



**ELECTRIC
ACTUATORS**

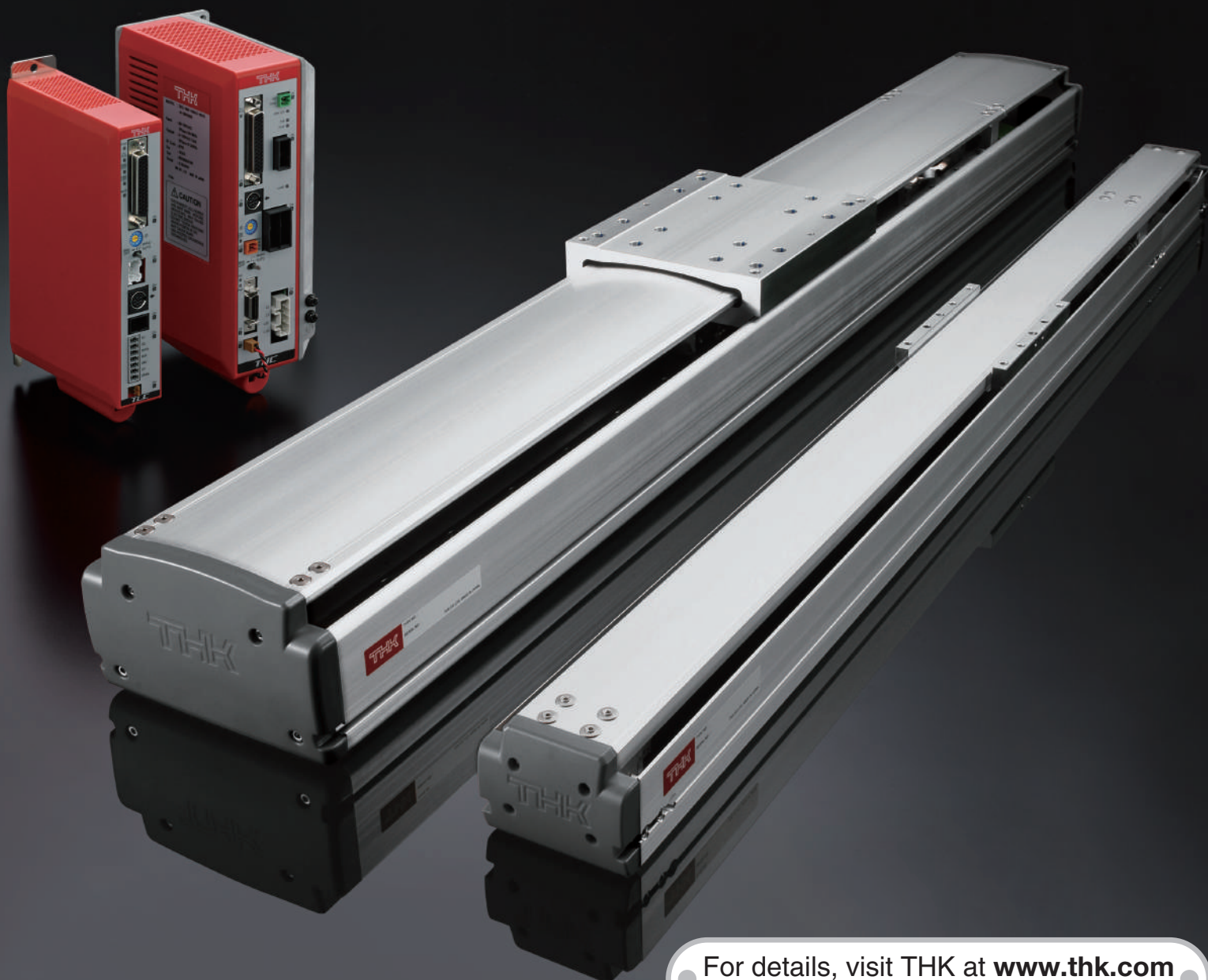
NEW

Universal series

US/USW

Servo Driver Controller

TLC/THC



For details, visit THK at www.thk.com

* Product information is updated regularly on the THK website.

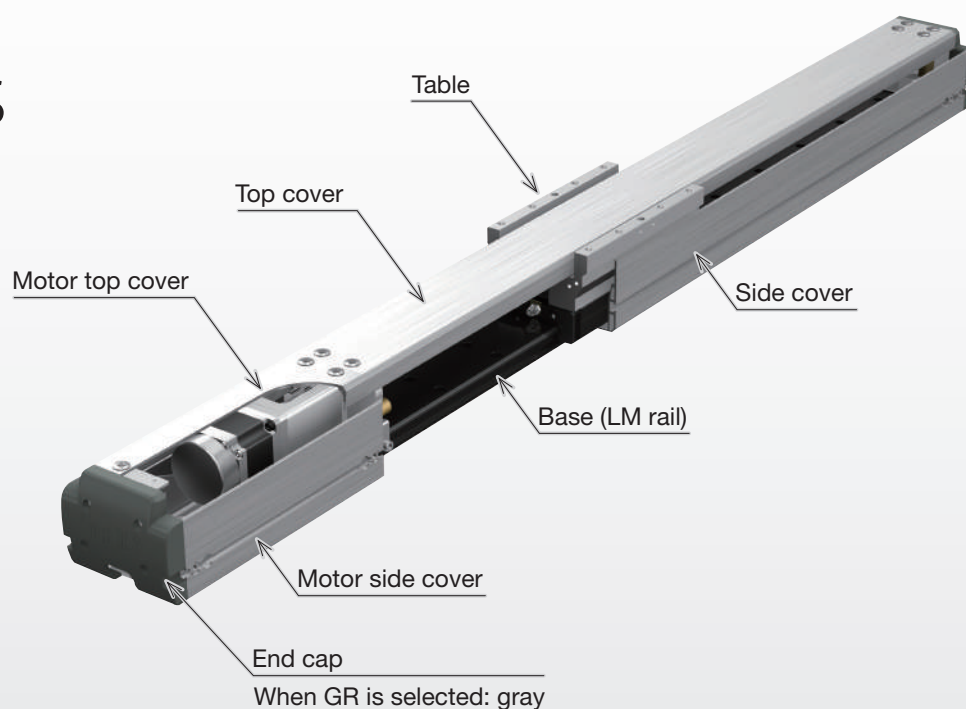
THK CO., LTD.
TOKYO, JAPAN

CATALOG No.376-10E

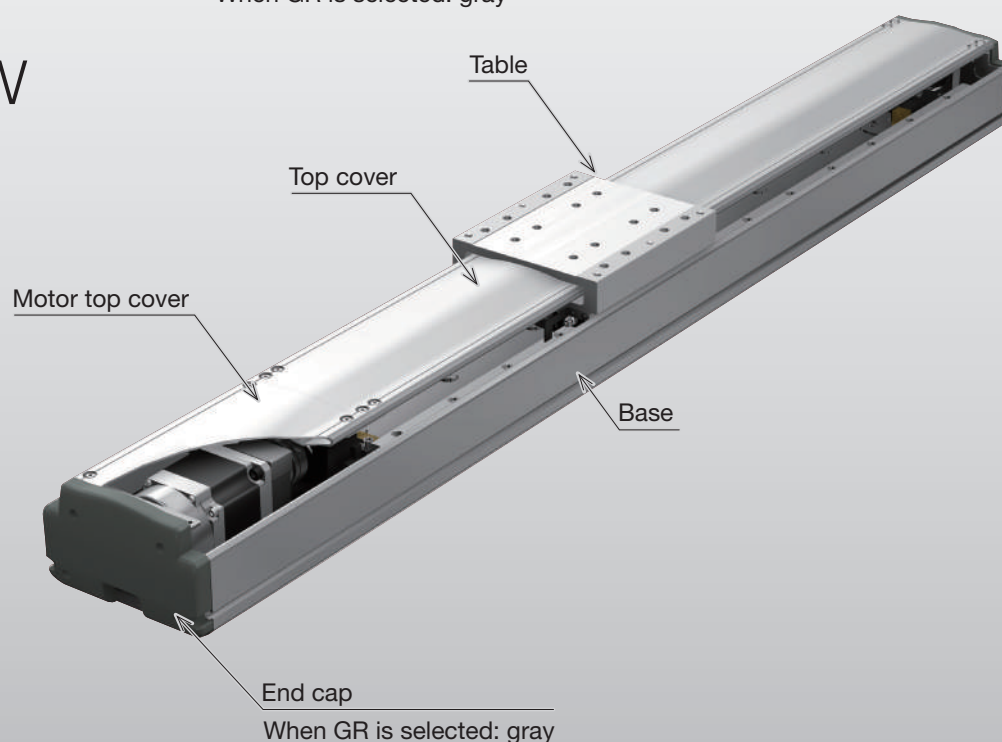
Electrical Actuator
Universal Series
US/USW

High Speed, High Load Capacity, Long Service Life

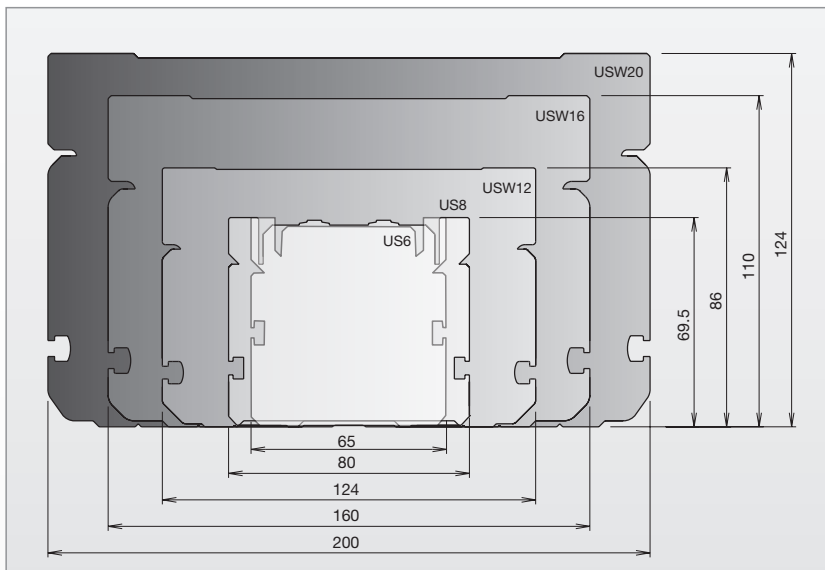
US



USW



Size range by model



Features

Long service life

Most US models have a running life of 20,000km with the maximum load capacity applied (10,000km for US6 and 8), which is the highest level of service life in the industry. LM Guide and ball screw running life can also be calculated based on usage conditions.

Long-term maintenance-free operation

Thanks to the use of Caged Ball LM Guide model SRS (US6), SHW (US8) and model SHS (USW12, 16, and 20) in a rectilinear guide, and Lubricator QZ, which supplies just the right amount of lubricant in the ball screw, this series provides long-term maintenance-free operation.

High speed

Most units in this series (US8 to USW20) accommodate twice as many types of leads for each ball screw shaft diameter. This reduces processing time and enables the device to operate at high speeds.

Smart structure

In most units the standard sensor is incorporated into the actuator, making the actuator highly compact (this does not apply to the US6). For other sensor options, the sensor is installed on the outside of the unit. US8: 1 sensor (home position); USW12, 16, and 20: 3 sensors (home position and ends).

Easy assembly

For the standard unit, both table and base have dowel pin holes, and the base has elongated holes. These facilitate installation and assembly, enabling the unit to be mounted easily. Either top face mounting or lower face mounting can be selected for the base (this applies to USW12, 16, and 20 only).

Versatile lineup

These units accommodate stroke lengths, specified in 50mm increments, ranging from 100mm to 1,700mm. Many types of ball screw leads are provided as well, enabling customers to select a unit ideally suited to their needs.

Types and Lineup List

[With ball screw]

Direct motor coupling type



Ball screw and motor are connected using a coupling.

[With ball screw]

Motor wrap type



Motor can be wrapped laterally to reduce the axial dimension.

Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	Motor rated output [W]	Maximum load capacity *2 [kg]								
					Horizontal mount	Vertical mount	100	200	300	400	500	600	
US6	6	100 to 900	300	50	30	7	360						310
	12		600		15	3	720						630
	6		300	100	70	14	360						310
	12		600		30	7	720						630
US8	5	100 to 1100	250	100	80	16	300						
	10		500		40	8	600						
	20		1000		20	4	1200						
	30		1500		8	2	1800						
	10		500	150	60	12	600						
	20		1000		30	6	1200						
	30		1500		12	3	1800						
USW12	5	100 to 1100	250	200	100	30	300						
	10		500		80	20	600						580
	20		1000		40	8	1200						1160
	30		1500		25	5	1800						1700
USW16	10	100 to 1500	500	400	120	35	550						
	20		1000		80	15	1100						
	40		2000		40	9	2200						
USW20	20	200 to 1700	1000	750	130	45	1100						
	40		2000		70	20	2200						

*1 At rated motor speed (3,000min⁻¹).

*2 At rated speed with acceleration and deceleration rate of 0.3G. (Ball screw lead 5mm for US8, 0.2G vertical only.)

*3 Dependent on motor speed (US6~USW12: 3,600min⁻¹, USW16~USW20: 3,300min⁻¹) and permissible rotational speed of the ball screw. Motor speed is dependent on the controller used.

Maximum speed [mm/s] for each stroke [mm] **3																	Described on					
Stroke [mm]																						
	700		800		900		1000		1100		1200		1300		1400			1500		1600		1700
	270	240	210	180	160																	Page 7
	550	480	420	370	330																	
	270	240	210	180	160																	
	550	480	420	370	330																	
	290	250	220	200	180	160	150	130	120													Page 23
	550	480	430	380	340	310	280	250	230													
	1090	960	850	760	680	610	560	510	460													
	1600	1410	1250	1120	1000	910	820	750	690													
	550	480	430	380	340	310	280	250	230													
	1090	960	850	760	680	610	560	510	460													
	1600	1410	1250	1120	1000	910	820	750	690													Page 39
	270	240	210	190	170	150	140	130	120													
	510	450	400	360	320	290	260	240	220													
	1020	900	800	720	640	580	530	480	440													
	1490	1320	1180	1050	950	860	780	720	660													Page 47
	550	520	470	420	380	340	310	290	260	240	230	210	190	180	170	160						
	1100		1040	930	840	760	700	640	590	540	500	460	430	400	380	350						
	2200		1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690					Page 55	
	1100		1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270		
	2200	2140	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530		

1

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW12RT	05	0150	A	TL	6	SR	C
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

US6T

US8T

USW12T

USW16T

USW20T

US6RT

US8RT

USW12RT

USW16RT

USW20RT

05: 5mm

06: 6mm

10: 10mm

12: 12mm

20: 20mm

30: 30mm

40: 40mm

0100: 100mm

0150: 150mm

0200: 200mm

to

1700: 1700mm

A

TL: Driver controller TLC

TH: Driver controller THC

P

Q

N

6

E

No symbol: When selecting P, Q, or N

SR: On right side as seen from side A

SL: On left side as seen from side A

T: From underside of base (tapped holes)

C: From top of base (counter-bore holes)

Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for wall mount type, 800mm.

Note: When motor wrap is selected, a sensor cannot be mounted on the same side as the motor wrap direction of the motor.

When TL or TH is selected:

Direct motor coupling type: Mounted parts: motor, coupling
Accessories: power cable, encoder cable, electromagnetic brake cable

Motor wrap type: Mounted parts: motor, timing belt, timing pulley
Accessories: power cable, encoder cable, electromagnetic brake cable

A motor corresponding to each controller should be mounted.

TL: TBL-III series (Tamagawa Seiki Co., Ltd.) 50W
TH: TBL-III series (Tamagawa Seiki Co., Ltd.) 100 - 750W

When TL or TH is selected, a controller must be separately ordered.

When TL or TH is selected, controllers are needed for each axis.

You can select TL only when selecting US6T or US6RT for model (1).

	Motor bracket	Option	Attributes common to TLC and THC			THC only	TLC and THC
			Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
	A	MR-GR	M20	R	S02	D2	H5
(9)	(10)		(11)	(12)	(13)	(14)	(15)

A	No symbol: Red end cap	M05: 50W	No symbol: Direct motor coupling	No symbol: When selecting a sensor P or Q	No symbol	F3: Standard 3m
	MR: Motor right wrap	M10: 100W	R: Right	S02: Motor side (Home position sensor)	D1: 100V	F5: Standard 5m
	ML: Motor left wrap	M15: 150W	U: Up	S03: Opposite motor side (Home position sensor)	D2: 200V	FA: Standard 10m
	GR: Change the end cap color to gray	M20: 200W	L: Left	D00: Motor side (Mechanical home seeking)		H3: High flex 3m
	HG: Hanging jig	M40: 400W	D: Down	R00: Opposite motor side (Mechanical home seeking)		H5: High flex 5m

If you select motor wrap for model (1), select either MR or ML. Changing end cap color: You can change the color of an end cap to gray. However, for motor wrap, this change is only applied to an end cap on the reverse motor side.

No symbol: red



When GR is selected: gray



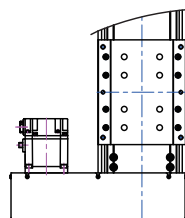
You can select a hanging jig only when selecting USW12, USW16 or USW20. If the GR is not included in the model configuration, cover will be red.

M05B: 50W with brake
M10B: 100W with brake
M15B: 150W with brake
M20B: 200W with brake
M40B: 400W with brake
M75B: 750W with brake

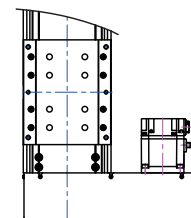
When selecting TL, you only can select M05 or M05B. You can select M15 or M15B only when selecting TH.

If you select MR as an option, R cannot be selected. If you select ML as an option, L cannot be selected. Note that the motor connector may be placed above the level of the top face of the slider when selecting U.

Motor wrap direction



Option symbol ML: Left-turn return



Option symbol MR: Right-turn return

Lengths for motor cable, motor electromagnetic brake cable (only when selecting a motor with an electromagnetic cable), encoder cable, home position/limit sensor, and sensor cable.

Combination of control device and sensor

The selection of a sensor depends on the control device. You only can select one of the combinations shown in the following table.

Model	Control device type	Sensor symbol	Home position method
US6	TLC	N	D00, R00
	THC	N	D00, R00
US8	THC	6, E	S02, S03
		P, Q	No symbol
		N	D00, R00
		6, E	S02, S03

Motor cable orientation



U: Up

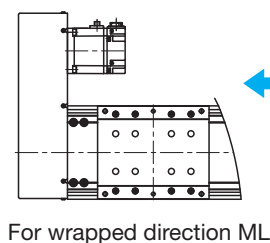


R: Right

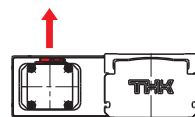


D: Down

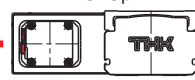
Motor cable orientation
(Seen from side B)



For wrapped direction ML



U: Up

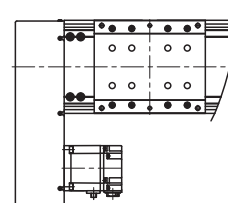


L: Left



D: Down

Motor cable orientation
(Seen from side C)



For wrapped direction MR

US6T

Direct motor coupling, 50W



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US6T	06	0150	A	TL	N	SR	C

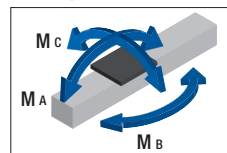
US6T	06: 6mm	0100: 100mm	A	TL: TLC	N	No symbol: When selecting N	C: From top of base (counter-base holes)
	12: 12mm	to				SR	
		0900: 900mm				SL	

Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed * ¹ [mm/s]				300	600
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15
		Vertical mount	0.3G	7	3
Rated thrust * ³ [N]				134	67
Maximum thrust * ⁴ [N]				402	201
Electromagnetic brake retention [N]				268	134
Running life * ⁵ [km]				10,000	
Static permissible moment * ⁶ [N·m]				M _A : 123, M _B : 127, M _C : 138	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US6T + TLC



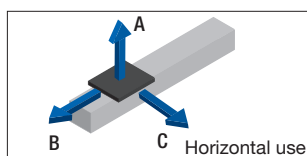
Motor rated output
50W

Motor bracket	Option	Motor rated output	Home position	Cable type and length
A	GR	M05	D00	H5

A	No symbol: Red end cap	M05: 50W	D00: Motor side (Mechanical home seeking)	F3: Standard 3m
	GR: Gray end cap	M05B: 50W with brake	R00: Opposite motor side (Mechanical home seeking)	F5: Standard 5m
				FA: Standard 10m
				H3: High flex 3m
				H5: High flex 5m
				HA: High flex 10m

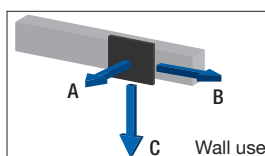
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



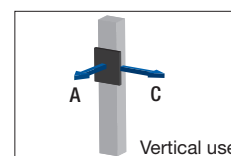
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	1790	470	510
	15	830	240	260
	30	410	110	130
12	1	2000	1580	1470
	7	1110	470	420
	15	630	240	210



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	1	1520	1520	2000
	7	410	410	1000
	15	190	180	520



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	3	830	830
	7	450	440
12	1	1440	1430
	2	990	980
	3	760	760

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

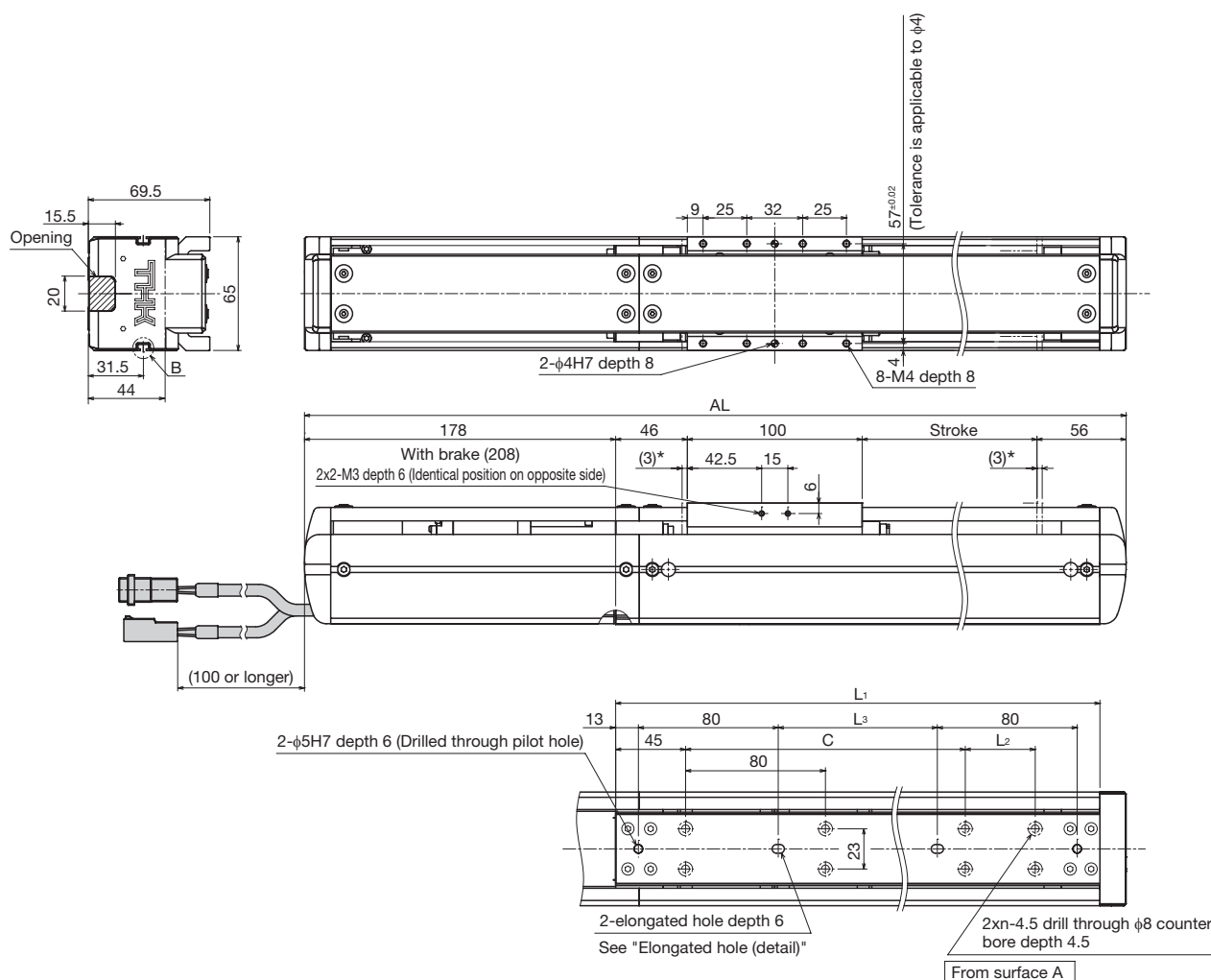
A, B, and C represent distances measured from the center of the top surface of the table.

US6T

Direct motor coupling, 50W



Dimensions



* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed ^{*1} ^{*2} [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL ^{*3}	480 (510)	530 (560)	580 (610)	630 (660)	680 (710)	730 (760)	780 (810)	
	L ₁	287	337	387	437	487	537	587	
	L ₂	40	-	40	40	-	40	-	
	L ₃	101	151	201	251	301	351	401	
	C	160	240	240	320	400	400	480	
Mounting hole count	n	4	4	5	6	6	7	7	
Weight ^{*3} [kg]		3.4 (3.6)	3.6 (3.8)	3.8 (4.0)	4.0 (4.2)	4.2 (4.4)	4.5 (4.7)	4.7 (4.9)	

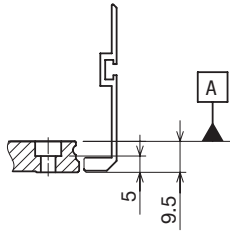
*¹ Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."*² The maximum speed is the value restricted by the permissible rotational speed of the ball screw.*³ Values when a brake is installed are shown in parentheses.

US6T + TLC

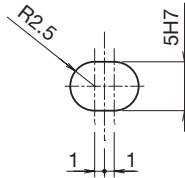


Motor rated output
50W

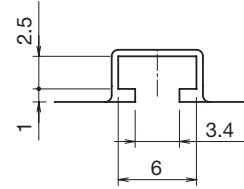
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	180	160
	720				630	550	480	420	370	330
	830 (860)	880 (910)	930 (960)	980 (1010)	1030 (1060)	1080 (1110)	1130 (1160)	1180 (1210)	1230 (1260)	1280 (1310)
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.9 (5.1)	5.1 (5.3)	5.3 (5.5)	5.5 (5.7)	5.7 (5.9)	5.9 (6.1)	6.1 (6.3)	6.3 (6.5)	6.6 (6.8)	6.8 (7.0)

US6RT

Motor wrap, 50W



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US6RT	06	0150	A	TL	N	SL	C

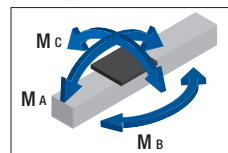
US6RT	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TL: TLC	N	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)
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Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed * ¹ [mm/s]				300	600
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15
		Vertical mount	0.3G	7	3
Rated thrust * ³ [N]				134	67
Maximum thrust * ⁴ [N]				402	201
Electromagnetic brake retention [N]				268	134
Running life * ⁵ [km]				10,000	
Static permissible moment * ⁶ [N·m]				M _A : 123, M _B : 127, M _C : 138	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum motor torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US6RT + TLC



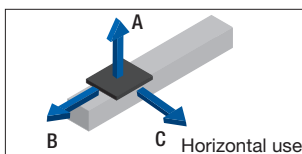
Motor rated output
50W

Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
A	MR-GR	M05	L	D00	H5

A	MR: Motor right wrap	M05: 50W	R: Right	D00: Motor side (Mechanical home seeking)	F3: Standard 3m
	ML: Motor left wrap	M05B: 50W with brake	U: Up	R00: Opposite motor side (Mechanical home seeking)	F5: Standard 5m
	GR: Gray end cap		L: Left		FA: Standard 10m
			D: Down		H3: High flex 3m
					H5: High flex 5m
					HA: High flex 10m

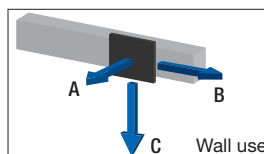
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



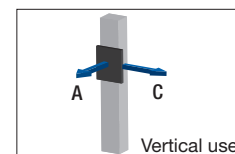
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	1790	470	510
	15	830	240	260
	30	410	110	130
12	1	2000	1580	1470
	7	1110	470	420
	15	630	240	210



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	1	1520	1520	2000
	7	410	410	1000
	15	190	180	520



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	3	830	830
	7	450	440
12	1	1440	1430
	2	990	980
	3	760	760

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

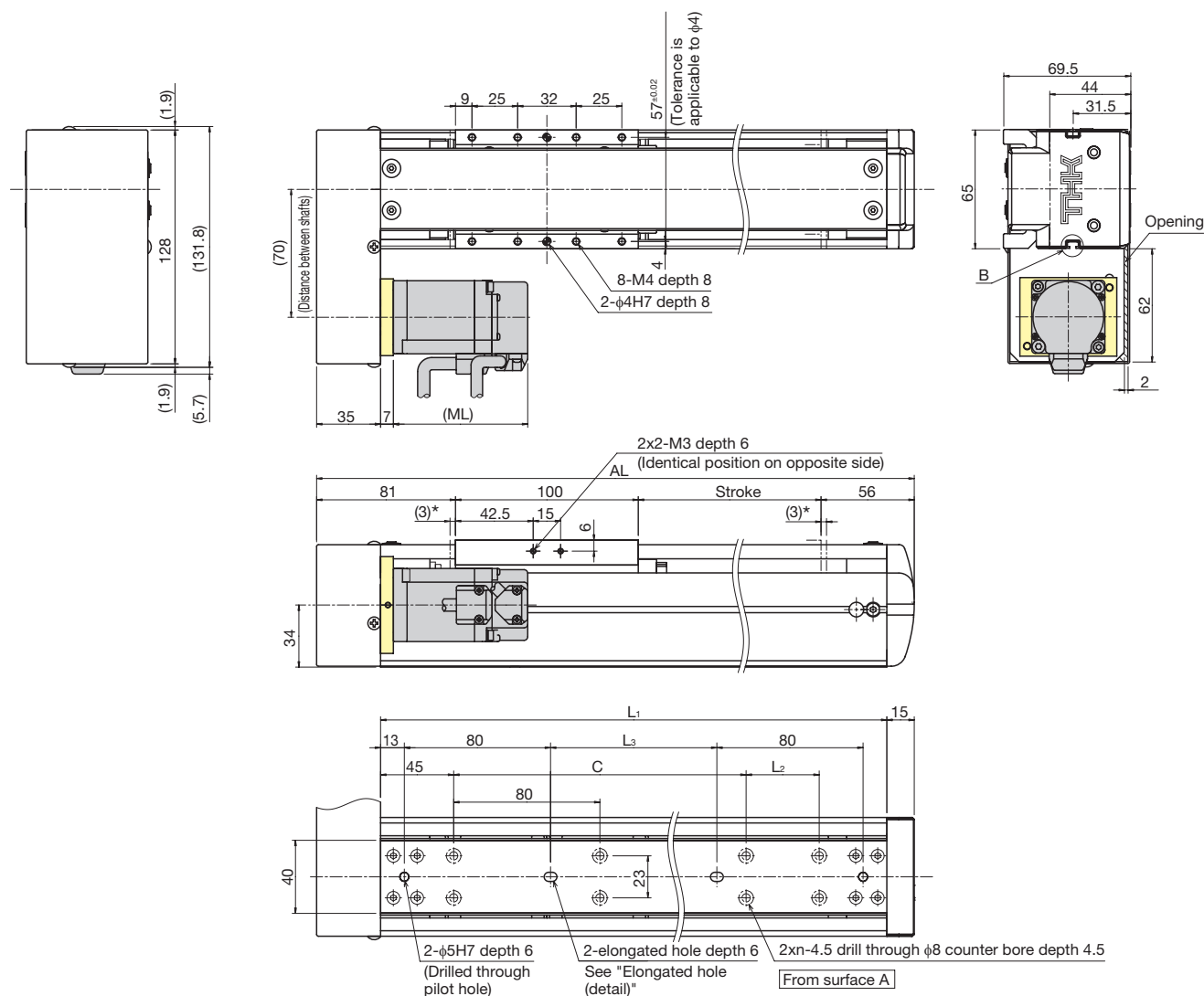
A, B, and C represent distances measured from the center of the top surface of the table.

US6RT

Motor wrap, 50W



Dimensions



* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed ^{*1 *2} [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL	337	387	437	487	537	587	637	
	ML	59.5							
	ML: With brake	95.1							
	L ₁	287	337	387	437	487	537	587	
	L ₂	40	-	40	40	-	40	-	
	L ₃	101	151	201	251	301	351	401	
Mounting hole count	C	160	240	240	320	400	400	480	
	n	4	4	5	6	6	7	7	
Weight ^{*3} [kg]		3.4 (3.6)	3.6 (3.8)	3.8 (4.0)	4.0 (4.2)	4.2 (4.4)	4.4 (4.6)	4.6 (4.8)	

^{*1} Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

^{*2} The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

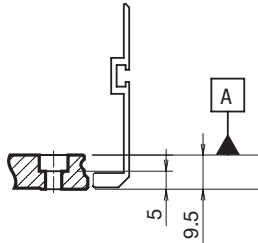
^{*3} Values when a brake is installed are shown in parentheses.

US6RT + TLC

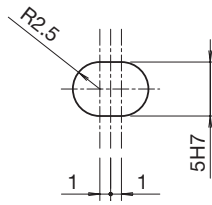


Motor rated output
50W

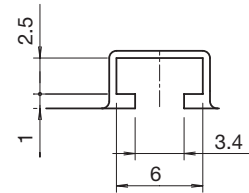
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	180	160
	720				630	550	480	420	370	330
	687	737	787	837	887	937	987	1037	1087	1137
	59.5									
	95.1									
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.8 (5.0)	5.0 (5.2)	5.3 (5.5)	5.5 (5.7)	5.7 (5.9)	5.9 (6.1)	6.1 (6.3)	6.3 (6.5)	6.5 (6.7)	6.7 (6.9)

US6T

Direct motor coupling, 100W



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US6T	06	0150	A	TH	6	SL	C

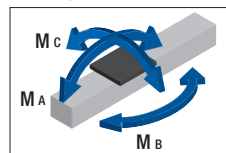
US6T	06: 6mm	0100: 100mm	A	TH: THC	N	No symbol: When selecting N	C: From top of base (counter-base holes)
	12: 12mm	to			6	SR	
	0900: 900mm				E	SL	

Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	12
Rated speed * ¹ [mm/s]				300	600
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	70	30
		Vertical mount	0.3G	14	7
Rated thrust * ³ [N]				268	134
Maximum thrust * ⁴ [N]				795	398
Electromagnetic brake retention [N]				268	134
Running life * ⁵ [km]				10,000	
Static permissible moment * ⁶ [N·m]				M _A : 123, M _B : 127, M _C : 138	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US6T + THC



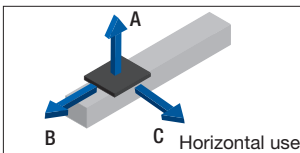
Motor rated output
100W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M10	S02	D2	H5

A	No symbol: Red end cap	M10: 100W	S02 : Motor side (Home position sensor)	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M10B: 100W with brake	S03 : Opposite motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
			D00: Motor side (Mechanical home seeking)		FA : Standard 10m
			R00: Opposite motor side (Mechanical home seeking)		H3 : High flex 3m
					H5 : High flex 5m
					HA: High flex 10m

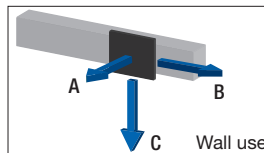
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



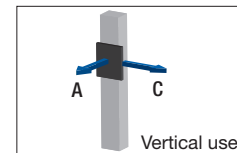
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17	730	210	230
	35	350	100	110
	70	170	40	40
12	7	1110	470	420
	15	630	240	210
	30	330	110	100



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	7	410	410	1000
	15	190	180	520
	30	60	60	220



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	7	450	440
	14	220	220
12	1	1440	1430
	4	630	620
	7	400	400

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

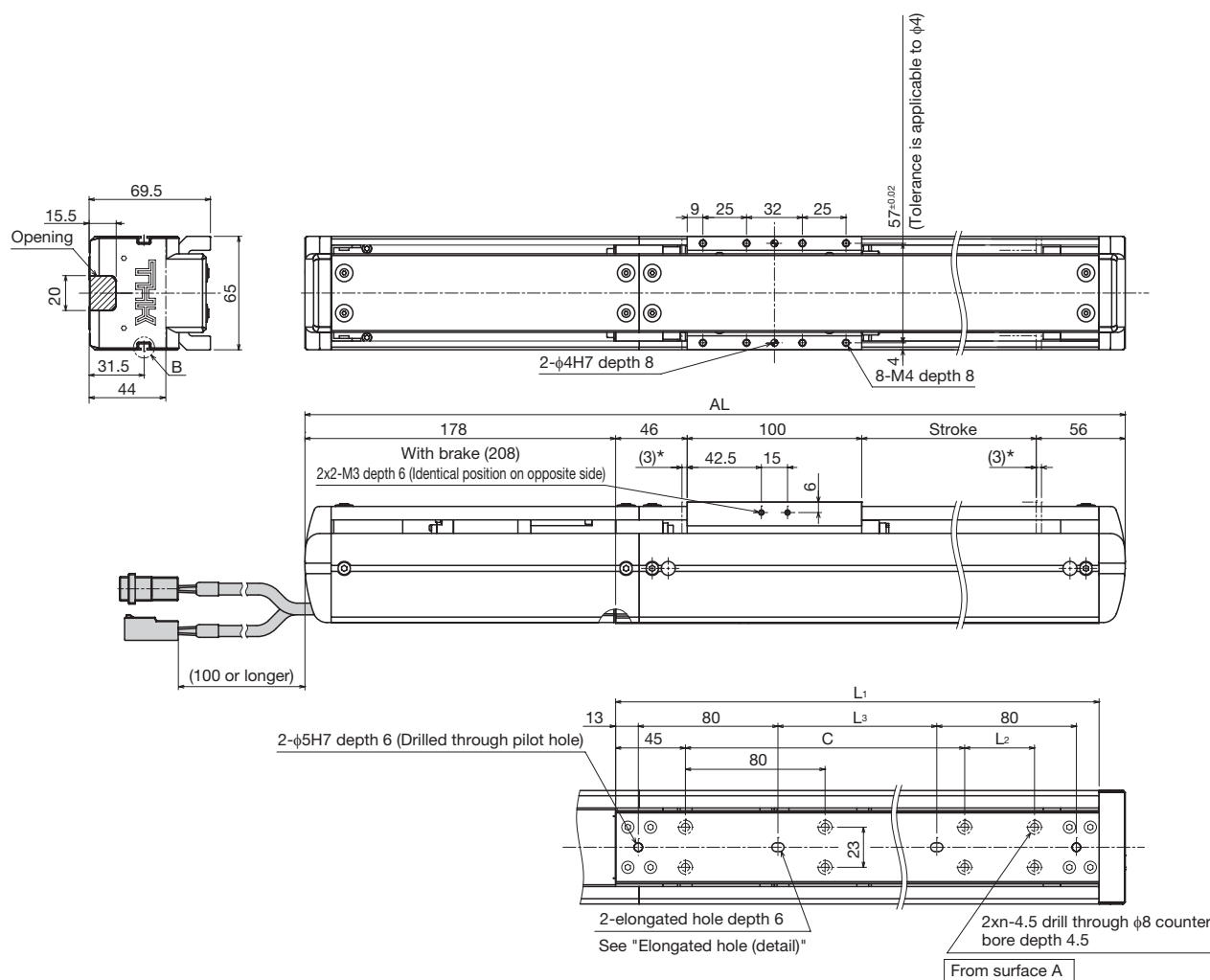
A, B, and C represent distances measured from the center of the top surface of the table.

US6T

Direct motor coupling, 100W



■ Dimensions



* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed ^{*1 *2} [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL ^{*3}	480 (510)	530 (560)	580 (610)	630 (660)	680 (710)	730 (760)	780 (810)	
	L ₁	287	337	387	437	487	537	587	
	L ₂	40	-	40	40	-	40	-	
	L ₃	101	151	201	251	301	351	401	
	C	160	240	240	320	400	400	480	
Mounting hole count	n	4	4	5	6	6	7	7	
Weight ^{*3} [kg]		3.5 (3.7)	3.7 (3.9)	3.9 (4.1)	4.1 (4.3)	4.3 (4.5)	4.6 (4.8)	4.8 (5.0)	

*¹ Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

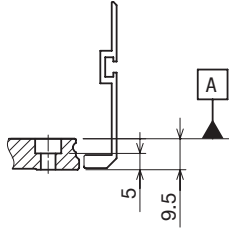
*3 Values when a brake is installed are shown in parentheses.

US6T + THC

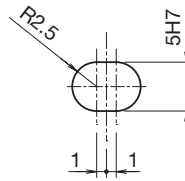


Motor rated output
100W

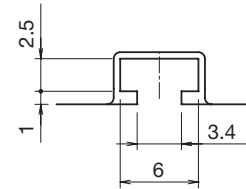
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	180	160
	720				630	550	480	420	370	330
	830 (860)	880 (910)	930 (960)	980 (1010)	1030 (1060)	1080 (1110)	1130 (1160)	1180 (1210)	1230 (1260)	1280 (1310)
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	5.0 (5.2)	5.2 (5.4)	5.4 (5.6)	5.6 (5.8)	5.8 (6.0)	6.0 (6.2)	6.2 (6.4)	6.4 (6.6)	6.7 (6.9)	6.9 (7.1)

US6RT

Motor wrap, 100W



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US6RT	06	0150	A	TH	6	SL	C

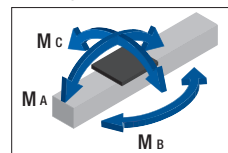
US6RT	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TH: THC	N 6 E	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)
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Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	12
Rated speed * ¹ [mm/s]				300	600
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	70	30
		Vertical mount	0.3G	14	7
Rated thrust * ³ [N]				268	134
Maximum thrust * ⁴ [N]				795	398
Electromagnetic brake retention [N]				268	134
Running life * ⁵ [km]				10,000	
Static permissible moment * ⁶ [N·m]				M _A : 123, M _B : 127, M _C : 138	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US6RT + THC



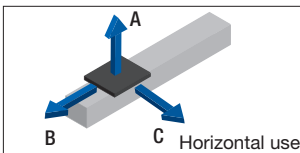
Motor rated output
100W

Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M10	L	S02	D2	H5

A	MR: Motor right wrap	M10: 100W	R: Right	S02: Motor side (Home position sensor)	D1: 100V	F3: Standard 3m
	ML: Motor left wrap	M10B: 100W with brake	U: Up	S03: Opposite motor side (Home position sensor)	D2: 200V	F5: Standard 5m
	GR: Gray end cap		L: Left	D00: Motor side (Mechanical home seeking)		FA: Standard 10m
			D: Down	R00: Opposite motor side (Mechanical home seeking)		H3: High flex 3m
						H5: High flex 5m
						HA: High flex 10m

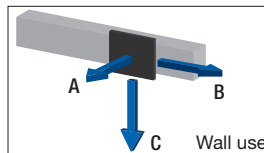
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



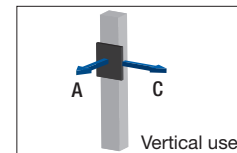
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17	730	210	230
	35	350	100	110
	70	170	40	40
12	7	1110	470	420
	15	630	240	210
	30	330	110	100



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	7	410	410	1000
	15	190	180	520
	30	60	60	220



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	7	450	440
	14	220	220
12	1	1440	1430
	4	630	620
	7	400	400

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

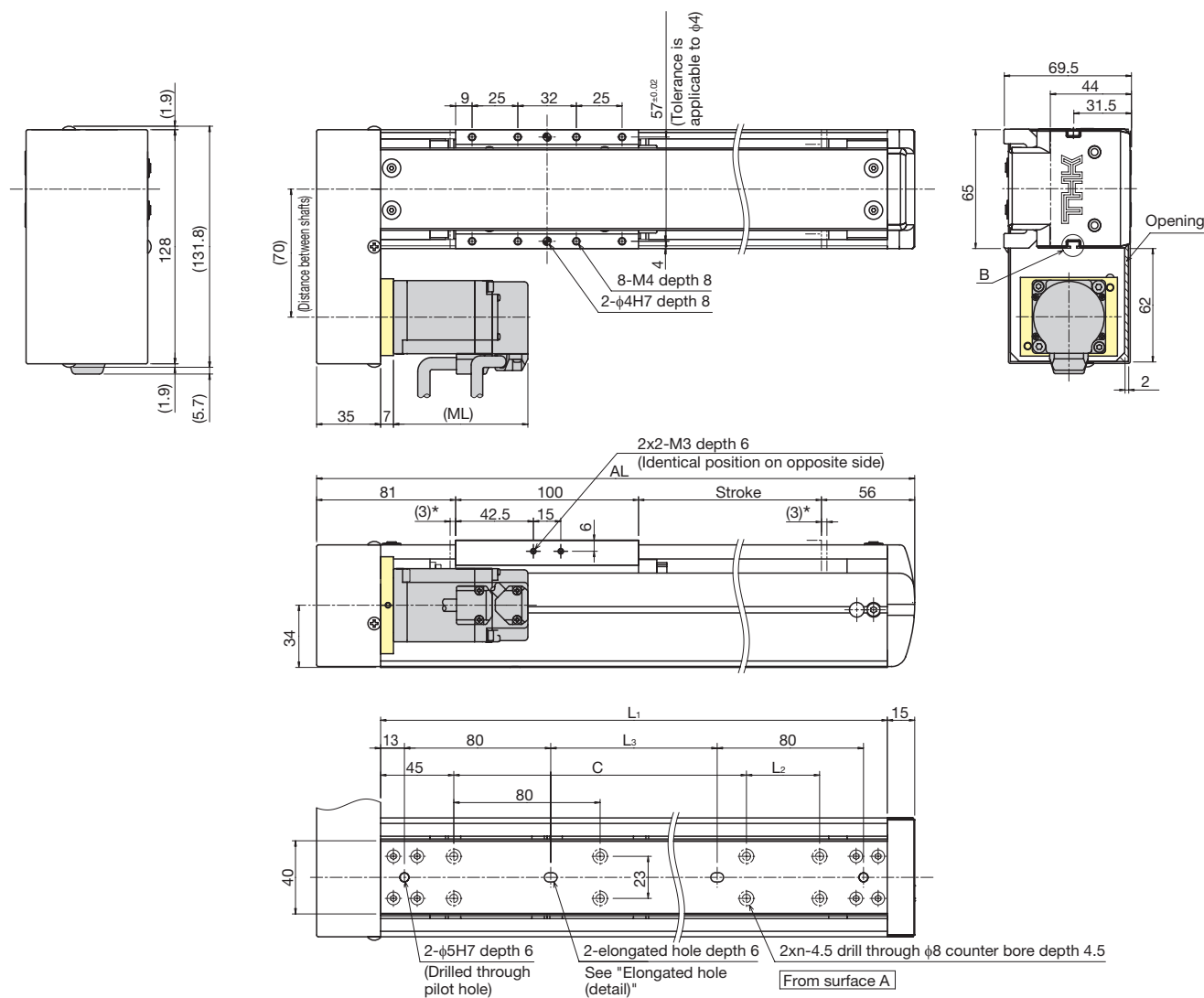
A, B, and C represent distances measured from the center of the top surface of the table.

US6RT

Motor wrap, 100W



Dimensions



* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed ^{*1 *2} [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL	337	387	437	487	537	587	637	
	ML	73.5							
	ML: With brake	109.1							
	L ₁	287	337	387	437	487	537	587	
	L ₂	40	-	40	40	-	40	-	
	L ₃	101	151	201	251	301	351	401	
Mounting hole count	C	160	240	240	320	400	400	480	
	n	4	4	5	6	6	7	7	
Weight ^{*3} [kg]		3.5 (3.7)	3.7 (3.9)	3.9 (4.1)	4.1 (4.3)	4.3 (4.5)	4.5 (4.7)	4.7 (4.9)	

^{*1} Load capacity and maximum speed are dependent on usage conditions. See page 63, "Speed and Load Capacity."

^{*2} The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

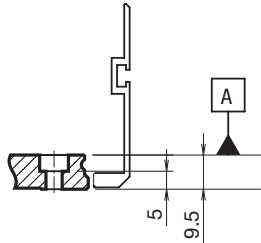
^{*3} Values when a brake is installed are shown in parentheses.

US6RT + THC

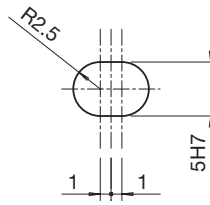


Motor rated output
100W

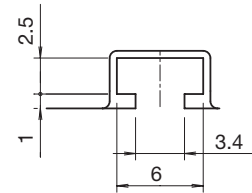
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	180	160
	720				630	550	480	420	370	330
	687	737	787	837	887	937	987	1037	1087	1137
	73.5									
	109.1									
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.9 (5.1)	5.1 (5.3)	5.4 (5.6)	5.6 (5.8)	5.8 (6.0)	6.0 (6.2)	6.2 (6.4)	6.4 (6.6)	6.6 (6.8)	6.8 (7.0)

US8T

Direct motor coupling, 100W



Model Configuration

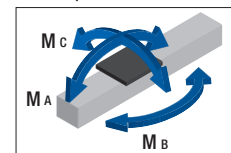
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US8T	05	0150	A	TH	6	SR	C

US8T	05: 5mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	10: 10mm	to			Q		
	20: 20mm	1100: 1100mm	N				
	30: 30mm		6				
					E		

Basic Specifications

Control device type				THC			
Motor rated output [W]				100			
Ball screw lead [mm]				5	10	20	30
Rated speed *1 [mm/s]				250	500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	80	40	20	8
		Vertical mount	0.3G	16*3	8	4	2
Rated thrust *4 [N]				322	161	80	54
Maximum thrust *5 [N]				955	478	239	159
Electromagnetic brake retention [N]				322	161	80	54
Running life *6 [km]				10,000			
Static permissible moment *7 [N·m]				MA: 287, MB: 235, MC: 226			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 64, "Speed and Load Capacity."

*³ When acceleration and deceleration rate is 0.2G.

*⁴ At rated motor torque.

*⁵ Dependent on maximum peak torque and permissible load.

*⁶ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US8T + THC



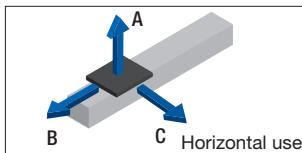
Motor rated output
100W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M10	S02	D2	H5

A	No symbol: Red end cap	M10: 100W	No symbol: When selecting P or Q	D1: 100V	F3: Standard 3m
	GR: Gray end cap	M10B: 100W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5: Standard 5m
			S03 : Opposite motor side (Home position sensor)		FA: Standard 10m
			D00: Motor side (Mechanical home seeking)		H3: High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5: High flex 5m
					HA: High flex 10m

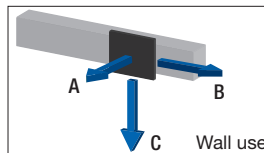
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



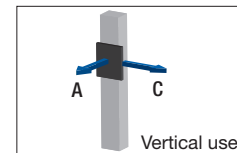
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	1610	370	340
	40	970	190	170
	80	520	80	70
10	10	1860	660	560
	20	1190	370	310
	40	680	190	150
20	5	2000	1060	930
	10	1860	660	560
	20	1190	370	310
30	2	2000	1780	1580
	4	2000	1220	1070
	8	2000	780	670



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	280	310	1410
	40	120	120	750
	80	20	20	250
10	10	550	590	1690
	20	280	310	1010
	40	120	120	510
20	5	930	1000	2000
	10	550	590	1690
	20	180	310	1010
30	2	1610	1710	2000
	4	1080	1150	2000
	8	660	710	1910



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	2	1690	1680
	4	1150	1140
	8	720	720
20	1	2000	2000
	2	1690	1680
	4	1150	1140
30	0.5	2000	2000
	1	2000	2000
	2	1690	1680

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

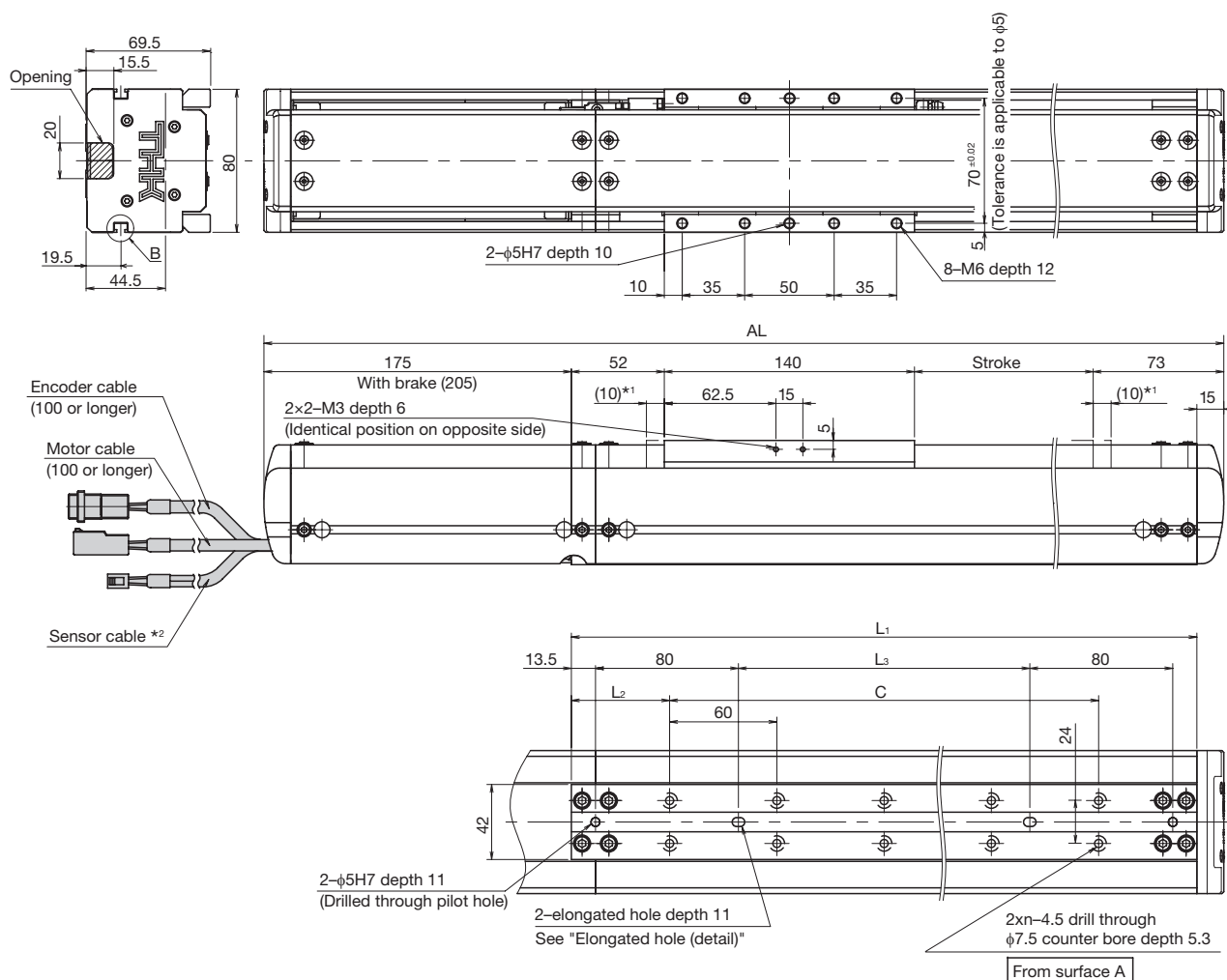
A, B, and C represent distances measured from the center of the top surface of the table.

US8T

Direct motor coupling, 100W



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300									
		10mm	600									
		20mm	1200									
		30mm	1800									
Dimensions [mm]	AL *3		540 (570)	590 (620)	640 (670)	690 (720)	740 (770)	790 (820)	840 (870)	890 (920)	940 (970)	
	L ₁		350	400	450	500	550	600	650	700	750	
	L ₂		55	50	45	40	35	60	55	50	45	
	L ₃		163	213	263	313	363	413	463	513	563	
	C		240	300	360	420	480	480	540	600	660	
Mounting hole count	n		5	6	7	8	9	9	10	11	12	
Weight *3 [kg]			6.1 (6.4)	6.4 (6.7)	6.7 (7.0)	7.0 (7.3)	7.3 (7.6)	7.5 (7.8)	7.8 (8.1)	8.1 (8.4)	8.4 (8.7)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 64, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

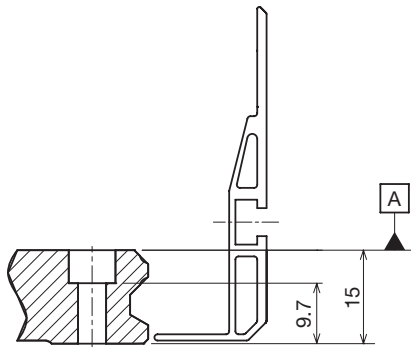
*3 Values when a brake is installed are shown in parentheses.

US8T + THC

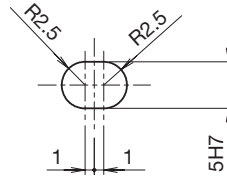


Motor rated output
100W

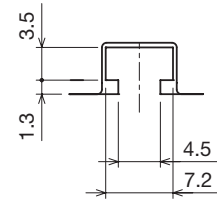
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			290	250	220	200	180	160	150	130	120
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	1800			1600	1410	1250	1120	1000	910	820	750	690
	990 (1020)	1040 (1070)	1090 (1120)	1140 (1170)	1190 (1220)	1240 (1270)	1290 (1320)	1340 (1370)	1390 (1420)	1440 (1470)	1490 (1520)	1540 (1570)
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.7 (9.0)	8.9 (9.2)	9.2 (9.5)	9.4 (9.7)	9.7 (10.0)	9.9 (10.2)	10.2 (10.5)	10.5 (10.8)	10.7 (11.0)	11.0 (11.3)	11.2 (11.5)	11.5 (11.8)

US8RT

Motor wrap, 100W



Model Configuration

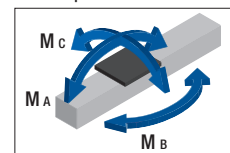
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US8RT	05	0150	A	TH	6	SL	C

US8RT	05: 5mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	10: 10mm	to			Q		
	20: 20mm	1100: 1100mm	N		SR		
	30: 30mm		6		SL		
					E		

Basic Specifications

Control device type				THC			
Motor rated output [W]				100			
Ball screw lead [mm]				5	10	20	30
Rated speed * ¹ [mm/s]				250	500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	80	40	20	8
		Vertical mount	0.3G	16* ³	8	4	2
Rated thrust * ⁴ [N]				322	161	80	54
Maximum thrust * ⁵ [N]				955	478	239	159
Electromagnetic brake retention [N]				322	161	80	54
Running life * ⁶ [km]				10,000			
Static permissible moment * ⁷ [N·m]				M _A : 287, M _B : 235, M _C : 226			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 64, "Speed and Load Capacity."

*³ When acceleration and deceleration rate is 0.2G.

*⁴ At rated motor torque.

*⁵ Dependent on maximum peak torque and permissible load.

*⁶ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US8RT + THC



Motor rated output
100W

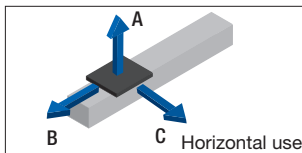
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M10	L	S02	D2	H5

A	MR: Motor right wrap	M10: 100W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard	3m
	ML: Motor left wrap	M10B: 100W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard	5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard	10m
			D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex	3m
				R00: Opposite motor side (Mechanical home seeking)		H5 : High flex	5m
						HA: High flex	10m

Note: If the GR is not included in the model configuration, cover will be red.

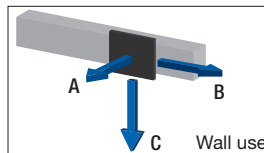
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



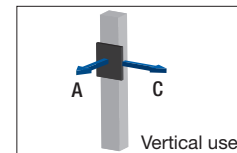
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	1610	370	340
	40	970	190	170
	80	520	80	70
10	10	1860	660	560
	20	1190	370	310
	40	680	190	150
20	5	2000	1060	930
	10	1860	660	560
	20	1190	370	310
30	2	2000	1780	1580
	4	2000	1220	1070
	8	2000	780	670



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	280	310	1410
	40	120	120	750
	80	20	20	250
10	10	550	590	1690
	20	280	310	1010
	40	120	120	510
20	5	930	1000	2000
	10	550	590	1690
	20	180	310	1010
30	2	1610	1710	2000
	4	1080	1150	2000
	8	660	710	1910



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	2	1690	1680
	4	1150	1140
	8	720	720
20	1	2000	2000
	2	1690	1680
	4	1150	1140
30	0.5	2000	2000
	1	2000	2000
	2	1690	1680

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

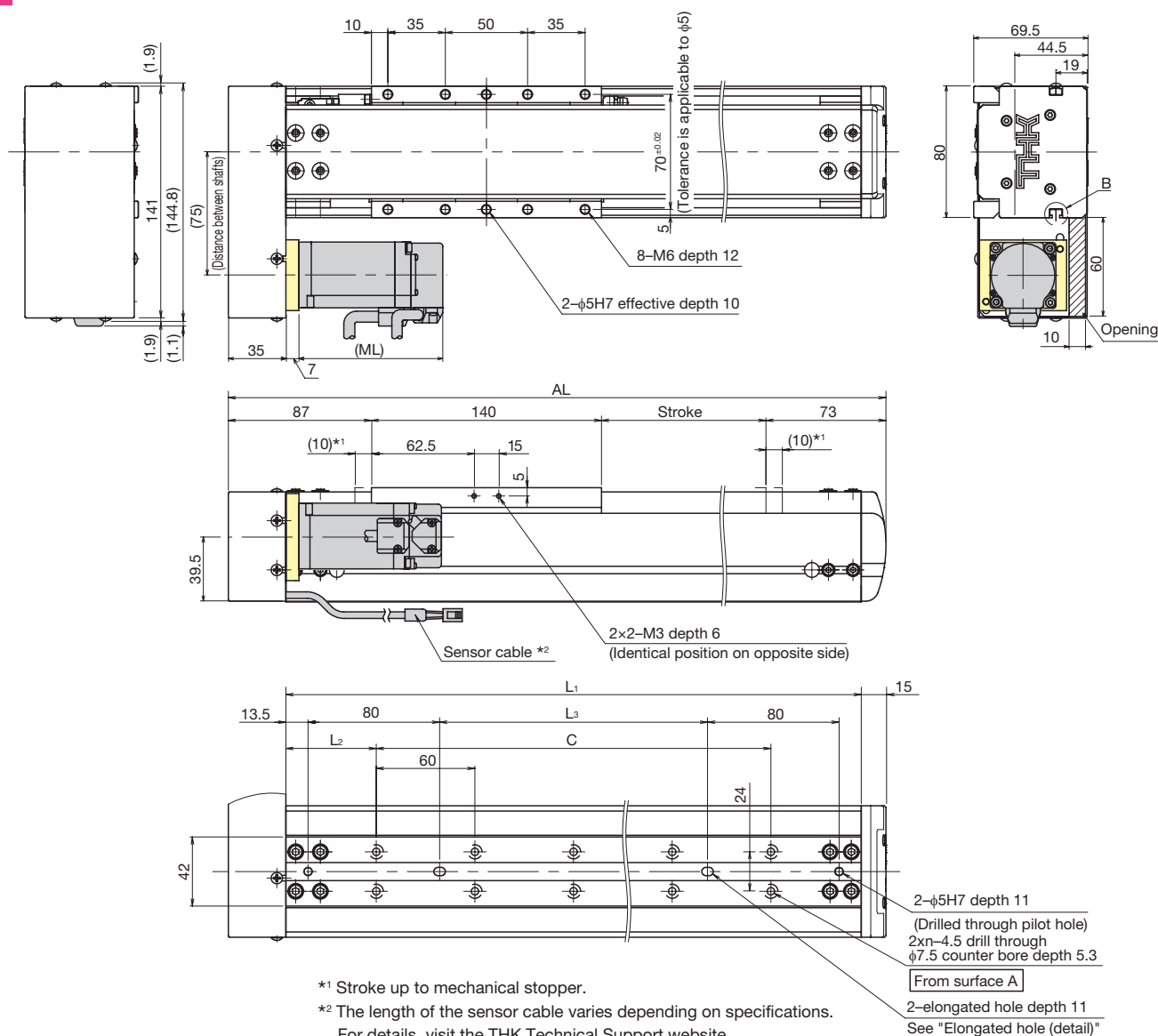
A, B, and C represent distances measured from the center of the top surface of the table.

US8RT

Motor wrap, 100W



Dimensions



Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed * ¹ * ² [mm/s]	Ball screw lead	5mm	300									
		10mm	600									
		20mm	1200									
		30mm	1800									
Dimensions [mm]	AL		400	450	500	550	600	650	700	750	800	
	ML		73.5									
	ML: With brake		109.1									
	L ₁		350	400	450	500	550	600	650	700	750	
	L ₂		55	50	45	40	35	60	55	50	45	
	L ₃		163	213	263	313	363	413	463	513	563	
	C		240	300	360	420	480	480	540	600	660	
Mounting hole count	n		5	6	7	8	9	9	10	11	12	
Weight * ³ [kg]			6.3 (6.6)	6.6 (6.9)	6.9 (7.2)	7.2 (7.5)	7.5 (7.8)	7.7 (8.0)	8.0 (8.3)	8.3 (8.6)	8.6 (8.9)	

*¹ Load capacity and maximum speed are dependent on usage conditions. See page 64, "Speed and Load Capacity."

*² The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

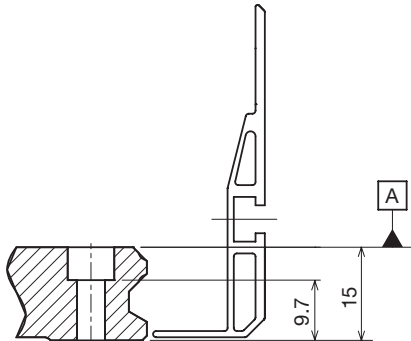
*³ Values when a brake is installed are shown in parentheses.

US8RT + THC

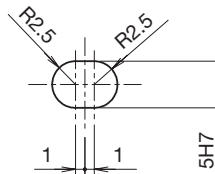


Motor rated output
100W

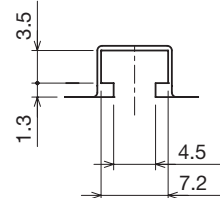
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			290	250	220	200	180	160	150	130	120
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	1800			1600	1410	1250	1120	1000	910	820	750	690
	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
73.5												
109.1												
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.9 (9.2)	9.1 (9.4)	9.4 (9.7)	9.6 (9.9)	9.9 (10.2)	10.1 (10.4)	10.4 (10.7)	10.7 (11.0)	10.9 (11.2)	11.2 (11.5)	11.4 (11.7)	11.7 (12.0)

US8T

Direct motor coupling, 150W



Model Configuration

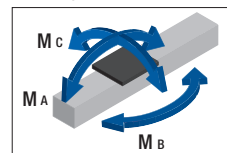
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US8T	10	0150	A	TH	6	SR	C	

US8T	10: 10mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	20: 20mm	to			Q		
	30: 30mm	1100: 1100mm	N		SL		
					6		
					E		

Basic Specifications

Control device type				THC		
Motor rated output [W]				150		
Ball screw lead [mm]				10	20	30
Rated speed * ¹ [mm/s]				500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	60	30	12
		Vertical mount	0.3G	12	6	3
Rated thrust * ³ [N]				240	120	80
Maximum thrust * ⁴ [N]				719	359	240
Electromagnetic brake retention [N]				161	80	54
Running life * ⁵ [km]				10,000		
Static permissible moment * ⁶ [N·m]				M _A : 287, M _B : 235, M _C : 226		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 65, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US8T + THC



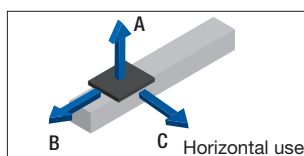
Motor rated output
150W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M15	S02	D2	H5

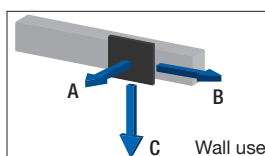
A	No symbol: Red end cap	M15: 150W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M15B: 150W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
			S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

Note: If the GR is not included in the model configuration, cover will be red.

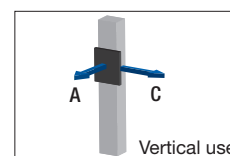
Permissible Overhang Length*



Horizontal mount



Wall mount



Vertical mount

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	20	1190	370	310
	40	680	190	150
	60	340	120	100
20	10	1860	660	560
	20	1190	370	310
	30	870	190	210
30	4	2000	1220	1070
	8	2000	780	670
	12	1670	570	490

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	20	280	310	1010
	40	120	120	510
	60	50	60	290
20	10	550	590	1690
	20	280	310	1010
	30	170	190	700
30	4	1080	1150	2000
	8	660	710	1940
	12	470	510	1490

Ball screw lead [mm]	Load mass [kg]	A	C
10	4	1150	1140
	8	720	720
	12	530	520
20	2	1690	1680
	4	1150	1140
	6	890	880
30	1	2000	2000
	2	1690	1680
	3	1360	1350

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

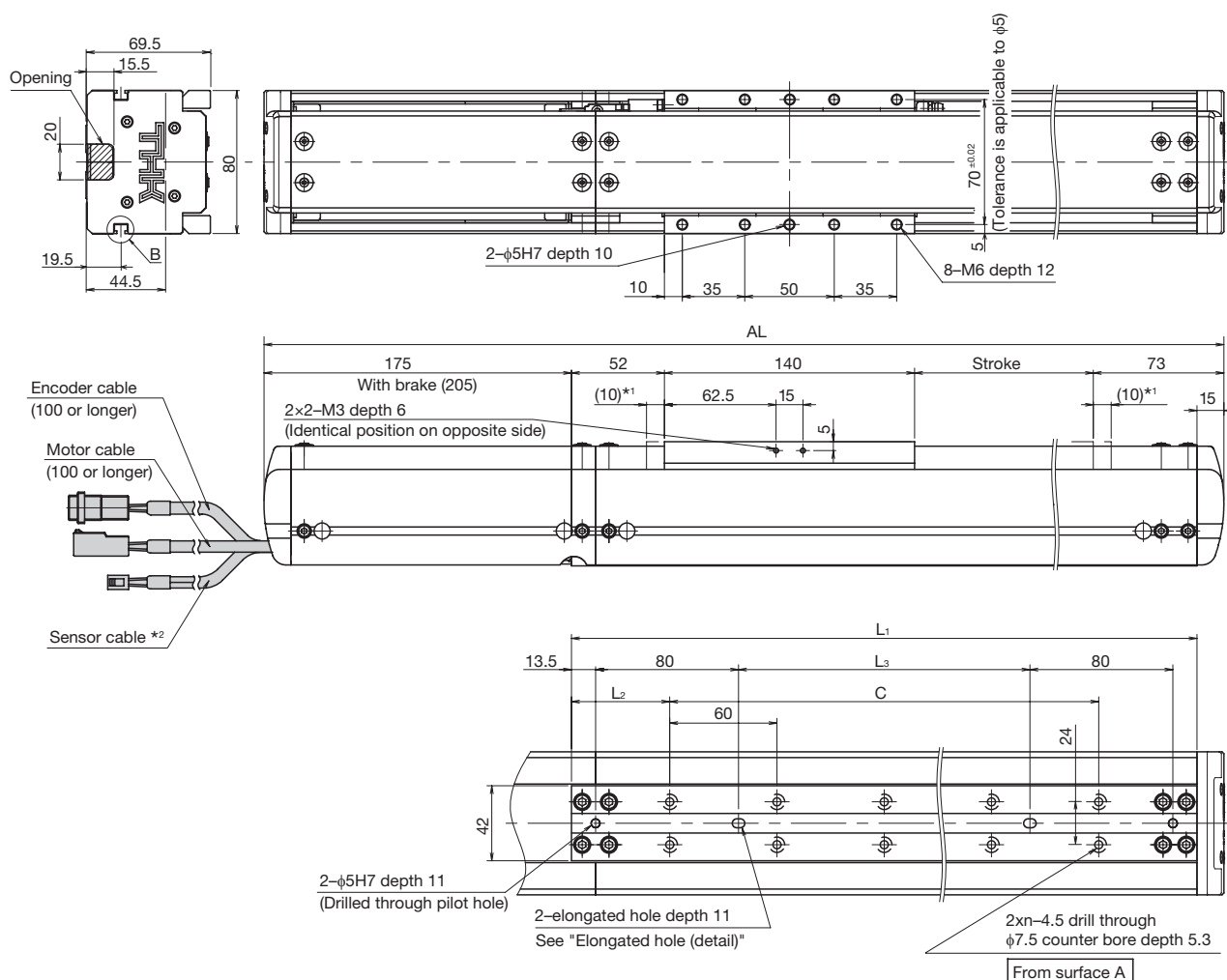
A, B, and C represent distances measured from the center of the top surface of the table.

US8T

Direct motor coupling, 150W



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL *3	540 (570)	590 (620)	640 (670)	690 (720)	740 (770)	790 (820)	840 (870)	890 (920)	940 (970)	
	L ₁	350	400	450	500	550	600	650	700	750	
	L ₂	55	50	45	40	35	60	55	50	45	
	L ₃	163	213	263	313	363	413	463	513	563	
Mounting hole count	C	240	300	360	420	480	480	540	600	660	
	n	5	6	7	8	9	9	10	11	12	
Weight *3 [kg]		6.2 (6.4)	6.4 (6.6)	6.7 (6.9)	7 (7.2)	7.3 (7.5)	7.6 (7.8)	7.9 (8.1)	8.2 (8.4)	8.4 (8.6)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 65, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

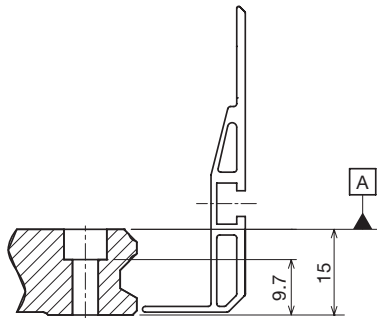
*3 Values when a brake is installed are shown in parentheses.

US8T + THC

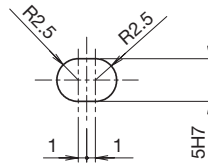


Motor rated output
150W

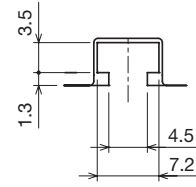
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	1800			1600	1410	1250	1120	1000	910	820	750	690
	990 (1020)	1040 (1070)	1090 (1120)	1140 (1170)	1190 (1220)	1240 (1270)	1290 (1320)	1340 (1370)	1390 (1420)	1440 (1470)	1490 (1520)	1540 (1570)
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.7 (8.9)	9 (9.2)	9.2 (9.4)	9.5 (9.7)	9.7 (9.9)	10 (10.2)	10.2 (10.4)	10.5 (10.7)	10.8 (11)	11 (11.2)	11.3 (11.5)	11.5 (11.7)

US8RT

Motor wrap, 150W



Model Configuration

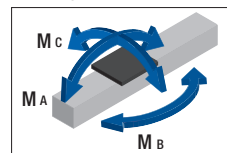
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
US8RT	10	0150	A	TH	6	SR	C

US8RT	10: 10mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	20: 20mm	to			Q		
	30: 30mm	1100: 1100mm	N		SR		
					6	SL	
					E		

Basic Specifications

Control device type				THC		
Motor rated output [W]				150		
Ball screw lead [mm]				10	20	30
Rated speed * ¹ [mm/s]				500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	60	30	12
		Vertical mount	0.3G	12	6	3
Rated thrust * ³ [N]				240	120	80
Maximum thrust * ⁴ [N]				719	359	240
Electromagnetic brake retention [N]				161	80	54
Running life * ⁵ [km]				10,000		
Static permissible moment * ⁶ [N·m]				M _A : 287, M _B : 235, M _C : 226		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 65, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

US8RT + THC



Motor rated output
150W

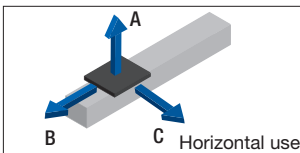
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M15	L	S02	D2	H5

A	MR: Motor right wrap	M15: 150W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard	3m
	ML: Motor left wrap	M15B: 150W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard	5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard	10m
			D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex	3m
				R00: Opposite motor side (Mechanical home seeking)		H5 : High flex	5m
						HA: High flex	10m

Note: If the GR is not included in the model configuration, cover will be red.

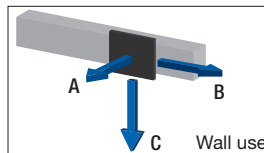
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



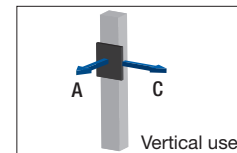
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	20	1190	370	310
	40	680	190	150
	60	340	120	100
20	10	1860	660	560
	20	1190	370	310
	30	870	190	210
30	4	2000	1220	1070
	8	2000	780	670
	12	1670	570	490



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	20	280	310	1010
	40	120	120	510
	60	50	60	290
20	10	550	590	1690
	20	280	310	1010
	30	170	190	700
30	4	1080	1150	2000
	8	660	710	1940
	12	470	510	1490



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	4	1150	1140
	8	720	720
	12	530	520
20	2	1690	1680
	4	1150	1140
	6	890	880
30	1	2000	2000
	2	1690	1680
	3	1360	1350

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

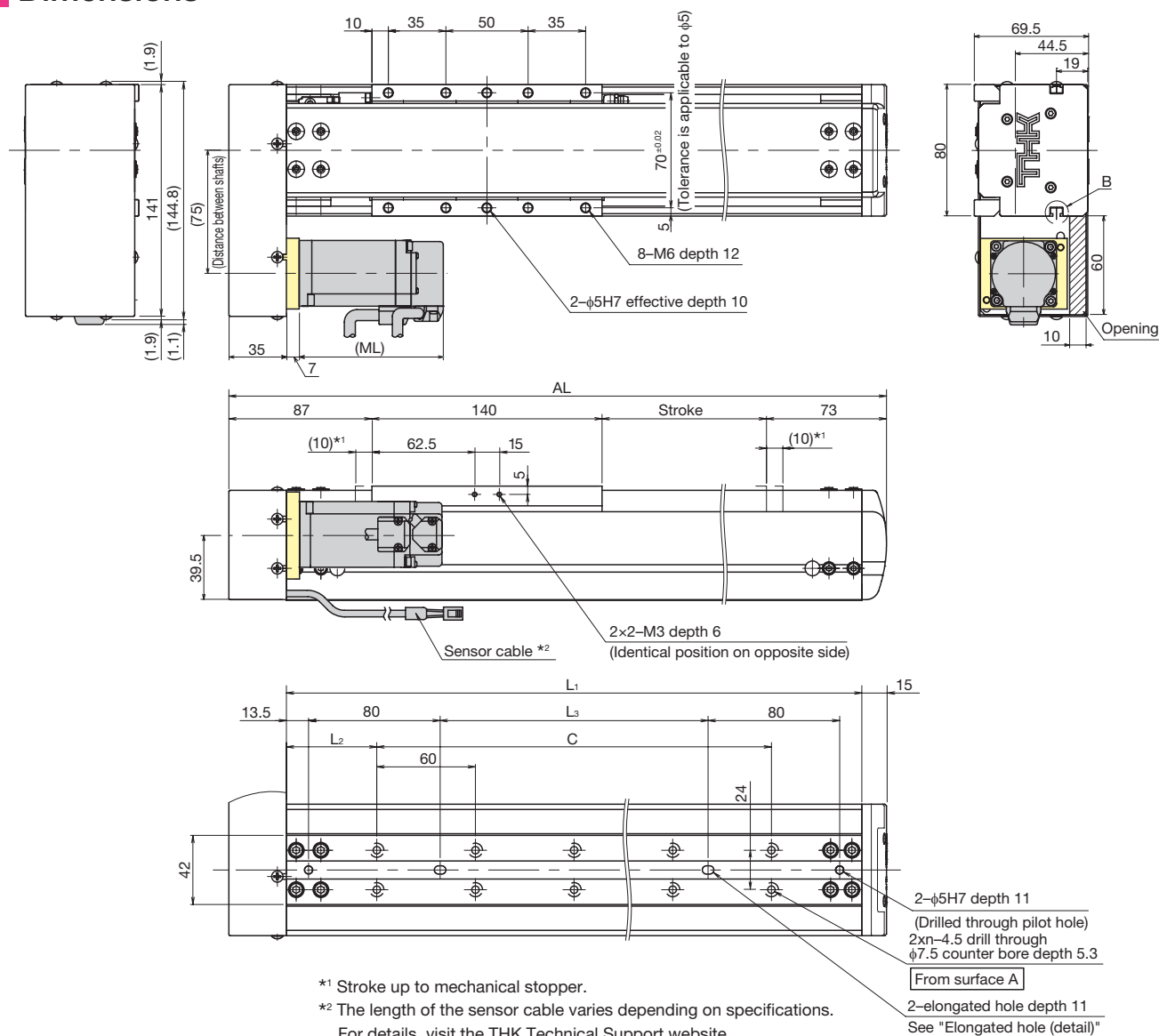
A, B, and C represent distances measured from the center of the top surface of the table.

US8RT

Motor wrap, 150W



Dimensions



Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	600									
		20mm	1200									
		30mm	1800									
Dimensions [mm]	AL		400	450	500	550	600	650	700	750	800	
	ML		87.5									
	ML: With brake		123.1									
	L ₁		350	400	450	500	550	600	650	700	750	
	L ₂		55	50	45	40	35	60	55	50	45	
	L ₃		163	213	263	313	363	413	463	513	563	
	C		240	300	360	420	480	480	540	600	660	
Mounting hole count	n		5	6	7	8	9	9	10	11	12	
Weight *3 [kg]			6.4 (6.6)	6.6 (6.8)	6.9 (7.1)	7.2 (7.4)	7.5 (7.7)	7.8 (8)	8.1 (8.3)	8.3 (8.5)	8.6 (8.8)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 65, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

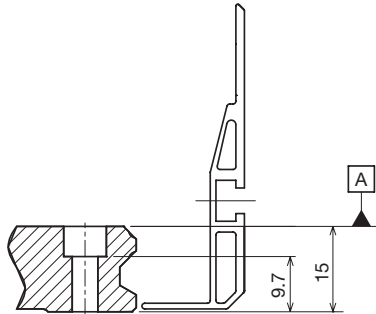
*3 Values when a brake is installed are shown in parentheses.

US8RT + THC

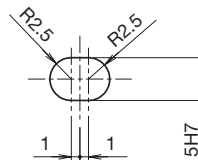


Motor rated output
150W

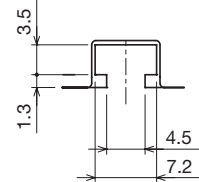
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	1800			1600	1410	1250	1120	1000	910	820	750	690
	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
87.5												
123.1												
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.9 (9.1)	9.2 (9.4)	9.4 (9.6)	9.7 (9.9)	9.9 (10.1)	10.2 (10.4)	10.4 (10.6)	10.7 (10.9)	11 (11.2)	11.2 (11.4)	11.5 (11.7)	11.7 (11.9)

USW12T

Direct motor coupling, 200W



Model Configuration

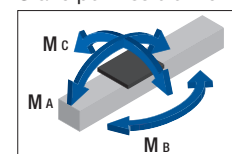
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW12T	05	0150	A	TH	6	SL	C

USW12T	05: 5mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes)
	10: 10mm	to			Q	SR	
	20: 20mm	1100: 1100mm			N	SL	C: From top of base (counter-bore holes)
	30: 30mm				6		
					E		

Basic Specifications

Control device type				THC			
Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed * ¹ [mm/s]				250	500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	100	80	40	25
		Vertical mount	0.3G	30	20	8	5
Rated thrust * ³ [N]				643	322	161	107
Maximum thrust * ⁴ [N]				1910	965	482	322
Electromagnetic brake retention [N]				1277	638	319	213
Running life * ⁵ * ⁶ [km]				20,000 (10,000)			
Static permissible moment * ⁷ [N·m]				M _A : 915, M _B : 317, M _C : 786			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 66, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ 10,000 km with ball screw lead 5mm in vertical use.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW12T + THC



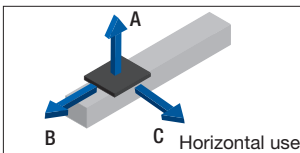
Motor rated output
200W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M20	S02	D2	H5

A	No symbol: Red end cap	M20: 200W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M20B: 200W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	HG: Hanging jig		S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

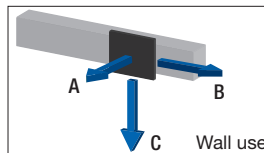
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



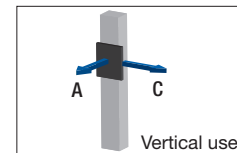
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	1870	450	570
	60	1120	230	290
	100	710	130	170
10	20	1790	630	710
	40	1090	340	390
	80	580	160	190
20	10	2000	1060	1170
	20	1790	630	710
	40	1090	340	370
30	5	2000	1620	1770
	15	2000	790	880
	25	1540	520	590



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	530	420	1800
	60	260	200	1030
	100	130	90	600
10	20	710	600	1750
	40	370	310	1020
	80	160	130	500
20	10	1180	1030	2000
	20	710	600	1750
	40	370	310	1050
30	5	1800	1600	2000
	15	890	770	2000
	25	580	500	1490



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	10	1020	1050
	20	600	620
	30	420	430
10	5	1520	1550
	10	980	1000
	20	570	590
20	2	2000	2000
	4	1720	1760
	8	1140	1170
30	1	2000	2000
	3	2000	2000
	5	1520	1550

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

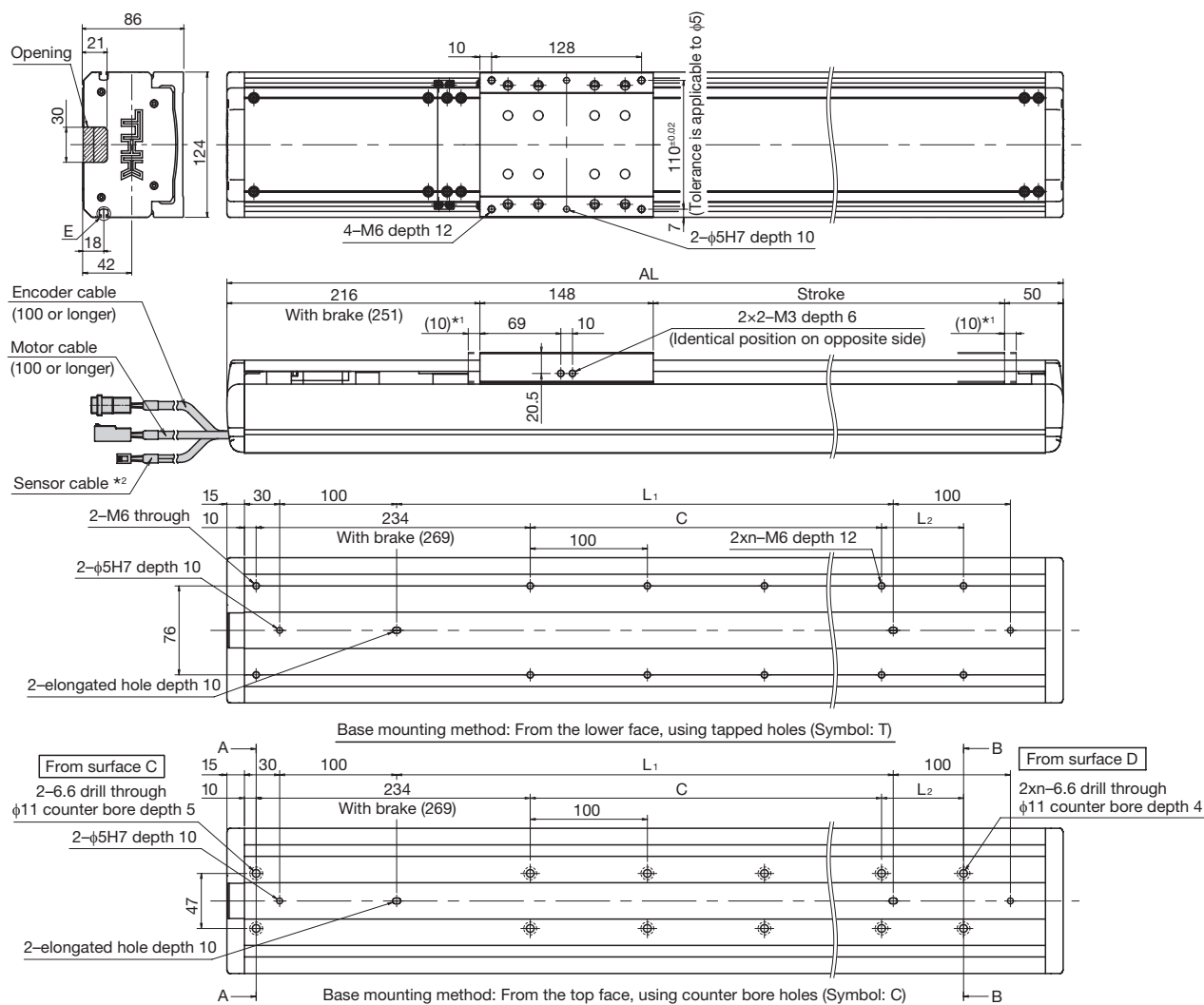
A, B, and C represent distances measured from the center of the top surface of the table.

USW12T

Direct motor coupling, 200W



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300									
		10mm	600									
		20mm	1200									
		30mm	1800									
Dimensions [mm]	AL *3		514 (549)	564 (599)	614 (649)	664 (699)	714 (749)	764 (799)	814 (849)	864 (899)	914 (949)	
	L ₁ *3		224 (259)	274 (309)	324 (359)	374 (409)	424 (459)	474 (509)	524 (559)	574 (609)	624 (659)	
	L ₂		70	20	70	20	70	20	70	20	70	
	C		100	200	200	300	300	400	400	500	500	
Mounting hole count	n		3	4	4	5	5	6	6	7	7	
Weight *3 [kg]			7.5 (8.3)	8.1 (8.9)	8.7 (9.5)	9.3 (10.1)	9.9 (10.7)	10.5 (11.3)	11.1 (11.9)	11.7 (12.5)	12.2 (13)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 66, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

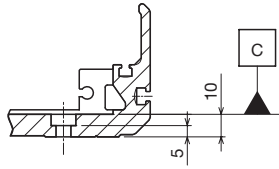
*3 Values when a brake is installed are shown in parentheses.

USW12T + THC

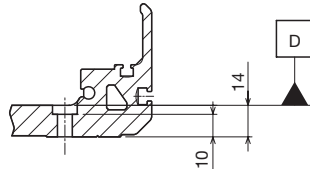


Motor rated output
200W

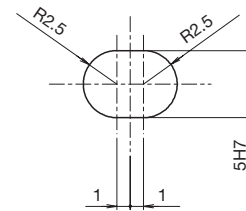
Detail



Cross section: A-A

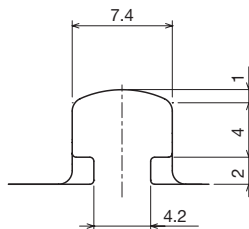


Cross section: B-B



Elongated hole (detail)

Counter-bore hole on base (detail)



Section E (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
300				270	240	210	190	170	150	140	130	120
600			580	510	450	400	360	320	290	260	240	220
1200			1160	1020	900	800	720	640	580	530	480	440
1800			1700	1490	1320	1180	1050	950	860	780	720	660
	964 (999)	1014 (1049)	1064 (1099)	1114 (1149)	1164 (1199)	1214 (1249)	1264 (1299)	1314 (1349)	1364 (1399)	1414 (1449)	1464 (1499)	1514 (1549)
	674 (709)	724 (759)	774 (809)	824 (859)	874 (909)	924 (959)	974 (1009)	1024 (1059)	1074 (1109)	1124 (1159)	1174 (1209)	1224 (1259)
	20	70	20	70	20	70	20	70	20	70	20	70
	600	600	700	700	800	800	900	900	1000	1000	1100	1100
	8	8	9	9	10	10	11	11	12	12	13	13
	12.9 (13.7)	13.4 (14.2)	14.1 (14.9)	14.6 (15.4)	15.3 (16.1)	15.8 (16.6)	16.5 (17.3)	17.1 (17.9)	17.7 (18.5)	18.3 (19.1)	18.9 (19.7)	19.5 (20.3)

USW12RT

Motor wrap, 200W



Model Configuration

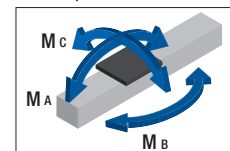
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW12RT	05	0150	A	TH	6	SL	C

USW12RT	05: 5mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes)
	10: 10mm	to			Q		
	20: 20mm	1100: 1100mm	N		SL		
	30: 30mm		6				
					E		C: From top of base (counter-bore holes)

Basic Specifications

Control device type				THC			
Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed * ¹ [mm/s]				250	500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	100	80	40	25
		Vertical mount	0.3G	30	20	8	5
Rated thrust * ³ [N]				643	322	161	107
Maximum thrust * ⁴ [N]				1910	965	482	322
Electromagnetic brake retention [N]				1277	638	319	213
Running life * ⁵ * ⁶ [km]				20,000 (10,000)			
Static permissible moment * ⁷ [N·m]				M _A : 915, M _B : 317, M _C : 786			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 66, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ 10,000 km with ball screw lead 5mm in vertical use.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW12RT + THC



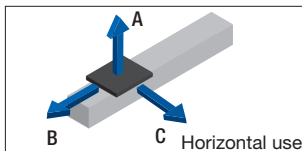
Motor rated output
200W

Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M20	L	S02	D2	H5

A	MR: Motor right wrap	M20: 200W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3: Standard 3m
	ML: Motor left wrap	M20B: 200W with brake	U: Up	S02: Motor side (Home position sensor)	D2: 200V	F5: Standard 5m
	GR: Gray end cap		L: Left	S03: Opposite motor side (Home position sensor)		FA: Standard 10m
	HG: Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3: High flex 3m
				R00: Opposite motor side (Mechanical home seeking)		H5: High flex 5m
						HA: High flex 10m

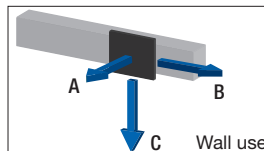
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



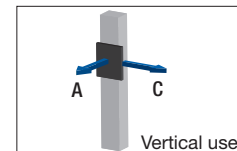
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	1870	450	570
	60	1120	230	290
	100	710	130	170
10	20	1790	630	710
	40	1090	340	390
	80	580	160	190
20	10	2000	1060	1170
	20	1790	630	710
	40	1090	340	390
30	5	2000	1620	1770
	15	2000	790	880
	25	1540	520	590



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	530	420	1800
	60	260	200	1030
	100	130	90	600
10	20	710	600	1750
	40	370	310	1020
	80	160	130	500
20	10	1180	1030	2000
	20	710	600	1750
	40	370	310	1020
30	5	1800	1600	2000
	15	890	770	2000
	25	580	500	1490



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	10	1020	1050
	20	600	620
	30	420	430
10	5	1520	1550
	10	980	1000
	20	570	590
20	2	2000	2000
	4	1720	1760
	8	1140	1170
30	1	2000	2000
	3	2000	2000
	5	1520	1550

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

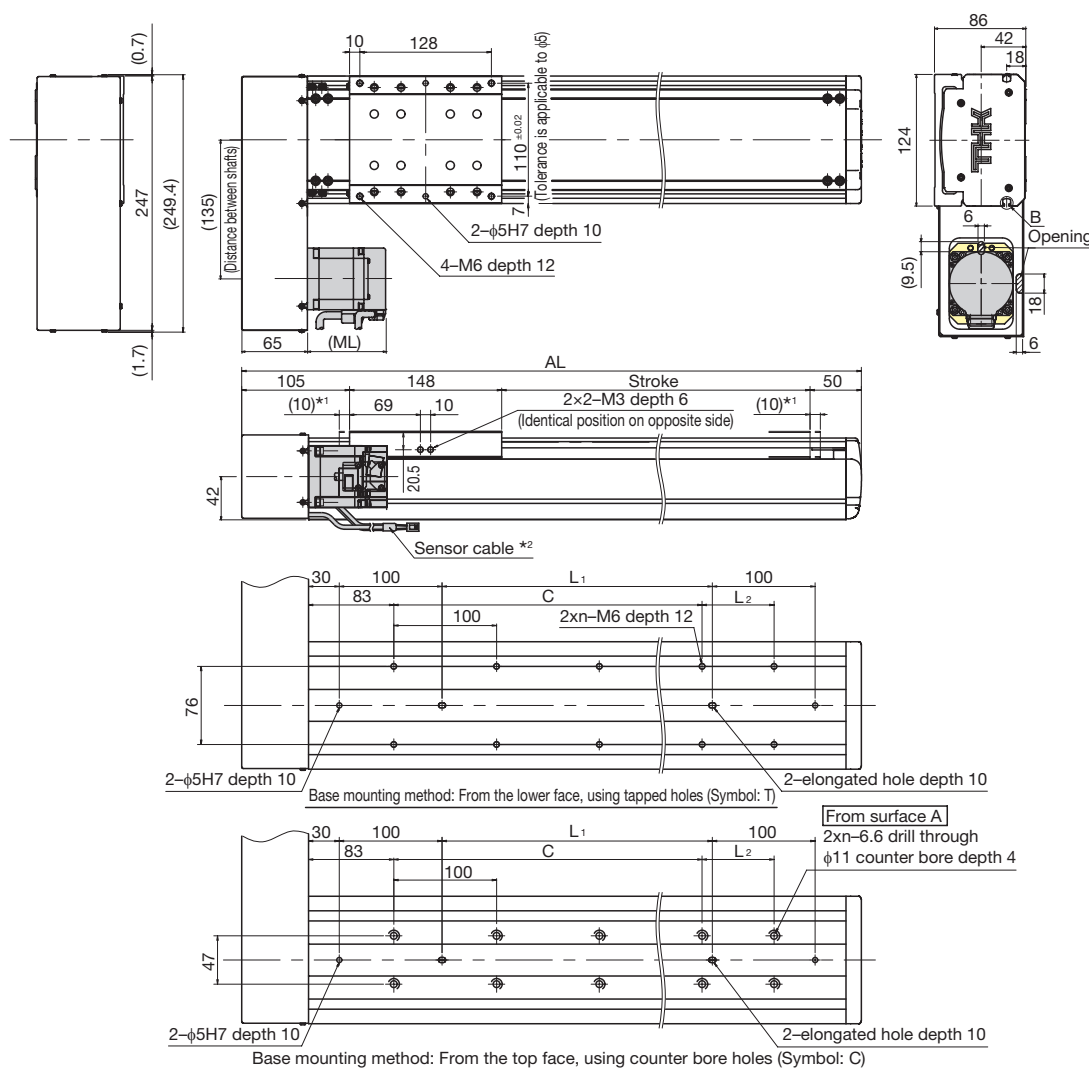
A, B, and C represent distances measured from the center of the top surface of the table.

USW12RT

Motor wrap, 200W



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300									
		10mm	600									
		20mm	1200									
		30mm	1800									
Dimensions [mm]	AL		403	453	503	553	603	653	703	753	803	
	ML		76.1									
	ML: With brake		110.7									
	L ₁		63	113	163	213	263	313	363	413	463	
	L ₂		70	20	70	20	70	20	70	20	70	
	C		100	200	200	300	300	400	400	500	500	
Mounting hole count	n		3	4	4	5	5	6	6	7	7	
Weight *3 [kg]			8.9 (9.4)	9.5 (10)	10.1 (10.6)	10.7 (11.2)	11.3 (11.8)	11.9 (12.4)	12.5 (13)	13.1 (13.6)	13.7 (14.2)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 66, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

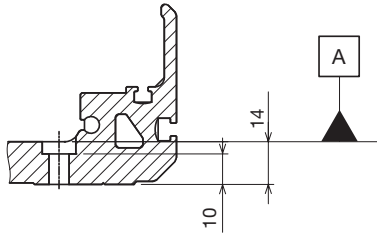
*3 Values when a brake is installed are shown in parentheses.

USW12RT + THC

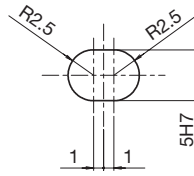


Motor rated output
200W

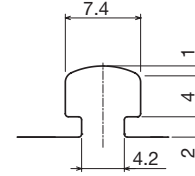
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			270	240	210	190	170	150	140	130	120
	600		580	510	450	400	360	320	290	260	240	220
	1200		1160	1020	900	800	720	640	580	530	480	440
	1800		1700	1490	1320	1180	1050	950	860	780	720	660
	853	903	953	1003	1053	1103	1153	1203	1253	1303	1353	1403
76.1												
110.7												
	513	563	613	663	713	763	813	863	913	963	1013	1063
	20	70	20	70	20	70	20	70	20	70	20	70
	600	600	700	700	800	800	900	900	1000	1000	1100	1100
	8	8	9	9	10	10	11	11	12	12	13	13
	14.3 (14.8)	14.9 (15.4)	15.5 (16)	16.1 (16.6)	16.7 (17.2)	17.3 (17.8)	17.9 (18.4)	18.5 (19)	19.1 (19.6)	19.7 (20.2)	20.3 (20.8)	20.9 (21.4)

USW16T

Direct motor coupling, 400W



Model Configuration

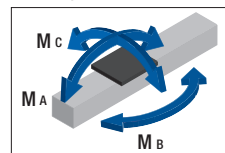
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW16T	10	0150	A	TH	6	SR	C	

USW16T	10: 10mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)
	20: 20mm	to			Q		
	40: 40mm	1500: 1500mm	N		SR		
			6		SL		
				E			

Basic Specifications

Control device type				THC		
Motor rated output [W]				400		
Ball screw lead [mm]				10	20	40
Rated speed * ¹ [mm/s]				500	1000	2000
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	120	80	40
		Vertical mount	0.3G	35	15	9
Rated thrust * ³ [N]				653	326	163
Maximum thrust * ⁴ [N]				1910	965	482
Electromagnetic brake retention [N]				638	319	160
Running life * ⁵ [km]				20,000		
Static permissible moment * ⁶ [N·m]				MA: 2161, MB: 740, MC: 1681		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment

*¹ At rated motor speed (3,000 min⁻¹).*² Load capacity and maximum speed are dependent on usage conditions. See page 67, "Speed and Load Capacity."*³ At rated motor torque.*⁴ Dependent on maximum peak torque and permissible load.*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW16T + THC



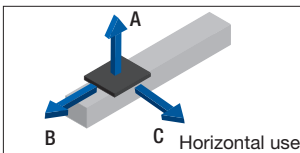
Motor rated output
400W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M40	S02	D2	H5

A	No symbol: Red end cap	M40: 400W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M40B: 400W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	HG: Hanging jig		S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

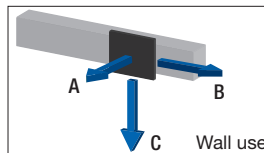
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



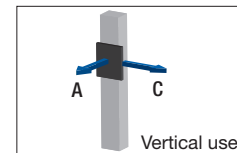
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	2590	950	820
	80	1590	520	440
	120	1130	340	290
20	20	3000	1560	1380
	40	2590	950	820
	80	1590	520	440
40	10	3000	2360	2100
	20	3000	1560	1380
	40	2590	950	820



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	760	900	2480
	80	380	460	1450
	120	230	280	970
20	20	1300	1520	3000
	40	760	900	2480
	80	380	460	1450
40	10	2020	2320	3000
	20	1300	1520	3000
	40	760	900	2480



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	10	2220	2270
	20	1460	1500
	35	970	1000
20	5	3000	3000
	10	2220	2270
	15	1750	1800
40	3	3000	3000
	6	2890	2960
	9	2350	2410

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

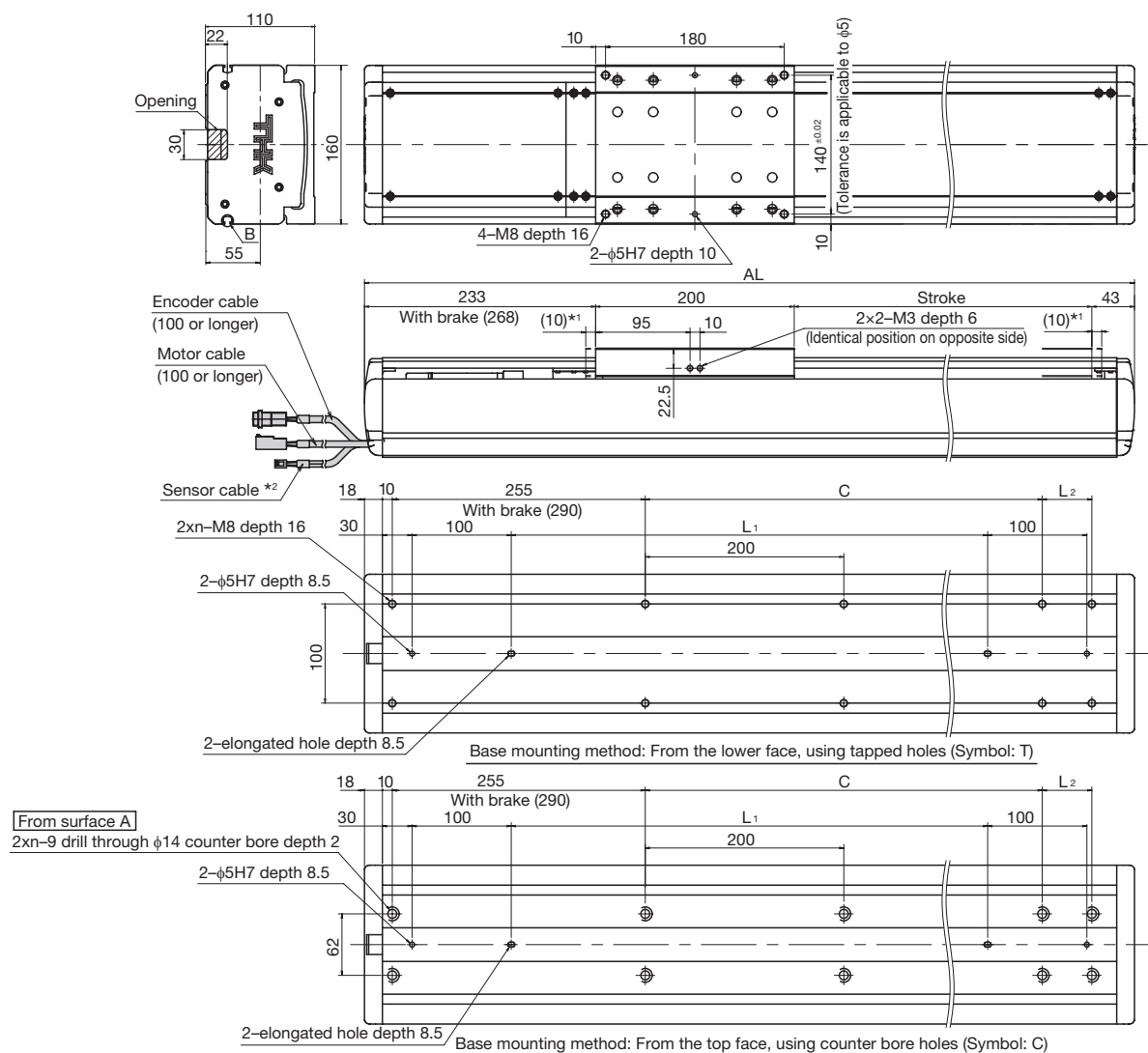
A, B, and C represent distances measured from the center of the top surface of the table.

USW16T

Direct motor coupling, 400W



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550											
		20mm	1100											
		40mm	2200											
Dimensions [mm]	AL *3	576 (611)	626 (661)	676 (711)	726 (761)	776 (811)	826 (861)	876 (911)	926 (961)	976 (1011)	1026 (1061)	1076 (1111)	1126 (1161)	
	L ₁ *3	280 (315)	330 (365)	380 (415)	430 (465)	480 (515)	530 (565)	580 (615)	630 (665)	680 (715)	730 (765)	780 (815)	830 (865)	
	L ₂	50	100	150	—	50	100	150	—	50	100	150	—	
	C	200	200	200	400	400	400	400	600	600	600	600	800	
Mounting hole count	n	4	4	4	4	5	5	5	5	6	6	6	6	
Weight *3 [kg]		14.4 (15.3)	15.4 (16.3)	16.4 (17.3)	17.4 (18.3)	18.4 (19.3)	19.4 (20.3)	20.4 (21.3)	21.4 (22.3)	22.4 (23.3)	23.4 (24.3)	24.4 (25.3)	25.4 (26.3)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 67, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

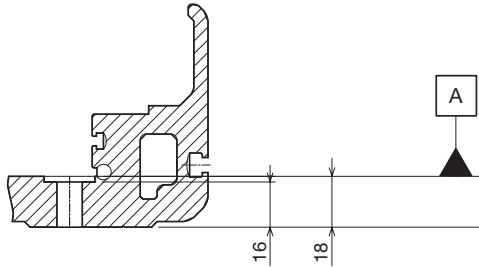
*3 Values when a brake is installed are shown in parentheses.

USW16T + THC

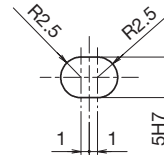


Motor rated output
400W

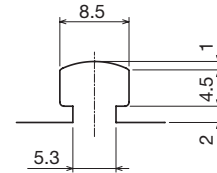
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
550			520	470	420	380	340	310	290	260	240	230	210	190	180	170	160
1100				1040	930	840	760	700	640	590	540	500	460	430	400	380	350
2200				1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690
	1176 (1211)	1226 (1261)	1276 (1311)	1326 (1361)	1376 (1411)	1426 (1461)	1476 (1511)	1526 (1561)	1576 (1611)	1626 (1661)	1676 (1711)	1726 (1761)	1776 (1811)	1826 (1861)	1876 (1911)	1926 (1961)	1976 (2011)
	880 (915)	930 (965)	980 (1015)	1030 (1065)	1080 (1115)	1130 (1165)	1180 (1215)	1230 (1265)	1280 (1315)	1330 (1365)	1380 (1415)	1430 (1465)	1480 (1515)	1530 (1565)	1580 (1615)	1630 (1665)	1680 (1715)
	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600
	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
	26.4 (27.3)	27.4 (28.3)	28.4 (29.3)	29.4 (30.3)	30.4 (31.3)	31.4 (32.3)	32.4 (33.3)	33.4 (34.3)	34.4 (35.3)	35.4 (36.3)	36.4 (37.3)	37.4 (38.3)	38.4 (39.3)	39.4 (40.3)	40.4 (41.3)	41.4 (42.3)	42.4 (43.3)

USW16RT

Motor wrap, 400W



Model Configuration

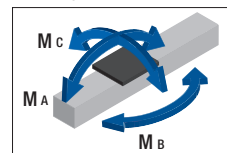
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW16RT	10	0150	A	TH	6	SL	C

USW16RT	10: 10mm	0100: 100mm	A	TH: THC	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)
	20: 20mm	to			Q	SR	
	40: 40mm	1500: 1500mm			N	SL	
					6		
					E		

Basic Specifications

Control device type				THC		
Motor rated output [W]				400		
Ball screw lead [mm]				10	20	40
Rated speed *1 [mm/s]				500	1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	120	80	40
		Vertical mount	0.3G	35	15	9
Rated thrust *3 [N]				653	326	163
Maximum thrust *4 [N]				1910	965	482
Electromagnetic brake retention [N]				638	319	160
Running life *5 [km]				20,000		
Static permissible moment *6 [N·m]				MA: 2161, MB: 740, MC: 1681		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 67, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW16RT + THC



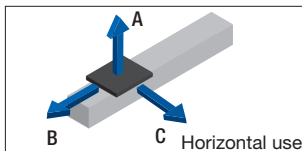
Motor rated output
400W

Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M40	L	S02	D2	H5

A	MR: Motor right wrap	M40: 400W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3: Standard 3m
	ML: Motor left wrap	M40B: 400W with brake	U: Up	S02: Motor side (Home position sensor)	D2: 200V	F5: Standard 5m
	GR: Gray end cap		L: Left	S03: Opposite motor side (Home position sensor)		FA: Standard 10m
	HG: Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3: High flex 3m
				R00: Opposite motor side (Mechanical home seeking)		H5: High flex 5m
						HA: High flex 10m

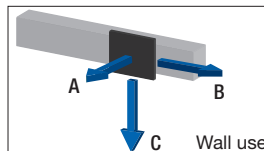
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



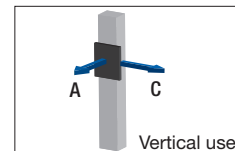
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	2590	950	820
	80	1590	520	440
	120	1130	340	290
20	20	3000	1560	1380
	40	2590	950	820
	80	1590	520	440
40	10	3000	2360	2100
	20	3000	1560	1380
	40	2590	950	820



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	760	900	2480
	80	380	460	1450
	120	230	280	970
20	20	1300	1520	3000
	40	760	900	2480
	80	380	460	1450
40	10	2020	2320	3000
	20	1300	1520	3000
	40	760	900	2480



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	10	2220	2270
	20	1460	1500
	35	970	1000
20	5	3000	3000
	10	2220	2270
	15	1750	1800
40	3	3000	3000
	6	2890	2960
	9	2350	2410

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 100mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

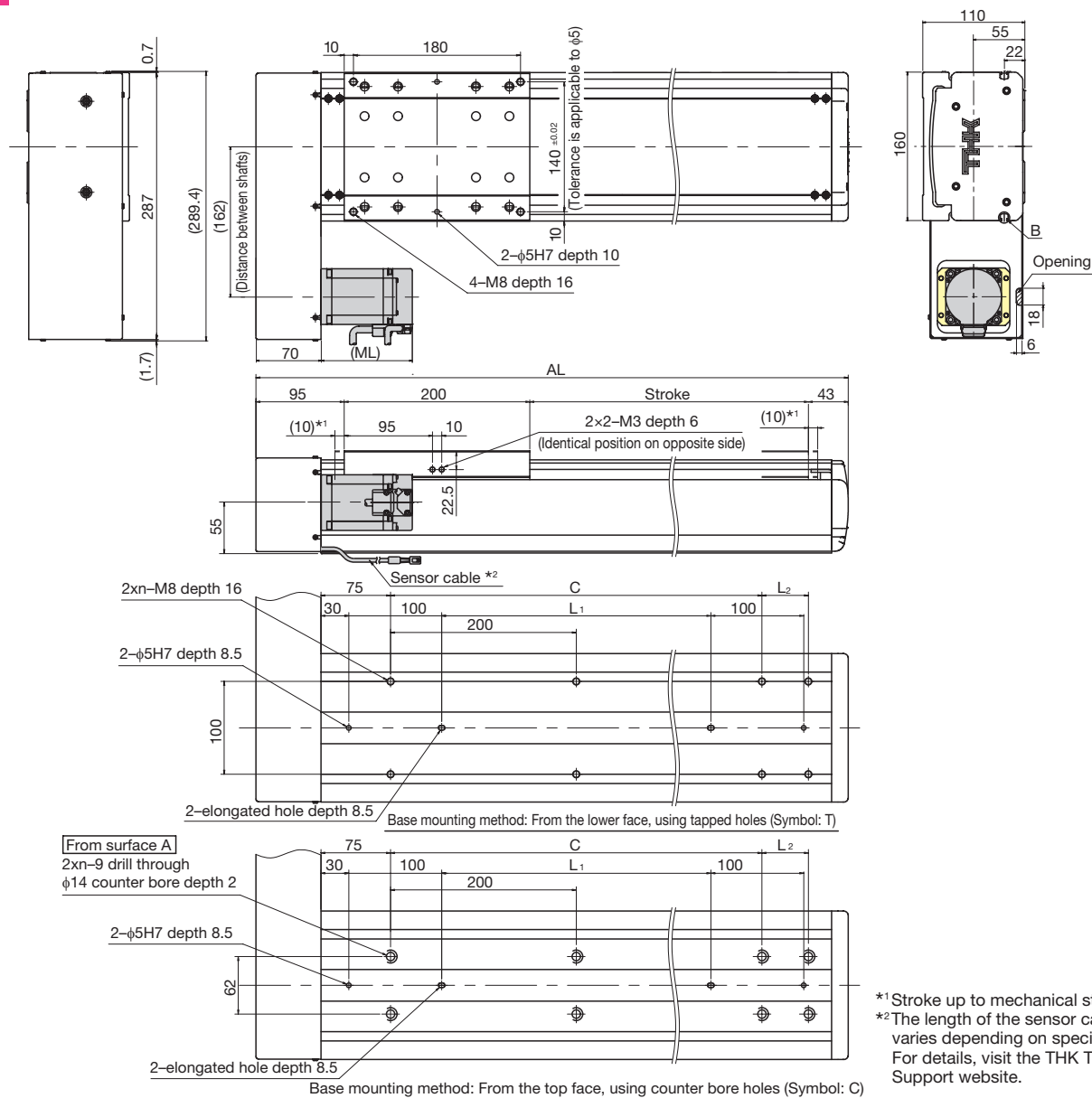
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW16RT



Dimensions



Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550												
		20mm	1100												
		40mm	2200												
Dimensions [mm]	AL	438	488	538	588	638	688	738	788	838	888	938	988		
	ML	98.1													
	ML: With brake	132.7													
	L ₁	90	140	190	240	290	340	390	440	490	540	590	640		
	L ₂	50	100	150	–	50	100	150	–	50	100	150	–		
	C	200	200	200	400	400	400	400	600	600	600	600	800		
Mounting hole count	n	3	3	3	3	4	4	4	4	5	5	5	5		
Weight *3 [kg]			14.7 (15.2)	15.7 (16.2)	16.7 (17.2)	17.7 (18.2)	18.7 (19.2)	19.7 (20.2)	20.7 (21.2)	21.7 (22.2)	22.7 (23.2)	23.7 (24.2)	24.7 (25.2)	25.7 (26.2)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 67, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

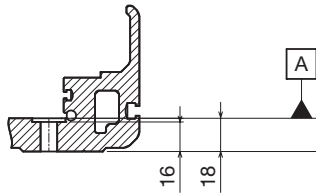
*3 Values when a brake is installed are shown in parentheses.

USW16RT + THC

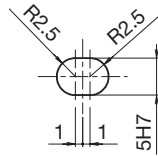


Motor rated output
400W

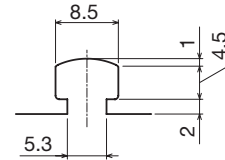
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
550			520	470	420	380	340	310	290	260	240	230	210	190	180	170	160
1100				1040	930	840	760	700	640	590	540	500	460	430	400	380	350
2200				1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690
1038	1088	1138	1188	1238	1288	1338	1388	1438	1488	1538	1588	1638	1688	1738	1788	1838	
98.1																	
132.7																	
690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	
50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50	
800	800	800	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	
6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	
26.7 (27.2)	27.7 (28.2)	28.7 (29.2)	29.7 (30.2)	30.7 (31.2)	31.7 (32.2)	32.7 (33.2)	33.7 (34.2)	34.7 (35.2)	35.7 (36.2)	36.7 (37.2)	37.7 (38.2)	38.7 (39.2)	39.7 (40.2)	40.7 (41.2)	41.7 (42.2)	42.7 (43.2)	

USW20T

Direct motor coupling, 750W



Model Configuration

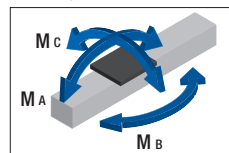
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW20T	20	0300	A	TH	6	SR	C

USW20T	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	A	TH: THC	P Q N 6 E	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)
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Basic Specifications

Control device type				THC	
Motor rated output [W]				750	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	130	70
		Vertical mount	0.3G	45	20
Rated thrust *3 [N]				603	302
Maximum thrust *4 [N]				1810	905
Electromagnetic brake retention [N]				603	302
Running life *5 *6 [km]				20,000 (10,000)	
Static permissible moment *7 [N·m]				M _A : 1921, M _B : 793, M _C : 2221	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 68, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 200mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ 10,000 km with ball screw lead 20 mm in vertical use.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW20T + THC



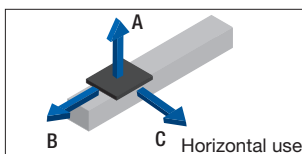
Motor rated output
750W

Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	GR	M75	S02	D2	H5

A	No symbol: Red end cap GR: Gray end cap HG: Hanging jig	M75: 750W M75B: 750W with brake	No symbol: When selecting P or Q S02 : Motor side (Home position sensor) S03 : Opposite motor side (Home position sensor) D00: Motor side (Mechanical home seeking) R00 : Opposite motor side (Mechanical home seeking)	D2: 200V	F3 : Standard 3m F5 : Standard 5m FA : Standard 10m H3 : High flex 3m H5 : High flex 5m HA: High flex 10m
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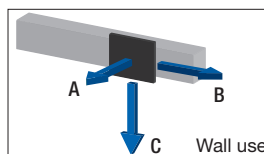
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



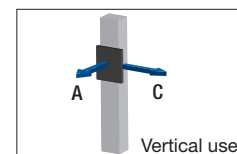
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	2640	950	1260
	80	1640	530	720
	130	1100	320	450
40	25	3000	1340	1750
	50	2290	790	1070
	70	1810	590	810



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	1180	920	2630
	80	650	490	1590
	130	390	290	1030
40	25	1660	1320	3000
	50	990	770	2270
	70	740	560	1770



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	15	1700	1770
	30	1060	1100
	45	770	800
40	5	3000	3000
	10	2160	2240
	20	1410	1470

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 200mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

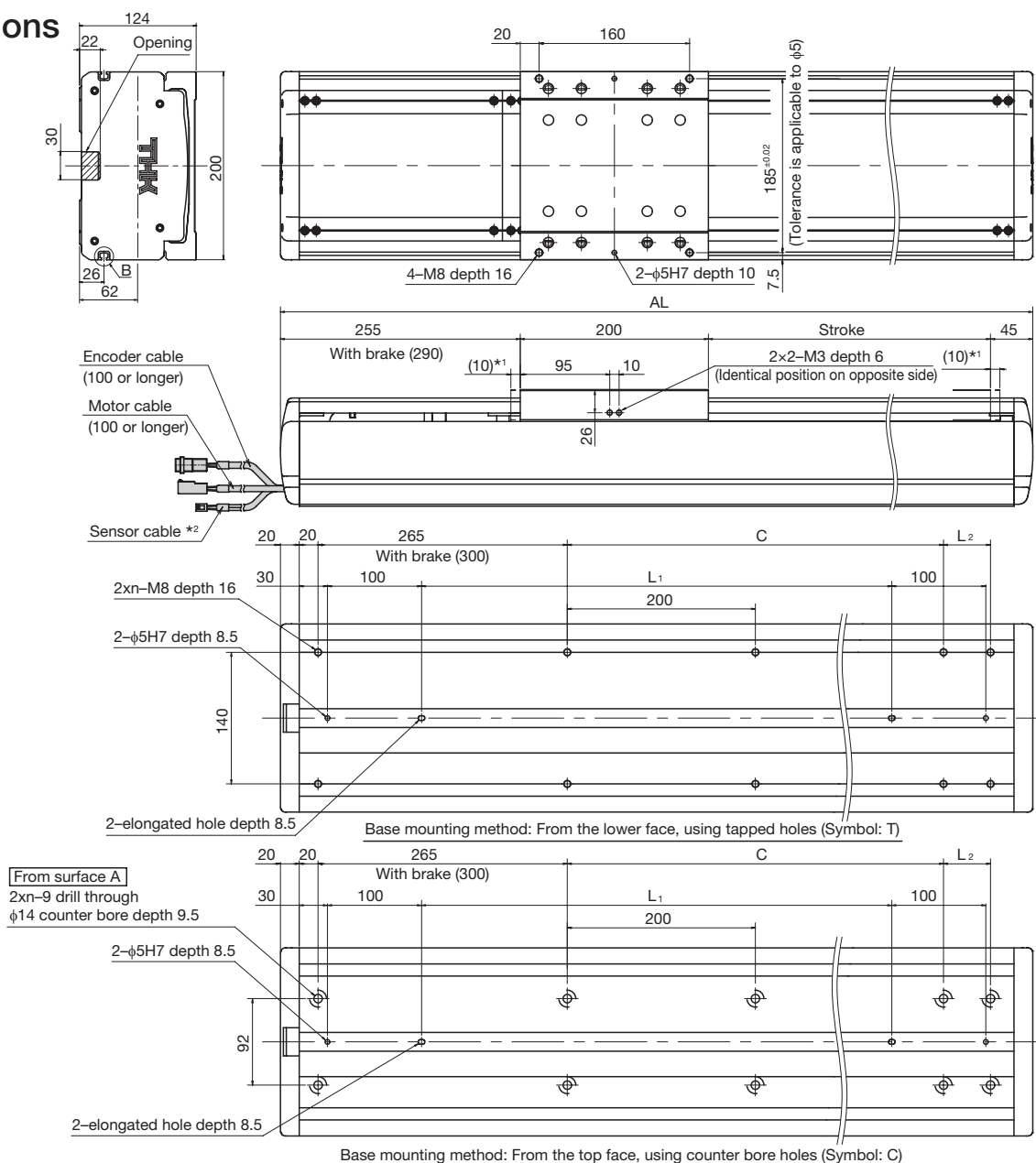
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW20T



Dimensions



*1 Stroke up to mechanical stopper.

*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100													
		40mm	2200													2140
Dimensions [mm]	AL *3		700 (735)	750 (785)	800 (835)	850 (885)	900 (935)	950 (985)	1000 (1035)	1050 (1085)	1100 (1135)	1150 (1185)	1200 (1235)	1250 (1285)	1300 (1335)	
	L ₁ *3		400 (435)	450 (485)	500 (535)	550 (585)	600 (635)	650 (685)	700 (735)	750 (785)	800 (835)	850 (885)	900 (935)	950 (985)	1000 (1035)	
	L ₂		150	–	50	100	150	–	50	100	150	–	50	100	150	
	C		200	400	400	400	400	600	600	600	600	800	800	800	800	800
Mounting hole count	n		4	4	5	5	5	5	6	6	6	6	7	7	7	
Weight *3 [kg]			25.1 (26.7)	26.4 (28)	27.8 (29.4)	29.2 (30.8)	30.6 (32.2)	32.1 (33.7)	33.4 (35)	34.8 (36.4)	36.2 (37.8)	37.6 (39.2)	39.1 (40.7)	40.4 (42)	41.8 (43.4)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 68, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

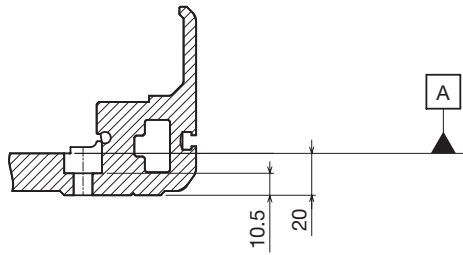
*3 Values when a brake is installed are shown in parentheses.

USW20T + THC

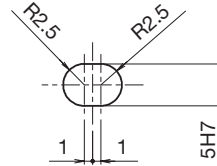


Motor rated output
750W

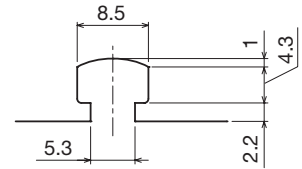
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270
	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530
	1350 (1385)	1400 (1435)	1450 (1485)	1500 (1535)	1550 (1585)	1600 (1635)	1650 (1685)	1700 (1735)	1750 (1785)	1800 (1835)	1850 (1885)	1900 (1935)	1950 (1985)	2000 (2035)	2050 (2085)	2100 (2135)	2150 (2185)	2200 (2235)
	1050 (1085)	1100 (1135)	1150 (1185)	1200 (1235)	1250 (1285)	1300 (1335)	1350 (1385)	1400 (1435)	1450 (1485)	1500 (1535)	1550 (1585)	1600 (1635)	1650 (1685)	1700 (1735)	1750 (1785)	1800 (1835)	1850 (1885)	1900 (1935)
	–	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	1600	1600	1800	1800
	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12
	43.2 (44.8)	44.6 (46.2)	45.8 (47.4)	47.4 (49)	48.8 (50.4)	50.2 (51.8)	51.6 (53.2)	53.1 (54.7)	54.4 (56)	55.8 (57.4)	57.2 (58.8)	58.6 (60.2)	60.1 (61.7)	61.4 (63)	62.8 (64.4)	64.2 (65.8)	65.6 (67.2)	67.1 (68.7)

USW20RT

Motor wrap, 750W



Model Configuration

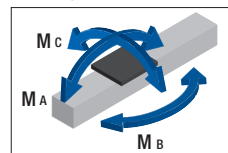
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method
USW20RT	20	0300	A	TH	6	SL	C

USW20RT	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	A	TH: THC	P Q N 6 E	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)
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Basic Specifications

Control device type				THC	
Motor rated output [W]				750	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	130	70
		Vertical mount	0.3G	45	20
Rated thrust *3 [N]				603	302
Maximum thrust *4 [N]				1810	905
Electromagnetic brake retention [N]				603	302
Running life *5 *6 [km]				20,000 (10,000)	
Static permissible moment *7 [N·m]				M _A : 1921, M _B : 793, M _C : 2221	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



*¹ At rated motor speed (3,000 min⁻¹).

*² Load capacity and maximum speed are dependent on usage conditions. See page 68, "Speed and Load Capacity."

*³ At rated motor torque.

*⁴ Dependent on maximum peak torque and permissible load.

*⁵ Conditions:

Stroke: 200mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity

Center of gravity: center of top surface of table.

*⁶ 10,000 km with ball screw lead 20 mm in vertical use.

*⁷ Maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

USW20RT + THC



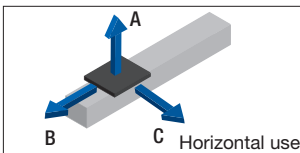
Motor rated output
750W

Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR-GR	M75	L	S02	D2	H5

A	MR: Motor right wrap	M75: 750W	R: Right	No symbol: When selecting P or Q	D2: 200V	F3: Standard 3m
	ML: Motor left wrap	M75B: 750W with brake	U: Up	S02: Motor side (Home position sensor)		F5: Standard 5m
	GR: Gray end cap		L: Left	S03: Opposite motor side (Home position sensor)		FA: Standard 10m
	HG: Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3: High flex 3m
				R00: Opposite motor side (Mechanical home seeking)		H5: High flex 5m
						HA: High flex 10m

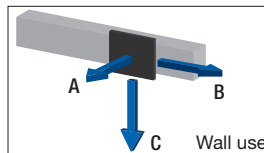
Note: If the GR is not included in the model configuration, cover will be red.

Permissible Overhang Length*



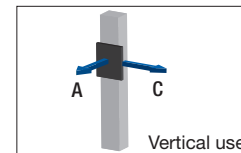
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	2640	950	1260
	80	1640	530	720
	130	1100	320	450
40	25	3000	1340	1750
	50	2290	790	1070
	70	1810	590	810



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	1180	920	2630
	80	650	490	1590
	130	390	290	1030
40	25	1660	1320	3000
	50	990	770	2270
	70	740	560	1770



Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	15	1700	1770
	30	1060	1100
	45	770	800
40	5	3000	3000
	10	2160	2240
	20	1410	1470

*Dependent on running life of LM guide (20,000km) and on static permissible moment.

Conditions for calculation of the values above:

Stroke: 200mm

Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

Applied load: maximum load capacity.

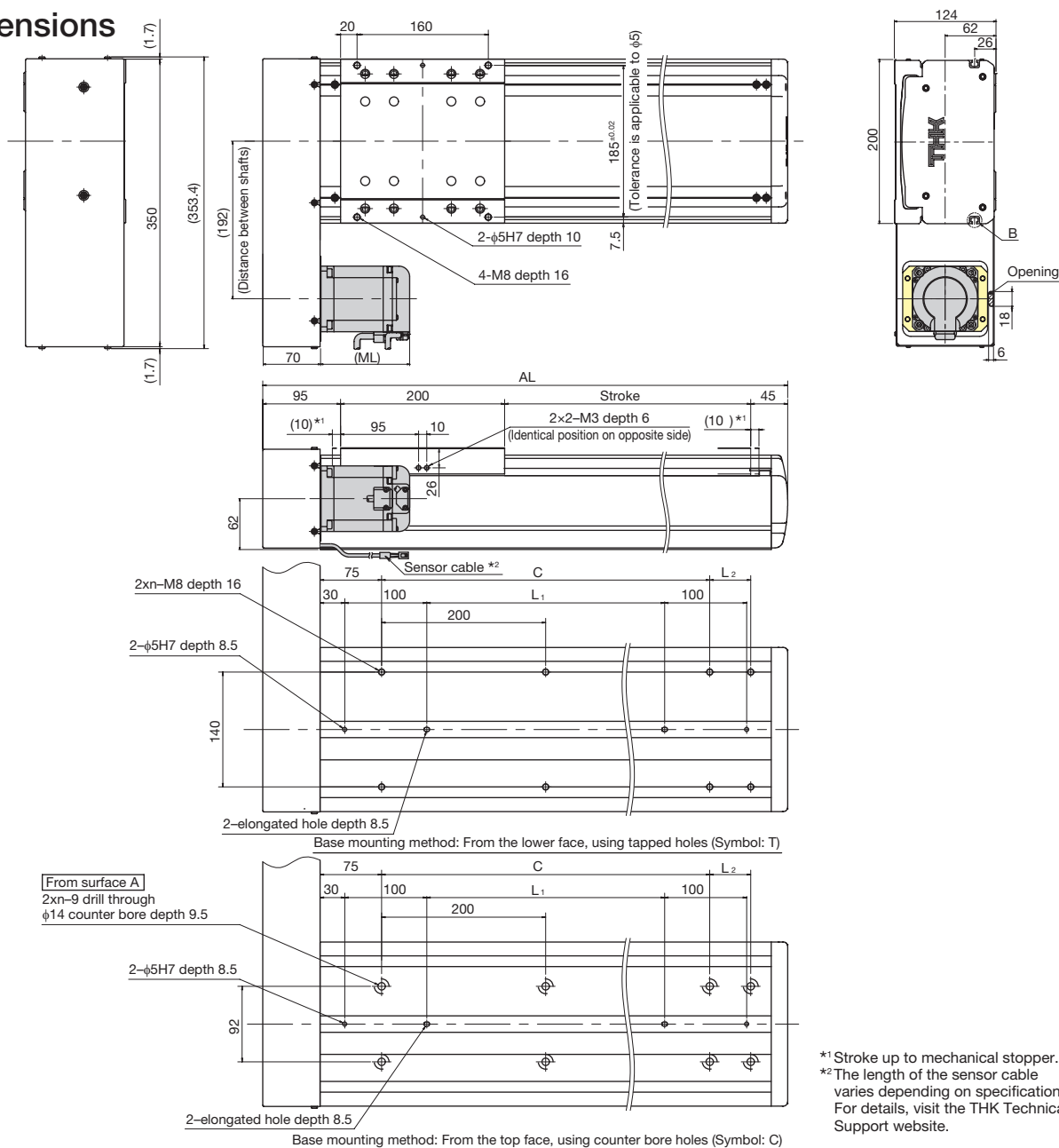
A, B, and C represent distances measured from the center of the top surface of the table.

USW20RT

Motor wrap, 750W



Dimensions



Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100													
		40mm	2200													2140
Dimensions [mm]	AL		540	590	640	690	740	790	840	890	940	990	1040	1090	1140	
	ML		108.7													
	ML: With brake		145.3													
	L ₁		190	240	290	340	390	440	490	540	590	640	690	740	790	
	L ₂		150	–	50	100	150	–	50	100	150	–	50	100	150	
Mounting hole count	C		200	400	400	400	400	600	600	600	600	800	800	800	800	
	n		3	3	4	4	4	4	5	5	5	5	6	6	6	
Weight *3 [kg]			27.3 (28.2)	28.6 (29.5)	29.9 (30.8)	31.3 (32.2)	32.7 (33.6)	34.1 (35)	35.4 (36.3)	36.7 (37.6)	38.1 (39)	39.4 (40.3)	40.8 (41.7)	42.1 (43)	43.5 (44.6)	

*1 Load capacity and maximum speed are dependent on usage conditions. See page 68, "Speed and Load Capacity."

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

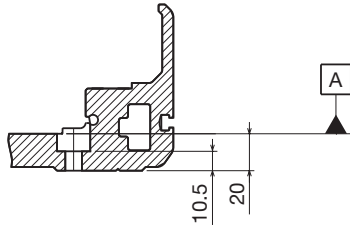
*3 Values when a brake is installed are shown in parentheses.

USW20RT + THC

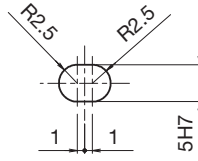


Motor rated output
750W

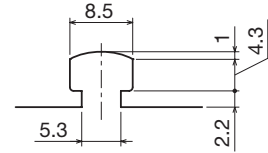
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270
	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530
	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690	1740	1790	1840	1890	1940	1990	2040
	108.7																	
	145.3																	
	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690
	–	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	1600	1600	1800	1800
	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
	44.8 (45.7)	46.2 (47.1)	47.6 (48.5)	48.9 (49.8)	50.2 (51.1)	51.6 (52.5)	52.9 (53.8)	54.3 (55.2)	55.6 (56.5)	56.9 (57.8)	58.3 (59.2)	59.7 (60.6)	61.1 (62)	62.4 (63.3)	63.7 (64.6)	65.1 (66)	66.4 (67.3)	67.8 (68.7)

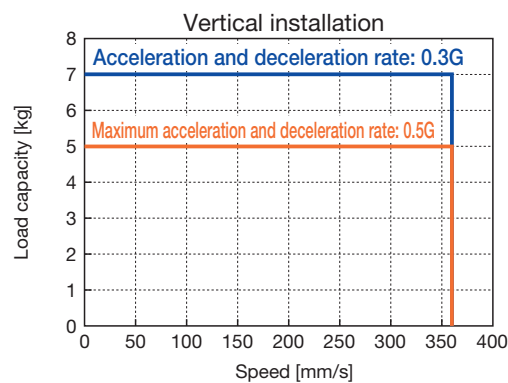
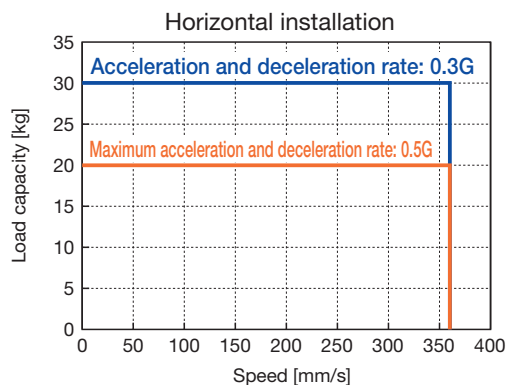
Speed and Load Capacity

Load capacity and maximum speed vary depending on usage conditions.

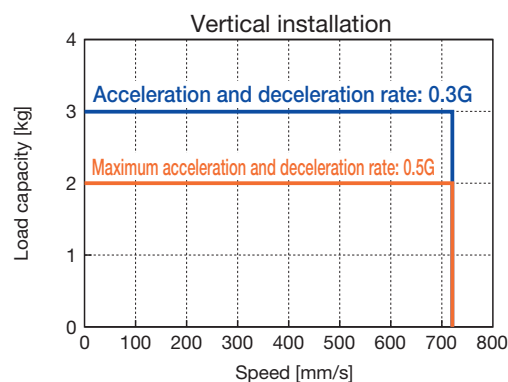
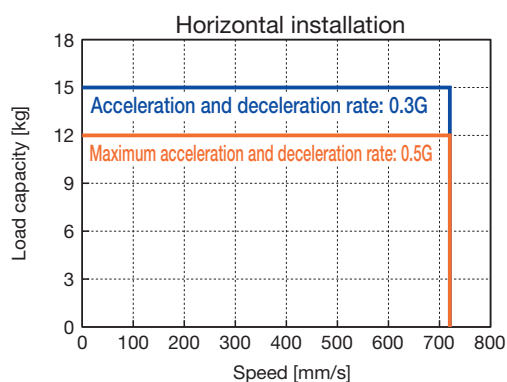
Conditions must be within the ranges shown below.

US6 (50W) with controller TLC

■ Lead 6mm

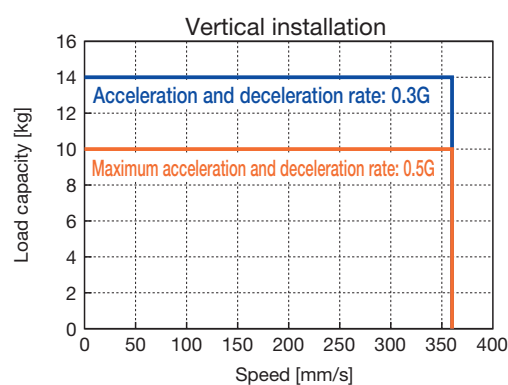
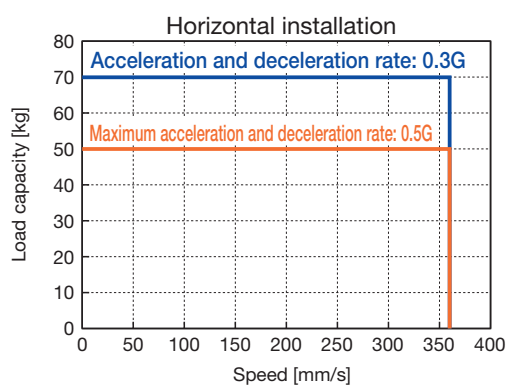


■ Lead 12mm

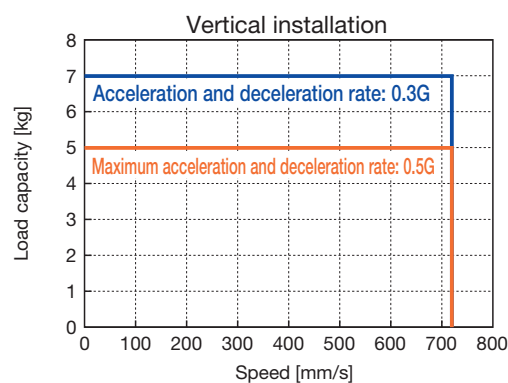
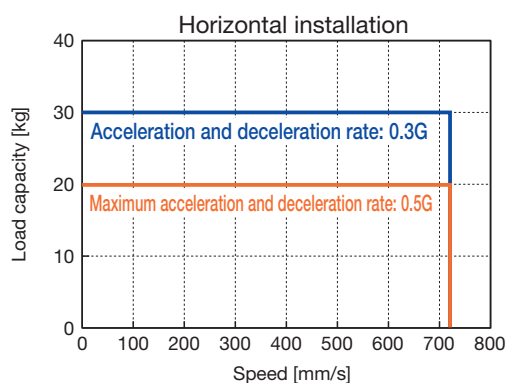


US6 (100W) with controller THC

■ Lead 6mm



■ Lead 12mm

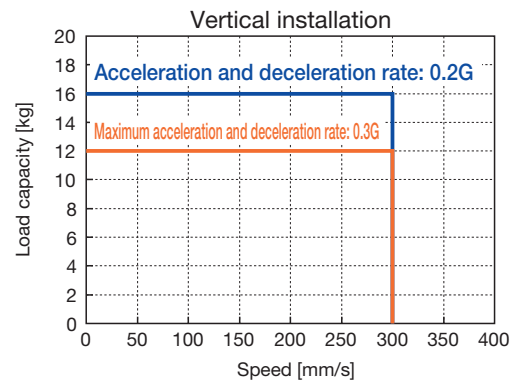
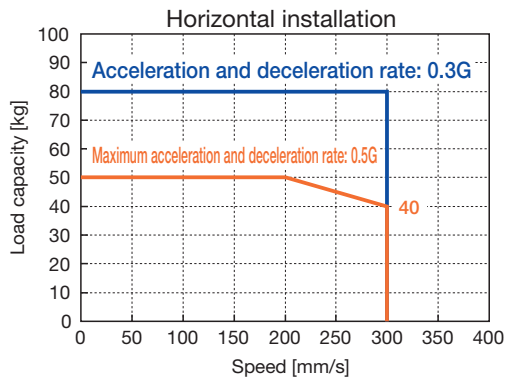


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

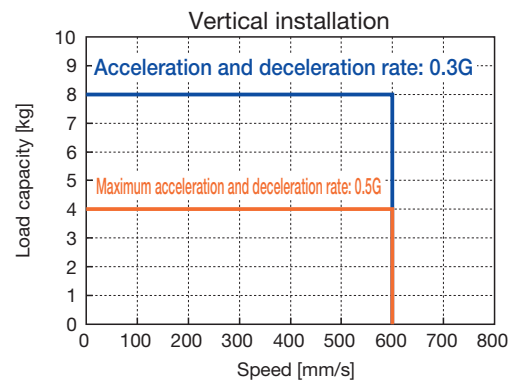
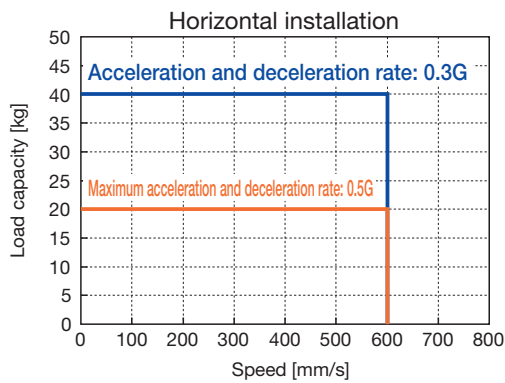
US8 (100W) with controller THC



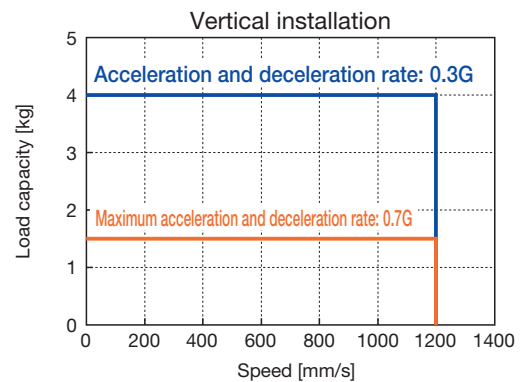
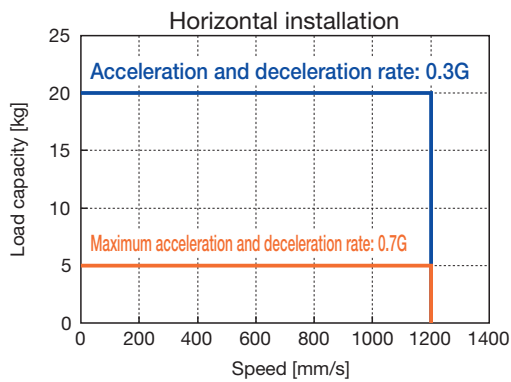
■ Lead 5mm



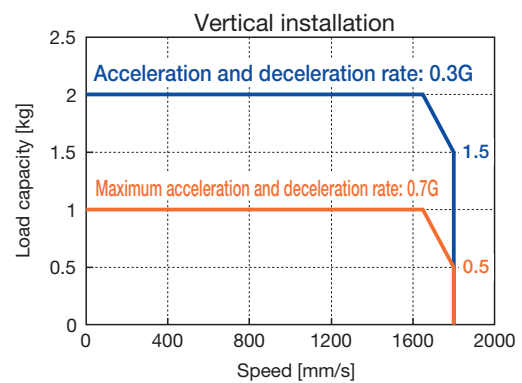
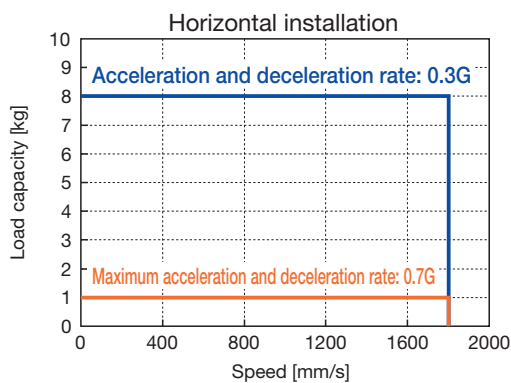
■ Lead 10mm



■ Lead 20mm



■ Lead 30mm

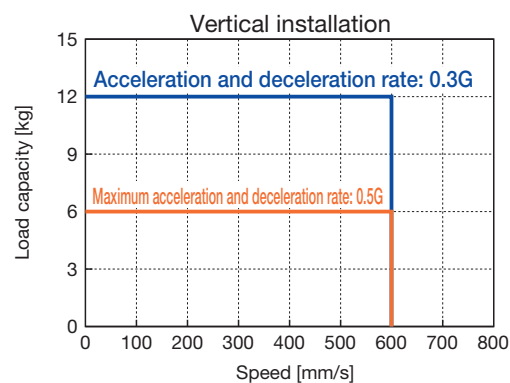
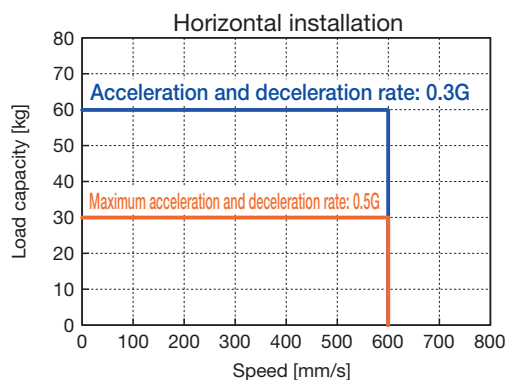


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

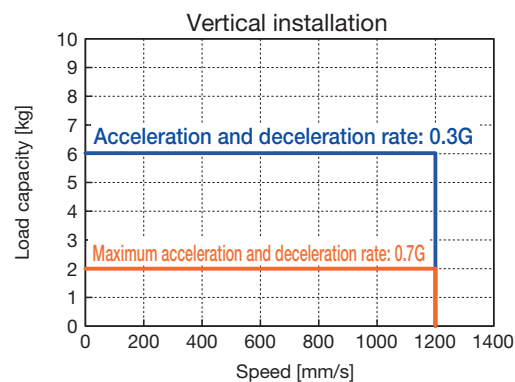
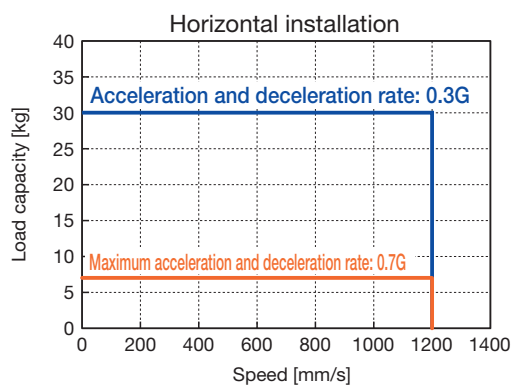
US8 (150W) with controller THC



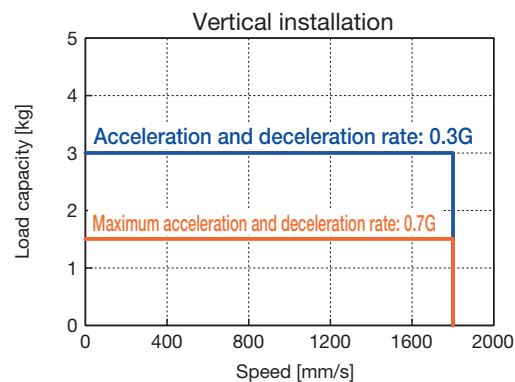
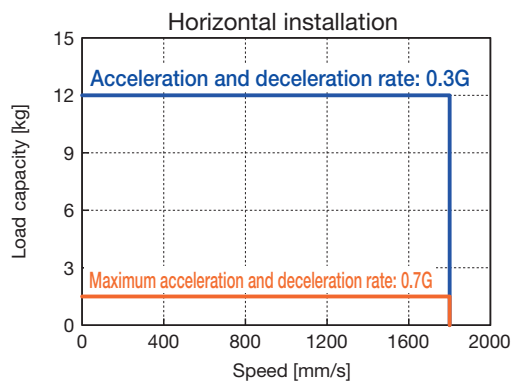
■ Lead 10mm



■ Lead 20mm



■ Lead 30mm

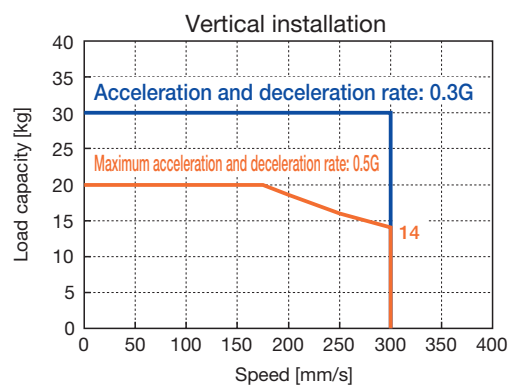
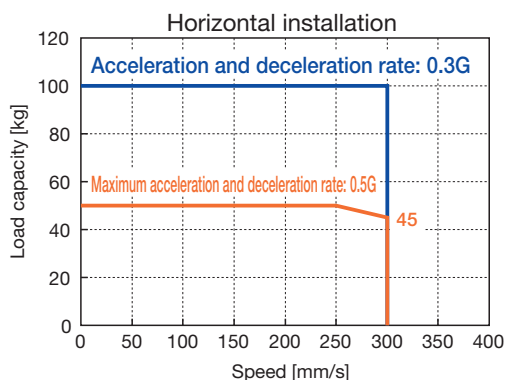


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

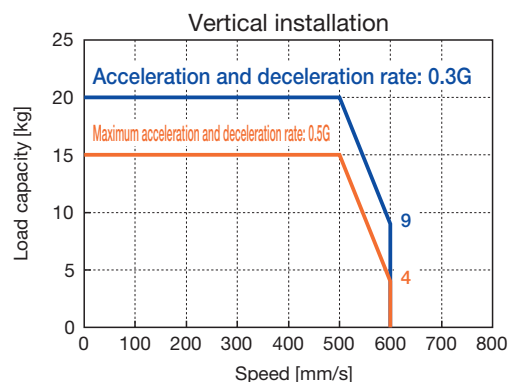
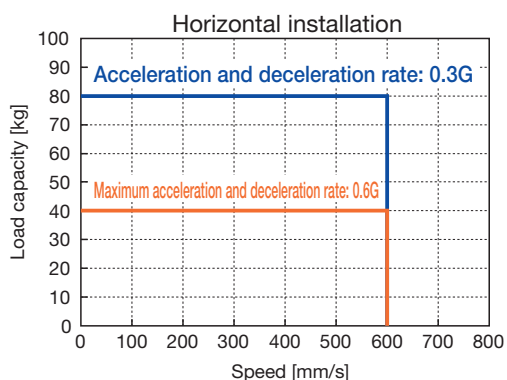
USW12 with controller THC



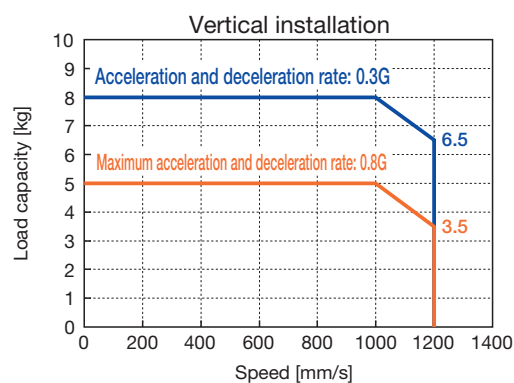
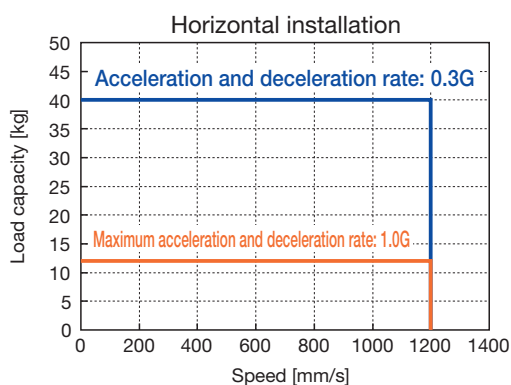
■ Lead 5mm



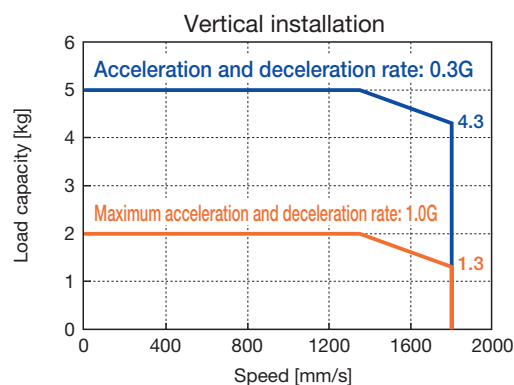
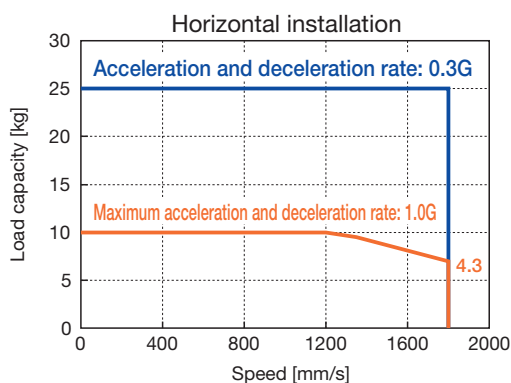
■ Lead 10mm



■ Lead 20mm



■ Lead 30mm

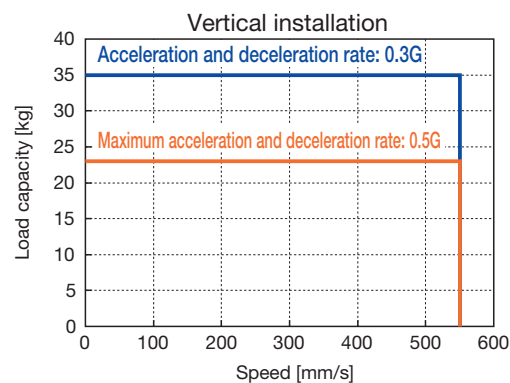
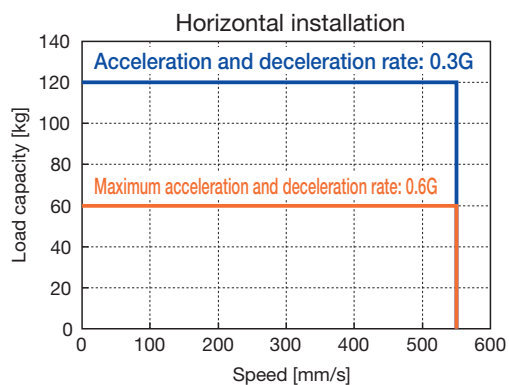


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

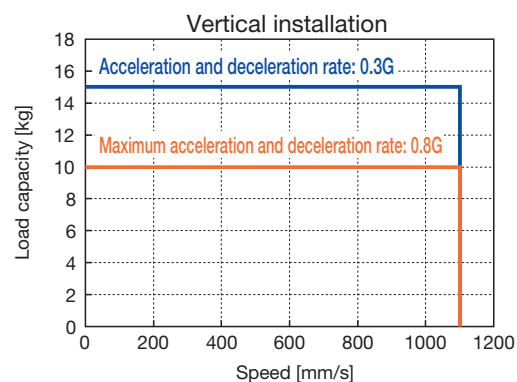
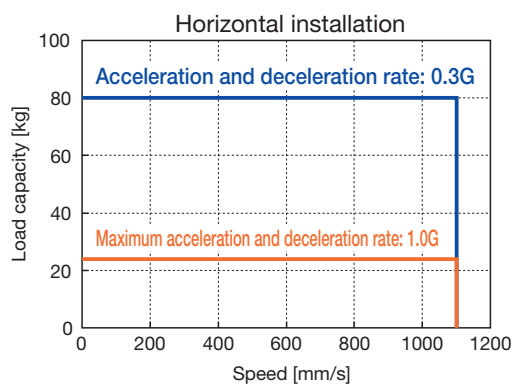
USW16 with controller THC



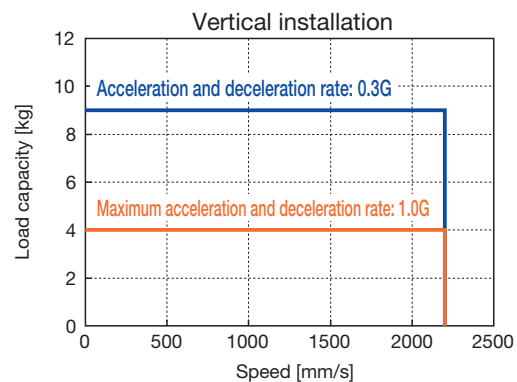
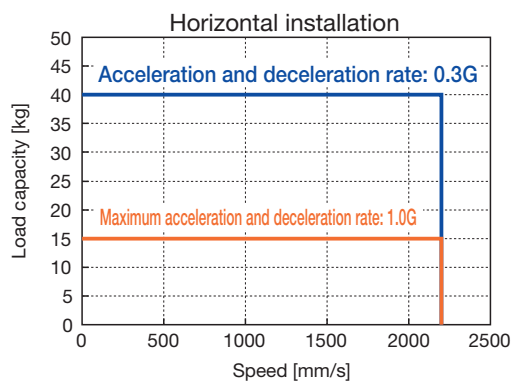
■ Lead 10mm



■ Lead 20mm



■ Lead 40mm

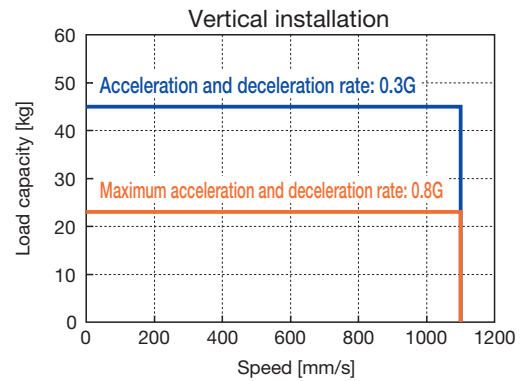
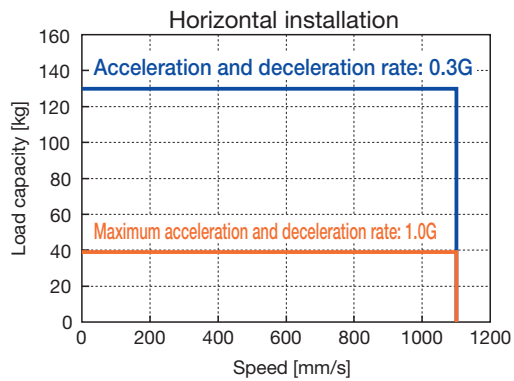


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

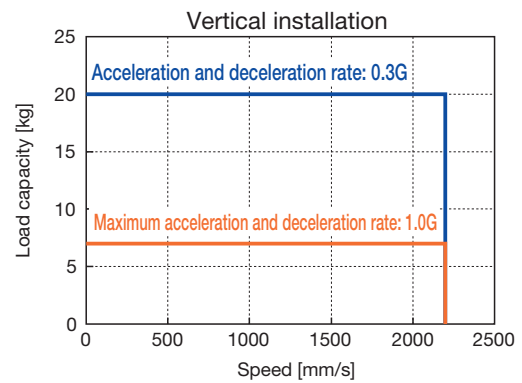
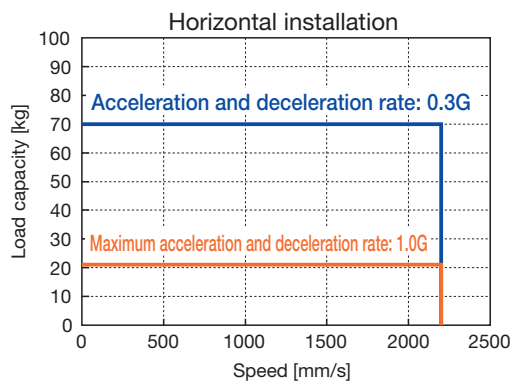
USW20 with controller THC



■ Lead 20mm



■ Lead 40mm



Sensors

Various types of sensors can be mounted using a T slot on the side surface of the base. Select a sensor by specifying the appropriate option symbol. The standard sensor is mounted inside the actuator.

Description	Type	Symbol
Standard US8 [x 1], USW12/16/20 [x 3] (Home position on motor side)	US8: APM-D3A1 (Azbil Corp.) USW12/16/20: EE-SX674 (Omron Corp.)	P
Standard US8 [x 1], USW12/16/20 [x 3] (Home position opposite motor side)	US8: APM-D3A1 (Azbil Corp.) USW12/16/20: EE-SX674 (Omron Corp.)	Q
None	—	N
Photo sensor [x 3], Connector [x 3]	EE-SX674 (Omron Corp.), EE-1001 (Omron Corp.)	6
Sensor N.O. contact [x 1] N.C. contact [x 2]	APM-D3A1 (Azbil Corp.) APM-D3B1 (Azbil Corp.)	E

N.O. contact: Normally open contact point

N.C. contact: Normally closed contact point

* The photo sensors can be switched between ON when lit and ON when unlit.

Notes:

1. The standard sensor for US8 is APM-D3A1 (Azbil Corp.); the standard sensor for USW12/16/20 is EE-SX674 (Omron Corp.).

2. Non-standard sensors (symbol: 6, E) are mounted outside the cover.

3. When motor wrap is selected, a sensor cannot be mounted on the same side as the motor wrap direction of the motor.

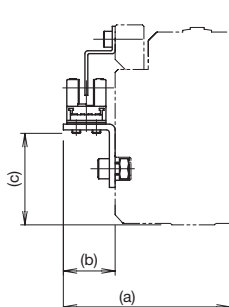
4. Proximity sensors placed too close to each other may not work properly. In such a case, please prepare a different frequency type of sensor. (For specifications, contact each manufacturer.)

5. The unit is shipped with sensors, mounting screws, sensor dogs, and connectors mounted.

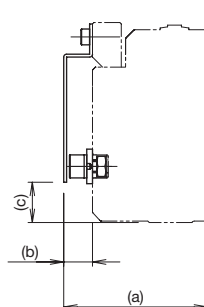
6. The standard sensor will not be mounted if a different sensor option is selected.

Sensor-mounting positions: dimensions

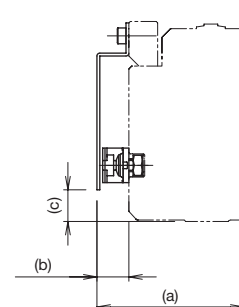
■US6/8



Symbol 6: EE-SX674 (Omron Corp.)

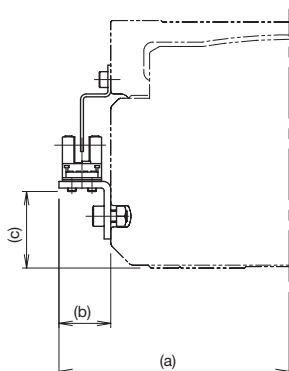


Symbol E: APM-D3** (Azbil Corp.)

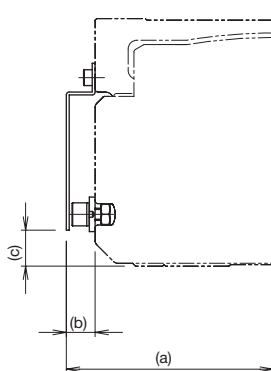


Symbol J, M: GX-F12*
(Panasonic Industrial Devices SUNX Co., Ltd.)

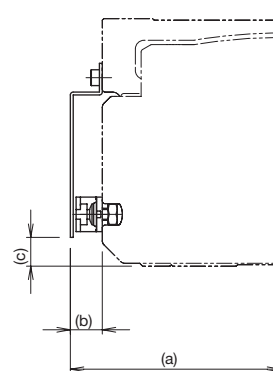
■USW12/16/20



Symbol 6: EE-SX674 (Omron Corp.)



Symbol E: APM-D3** (Azbil Corp.)



Symbol J, M: GX-F12*
(Panasonic Industrial Devices SUNX Co., Ltd.)

Model	a	b	c
US6	50.5	18	36.6
US8	58	18	31.8
USW12	80	18	26.6
USW16	98	18	30.6
USW20	118	18	34.6

Model	a	b	c
US6	43.5	11	23
US8	50	10	14
USW12	72	10	12.5
USW16	91	11	25.5
USW20	111	11	31

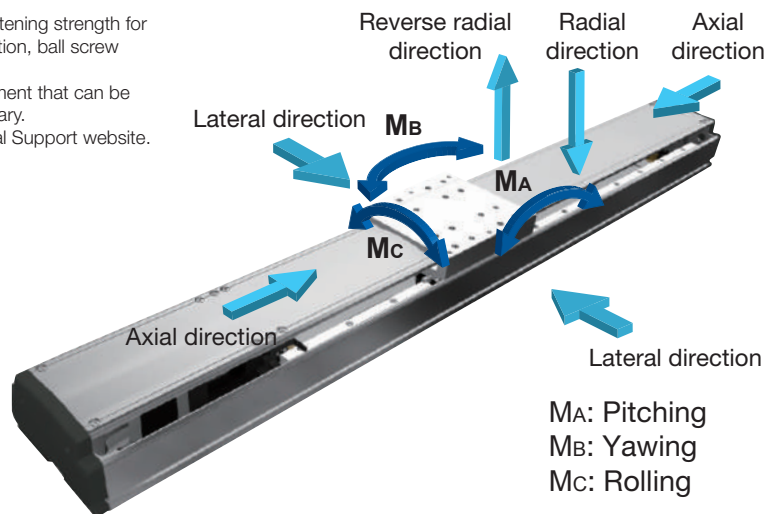
Model	a	b	c
US6	43.5	11	23
US8	51.1	11.1	11
USW12	73	11	10
USW16	92	12	29
USW20	112	12	33

Static Permissible Load and Static Permissible Moment

Model		US6	US8	USW12	USW16	USW20
Static permissible load ^{*1} [N]	Radial direction	17100	45400	96800	153600	209600
	Reverse radial direction	16753	28599	14300	24007	24007
	Lateral direction	3651	7520	3760	6488	6488
	Axial direction	1740 (Direct motor coupling)	2095 (100W, direct motor coupling)	3330	3760	2571
			2689 (100W, motor wrap)			
		1288 (Motor wrap)	1047 (150W, direct motor coupling)			
			1345 (150W, motor wrap)			
Static permissible moment ^{*2} [N·m]	M _A	123	287	915	2161	1921
	M _B	127	235	317	740	793
	M _C	138	226	786	1681	2221

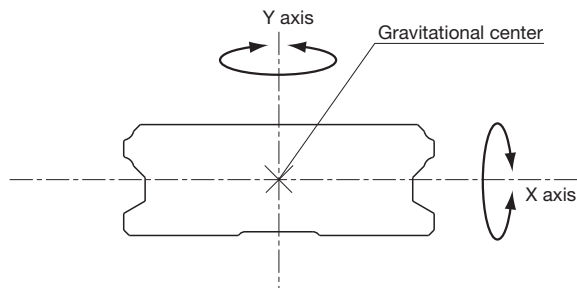
^{*1} The static permissible load is determined by the tightening strength for bolts and the static load ratings of the LM guide portion, ball screw portion, and support bearing.

^{*2} The static permissible moment is the maximum moment that can be applied in each direction while the product is stationary. For details on the nominal life, visit the THK Technical Support website.

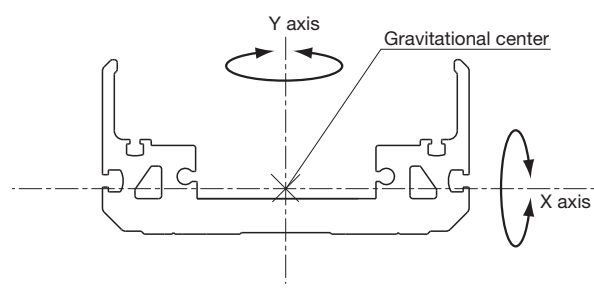


Geometrical Moment of Inertia

■ US6/8

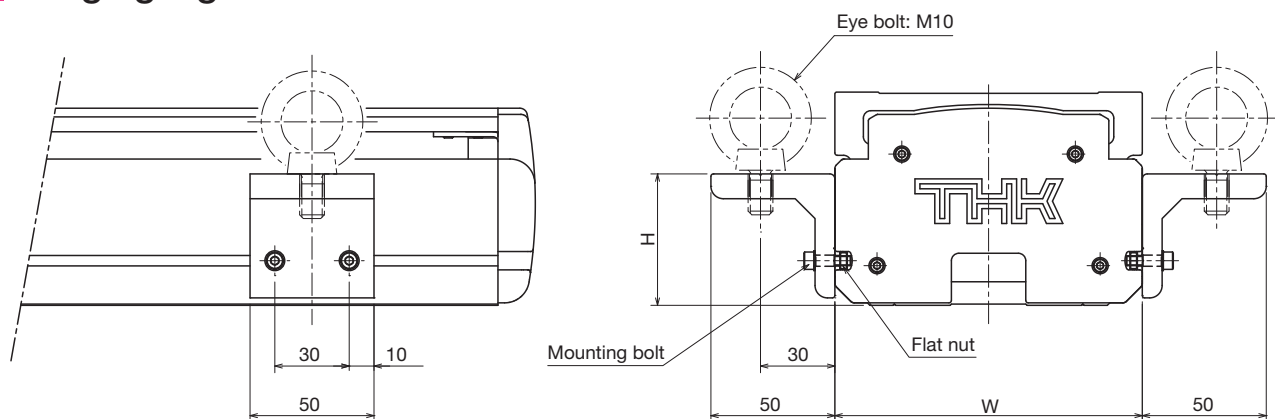


■ USW12/16/20



Model	I _x [mm ⁴]	I _y [mm ⁴]	Weight [kg/m]
US6	2.80×10 ³	5.20×10 ⁴	2.97
US8	1.11×10 ⁴	7.74×10 ⁴	4.61
USW12	4.07×10 ⁵	4.62×10 ⁶	6.67
USW16	1.27×10 ⁶	1.22×10 ⁷	11.55
USW20	2.19×10 ⁶	2.67×10 ⁷	16.06

Hanging Jig



[mm]

Model	W	H
USW12	124	53
USW16	160	52
USW20	200	56

Notes:

1. THK recommends using hanging jigs when the weight of the main actuator unit exceeds 20kg.
2. Hanging jigs are suitable for use with models USW12/16/20.
3. When the unit is shipped with hanging jigs mounted to the actuator, the customer must provide four M10 eyebolts (JIS B 1169 equivalent).
4. When the 6 E sensor option has been selected and the unit is shipped with hanging jigs mounted to the actuator, the sensor should be mounted at the end of the base on the motor side.
5. Hanging jigs can be ordered a separate item: Model USW __ -HANG (4 hanging jigs and 4 flat nuts). The customer must provide eight mounting bolts and four eyebolts.

Model	Recommended mounting bolt
USW12	Hexagonal-socket-head type bolt, M4-15L
USW16	Hexagonal-socket-head type bolt, M5-15L
USW20	Hexagonal-socket-head type bolt, M5-15L

Low-capacity servo driver controller

TLC

For single axis / Position type



Features

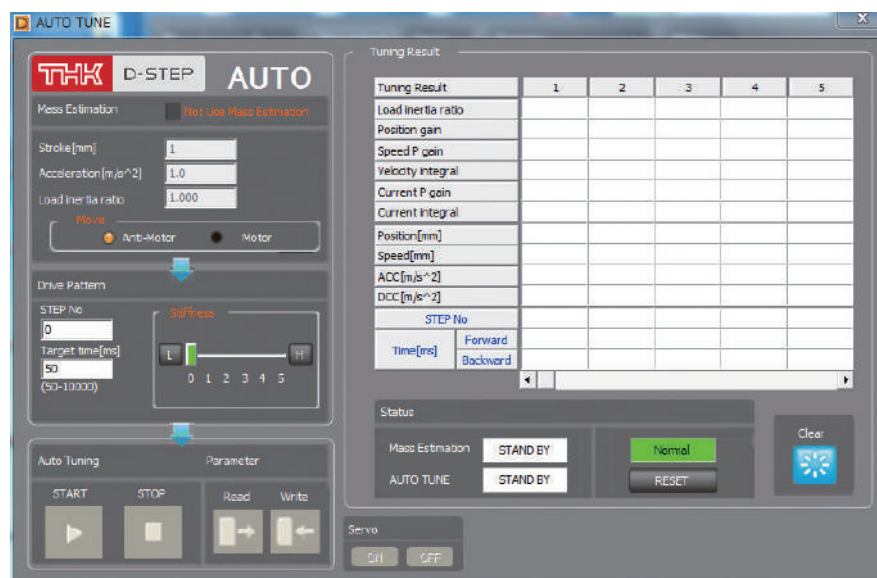
Ready to use, simplified setup.

Simple Operation

Use PC setup tool D-STEP or digital operator TDO to access many useful functions.

Functions

- Selectable function modes
(64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
- Step data count: Up to 512 (depending on function mode)
- Alarm history: Up to 50 (including power ON history)
- Switching between Auto/Manual, brake release switch
- Selectable control methods (positioning or pressing)
- Auto-tuning functionality built-in



Combined Control Device Model Configuration (TLC)

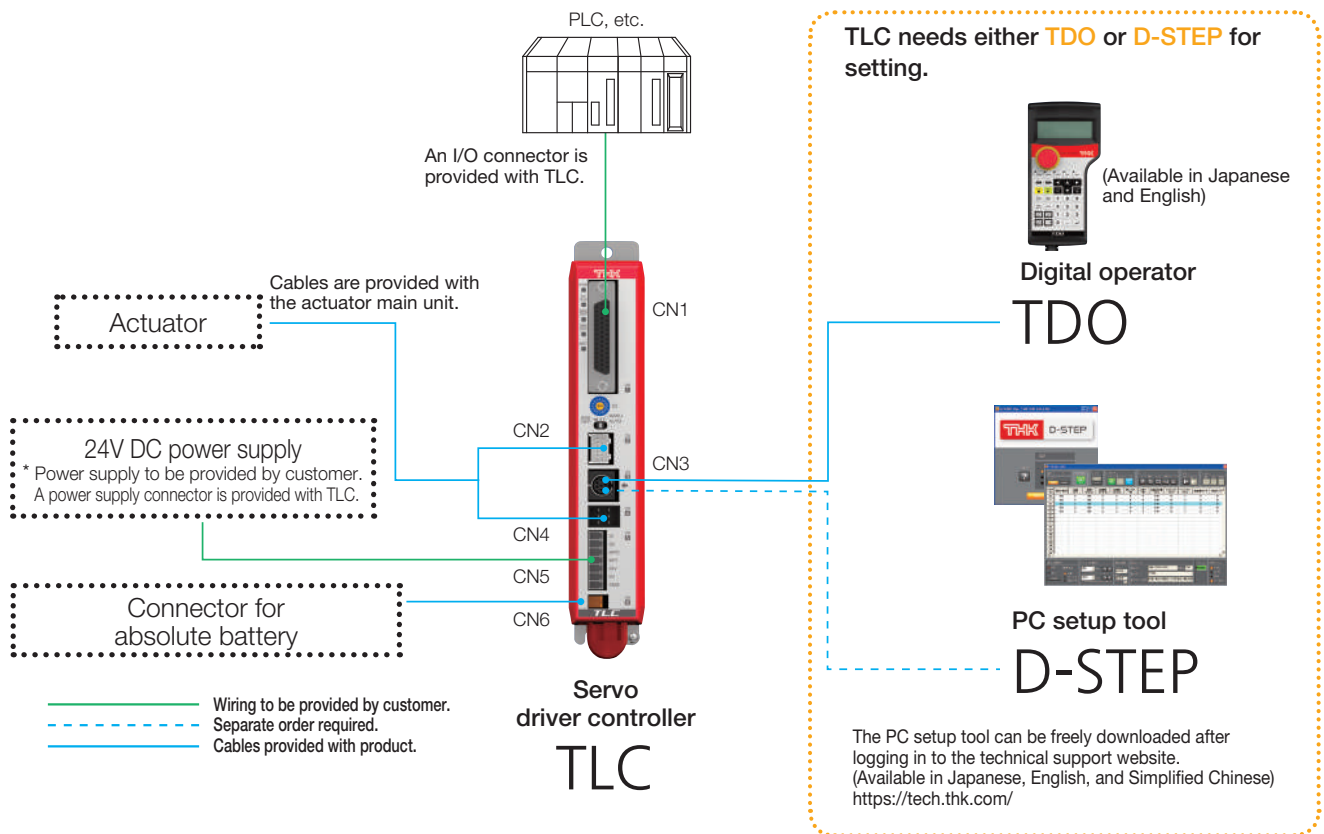
Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
TLC	005	024DC	MOD	A	US6T	12	D	B	0100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24VDC	MOD: Mode switching type	A: Absolute	Direct coupling US6T Motor wrap US6RT	06: 6mm 12: 12mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0100: 100mm

TLC Specifications

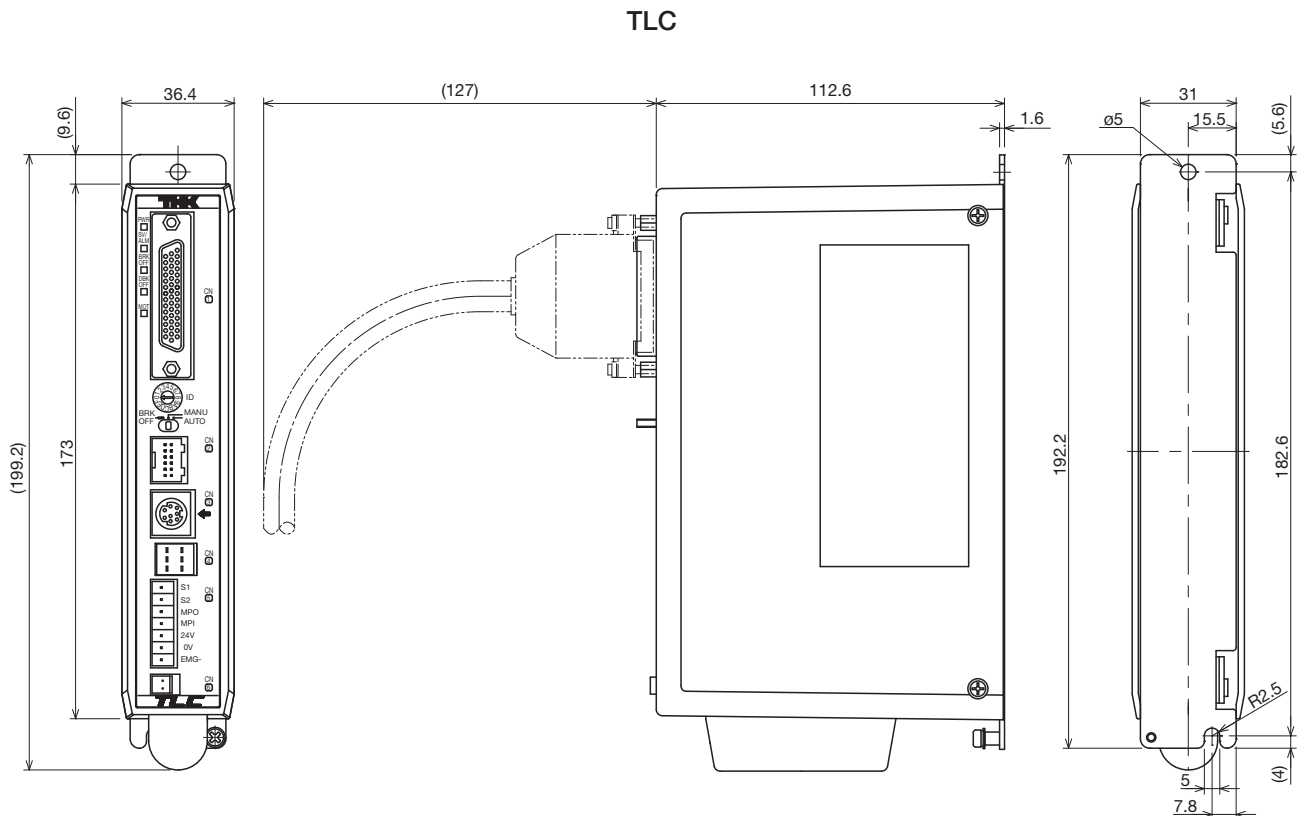
Type of machine	Model		TLC					
	Capacity		50W					
Input power supply	Main circuit		24VDC±10%					
	Control circuit							
	Power supply [A]		Rated 6A (Max 16A)					
Control	Control axis		Single axis					
	Motor		AC servo motor					
	Control		Feedback control (Semi-closed loop)					
	Position detection		Absolute					
	Acceleration/deceleration		Trapezoid acceleration, S-shape acceleration					
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points
	Data input/output		PC setup tool D-STEP or Digital operator TDO					
Input/output	Dedicated input/output	Input points	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *					
		Output points	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, etc.) *					
	Input/output power supply		24VDC ±10% (This should be prepared by yourself.)					
Communication	Serial communication	Device	Digital operator or PC software					
		Method	RS-485					
		Ports	Mini DIN × 1					
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing) / -20 to 85°C (No freezing)					
	Operating/storage humidity		90% RH or below (No condensation)					
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist, dust, water, oil and chemicals)					
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.					
	Accessories		Power supply connector × 1 I/O connector × 1					
	Options (sold separately)		Digital operator TDO (Cable length 5m) I/O cable 3m, 5m, 7m, and 10m Communication cable (Mini DIN↔USB)					
	External dimensions [mm]		36.4mm (W)×199.2mm (H)×112.6mm (D)					
Weight (not including battery)		0.4kg or less						

* This count varies depending on function mode.

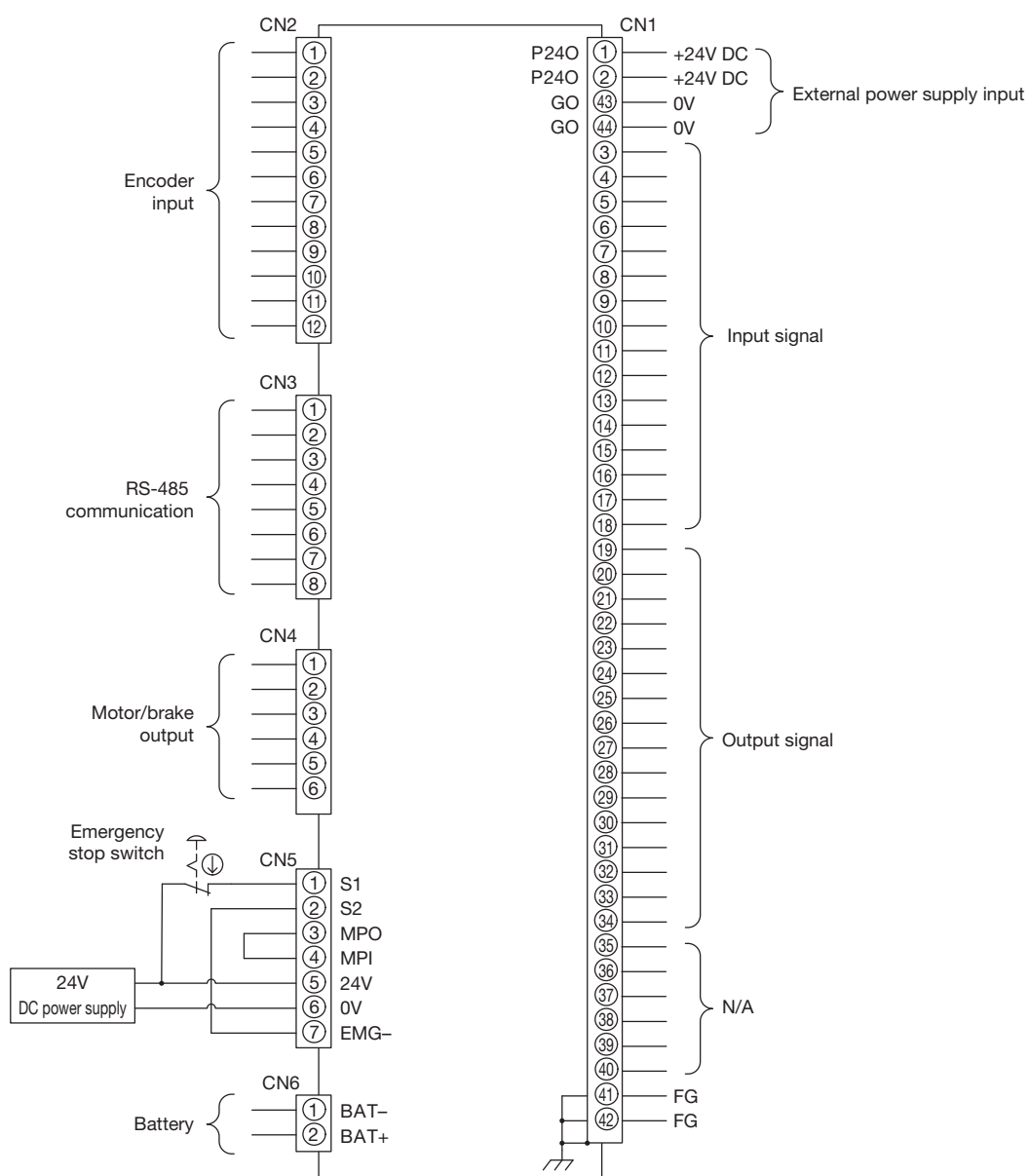
System Configuration



Dimensional Drawing of Controller



TLC Pin Assignment

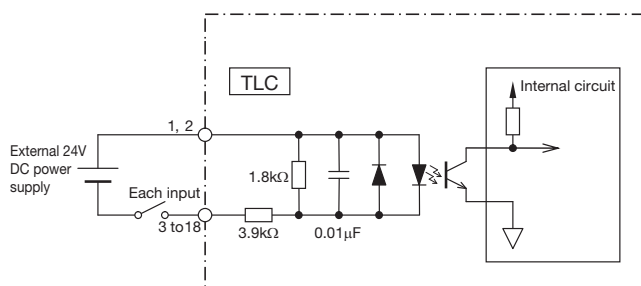


* For attached I/O connector pin numbers, see P.77.

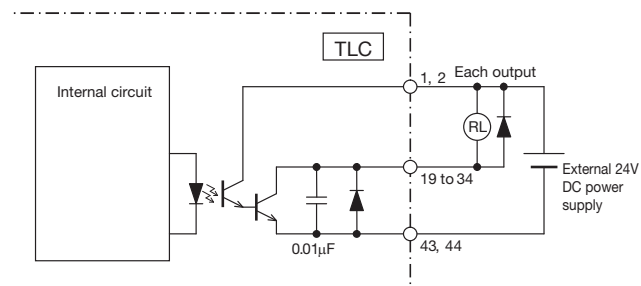
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for TLC (CN1)

Input circuit



Output circuit



TLC Function Modes

TLC provides six modes to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output and P area output	3	–

Pin Assignment by Function Mode

I/O	CN1 pin number	Signal name					
		Function mode 0	Function mode 1	Function mode 2	Function mode 3	Function mode 4	Function mode 5
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33	BALM	BALM	BALM	BALM	BALM	BALM
	34	ALM	ALM	ALM	ALM	ALM	ALM

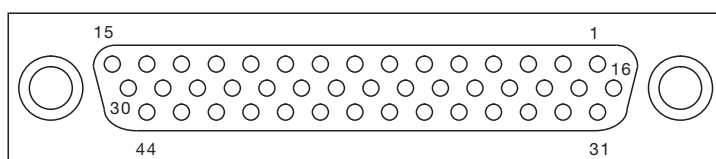
Input Signal Functions

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, and AUTO when it is off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 to PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with "STRT" signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 to 6	Cylinder type START	Program start signal for position numbers from ST0 to ST6. Can select either Level or Edge for signal using parameter 13 "move" command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Output Signal Functions

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO1 to PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	Operation mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
BALM	Voltage reduction in battery	Off when the battery voltage decreases.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 to PE6	Cylinder type arrival completed output	Signal generated after operation for positioning is completed.
LS0 to LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

I/O Connector Pin Numbers



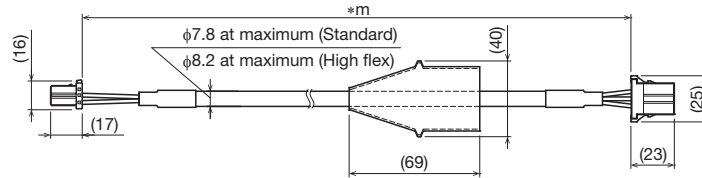
* Controller connector port view

Actuator Cable

Motor brake cable for TLC: CBL-TLC-ACP-** F (Standard)

CBL-TLC-ACP-** R (High flex)

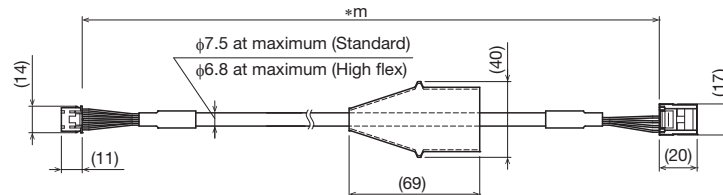
** indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Encoder cable for TLC: CBL-TLC-ACS-** F (Standard)

CBL-TLC-ACS-** R (High flex)

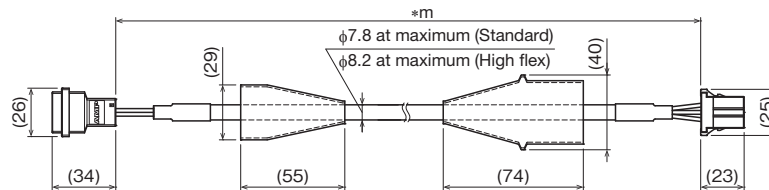
** indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Motor brake extension cable for TLC/THC: CBL-ACP-EXT01-** F (Standard)

CBL-ACP-EXT01-** R (High flex)

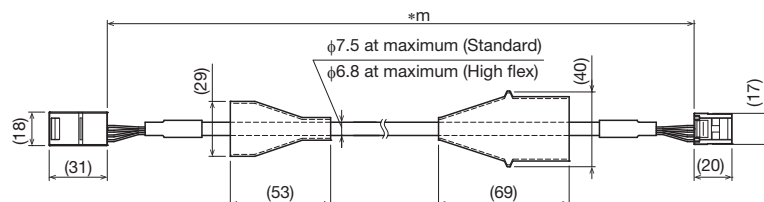
** indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Extension encoder cable for TLC: CBL-ACS-EXT01-** F (Standard)

CBL-ACS-EXT01-** R (High flex)

** indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Note 1) For use involving moving elements, select high flex type. The recommended bending radius at the core of cable is R95 or greater.

(For use involving other than moving elements, R50 or greater is recommended.)

Note 2) When using the TLC servo driver controller, motor brake cable and encoder cable should be no longer than 11m.

Up to two extension cables can be connected.

Option

Lithium ion battery (for maintenance)

ER6V C4 (Toshiba Home Appliances Corporation)

- This is required for the absolute system.
- When replacing the battery, order the above.

High-capacity servo driver controller

THC

For single axis / Position type



Features

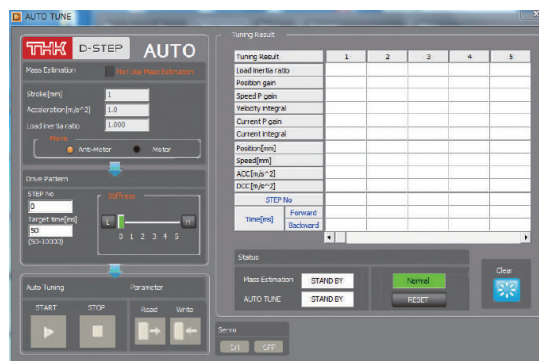
Ready to use, simplified setup.

Simple Operation

Use PC setup tool D-STEP or digital operator TDO to access many useful functions.

Functions

- Selectable function modes
(64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
- Step data count: Up to 512 (depending on function mode)
- Alarm history: Up to 50 (including power ON history)
- Switching between Auto/Manual, brake release switch
- Selectable control methods (positioning or pressing)
- Auto-tuning functionality built-in



Combined Control Device Model Configuration (THC)

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke	Sensor
THC	020	100AC	MOD	A	USW12T	10	D	B	0100	1
(1) THC	(2) 010: 100W 020: 200W 040: 400W 075: 750W	(3) 100AC: 100VAC 200AC: 200VAC	(4) MOD: Mode switching type	(5) A: Absolute	(6) Direct coupling US6T US8T USW12T USW16T USW20T Motor wrap US6RT US8RT USW12RT USW16RT USW20RT	(7) 05: 5mm 06: 6mm 10: 10mm 12: 12mm 20: 20mm 30: 30mm 40: 40mm	(8) D: Motor side R: Reverse motor side	(9) No symbol: Without brake B: With brake	(10) Enter the stroke of the actuator model (6) Example) 0100: 100mm	(11) No symbol: None 1: With sensor Internal sensor 2: With sensor External sensor

When the capacity is 750W, you only can select 200V AC.

When using motor rated output of 150W, select the capacity 020.

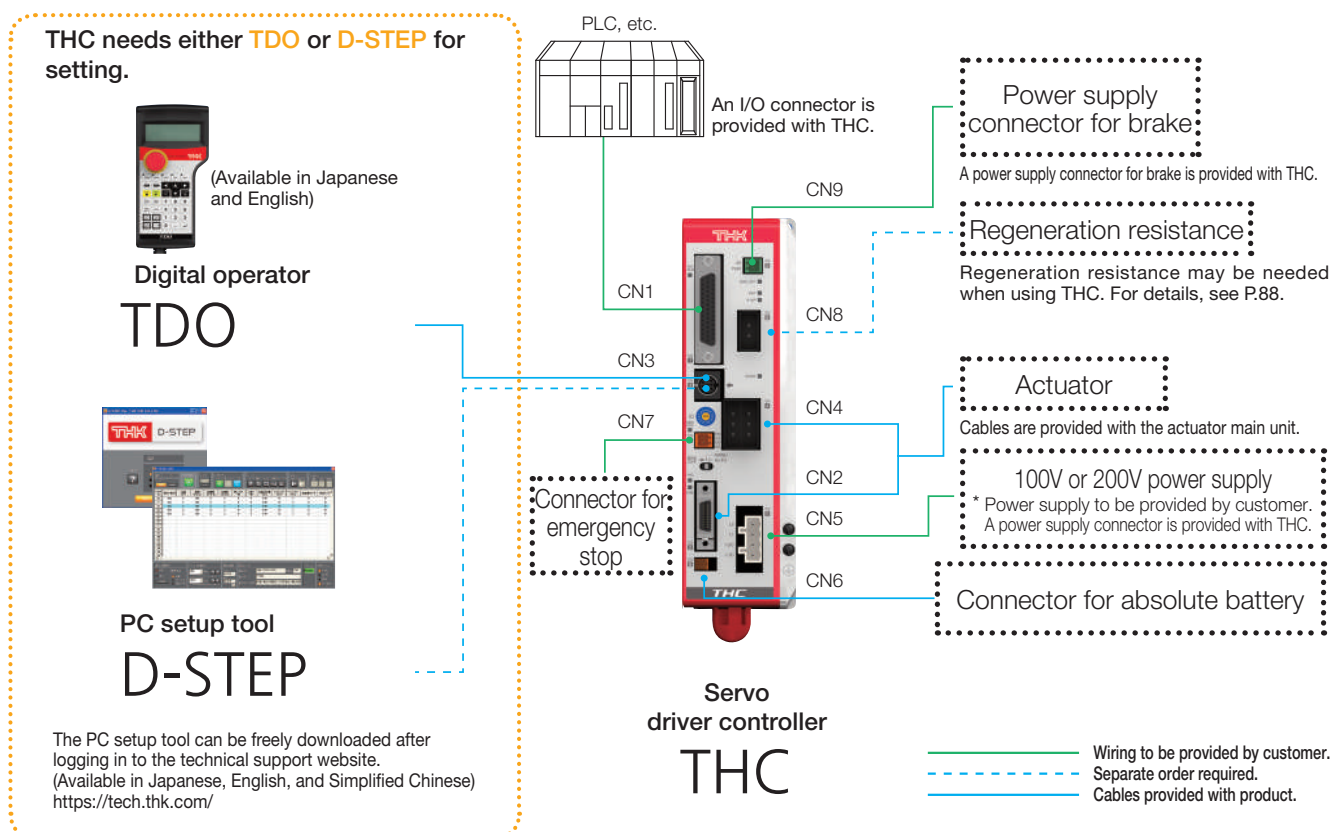
Page 5 Model Configuration
When "P" and "Q" is selected in (6) sensor, select "1".
When "6" and "E" is selected in (6) sensor, select "2".

THC Specifications

Type of machine	Model		THC					
	Capacity		100V AC			200V AC		
			100W	200W	400W	100W	200W	400W 750W
Input power supply	Main circuit		100V AC single-phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single-phase, 50/60Hz (Permissible voltage: 170 to 250V)		
	Control circuit		100V AC single-phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single-phase, 50/60Hz (Permissible voltage: 170 to 250V)		
	Power supply [kVA]		0.5	0.9	1.3	0.5	0.9	1.6 2.4
Control	Control axis		Single axis					
	Motor		AC servo motor					
	Control		Feedback control (Semi-closed loop)					
	Position detection		Absolute					
Program	Acceleration/deceleration		Trapezoid acceleration, S-shape acceleration					
	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points
	Data input/output		PC setup tool D-STEP or Digital operator TDO					
Input/output	Dedicated input points		16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.)					
	Output points		16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, etc.)					
	Input/output power supply		24VDC ±10% (This should be prepared by yourself.)					
Communication	Serial communication	Device	Digital operator or PC software					
		Method	RS-485					
		Ports	Mini DIN × 1					
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing)/-20 to 85°C (No freezing)					
	Operating/storage humidity		90% RH or below (No condensation)					
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist, dust, water, oil and chemicals)					
Applicable standards	CE Marking		Low voltage directive: EN61800-5-1, EMC directive: EN61800-3					
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.					
	Accessories		Power supply connector × 1 I/O connector × 1					
	Options (sold separately)		Digital operator TDO (Cable length 5m) I/O cable 3m, 5m, 7m, and 10m Communication cable (Mini DIN↔USB)					
	External dimensions [mm]		200W or lower: 58mm (W) × 208.6mm (H) × 120mm (D) 400W or higher: 67.5mm (W) × 208.6mm (H) × 120mm (D)					
	Weight (not including battery)		1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.5kg or less

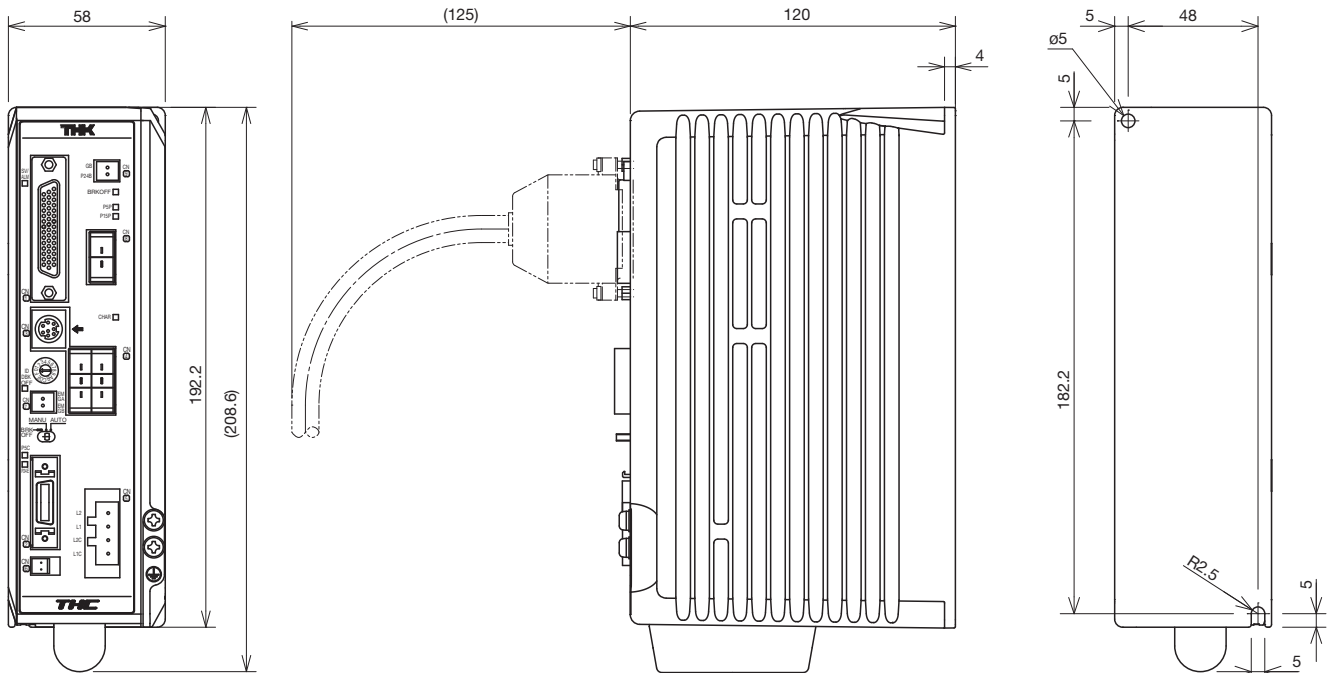
* This count varies depending on function mode.

System Configuration

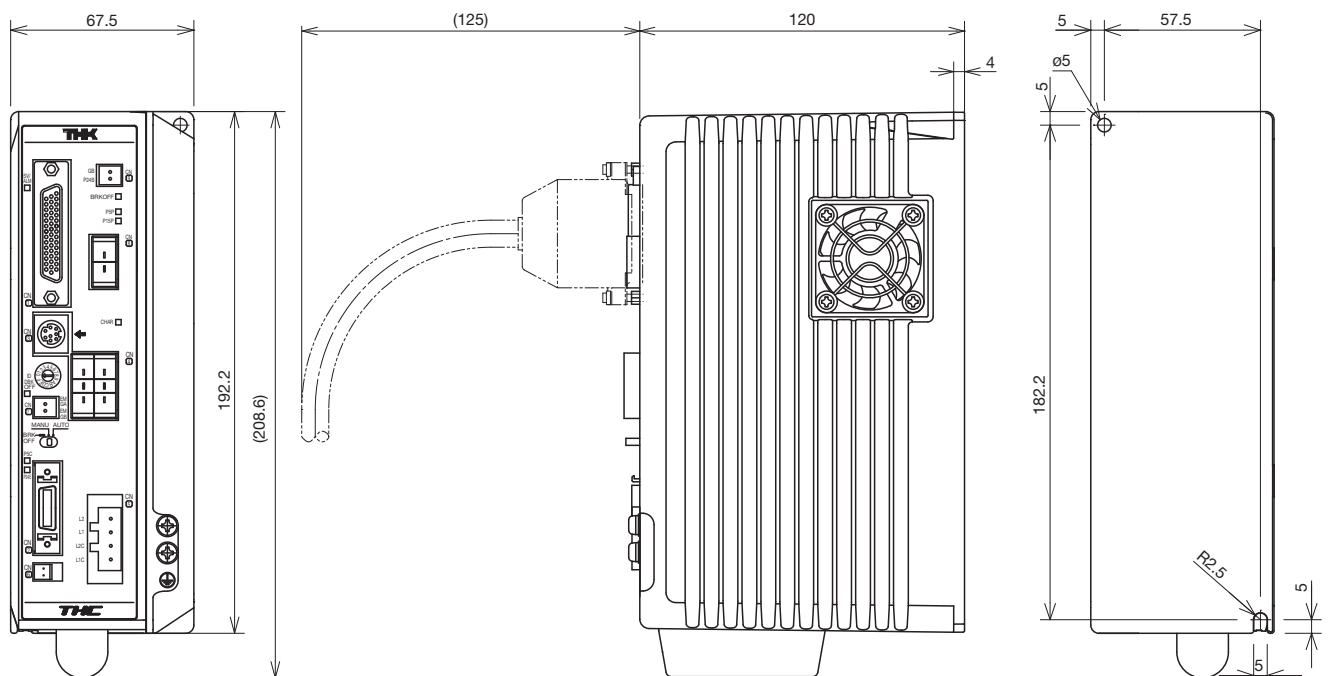


Controller

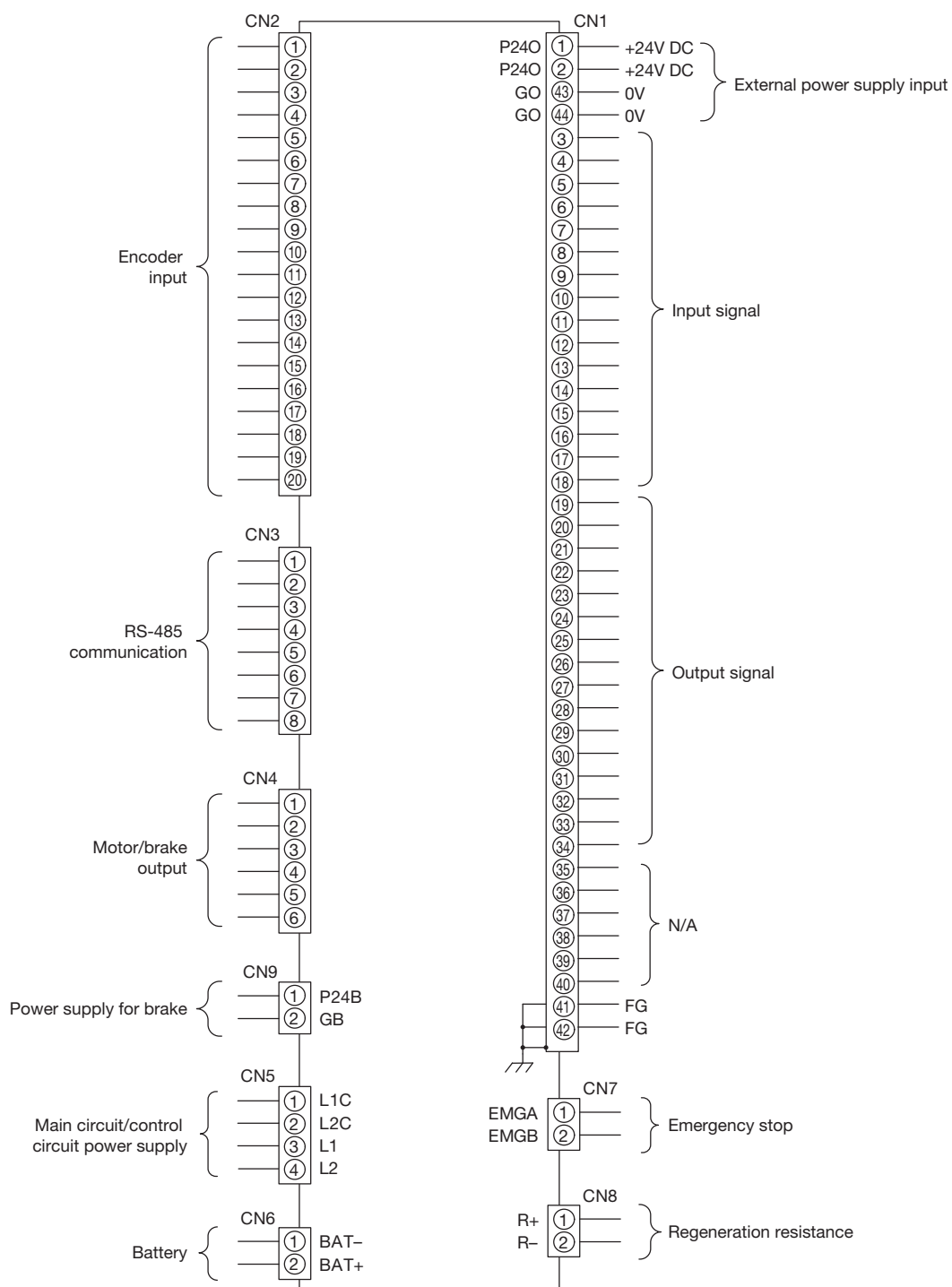
THC (100–200W)



THC (400W & 750W)



THC Pin Assignment

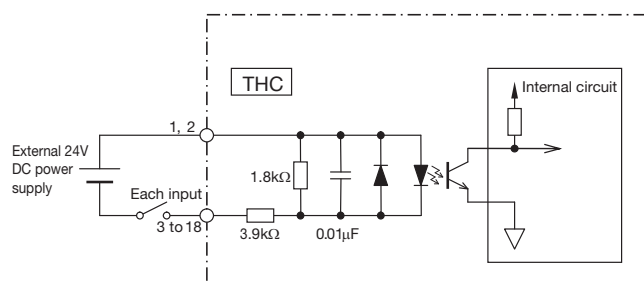


* For attached I/O connector pin numbers, see P.85.

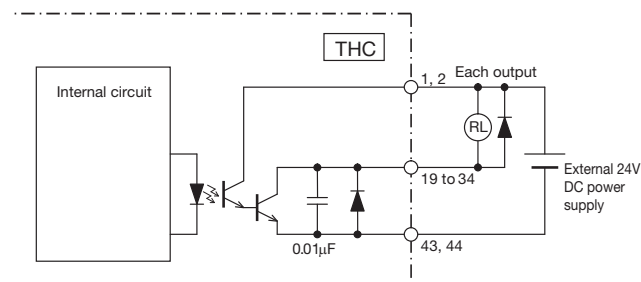
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for THC (CN1)

Input circuit



Output circuit



THC Function Modes

THC provides six modes to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output and P area output	3	–

Pin Assignment by Function Mode

I/O	CN1 pin number	Signal name					
		Function mode 0	Function mode 1	Function mode 2	Function mode 3	Function mode 4	Function mode 5
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33	BALM	BALM	BALM	BALM	BALM	BALM
	34	ALM	ALM	ALM	ALM	ALM	ALM

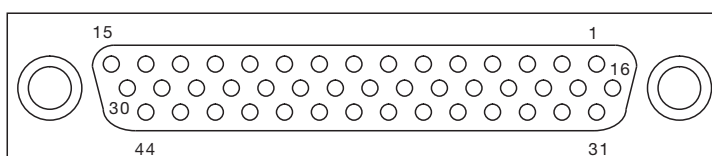
Input Signal Functions

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, and AUTO when it is off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 - PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with "STRT" signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 - 6	Cylinder type START	Program start signal for position numbers from ST0 to ST6. Can select either Level or Edge for signal using parameter 13 "move" command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Output Signal Functions

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO1 - PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	Operation mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
BALM	Voltage reduction in battery	Off when the battery voltage decreases.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 - PE6	Cylinder type arrival completed output	Signal generated after operation for positioning is completed.
LS0 - LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

I/O Connector Pin Numbers



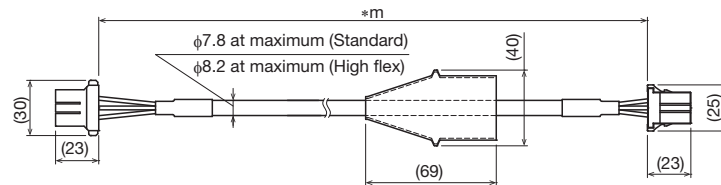
* Controller connector port view

Actuator Cable

Motor brake cable for THC: CBL-THC-ACP-**-F (Standard)

CBL-THC-ACP-**-R (High flex)

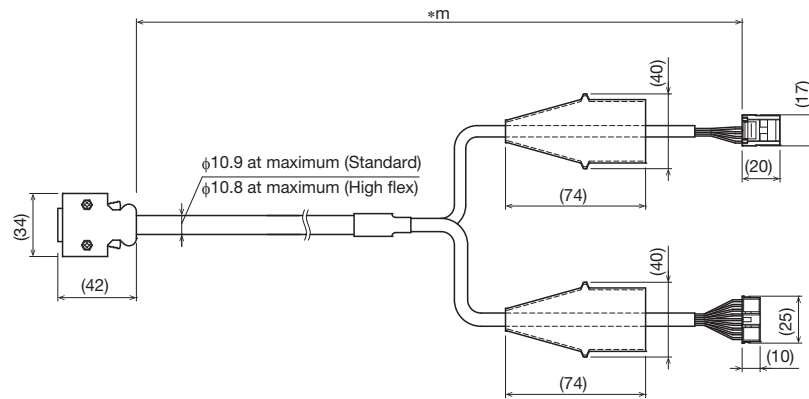
** indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Encoder sensor cable for THC: CBL-THC-ACS-**-F (Standard)

CBL-THC-ACS-**-R (High flex)

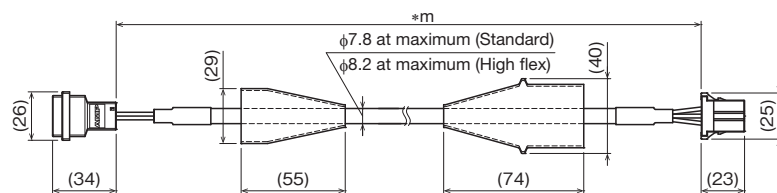
** indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Motor brake extension cable for TLC/THC: CBL-ACP-EXT01-**-F (Standard)

CBL-ACP-EXT01-**-R (High flex)

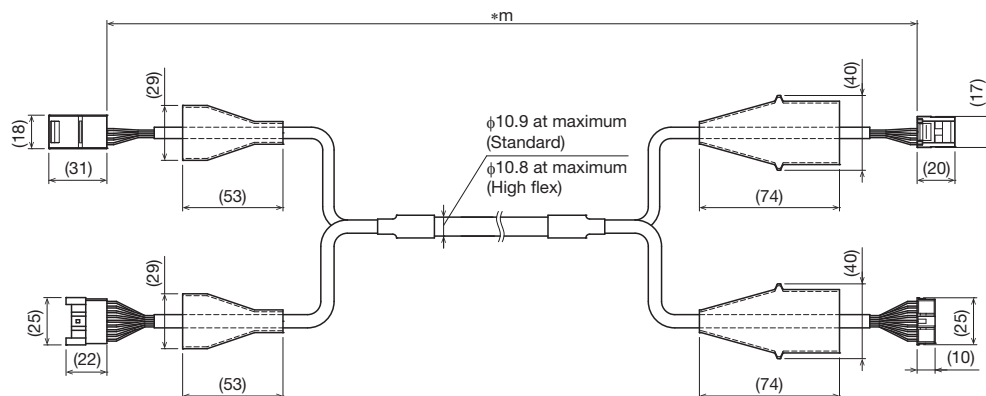
** indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Encoder sensor extension cable for THC: CBL-ACS-EXT02-**F (Standard)

CBL-ACS-EXT02-**R (High flex)

** indicates cable length: 01 (1m), 03 (3m), or 05 (5m).



Note 1) For use involving moving elements, select high flex type. The recommended bending radius at the core of cable is R95 or greater.
(For use involving other than moving elements, R50 or greater is recommended.)

Note 2) When using the TLC servo driver controller, motor brake cable and encoder sensor cable should be no longer than 11m.
Up to two extension cables can be connected.

Note 3) When using the THC servo driver controller, the lengths of motor brake cable and encoder sensor cable should be no longer than 16m.
Up to two extension cables can be connected.

Option

Lithium ion battery (for maintenance)

ER6V C4 (Toshiba Home Appliances Corporation)

- This is required for the absolute system.
- When replacing the battery, order the above.

Optional (Regeneration Resistance)

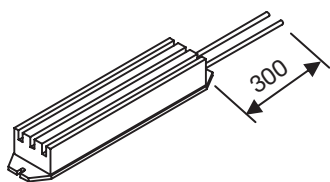
Regeneration resistance

To make electrical actuator operate via the THC controller series, a regeneration resistance may be necessary depending on the operating conditions. The following table lists the required number of regeneration resistances just for reference. The customer should provide the required number of them.

It is recommended that you use regeneration resistances manufactured by Iwaki Musen Kenkyusho Co.,LTD.

THK supplies regeneration resistance connection cables. The customer can order them separately as necessary.

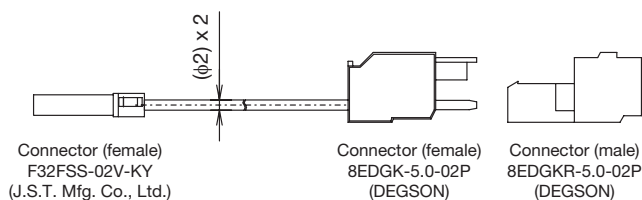
■ Regeneration resistance (Power-type cement resistor)



	Name of item	Manufacturer
A	RH150 100Ω J	Iwaki Musen
B	RH150 50Ω J	Kenkyusho Co.,LTD.

THC capacity	Orientation	
	Horizontal mount	Vertical mount
100W	A x 1	A x 1
200W	A x 1	A x 1
400W	B x 2	B x 2
750W	B x 2	B x 2

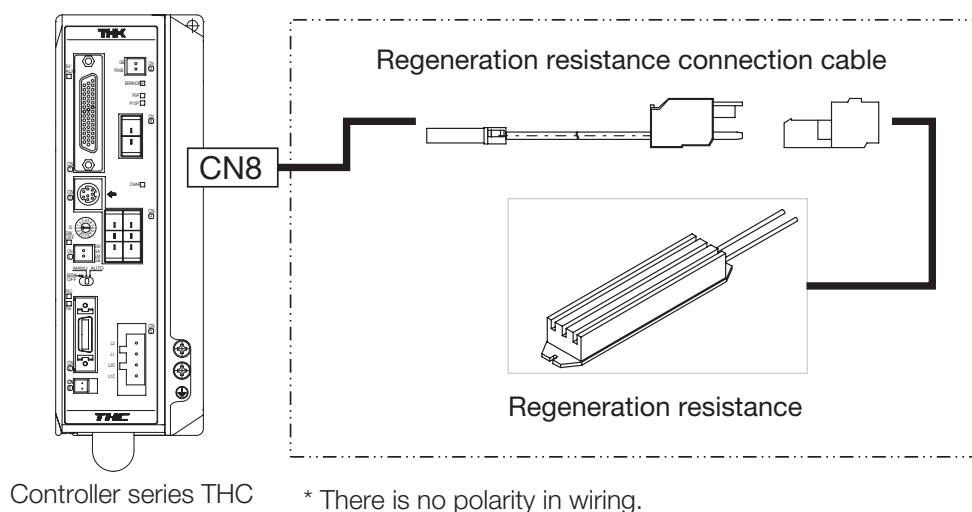
■ Regeneration resistance connection cable (CBL-REG00-01F)



* Cable insertion jig (DG010-01P-19-00AH) is provided.
(The customer does not have to provide special tools)

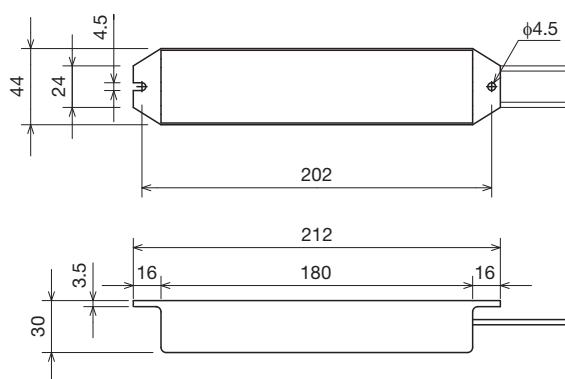
	Model	Length	Manufacturer
1	CBL-REG00-01F	1m	THK Co., Ltd.

Configuration Diagram



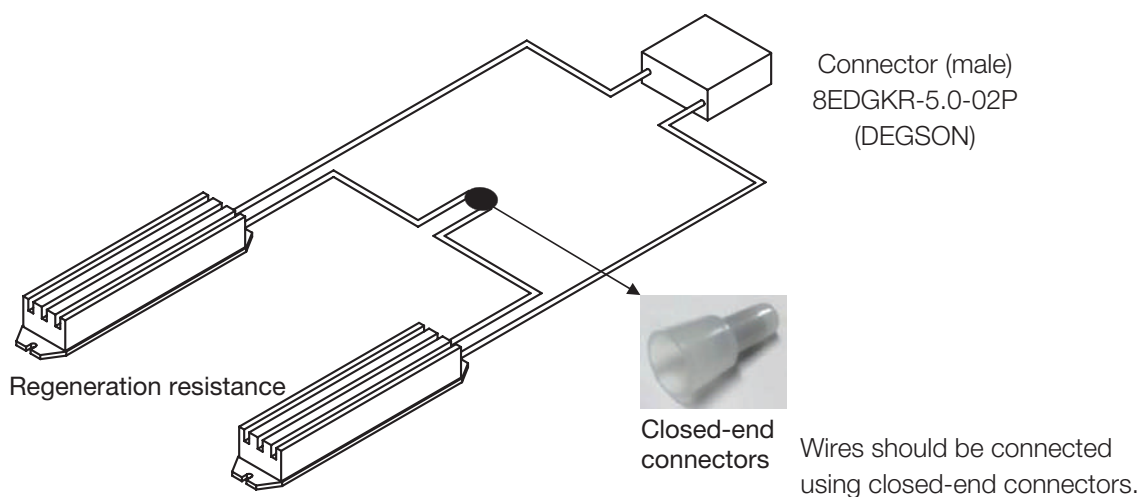
Regeneration Resistance External Drawing

RH150 (90W, 100Ω) (90W, 50Ω) common to all



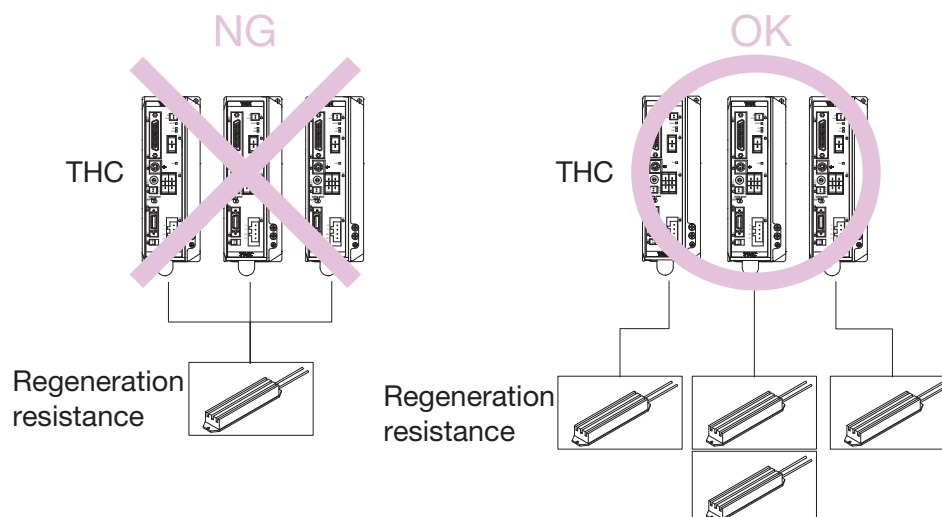
Wiring Example (Using Two Regeneration Resistances)

When you use two regeneration resistances, connect them in series.



Precautions on Selecting Resistance

The customer should provide the required number of regeneration resistances for each THC.



Network Unit / Branch Unit

TNU/TJU

Multiple-axis connection fieldbus compatible



Less Wiring Required

Connecting to a PLC through a fieldbus network requires less wiring than an I/O cable connection. In addition, the network unit and each driver controller can be connected with a single dedicated cable.

CC-Link EtherCAT[®] EtherNet/IP[™] DeviceNet[™]

Up to 16 Axes Can Be Connected

Up to 16 axes of mixed THK driver controllers (TSC, TLC, and THC) can be connected using one TNU and TJU (branch unit) in combination.

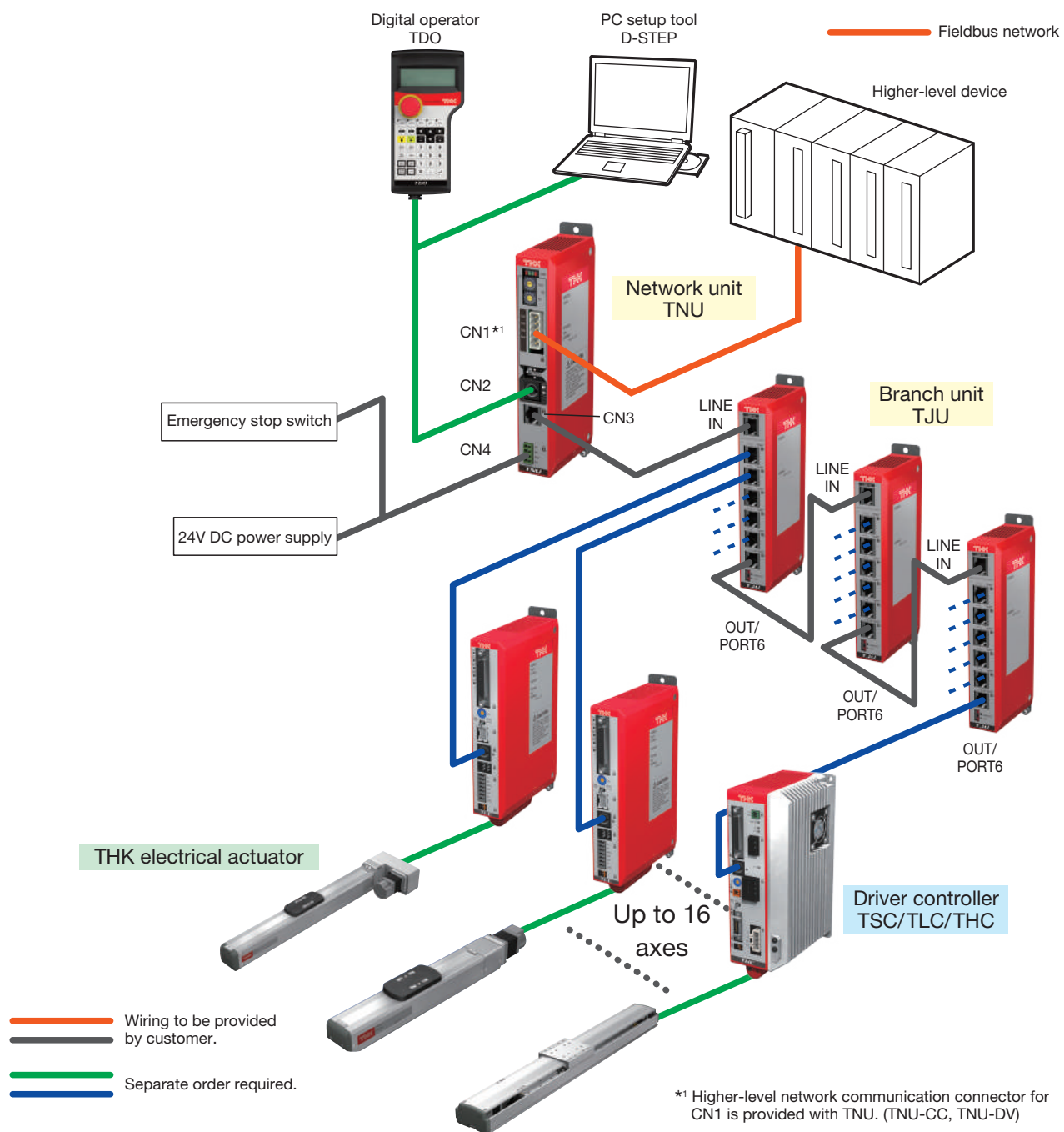
Direct Numerical Control Supported (Version 1.2 or later)

Position, speed, and acceleration commands can be made directly from the PLC. As well, information such as the current position can be monitored.

* TSC is supported with Version 1.22, TLC/THC with Version 1.07 or later.

* For TNU-EC support, contact THK.

System Configuration



Model Configuration

● Network unit

Model	Network type
TNU	CC
(1)	(2)
TNU	CC:CC-Link
	DV:DeviceNet
	EC:EtherCAT
	EP:EtherNet/IP

● Branch unit

Model
TJU
(1)
TJU

● TACnet cable (between TJU and driver controller)

Model	Type	Cable length
CBL	NW	01
(1)	(2)	(3)
CBL	NW	01:1m
		03:3m

Use an industrial Ethernet cable between TNU and TJU, and between TJUs.

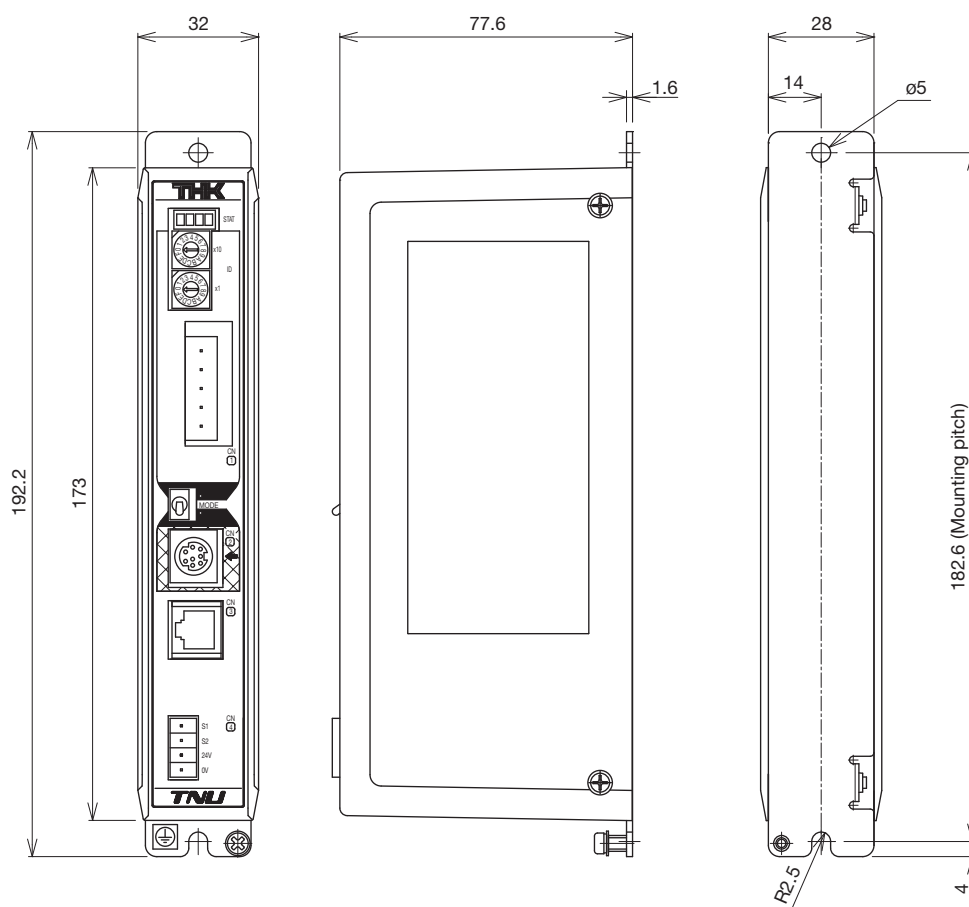
Specifications

Model		TNU-CC		TNU-DV	TNU-EC	TNU-EP
Fieldbus	Communication standard	CC-Link Ver1.10	CC-Link Ver2.00	DeviceNet	EtherCAT	EtherNet/IP
	Communication speed	10Mbps/5Mbps/2.5Mbps/625kbps/156kbps		500kbps/250kbps/125kbps	100M	10M/100M
	Number of occupied stations	Remote device stations	Remote device stations	Number of occupied nodes: 1 Number of occupied channels*: input 128 CH output 128 CH	—	—
		4 stations	1 station, 2 stations, 3 stations, 4 stations			
Applicable controller		TSC/TLC/THC				
THK network	Transmission channel type	RS-485				
	Communication speed [bps]	38.4k/57.6k/115.2k				
	Communication method	Half duplex				
	Maximum trunk length [m]	20				
	Maximum number of connectable axes	16				
Input power supply		24V DC ±10%, up to 0.3A				
Operating/storage temperature		0 to 55°C (No freezing)/-20 to 85°C (No freezing)				
Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist)				
Protective function		Higher-level network communication error, communication error, system error				
Weight [g]		240(TJU:220)				

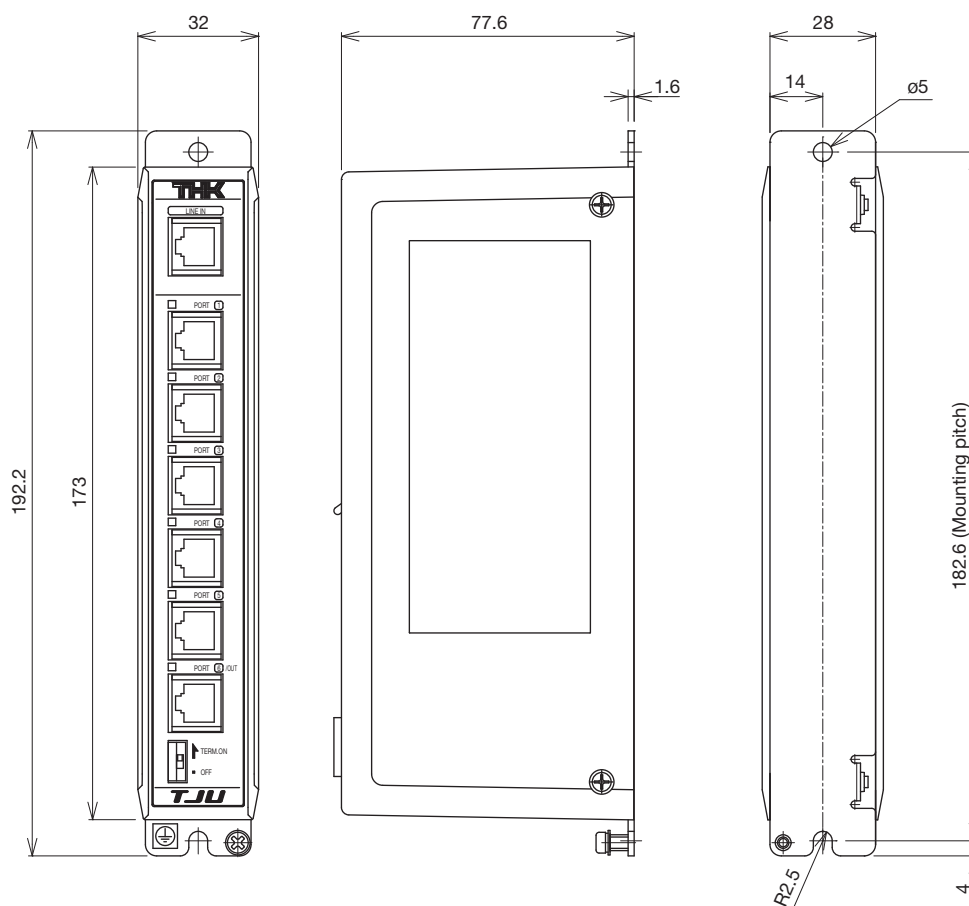
* The number of occupied channel numbers is fixed. If using master devices with 128 or fewer input occupied channels or 128 or fewer output occupied channels, contact THK.

Dimensions

● TNU



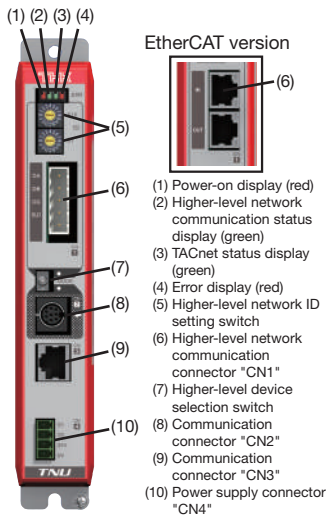
● TJU



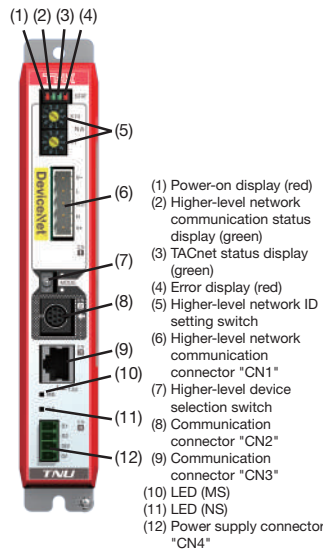
The external dimensions and mounting dimensions of TNU and TJU are the same.

Components

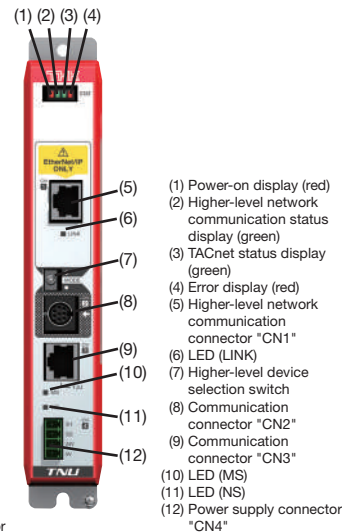
● TNU-CC ● TNU-EC



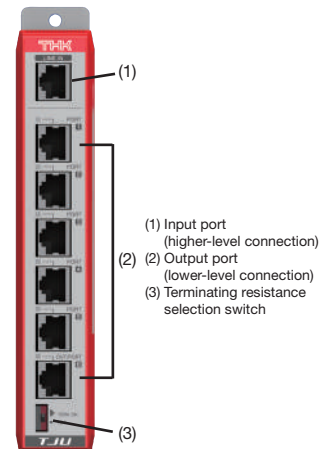
● TNU-DV



● TNU-EP

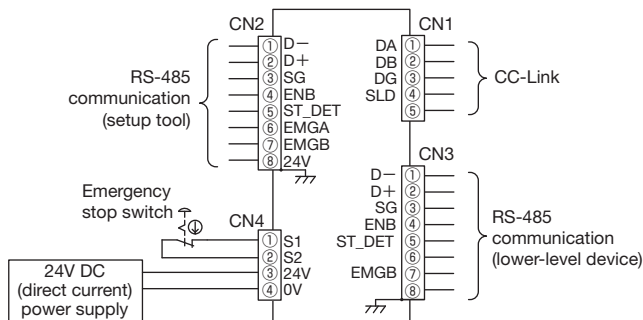


● TJU

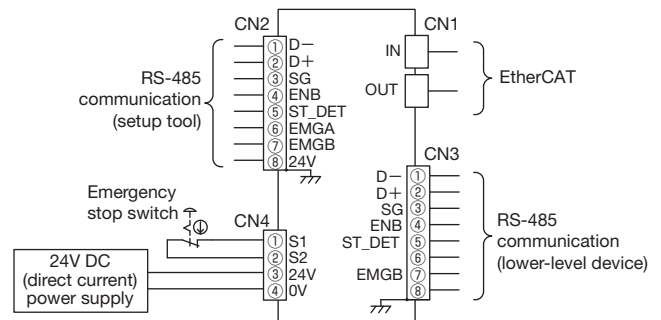


External Device Connection (TNU)

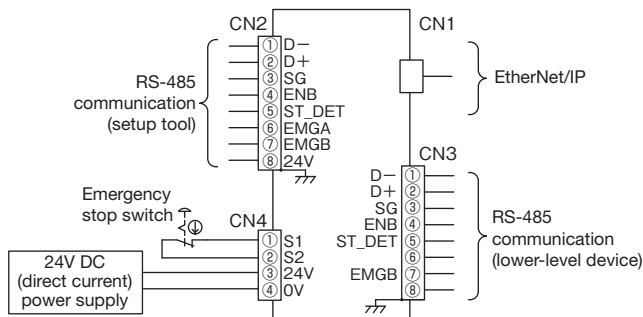
● CC-Link



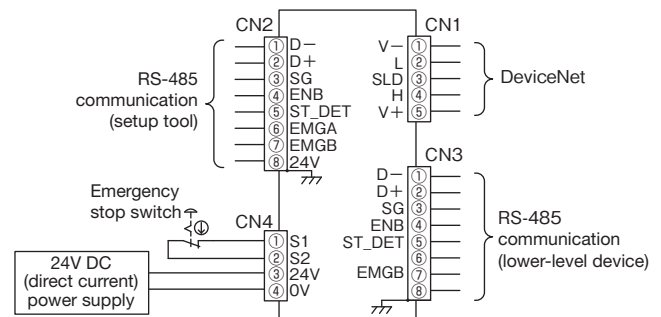
● EtherCAT



● EtherNet/IP



● DeviceNet



Note: The emergency stop terminals (CN4-S1 and S2) are not used for power shutdown of TNU, but used for an emergency stop of the lower-level device (THK driver controller).

TDO Digital operator (separate order required)**Features**

Simple, quick operations and settings of TSC, TLC and THC are possible without using a PC.

Simple Operation

Key sheet with a straightforward design,
LC with backlight (20 digits × 4 lines).

Functions

- Checking and editing step data and parameters
- Operation of actuator
(Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF, Electromagnetic brake ON/OFF)
- Monitor (I/O, Current position, Position command, Current command, Version display)
- Alarm (History display, Clear history, Interrupt display on occurrence, Alarm reset)
- Settings (Backlight luminance, LCD contrast, Beep tone, Automatic turn off of backlight)
- Enable switch (3 positions) - Protection structure IP54 (excluding cable connectors) - Display language (Japanese/English)

External dimensions: 110mm (W) × 218.3mm (H) × 66.6mm (D) (excluding crests)

Main unit weight: 400g (excluding cables) Cable length: 5m

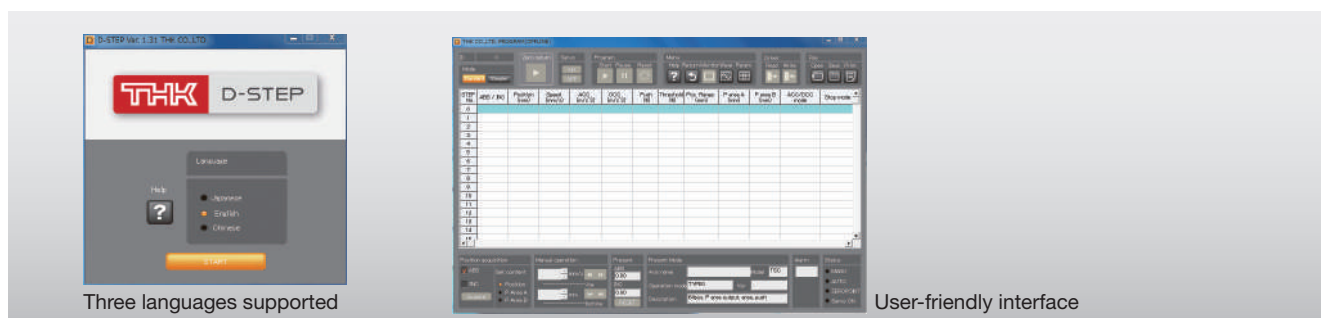
* TLC/THC is supported with Version 1.03 or later.

* TNU is supported with Version 1.10 or later.

Model Configuration

Model	Type
TDO	N
(1)	(2)
TDO	N: Category 2*1 compliant type

*1 ISO 13849-1

D-STEP PC setup tool**Features**

Supports multifunctional TSC/TLC/THC with user-friendly interface.

Simple Operation

Operations and settings of TSC, TLC and THC are possible using a PC.

Equipped with functions useful for maintenance, such as backing up data or logging operating states.

Functions

- Checking, editing, backing up, or offline-editing of step data
- Checking, editing, backing up, or offline-editing of parameters
- Operations of actuator (Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF)
- Monitor (I/O, Current position, Position command, Current command) - Logging (Speed and current waveform display)
- Alarm (History display, Clear history, Alarm reset) - Display language (Japanese/English/Simplified Chinese)

Supported OS: Windows XP/Windows Vista/Windows 7

D-STEP can be freely downloaded from the THK technical support website (<https://tech.thk.com/>).

* TLC/THC/TNU is supported with Version 1.10 or later.

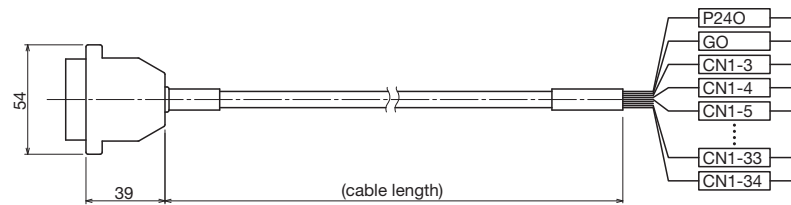
Cable

I/O cable: CBL-CON-IO-** (optional)

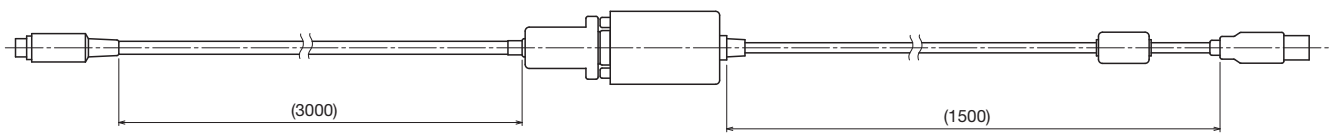
** indicates cable length: 03 (3m), 05 (5m), or 10 (10m).

Cables are used for TSC/TLC/THC.

* Cables are shipped with the discrete wire side terminals unprocessed.



PC communications cable: CBL-COM-03 (optional)





Precautions on Use

● Application

- This product cannot be applied to any equipment or system that may be used under a life-threatening condition.
- When you consider using this product for special applications such as equipment/system for mobile vehicles, medical uses, aerospace, atomic energy and power plants, make sure to contact THK for applicability beforehand.

● Safety Precautions

- Before operation, please read thoroughly and obey "Manipulating industrial robots – Safety" (JIS B8433) and "Ordinance on Industrial Safety and Health" (Ministry of Health, Labor and Welfare).
- Read the manual carefully, understand the contents well, and strictly observe the safety precautions.
- Before performing installation, adjustment, checking, or services regarding the main actuator unit, controller and the relevant connected equipment, make sure to remove all power plugs from the outlet and apply locking or safety plugs so that nobody else can turn on the power. Also display a signboard showing that the work is ongoing at a prominent place.
- Do not touch the moving part of the actuator while it is energized. In addition, do not enter the operating area of the actuator while the product is operating or in the ready state.
- 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.
- Do not unnecessarily disassemble this product. Doing so may allow foreign materials to enter or deterioration of precision. Also this will cause the risk of electric shock from the controller.
- Take care not to drop or strike this product. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.
- Operation of the actuator over the permissible rotational speed may cause damage or an accident. Please keep the rotational speed within THK specifications.
- Prevent foreign material, such as dust or cutting chips, from entering the product. This could cause damage to ball recirculation components and loss of functionality.
- When planning to use the product in an environment where a coolant could penetrate the unit, contact THK.
- When there is any risk that the slider may collide with the stoppers attached to both ends of operable range, install some shock absorbing mechanism such as a shock absorber. The stoppers are not designed to absorb the impact generated by the collision of the slider. When the slider collides with a stopper during operation, it may cause damage or an accident.

● Environment

- An indoor location and ambient temperatures from 0 to 40°C, and humidity of 80%RH or below (no freezing or condensation).

Wrong environment can cause failures of the actuator and driver. The best place to use the product is as follows:

- A place free from corrosive gas and flammable gas.
- A place where vibration or impact is not transmitted to the unit.
- A place free from electrically conductive powder (such as iron powder), dust, oil mist, cutting fluid, moisture, salt, and organic solvent.
- A place free from direct sunlight and radiant heat.

- A place free from strong electric and magnetic fields.
- A place that is easily accessible for service and cleaning purposes.
- When using the product in locations exposed to constant vibrations or in special environments such as vacuum or abnormally high or low temperatures, contact THK in advance.

● Mounting Surface

- The surface should be the plane that has the precision of machining or the equivalent of that. Some products specify the required flatness.
When you wish to use the product with QZ in a position other than horizontal (such as wall mount and vertical posture), contact THK.

● Lubrication

- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on the rolling part and cause early failure.
- Do not use a mix of lubricants with different physical properties. Note that encapsulated lubricant types vary depending on products.
- Please contact THK if using special lubricants.
- THK recommend the greasing interval to be approximately every 100km. However, it may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.
- If the product is to be used in a location exposed to vibrations or in a special environment such as vacuum, or abnormally high or low temperatures, or in a clean room, normal lubricants may not be used. Contact THK for details.
- When adopting oil lubrication method, contact THK.

● Storage

- When storing this actuator, enclose it in a package designated by THK and store it in a horizontal position away from abnormally high or low temperatures and high humidity.



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