

Quick Ship Program

Linear Actuators

KR



ES/EC



**U.S. STOCK
AVAILABLE!***

FOUR-WAY EQUAL LOADING

Mountable in any orientation

COMPACT

*LM Guide, Ball Screw, and support unit
integrated into one structure*

HIGH ACCURACY

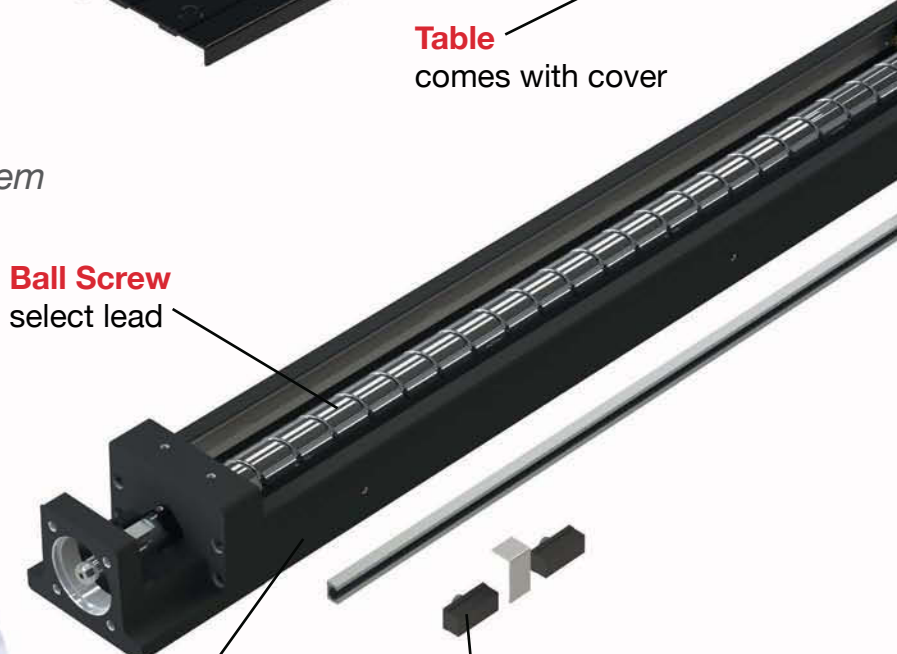
*Circular-arc groove to allow a high
accuracy feed*

ROBUST

Easy to configure into a 2 or 3 axis system

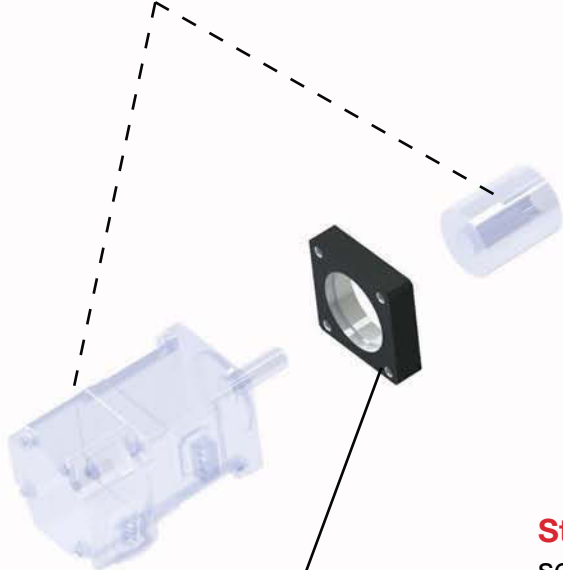


Table
comes with cover



Ball Screw
select lead

Motor & Coupling



Intermediate Flange
select your motor

Steel U-Shape Base
select base size/stroke



Sensor
select spec
*Sensor Rail/Dog included

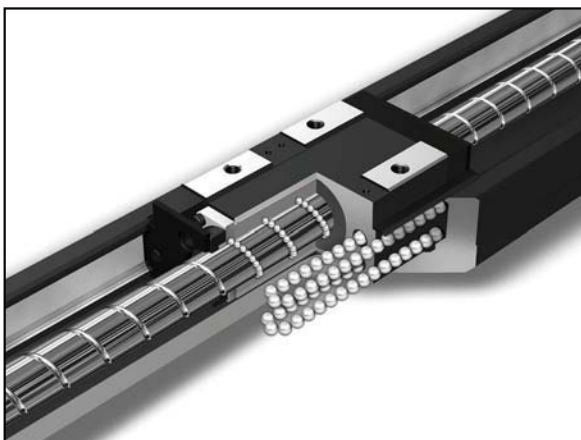
* KR Actuators available for Quick-Ship are either in stock in U.S. or modified from in stock parts.

Precautions on using KR actuator: Please refer to general catalog or SKR/KR Instruction Manual . (Available at www.thk.com)

Availability is subject to change depending on inventory level. Product spec is subject to change without notice.

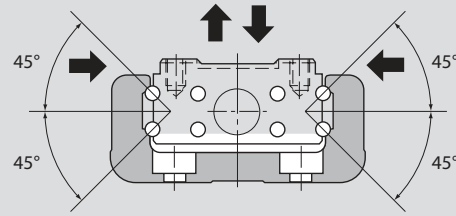


Integrated Compact Design:



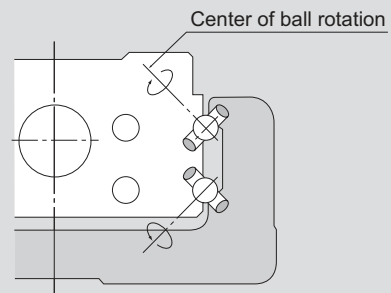
Four Way Equal Loading:

Can be used in any mounting orientation by adopting 4-Row 45 degree contact.



High Accuracy:

Circular-arc groove provides high accuracy and smooth motion.



High Rigidity Design:

U-shaped steel base allows for superior rigidity and makes it easy to configure KR actuators into 2 or 3 axis applications.



DETERMINE KR QUICK-SHIP PART NUMBER

Step 1		Step 2			
MODEL NUMBER	BALL SCREW LEAD	BLOCK TYPE		STROKE	ACCURACY
KR33	10	B	-	0325	P
	*6mm = 06	A = Single Block B = Double Block		30 - 790 mm *100 mm = 0100	No Symbol = Standard P = Precision

Step 1: Determine Model Number & Ball Screw Lead

LOAD CAPACITY CHART

MODEL	BALL SCREW LEAD (mm)	MAX PAYLOAD (kg)		DESIGN MOTOR SIZE (W)	ALLOWABLE INPUT TORQUE [Nm]
		HORIZONTAL	VERTICAL		
KR20	01	12.5	3	50	0.2
	06	12.5	4		0.42
KR26	02	27.5	9.5	50	0.62
	06	27.5	7		0.8
KR33	05	43.5	14.5	100	1.2
	06	43.5	15		
	10	37.5	12		
KR46	10	96	23	400	2.5
	20	66.5	18		

*Load Capacity is the value for single block type.

*Load Capacity is at rated speed under 0.3G (0.5G for KR46) acceleration.

Step 2: Determine Block Type

STATIC PERMISSIBLE MOMENT

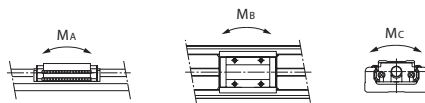
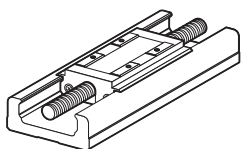
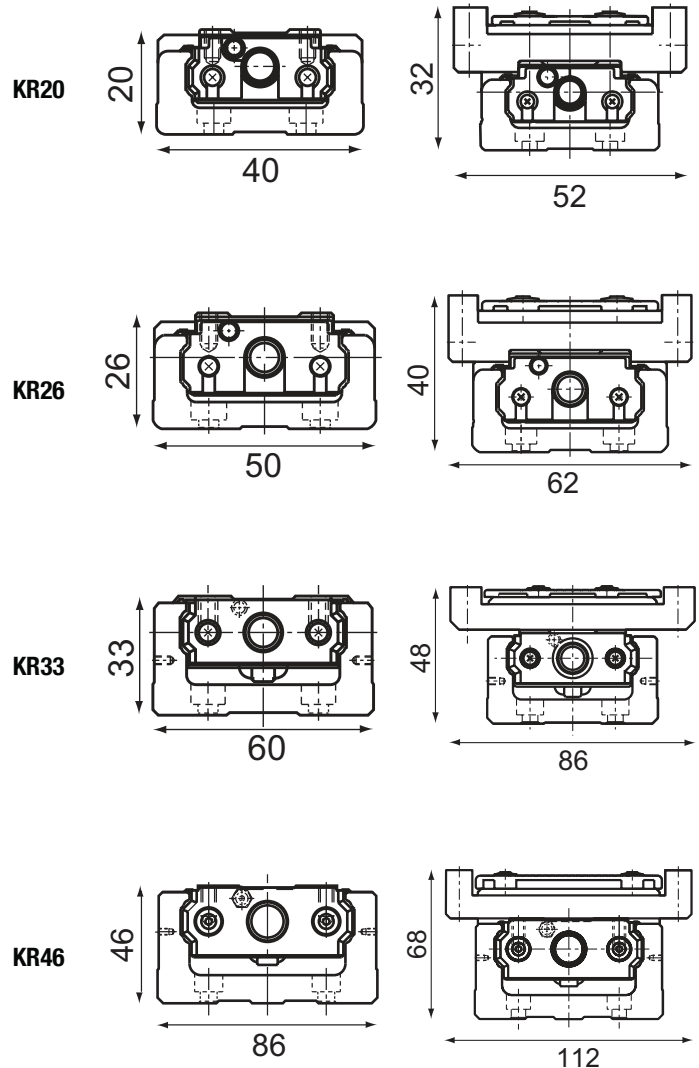
MODEL	BLOCK	STATIC PERMISSIBLE MOMENT (Nm)		
		MA	MB	MC
KR20	A	31	31	83
	B	176	176	165
KR26	A	84	84	208
	B	480	480	416
KR33	A	166	166	428
	B	908	908	857
KR46	A	547	547	1400
	B	2,940	2,940	2,800

*The values for double block are when blocks are in close contact.

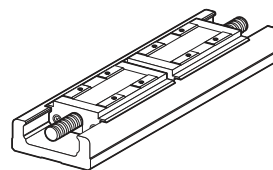
Cross Section (mm)

NO COVER

WITH COVER



Block A (Single)



Block B (Double)

: Choose Quick-Ship Option
 : Standard/Only Quick-Ship Option

Step 3

MOTOR OPTION		COVER	SENSOR	HOUSING	SAMPLE PART NUMBER
0	-	1	J	A0	KR3310B-0325-P0-1JA0

0 = Standard, No Motor

A0 = Standard Housing

Step 3: Determine Stroke & Other Options

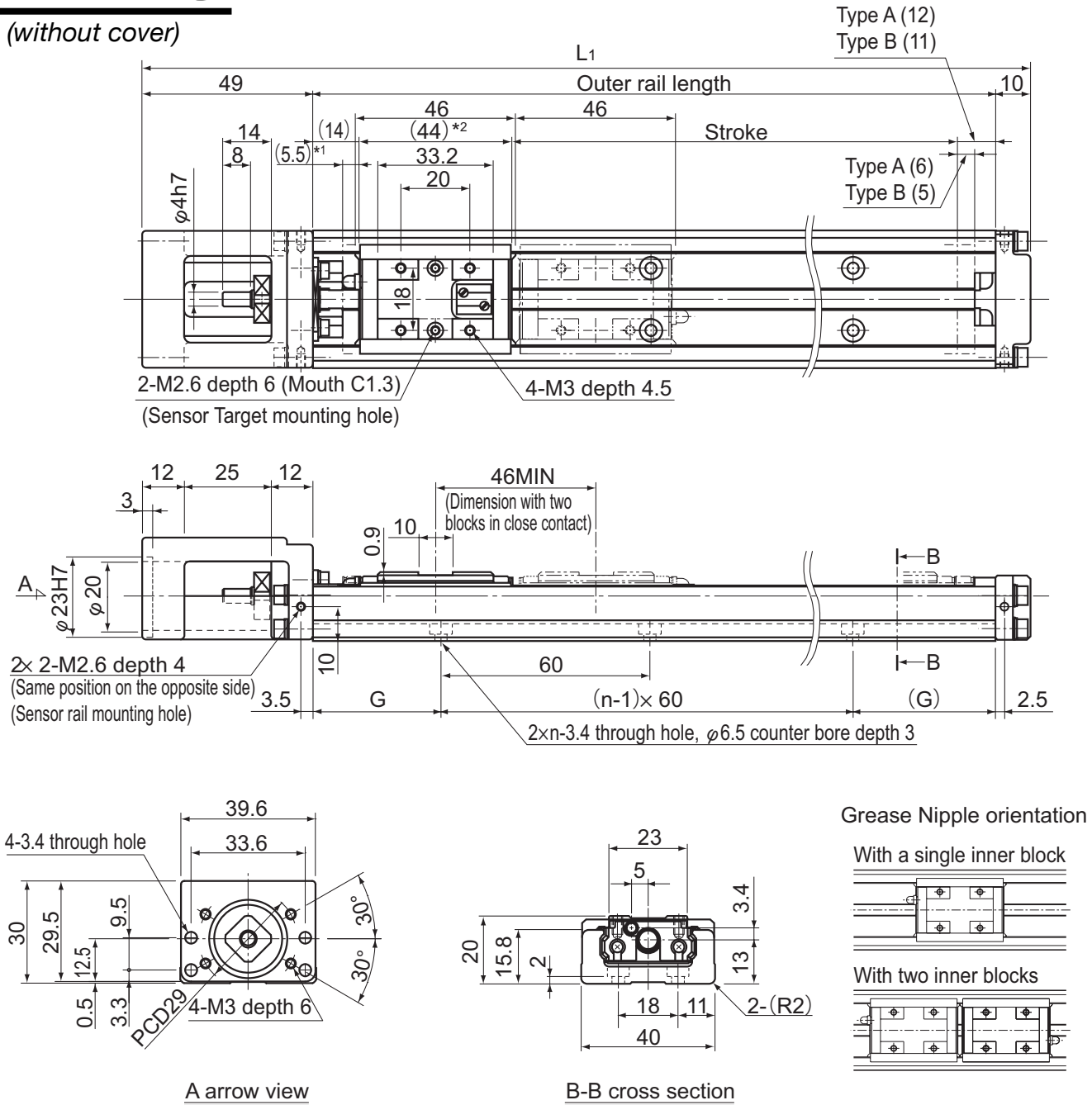
SIZE	BALL SCREW LEAD (mm)	STROKE (mm)		ACCURACY						COVER	SENSOR
		SINGLE BLOCK	DOUBLE BLOCK	MAX. SPEED (mm/S)		POSITIONING REPEATABILITY (mm)		BACKLASH (mm)			
				NORMAL	PRECISION	NORMAL	PRECISION	NORMAL	PRECISION		
20	01	30	---	100	100	±0.01	±0.003	0.02	0.003		
		80	35								
		130	85								
	06	30	---	600	600						
		80	35								
		130	85								
26	02	60	---	200	200						
		110	45								
		160	95								
		210	145								
	06	60	---	590	600						
		110	45								
		160	95								
		210	145								
		210	145								
33	05	50	---	390	500						
		100	---								
		200	125								
		300	225								
		400	325								
		500	425			330	330				
	600	525	230	230							
	06	50	---	470	600						
		100	---								
		200	125								
		300	225			590					
		400	325			390	390				
		500	425			280	280				
		600	525			280	280				
		10	50			---	790	1000			
			100			---		1000			
			200			125		1000			
	300		225	1000							
	400		325	980							
	500		425	650	650						
	600		525	470	470						
46	10	190	80	520	740						
		290	180								
		390	280								
		490	380		730						
		590	480		550						
		690	580		430	430					
		790	680		430	430					
	20	190	80	1050	1480						
		290	180								
		390	280								
		490	380		1440						
		590	480		1090						
		690	580		850	850					
		790	680		850	850					

* The rated speed is the value when revolution of the motor is 3000 rpm.

* The maximum speed is the value restricted by the motor rotation (at 6,000 rpm), or by the rotation speed of the ball screw.

KR20

(without cover)



*1 Distance between the mechanical stopper and the stroke starting position.
 *2 Indicates the inner block length when calculating the available stroke range.
 The length in model KR-B (with two long-type inner blocks) is 90 mm.

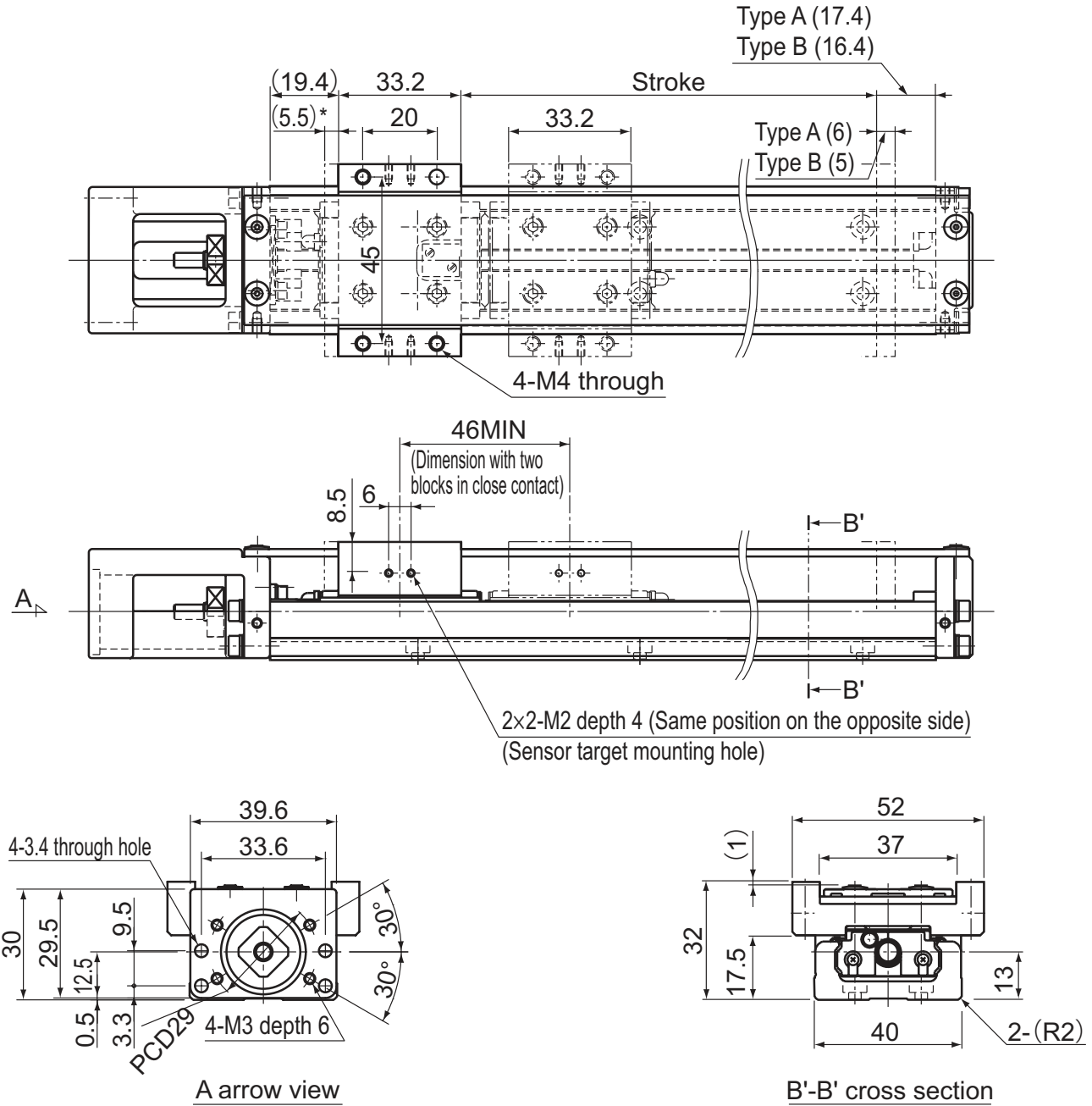
STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L_1 (mm)	OUTER RAIL LENGTH (mm)	G (mm)	n	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*					TYPE A	TYPE B
30(41.5)	—	159	100	20	2	0.45	—
80(91.5)	35(45.5)	209	150	15	3	0.58	0.655
130(141.5)	85(95.5)	259	200	40	3	0.72	0.795

*Indicates a value when two inner blocks are in close contact with each other.

KR20

(with cover)

REFER TO PAGES 3-4 TO
DETERMINE KR PART NO.



* Distance between the mechanical stopper and the stroke starting position.

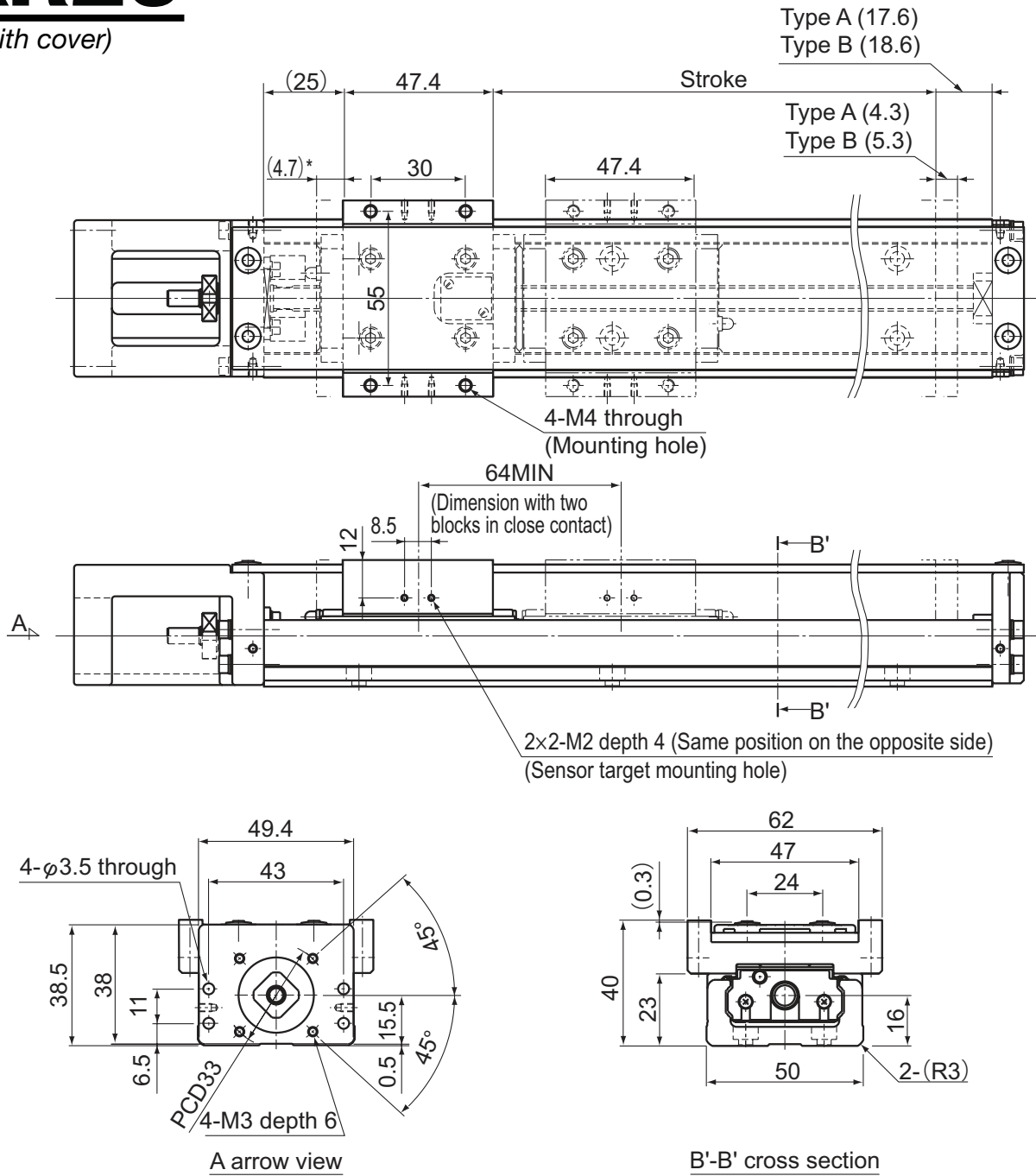
STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L ₁ (mm)	OUTER RAIL LENGTH (mm)	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*			TYPE A	TYPE B
30(41.5)	—	159	100	0.51	—
80(91.5)	35(45.5)	209	150	0.66	0.78
130(141.5)	85(95.5)	259	200	0.8	0.92

*Indicates a value when two inner blocks are in close contact with each other.

KR26

(with cover)

REFER TO PAGES 3-4 TO
DETERMINE KR PART NO.



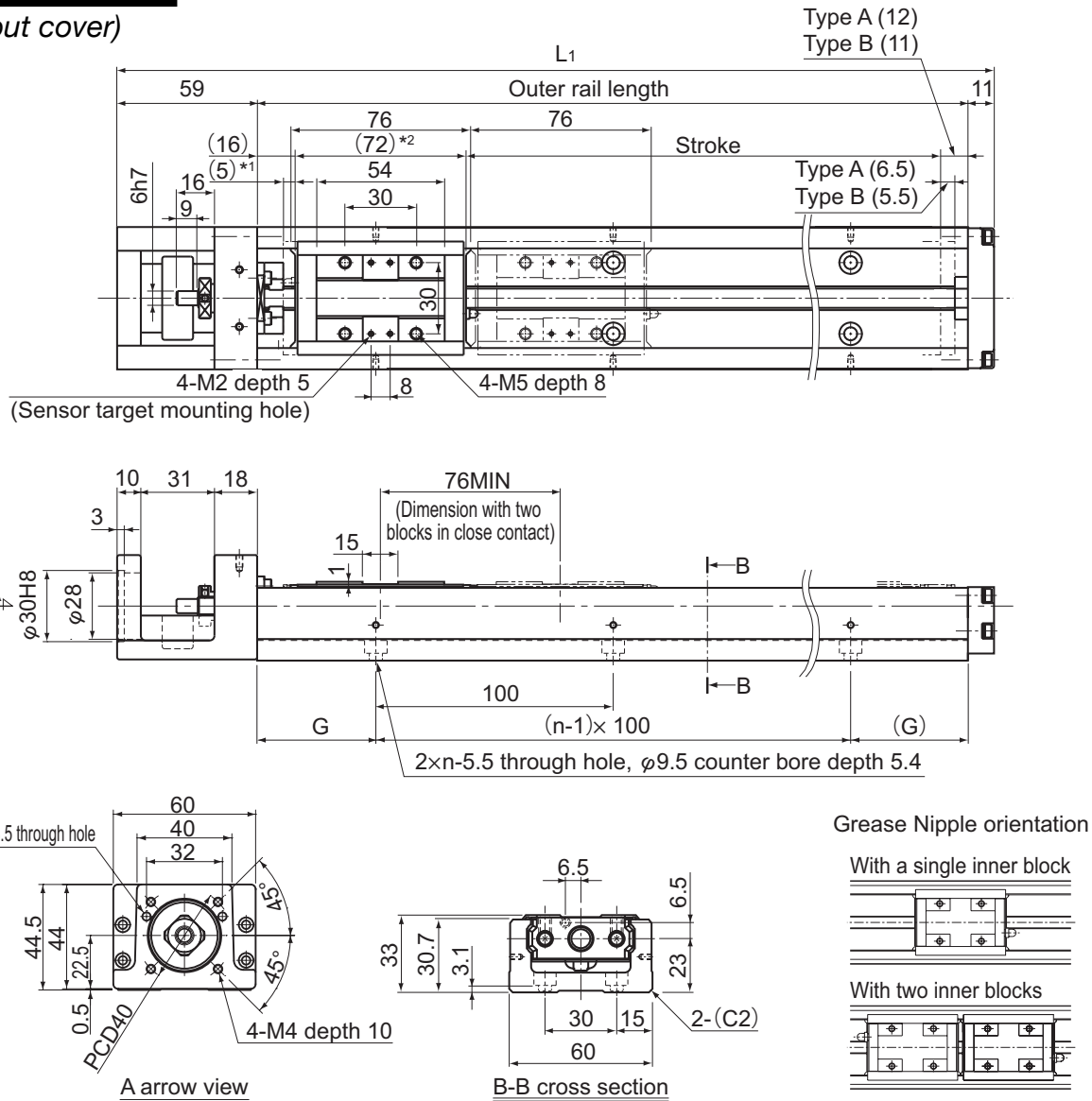
* Distance between the mechanical stopper and the stroke starting position.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L ₁ (mm)	OUTER RAIL LENGTH (mm)	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*			TYPE A	TYPE B
60(69)	—	220	150	1.12	—
110(119)	45(55)	270	200	1.34	1.605
160(169)	95(105)	320	250	1.56	1.825
210(219)	145(155)	370	300	1.78	2.045

*Indicates a value when two inner blocks are in close contact with each other.

KR33

(without cover)



*1 Distance between the mechanical stopper and the stroke starting position.
 *2 Indicates the inner block length when calculating the available stroke range.
 The length in model KR-B (with two long-type inner blocks) is 148 mm.

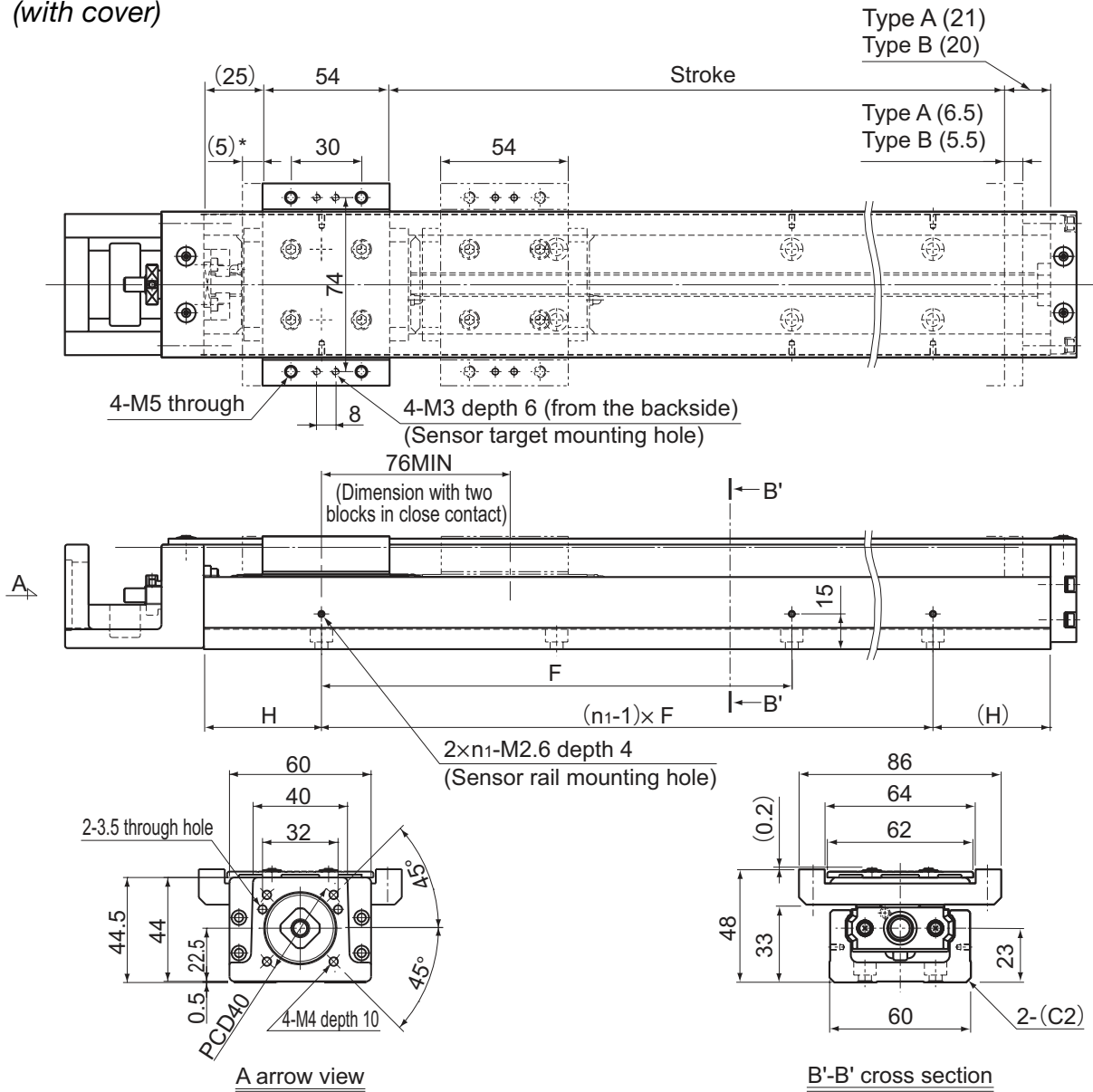
STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L_1 (mm)	OUTER RAIL LENGTH (mm)	G (mm)	n	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*					TYPE A	TYPE B
50(61.5)	—	220	150	25	2	1.7	—
100(110.5)	—	270	200	50	2	2	—
200(211.5)	125(135.5)	370	300	50	3	2.6	2.95
300(311.5)	225(235.5)	470	400	50	4	3.2	3.55
400(411.5)	325(335.5)	570	500	50	5	3.9	4.25
500(511.5)	425(435.5)	670	600	50	6	4.5	4.85
600(611.5)	525(535.5)	770	700	50	7	5.5	5.85

*Indicates a value when two inner blocks are in close contact with each other.

KR33

(with cover)

REFER TO PAGES 3-4 TO
DETERMINE KR PART NO.



* Distance between the mechanical stopper and the stroke starting position.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L ₁ (mm)	OUTER RAIL LENGTH (mm)	H (mm)	F (mm)	n ₁	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*						TYPE A	TYPE B
50(61.5)	—	220	150	25	100	2	1.9	—
100(110.5)	—	270	200	50	100	2	2.2	—
200(211.5)	125(135.5)	370	300	50	200	2	2.8	3.28
300(311.5)	225(235.5)	470	400	100	200	2	3.5	3.98
400(411.5)	325(335.5)	570	500	50	200	3	4.2	4.68
500(511.5)	425(435.5)	670	600	100	200	3	4.8	5.28
600(611.5)	525(535.5)	770	700	50	200	4	5.9	6.38

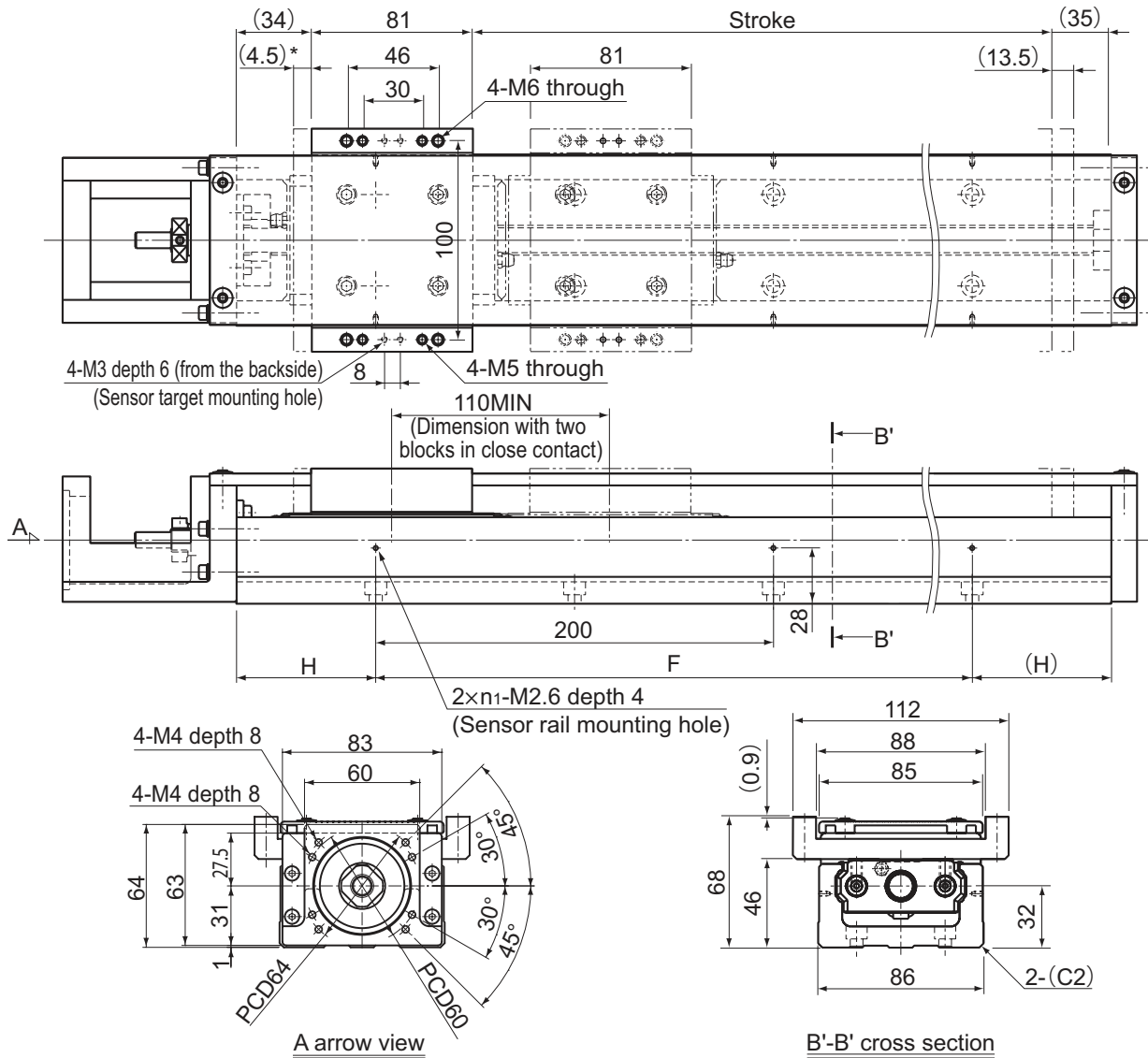
*Indicates a value when two inner blocks are in close contact with each other.

Note - It must be noted that the cover-mounting bolt is 0.2mm higher than the top face of the sub table.

KR46

(with cover)

REFER TO PAGES 3-4 TO
DETERMINE KR PART NO.



* Distance between the mechanical stopper and the stroke starting position.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		OVERALL LENGTH L ₁ (mm)	OUTER RAIL LENGTH (mm)	H (mm)	F (mm)	n ₁	OVERALL MAIN UNIT MASS (kg)	
TYPE A	TYPE B*						TYPE A	TYPE B
190(208)	80(98)	440.5	340	70	200	2	8.3	9.79
290(308)	180(198)	540.5	440	20	400	3	9.7	11.19
390(408)	280(298)	640.5	540	70	400	3	11	12.49
490(508)	380(398)	740.5	640	20	600	4	12.4	13.89
590(608)	480(498)	840.5	740	70	600	4	13.7	15.19
690(708)	580(598)	940.5	840	20	800	5	15	16.49
790(808)	680(698)	1040.5	940	70	800	5	16.3	17.79

*Indicates a value when two inner blocks are in close contact with each other.

Note - It must be noted that the cover-mounting bolt is 0.2mm higher than the top face of the sub table.

INTERMEDIATE FLANGES

Intermediate flanges are also in stock for varieties of motors.

THK's intermediate flanges are provided with surface coating that provides excellent corrosion resistance.

Refer to the corresponding chart to determine Part No. and Product Code.



KR SIZE	SYMBOL	THK PART NO.	PRODUCT CODE	KR SIZE	SYMBOL	THK PART NO.	PRODUCT CODE
20	M20	KR/SKR20 INT-FLNG F20-M	652171120130001	26	M26	KR/SKR26 INT-FLNG F26-M	652171126130001
	N20	KR/SKR20 INT-FLNG F20-N	652171120140001		N26	KR/SKR26 INT-FLNG F26-N	652171126140001
	Q20	KR/SKR20 INT-FLNG F20-Q	652171120160000		Q26	KR/SKR26 INT-FLNG F26-Q	652171126160000
	R20	KR/SKR20 INT-FLNG F20-R	652171120170000		R26	KR/SKR26 INT-FLNG F26-R	652171126170000
	S20	KR/SKR20 INT-FLNG F20-S	652171120180000		S26	KR/SKR26 INT-FLNG F26-S	652171126180000
	X20A	KR/SKR20 INT-FLNG F20-TA000	75210001630A000		X26A	KR26 INT-FLNG F26-T000	75210001099A000
				X26B	KR26 INT-FLNG MPL15X0	75210001178A010	
33	Q33	KR30/33/SKR33 INT-FLNG F33-Q	652171130160000	46	Q46	KR45/46/SKR46 INT-FLNG F46-Q	652171145160000
	R33	KR30/33/SKR33 INT-FLNG F33-R	652171130170000		U46	KR45/46/SKR46 INT-FLNG F46-U	652171145200000
	T33	KR30/33/SKR33 INT-FLNG F33-T	652171130190000		V46	KR45/46/SKR46 INT-FLNG F46-V	652171145210000
	U33	KR30/33/SKR33 INT-FLNG F33-U	652171130200000		X46A	KR45/46/SKR46 INT-FLNG F46-TA000	75210001639A001
	X33A	KR30H/33/SKR33 INT-FLNG F33-TA009	75210001651A090		X46B	KR45/46/SKR46 INT-FLNG F46-TA001	75210001639A010
	X33B	KR33 INT-FLNG F33-TA001	75210001636A010		X46C	KR45/46/SKR46 INT-FLNG F46-TA009	75210001639A090
	X33C	KR33 INT-FLNG F33-TA014	75210001636A140		X46D	KR45/46/SKR46 INT-FLNG F46-TA014	75210001639A140
	X33D	KR33 INT-FLNG F33-TA028	75210001636A280		X46E	KR45/46/SKR46 INT-FLNG F46-TA109	75210001639AA90
	X33E	KR33 INT-FLNG F33-TA109	75210001636AA90		Y46	KR45/46/SKR46 INT-FLNG F46-Y	652171145220000

MAX INPUT TORQUE [Nm]						0.207	0.622	1.244	2.707
MOTOR TYPE		WATTAGE (W)	PEAK TORQUE (Nm)	FLANGE SIZE (mm)	KR20	KR26	KR33	KR46	
					SYMBOL	SYMBOL	SYMBOL	SYMBOL	
ALLEN BRADLEY	VPL	VPL-A/B0631	280	1.3	55	---	X26B	X33E	X46C
		VPL-A/B0632	390	2.7	55	---	X26B	X33E	X46C
		VPL-A/B0633	440	4.1	55	---	X26B	---	X46C
		VPL-A/B0751	500	2.3	70	---	---	X33C	X46D
		VPL-A/B0752	660	4.4	70	---	---	X33C	X46D
		VPL-A/B0753	800	7.4	70	---	---	X33C	---
	MPL	MPL-A/B 1510V	160	0.77	55	---	X26B	X33E	X46C
		MPL-A/B 1520U	270	1.58	55	---	X26B	X33E	X46C
		MPL-A/B 1530U	390	2.80	55	---	X26B	X33E	X46C
		MPL-A/B210V	370	1.50	70	---	---	X33C	X46D
		MPL-A/B220T	620	4.74	70	---	---	X33C	X46D
		MPL-A/B230P	860	8.20	70	---	---	X33C	X46D
	TLP	TLP-A046-005	50	0.447	40	Q20	Q26	Q33	Q46
		TLP-A046-010	100	1.034	40	Q20	Q26	Q33	Q46
		TLP-A070-020	200	2.16	60	--	--	X33D	V46
		TLP-A070-040	400	4.275	60	--	--	X33D	V46
	TLY	TLY/TL-A110 (-AA, METRIC)	41	0.2	40	Q20	Q26	Q33	Q46
		TLY/TL-A120 (-AA, METRIC)	86	0.36	40	Q20	Q26	Q33	Q46
TLY/TL-A130 (-AA, METRIC)		140	0.76	40	Q20	Q26	Q33	Q46	
TLY/TL-A220 (-AA, METRIC)		350	1.48	60	---	---	X33D	V46	
TLY/TL-A230 (-AA, METRIC)		440	3.05	60	---	---	X33D	V46	

MAX INPUT TORQUE [Nm]						0.207	0.622	1.244	2.707	
MOTOR TYPE		WATTAGE (W)	PEAK TORQUE (Nm)	FLANGE SIZE (mm)	KR20	KR26	KR33	KR46		
					SYMBOL	SYMBOL	SYMBOL	SYMBOL		
KOLLOMORGEN	AKM1AN	AKM11B	140	0.62	40	Q20	Q26	Q33	Q46	
		AKM12C	230	1.08	40	Q20	Q26	Q33	Q46	
		AKM13C	300	1.46	40	Q20	Q26	Q33	Q46	
	AKM2AN	AKM21C	320	1.48	58	---	---	X33A	X46E	
		AKM22C	290	2.73	58	---	---	X33A	X46E	
		AKM23D	530	3.89	58	---	---	X33A	X46E	
		AKM24D	540	4.84	58	---	---	X33A	X46E	
	AKM3AN	AKM31C	290	3.87	70	---	---	X33C	X46D	
		AKM32H	1060	6.22	70	---	---	X33C	X46D	
		AKM33E	550	8.95	70	---	---	X33C	X46D	
	AKM2G2xx	AKM2G21D	293	1.78	58	--	X26B	X33E	X46C	
		AKM2G21E	369	1.79	58	--	X26B	X33E	X46C	
		AKM2G21G	456	1.79	58	--	X26B	X33E	X46C	
		AKM2G22C	206	3.33	58	--	X26B	X33E	X46C	
		AKM2G22D	326	3.33	58	--	X26B	X33E	X46C	
		AKM2G22E	422	3.34	58	--	X26B	X33E	X46C	
		AKM2G23D	273	4.69	58	--	--	X33E	X46C	
		AKM2G23E	416	4.69	58	--	--	X33E	X46C	
		AKM2G23F	599	4.74	58	--	--	X33E	X46C	
		AKM2G24D	277	5.93	58	--	--	--	X46C	
		AKM2G24E	419	5.95	58	--	--	--	X46C	
		AKM2G24F	610	6	58	--	--	--	X46C	
	AKM2G3xx	AKM2G31C	175	5.99	72	--	--	--	X46D	
		AKM2G31D	263	6	72	--	--	--	X46D	
		AKM2G31E	404	6.06	72	--	--	--	X46D	
	YASKAWA ELECTRIC	Σ-mini	SGMM-A1	10	0.096	25	N20	N26	---	---
			SGMM-A2	20	0.191	25	N20	N26	---	---
			SGMM-A3	30	0.289	25	N20	N26	---	---
		Σ-V	SGMJV-A5	50	0.557	40	Q20	Q26	Q33	Q46
			SGMAV-A5	50	0.477	40	Q20	Q26	Q33	Q46
SGMJV-01			100	1.11	40	Q20	Q26	Q33	Q46	
SGMAV-01			100	0.96	40	Q20	Q26	Q33	Q46	
SGMAV-C2			150	1.43	40	---	---	Q33	Q46	
SGMJV-02			200	2.23	60	---	---	---	V46	
SGMAV-02			200	1.91	60	---	---	---	V46	
SGMJV-04			400	4.46	60	---	---	---	V46	
SGMAV-04			400	3.82	60	---	---	---	V46	
Σ7			SGM7A-A5	50	0.557	40	Q20	Q26	Q33	Q46
		SGM7J-A5	Q20				Q26	Q33	Q46	
		SGM7A-01	100	1.11	Q20		Q26	Q33	Q46	
		SGM7J-01			Q20		Q26	Q33	Q46	
		SGM7A-02	200	2.23	60	--	--	X33D	V46	
		SGM7J-02				--	--	X33D	V46	
		SGM7A-04	400	4.46	60	--	--	X33D	V46	
		SGM7J-04				--	--	X33D	V46	
		SGM7A-06	600	6.69	60	--	--	--	V46	
		SGM7J-06				--	--	--	V46	

: May Require Torque Limit
--- : Contact THK

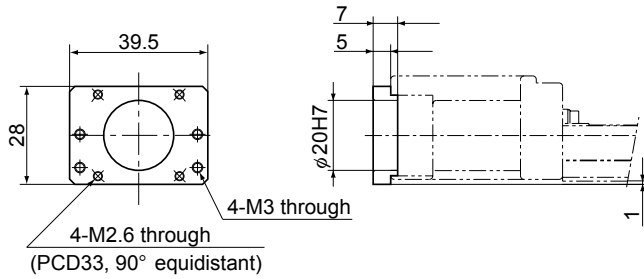
MAX INPUT TORQUE [Nm]						0.207	0.622	1.244	2.707
MOTOR TYPE		WATTAGE (W)	PEAK TORQUE (Nm)	FLANGE SIZE (mm)	KR20	KR26	KR33	KR46	
					SYMBOL	SYMBOL	SYMBOL	SYMBOL	
OMRON	OMNUC G5	R88M-K05030	50	0.48	40	Q20	Q26	Q33	Q46
		R88M-K10030	100	0.95	40	---	Q26	Q33	Q46
		R88M-K20030	200	1.91	60	---	---	---	Y46
		R88M-K40030	400	3.8	60	---	---	---	Y46
	OMNUC G	R88M-G05030	50	0.45	40	Q20	Q26	Q33	Q46
		R88M-G10030	100	0.93	40	---	Q26	Q33	Q46
		R88M-GP10030	100	0.84	60	---	---	---	Y46
		R88M-G20030	200	1.78	60	---	---	---	Y46
	1S	R88M-G40030	400	3.6	60	---	---	---	Y46
		R88M-1M10030	100	0.95	40	--	Q26	Q33	Q46
		R88M-1M20030	200	1.91	60	--	--	X33D	V46
	MITSUBISHI ELECTRIC	J2-Jr	R88M-1M40030	400	3.8	60	--	--	X33D
HC-AQ013			10	0.0955	28	M20	M26	---	---
HC-AQ023			20	0.191	28	M20	M26	---	---
J4		HC-AQ033	30	0.287	28	M20	M26	---	---
		HG-KR053	50	0.560	40	Q20	Q26	Q33	Q46
		HG-MR053	50	0.480	40	Q20	Q26	Q33	Q46
		HG-KR13	100	1.100	40	---	---	Q33	Q46
		HG-MR13	100	0.950	40	---	---	Q33	Q46
		HG-KR23	200	2.200	60	---	---	---	V46
		HG-MR23	200	1.900	60	---	---	---	V46
		HG-KR43	400	4.500	60	---	---	---	V46
JN		HG-MR43	400	3.800	60	---	---	---	V46
	HF-KN053	50	0.48	40	Q26	Q26	Q33	Q46	
	HF-KN013	100	0.95	40	Q26	Q26	Q33	Q46	
	HF-KN23	200	1.91	60	--	--	X33D	V46	
ORIENTAL MOTOR	α Step	HF-KN43	400	3.8	60	--	--	X33D	V46
		ASC3*	--	0.055-0.12	28	S20	S26	---	---
		AR/ARL46	--	0.30	42	R20	R26	R33	---
		AS/ASC46	--	0.30	42	R20	R26	R33	---
		AR6*	--	1-2	60	---	---	U33	U46
		ARL6*	--	1.2-2	60	---	---	U33	U46
	5 phase	AS/ASC6*	--	1.2-2	60	---	---	U33	U46
		CRK52*	--	0.042-0.09	28	S20	S26	---	---
		CRK54*	--	0.24-0.42	42	R20	R26	R33	---
		CRK56*	--	0.78-2.3	60	---	---	U33	U46
		CSK52*	--	0.033-0.06	28	S20	S26	---	---
		CSK54*	--	0.13-0.42	42	R20	R26	R33	---
CSK56*		--	0.42-1.66	60	---	---	U33	U46	
RKS54*		--	0.14-0.27	42	R20	R26	R33	---	
RKS56*		--	0.52-1.77	60	---	---	U33	U46	
RK54*		--	0.13-0.24	42	R20	R26	R33	---	
2 phase	RK56*	--	0.42-1.66	60	---	---	U33	U46	
	UMK24*	--	0.16-0.32	42	R20	R26	R33	---	
	UMK26*	--	0.39-1.35	56.4	---	---	T33	---	
	CSK24*	--	0.16-0.32	42	R20	R26	R33	---	
NEMA	Nema size	CSK26*	--	0.39-1.35	56.4	---	---	T33	---
		Nema 11	--	--	28.2	S20	S26	---	---
		Nema 14	--	--	35.3	---	---	---	---
		Nema 17	--	--	42	R20	R26	R33	---
		Nema 23	--	--	57.15	X20A	X26A	T33	X46A
Nema 34	--	--	86.1	---	---	X33B	X46B		

May Require Torque Limit : Contact THK

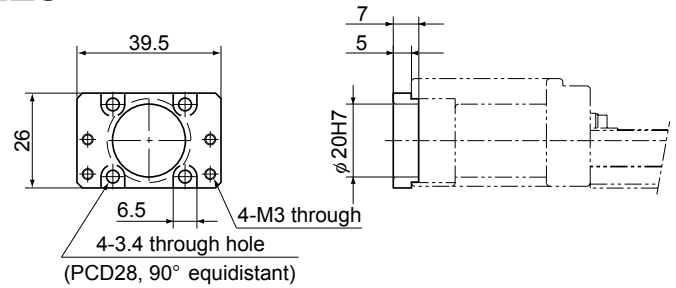
INTERMEDIATE FLANGE DIMENSIONS

KR20

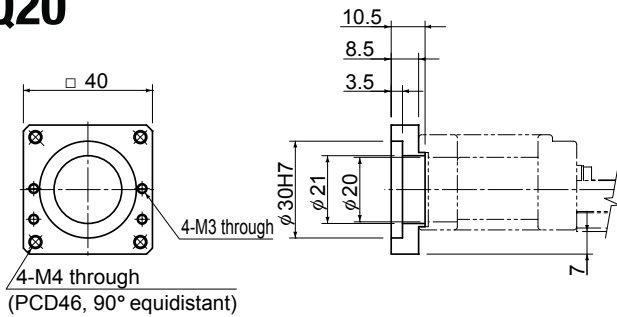
M20



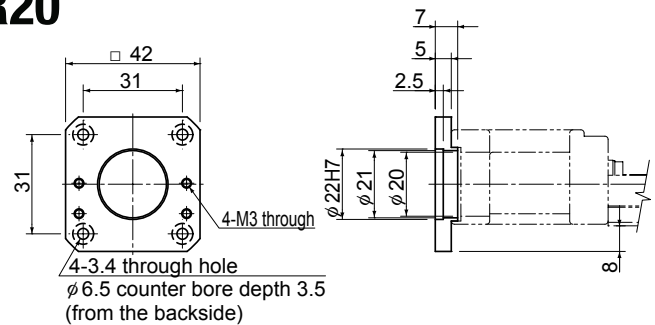
N20



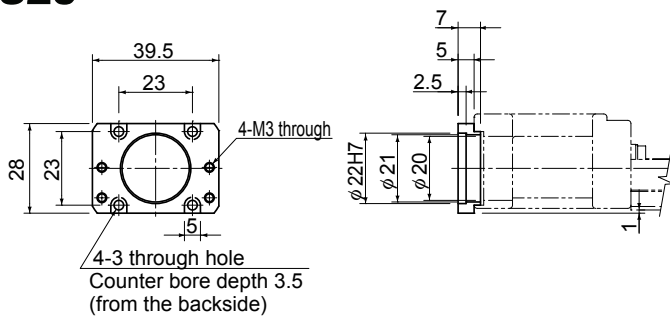
Q20



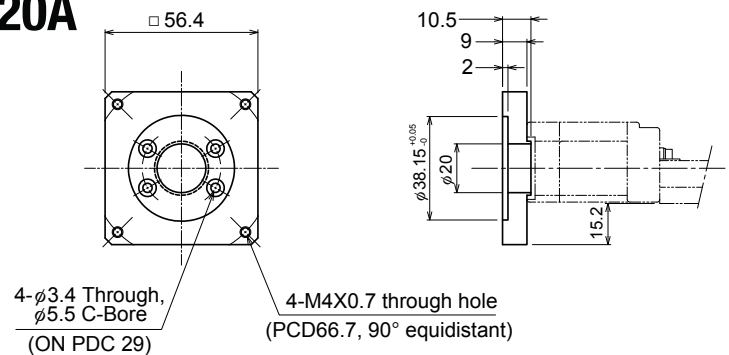
R20



S20

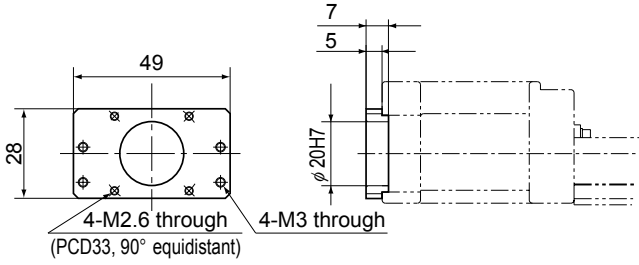


X20A

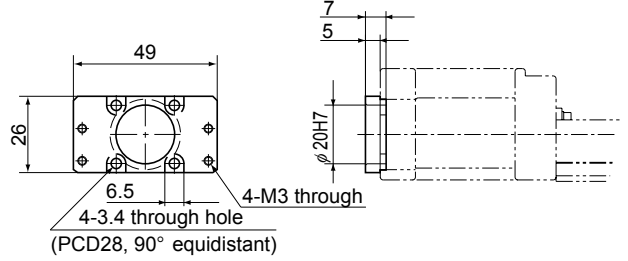


KR26

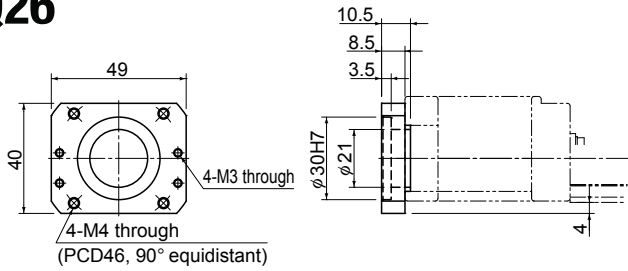
M26



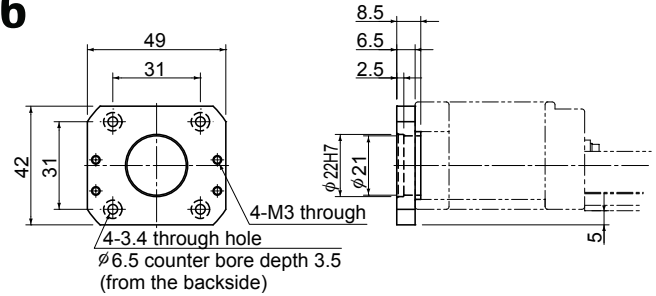
N26



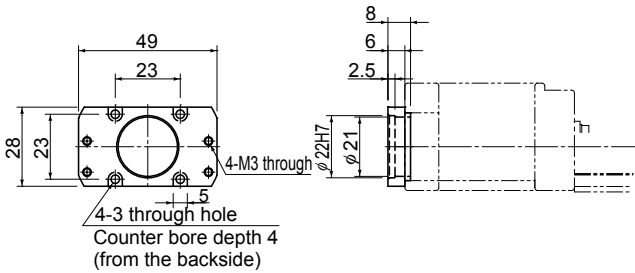
Q26



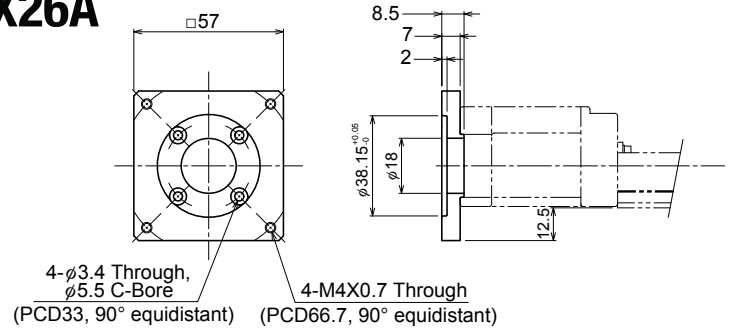
R26



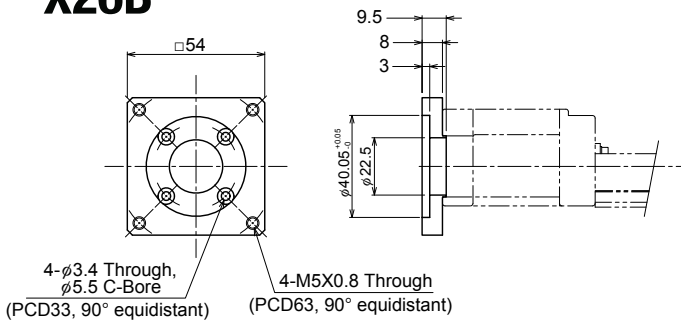
S26



X26A

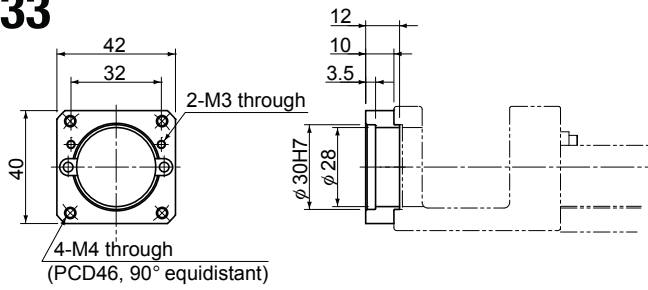


X26B

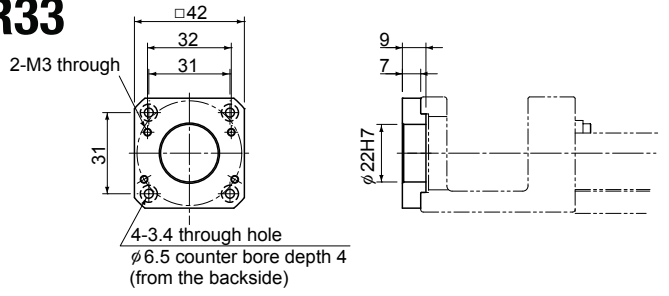


KR33

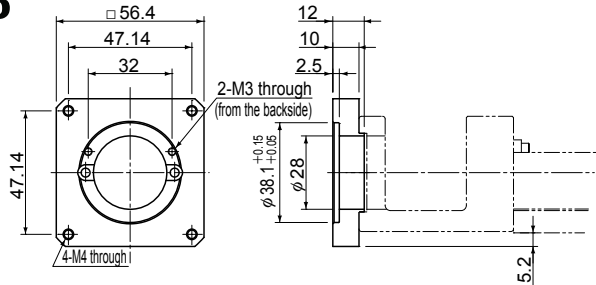
Q33



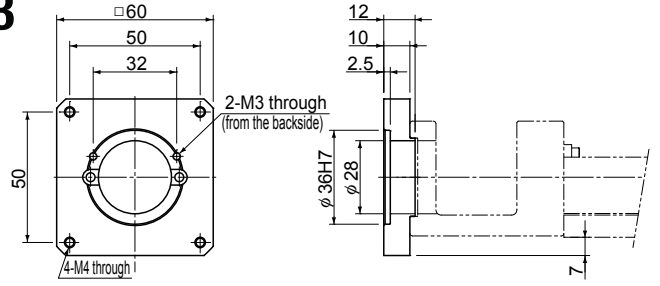
R33



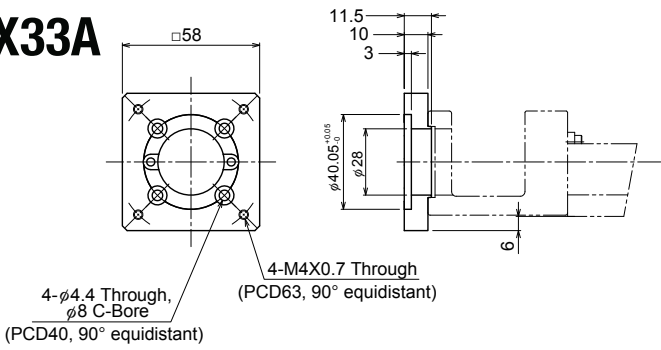
T33



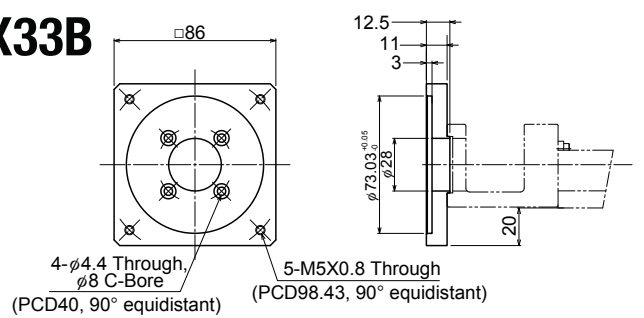
U33



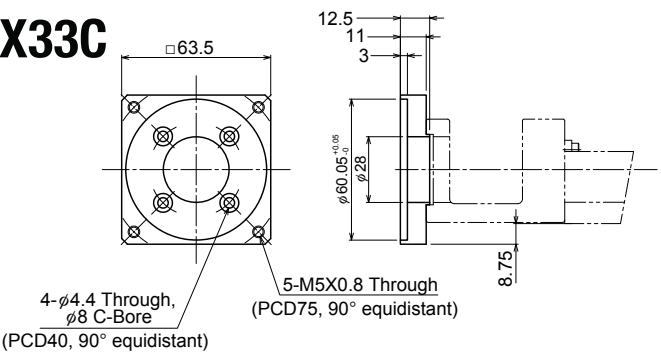
X33A



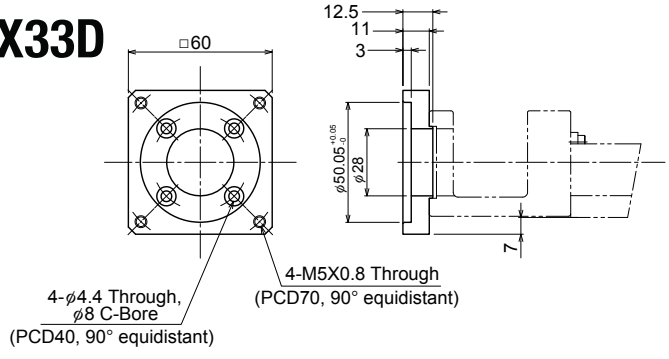
X33B



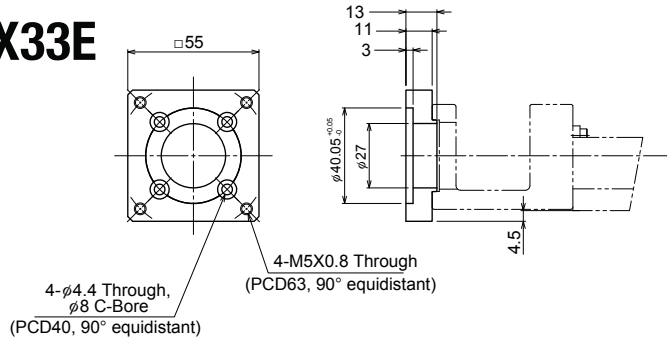
X33C



X33D

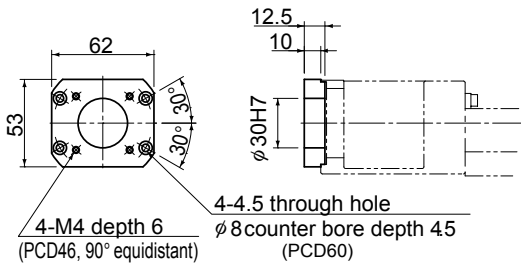


X33E

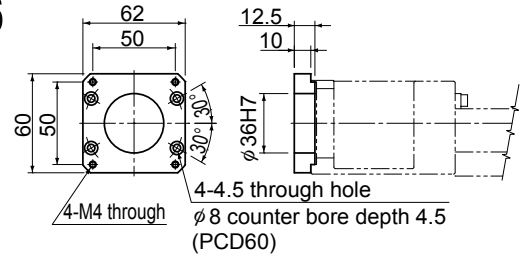


KR46

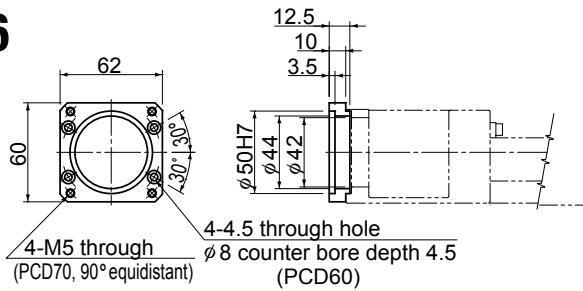
Q46



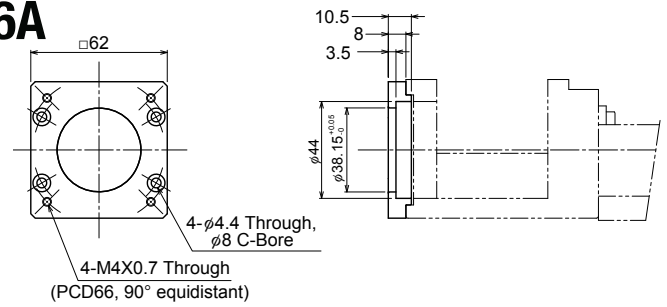
U46



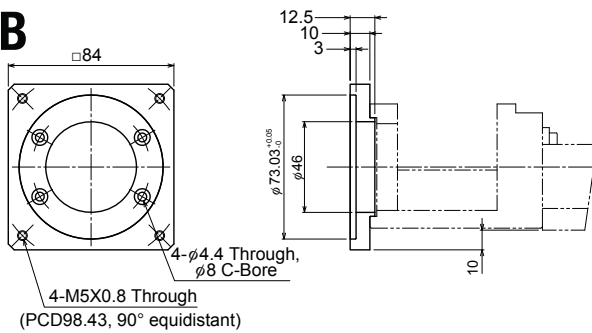
V46



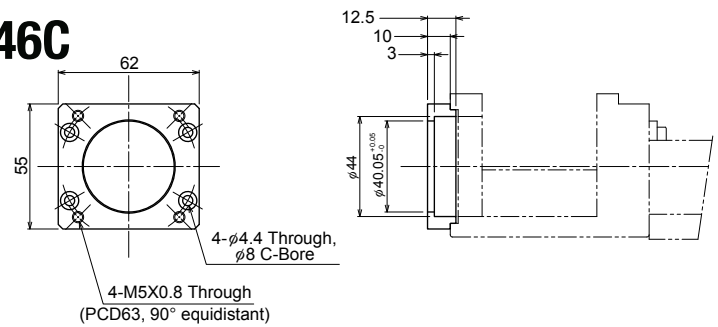
X46A



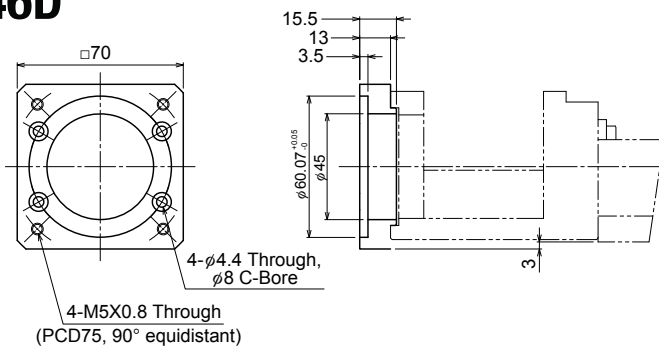
X46B



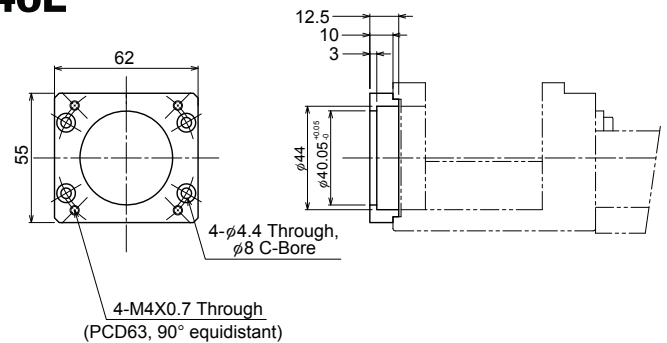
X46C



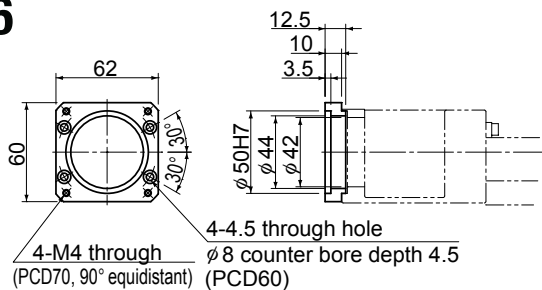
X46D



X46E



Y46



More KR Options:

Contact THK or refer to KR Catalog No. 209E for details



Motor Wrap



Short Block: Single/Double



Bellows

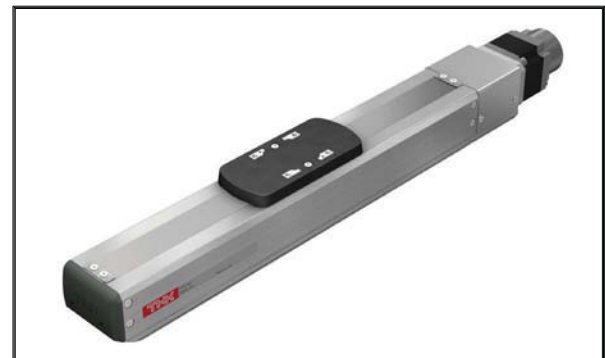


Other Sizes: 15, 55, 65

KR Families:



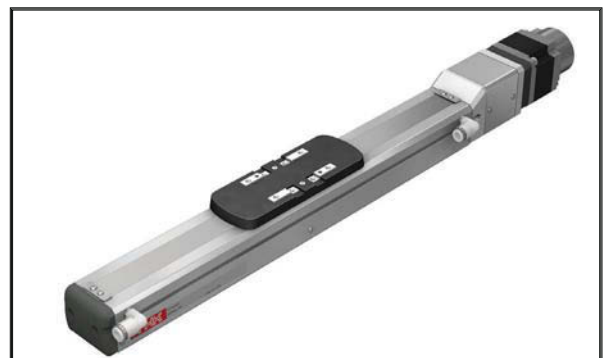
SKR: Caged Ball Type



KRF: Full Enclosed Type



KSF: Full Enclosed + High Speed



CKRF/CKSF: Clean Room Type of KRF/KSF

ELECTRIC ACTUATORS

Full-Closed Stepper Motor & Drive

COMPACT & LIGHTWEIGHT

Simple structure with aluminum frame

LONG-TERM MAINTENANCE FREE

Utilization of Caged Ball LM Guides and QZ Lubricators

COST EFFECTIVE

Less components necessary

FULLY ENCLOSED

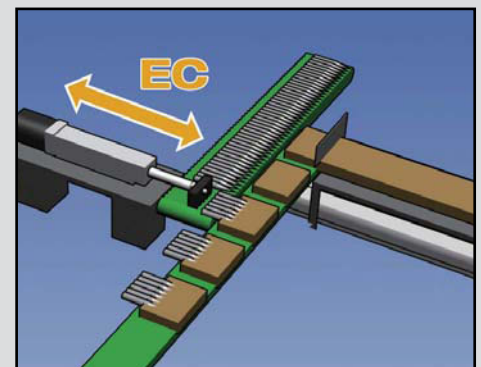
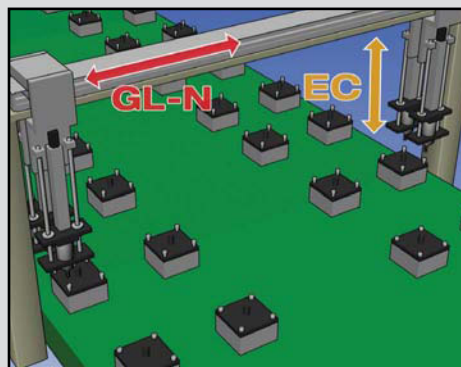
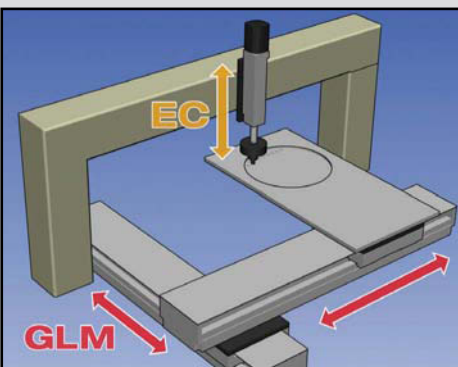
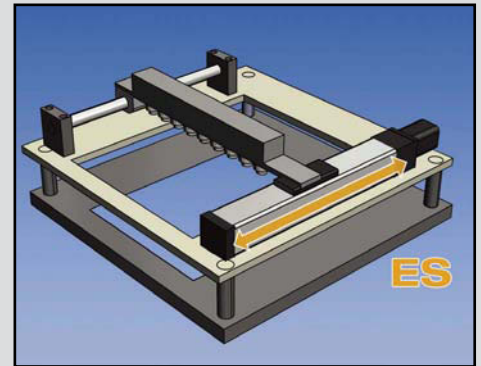
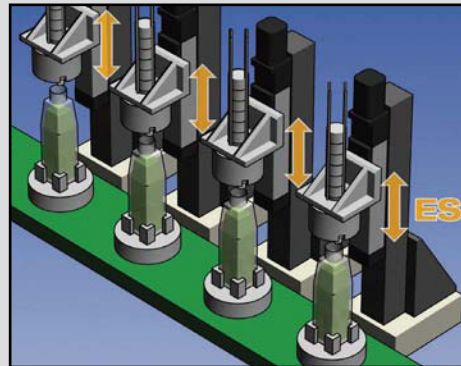
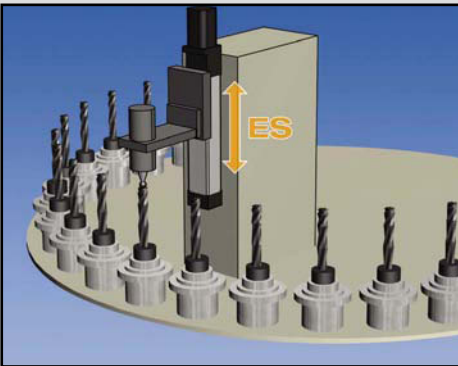
Protection from outside elements with Strip seal (ES) and LaCS seal (EC)

TSC
Stepper Driver Controller

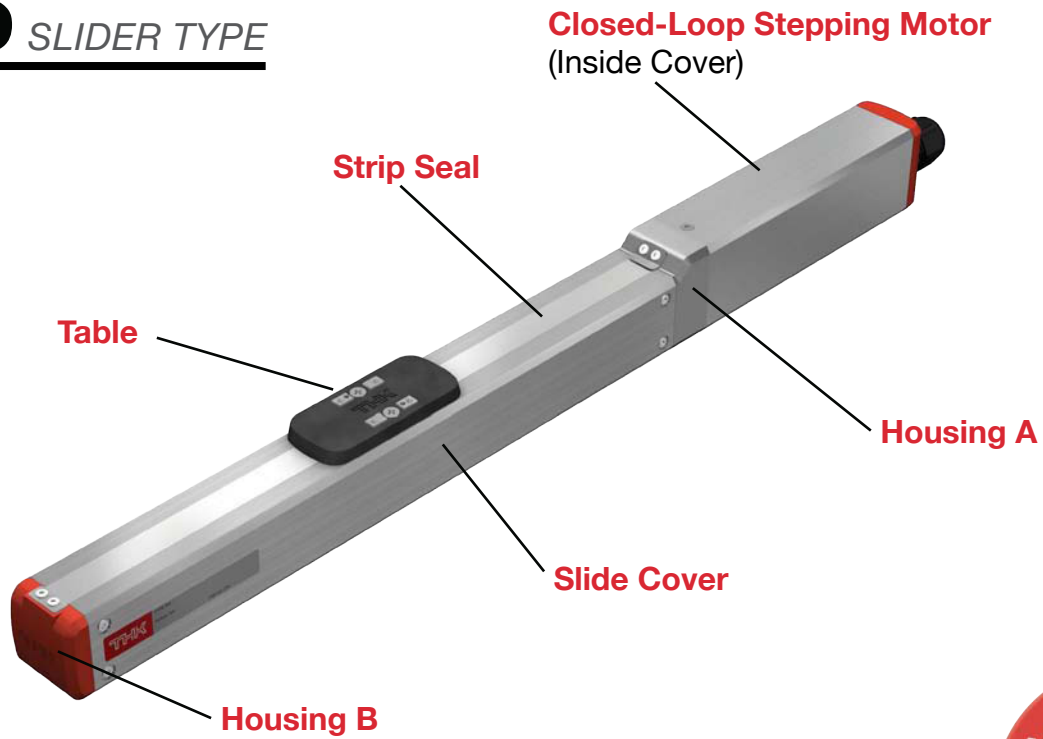


Stocked blank controller can be configured for a specific actuator and shipped quickly.

Application Examples:

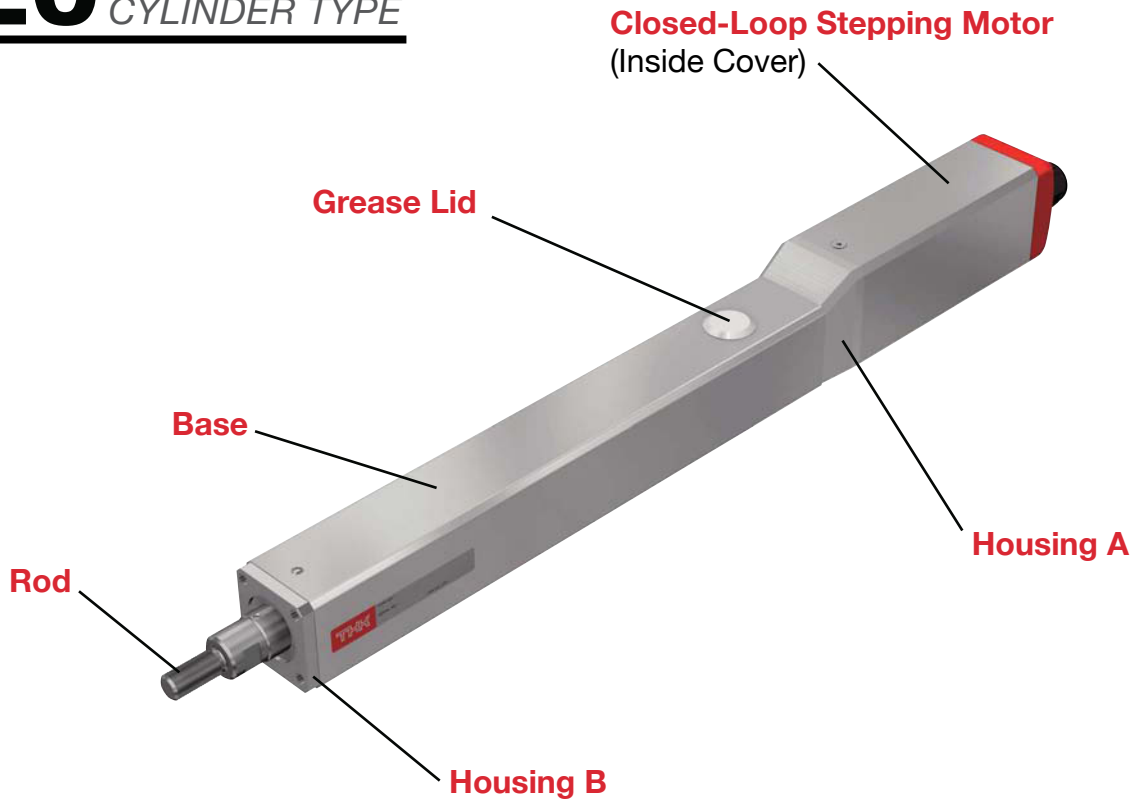


ES SLIDER TYPE



**U.S. STOCK
AVAILABLE!**

EC CYLINDER TYPE

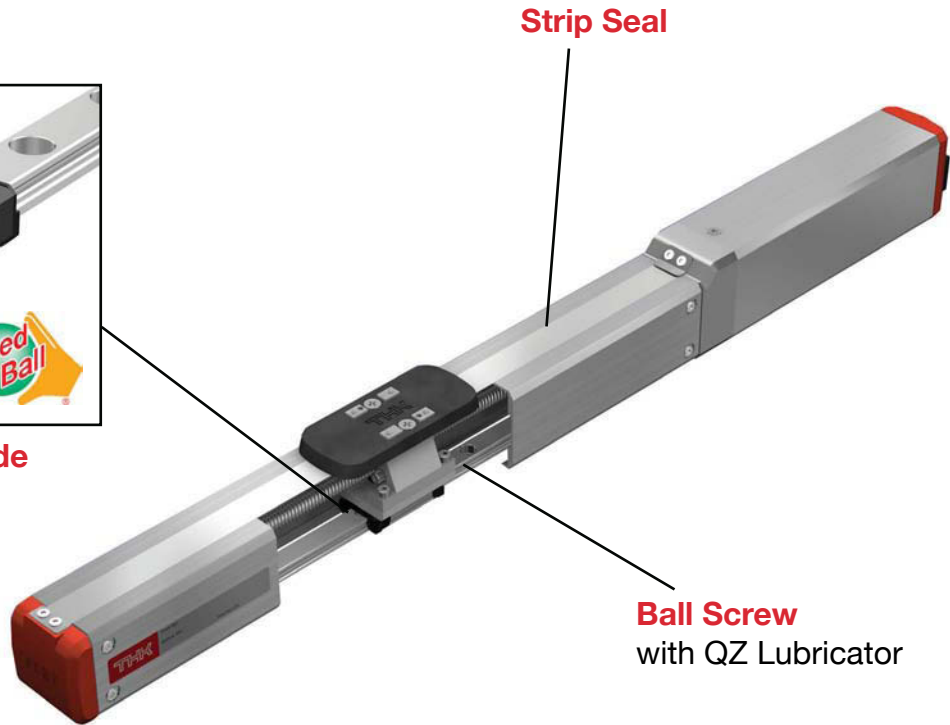


Precautions on using ES/EC actuator: Please refer to ES EC Instruction Manual & TSC Instruction Manual. (Available at www.thk.com) Inventory is subject to availability. Product spec is subject to change without notice.

ES SLIDER TYPE



Caged-Ball LM Guide



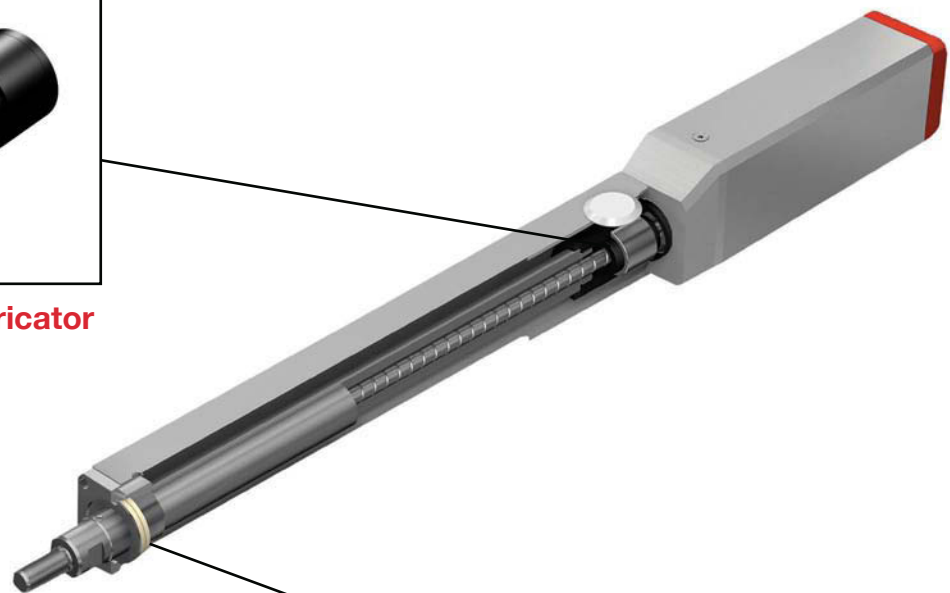
Strip Seal

**Ball Screw
with QZ Lubricator**

EC CYLINDER TYPE



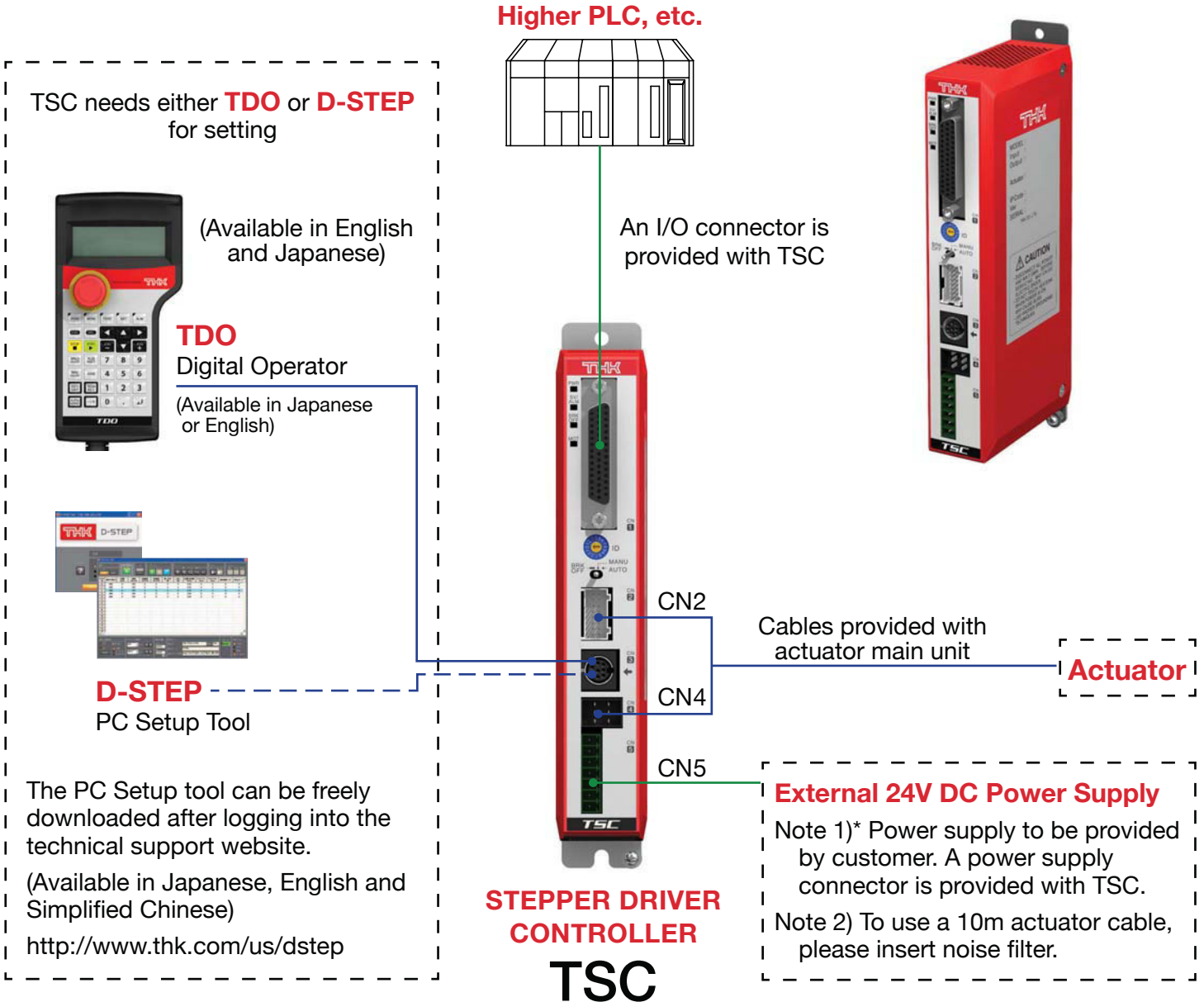
Ball Screw with QZ Lubricator



**LaCS Seal
(Laminated Contact Scraper)**

TSC STEPPER DRIVER CONTROLLER

For Single Axis / Position Type



DETERMINE ES-EC QUICK-SHIP PART NUMBER

ACTUATOR + MOTOR + MOTOR CABLE

Step 1		Step 2		Step 3			
MODEL NUMBER		BALL SCREW LEAD		STROKE	DESIGN SYMBOL		CONTROL DEVICE
ES4	-	12	-	0300	B	-	TS

KIT

*All included

- Actuator + Motor + Motor Cable - 3 m I/O cable (Refer to Page 41)
(Refer to Page 27-38)
- TSC Controller (Refer to Page 39-40) - 3 m PC communication cable (Refer to Page 41)

Step 1		Step 2		Step 3			
MODEL NUMBER		BALL SCREW LEAD		STROKE	DESIGN SYMBOL		CONTROL DEVICE
ES4	-	12	-	0300	B	-	TS

*6mm = 06

50 - 600 mm
*100 mm = 0100

B = Standard



TS = Stepper Driver
Controller TSC

Step 1-3: Determine Model Number, Ball Screw Lead, Stroke and Motor Spec

MODEL	BALL SCREW LEAD (mm)	STROKE (mm)	MOTOR TYPE	MAXIMUM LOAD CAPACITY ^{*1 *2} (kg)	
				HORIZONTAL MOUNT	VERTICAL MOUNT
ES3	06	50 - 300	Stepper Motor □28	1	0.5
ES4	06	50 - 400	Stepper Motor □35	9	4
	12			7.5	1.5
ES5	06	50 - 500	Stepper Motor □42	10	5
	12			6	2
ES6	06	50 - 600	Stepper Motor □42	10	5
	12			6	2
EC3	06	50 - 200	Stepper Motor □35	15	6
EC4	06	50 - 300	Stepper Motor □42	40	12
	12			25	4.5

*1 This specification shows the value when combining with stepper driver controller TSC.

*2 Load capacity and maximum speed vary depending on use conditions. For details, see "Speed and Load Capacity".

 : Choose Quick-Ship Option
 : Standard/Only Quick Ship Option

Step 4

	MOTOR SPEC		HOME POSITION		CABLE LENGTH	SAMPLE PART NUMBER
/	28P	-	D00	-	S3	ES4-12-0300B-TS/28P-D00-S3

Step 4

	MOTOR SPEC		HOME POSITION		CABLE LENGTH	SAMPLE PART NUMBER
/	28P	-	D00	-	S3	KIT-ES4-12-0300B-TS/28P-D00-S3

28P = ES3
35P = ES4/EC3
42P = ES5/ES6/EC4

D00 = Standard,
Motor Slide

S3 = Standard,
3m

MAXIMUM SPEED FOR EACH STROKE *1 *2 (mm/s)											
STROKE (mm)											
50	100	150	200	250	300	350	400	450	500	550	600
300											
250											
500											
300											
500											
300										270	230
500											460
187											
Horizontal: 250, Vertical: 240				230	170						
450					340						

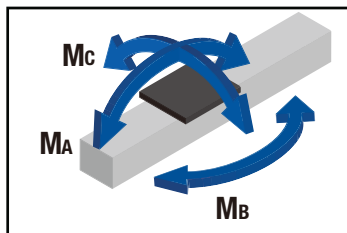
Basic Specifications:

CONTROL DEVICE TYPE				TSC
MOTOR				□28
BALL SCREW LEAD (mm)				6
MAX. LOAD WEIGHT	ACCELERATION/ DECELERATION RATE	HORIZONTAL MOUNT	0.3G	1
		VERTICAL MOUNT	0.2G	0.5
RUNNING LIFE *1 (km)				5000
POSITIONING REPEATABILITY (mm)				±0.020
LOST MOTION (mm)				0.1
STATIC PERMISSIBLE MOMENT *2 (N-m)				MA: 6.0, MB: 7.5, MC: 5.9

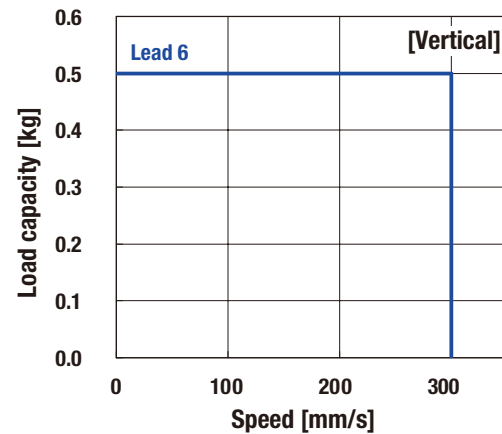
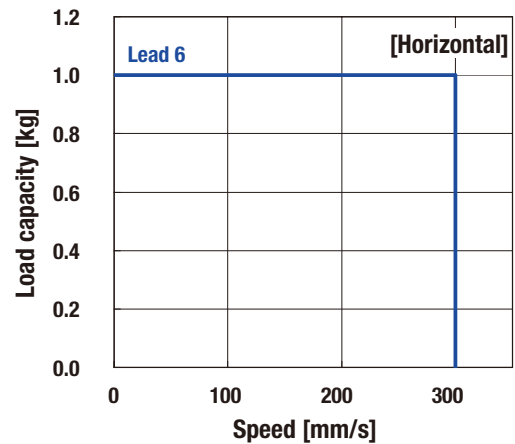
*1 Service life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm.

*2 Maximum permissible moment when unit is stationary.
Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

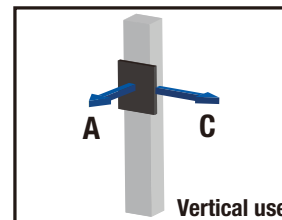
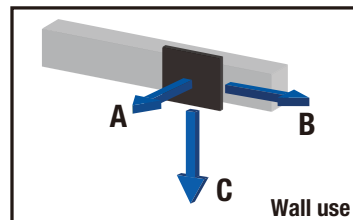
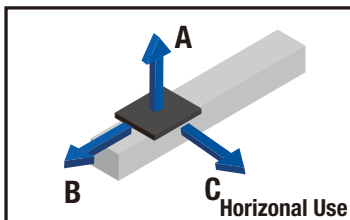
Static Permissible Moment



Speed & Load Capacity Comparison:



Permissible Overhang Length*:



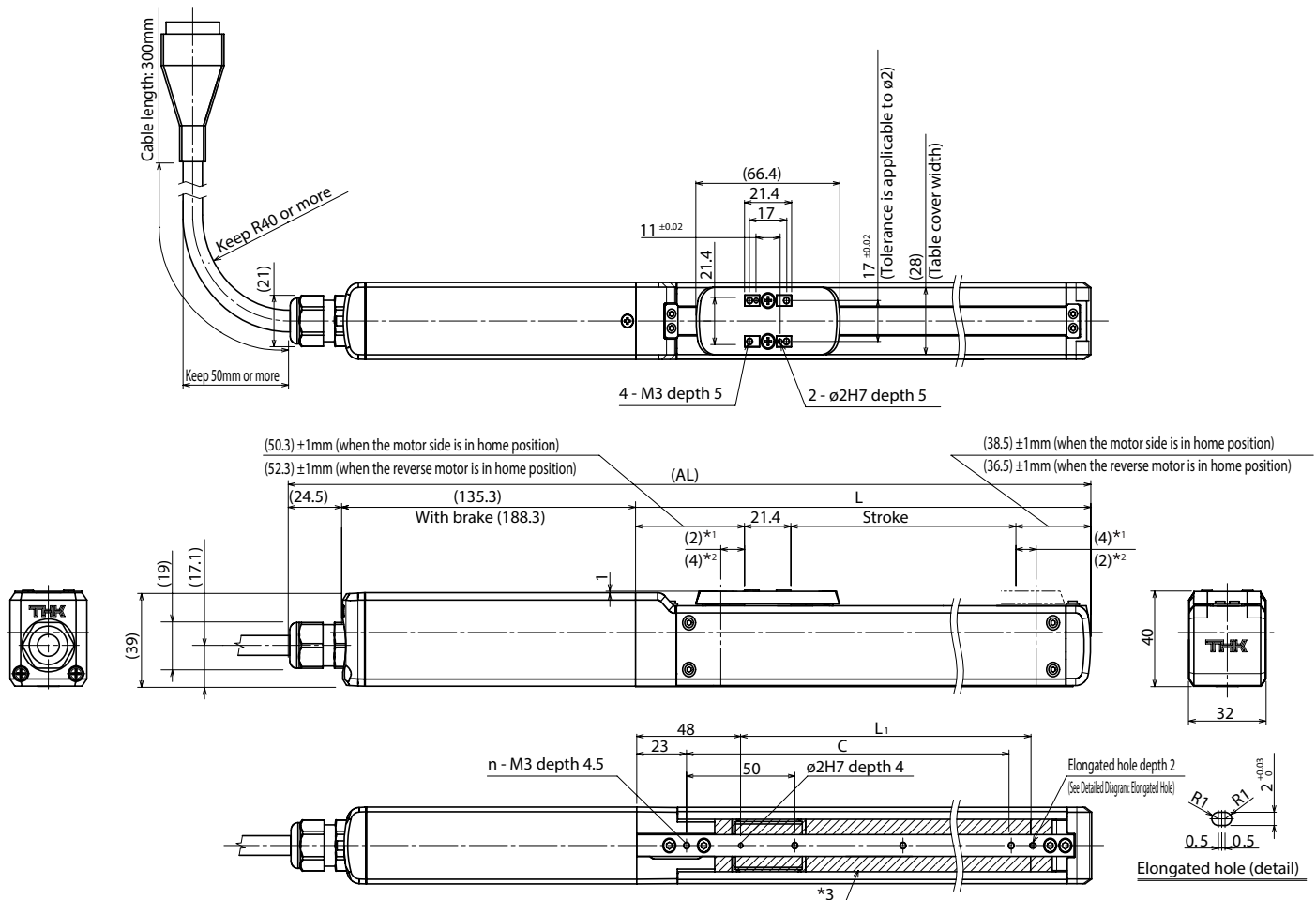
BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]		
		A	B	C
6	0.5	200	200	200
	1	200	160	200

BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]		
		A	B	C
6	0.5	200	200	200
	1	170	150	200

BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]	
		A	C
6	0.3	200	200
	0.5	200	200

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

Dimensions:



- *1 Stroke to the mechanical stopper when the motor side is in home position.
- *2 Stroke to the mechanical stopper when the reverse motor side is in home position.
- *3 represents the opening parts.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)
MAX SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	300					
DIMENSIONS (mm)	AL*3	320 (373)	370 (423)	420 (473)	470 (523)	520 (573)	570
	L	160.2	210.2	260.2	310.2	360.2	410.2
	L ₁	85	135	185	235	285	335
	C	100	150	200	250	300	350
MOUNTING HOLE	n	3	4	5	6	7	8
WEIGHT *3 (kg)		1 (1.3)	1 (1.4)	1.1 (1.4)	1.1 (1.5)	1.3 (1.5)	1.3 (1.6)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".
 *2 Dependent on permissible rotational speed of ball screw.
 *3 Values when a brake is installed are shown in parentheses.

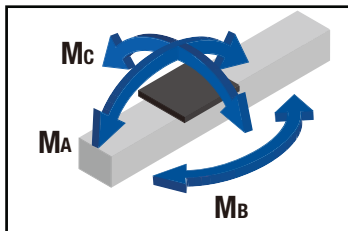
Basic Specifications:

CONTROL DEVICE TYPE				TSC	
MOTOR				□35	
BALL SCREW LEAD (mm)				6	12
MAX. LOAD WEIGHT	ACCELERATION/DECELERATION RATE	HORIZONTAL MOUNT	0.3G	9	7.5
		VERTICAL MOUNT	0.2G	4	1.5
RUNNING LIFE *1 (km)				5000	
POSITIONING REPEATABILITY (mm)				±0.020	
LOST MOTION (mm)				0.1	
STATIC PERMISSIBLE MOMENT *2 (N-m)				MA: 9.3, MB: 13.5, MC: 17.7	

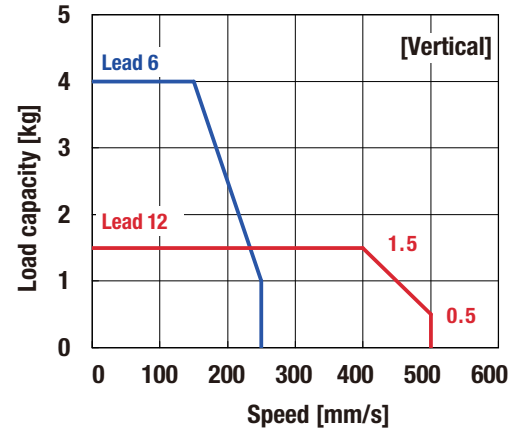
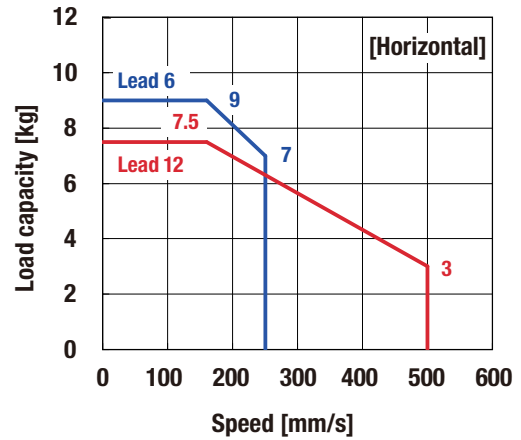
*1 Service life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm.

*2 Maximum permissible moment when unit is stationary.
Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

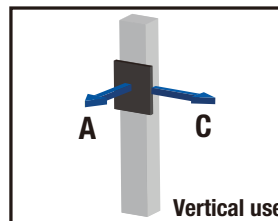
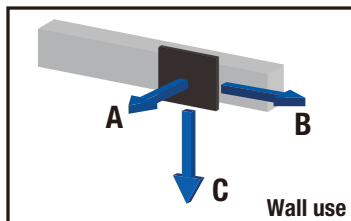
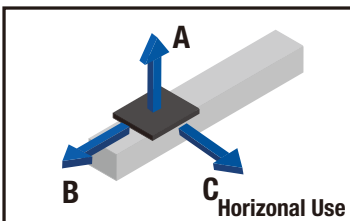
Static Permissible Moment



Speed & Load Capacity Comparison:



Permissible Overhang Length*:



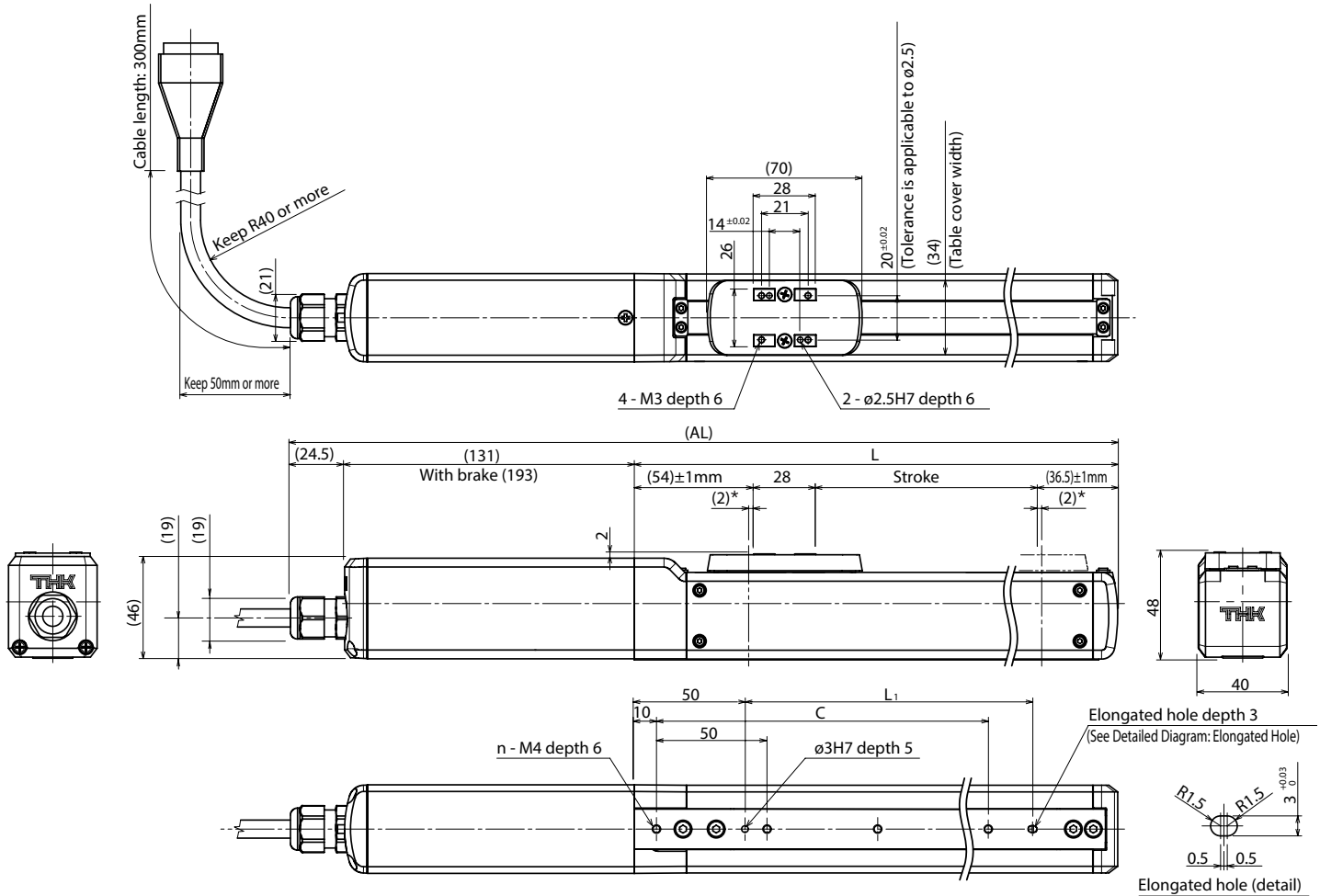
BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]		
		A	B	C
6	4.5	300	50	100
	9	160	20	40
12	3.8	260	60	100
	7.5	110	20	40

BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]		
		A	B	C
6	4.5	60	30	300
	9	10	5	70
12	3.8	70	40	220
	7.5	10	10	50

BALL SCREW LEAD (mm)	LOAD MASS (kg)	[mm]	
		A	C
6	2	100	110
	4	30	40
12	0.8	260	300
	1.5	130	150

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

Dimensions:



* This is a stroke between mechanical stoppers.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (54)	100 (104)	150 (154)	200 (204)	250 (254)	300 (304)	350 (354)	400 (404)
MAX SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	250							
	BALL SCREW LEAD: 12mm	500							
DIMENSIONS (mm)	AL*3	324 (386)	374 (436)	424 (486)	474 (536)	524 (586)	574 (636)	624 (686)	674 (736)
	L	168.5	218.5	268.5	318.5	368.5	418.5	468.5	518.5
	L ₁	80	130	180	230	280	330	380	430
	C	100	150	200	250	300	350	400	450
MOUNTING HOLE	n	3	4	5	6	7	8	9	10
WEIGHT *3 (kg)		1.5 (1.9)	1.6 (2.1)	1.7 (2.2)	1.8 (2.3)	1.9 (2.4)	2 (2.5)	2.1 (2.6)	2.2 (2.7)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".

*2 Dependent on permissible rotational speed of ball screw.

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

ES5 SLIDER TYPE TSC SPECIFICATION DIRECT MOTOR COUPLING

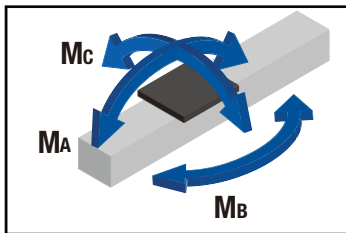
Basic Specifications:

CONTROL DEVICE TYPE				TSC	
MOTOR				□42	
BALL SCREW LEAD (mm)				6	12
MAX. LOAD WEIGHT	ACCELERATION/DECELERATION RATE	HORIZONTAL MOUNT	0.3G	10	6
		VERTICAL MOUNT	0.2G	5	2
RUNNING LIFE *1 (km)				5000	
POSITIONING REPEATABILITY (mm)				±0.020	
LOST MOTION (mm)				0.1	
STATIC PERMISSIBLE MOMENT *2 (N-m)				MA: 10.5, MB: 22, Mc: 22.1	

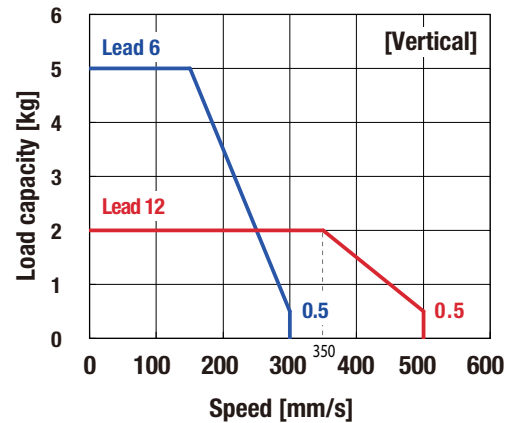
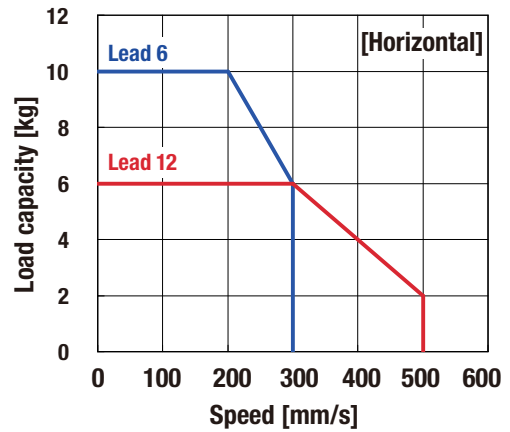
*1 Service life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm.

*2 Maximum permissible moment when unit is stationary.
Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

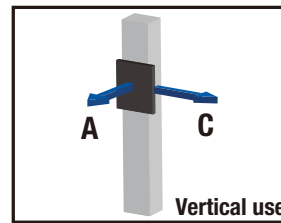
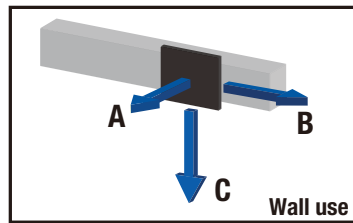
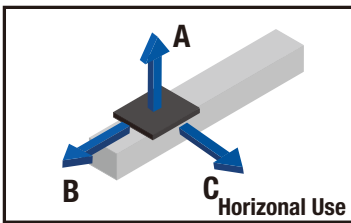
Static Permissible Moment



Speed & Load Capacity Comparison:



Permissible Overhang Length*:



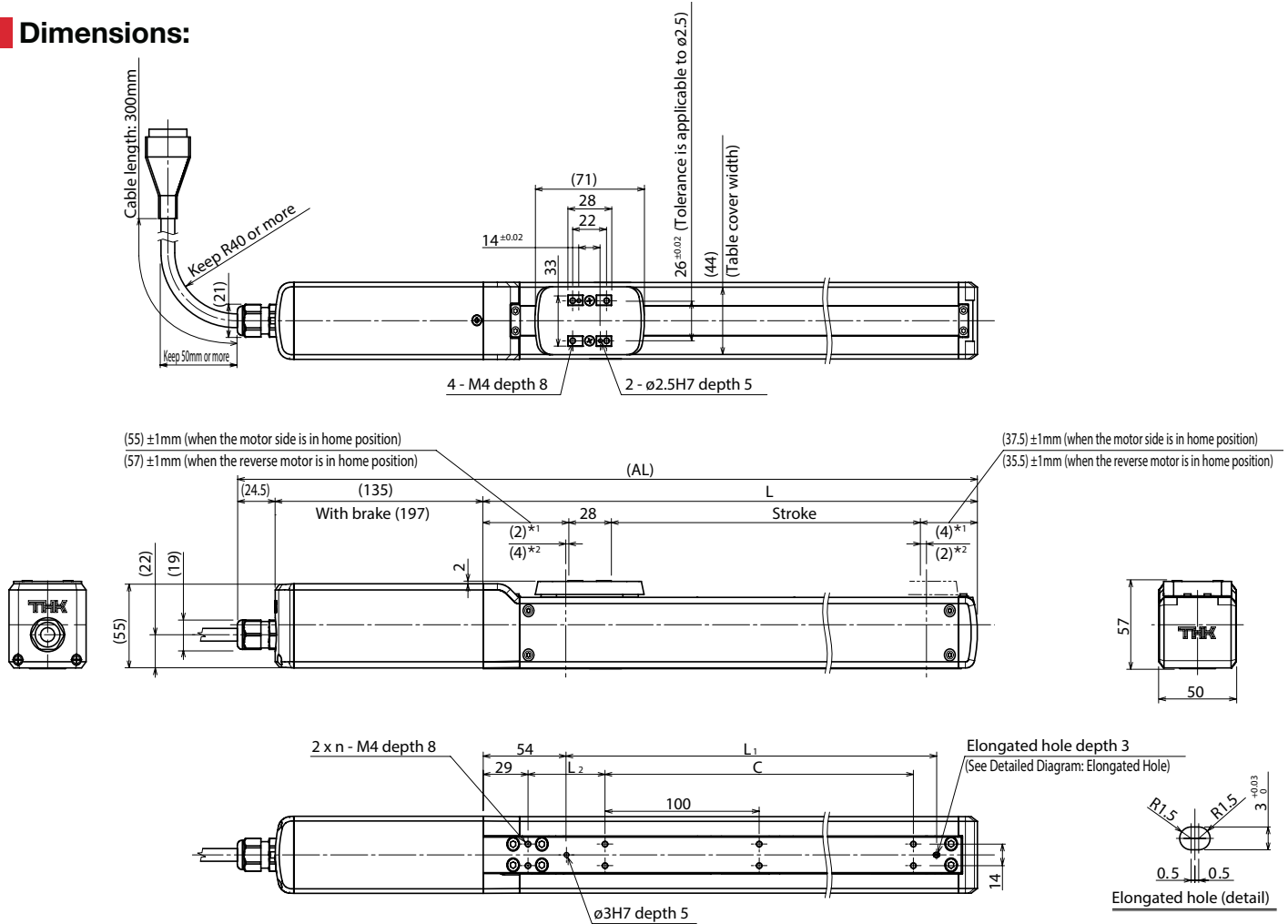
BALL SCREW LEAD (mm)	LOAD MASS (kg)	A [mm]	B [mm]	C [mm]
6	5	400	90	200
	10	270	40	90
12	3	400	160	280
	6	320	70	130

BALL SCREW LEAD (mm)	LOAD MASS (kg)	A [mm]	B [mm]	C [mm]
6	5	160	70	400
	10	50	20	220
12	3	260	130	400
	6	100	50	250

BALL SCREW LEAD (mm)	LOAD MASS (kg)	A [mm]	C [mm]
6	2.5	160	180
	5	70	70
12	1	400	400
	2	200	200

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

Dimensions:



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)
MAX SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	300									
	BALL SCREW LEAD: 12mm	500									
DIMENSIONS (mm)	AL *3	330 (392)	380 (442)	430 (492)	480 (542)	530 (592)	580 (642)	630 (692)	680 (742)	730 (792)	780 (842)
	L	170.5	220.5	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5
	L ₁	90	140	190	240	290	340	390	440	490	450
	L ₂	100	50	100	50	100	50	100	50	100	50
	C	0	100	100	200	200	300	300	400	400	500
MOUNTING HOLE	n	2	3	3	4	4	5	5	6	6	7
WEIGHT *3 (kg)		2.1 (2.6)	2.2 (2.7)	2.3 (2.8)	2.5 (3)	2.6 (3.1)	2.8 (3.2)	2.9 (3.4)	3 (3.5)	3.2 (3.7)	3.3 (3.8)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES6 SLIDER TYPE TSC SPECIFICATION DIRECT MOTOR COUPLING

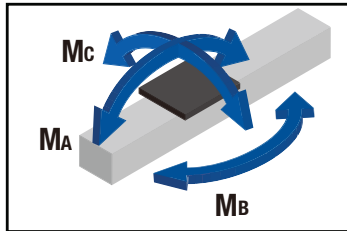
Basic Specifications:

CONTROL DEVICE TYPE				TSC	
MOTOR				□42	
BALL SCREW LEAD (mm)				6	12
MAX. LOAD WEIGHT	ACCELERATION/DECELERATION RATE	HORIZONTAL MOUNT	0.3G	10	6
		VERTICAL MOUNT	0.2G	5	2
RUNNING LIFE *1 (km)				5000	
POSITIONING REPEATABILITY (mm)				±0.020	
LOST MOTION (mm)				0.1	
STATIC PERMISSIBLE MOMENT *2 (N-m)				MA: 10.5, MB: 22, MC: 22.1	

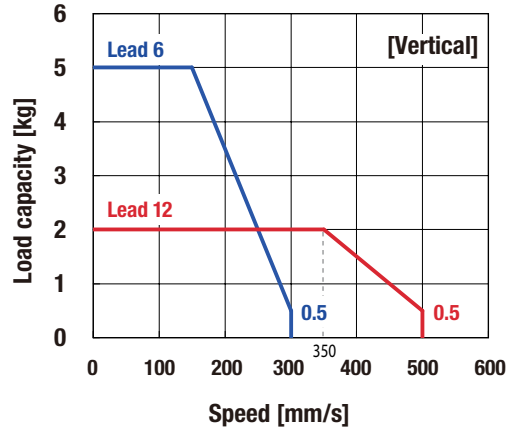
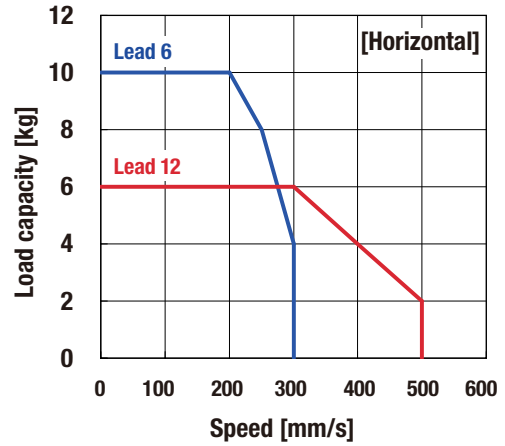
*1 Service life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhanging length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm.

*2 Maximum permissible moment when unit is stationary.
Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

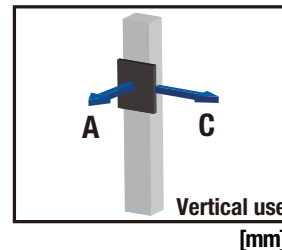
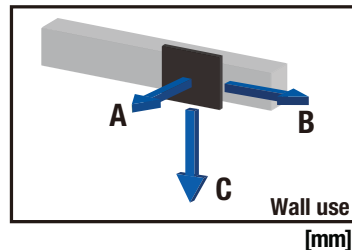
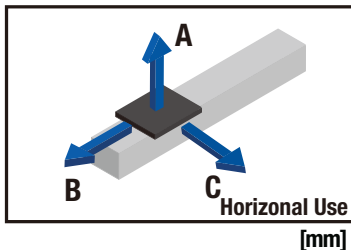
Static Permissible Moment



Speed & Load Capacity Comparison:



Permissible Overhang Length*:



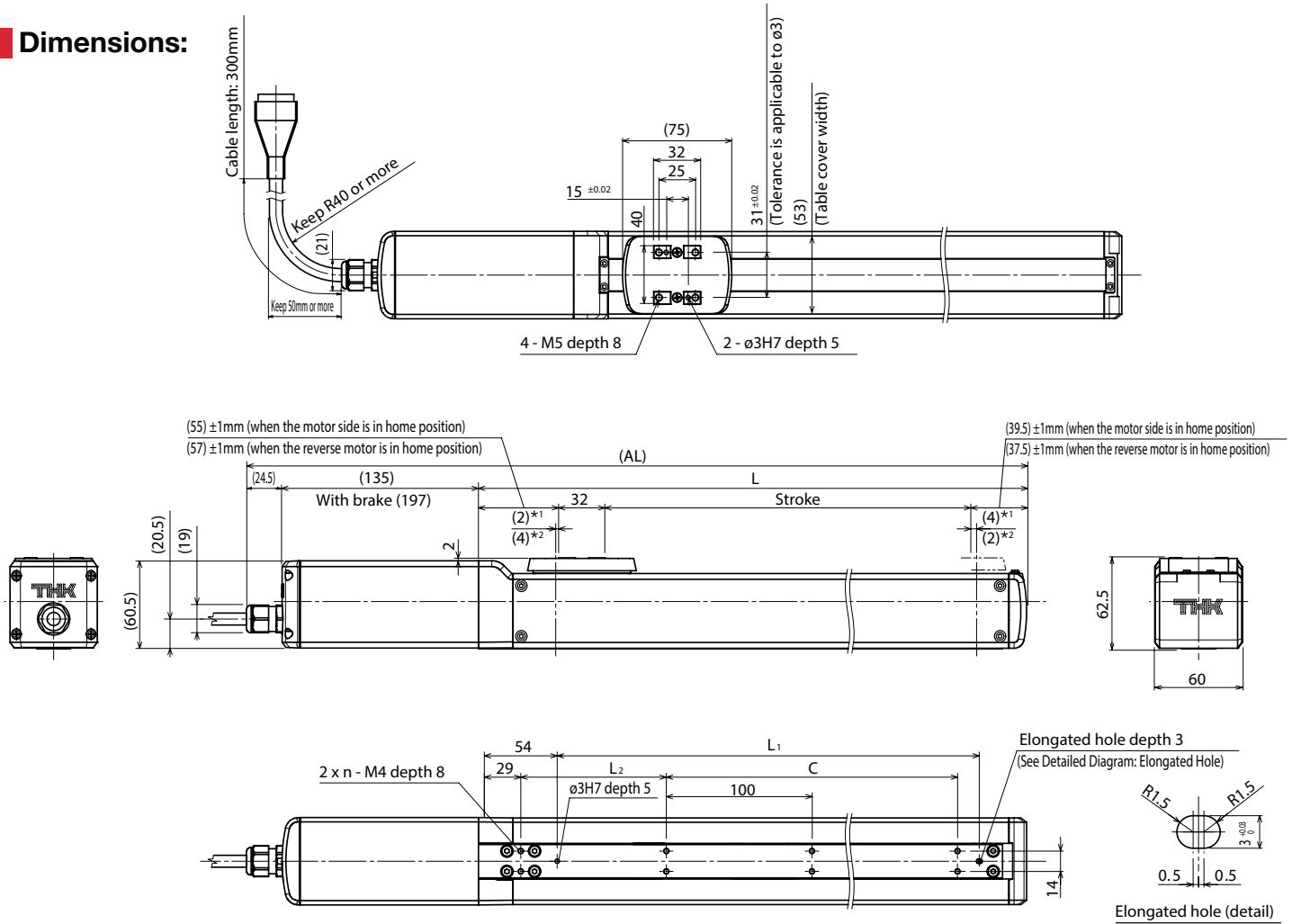
BALL SCREW LEAD (mm)	LOAD MASS (kg)	A	B	C
6	5	500	90	200
	10	260	40	90
12	3	500	160	280
	6	320	70	130

BALL SCREW LEAD (mm)	LOAD MASS (kg)	A	B	C
6	5	160	70	500
	10	40	20	210
12	3	250	130	500
	6	90	50	140

BALL SCREW LEAD (mm)	LOAD MASS (kg)	A	C
6	2.5	160	160
	5	60	60
12	1	420	420
	2	190	190

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

Dimensions:



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

Stroke in **Blue**: Stock Available for 6mm ball screw lead
Stroke in **Red**: Stock Available for 12mm ball screw lead

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)	550 (556)	600 (606)
MAX SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	300										270	230
	BALL SCREW LEAD: 12mm	500											460
DIMENSIONS (mm)	AL*3	336 (398)	386 (448)	436 (498)	486 (548)	536 (598)	586 (648)	636 (698)	686 (748)	736 (798)	786 (848)	836 (898)	886 (948)
	L	176.5	226.5	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5
	L ₁	90	140	190	240	290	340	390	440	490	540	590	640
	L ₂	100	50	100	50	100	50	100	50	100	50	100	50
	C	0	10	100	200	200	300	300	400	400	500	500	600
MOUNTING HOLE	n	2	3	3	4	4	5	5	6	6	7	7	8
WEIGHT *3 (kg)		2.4 (2.9)	2.6 (3)	2.7 (3.2)	2.8 (3.3)	3 (3.5)	3.1 (3.6)	3.3 (3.8)	3.4 (3.9)	3.5 (4)	3.7 (4.2)	3.8 (4.3)	4 (4.5)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Basic Specifications:

CONTROL DEVICE				TSC	
MOTOR				□35	
BALL SCREW LEAD (mm)				6	12
MAXIMUM LOAD WEIGHT *1 (kg)	ACCELERATION & DECELERATION RATE	HORIZONTAL MOUNT	0.3G	15	6
		VERTICAL	0.2G	6	1
RUNNING LIFE *2 (km)				5000	
POSITIONING REPEATABILITY (mm)				±0.020	
LOST MOTION (mm)				0.1	
ROD NON-ROTATIONAL ACCURACY (°)				±1.5	

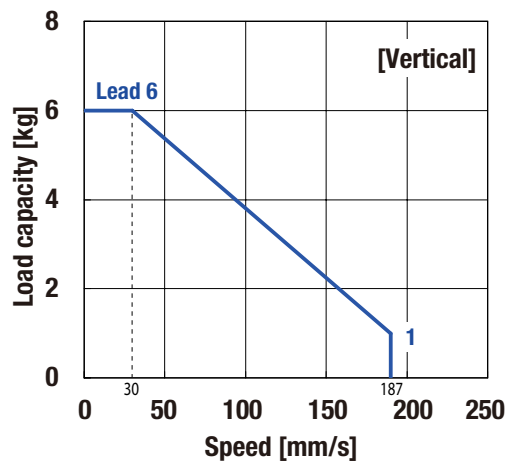
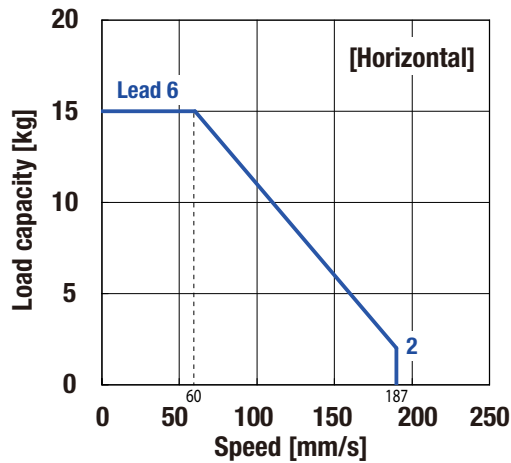
*1 Only axial loads permissible.

Only an axial load may be applied to rod via LM Guide. LM Guide sliding resistance must be considered when making selection.

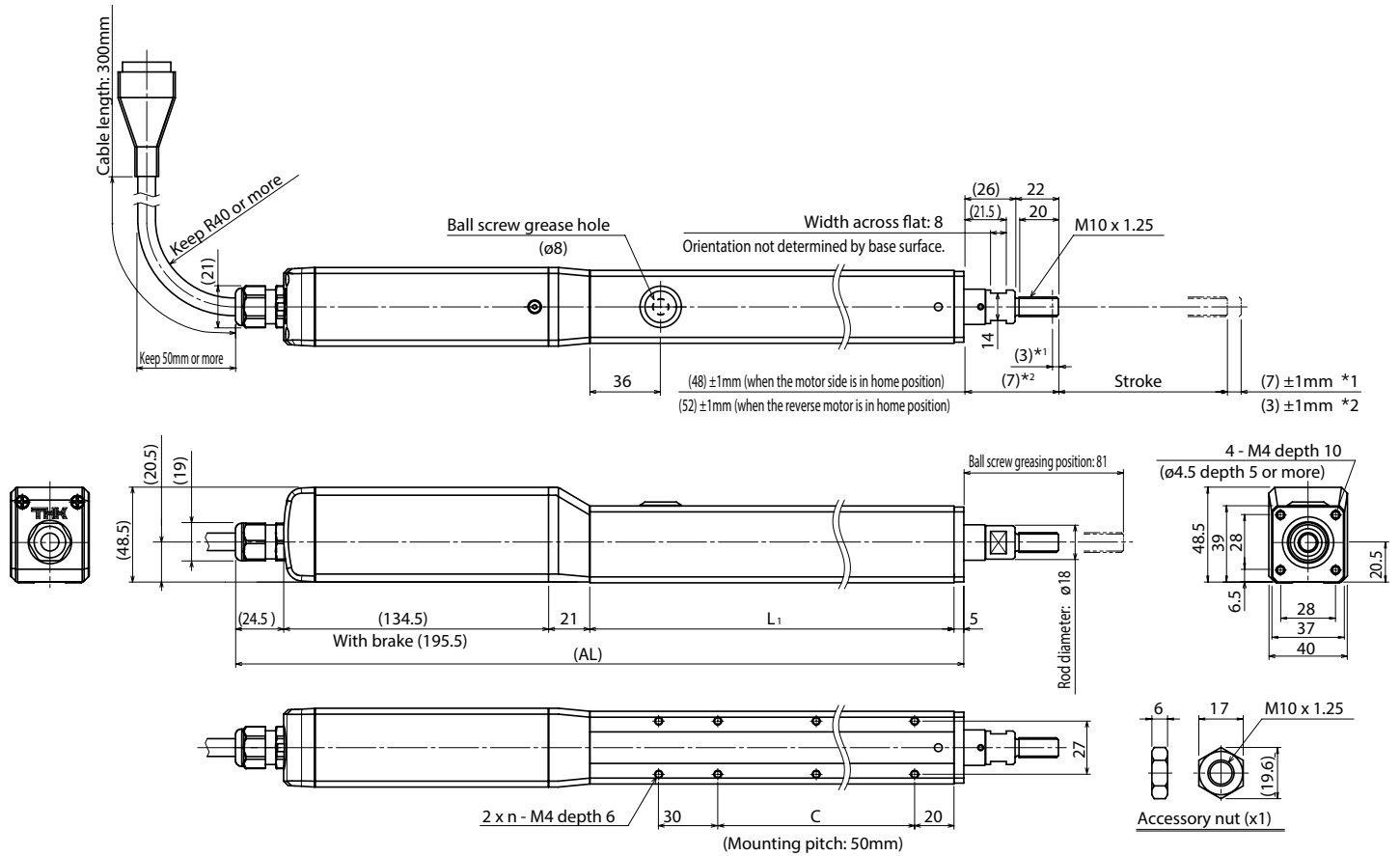
*2 The following conditions apply to running life.

Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical.

Speed & Load Capacity Comparison:



Dimensions:



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (60)	100 (110)	150 (160)	200 (210)
MAXIMUM SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	187			
DIMENSIONS (mm)	AL*3	320 (381)	370 (431)	420 (481)	470 (531)
	L ₁	135	185	235	285
	C	50	100	150	200
MOUNTING HOLE COUNT	n	3	4	5	6
WEIGHT *3 (kg)		1.4 (1.8)	1.6 (2)	1.8 (2.2)	2 (2.4)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Basic Specifications:

CONTROL DEVICE				TSC	
MOTOR				□42	
BALL SCREW LEAD (mm)				6	12
MAXIMUM LOAD WEIGHT *1 (kg)	ACCELERATION & DECELERATION RATE	HORIZONTAL MOUNT	0.3G	40	25
		VERTICAL	0.2G	12	4.5
RUNNING LIFE *2 (km)				5000	
POSITIONING REPEATABILITY (mm)				±0.020	
LOST MOTION (mm)				0.1	
ROD NON-ROTATIONAL ACCURACY (°)				±1.5	

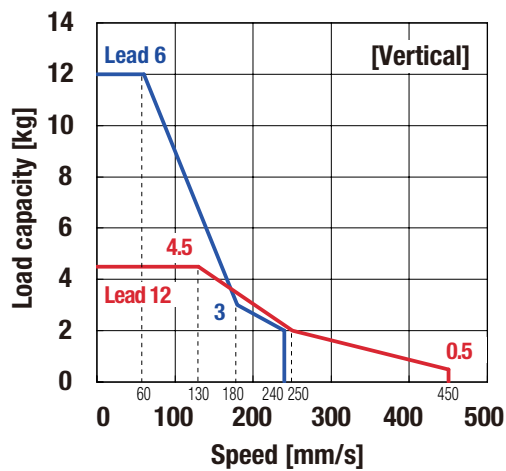
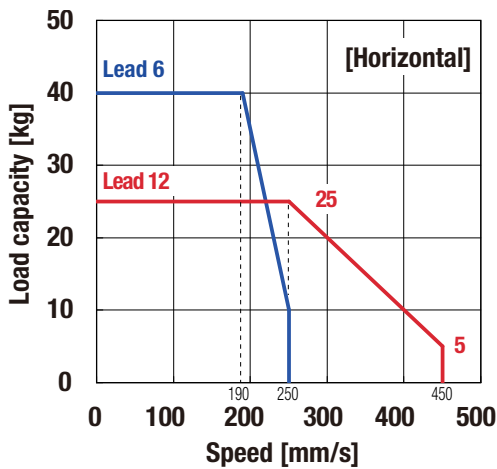
*1 Only axial loads permissible.

Only an axial load may be applied to rod via LM Guide. LM Guide sliding resistance must be considered when making selection.

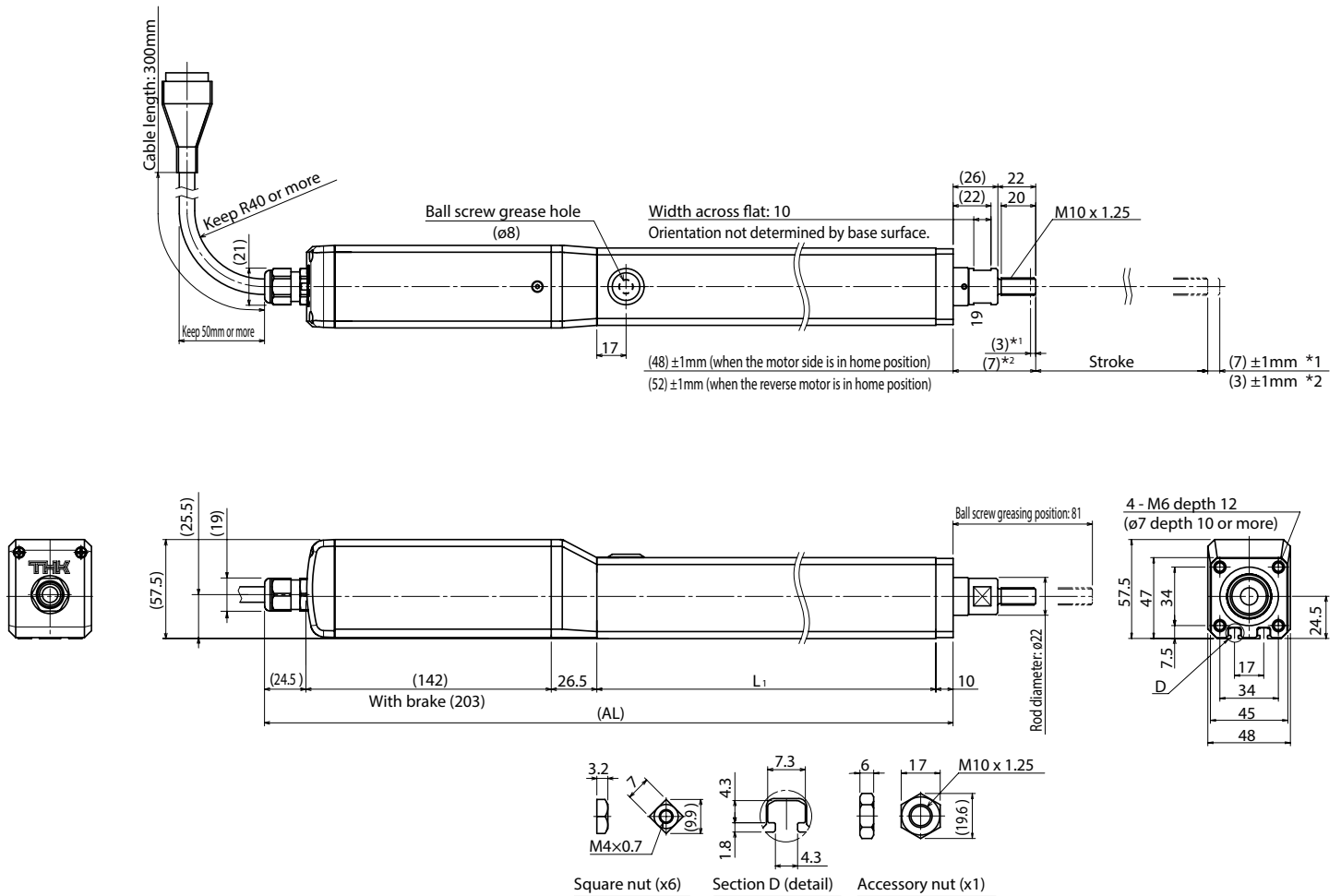
*2 The following conditions apply to running life.

Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical.

Speed & Load Capacity Comparison:



Dimensions:



*1 Stroke to the mechanical stopper when the motor side is in home position.

*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

Stroke in **Blue**: Stock Available for 6mm ball screw lead
 Stroke in **Red**: Stock Available for 12mm ball screw lead

STROKE (mm) (STROKE BTWN MECHANICAL STOPPERS)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
MAXIMUM SPEED *1 *2 (mm/s)	BALL SCREW LEAD: 6mm	Horizontal: 250, Vertical: 240				230	170
	BALL SCREW LEAD: 12mm	450					340
DIMENSIONS (mm)	AL*3	350 (411)	400 (461)	450 (511)	500 (561)	550 (611)	600 (661)
	L ₁ *4	147	197	247	297	347	397
WEIGHT *3 (kg)		2.3 (2.9)	2.6 (3.2)	3 (3.5)	3.3 (3.8)	3.6 (4.2)	4 (4.5)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed & Load Capacity".

*2 Dependent on permissible rotational speed of ball screw.

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

*4 The dimension of the T slot corresponds to L₁.

DETERMINE TSC PART NUMBER

: Choose Quick-Ship Option
 : Standard/Only Quick Ship Option

MODEL	CURRENT	DESIGN SYMBOL	TYPE	COMBINE ACTUATOR	COMBINED ACTUATOR BALL SCREW LEAD	HOME POSITION	SAMPLE PART NUMBER
TSC	015	B	MOD	ES6	06	D00	TSC-015B-MOD-ES6-06-D00
<i>TSC = Standard</i>	<i>015 = 1.5A</i>	<i>B = Standard</i>	<i>MOD = Mode Switching Type</i>			<i>D00 = Motor Side</i>	


Basic Specifications:

BASIC SPECIFICATIONS	INPUT POWER SUPPLY	24V DC ±10% (Up to 2.5A)					
CONTROL	CONTROL AXIS	Single shaft					
	MOTOR TYPE	Stepper Motor (□28mm, □35mm, □42mm)					
	CONTROL METHOD	Feedback control (Semi-closed loop)					
	POSITION DETECTION METHOD	Incremental					
PROGRAM	ACCELERATION/DECELERATION METHOD	Trapezoid 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
INPUT/OUTPUT	DATA INPUT/OUTPUT METHOD		PC setup tool D-STEP or Digital operator TDO				
	DEDICATED INPUT/OUTPUT	INPUT POINT	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.)*				
		OUTPUT POINT	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery Alarm, etc.)*				
INPUT/OUTPUT POWER SUPPLY		24V DC ±10% (This should be prepared by yourself.)					
COMMUNICATION	SERIAL COMMUNICATION	CONNECTED DEVICE	PC setup tool D-STEP or Digital operator TDO				
		COMMUNICATION METHOD	RS-485				
		PORT COUNT	Mini DIN x 1				
USAGE CONDITIONS	USAGE CONDITIONS		0 to 40°C (No freezing)/-20 to 85°C (No freezing)				
	OPERATING HUMIDITY/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 x 1; I/O connector x 1				
	OPTIONS (SOLD SEPARATELY)		Digital operator TDO (Cable length 5m); I/O cable 3m, 5m, 7m and 10m; PC Communication cable (Mini DIN - USB)				
	OUTER DIMENSIONS		32 mm (W) x 192.2mm (H) x 77.6mm (D)				
	WEIGHT		300g or less				


* Varies depending on function mode.

System Configuration:

TSC needs either **TDO** or **D-STEP** for setting



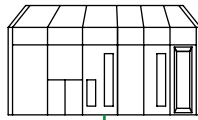
TDO
Digital Operator
(Available in Japanese or English)



D-STEP
PC Setup Tool

The PC Setup tool can be freely downloaded after logging into the technical support website.
(Available in Japanese, English and Simplified Chinese)
<http://www.thk.com/us/dstep>

Higher PLC, etc.



An I/O connector is provided with TSC



TSC

— Wiring provided by customer
- - - Separate order required
— Wiring provided with product

Cables provided with actuator main unit

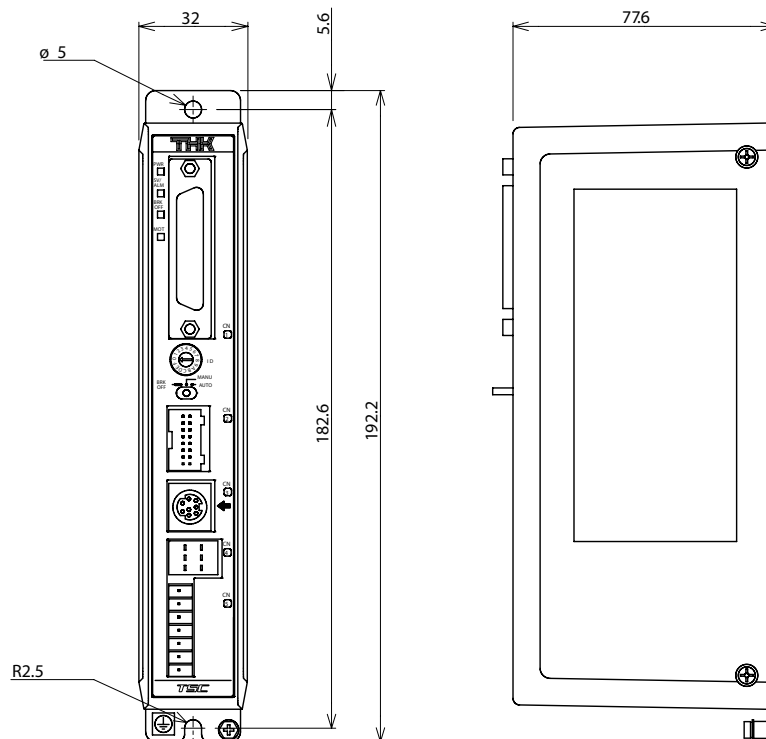
Actuator

External 24V DC Power Supply

Note 1)* Power supply to be provided by customer. A power supply connector is provided with TSC.

Note 2) To use a 10m actuator cable, please insert noise filter.

Dimensional Drawing of Controller:



* For details of the dimensional drawing, please contact THK.

D-STEP PC SETUP TOOL



Features:

Supports multi-functional 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 (<http://www.thk.com/us/dstep>).

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

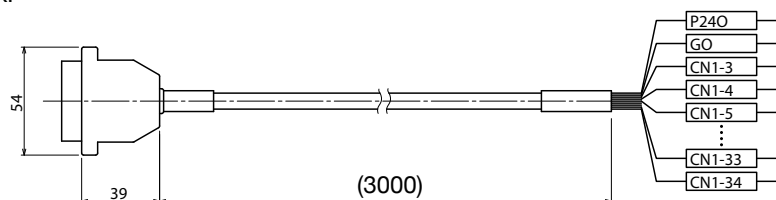
Optional Cable:

I/O cable: CBL-CON-IO-03

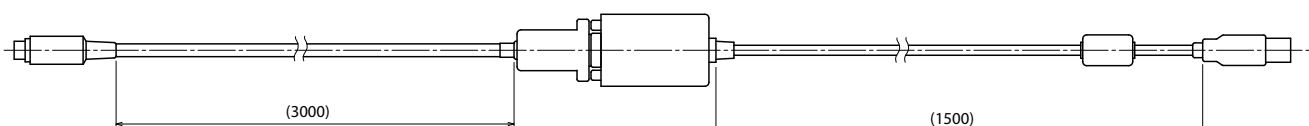
Cables are shipped with the discrete wire side terminals unprocessed.

Cables are used for TSC/TLC/THC.

For longer cables, contact THK.

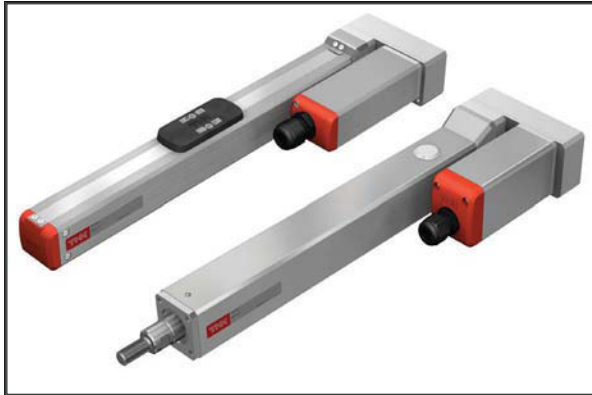


PC Communication cable: CBL-COM-03



More Options:

Contact THK or refer to Actuator Catalog No. 660E for details



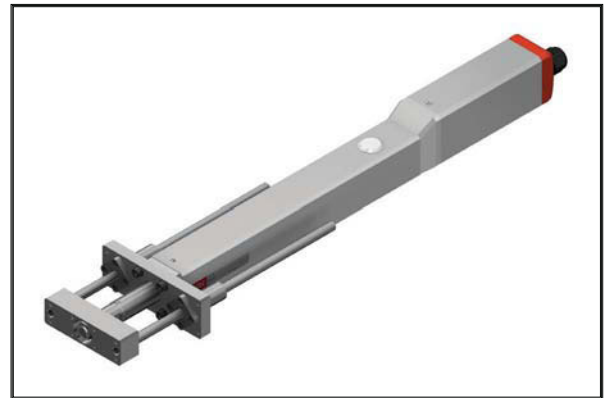
Motor Wrap



Servo Motor



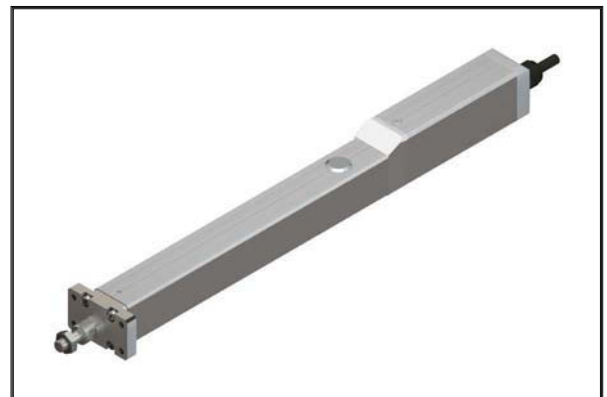
Sensors: ES Option



Linear Bushings: EC Option



Cylinder Base: EC Option



Flange: EC Option

SUPPORT TOOLS

Technical Support Site - tech.thk.com

01 Optimal Product Selection Tool

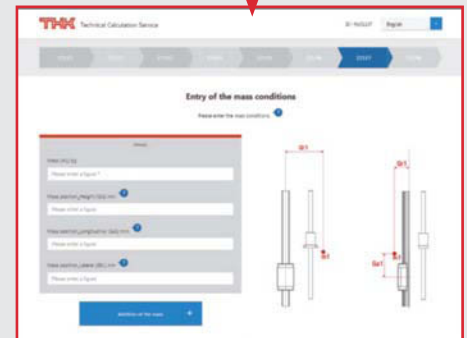
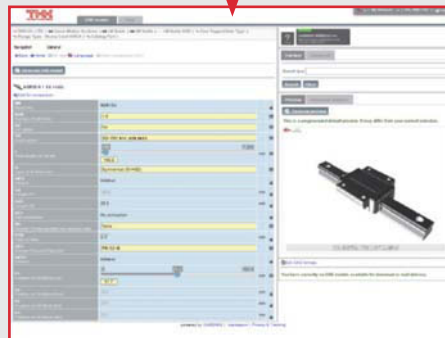
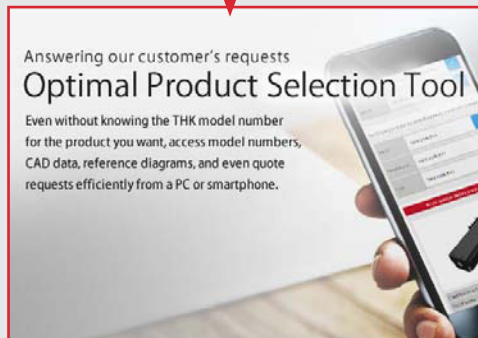
Input usage conditions to easily narrow down the selection of products and help you make the right choice.

02 CAD/Drawing Data Aquisition

From each product page, important information such as catalog data, CAD data and reference diagrams can be easily accessed.

03 Life Calculator

Easily calculate a product's expected service life by selecting a tool and entering its conditions, as shown in the steps.



Online Shopping - www.thkstore.com



Large Inventory
Contributes to quick delivery



Major Credit Cards Accepted
Visa, Mastercard, and American Express



2D/3D CAD & Product Configurator
2D/3D models and product configurator available for download in most file formats



Collect Shipping Available
Shipping via customer's carrier account



Easy Access
Clear lead times and prices are listed in the store (no RFQ required)



Grease MSDS
Grease MSDS (Material Safety Data Sheets) can be downloaded



Available for USA/Canada/Mexico Customers
We ship to the USA (mainland), Canada, and Mexico

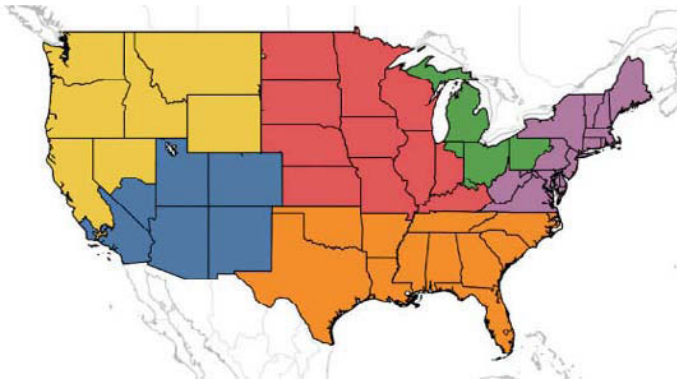


Quotation File
Cart contents can be downloaded as quotation



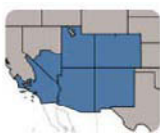
CONTACT US

North America - United States



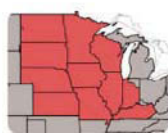
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I NOTES

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