	*	265 (30)	265 (30)	34.3 (15.6)

*see back page

Order No. LK-100-RW-5- . . .

Type

5 = Pitch 5mm

08=Stroke 200
10=Stroke 250
12=Stroke 300
14=Stroke 350
16=Stroke 400
20=Stroke 500
22=Stroke 600
26=Stroke 800
30=Stroke 1000
Custom strokes available

Note: Sensors, Flange, and Coupling need to be ordered separately-see back page.

Linear Unit LK 100-RW

Ball Screw, Twin Rail, with cover

Sensor Order No. IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Additional sensor and cables may be found in the Sensor Catalog.

Motor Flange:
The motor flange is mounted with M4 screws and also secures the bearing. Standard flanges are available. Please include a sketch of desired motor pattern.

Order No. Motor Flange for LK-100-RW

Coupling:
It is recommended to use a high torque flex coupling.

Order No. Coupling for LK-100-RW Motor shaft ø . . . mm

Inertial mass "J"
The listed inertial mass "J" reflects the entire unit including the coupling (motor not included).
At a stroke of 25mm: J = 0.23 kgcm^2
J increases per additional 25mm stroke by 0.005 kgcm^2

F3 is dependent upon motor torque Md:

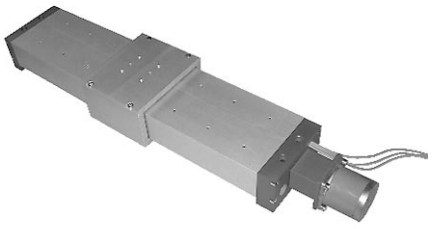
By pitch 5mm: $\frac{\text{Md [Ncm]}}{0.08}$ = N max. allowed 1000 N

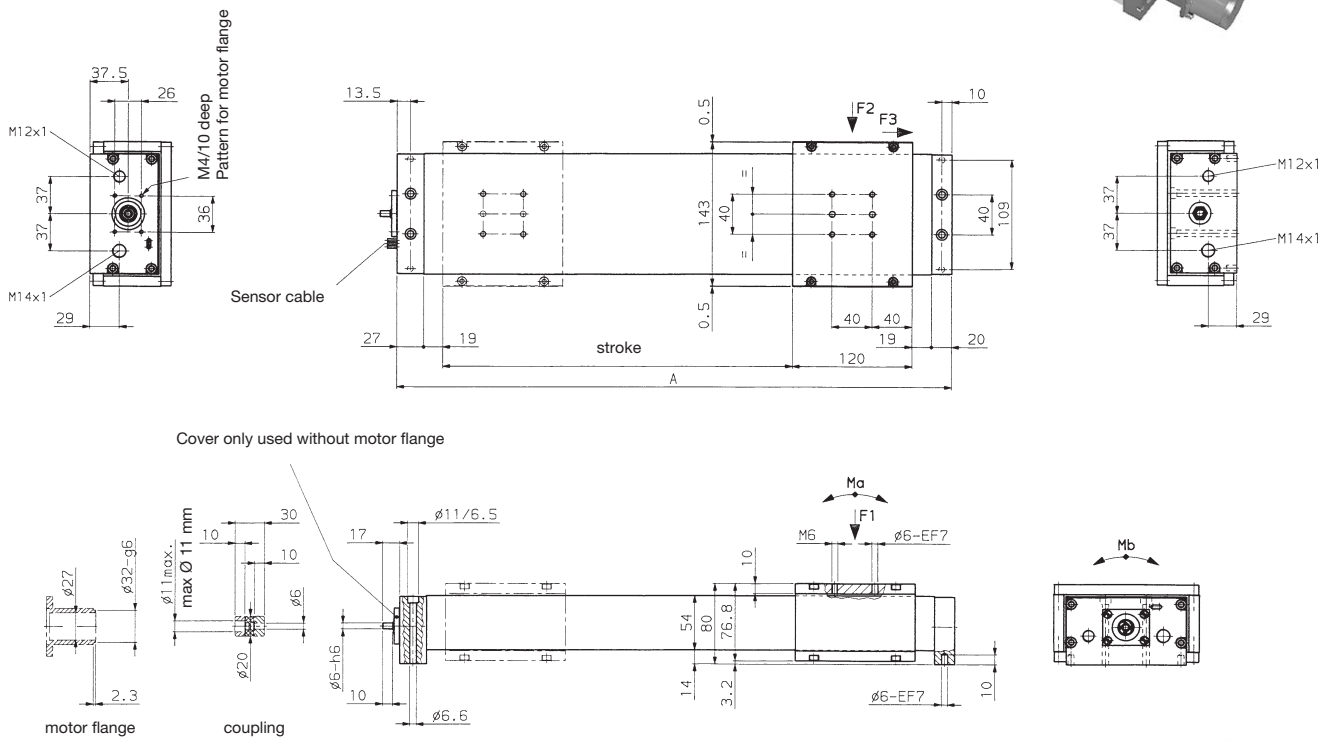
Ball Screw:
Rolled ball screw, ISO Class 7 (DIN 69051)
Ball screw nut (anti-backlash)

Ball Screw Bearing:
Precision ball bearing, axial play = 0

Linear Unit LK-100-RWA

Ball Screw (anti-backlash), Twin Rail





Stroke mm	A mm	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. In (Nm)	Mb lb. In (Nm)	Weight lb. (kg)
0-200	405	168 (750)	112 (500)	*	265 (30)	265 (30)	16.5 (7.5)
0-250	455	168 (750)	112 (500)	*	265 (30)	265 (30)	17.4 (7.9)
0-300	505	168 (750)	112 (500)	*	265 (30)	265 (30)	18.5 (8.4)
0-350	555	168 (750)	112 (500)	*	265 (30)	265 (30)	19.4 (8.8)
0-400	605	168 (750)	112 (500)	*	265 (30)	265 (30)	20.2 (9.2)
0-500	705	168 (750)	112 (500)	*	265 (30)	265 (30)	22.2 (10.1)
0-600	805	146 (650)	89 (400)	*	265 (30)	265 (30)	24.2 (11.0)
0-800	1005	146 (650)	89 (400)	*	265 (30)	265 (30)	26.9 (12.2)
0-1000	1205	146 (650)	89 (400)	*	265 (30)	265 (30)	31.9 (14.5)

*see back page

Order No. LK-100-RWA-5-. . .

Type

5 = Pitch 5mm

08=Stroke 200
10=Stroke 250
12=Stroke 300
14=Stroke 350
16=Stroke 400
20=Stroke 500
22=Stroke 600
26=Stroke 800
30=Stroke 1000
Custom strokes available

Note: Sensors, Flange, and Coupling need to be ordered separately-see back page.

Linear Unit LK-100-RWA

Ball Screw, Twin Rail

Sensor Order No. IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Additional sensor and cables may be found in the Sensor Catalog.

Motor Flange:
The motor flange is mounted with M4 screws and also secures the double race thrust bearing. Standard flanges are available. Please include a sketch of desired motor pattern.

Order No. Motor Flange for LK-100-RWA

Coupling:
It is recommended to use a high torque flex coupling.

Order No. Coupling for LK-100-RWA Motor shaft ø . . . mm

Inertial mass "J"
The listed inertial mass "J" reflects the entire unit including the coupling (motor not included).
At a stroke of 25mm: J = 0.23 kgcm^2
J increases per additional 25mm stroke by 0.005 kgcm^2

F5 is dependent upon motor torque Md:

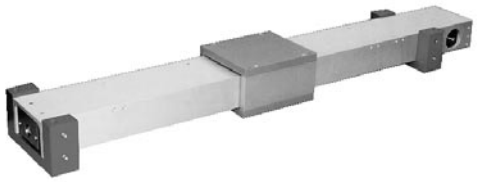
By pitch 5mm: $\frac{\text{Md [Ncm]}}{0.08}$ = N max. allowed 1000 N

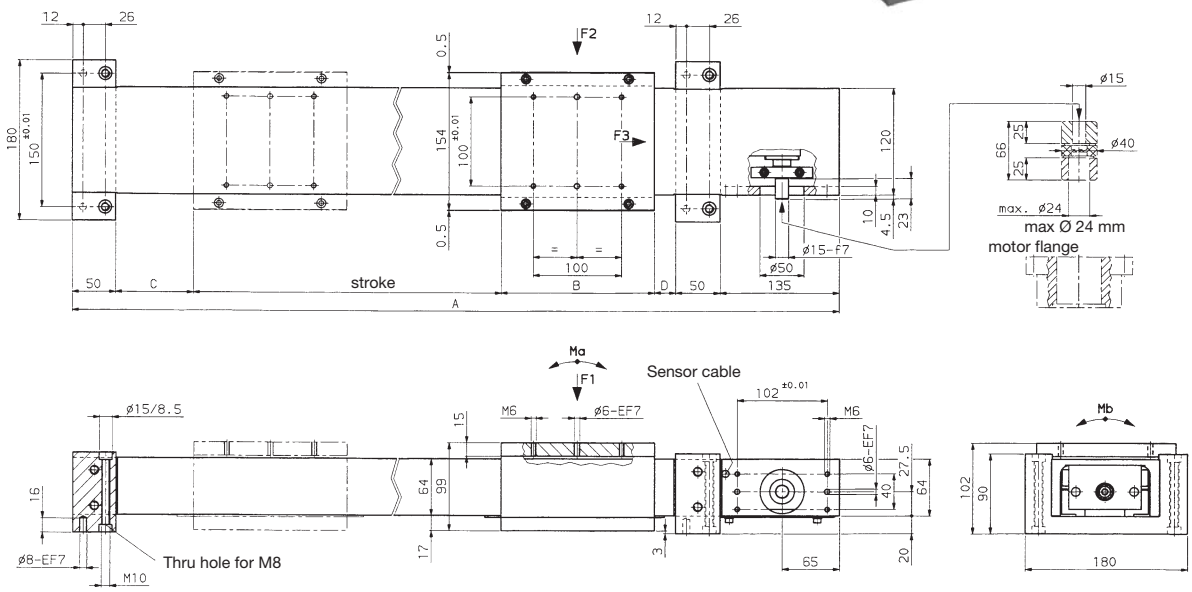
Ball Screw:
Rolled ball screw, ISO Class 7 (DIN 69051)
Ball screw nut (anti-backlash)

Ball Screw Bearing:
Precision ball bearing, axial play = 0

Linear Unit LK-120-ZR

Timing Belt, Twin Rail





LK-120-ZR-2 (with 2 carriages)

Stroke mm	A mm	B mm	C mm	D mm	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. In (Nm)	Mb lb. In (Nm)	Weight lb. (kg)
0-250	772	175	88	24	168 (750)	112 (500)	*	265 (30)	265 (30)	37.0 (16.8)
0-500	1022	175	88	24	168 (750)	112 (500)	*	265 (30)	265 (30)	42.5 (19.3)
0-750	1272	175	88	24	146 (650)	90 (400)	*	265 (30)	265 (30)	48.2 (21.9)
0-1000	1522	175	88	24	146 (650)	90 (400)	*	265 (30)	265 (30)	53.8 (24.4)
0-1250	1722	175	88	24	134 (600)	78 (350)	*	265 (30)	265 (30)	58.8 (26.7)
0-1500	2022	175	88	24	123 (550)	67 (300)	*	265 (30)	265 (30)	65.0 (29.5)
0-2000	2522	175	88	24	112 (500)	56 (250)	*	265 (30)	265 (30)	76.2 (34.6)
0-2500	3022	175	88	24	101 (450)	45 (200)	*	265 (30)	265 (30)	87.5 (39.7)

LK-120-ZR-4 (with 4 carriages)

Stroke mm	A mm	B mm	C mm	D mm	F1 lb (N)	F2 lb (N)	F3 lb (N)	Ma lb. In (Nm)	Mb lb. In (Nm)	Weight lb. (kg)
0-250	832	220	95.5	31.5	303(1350)	202 (900)	*	486 (55)	486 (55)	41.2 (18.7)
0-500	1082	220	95.5	31.5	303(1350)	202 (900)	*	486 (55)	486 (55)	46.7 (21.2)
0-750	1332	220	95.5	31.5	269(1200)	157 (700)	*	486 (55)	486 (55)	52.4 (23.8)
0-1000	1582	220	95.5	31.5	269(1200)	157 (700)	*	486 (55)	486 (55)	57.9 (26.3)
0-1250	1782	220	95.5	31.5	224(1000)	146 (650)	*	486 (55)	486 (55)	63.7 (28.9)
0-1500	2082	220	95.5	31.5	224(1000)	123 (550)	*	486 (55)	486 (55)	69.2 (31.4)
0-2000	2582	220	95.5	31.5	20(900)	101 (450)	*	486 (55)	486 (55)	80.4 (36.5)
0-2500	3082	220	95.5	31.5	180(800)	78 (350)	*	486 (55)	486 (55)	91.7 (41.6)

*see back page

Order No. **LK-120-ZR-. . .- . . .**

- Type
- 2= with 2 PC. carriage
- 4= with 4 PC. carriage
- 10=Stroke 250, 20=Stroke 500, 25=Stroke 750, 30=Stroke 1000, 35=Stroke 1250, 40=Stroke 1500, 45=Stroke 2000, 50=Stroke 2500, Custom strokes available

Note: Sensors, Flange, and Coupling need to be ordered separately-see back page.

Linear Unit LK-120-ZR

Timing Belt, Twin Rail

Sensor Order No. IM-008-NS-U2L (NPN)
IM-008-PS-U2L (PNP)

Please find additional information in our Electronic Catalog.

Motor Flange:
The motor flange is mounted with M6 screws. To manufacture the flange please include drawing of motor pattern.

Order No. Motor Flange for LK-120-ZR

Coupling:
It is recommended to use a high torque flex coupling.

Order No. Coupling for LK-120-ZR Motor shaft ø . . . mm

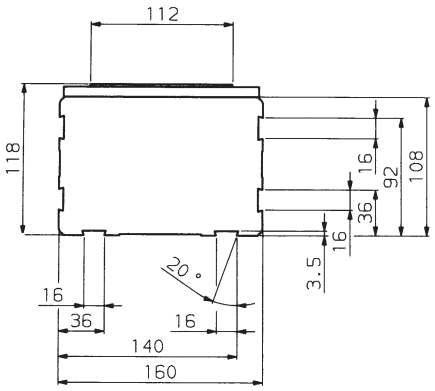
Timing Belt:
Pitch 5 mm, drive gear 25 tooths, division Ø=39.78 mm, stroke per turn=125 mm

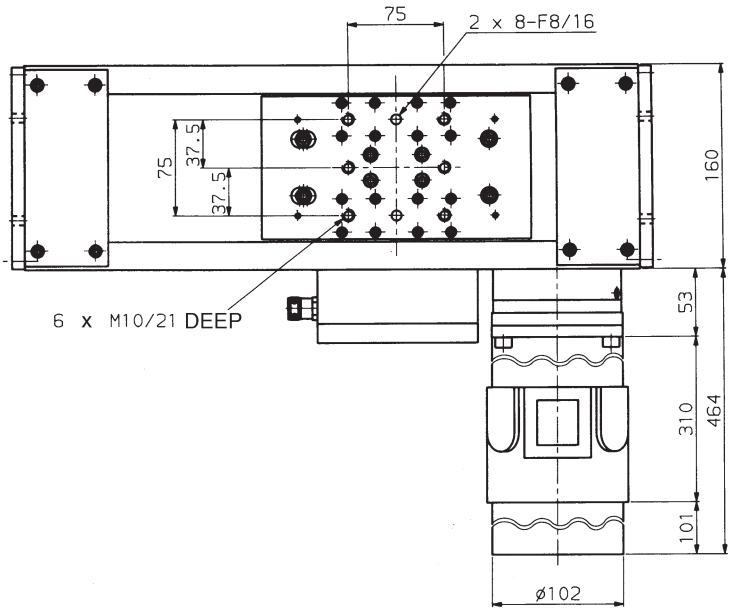
F3 is dependent upon motor torque Md:

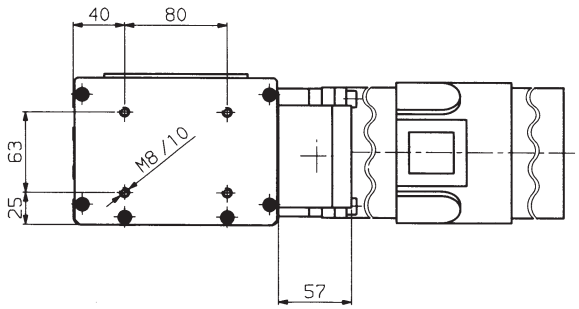
$$F3 = \frac{Md\ [Ncm]}{1.989} = N$$ max. allowed 2,660 N

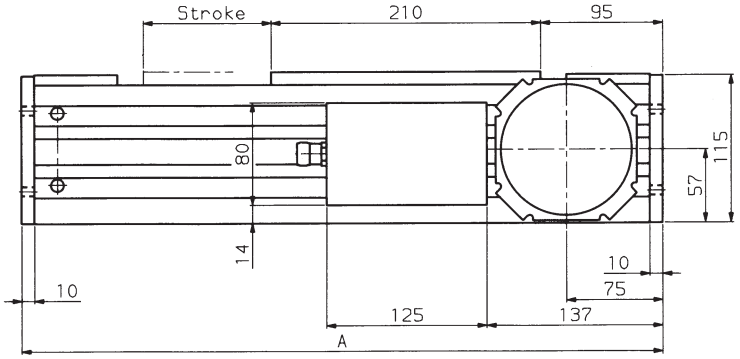
Linear Unit LK 160-ZR

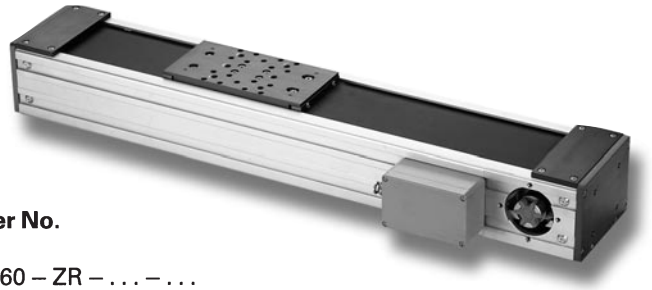
Electric Linear Actuator with timing belt











Type	Stroke	A	Weight[1]
LK160-ZR-03	0- 300	700	55.1 lb (25.0 kg)
LK160-ZR-04	0- 400	800	60.6 lb (27.5 kg)
LK160-ZR-05	0- 500	900	66.2 lb (30.0 kg)
LK160-ZR-06	0- 600	1000	71.7 lb (22.5 kg)
LK160-ZR-07	0- 700	1100	77.2 lb (35.0 kg)
LK160-ZR-08	0- 800	1200	82.7 lb (37.5 kg)
LK160-ZR-09	0- 900	1300	88.2 lb (40.0 kg)
LK160-ZR-10	0-1000	1400	93.7 lb (42.5 kg)
LK160-ZR-12	0-1200	1600	104.7 lb (47.5 kg)
LK160-ZR-14	0-1400	1800	115.8 lb (52.5 kg)
LK160-ZR-16	0-1600	2000	126.8 lb (57.5 kg)

1 Without Motor

Order No.

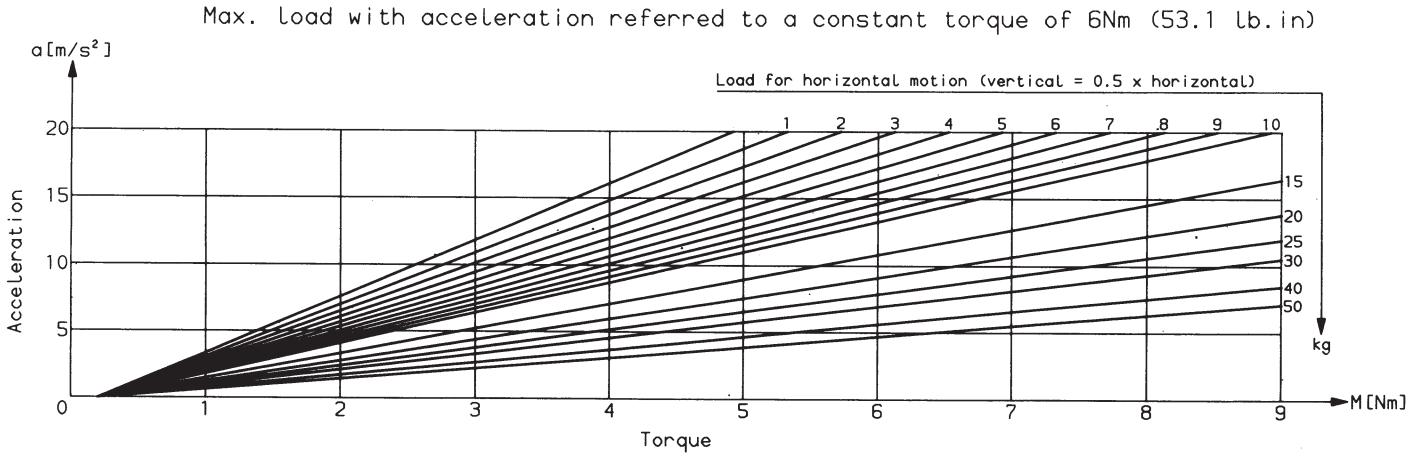
LK 160 – ZR – . . . – . . .

- . . . = Typ
- . . . = O = Without motor, M = With DC motor

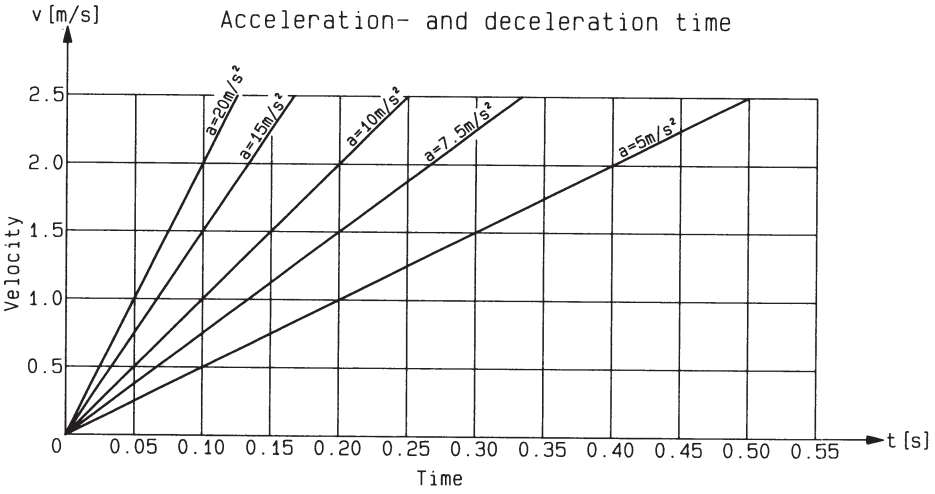
Technical data:

- Timing belt drive
- Self supporting solid Aluminum extrusion
- High load capacity as a result of ball bearings on hardened guide rails
- High speed up to 2.5 m/sec (98.4″/sec)
- High repeatability 0.05 mm (.002″)
- High resolution 0.05 mm (.002″)
- High cycle rate: The standard motor can be loaded up to 9 Nm (79.65 lb. in) in start-stop cycling when using forced ventilation
- Overtravel switches in both end positions, plus mechanical shock absorbers
- Home position switch
- Easy mounting due to dovetail groove in extrusion
- Stroke per turn 125 mm

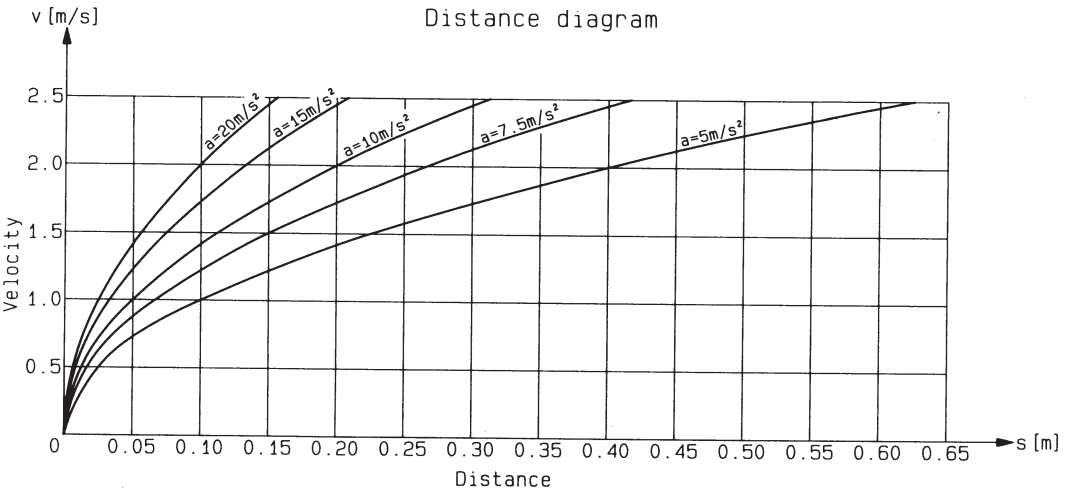
Max. controllable load parameters



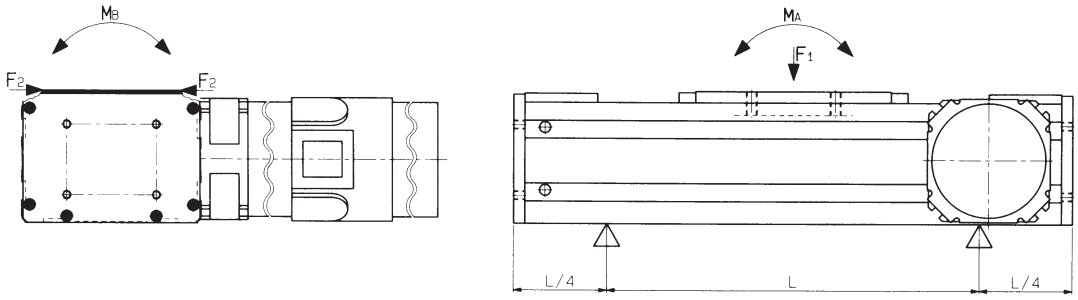
Acceleration time/deceleration time



Acceleration distance/deceleration distance



Dynamic mechanical load capacity for 5000 km (1000 km)



F_1 = 1500 N (2590 N)
F_2 = 1500 N (2590 N)

M_A = 44 Nm (74 Nm)
M_B = 57 Nm (98 Nm)

Deflection of carrier unit with ends supported
Deflection f < 0.2 mm (<.008") with F_1 = 1500 N (337.2 lb)
Support L = 1350 mm (53.15")

Mounting options

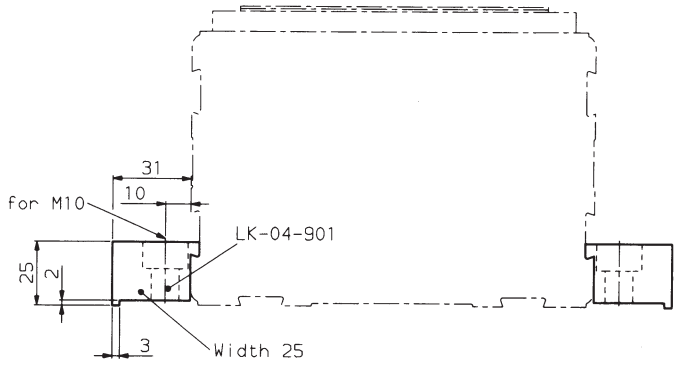
Option 1
– With clamps

Option 2
– Tapped mounting plate and through holes

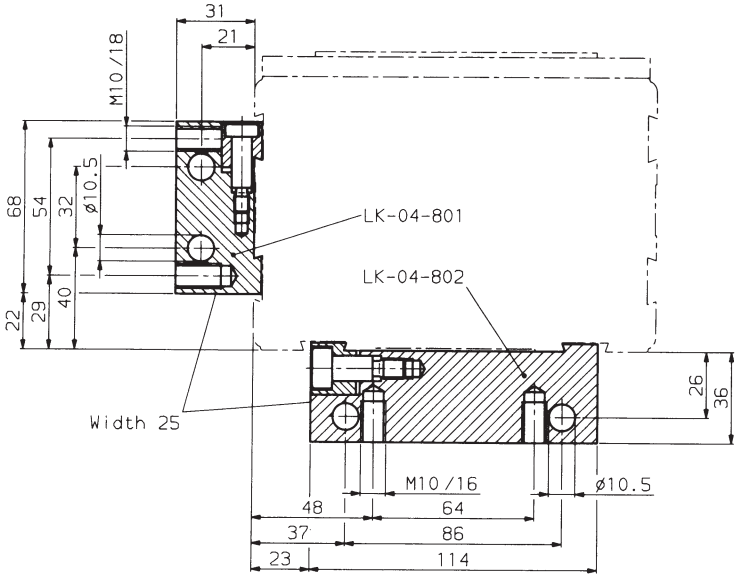
Option 3
- Front mounting plate according to data sheet, sheet 2.091
- Combination: Front mounting and clamp

Option 4
- with key

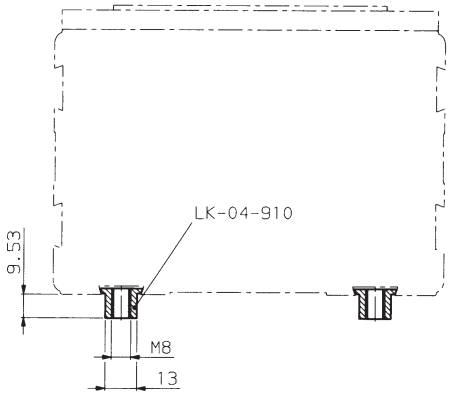
OPTION 1



OPTION 2

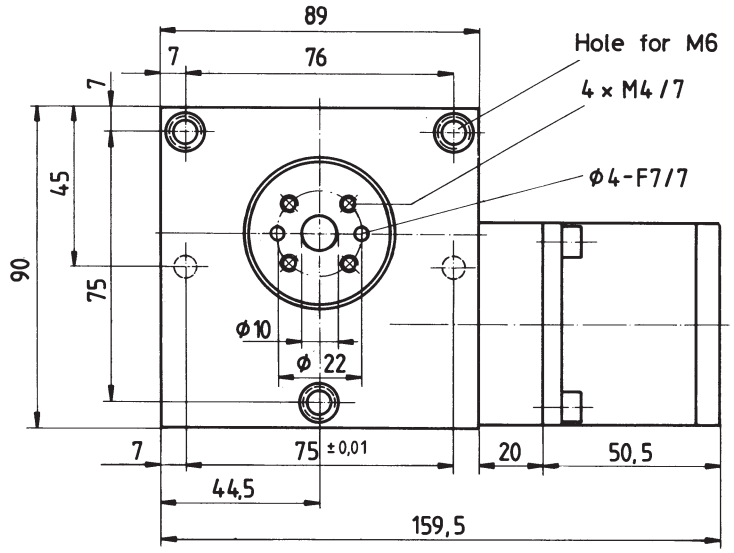


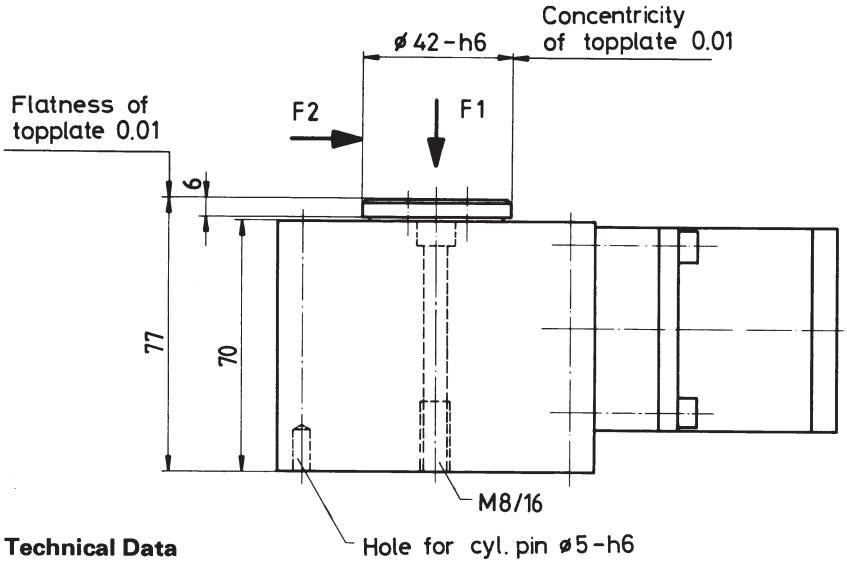
OPTION 3

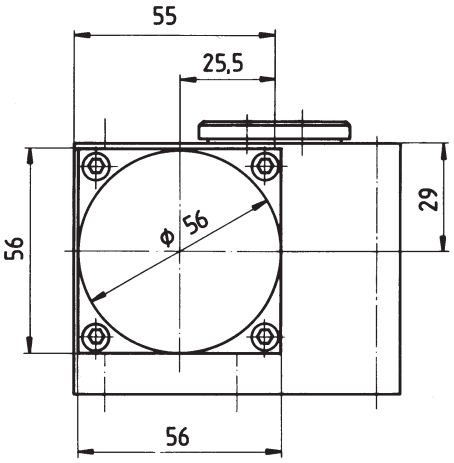


Rotary indexing table RE 75

Electrical Actuator







Technical Data

Type of drive		Stepping motor	DC-motor
Procedural mode	[°]	360	360
Travel per revolution of motor shaft	[°]	24°	24°
Drive element		worm gear	worm gear
Transport load	[lb (kg)]	110.3 (50)	110.3 (50)
Carrying power F1 dyn.	[lb (N)]	124 (550)	124 (550)
Radial force F 2 dyn.	[lb (N)]	337 (1500)	337 (1500)
Dead weight			
Torque	[lb. in (Nm)]	95.58 (10,8)	
Step angle	[°]	0.9	
Starting frequency	[cycles]	900	
Operating frequency	[cycles]	4800	
Impulse generator	[imp./rev.]		600
Motor revs.	[rpm]	720	
Motor torque	[lb. in (Nm)]	1.59 (0,18)	
Stopping momentum		self-locking	
Acceleration time	[s]	0.1	
Rotating speed	[%s]	60	
Resolution	['']	45	30
Repeatability	['']	45	30
Installation position		as desired	as desired
Weight (without motor)	[lb (kg)]	5.1 (2,3)	5.1 (2,3)

Order No.

RE 75 — ...

Type of drive: OM = Without motor
SM = Stepping motor
DC = DC-motor