

THK

LM SYSTEM

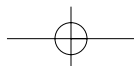
High Performance / Low Cost

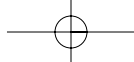
THK Linear Actuator Type GL



THK CO., LTD.
TOKYO, JAPAN

Catalog. No. 175-EU





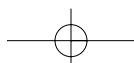
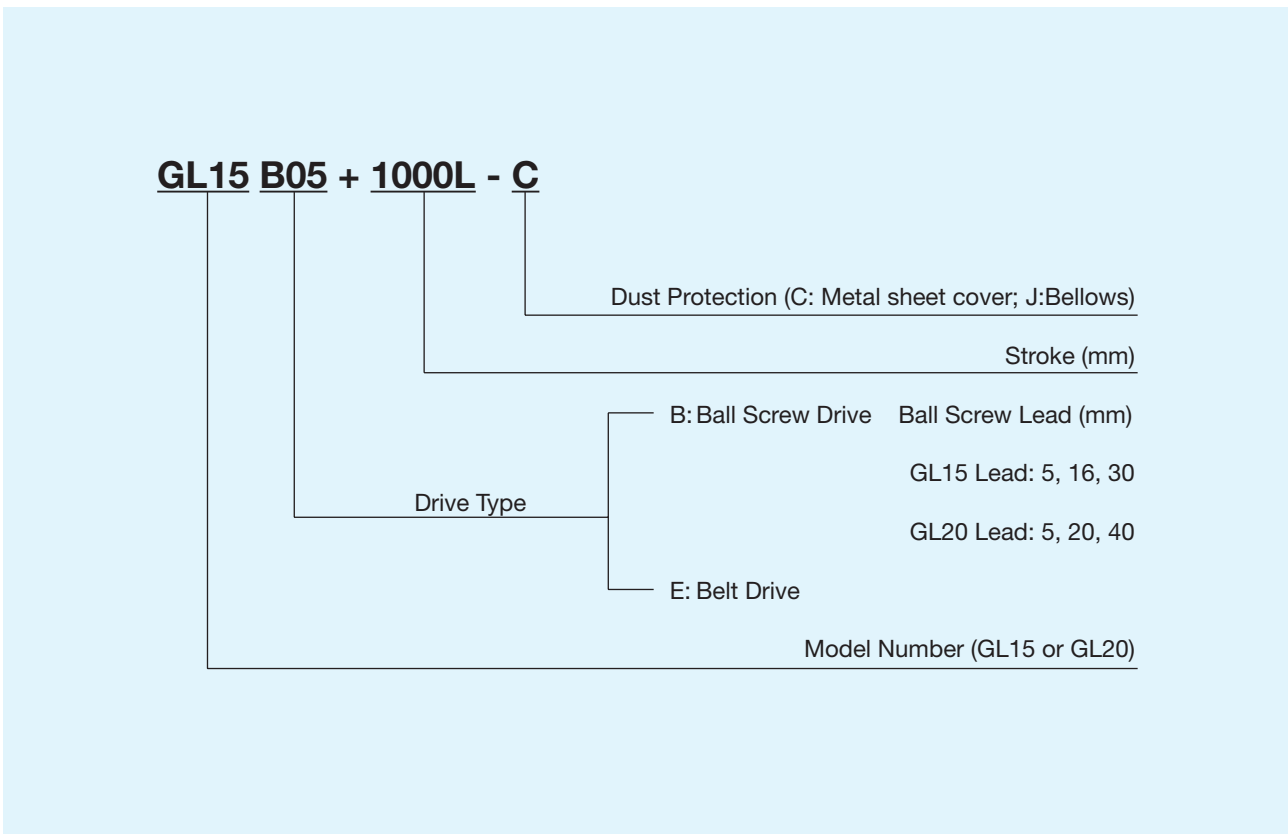
Standard Stroke Lengths (Without Bellows)

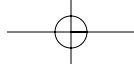
Table 1

Unit: mm

Model Number	Base Length L_0	340	460	580	700	820	1060	1240	1420	1600	1780	1960	2200	2320	2500	3000
GL15B	Stroke (Ball Screw)	100	220	340	460	580	820	1000	1180	—	—	—	—	—	—	—
GL15E	Stroke (Belt Drive)	70	190	310	430	550	790	970	1150	1330	1510	1690	—	—	—	—
GL20B	Stroke (Ball Screw)	—	200	320	440	560	800	980	1160	1340	1520	—	—	—	—	—
GL20E	Stroke (Belt Drive)	—	160	280	400	520	760	940	1120	1300	1480	1660	1900	2020	2200	2700

Model Number Coding





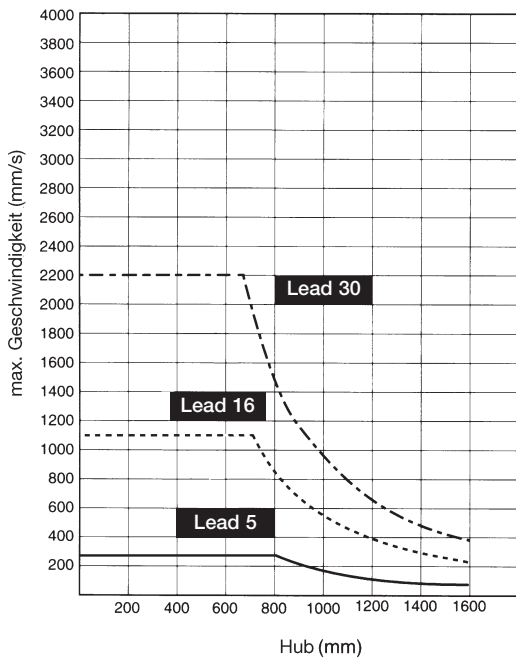
Technical Data

The dynamic and static load capacity of the LM Guide, ball screw and support bearing is used to determine the life-time and the safety factor, which is depending on the application, specific lead conditions and motion profiles. Please compare the technical data with the values of the catalogue No. 200-1AE page 176ff (GSR) and catalogue No. 75-1BE (Rolled Ball Screws). You will find the technical data on page 6 to 9.

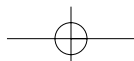
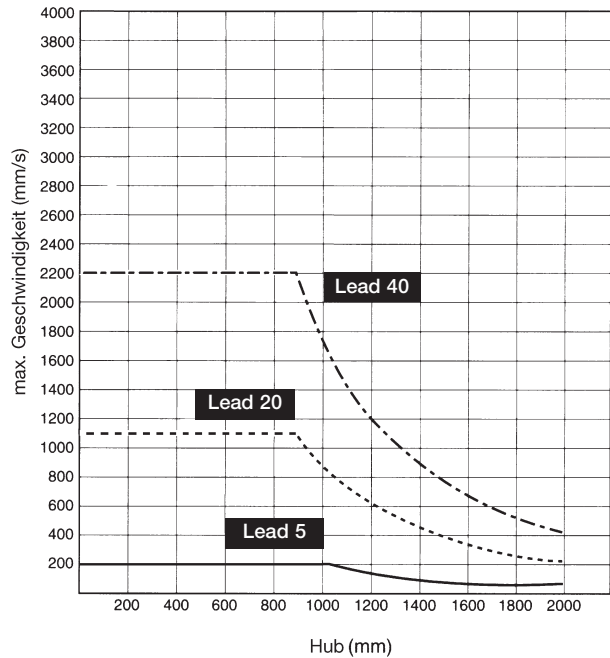
The dynamic load rating of the integrated LM Guides type GSR-T is based on 50 km of travel life. The rating is only valid for the linear guide. In practise and in view of the required lifetime lower values are useful. Please contact your local authorised THK distributors or THK Application Engineers to obtain the engineering assistance on your application requirements.

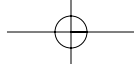
Maximum Speed Data for Ball Screw Drive GL15B und GL20B (Critical Speed)

GL15B

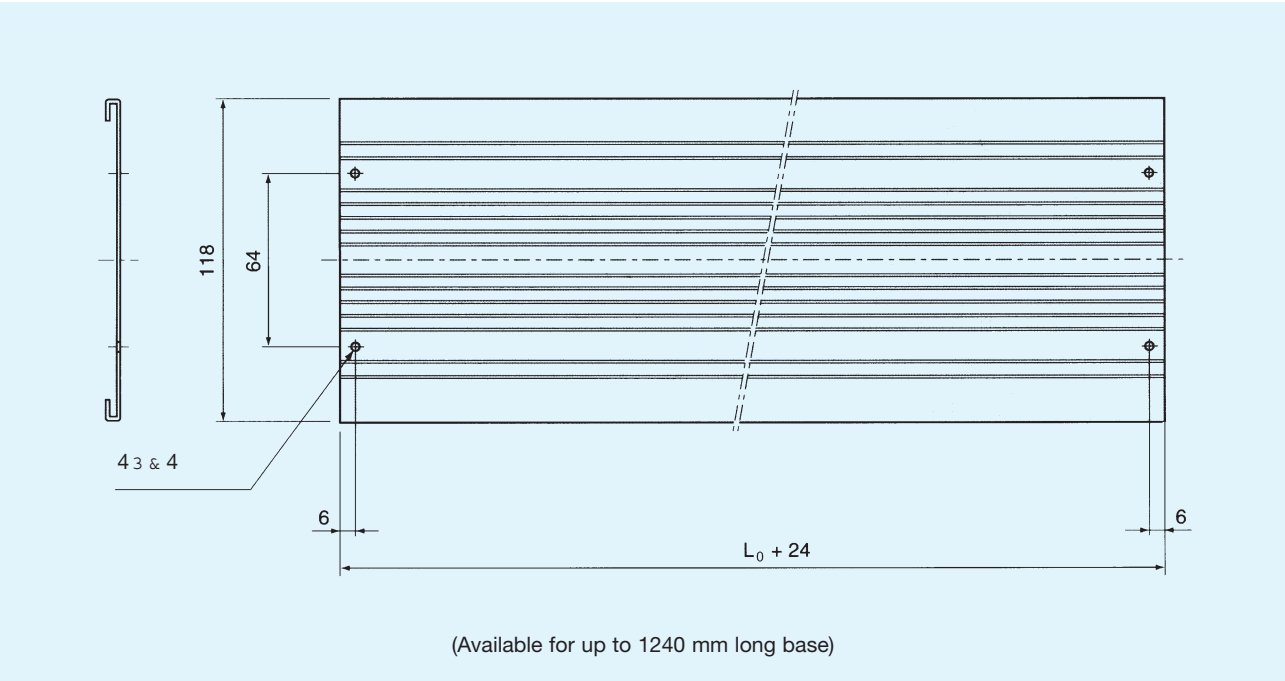


GL20B

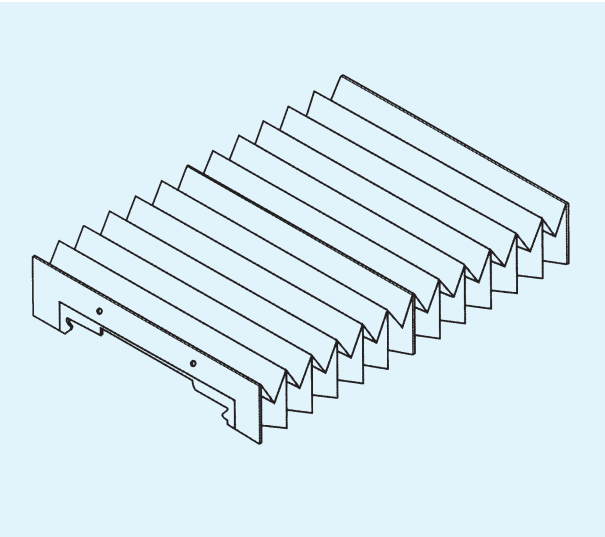




Metal Sheet Cover



Dust Protection Bellows



THK will supply bellows for dust protection.
(Please contact THK).

Sensors

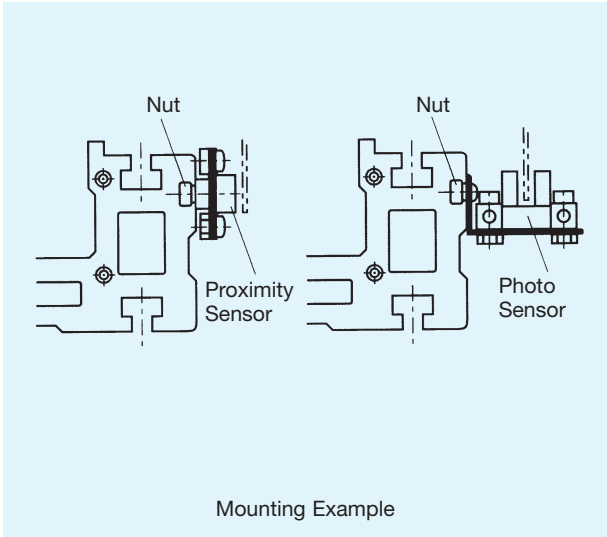
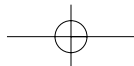
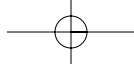


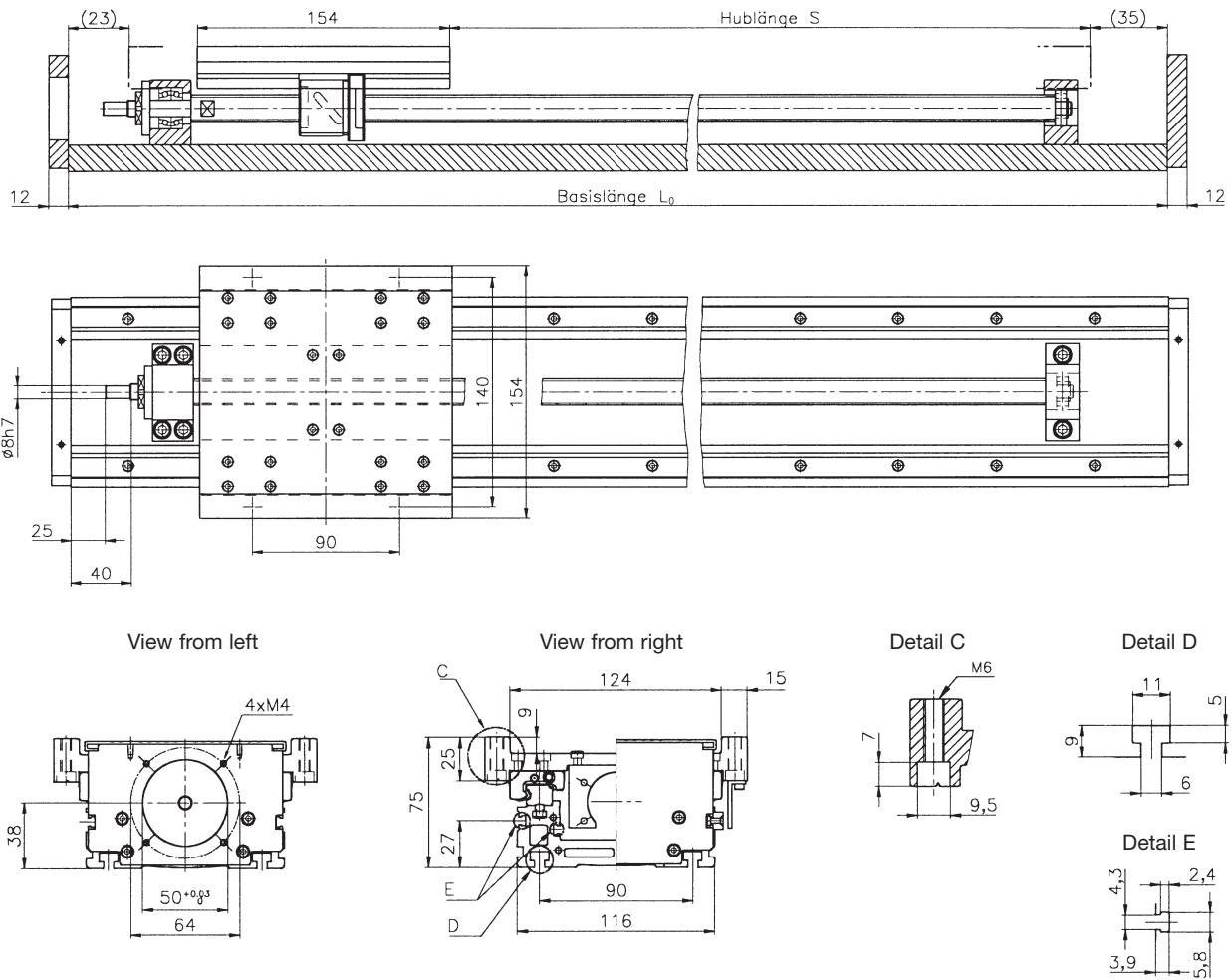
Photo-Sensor	EE-SX671	
Proximity Sensor	TL-W3MC1	NPN normally open
	TL-W3MC2	NPN normally closed
	TL-W3MB1	PNP normally open
	TL-W3MB2	PNP normally closed

THK provides proximity sensor kits, that can be directly mounted to the T-Slots, located on either side of the linear actuator base. All sensors can be delivered ex stock.





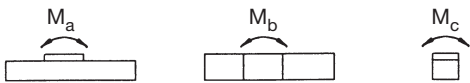
Type GL15B with Ball Screw



LM Guide Specification	
Type	GSR15T
Dyn. Load Rating C (N)	5690 ¹⁾
Stat. Load Rating C ₀ (N)	8430 ¹⁾

¹⁾ The load rating of the LM Guide ist the value of one block.

Static Permissible Moment	
M _a (Nm)	1130
M _b (Nm)	1040
M _c (Nm)	1140



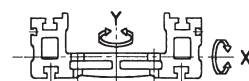
Bearing Specification	
Dyn. Load Rating C (N)	6080
Stat. Load Rating C ₀ (N)	450

Ball Screw Specification			
Outer Diam. of Screw (mm)	16	16	15
Lead (mm)	5	16	30
Dyn. Load Rating C (N)	5400	5800	4300
Stat. Load Rating C ₀ (N)	13300	12900	9300
Accuracy	C10		
Axial Clearance	<0.1mm		

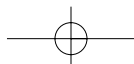
Repeatability	+/-0.02mm
---------------	-----------

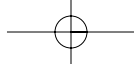
Geometrical Moment of Inertia	
I _x (mm ⁴)	2.0 \pm 10 ⁵
I _y (mm ⁴)	2.7 \pm 10 ⁶
M (kg/m)	7.4 ¹⁾

¹⁾ including rails

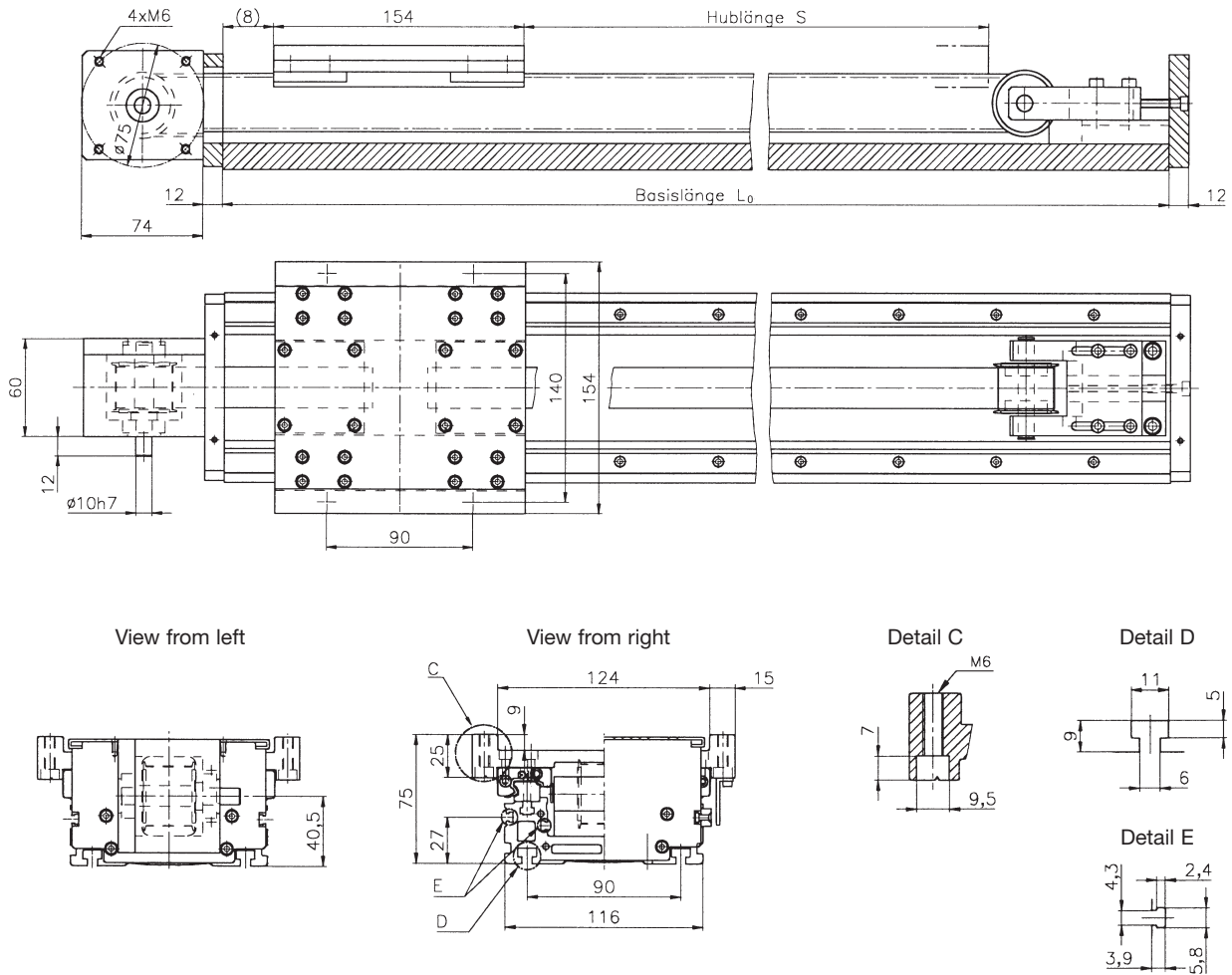


Stroke: S	100	220	340	460	580	820	1000	1180
Base Length: L ₀	340	460	580	700	820	1060	1240	1420





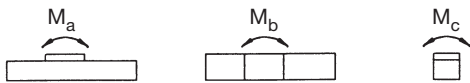
Type GL15E with Belt



LM Guide Specification	
Type	GSR15T
Dyn. Load Rating C (N)	5690 ¹⁾
Stat. Load Rating C ₀ (N)	8430 ¹⁾

¹⁾ The load rating of the LM Guide ist the value of one block.

Static Permissible Moment	
M _a (Nm)	1130
M _b (Nm)	1040
M _c (Nm)	1140

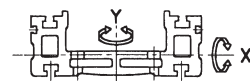


Belt Drive Specification	
Drive Pulley Diameter (mm)	35.01
Tooth Pitch (mm)	5.0
Permissible Tension (N)	765
Belt width (mm)	25

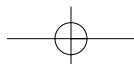
Repeatability	+/-0.08mm
---------------	-----------

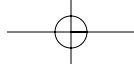
Geometrical Moment of Inertia	
I _x (mm ⁴)	2.0 \geq 10 ⁵
I _y (mm ⁴)	2.7 \geq 10 ⁶
M (kg/m)	7.4 ¹⁾

¹⁾ including rails

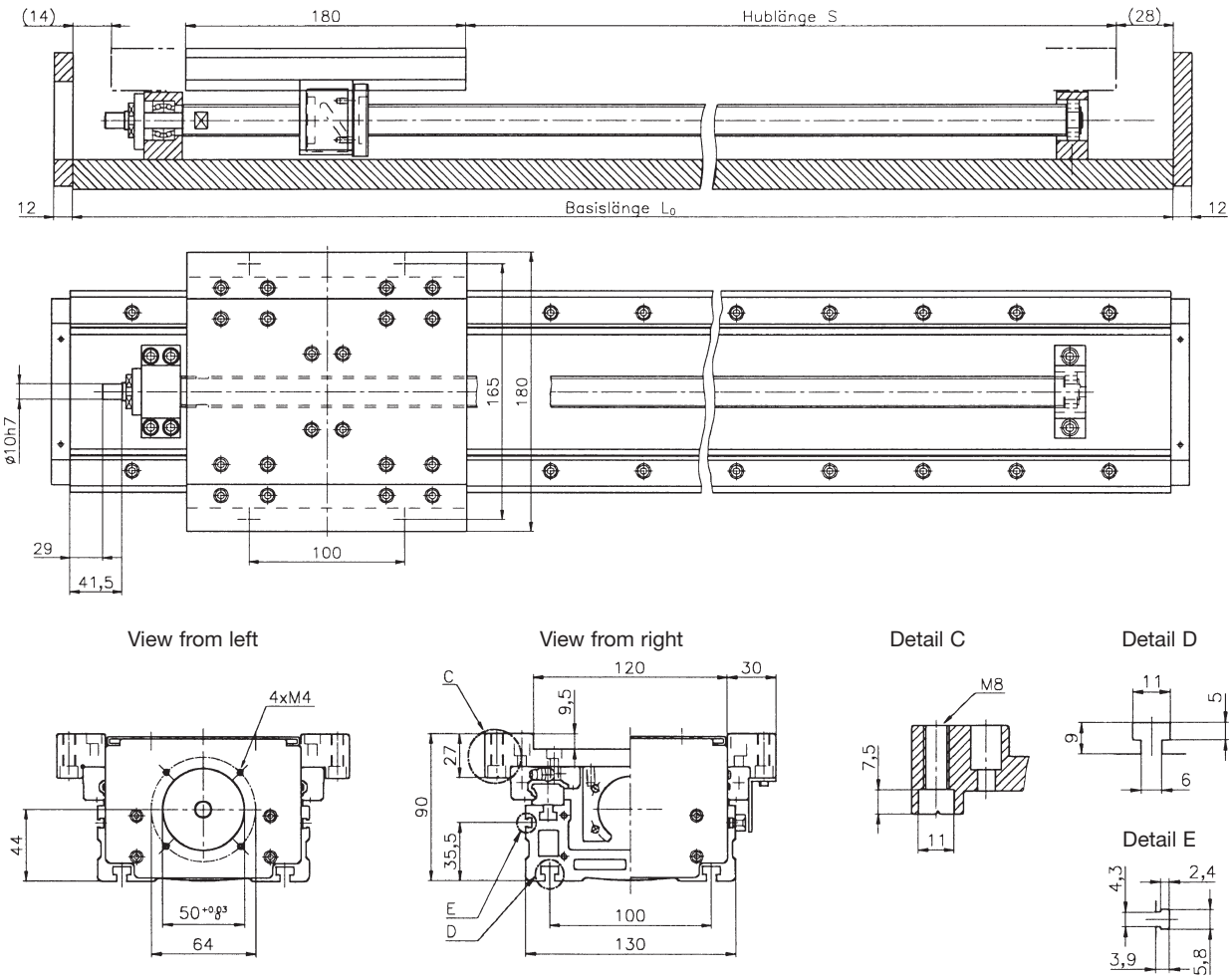


Stroke: S	70	190	310	430	550	790	970	1150	1330	1510	1690
Base Length: L ₀	340	460	580	700	820	1060	1240	1420	1600	1780	1960





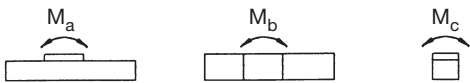
Type GL20B with Ball Screw



LM Guide Specification	
Type	GSR20T
Dyn. Load Rating C (N)	9220 ¹⁾
Stat. Load Rating C ₀ (N)	13200 ¹⁾

¹⁾ The load rating of the LM Guide ist the value of one block.

Static Permissible Moment	
M _a (Nm)	1970
M _b (Nm)	1810
M _c (Nm)	2000



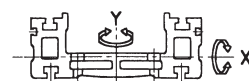
Bearing Specification	
Dyn. Load Rating C (N)	6660
Stat. Load Rating C ₀ (N)	550

Ball Screw Specification			
Outer Diam. of Screw (mm)	20	20	20
Lead (mm)	5	20	40
Dyn. Load Rating C (N)	6000	7700	5400
Stat. Load Rating C ₀ (N)	16500	22300	13600
Accuracy	C10		
Axial Clearance	<0.1mm		

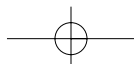
Repeatability	+/-0.02mm
---------------	-----------

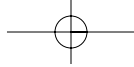
Geometrical Moment of Inertia	
I _x (mm ⁴)	4.63 \times 10 ⁵
I _y (mm ⁴)	4.68 \times 10 ⁶
M (kg/m)	10.4 ¹⁾

¹⁾ including rails

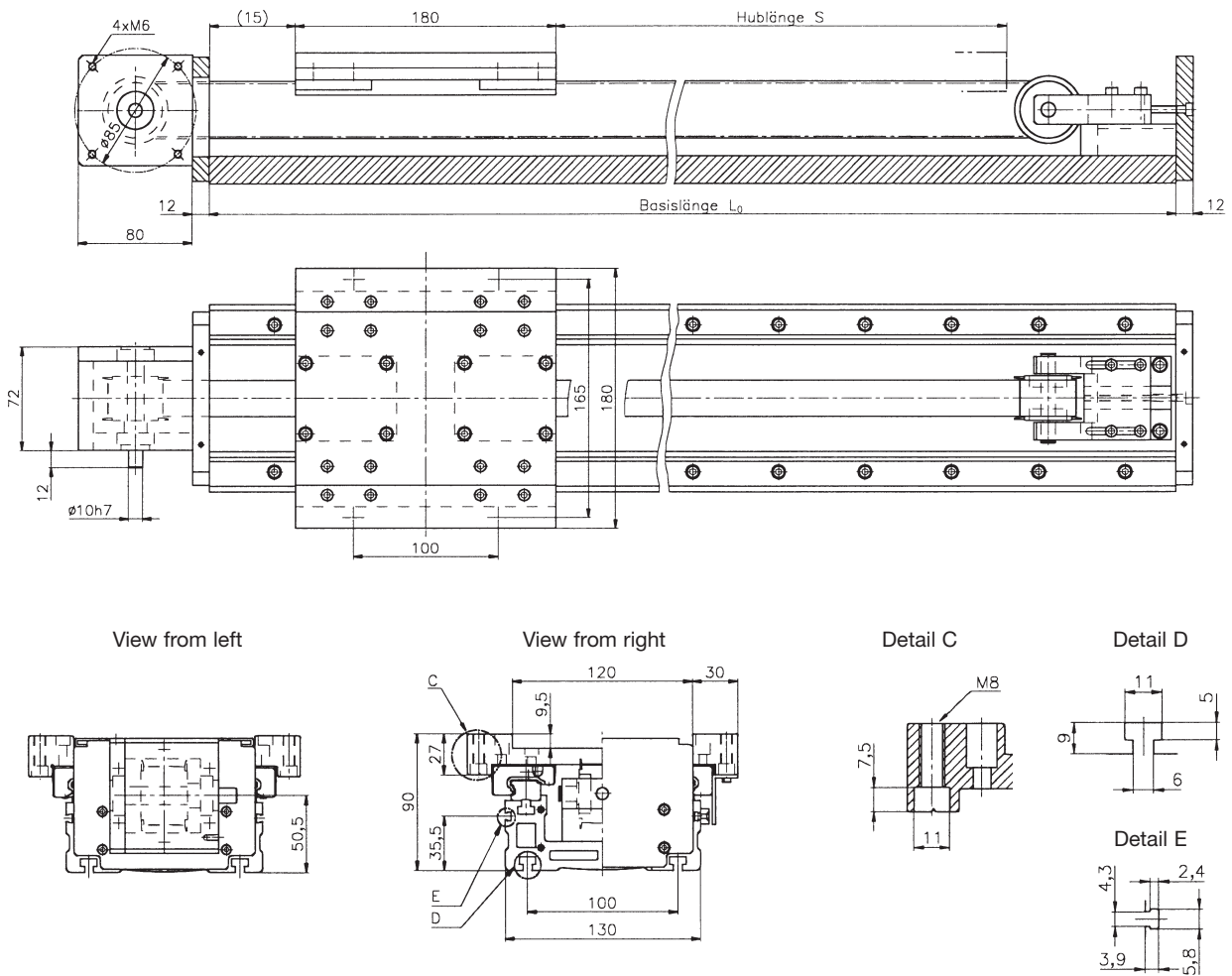


Stroke: S	200	320	440	560	800	980	1160	1340	1520
Base Length: L ₀	460	580	700	820	1060	1240	1420	1600	1780





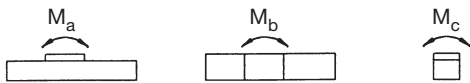
Type GL20E with Belt



LM Guide Specification	
Type	GSR20T
Dyn. Load Rating C (N)	9220 ¹⁾
Stat. Load Rating C ₀ (N)	13200 ¹⁾

¹⁾ The load rating of the LM Guide ist the value of one block.

Static Permissible Moment	
M _a (Nm)	1970
M _b (Nm)	1810
M _c (Nm)	2000

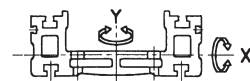


Belt Drive Specification	
Drive Pulley Diameter (mm)	38.2
Tooth Pitch (mm)	5.0
Permissible Tension (N)	765
Belt width (mm)	25

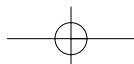
Repeatability	+/-0.08mm
---------------	-----------

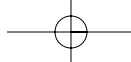
Geometrical Moment of Inertia	
I _x (mm ⁴)	4.63 ± 10 ⁵
I _y (mm ⁴)	4.68 ± 10 ⁶
M (kg/m)	10.4 ¹⁾

¹⁾ including rails



Stroke: S	160	280	400	520	760	940	1120	1300	1480	1660	1900	2020	2200	2700
Base Length: L ₀	460	580	700	820	1060	1240	1420	1600	1780	1960	2200	2320	2500	3000





Datasheet Linear Actuator Type GL

worked out from _____ **Date** _____
Company _____ **Telephone No.** _____
Contact Person _____ **Fax No.** _____
Road _____
Town _____

Description of the application

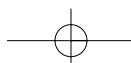
Axis		x	y	z
Mounting Orientation (horizontal, vertical, wall mounted, over head)				
Drive Type Ball Screw B Lead h (GL 15 - 5, 16, 30 mm) (GL 20 - 5, 20, 40 mm)				
Belt Drive E				
Stroke s	mm			
Max. Speed v	m/s			
Max. Acceleration a	m/s ²			
Weight m	kg			
Center of gravity m LM 1 LM 2 LM 3	mm mm mm			
Additional Load F (r, t, a)	N			
Point of Load F (r, t, a) Lr1/Lr2 Lt1/Lt2 La1/La2	mm mm mm			
Positioning Accuracy	mm			
Positioning Repeatability	mm			
Required lifetime	h km			

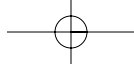
Please enclose a sketch of the application.

Please state following options:

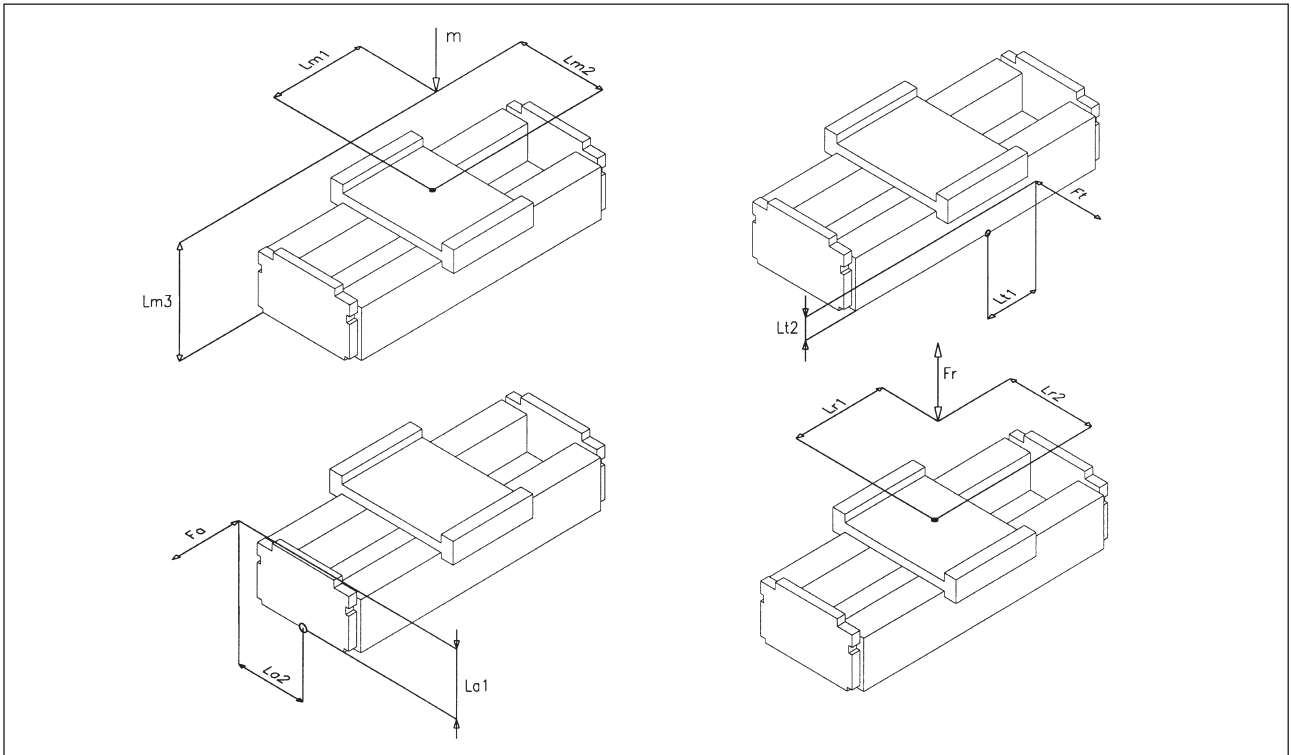
- Bellows
- Metal sheet cover
- Motor adapter (Please enclose the connecting dimensions of the motor)
- Coupling
- Max. torque M=.....(Nm)

- Proximity sensor
- Photo sensor
- Sensor dog

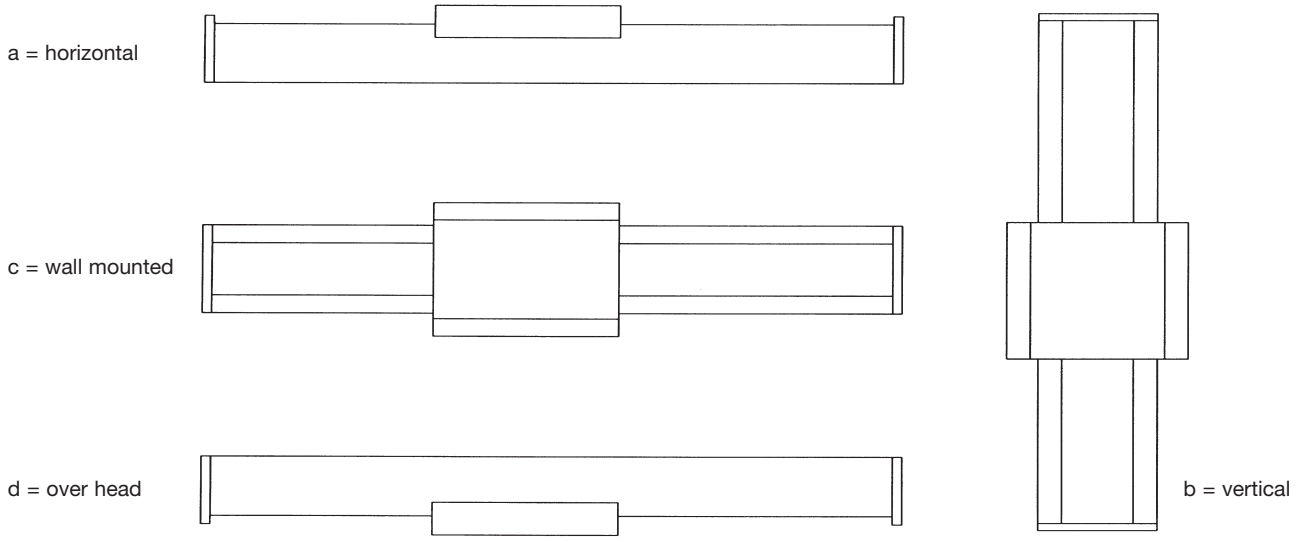




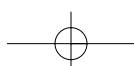
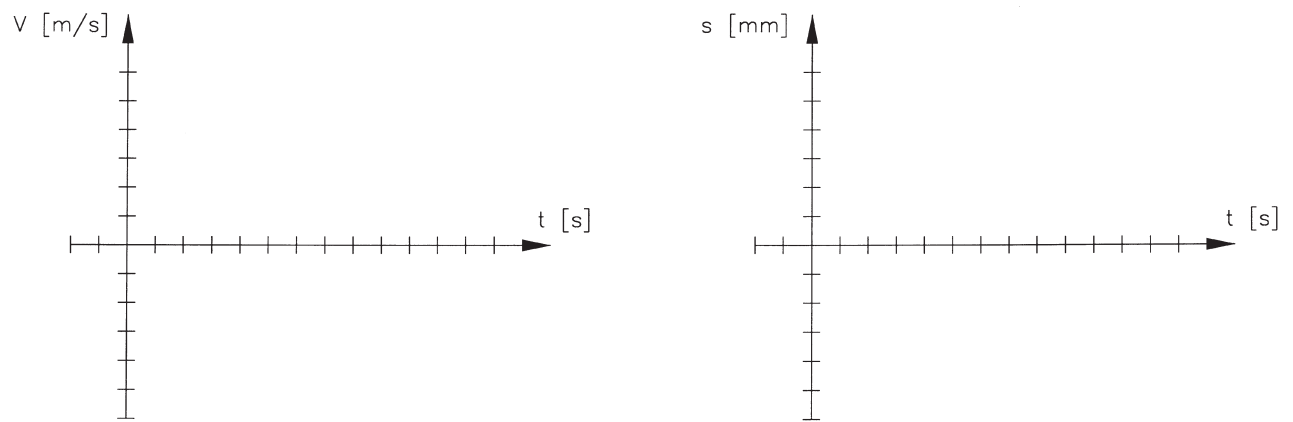
Point of load and center of gravity:



Mounting orientation:



Motion profile:



THK Linear Actuator Type GL



Specifications are subject to change without notice

7/97 Printed in Belgium

Sales & Service

Germany

THK GmbH
Head Office Düsseldorf
 Hubert-Wollenberg-Str. 15
 40878 Ratingen
 Tel.: (0 21 02) 74 25-0
 Fax: (0 21 02) 74 25-29 9

Branch Office Stuttgart

Kleines Wegle 5
 71691 Freiberg/Neckar
 Tel.: (0 71 41) 27 57-0
 Fax: (0 71 41) 27 57-90

Distributors:

Postal code
 20-29, 30-31, 34, 37-38
SNR WÄZLAGER GMBH
 Friedrich-Hagemann Str.66
 33719 Bielefeld
 Tel.: (05 21) 9 24 00-0
 Fax: (05 21) 9 24 00 90

Postal code
 32-33, 4, 5 (without 55)

Indunorm
Bewegungstechnik GmbH
 Keniastr. 12
 47269 Duisburg
 Tel.: (02 03) 76 91-0
 Fax: (02 03) 76 91 29 1

Postal code
 35-36, 55, 60-97

Nadella GmbH
 Tränkestr. 7
 70597 Stuttgart
 Tel.: (07 11) 7 20 63-0
 Fax: (07 11) 7 20 63 25

Switzerland

Bachofen-AG
 Ackerstraße 42
 8610 Uster
 Tel.: (01) 9 44 11 11
 Fax: (01) 9 44 12 33

Austria

Manfred Oberauer
 Johann-Strauß-Str. 3
 4701 Bad Schallerbach
 Tel.: (0 72 49) 4 82 66
 Fax: (0 72 49) 4 23 03

United Kingdom

THK Milton Keynes
 26 Alston Drive
 Bradwell Abbey
 Milton Keynes,
 MK13 9HA
 Tel.: (0 19 08) 22 21 59
 Fax: (0 19 08) 22 21 61

Italy

THK Italy
 Via Buonarroti, 182
 20052 Monza (MI)
 Tel.: (0 39) 2 84 20 79
 Fax: (0 39) 2 84 25 27

France

THK France
 ZI Les Bordes
 3 rue Henri Dunant
 CE 2204
 91922 Bondoufle Cedex
 Tel.: (1) 69 91 43 70
 Fax: (1) 60 86 45 75

USA

THK Chicago
 200 East Commerce Drive
 Schaumburg, IL. 60173
 Tel.: (8 47) 3 10-11 11
 Fax: (8 47) 3 10-11 82

THK New Jersey

300 F, RT.17, South
 Mahwah, NJ. 07430
 Tel.: (2 01) 5 29-19 50
 Fax: (2 01) 5 29-19 62

THK Atlanta

6135-E Northbelt Drive
 Norcross, GA. 30071
 Tel.: (4 04) 8 40-79 90
 Fax: (4 04) 8 40-78 97

THK Los Angeles

6000 Phyllis Drive
 Cypress, CA. 90630
 Tel.: (7 14) 8 91-67 52
 Fax: (7 14) 8 94-93 15

Canada

THK Canada
 130 Matheson Blvd. E., U. 1
 Mississauga, Ontario
 Canada L4Z 1Y6
 Tel.: (9 05) 7 12-29 22
 Fax: (9 05) 7 12-29 25

Brasil

THK Brasil Ltda.
 Rua Dr. Arthur Zapponi, 57
 Freguesia DO O
 Sao Paulo - S.P.
 C.E.P. 02840-170
 Tel.: (0 11) 8 57-99 11
 Fax: (0 11) 2 65-15 89

China

THK Beijing
 Kunlun Hotel Room No.526
 2 Xin Yuan Lu
 Chaoyang District Beijing
 Tel.: (01) 5 00 33 88
 Rm.#526
 Fax: (01) 5 04 45 57
 Rm.#526

Taiwan

THK Taiwan
 C611 SHIH, 6F, No. 7
 Wu-Chuan 1 Rd.
 Wu-Ku Kung Yeh Chu
 Hsin Chuang City
 Taipei Hsien
 Tel.: (02) 2 99-79 30
 Fax: (02) 2 97-81 49

Hongkong

THK Shouzan Co., Ltd.
 4/Fl., Hanyee Bldg., Flat C
 19-21 Hankow Road
 Tsimshatsui, Kowloon
 Tel.: 3 76 10 91, 3 76 12 52
 Fax: 3 76 07 49

Malaysia

THK Malaysia
 19-12-1, Mont Kiara Palma
 Jalan Mont Kiara, Off
 Jalan Bukit Kiara
 50480 Kuala Lumpur
 Tel.: (03) 2 54-70 07
 Fax: (03) 2 54-70 07

Factories

Europe

PGM Ball Screws Ltd.
 Bodmin Road, Wyken
 GB-Coventry CV2 5DZ
 Tel.: (012 03) 84 19 00
 Fax: (012 03) 61 10 32

PGM Ireland Ltd.

18 Cookstown
 Industrial Estate
 IRL-Tallaght, Dublin 24
 Tel.: (01) 4 51 39 22
 Fax: (01) 4 51 34 69

Japan

Head Office
 3-11-6 Nishi-Gotanda
 Shinagawa-Ku
 Tokyo 141
 Tel.: (03) 54 34-03 51
 Fax: (03) 54 34-03 53

Plants in:

Kofu, Yamaguchi,
 Yamagata, Mie, Tokyo,
 Nagoya, Osaka, Gifu,
 etc.