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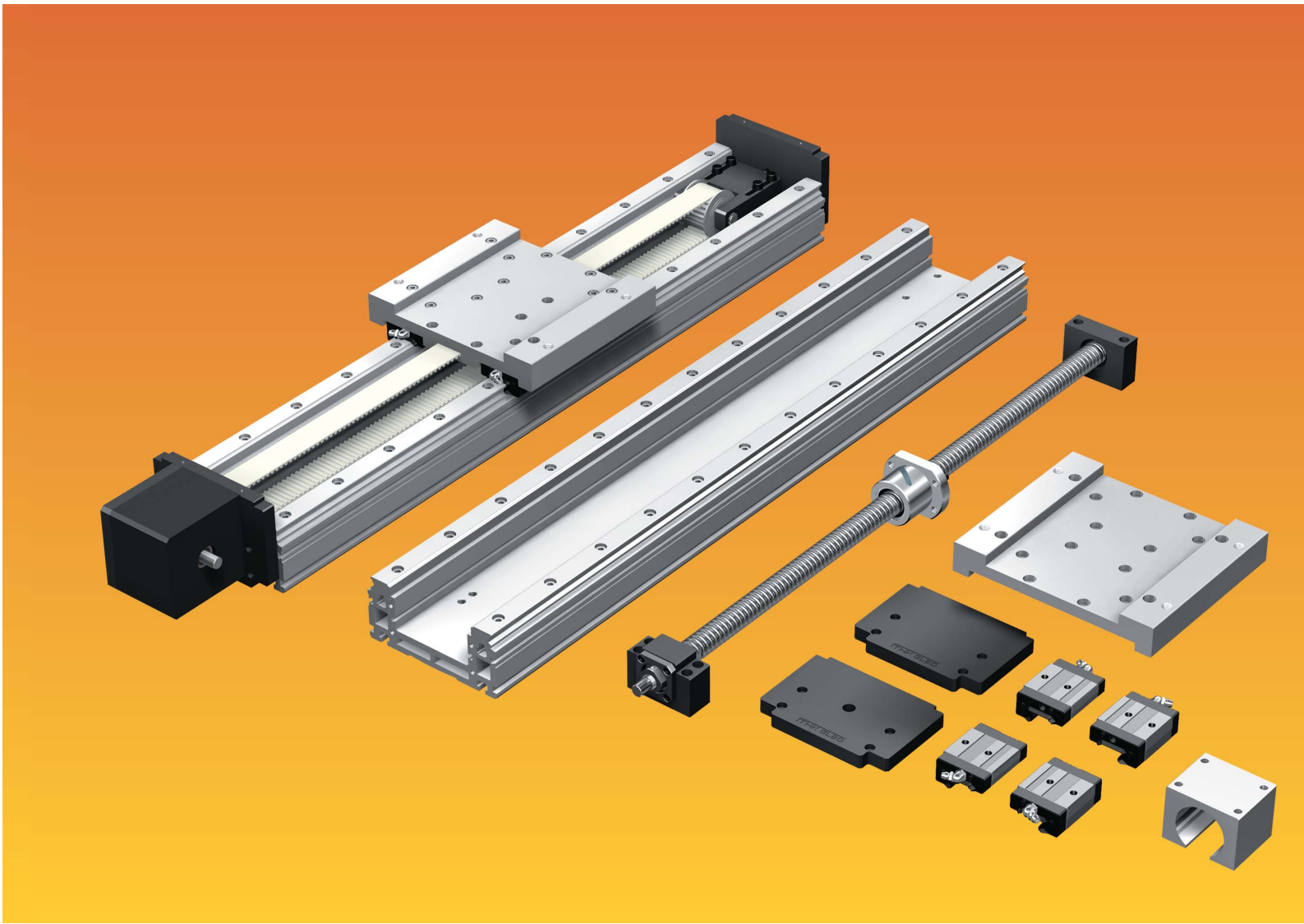
Find the *THK GL15-640* at our website: *Click HERE*

THK

LM ACTUATOR

Low Price Simple Actuator
LM Assembly Kit Also Available

GL



THK CO., LTD.
TOKYO. JAPAN

CATALOG No.175-10E

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Structures

Ball Screw

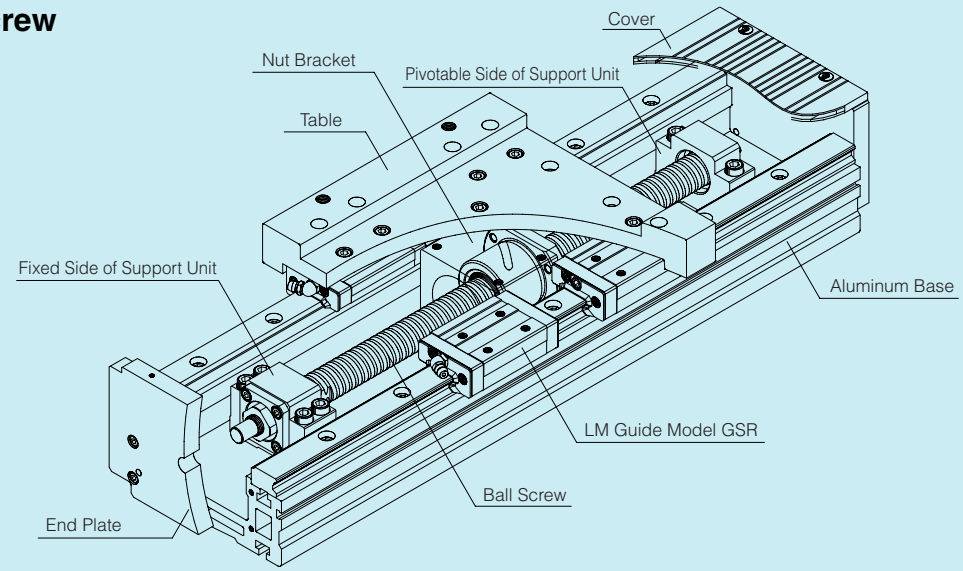


Figure 1 Ball Screw Type Structure

Timing Belt

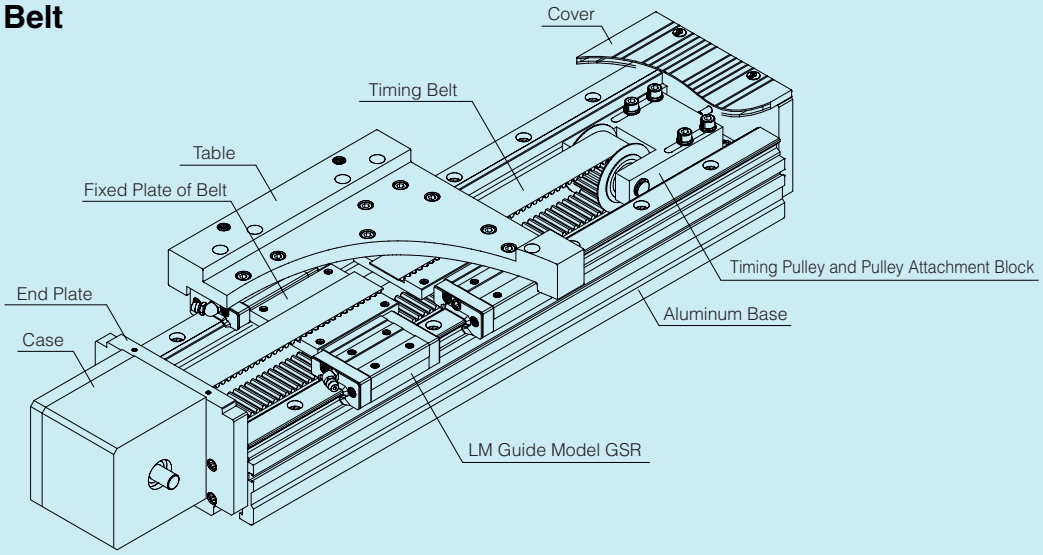


Figure 2 Timing Belt Type Structure

Note: If the Model GL with timing belt is mounted vertically, the carriage may drop. Please contact THK for further details.

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Features

Lightweight, high rigidity aluminum base with LM Guides model GSR has been utilized for the guide portion. A screw or belt options are available for the drive system.

● Enables manufacturing of actuator that corresponds to it use

Allows you to manufacture the actuator that matches your specifications because you can select the parts. Both the pre-assembled parts and part kits are available for purchase.

● Short delivery time

All parts are standardized to enable manufacturing with short delivery times.

● Drive System

[Ball Screw Type]

Variety of screw leads can be selected.

Table 1 Ball Screw Leads by Model Numbers

Model number	Ball Screw lead [mm]
GL15	5, 16, 30
GL20	5, 20, 40

[Timing Belt Type]

Highly rigid timing belt ensures that high speed processes are possible for longer stroke (max. 2720 mm) applications than the Ball Screw driven type.

Table 2 Pitch Diameter of the Timing Pulley

Model number	Pitch diameter [mm]	Slider move distance [mm] per pulley rotation
GL15	35.01	35.01×π≒110
GL20	38.20	38.20×π≒120

Note: Because the timing pulley has a large pitch diameter, the use of a reducer is recommended.

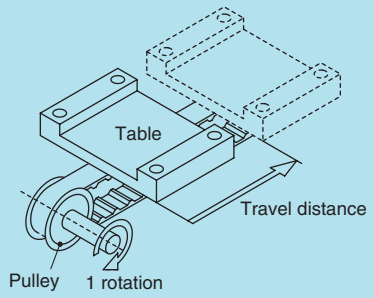


Figure 3 Slider move distance per pulley rotation

● Lightweight and High Rigidity

By using a hollow aluminum extrusion, light weight and high rigidity is achieved.

Table 3 Geometrical Moment of Inertia and Weight in the Base

Model number	Geometrical Moment of Inertia		Weight
	Ix [mm^4]	Iy [mm^4]	[kg/m]
GL15	2.0×10^5	2.7×10^6	5.1
GL20	4.62×10^5	4.62×10^6	6.8

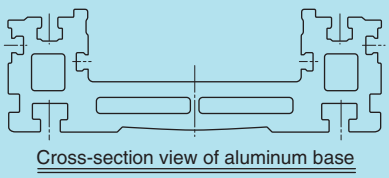


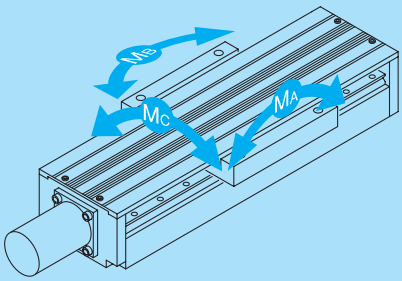
Figure 4 Base Section

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Specification

Model number			GL15				GL20			
Drive system			Ball Screw		Belt		Ball Screw		Belt	
Screw lead		[mm]	5, 16, 30		—		5, 20, 40		—	
Pulley pitch diameter		[mm]	—		35.01		—		38.20	
Repeatability Note 1)		[mm]	±0.02		±0.08		±0.02		±0.08	
Effective stroke Note 2)		[mm]	100 to 1180		70 to 1720		200 to 1520		150 to 2720	
Applicable LM Guide			GSR15V	GSR15T	GSR15V	GSR15T	GSR20V	GSR20T	GSR20V	GSR20T
Note 3) Rated moment load	MA	[N-m]	60.9	67.7	90.7	134.1	137.0	173.9	117.0	157.3
	MB		46.5	52.0	69.3	102.3	104.0	132.1	88.6	119.2
	MC		61.8	77.2	91.7	123.3	117.0	152.8	103.6	137.2

Note 1: This repeatability is ensured at an ambient temperature of 20°C.
Note 2: The effective stroke decreases depending on the table length. See the dimensional drawings (P.5 to 10) for stroke details.
Note 3: The rated moment load refers to the moment in each direction obtained when the life travel distance of the LM guide is 5000km. For the ball screw drive, the rated moment load is the minimum loaded moment calculated under the conditions of the maximum moving speed per lead and an acceleration of 0.3G.



MA Moment in the pitching direction
MB Moment in the yawing direction
MC Moment in the rolling direction

Figure 5 Direction of rated moment loads

Maximum Travel Speed

[Ball Screw Type]

Ball Screws have an allowable rotational speed based on the DN value and the critical speed. The table travel speed [mm/s] of the LM Actuator depends on the rotational speed of the Ball Screw and the rated rpm (3000 min^{-1}) of the AC servo motor.

Maximum travel speed

Unit: mm/s

Model number		GL15			GL20		
Ball Screw lead		5	16	30	5	20	40
Base length	340	248	800	1500	—	—	—
	460	248	800	1500	202	1000	2000
	580	248	800	1500	202	1000	2000
	700	248	800	1500	202	1000	2000
	820	248	800	1500	202	1000	2000
	1060	214	706	1215	202	1000	2000
	1240	148	488	834	190	786	1573
	1420	108	357	610	140	573	1146
	1600	—	—	—	106	436	873
	1780	—	—	—	84	343	686

Note: The LM actuator may not reach the maximum travel speed if the moving distance is short.

[Timing Belt Type]

The table shown below summarizes the table travel speed [mm/s] of when the LM Actuator is equipped with a reducer and the AC servo motor is operated at a rated rpm (3000min^{-1}).

Maximum travel speed

Unit: mm/s

Model number	GL15			GL20		
Reduction ratio	1/3	1/5	1/9	1/3	1/5	1/9
Maximum travel speed	1833	1100	611	2000	1200	667

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Configuration of Numbers

The following shows the numbering of model GL.

[Pre-assembled Part]

GL15–082–T4–L–B30–P–J–ASSY
1 2 3 4 5 6 7 8

[Kit Part]

GL20–070–T4–L–E–C–KIT
1 2 3 4 5 7 8

Note: If you have ordered kit parts, we will deliver all parts together.

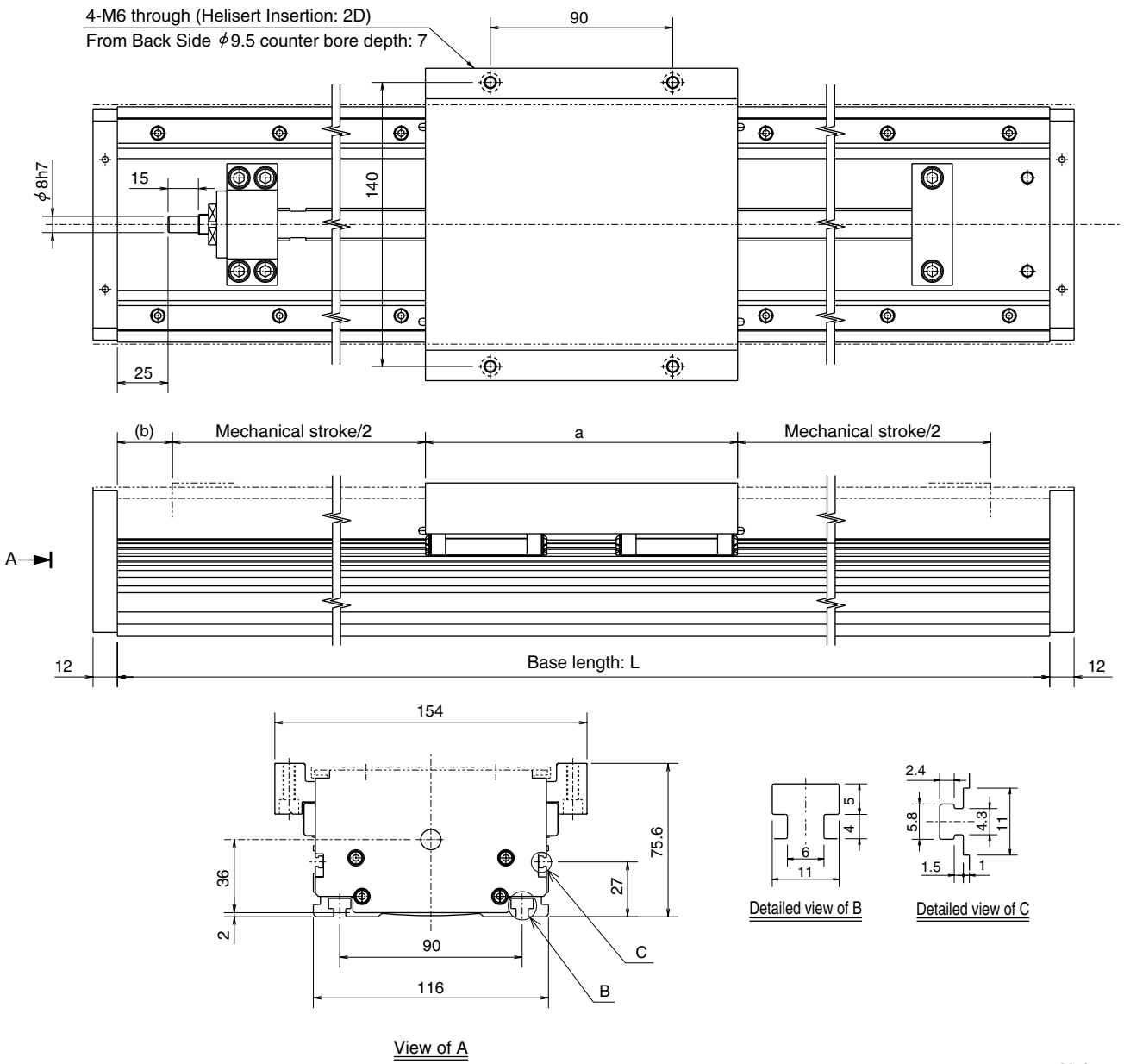
1	**Model Number**	GL15/GL20
2	**Base Length**	034: 340 mm to 300: 3000 mm
3	**LM Block Code**	V4: Short Type T4: Long Type
4	**Top Table Code**	S: Short Type (Only V4) L: Long Type (Only T4)
5	**Drive System Code**	B05: Ball Screw Lead 5 mm B16: Ball Screw Lead 16 mm (Only GL15) B20: Ball Screw Lead 20 mm (Only GL20) B30: Ball Screw Lead 30 mm (Only GL15) B40: Ball Screw Lead 40 mm (Only GL20) E : Belt Drive
6	**End Plate Code** (Ball Screw drive type only)	No Code: No End Plate P : With End Plate
7	**Cover Code**	No Code: None C : With Cover J : With Twill Braid
8	**Assembly Code**	ASSY: Assembly and adjustment done KIT : Without assembly and adjustment

*The deflection of the cover increases when the base length is above 1240 mm, an additional cover support is attached to the table to prevent this deflection. This is attached to models with base lengths above 1060 mm.

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Dimensional Drawing of Ball Screw Specifications

● GL15 Model, Ball Screw Driven



Unit: mm

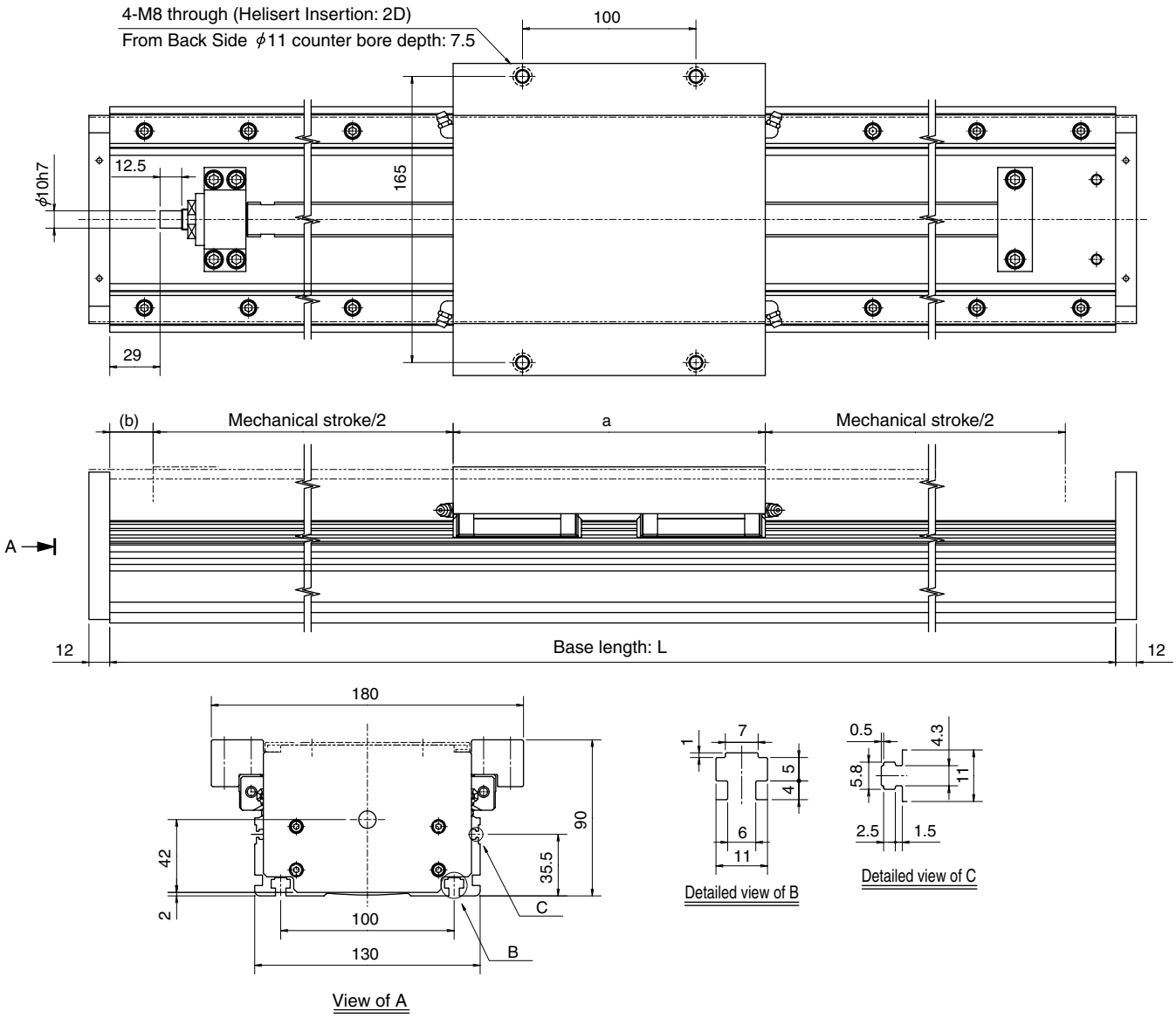
Table type	Table length: a	b
S type	126	45
L type	154	30

Base length: L [mm]			340	460	580	700	820	1060	1240	1420
Mechanical stroke [mm]			100	220	340	460	580	820	1000	1180
Main unit weight [kg]	Table	S type	5.7	6.8	8.0	9.0	10.2	12.4	14.1	15.9
		L type	6.0	7.1	8.3	9.3	10.5	12.7	14.4	16.2

Note: The main unit weight includes the cover weight.

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● GL20 Model, Ball Screw Driven



Unit: mm

Table type	Table length: a	b
S type	160	35
L type	180	25

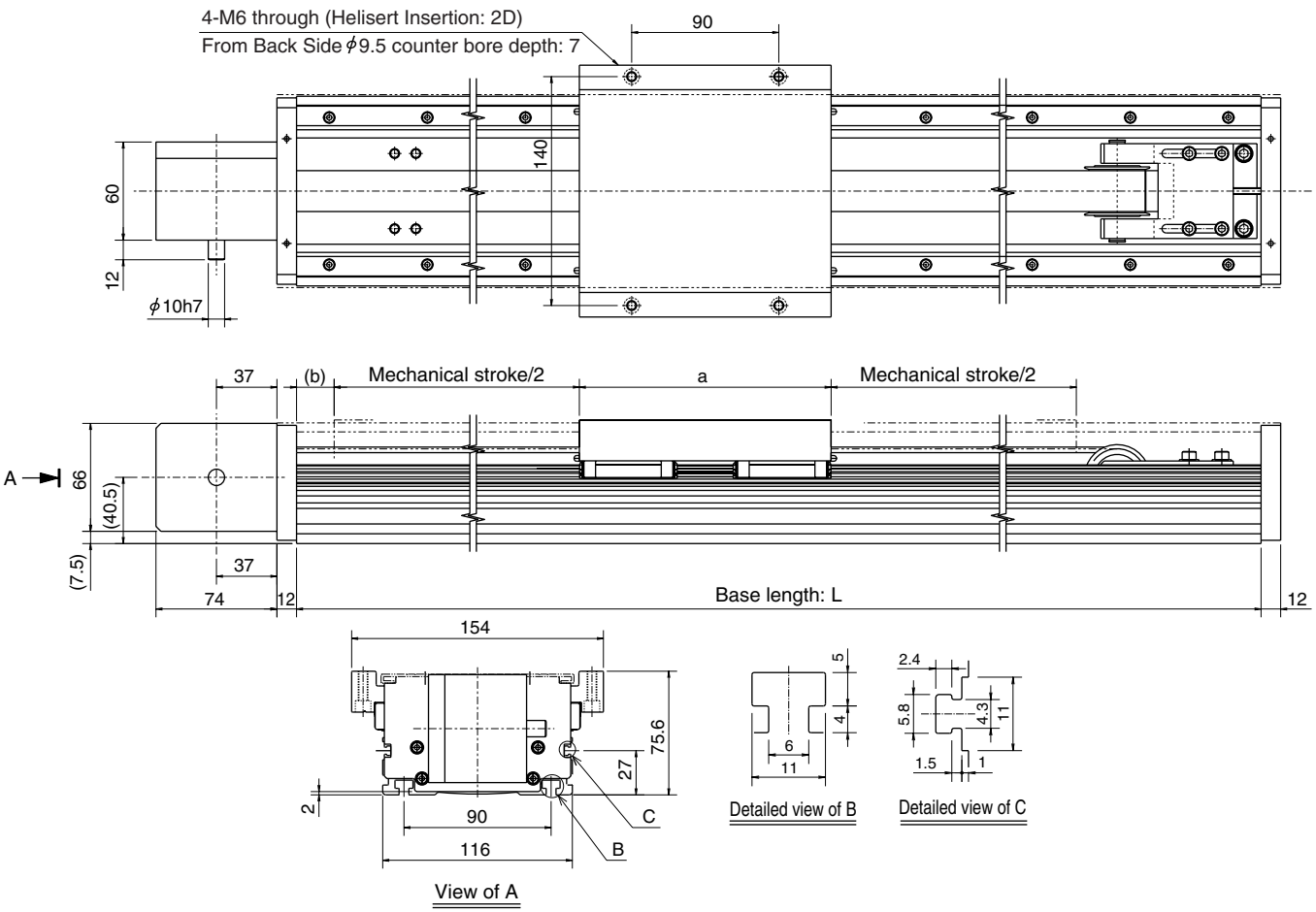
Base length: L [mm]			460	580	700	820	1060	1240	1420	1600	1780
Mechanical stroke [mm]			200	320	440	560	800	980	1160	1340	1520
Main unit weight [kg]	Table	S type	9.6	11.2	12.7	14.3	17.4	19.8	22.2	24.5	26.9
		L type	10.1	11.7	13.2	14.8	17.9	20.3	22.7	25.0	27.4

Note: The main unit weight includes the cover weight.

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Dimensional Drawing of Belt Specifications

● GL15 Model, Belt Driven



Unit: mm

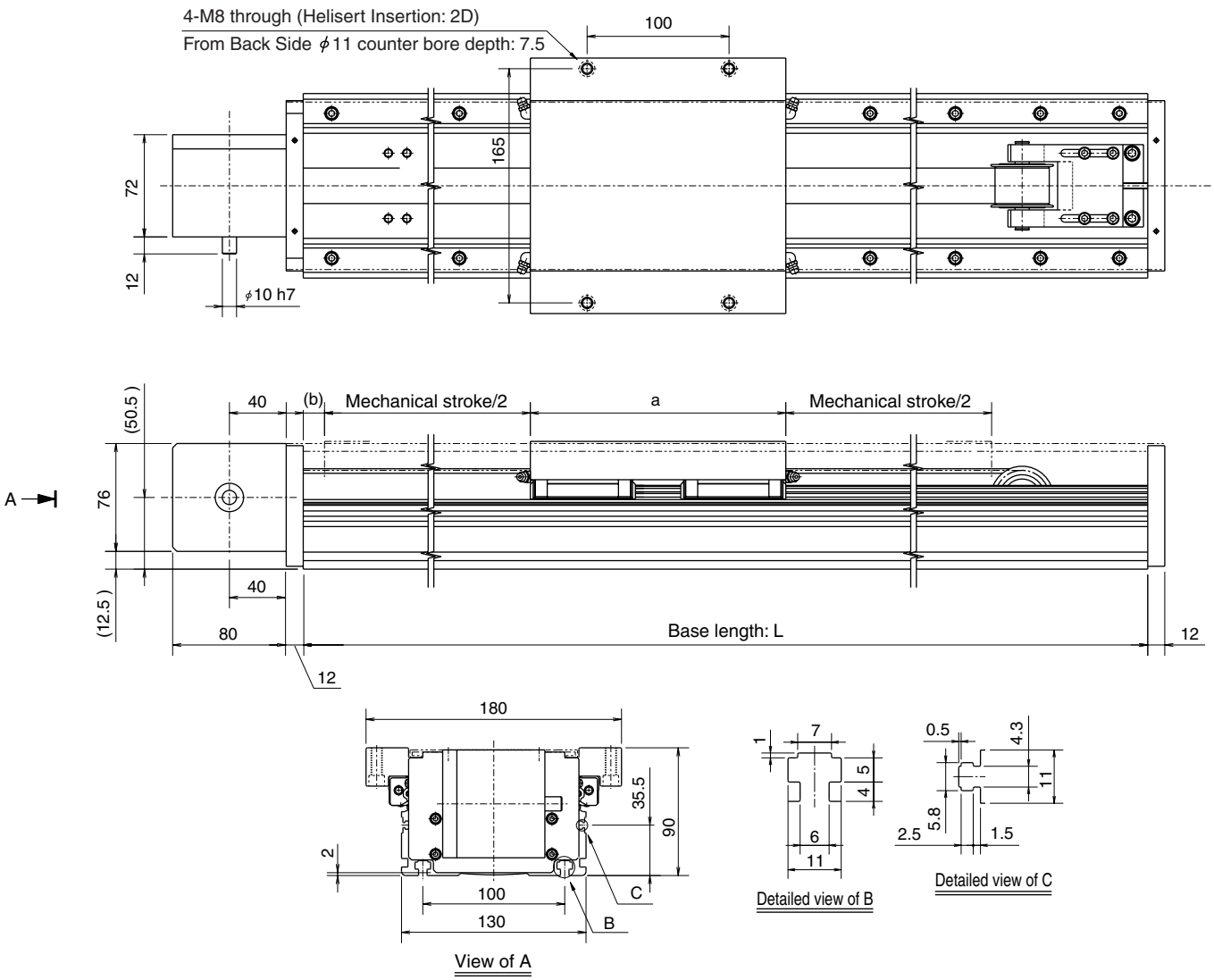
Table type	Table length: a	b
S type	126	8
L type	154	8

Base length: L [mm]			340	460	580	700	820	1060	1240	1420	1600	1780	1960
Mechanical stroke [mm]	Table	S type	100	220	340	460	580	820	1000	1180	1360	1540	1720
		L type	70	190	310	430	550	790	970	1150	1330	1510	1690
Main unit weight [kg]	Table	S type	6.8	7.8	8.7	9.7	10.8	12.7	14.2	15.7	17.1	18.6	20.1
		L type	7.1	8.1	9.0	10.0	11.1	13.0	14.5	16.0	17.4	18.9	23.1

Note 1: The main unit weight includes the cover weight.
Note 2: The drive shaft of the pulley can be changed to the opposite side. Please contact THK for further details.
Note 3: For details on the motor and reducer, please contact THK.

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● GL20 Model, Belt Driven



Unit: mm

Table type	Table length: a	b
S type	160	15
L type	180	15

Base length: L [mm]			460	580	700	820	1060	1240	1420	1600	1780	1960	2200	2320	2500	3000
Mechanical stroke [mm]	Table	S type	180	300	420	540	780	960	1140	1320	1500	1680	1920	2040	2220	2720
		L type	160	280	400	520	760	940	1120	1300	1480	1660	1900	2020	2200	2700
Main unit weight [kg]	Table	S type	11.0	12.3	13.6	15.0	17.7	19.7	21.7	23.7	25.7	27.7	30.3	31.7	33.8	39.5
		L type	11.5	12.8	14.1	15.5	18.2	20.2	22.2	24.2	26.2	28.2	30.8	32.2	34.3	40.0

Note 1: The main unit weight includes the cover weight.
Note 2: The drive shaft of the pulley can be changed to the opposite side. Please contact THK for further details.
Note 3: For details on the motor and reducer, please contact THK.

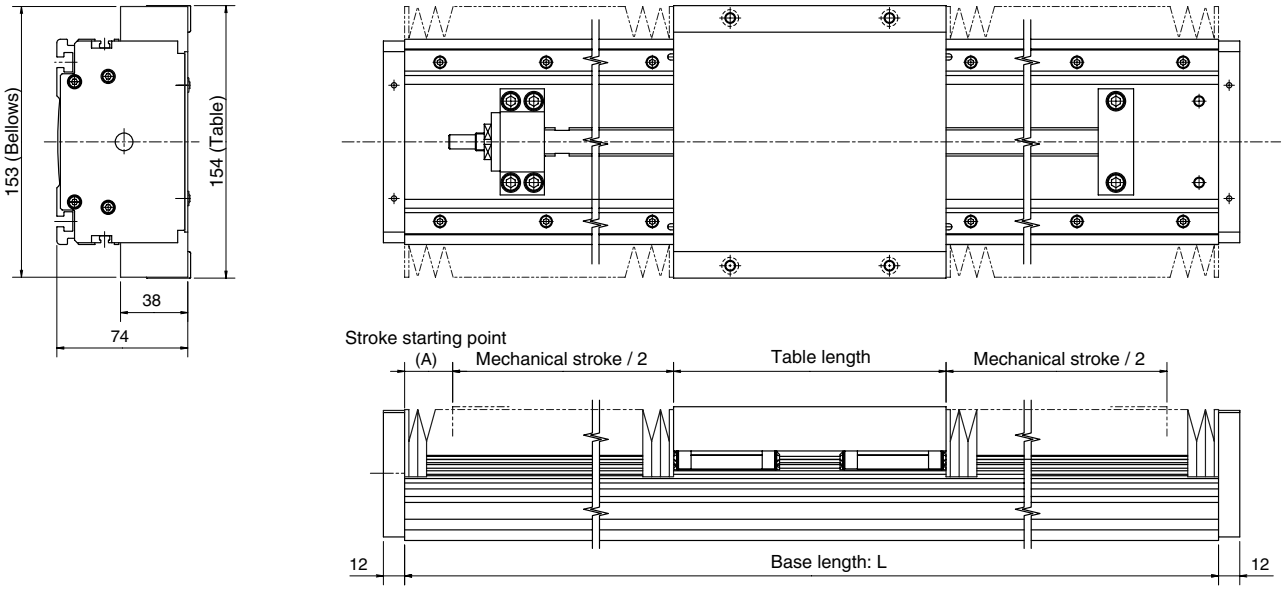
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Options

Bellows

The GL model has an anti-dust bellows as well as an anti-dust cover.

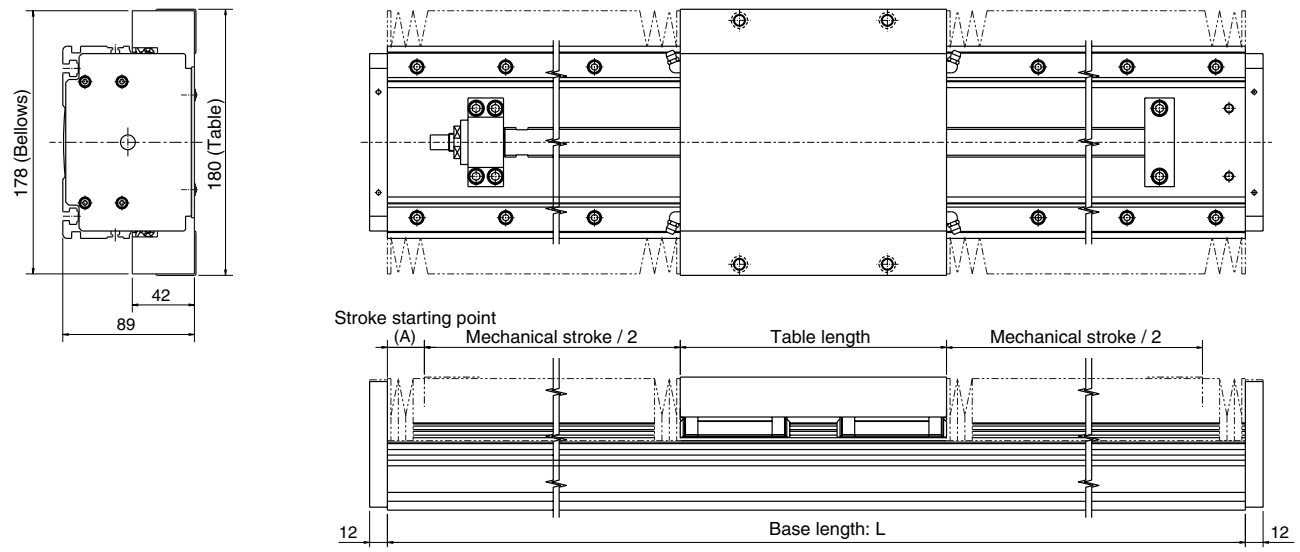
[GL15 Model, Ball Screw Driven]



Unit: mm

Base length: L			340	460	580	700	820	1060	1240	1420
Mechanical stroke	Table	S type	100	220	340	455	560	770	910	1070
		L type								
Stroke (Starting point: A)	Table	S type	57	57	57	59.5	67	82	102	112
		L type	43	43	43	45.5	53	68	88	98

[GL20 Model, Ball Screw Driven]

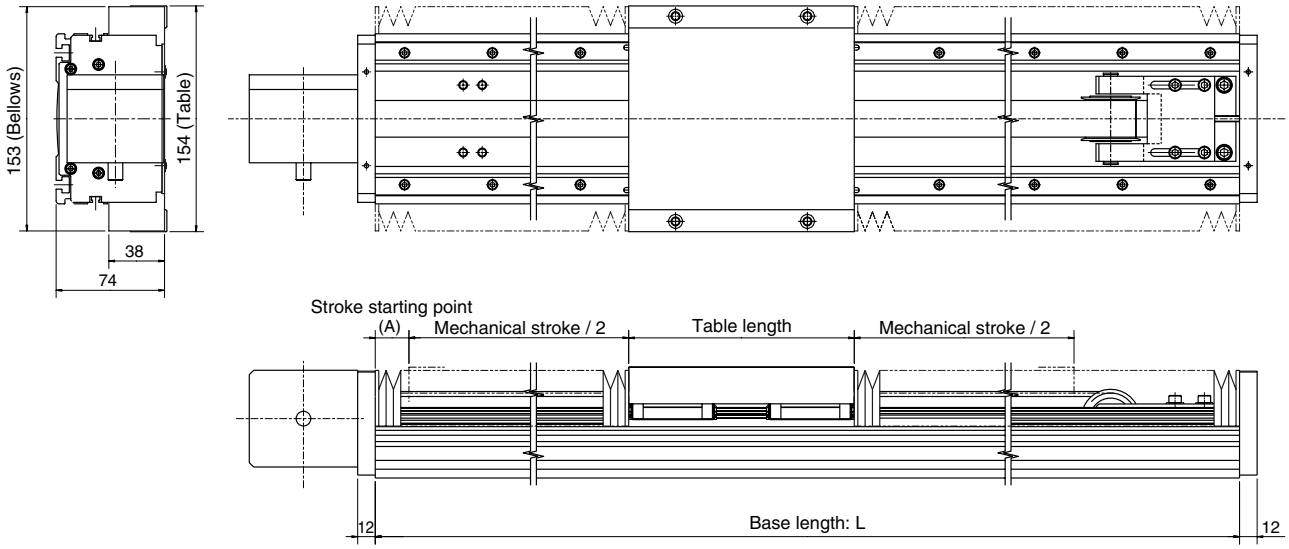


Unit: mm

Base length: L			460	580	700	820	1060	1240	1420	1600	1780
Mechanical stroke	Table	S type	200	320	440	560	780	940	1100	1260	1400
		L type									
Stroke (Starting point: A)	Table	S type	50	50	50	50	60	70	80	90	110
		L type	40	40	40	40	50	60	70	80	100

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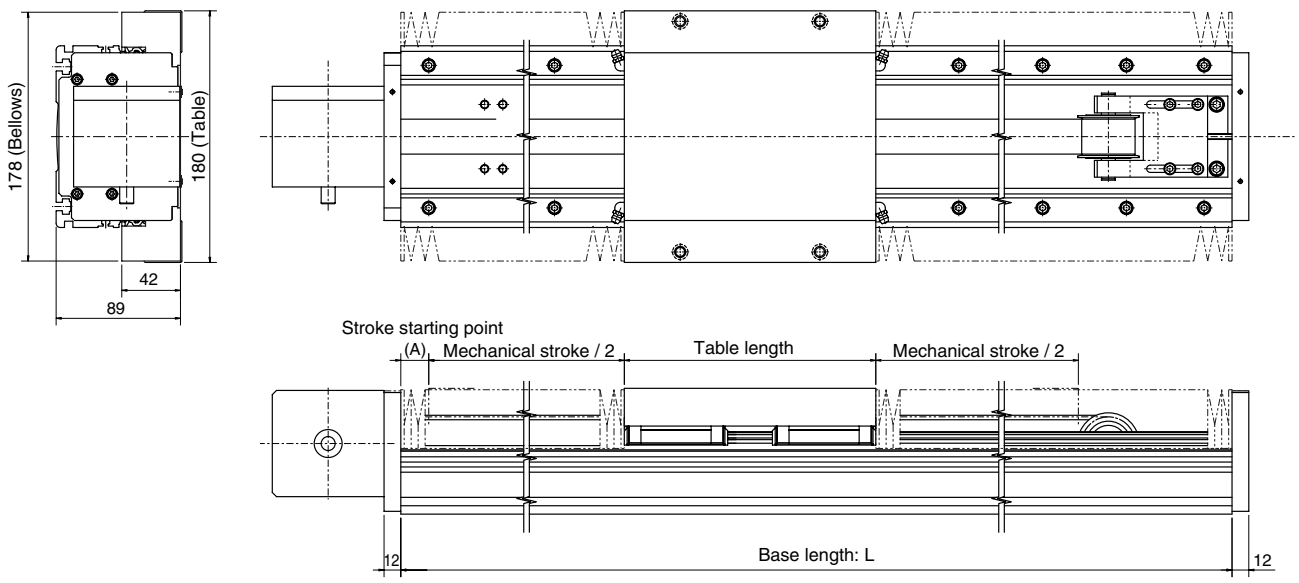
[GL15 Model, Belt Driven]



Unit: mm

Base length: L			340	460	580	700	820	1060	1240	1420	1600	1780	1960
Mechanical stroke	Table	S type	78	188	308	408	508	728	868	1008	1148	1288	1488
		L type	50	160	280	380	480	700	840	980	1120	1260	1400
Stroke starting point: A			30	40	50	65	80	105	125	145	165	185	205

[GL20 Model, Belt Driven]



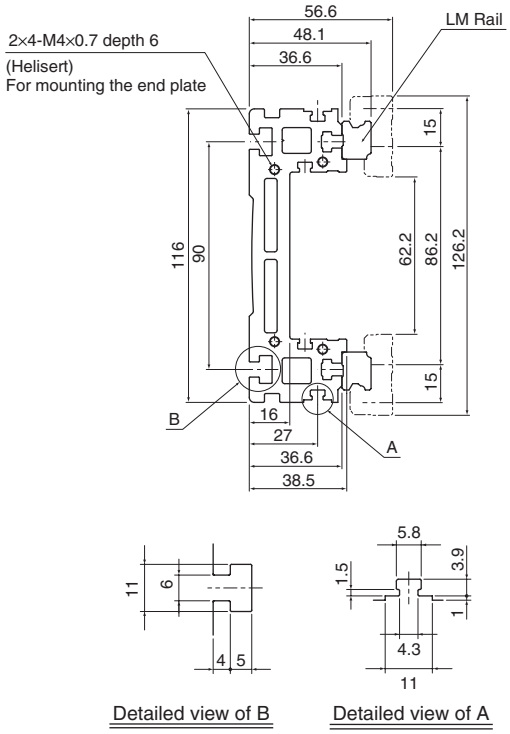
Unit: mm

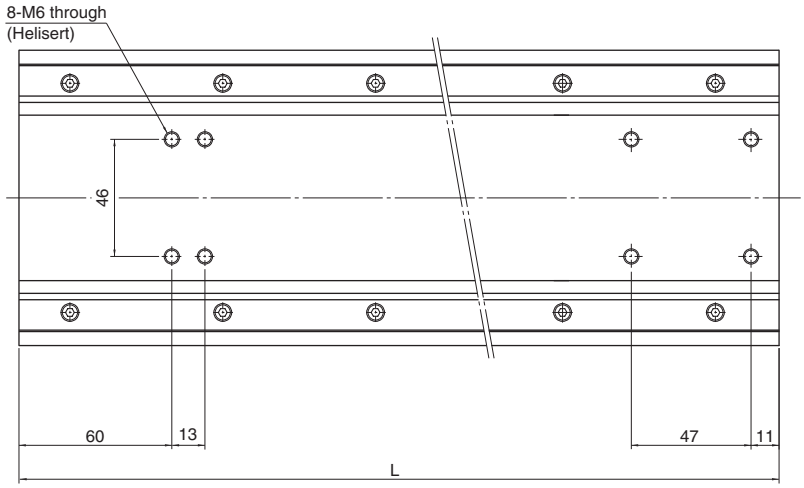
Base length: L			460	580	700	820	1060	1240	1420	1600	1780	1960	2200	2320	2500	3000
Mechanical stroke	Table	S type	160	260	360	460	680	840	1110	1160	1300	1440	1640	1720	1860	2280
		L type	140	240	340	440	660	820	990	1140	1280	1420	1620	1700	1840	2260
Stroke starting point: A			40	50	80	100	110	120	125	1450	160	180	200	220	240	280

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● Dimensional Drawing of Base with LM Rail

Model GL15 (Model GSR15 With LM rail)





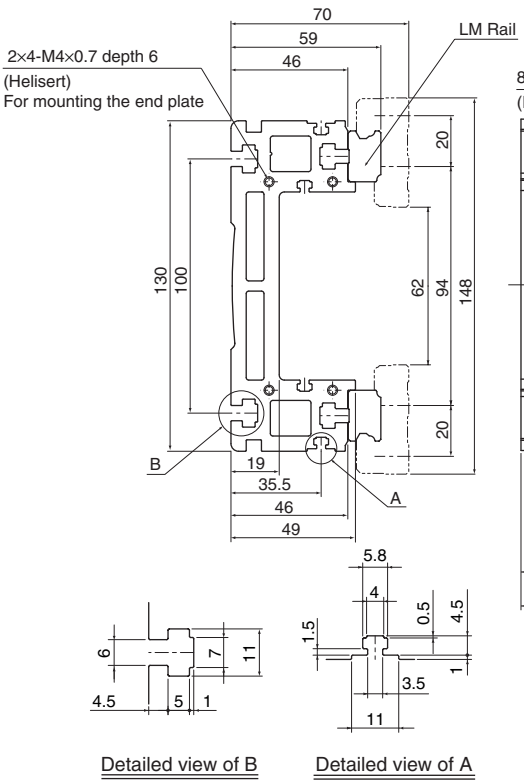
Moment of Inertia and Mass of the Base

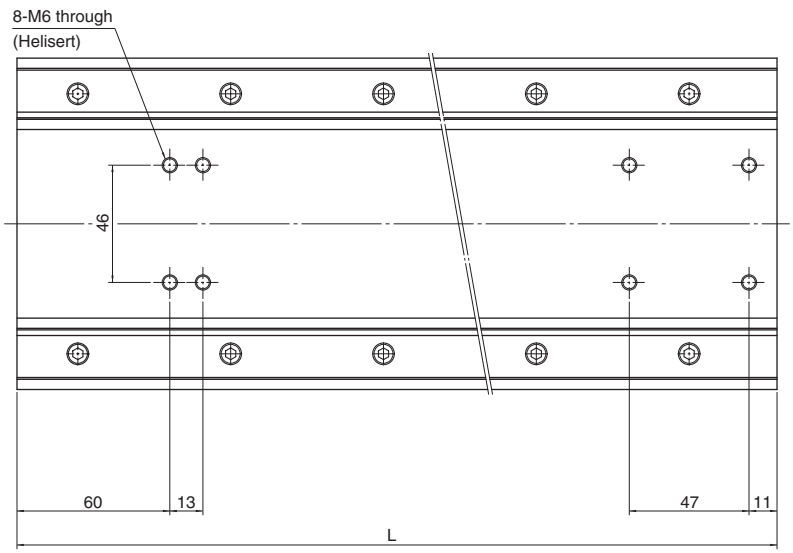
	Ix [mm⁴]	Iy [mm⁴]	Mass [kg/m]
GL15	2.0×10^5	2.7×10^6	6.28

Mass: Sum of the base and the LM rail masses

*For L, refer to the base length in the tables on pages 5 and 7.

Model GL20 (Model GSR20 With LM rail)





Moment of Inertia and Mass of the Base

	Ix [mm⁴]	Iy [mm⁴]	Mass [kg/m]
GL20	4.62×10^5	4.62×10^6	8.58

Mass: Sum of the base and the LM rail masses

*For L, refer to the base length in the tables on pages 6 and 8.

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● Sensor

The GL model allows various sensors to be set to the T groove at the side of the base.

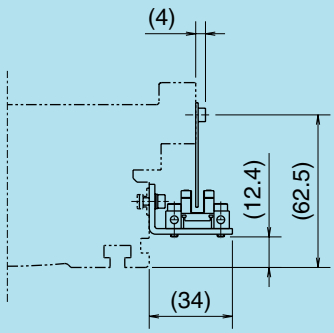
[Control Number]

Type	Logic Mode	Sensor Model Number Type	Quantity	Manufacturer	Accessories
Photo sensor	Selectable	EE-SX671	3	OMRON	Mounting bolts and nuts, Sensor target, Mounting plate, Connector (EE-1001)
	Selectable	EE-SX674	3	OMRON	Mounting bolts and nuts, Sensor target, Mounting plate, Connector (EE-1001)
Proximity sensor	N.O.contact (ON when activated)	TL-W3MC1	3	OMRON	Mounting bolts and nuts, Sensor target
	N.O.contact (ON when activated)	TL-W3MC1	1	OMRON	Mounting bolts and nuts, Sensor target
	N.C.contact (OFF when activated)	TL-W3MC2	2		

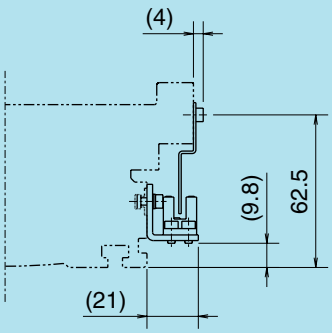
Note 1: All sensor outputs are NPN outputs.
Note 2: The sensor and accessories are provided with the product.
Note 3: N.O.contact: Normally Open type
N.C.contact: Normally Close type

[Dimensional Drawing]

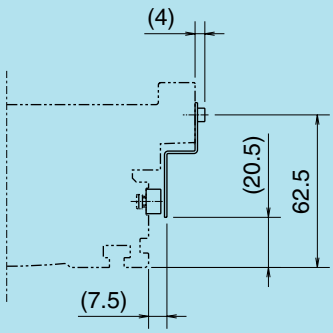
GL15



EE-SX671 (OMRON)

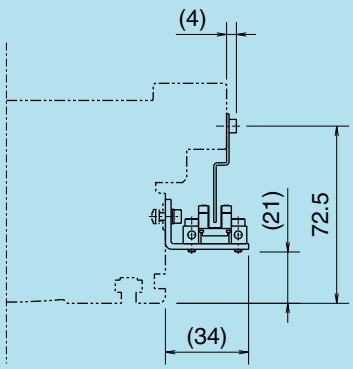


EE-SX674 (OMRON)

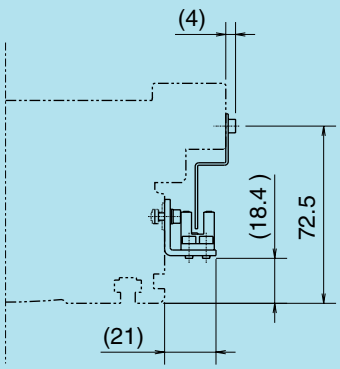


TL-W3MC1 (OMRON)

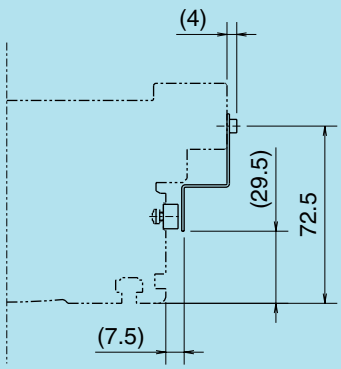
GL20



EE-SX671 (OMRON)



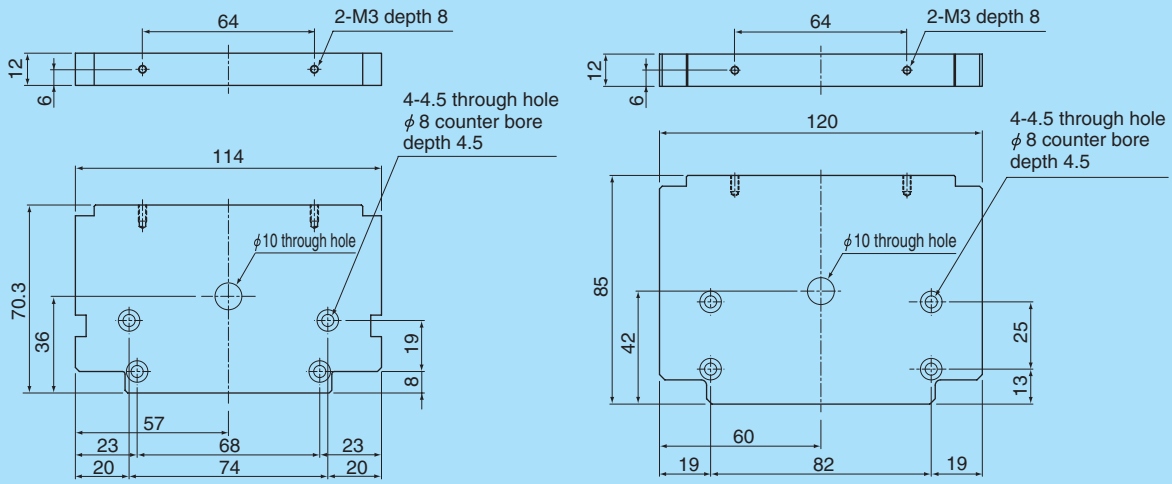
EE-SX674 (OMRON)



TL-W3MC1 (OMRON)

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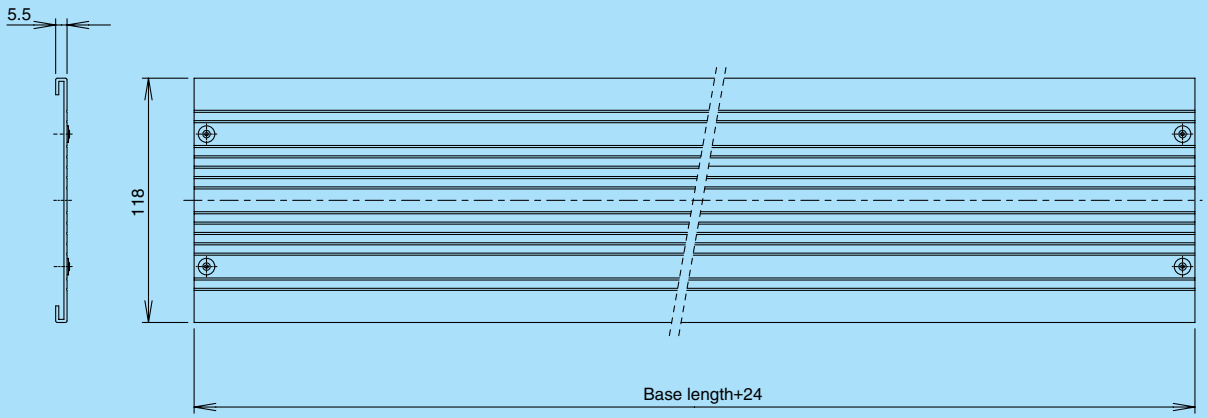
● End Plate Dimensional Drawing (Ball Screw Specifications)



GL15 GL20

Note: When attaching the motor, please process the end plate, or contact THK for further details.

● Dimensional Drawing of Cover

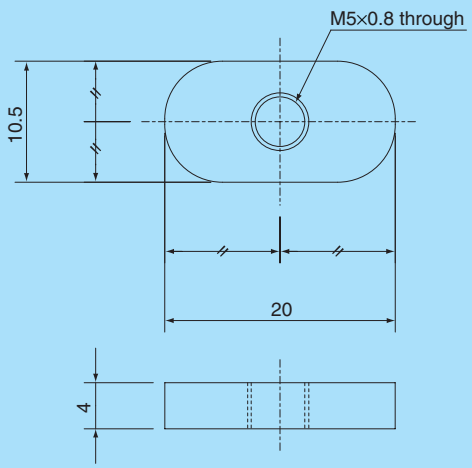


Material : Aluminum
Surface Processing : Anodic Oxide Coating

Note 1: Deflection of the cover increases as the base length increases. A cover-support is attached to the table to prevent table interference. This is attached as standard from models with base lengths above 1000 mm. The cover may touch another part such as the rail and belt, because deflection caused by the cover's own weight increases.

Note 2: If the GL model is used in any position other than horizontal, a part mounted on the table might touch the cover due to deflection caused by the cover.

● Dimensional Drawing of Plate Nut for Base Mounting



Base length: mm	340	460	580	700	820	1060	1240	1420
n	4	4	6	6	8	10	10	12
Base length: mm	1600	1780	1960	2200	2320	2500	3000	
n	14	14	16	16	18	18	20	

The plate nut for base mounting is included.

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MEMO

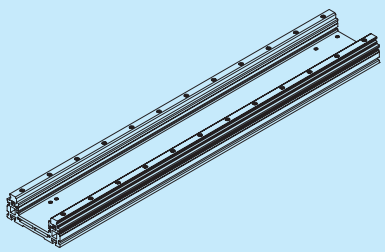
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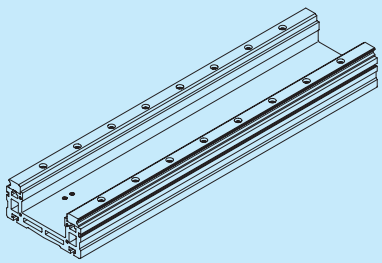
Base with LM Rail

Type

Model GL15 (Model GL15 with LM rail)

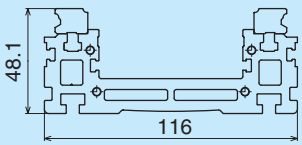


Model GL20 (Model GL20 with LM rail)

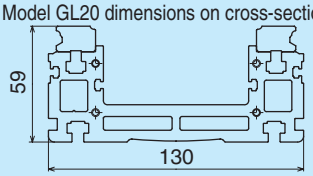


Specifications

Model GL15 dimensions on cross-section view



Model GL20 dimensions on cross-section view



Name

Example

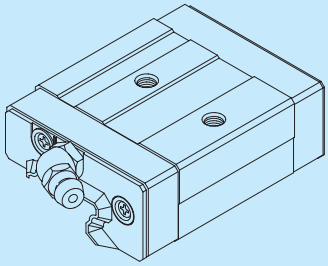
GL15-034
① ②

①Model number

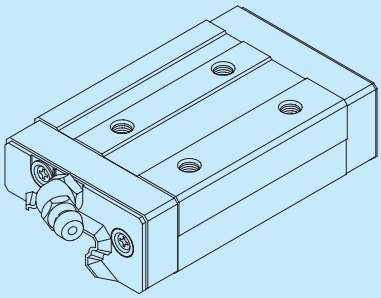
②Base Length
340mm

LM Block

Type V (Short Type)



Type T (Long Type)



Type V	Type T
LM Blocks for Model GL15	
GSR15V	GSR15T
LM Blocks for Model GL20	
GSR20V	GSR20T

Example

GL15-V4
① ②③

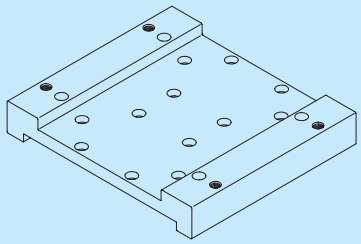
①Model number

②LM Block Type
V or T

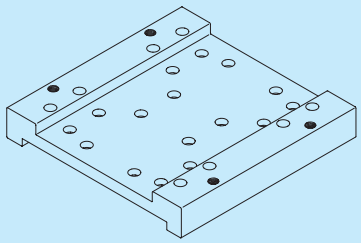
③Quantity

Top Table

Type S (Short Type)



Type L (Long Type)



Main Dimensions

Model GL15 main dimensions

For Short
W154 mm × L126 mm

For Long
W154 mm × L154 mm

Model GL20 main dimensions

For Short
W180 mm × L160 mm

For Long
W180 mm × L180 mm

Example

GL20-L
① ②

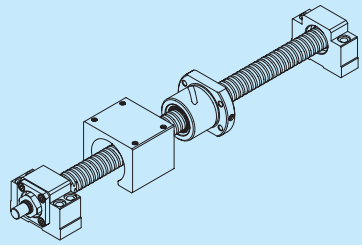
①Model number

②Table Type
S or L

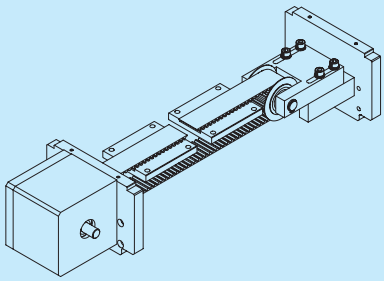
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Drive System

Type B (Ball Screw Kit)



Type E (Belt Kit)



	Ball Screw	Belt
Model GL15	ϕ15 Lead 30	Pitch 5 Belt Width 25 Number of Pulley Teeth 22
	ϕ16 Lead 5 Lead 16	
Model GL20	ϕ20 Lead 5 Lead 20 Lead 40	Pitch 5 Belt Width 25 Number of Pulley Teeth 24

Example

GL15-034-B05
① ② ③ ④

①Model number
②Base Length 340 mm
③Drive System Ball Screw Type
④Ball Screw Lead 5 mm

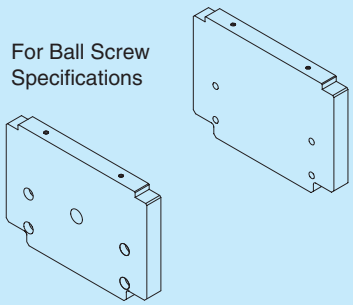
GL15-034-E
① ② ③

①Model number
②Base Length 340 mm
③Drive System Belt Type

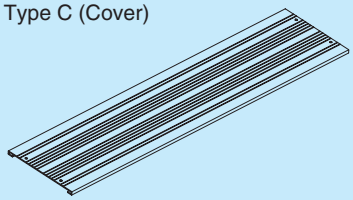
Options

Type P (End Plate) 2 in 1

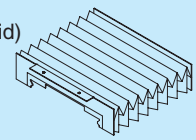
For Ball Screw Specifications



Type C (Cover)

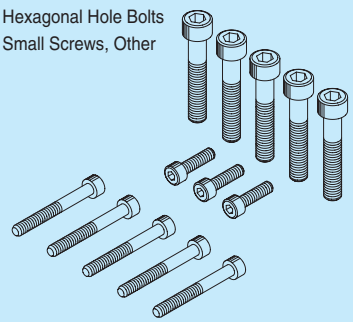


Type J (Twill Braid)



Bolt For Assembly (Accessory Parts)

Hexagonal Hole Bolts
Small Screws, Other



Example: End Plate

GL15-P
① ②

①Model number
②End Plate

Example: Cover

GL15-034-C
① ② ③

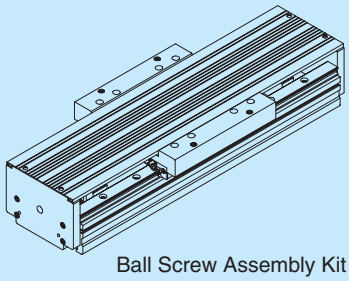
①Model number
②Base Length 340 mm
③Cover

Example: Twill Braid

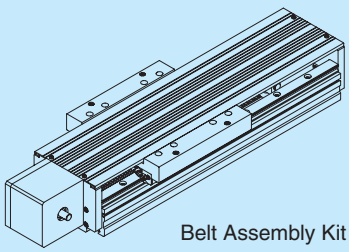
GL15-034-J
① ② ③

①Model number
②Base Length 340 mm
③Twill Braid

Pre-assembled Diagram



Ball Screw Assembly Kit



Belt Assembly Kit

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Appendix

Service Life Time and Static Safety factor

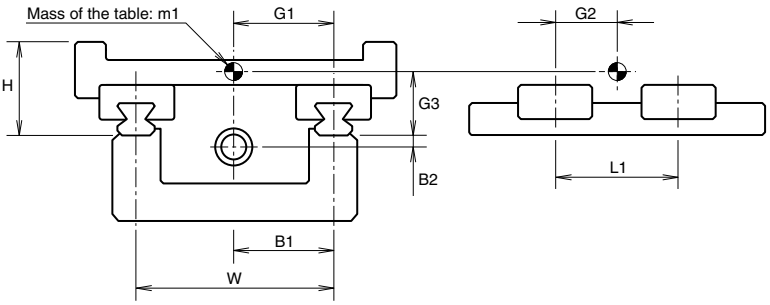
The GL model consists of LM Guides, a ball screw, and support units. The life and safety factor of each component can be calculated from the basic dynamic load rating and the basic static load rating. For more information on these, refer to each item (LM Guides, ball screws, and support units) in the general catalog.

The nominal life of the LM Guides and ball screw can be calculated using the technical calculation software available from the THK Technical Support Site (https:tech.thk.com/) or contained in the CD-ROM catalog. In calculating the nominal life, see the data in the following table.

Note: Please note that the calculation of life is theoretical. In actual use, the life varies depending on the service conditions such as the usage environment, the lubricating condition, the accuracy or rigidity of the area where the LM actuator is installed, and so forth.

[LM Guide]

Actuator model number	Table type	LM Guide model number	Thrust position		Rail span	Block span	Movable section				Slider height
							Mass	Gravity center			
			B1 [mm]	B2 [mm]	W [mm]	L1 [mm]	m1 [kg]	G1 [mm]	G2 [mm]	G3 [mm]	H [mm]
GL15-✱✱✱-V4-S-B	S	GSR15V	45	-1.4	90	80	1.4	45	40	30	39
GL15-✱✱✱-T4-L-B	L	GSR15T		-1.4		94	1.7		47	30	
GL20-✱✱✱-V4-S-B	S	GSR20V	50	2	100	100	2.6	50	50	34.5	44
GL20-✱✱✱-T4-L-B	L	GSR20T		2		106	3.0		53	34.5	
GL15-✱✱✱-V4-S-E	S	GSR15V	45	-21.5	90	80	1.3	45	40	30	39
GL15-✱✱✱-T4-L-E	L	GSR15T		-21.5		94	1.7		47	30	
GL20-✱✱✱-V4-S-E	S	GSR20V	50	-25.5	100	100	2.4	50	50	34.5	44
GL20-✱✱✱-T4-L-E	L	GSR20T		-25.5		106	2.8		53	34.5	



[Ball Screw]

Actuator model number			Stroke [mm]	Ball screw			
Model number	Base* length [mm]	Ball screw		Mounting method	Category	Nut model number	Mounting distance MAX [mm]
GL15	034	B05	100	Fixed–support	Rolled–without pre-load	BTK1605-2.6ZZ	170
	142		1180				1250
GL15	034	B16	100	Fixed–support	Rolled–without pre-load	BLK1616-3.6ZZ	162.5
	142		1180				1242.5
GL15	034	B30	100	Fixed–support	Rolled–without pre-load	WTF1530-2ZZ	160.5
	142		1180				1240.5
GL20	046	B05	200	Fixed–support	Rolled–without pre-load	BTK2005-2.6ZZ	283
	178		1520				1603
GL20	046	B20	200	Fixed–support	Rolled–without pre-load	BLK2020-3.6ZZ	278
	178		1520				1598
GL20	046	B40	200	Fixed–support	Rolled–without pre-load	WTF2040-2ZZ	277.5
	178		1520				1597.5

* The base length shows the minimum and maximum lengths.
Example: 034 for a base length of 340mm and 142 for a base length of 1420mm

LM Guide model number symbol	Movable section mass [kg]	Sliding resistance [N]
GL15-✱✱✱-V4-S	1.4	10.0
GL15-✱✱✱-V4-L	1.7	10.0
GL20-✱✱✱-V4-S	2.6	12.4
GL20-✱✱✱-V4-L	3.0	12.4

[Support Unit]

Nominal model number	Support unit fixed side		Support unit support side	
	Angular ball bearing		Deep-groove ball bearing	
	Model number	Bearing model number	Model number	Bearing model number
GL15	BK10	7000DFGMP5	BF10	608ZZ
GL20	BK12	7001DFGMP5	BF12	6000ZZ

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● Motor Selection

When selecting a motor that is installed on the GL model, refer to the following data. For details of the motor selection method and motor specifications, contact the motor manufacturer.

[Ball Screw Specifications]

Actuator model number			Ball screw shaft				
Nominal model number	Base length*1 [mm]	Ball screw	Model number	Outer diameter [mm]	Lead [mm]	Length*2 [mm]	Shaft-end outer diameter [mm]
GL15	034	B05	BTK1605-2.6ZZ	16	5	264	ϕ8h7
	142					1344	
GL15	034	B16	BLK1616-3.6ZZ	16	16	264	ϕ8h7
	142					1344	
GL15	034	B30	WTF1530-2ZZ	15	30	264	ϕ8h7
	142					1344	
GL20	046	B05	BTK2005-2.6ZZ	20	5	380	ϕ10h7
	178					1700	
GL20	046	B20	BLK2020-3.6ZZ	20	20	380	ϕ10h7
	178					1700	
GL20	046	B40	WTF2040-3ZZ	20	40	380	ϕ10h7
	178					1700	

LM Guide model number symbol	Movable section mass [kg]	Sliding resistance [N]
GL15-✱✱✱-V4-S	1.4	10.0
GL15-✱✱✱-V4-L	1.7	10.0
GL20-✱✱✱-V4-S	2.6	12.4
GL20-✱✱✱-V4-L	3.0	12.4

Allowable input torque*3	
Nominal model number	[N-m]
GL15	2.8
GL20	5.3

*1 The base length shows the minimum and maximum lengths.
Example: 034 for a base length of 340mm and 142 for a base length of 1420mm
*2 The length of a ball screw shaft is the length available for the direct-mounting specification. For the wrap-around specification, the length of the ball screw shaft is 74mm longer for the GL15 model and 78mm longer for the GL20 model.
*3 The allowable input torque is the value for the direct-mounting specification. For the wrap-around specification, contact THK.

[Belt Specifications]

Actuator model number	Belt		Timing pulley			
	Model number	Mass* [kg]	Model number	Diameter (PCD) [mm]	Table moving distance /one turn of pulley	Moment of inertia (total of two pulleys) [kg-cm²]
GL15	025-MA5	0.38	22-MA5-025	35.01	110mm	0.289
GL20	025-MA5	0.58	24-MA5-025	38.20	120mm	0.447

LM Guide model symbol	Movable section mass [kg]	Sliding resistance [N]
GL15-✱✱✱-V4-S	1.3	10.0
GL15-✱✱✱-V4-L	1.7	10.0
GL20-✱✱✱-V4-S	2.4	12.4
GL20-✱✱✱-V4-L	2.8	12.4

Reducer		
Reduction ratio	Rated output [W]	Moment of inertia [kg-cm²]
1/3	100	0.058
1/3	200	0.135
1/5	100	0.04
1/5	200	0.118
1/9	100	0.035

Allowable input torque	
Nominal model number	[N-m]
GL15	4.8
GL20	8.1

* The belt mass is the mass for the maximum belt length.

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THK LM Actuator GL

⚠ Precautions on Use

Handling

- Disassembling parts may cause foreign material to enter the system or deteriorate the accuracy. Do not disassemble the product.
- Do not drop or strike this product. Doing so may damage the product. If this product is a shocked, its functions may be damaged even though it looks normal in appearance.
- Entrance of foreign material may cause damage to the ball circulating component or functional loss. Prevent foreign material, such as dust or cutting chips, from entering the system.
- When planning to use the LM system in an environment where the coolant penetrates the LM Actuator model GL, it may cause trouble to product functions depending on the type of the coolant. Contact THK for details.
- Exceeding the permissible rotational speed may lead the components to be damaged or cause an accident. Be sure to use the product within the specification range designated by THK.
- The service temperature range of this product is 0 to 40°C (no freezing or condensation). If you consider using this product outside the service temperature range, contact THK.
- When using the LM system in locations exposed to constant vibrations or in special environments such as clean rooms, vacuum and low/high temperature, contact THK in advance.
- If the product is operating or in the ready state, never touch a moving part. In addition, do not enter the operating area of the actuator.
- If two or more people are involved in the operation, confirm the procedures such as a sequence, signs and anomalies in advance, and appoint another person for monitoring the operation.

Lubrication

- Thoroughly remove anti-rust oil and feed lubricant before using the product.
- To maximize the performance of the LM Actuator model GL, lubrication is required. Using the product without lubrication may increase wear of the rolling elements or shorten the service life. This product contains THK AFB-LF grease as standard.
- The ball screw does not have a grease nipple, apply grease directly onto the rolling surface.
- Do not mix lubricants of different physical properties.
- When planning to use a special lubricant, contact THK before using it.
- When planning to use an oil lubricant, contact THK before using it.
- In normal use, the lubricant must be replenished every 100 km as a guide. However, the greasing interval varies according to the conditions. We recommend determining the greasing interval based on the result of the initial inspection.
- In locations exposed to constant vibrations or in special environments such as clean rooms, vacuum and low/high temperature, normal lubricants may not be used. Contact THK for details. For clean room applications, low dust-generative grease is available. Contact THK for details.

Storage

When storing the LM Actuator model GL, enclose it in a package designated by THK and store it in a horizontal orientation while avoiding high temperature, low temperature and high humidity.

- **"LM GUIDE" and "Caged Ball" are the registered trademarks of THK CO., LTD.**
- There may be differences between products appearing in photographs and the actual product.
- The appearance, specifications, and other information are subject to change without prior notice to improve reliability, function, etc. When deciding to adopt the product, contact us beforehand.
- We have exercised great care in preparing this catalog, but it is still possible that are misspellings, omissions of letters, etc. THK assumes no responsibility or liability for damage resulting from such errors possibly contained herein.
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