

Application
Standard Ball Screw Type GTH/GTY/ETH
Standard Belt Type M Series
Cleanroom Ball Screw Type GCH/ECH
Cleanroom Belt Type ECB
Reference

Memo

Blank area for notes.



M Series

Standard/Belt Type (Europe Type)

CONTENTS

Standard/Ball Screw

SMALL MH65		Width 65mm Max. stroke 3000mm087 Recommended payload 15kg
MEDIUM MH80		Width 80mm Max. stroke 3000mm087 Recommended payload 25kg
SMALL MK65		Width 65mm Max. stroke 5000mm087 Recommended payload 60kg
MEDIUM MK85		Width 85mm Max. stroke 5000mm087 Recommended payload 100kg
LARGE MK110		Width 110mm Max. stroke 4800mm087 Recommended payload 200kg
SMALL MG65		Width 66mm Max. stroke 3700mm087 Recommended payload 52kg

Spec Index of Electric Actuator

M Europe Type Belt Actuator

Env.	Drive Type	Model No.	Reducer Mechanism	Motor Output (w)	Width (mm)	Repeatability (mm)	Belt Spec		Maximum Payload(kg)		Max. Speed ^{*1} (mm/s)
							Belt Width (mm)	Lead(mm)	Horizontal	Vertical	
Standard	Timing Belt	MH65	No	400W	65	±0.1	20	78	15		3900
		MH80		750W	80		30	102	25		5000
		MK65	Yes	400W	65		32	110 ^{*2}	60	17	5000 ^{*2}
		MK85		750W	85		46	200 ^{*2}	100	24	5000 ^{*2}
		MK110		750W	110		50	250 ^{*2}	200	50	5000 ^{*2}
		MG65		400W	66	±0.04	20	45 ^{*2}	52	15	3500 ^{*2}

*1: The highest speed is based on the maximum servo motor's rpm (3000 or 3600).
 *2: Lead - the maximum speed depends on different gear ratio.

- Application
- Standard Ball Screw Type
GTH / GTY / ETH
- Standard Belt Type
M Series
- Cleanroom Ball Screw Type
GCH / ECH
- Cleanroom Belt Type
ECB
- Reference

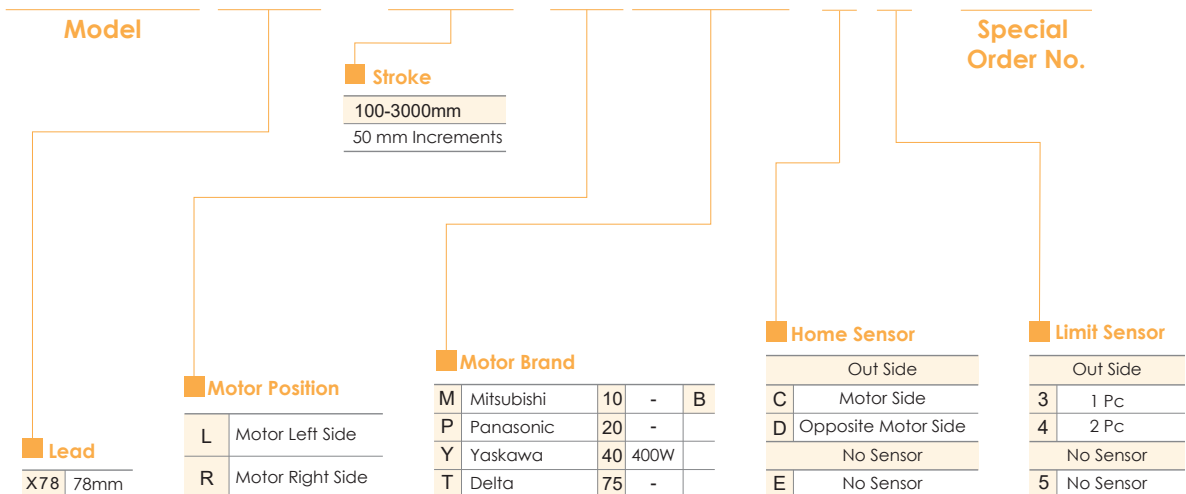
	Stroke(mm) & Maximum Speed (mms) ^{*2}																												Page
	行程 Stroke	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	3000	3100	3300	3500	3700	3900	4100	4300	4500	4800	5000	5100	5300	5500	5700	
					3900																								291
					5000																								295
										5000																			299
												5000																	307
													5000																315
														3500															



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MH65- X78 - 2000 - L - M40 - C 4 - 0001



Specification

Item	Belt	Lead		mm	78			
		Maximum Rotating speed		rpm	500	1000	1500	2000
		Maximum linear speed		mm/s	650	1300	1950	2600
		Load factor			1.75			
		Tis (Nominal Tension)		N	98			
		Timax (Maximum Tension)		N	195			
	Linear Guide	Dynamic horizontal	100 Km of travel	N	4256			
			1000 Km of travel	N	1976			
			10000 Km of travel	N	917			
		Static horizontal		N	6681			
	Fixed bearing	Basic dynamic load rating Cr		N	10000			
		Static load rating Cor		N	18800			
	Common Spec	Repeatability		mm	±0.1			
		Allowable input torque		N.m	4.5			
		Maximum acceleration		m/s ²	5			
		Friction coefficient			0.03			
		Stroke (increments)		mm	50-3000 mm (50 increments)			
		Ambient temperature ^{*1}		°C	0~+40			

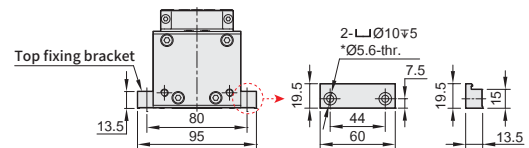
*1 For extreme temperatures: -20°C ~80°C special greases are required.

Numbers of Fixing Screws

M5 nuts Qty.(by stroke)					
Stroke	100~950	100~1450	100~1950	2000~2450	2500~3000
Quantity	6	8	10	12	14

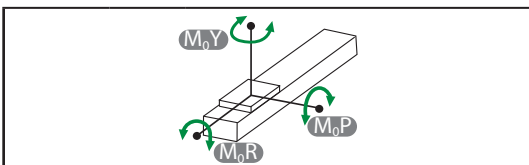
*Standard mounting method is fix from the bottom, using the M5 bolt and nut.

Installation Reference



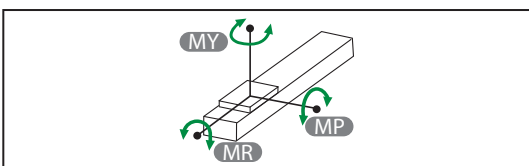
*Top fixing plate is optional.

Static Loading Moment



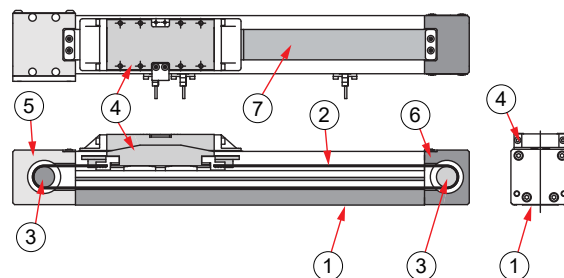
M_{0Y}	N.m	44
M_{0P}	N.m	44
M_{0R}	N.m	12

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	67.4	31.3	14.5
MP	N.m	67.4	31.3	14.5
MR	N.m	11	5.1	2.4

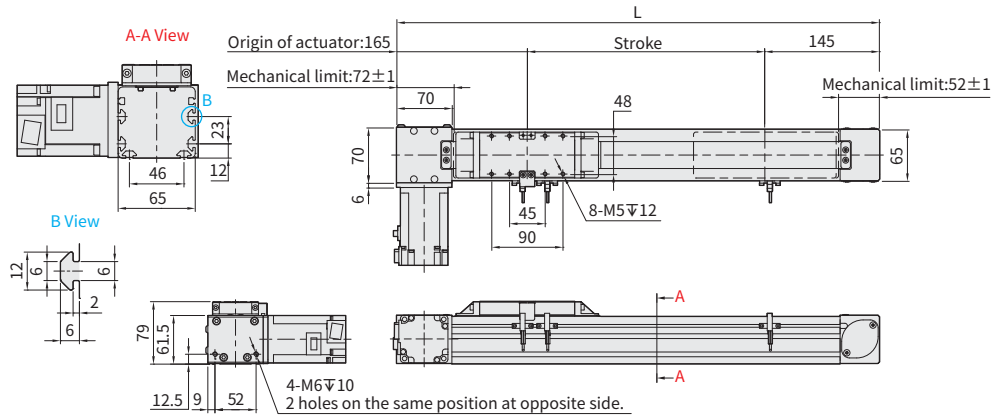
Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6463
6	Output pulley support block	AL6061
7	Steel Band	SUS430

L Motor Left Side   Download CAD data at www.toyorobot.com

Unit : mm



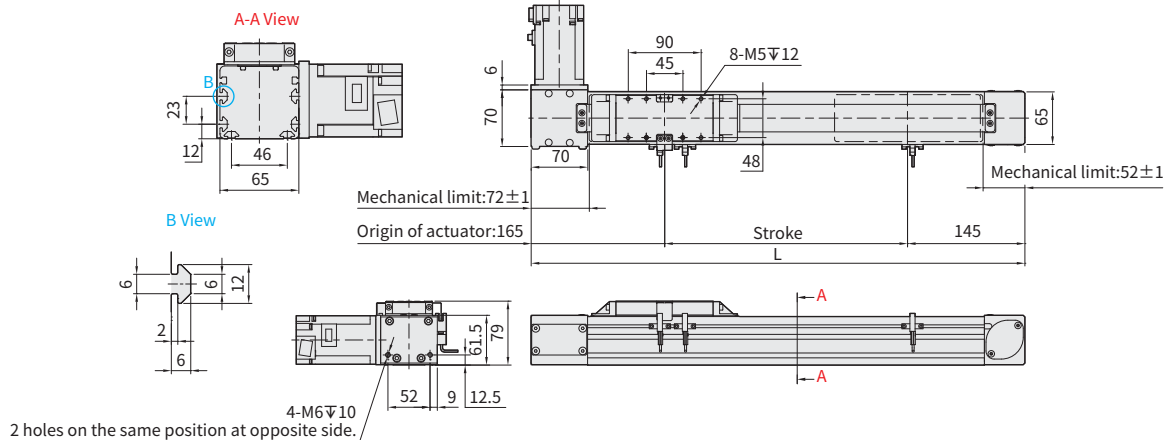
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
Limit Stroke (±1)	106	206	306	406	506	606	706	806	906	1006	1106	1206	1306	1406	1506	
L	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	
KG	3.13	3.81	4.49	5.17	5.85	6.53	7.21	7.89	8.57	9.25	9.93	10.61	11.29	11.97	12.65	
Linear Speed mm/s	Lead78		3900*													

Stroke	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	
Limit Stroke (±1)	1606	1706	1806	1906	2006	2106	2206	2306	2406	2506	2606	2706	2806	2906	3006	
L	1910	2010	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	
KG	13.33	14.01	14.69	15.37	16.05	16.73	17.41	18.09	18.77	19.45	20.13	20.81	21.49	22.17	22.85	
Linear Speed mm/s	Lead78		3900*													

*Speed will be vary with the condition of use. Please refer to load curve on P.269.

R Motor Right Side   Download CAD data at www.toyorobot.com

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
Limit Stroke (±1)	106	206	306	406	506	606	706	806	906	1006	1106	1206	1306	1406	1506	
L	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	
KG	3.13	3.81	4.49	5.17	5.85	6.53	7.21	7.89	8.57	9.25	9.93	10.61	11.29	11.97	12.65	
Linear Speed mm/s	Lead78		3900*													

Stroke	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	
Limit Stroke (±1)	1606	1706	1806	1906	2006	2106	2206	2306	2406	2506	2606	2706	2806	2906	3006	
L	1910	2010	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	
KG	13.33	14.01	14.69	15.37	16.05	16.73	17.41	18.09	18.77	19.45	20.13	20.81	21.49	22.17	22.85	
Linear Speed mm/s	Lead78		3900*													

*Speed will be vary with the condition of use. Please refer to load curve on P.269.



Memo

Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

M Series

MH65

MH80

MK65

MK85

MK110

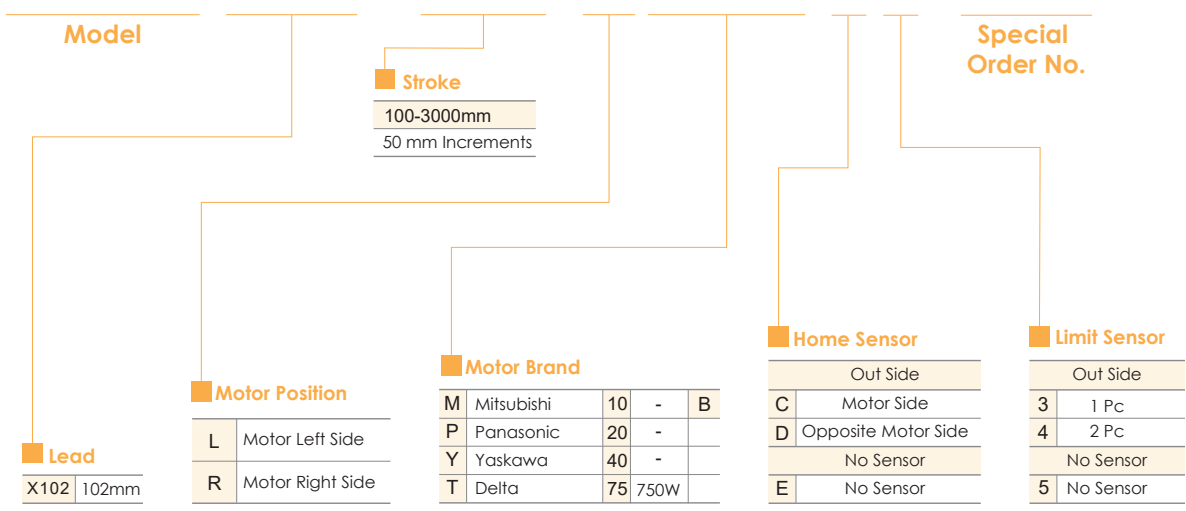
MG65



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MH80 - X102 - 2000 - L - M75 - C 4 - 0001



Specification

Item	Belt	Lead	mm	102		
		Maximum Rotating speed	rpm	500	1000	1500
		Maximum linear speed	mm/s	850	1700	2550
		Load factor		2.75		
		Tis (Nominal Tension)	N	147		
		Timax (Maximum Tension)	N	261		
	Linear Guide	Dynamic horizontal	100 Km of travel	N	7129	
			1000 Km of travel	N	3309	
			10000 Km of travel	N	1536	
		Static horizontal	N	10846		
	Fixed bearing	Basic dynamic load rating Cr	N	11700		
		Static load rating Cor	N	20200		
	Common Spec	Repeatability	mm	±0.1		
		Allowable input torque	N.m	8.4		
		Maximum acceleration	m/s ²	5		
		Friction coefficient		0.03		
		Stroke (increments)	mm	50-3000mm (50 increments)		
		Ambient temperature※1	°C	0~+40		

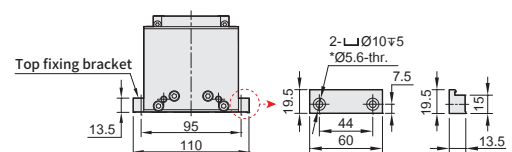
※1 For extreme temperatures: -20°C ~80°C special greases are required.

Numbers of Fixing Screws

M5 nuts Qty.(by stroke)					
Stroke	100~950	100~1450	100~1950	2000~2450	2500~3000
Quantity	6	8	10	12	14

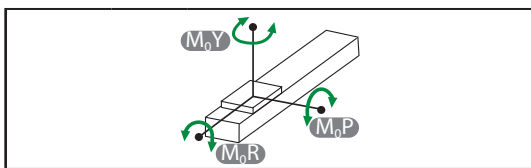
*Standard mounting method is fix from the bottom, using the M5 bolt and nut.

Installation Reference



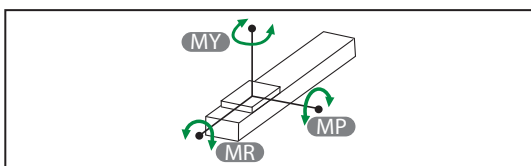
*Top fixing plate is optional.

Static Loading Moment



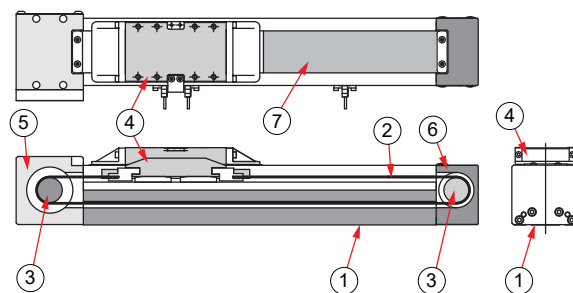
M₀Y	N.m	82
M₀P	N.m	82
M₀R	N.m	24

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	41.6	19.3	9
MP	N.m	41.6	19.3	9
MR	N.m	21.3	9.9	4.6

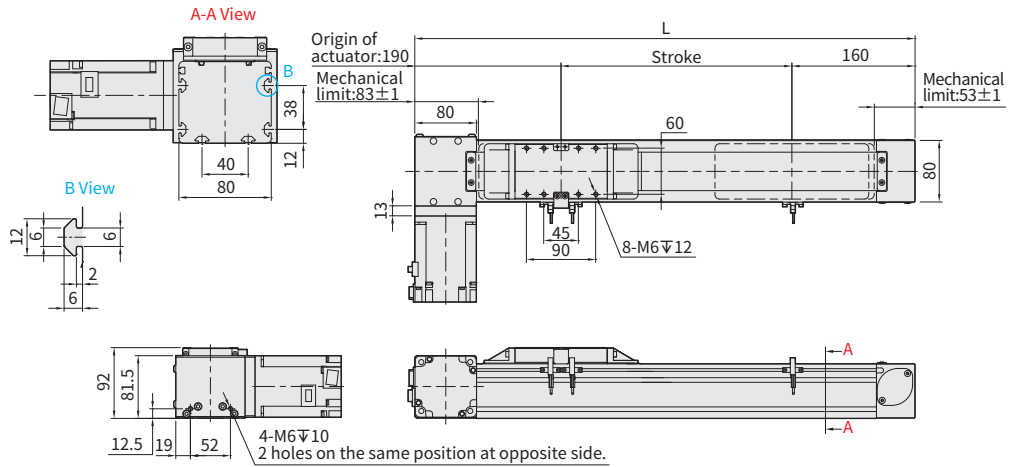
Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6463
6	Output pulley support block	AL6061
7	Steel Band	SUS430

L Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm

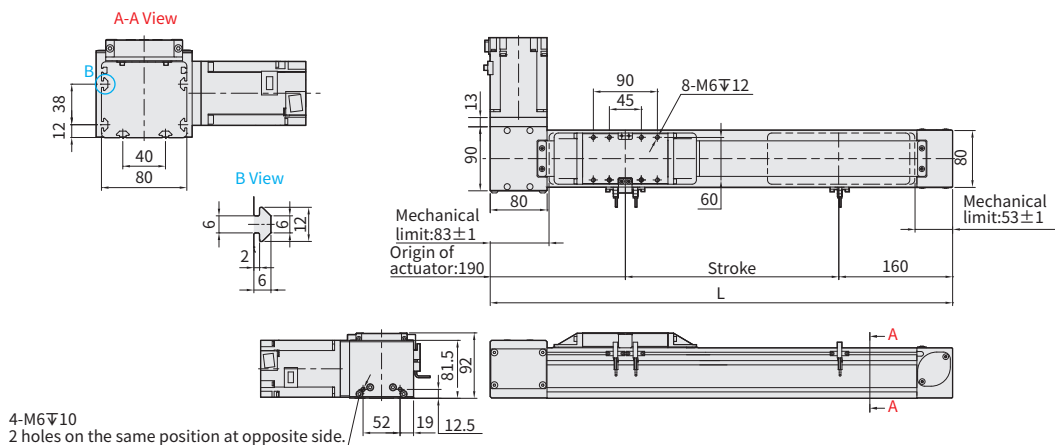


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514
L	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750	1850
KG	4.81	5.65	6.49	7.33	8.17	9.01	9.85	10.69	11.53	12.37	13.21	14.05	14.89	15.73	16.57
Linear Speed mm/s	Lead102	5000*													
Stroke	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
Limit Stroke (±1)	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	2614	2714	2814	2914	3014
L	1950	2050	2150	2250	2350	2450	2550	2650	2750	2850	2950	3050	3150	3250	3350
KG	17.41	18.25	19.09	19.93	20.77	21.61	22.45	23.29	24.13	24.97	25.81	26.65	27.49	28.33	29.17
Linear Speed mm/s	Lead102	5000*													

*Speed will be vary with the condition of use. Please refer to load curve on P. 273.

R Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514
L	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750	1850
KG	4.81	5.65	6.49	7.33	8.17	9.01	9.85	10.69	11.53	12.37	13.21	14.05	14.89	15.73	16.57
Linear Speed mm/s	Lead102	5000*													
Stroke	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
Limit Stroke (±1)	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	2614	2714	2814	2914	3014
L	1950	2050	2150	2250	2350	2450	2550	2650	2750	2850	2950	3050	3150	3250	3350
KG	17.41	18.25	19.09	19.93	20.77	21.61	22.45	23.29	24.13	24.97	25.81	26.65	27.49	28.33	29.17
Linear Speed mm/s	Lead102	5000*													

*Speed will be vary with the condition of use. Please refer to load curve on P. 273.



Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

Memo

Large empty rectangular area for taking notes or recording technical details.

M Series

MH65

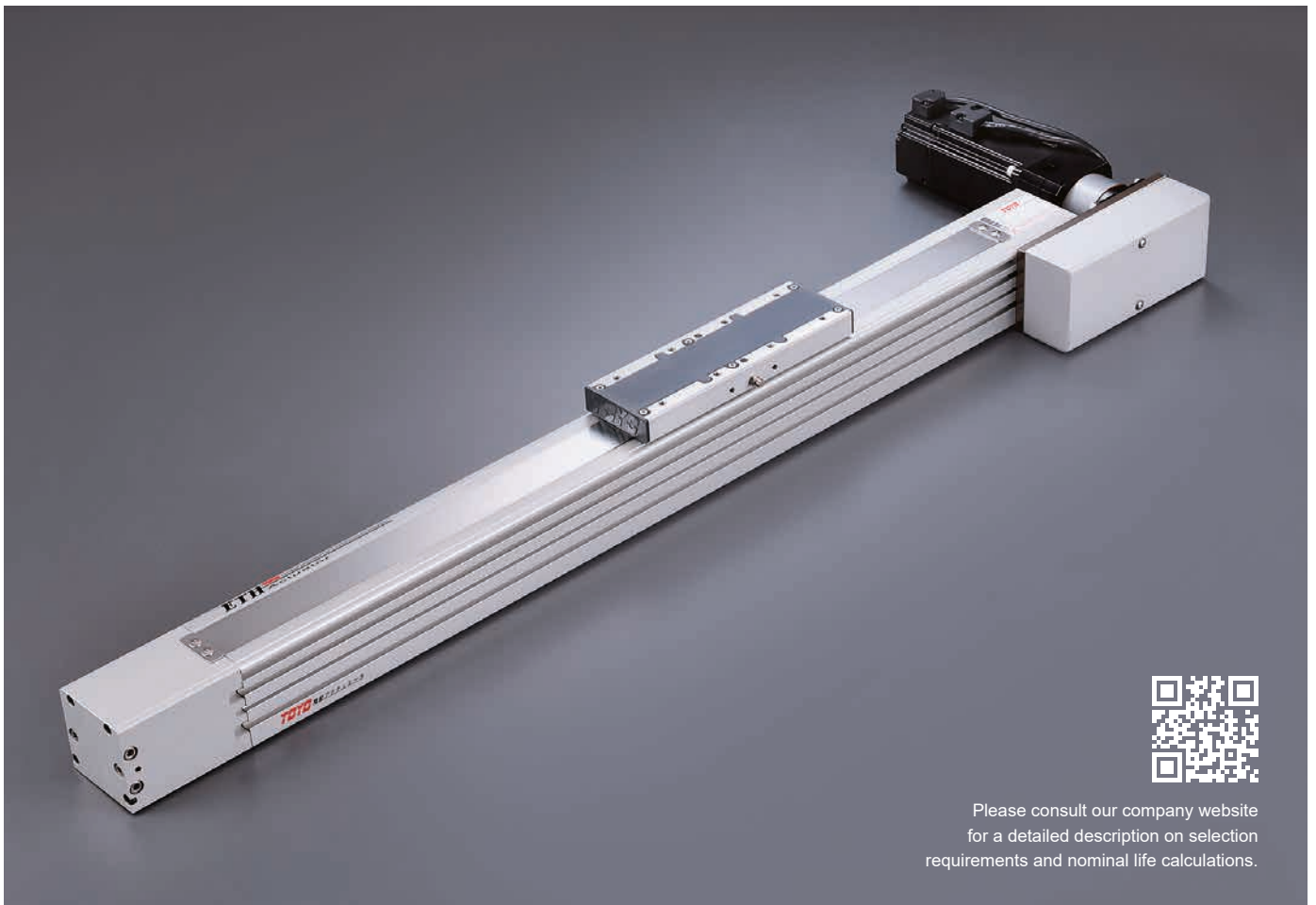
MH80

MK65

MK85

MK110

MG65



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MK65 - 2000 - L - M4B - C 4 - NL - 10 - A001

Model

Stroke

100-5000mm
100 mm Increments

Motor Position

L	Motor Left Side
LU	Motor Left Upper Side
LD	Motor Left Lower Side
LT	Reducer With Motor Left Side
LL	Motor Shaft Left Side
R	Motor Right Side
RU	Motor Right Upper Side
RD	Motor Right Lower Side
RT	Reducer With Motor Right Side
RR	Motor Shaft Right Side

Dimensions

M4	Servo motor: PCD70-M5-shift Φ 14mm	B*
P4	Servo motor: PCD70-M4-shift Φ 14mm	

*If No Brake, No Description.

Grease Fitting Position

NL On The Left of The Slider
NR On The Right of The Slider

Home Sensor

Out Side	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

Limit Sensor

Out Side	
3	1Pc
4	2Pc
No Sensor	
5	No Sensor

Special Order No.

Gearbox Ratio

3	3:1
5	5:1
7	7:1
10	10:1
N	None Gearbox Type

*It's optional N when using LU/RR only.



Specification

Item	Belt	Reducers Ratio			3	5	7	10
		Lead with gearbox		mm	36.6	22	15.7	11
		Maximum Rotating speed		rpm	3600	3600	3600	3600
		Maximum linear speed		mm/s	2200	1320	943	660
		Load factor			1.75	1.75	1.35	1.35
		Tis (Nominal Tension)		N	222			
		Timax (Maximum Tension)		N	393			
	Linear Guide	Dynamic horizontal	100 Km of travel	N	12916			
			1000 Km of travel	N	5995			
			10000 Km of travel	N	2783			
	Static horizontal		N	29171				
	Fixed bearing	Basic dynamic load rating Cr		N	7400			
		Static load rating Cor		N	12800			
	Common Spec	Repeatability		mm	±0.1			
		Allowable input torque		N.m	13.5	22.5	31.5	45
		Maximum acceleration		m/s ²	5			
		Friction coefficient			0.03			
		Stroke (increments)		mm	50-5000mm (100 increments)			
	Ambient temperature ^{※1}		°C	0~+40				

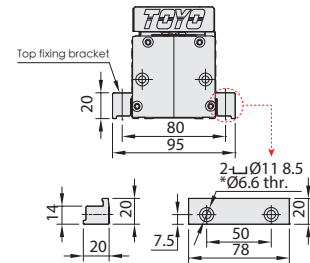
※1 For extreme temperatures: -20°C ~80°C special greases are required.
*When the actuator is not attached with reducer to drive, the lead is 110mm.

Numbers of Fixing Screws

M5 nuts Qty.(by stroke)			
Stroke	Quantity	Stroke	Quantity
100~500	4	2600~3000	14
600~1000	6	3100~3500	16
1100~1500	8	3600~4000	18
1600~2000	10	4100~4500	20
2100~2500	12	4600~5000	22

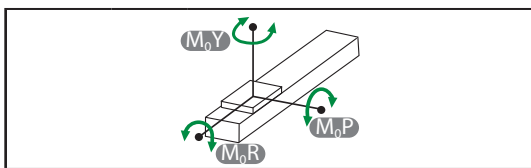
*Standard mounting method is fix from the bottom, using the M5 bolt and nut.

Installation Reference



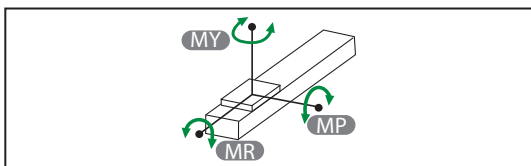
※Top fixing plate is optional.

Static Loading Moment



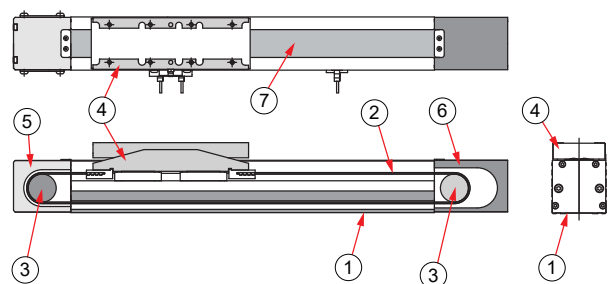
M_{0Y}	N.m	338
M_{0P}	N.m	338
M_{0R}	N.m	59

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	111.4	51.7	24
MP	N.m	111.4	51.7	24
MR	N.m	13.6	6.3	2.9

Parts list



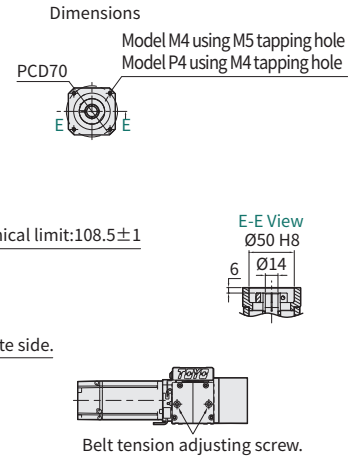
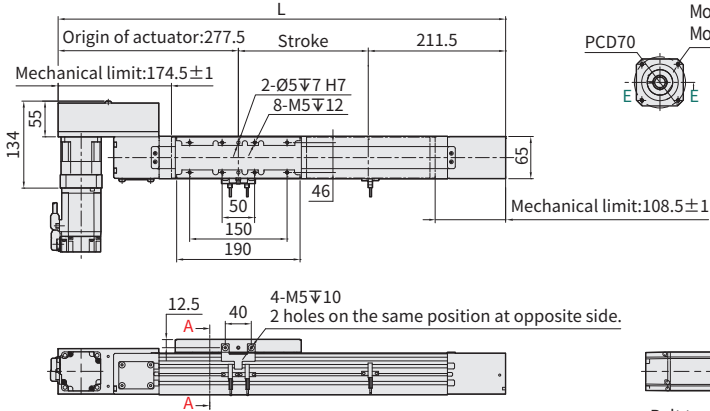
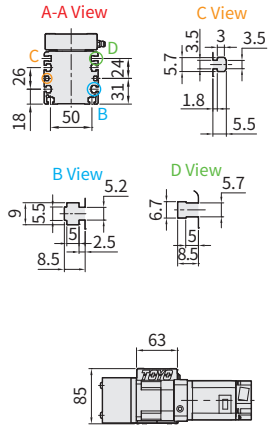
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6061
6	Output pulley support block	AL6061
7	Steel Band	SUS430

MK65

▶ Belt Drive

L Motor Left Side   [Download CAD data at www.toyrobot.com](http://www.toyrobot.com)

Unit : mm

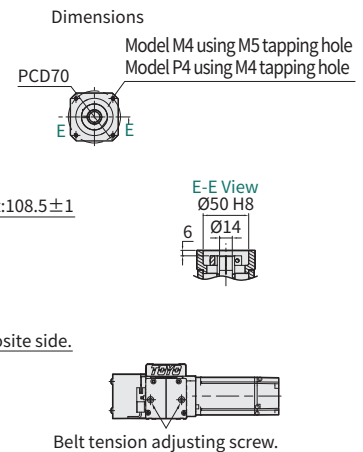
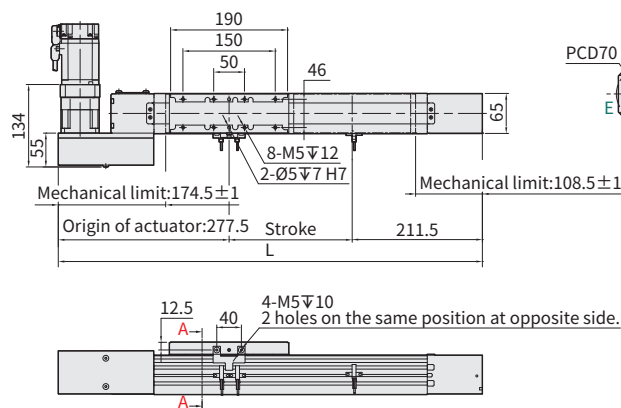
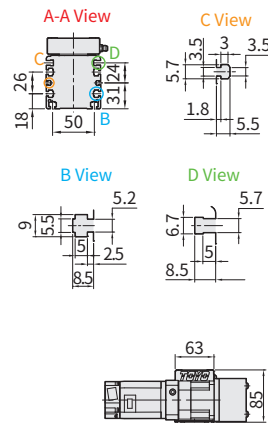


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	589	689	789	889	989	1089	1189	1289	1389	1489	1589	1689	1789	1889	1989	2089	2189	2289	2389	2489	2589	2689	2789	2889	2989		
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31		
Linear Speed mm/s	Lead110																										
	5000*																										
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3089	3189	3289	3389	3489	3589	3689	3789	3889	3989	4089	4189	4289	4389	4489	4589	4689	4789	4889	4989	5089	5189	5289	5389	5489		
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31		
Linear Speed mm/s	Lead110																										
	5000*																										

*Speed will vary with the condition of use. Please refer to load curve on P. 277.

R Motor Right Side   [Download CAD data at www.toyrobot.com](http://www.toyrobot.com)

Unit : mm



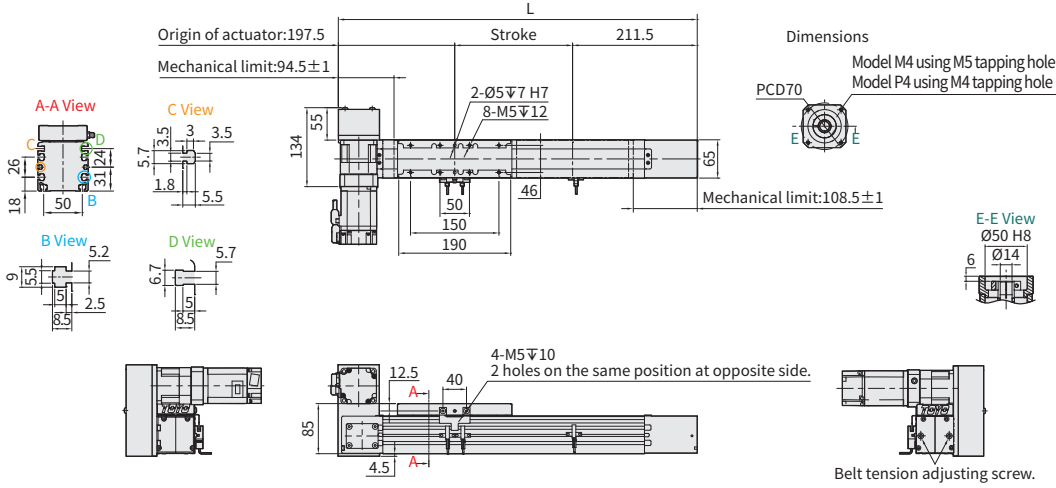
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	589	689	789	889	989	1089	1189	1289	1389	1489	1589	1689	1789	1889	1989	2089	2189	2289	2389	2489	2589	2689	2789	2889	2989		
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31		
Linear Speed mm/s	Lead110																										
	5000*																										
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3089	3189	3289	3389	3489	3589	3689	3789	3889	3989	4089	4189	4289	4389	4489	4589	4689	4789	4889	4989	5089	5189	5289	5389	5489		
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31		
Linear Speed mm/s	Lead110																										
	5000*																										

*Speed will vary with the condition of use. Please refer to load curve on P. 277.



LU Motor Left Side [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm

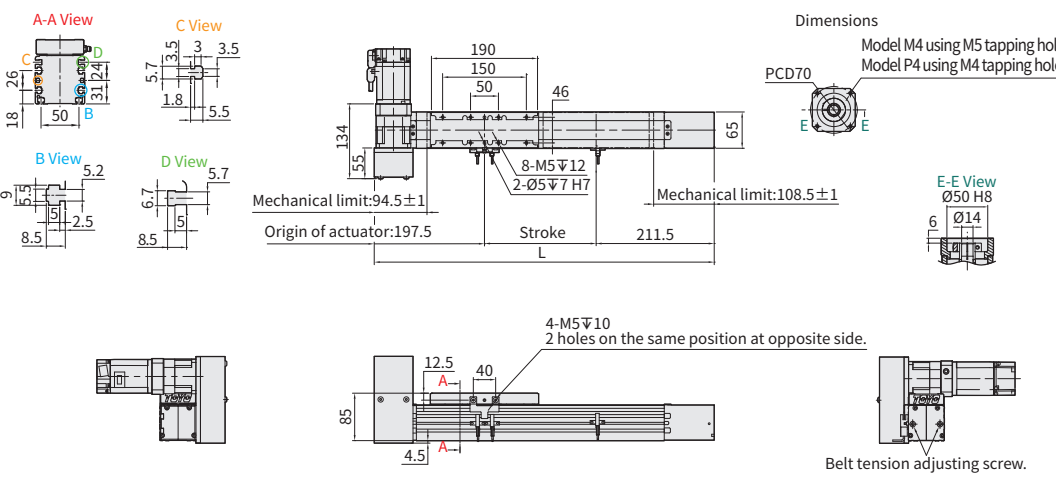


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	509	609	709	809	909	1009	1109	1209	1309	1409	1509	1609	1709	1809	1909	2009	2109	2209	2309	2409	2509	2609	2709	2809	2909
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31
Linear Speed mm/s	Lead110	5000°																							
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3009	3109	3209	3309	3409	3509	3609	3709	3809	3909	4009	4109	4209	4309	4409	4509	4609	4709	4809	4909	5009	5109	5209	5309	5409
KG	19.87	20.39	20.91	21.43	21.95	22.47	22.99	23.51	24.03	24.55	25.07	25.59	26.11	26.63	27.15	27.67	28.19	28.71	29.23	29.75	30.27	30.79	31.31	31.83	32.35
Linear Speed mm/s	Lead110	5000°																							

*Speed will be vary with the condition of use. Please refer to load curve on P.277.

RU Motor Right Side [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm

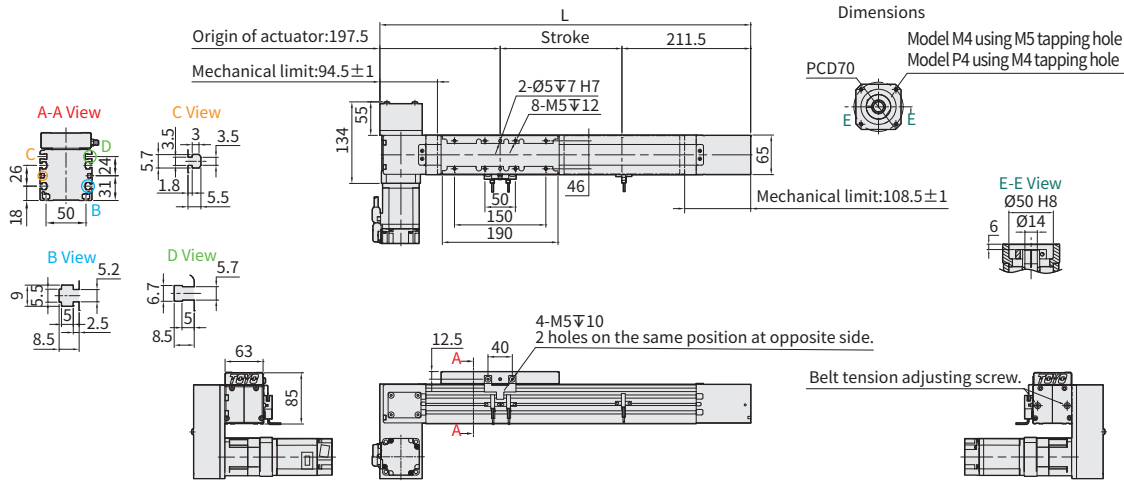


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	509	609	709	809	909	1009	1109	1209	1309	1409	1509	1609	1709	1809	1909	2009	2109	2209	2309	2409	2509	2609	2709	2809	2909
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31
Linear Speed mm/s	Lead110	5000°																							
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3009	3109	3209	3309	3409	3509	3609	3709	3809	3909	4009	4109	4209	4309	4409	4509	4609	4709	4809	4909	5009	5109	5209	5309	5409
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31
Linear Speed mm/s	Lead110	5000°																							

*Speed will be vary with the condition of use. Please refer to load curve on P.277.

LD Motor Left Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



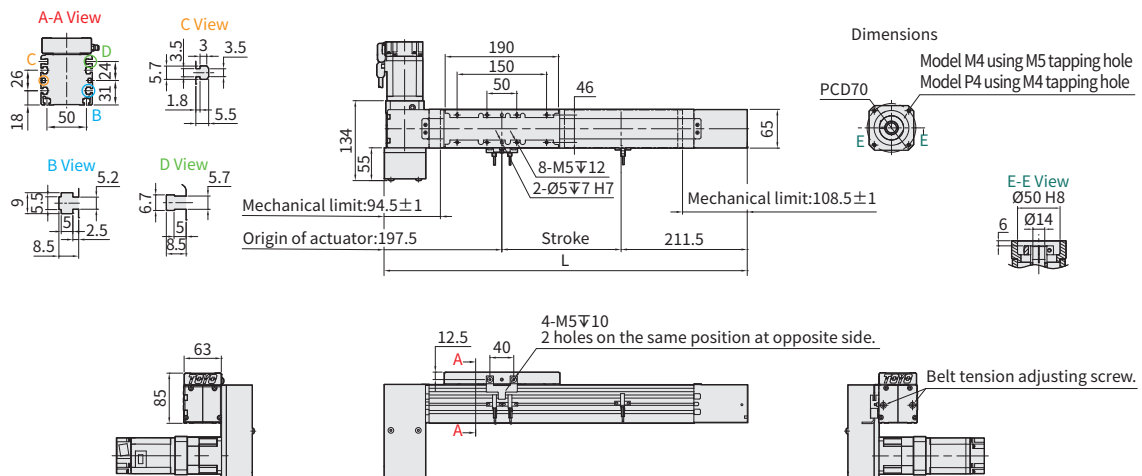
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	509	609	709	809	909	1009	1109	1209	1309	1409	1509	1609	1709	1809	1909	2009	2109	2209	2309	2409	2509	2609	2709	2809	2909
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31
Linear Speed mm/s	Lead110 5000*																								

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3009	3109	3209	3309	3409	3509	3609	3709	3809	3909	4009	4109	4209	4309	4409	4509	4609	4709	4809	4909	5009	5109	5209	5309	5409
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31
Linear Speed mm/s	Lead110 5000*																								

*Speed will be vary with the condition of use. Please refer to load curve on P.277.

RD Motor Right Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

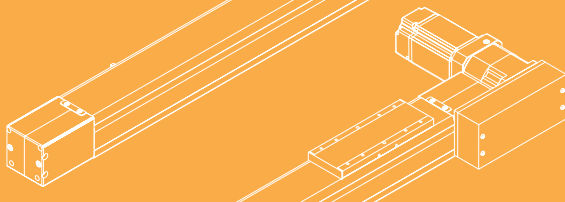
Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	509	609	709	809	909	1009	1109	1209	1309	1409	1509	1609	1709	1809	1909	2009	2109	2209	2309	2409	2509	2609	2709	2809	2909
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31
Linear Speed mm/s	Lead110 5000*																								

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3009	3109	3209	3309	3409	3509	3609	3709	3809	3909	4009	4109	4209	4309	4409	4509	4609	4709	4809	4909	5009	5109	5209	5309	5409
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31
Linear Speed mm/s	Lead110 5000*																								

*Speed will be vary with the condition of use. Please refer to load curve on P.277.



Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

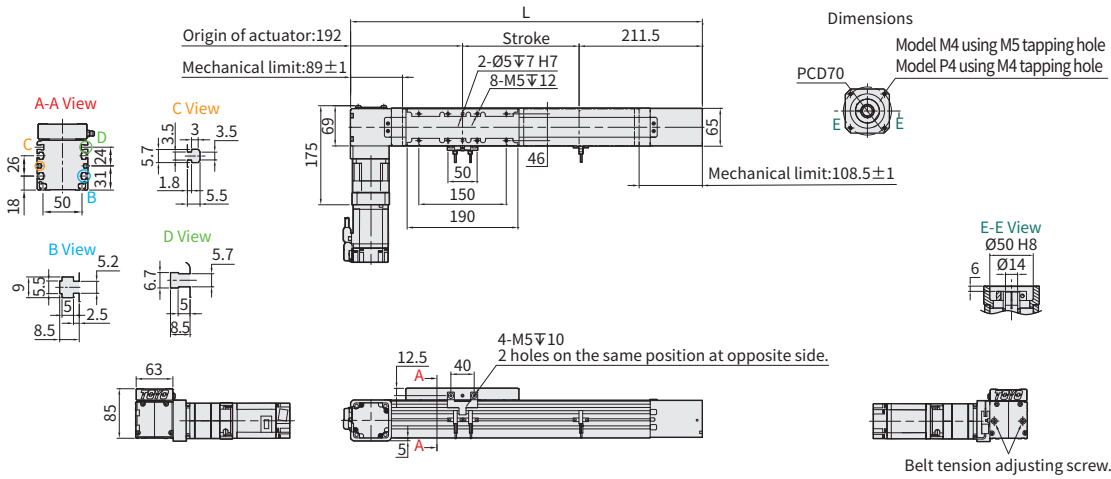
Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

LT Reducer With Motor Left Side [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



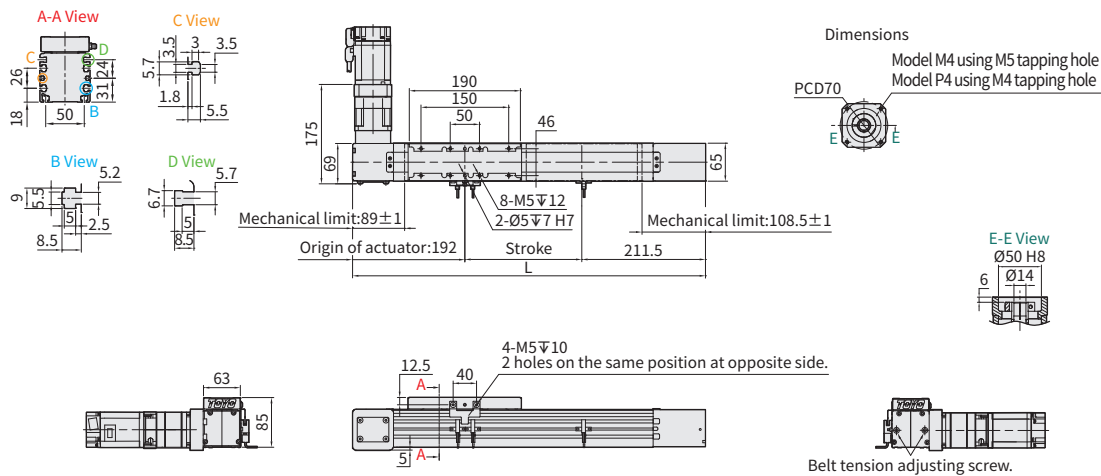
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	503.5	603.5	703.5	803.5	903.5	1003.5	1103.5	1203.5	1303.5	1403.5	1503.5	1603.5	1703.5	1803.5	1903.5	2003.5	2103.5	2203.5	2303.5	2403.5	2503.5	2603.5	2703.5	2803.5	2903.5		
KG	6.87	7.39	7.91	8.43	8.95	9.47	9.99	10.51	11.03	11.55	12.07	12.59	13.11	13.63	14.15	14.67	15.19	15.71	16.23	16.75	17.27	17.79	18.31	18.83	19.35		
Linear Speed mm/s	Lead110																										
	5000°																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3003.5	3103.5	3203.5	3303.5	3403.5	3503.5	3603.5	3703.5	3803.5	3903.5	4003.5	4103.5	4203.5	4303.5	4403.5	4503.5	4603.5	4703.5	4803.5	4903.5	5003.5	5103.5	5203.5	5303.5	5403.5		
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31		
Linear Speed mm/s	Lead110																										
	5000°																										

*Speed will be vary with the condition of use. Please refer to load curve on P.277.

RT Reducer With Motor Right Side [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	503.5	603.5	703.5	803.5	903.5	1003.5	1103.5	1203.5	1303.5	1403.5	1503.5	1603.5	1703.5	1803.5	1903.5	2003.5	2103.5	2203.5	2303.5	2403.5	2503.5	2603.5	2703.5	2803.5	2903.5		
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31		
Linear Speed mm/s	Lead110																										
	5000°																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3003.5	3103.5	3203.5	3303.5	3403.5	3503.5	3603.5	3703.5	3803.5	3903.5	4003.5	4103.5	4203.5	4303.5	4403.5	4503.5	4603.5	4703.5	4803.5	4903.5	5003.5	5103.5	5203.5	5303.5	5403.5		
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31		
Linear Speed mm/s	Lead110																										
	5000°																										

*Speed will be vary with the condition of use. Please refer to load curve on P.277.

M Series

MH65

MH80

MK65

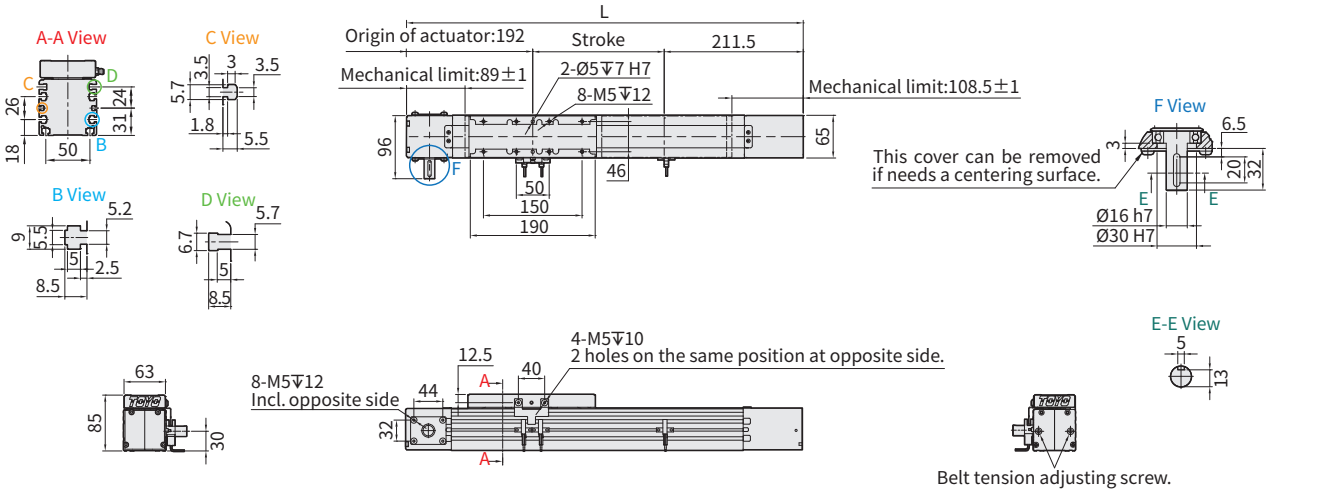
MK85

MK110

MG65

LL Motor Shaft Left Side   Download CAD data at www.toyorobot.com

Unit : mm



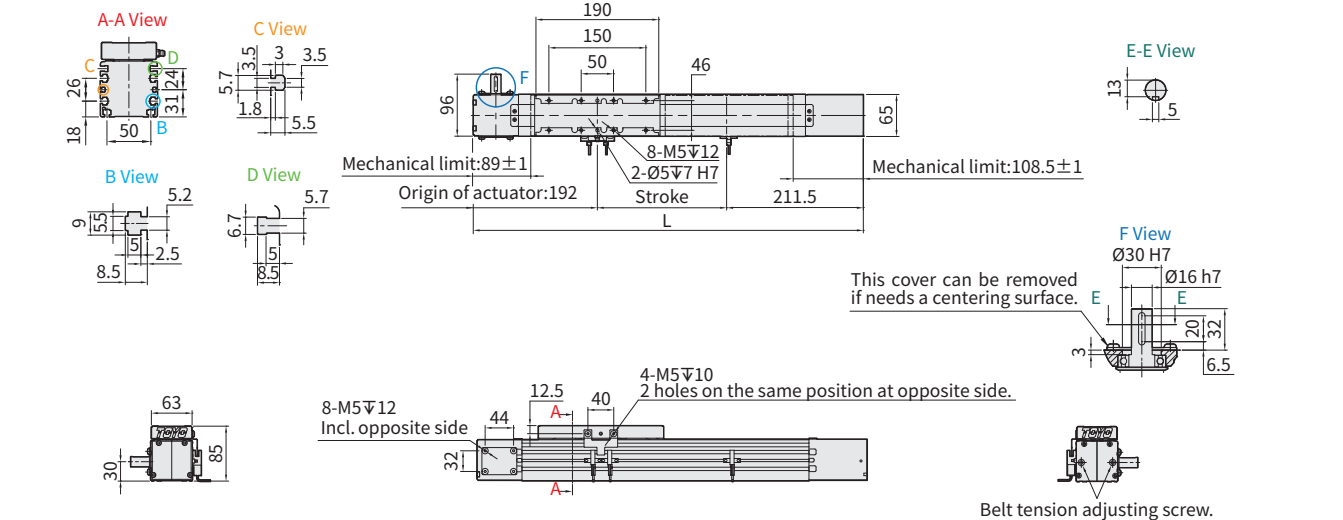
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	
L	503.5	603.5	703.5	803.5	903.5	1003.5	1103.5	1203.5	1303.5	1403.5	1503.5	1603.5	1703.5	1803.5	1903.5	2003.5	2103.5	2203.5	2303.5	2403.5	2503.5	2603.5	2703.5	2803.5	2903.5	
KG	4.36	4.9	5.44	5.98	6.52	7.06	7.6	8.14	8.68	9.22	9.76	10.3	10.84	11.38	11.92	12.46	13	13.54	14.08	14.62	15.16	15.7	16.24	16.78	17.32	
Linear Speed mm/s	Lead110 5000*																									

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014	
L	3003.5	3103.5	3203.5	3303.5	3403.5	3503.5	3603.5	3703.5	3803.5	3903.5	4003.5	4103.5	4203.5	4303.5	4403.5	4503.5	4603.5	4703.5	4803.5	4903.5	5003.5	5103.5	5203.5	5303.5	5403.5	
KG	17.86	18.4	18.94	19.48	20.02	20.56	21.1	21.64	22.18	22.72	23.26	23.8	24.34	24.88	25.42	25.96	26.5	27.04	27.58	28.12	28.66	29.2	29.74	30.28	30.82	
Linear Speed mm/s	Lead110 5000*																									

*Speed will vary with the condition of use. Please refer to load curve on P. 277.

RR Motor Shaft Right Side   Download CAD data at www.toyorobot.com

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	
L	503.5	603.5	703.5	803.5	903.5	1003.5	1103.5	1203.5	1303.5	1403.5	1503.5	1603.5	1703.5	1803.5	1903.5	2003.5	2103.5	2203.5	2303.5	2403.5	2503.5	2603.5	2703.5	2803.5	2903.5	
KG	7.87	8.43	8.99	9.55	10.11	10.67	11.23	11.79	12.35	12.91	13.47	14.03	14.59	15.15	15.71	16.27	16.83	17.39	17.95	18.51	19.07	19.63	20.19	20.75	21.31	
Linear Speed mm/s	Lead110 5000*																									

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014	
L	3003.5	3103.5	3203.5	3303.5	3403.5	3503.5	3603.5	3703.5	3803.5	3903.5	4003.5	4103.5	4203.5	4303.5	4403.5	4503.5	4603.5	4703.5	4803.5	4903.5	5003.5	5103.5	5203.5	5303.5	5403.5	
KG	21.87	22.43	22.99	23.55	24.11	24.67	25.23	25.79	26.35	26.91	27.47	28.03	28.59	29.15	29.71	30.27	30.83	31.39	31.95	32.51	33.07	33.63	34.19	34.75	35.31	
Linear Speed mm/s	Lead110 5000*																									

*Speed will vary with the condition of use. Please refer to load curve on P. 277.



Application
Standard Ball Screw Type GTH / GTY / ETH
Standard Belt Type M Series
Cleanroom Ball Screw Type GCH / ECH
Cleanroom Belt Type ECB
Reference

Memo

Large empty rectangular area for taking notes or providing additional information.

M Series

MH65
MH80
MK65
MK85
MK110
MG65



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MK85 - 2000 - L - M7B - C 4 - NL - 10 - A001

Model

Stroke

100-5000mm
100 mm Increments

Motor Position

L	Motor Left Side
LU	Motor Left Upper Side
LD	Motor Left Lower Side
LT	Reducer With Motor Left Side
LL	Motor Shaft Left Side
R	Motor Right Side
RU	Motor Right Upper Side
RD	Motor Right Lower Side
RT	Reducer With Motor Right Side
RR	Motor Shaft Right Side

Dimensions

M7	Servo motor: PCD90-M6-shift Φ19mm	B
P7	Servo motor: PCD90-M5-shift Φ19mm	

*If No Brake, No Description.

Grease Fitting Position

NL On The Left of The Slider
NR On The Right of The Slider

Special Order No.

Home Sensor

	Out Side
C	Motor Side
D	Opposite Motor Side
	No Sensor
E	No Sensor

Limit Sensor

	Out Side
3	1Pc
4	2Pc
	No Sensor
5	No Sensor

Gearbox Ratio

5	5:1
7	7:1
10	10:1
N	None Gearbox Type

*It's optional N when using LU/RR only.



Specification

Item	Belt	Reducers Ratio			5	7	10
		Lead with gearbox		mm	40	28.5	20
		Maximum Rotating speed		rpm	3600	3600	3600
		Maximum linear speed		mm/s	2400	1714	1200
		Load factor			1.75	1.75	1.35
		Tis (Nominal Tension)		N	372		
		Timax (Maximum Tension)		N	647		
	Linear Guide	Dynamic horizontal	100 Km of travel		N	20204	
			1000 Km of travel		N	9378	
			10000 Km of travel		N	4353	
	Fixed bearing	Static horizontal		N	43245		
		Basic dynamic load rating Cr		N	9100		
	Common Spec	Static load rating Cor		N	14100		
		Repeatability		mm	±0.1		
	Common Spec	Allowable input torque		N.m	42	58.8	84
		Maximum acceleration		m/s ²	5		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-5000mm (100 increments)		
		Ambient temperature ^{*1}		°C	0~+40		

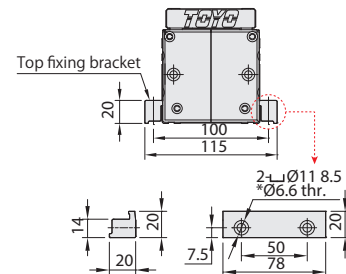
※1 For extreme temperatures: -20°C ~80°C special greases are required.
*When the actuator is not attached with reducer to drive, the lead is 200mm.

Numbers of Fixing Screws

M5 nuts Qty.(by stroke)			
Stroke	Quantity	Stroke	Quantity
100~500	4	2600~3000	14
600~1000	6	3100~3500	16
1100~1500	8	3600~4000	18
1600~2000	10	4100~4500	20
2100~2500	12	4600~5000	22

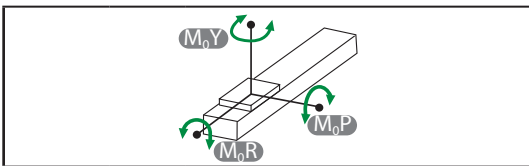
*Standard mounting method is fix from the bottom, using the M5 bolt and nut.

Installation Reference



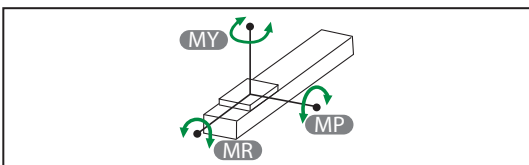
*Top fixing plate is optional.

Static Loading Moment



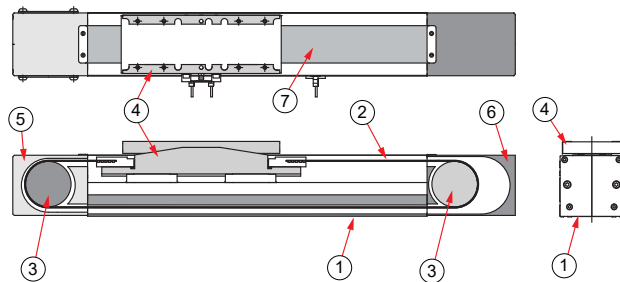
M₀Y	N.m	868
M₀P	N.m	868
M₀R	N.m	123

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	287.5	133.4	61.9
MP	N.m	287.5	133.4	61.9
MR	N.m	32.2	15	6.9

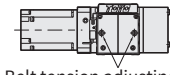
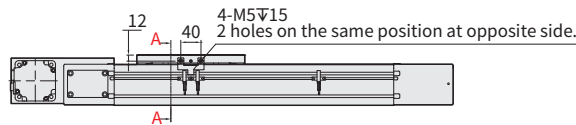
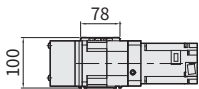
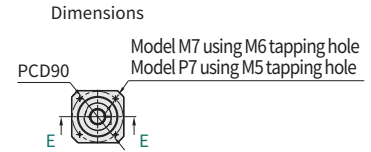
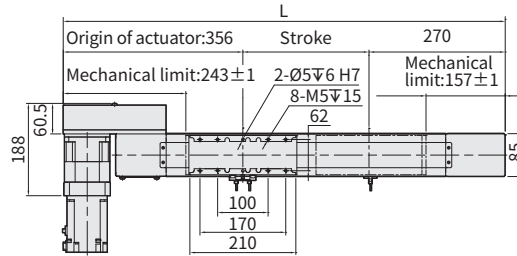
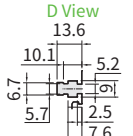
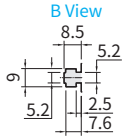
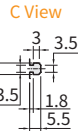
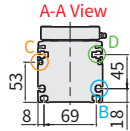
Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6061
6	Output pulley support block	AL6061
7	Steel Band	SUS430

L Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Belt tension adjusting screw.

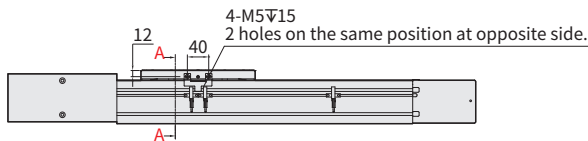
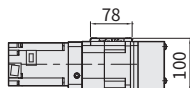
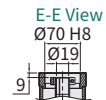
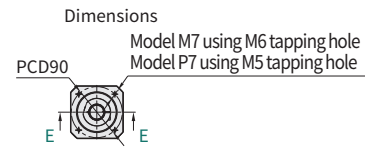
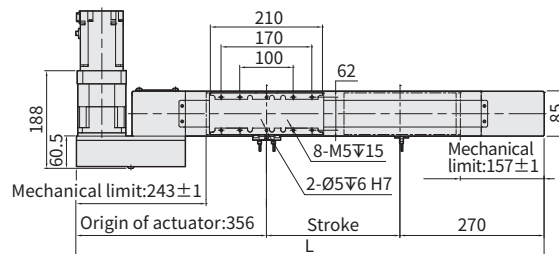
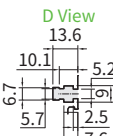
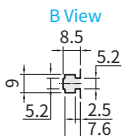
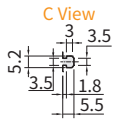
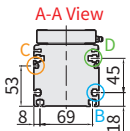
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	726	826	926	1026	1126	1226	1326	1426	1526	1626	1726	1826	1926	2026	2126	2226	2326	2426	2526	2626	2726	2826	2926	3026	3126
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97
Linear Speed mm/s	Lead200 5000*																								

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3226	3326	3426	3526	3626	3726	3826	3926	4026	4126	4226	4326	4426	4526	4626	4726	4826	4926	5026	5126	5226	5326	5426	5526	5626
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97
Linear Speed mm/s	Lead200 5000*																								

*Speed will vary with the condition of use. Please refer to load curve on P. 285.

R Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Belt tension adjusting screw.

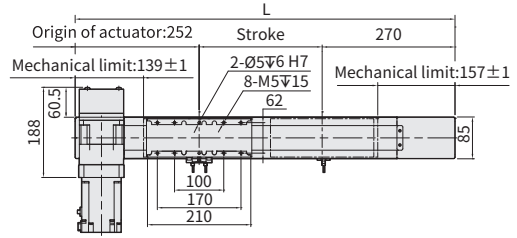
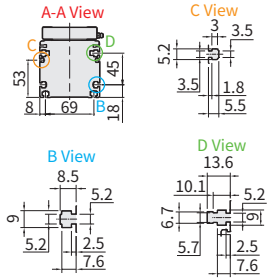
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	726	826	926	1026	1126	1226	1326	1426	1526	1626	1726	1826	1926	2026	2126	2226	2326	2426	2526	2626	2726	2826	2926	3026	3126
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97
Linear Speed mm/s	Lead200 5000*																								

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3226	3326	3426	3526	3626	3726	3826	3926	4026	4126	4226	4326	4426	4526	4626	4726	4826	4926	5026	5126	5226	5326	5426	5526	5626
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97
Linear Speed mm/s	Lead200 5000*																								

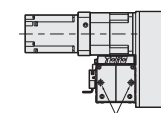
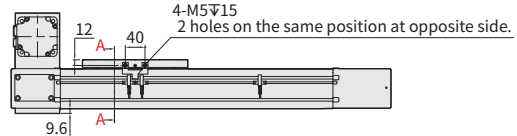
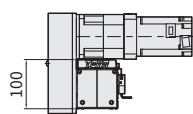
*Speed will vary with the condition of use. Please refer to load curve on P. 285.

LU Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Dimensions
Model M7 using M6 tapping hole
Model P7 using M5 tapping hole



Belt tension adjusting screw.

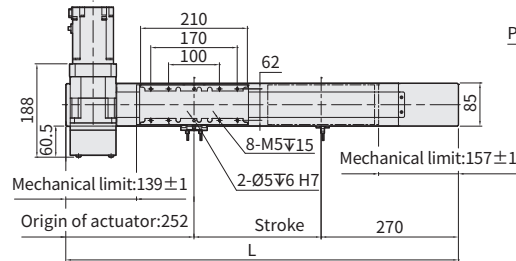
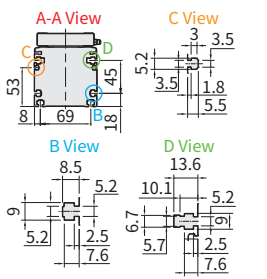
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022		
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97		
Linear Speed mm/s	Lead200 5000*																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522		
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97		
Linear Speed mm/s	Lead200 5000*																										

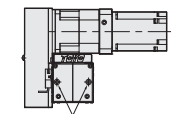
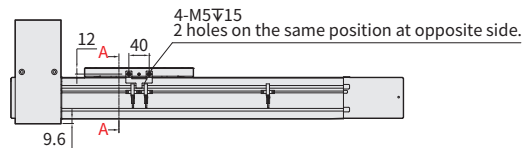
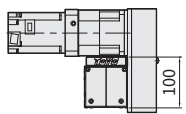
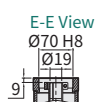
*Speed will be vary with the condition of use. Please refer to load curve on P.285.

RU Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Dimensions
Model M7 using M6 tapping hole
Model P7 using M5 tapping hole



Belt tension adjusting screw.

Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022		
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97		
Linear Speed mm/s	Lead200 5000*																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522		
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97		
Linear Speed mm/s	Lead200 5000*																										

*Speed will be vary with the condition of use. Please refer to load curve on P.285.

M Series

MH65

MH80

MK65

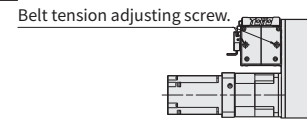
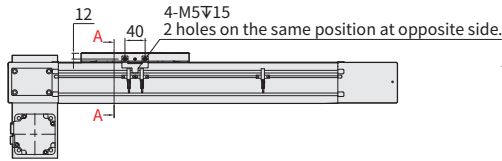
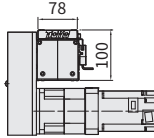
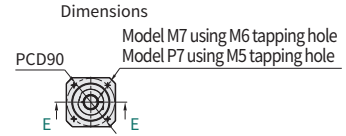
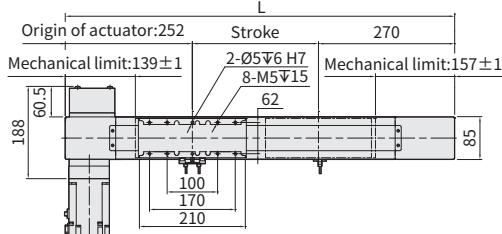
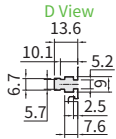
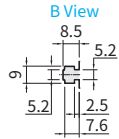
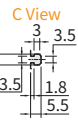
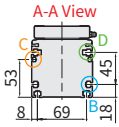
MK85

MK110

MG65

LD Motor Left Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm

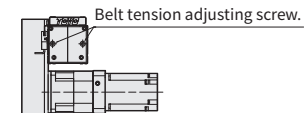
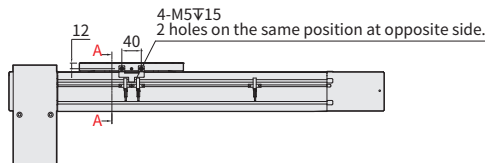
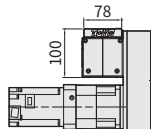
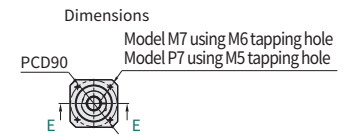
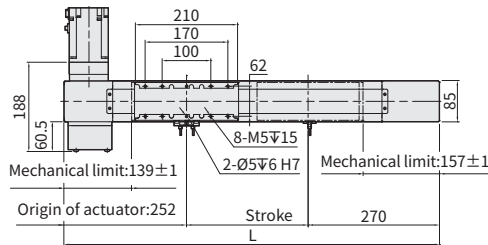
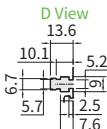
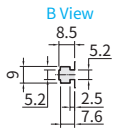
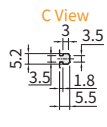
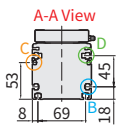


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97
Linear Speed mm/s	Lead200 5000*																								
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97
Linear Speed mm/s	Lead200 5000*																								

*Speed will vary with the condition of use. Please refer to load curve on P. 285.

RD Motor Right Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm

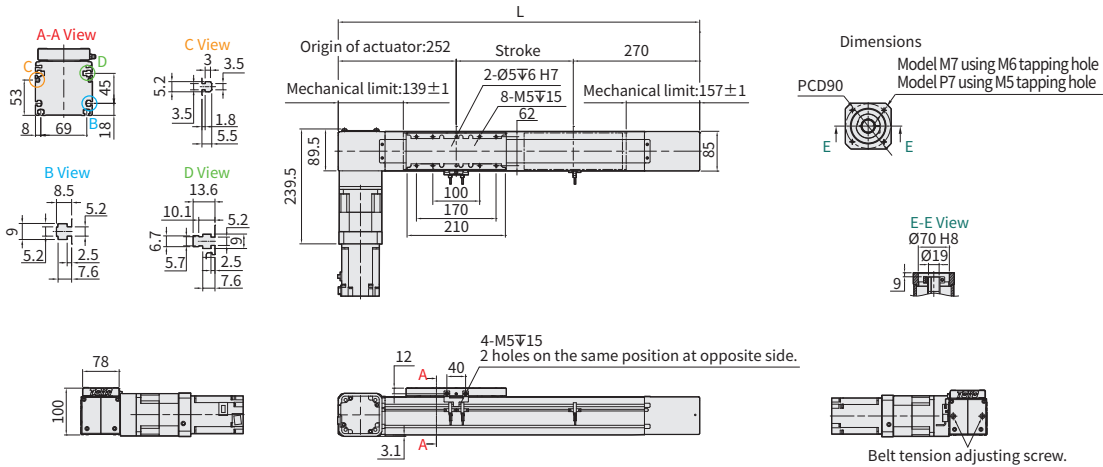


Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022
KG	14.81	15.65	16.49	17.33	18.17	19.01	19.85	20.69	21.53	22.37	23.21	24.05	24.89	25.73	26.57	27.41	28.25	29.09	29.93	30.77	31.61	32.45	33.29	34.13	34.97
Linear Speed mm/s	Lead200 5000*																								
Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522
KG	35.81	36.65	37.49	38.33	39.17	40.01	40.85	41.69	42.53	43.37	44.21	45.05	45.89	46.73	47.57	48.41	49.25	50.09	50.93	51.77	52.61	53.45	54.29	55.13	55.97
Linear Speed mm/s	Lead200 5000*																								

*Speed will vary with the condition of use. Please refer to load curve on P. 285.

LT Reducer With Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



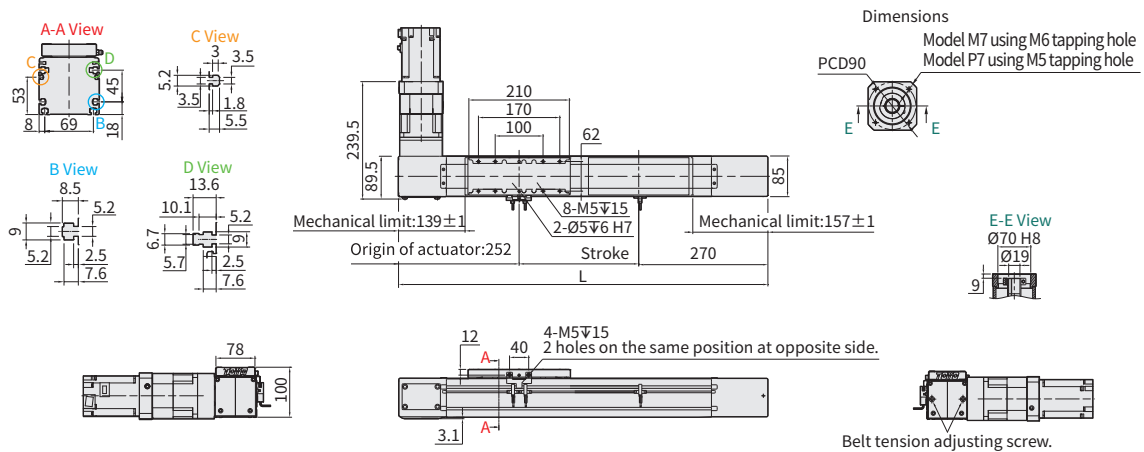
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022		
KG	13.06	13.88	14.7	15.52	16.34	17.16	17.98	18.8	19.62	20.44	21.26	22.08	22.9	23.72	24.54	25.36	26.18	27	27.82	28.64	29.46	30.28	31.1	31.92	32.7		
Linear Speed mm/s	Lead200 5000*																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522		
KG	33.56	34.38	35.2	36.02	36.84	37.66	38.48	39.3	40.12	40.94	41.76	42.58	43.4	44.22	45.04	45.86	46.68	47.5	48.32	49.14	49.96	50.78	51.6	52.42	53.24		
Linear Speed mm/s	Lead200 5000*																										

*Speed will be vary with the condition of use. Please refer to load curve on P.285.

RT Reducer With Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



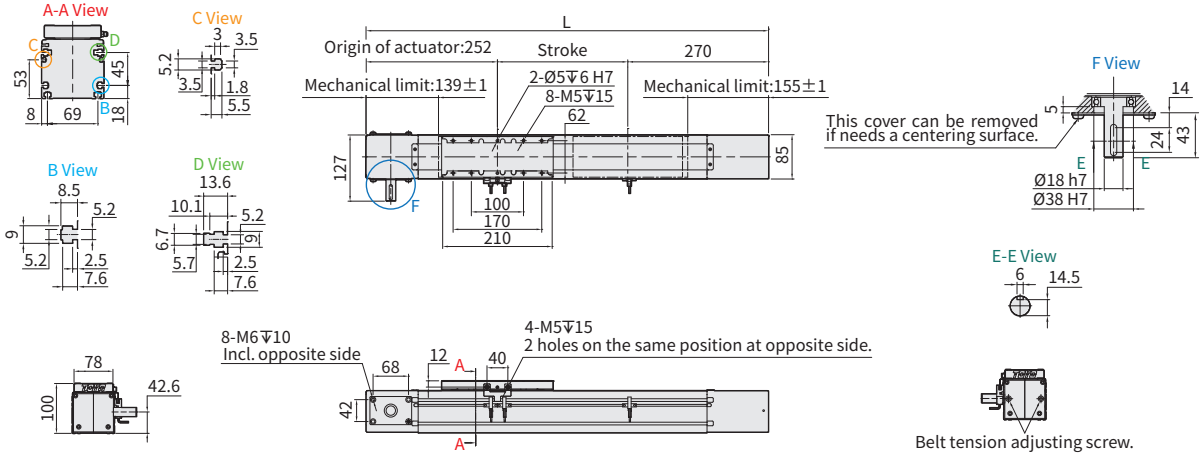
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500		
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514		
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022		
KG	13.06	13.88	14.7	15.52	16.34	17.16	17.98	18.8	19.62	20.44	21.26	22.08	22.9	23.72	24.54	25.36	26.18	27	27.82	28.64	29.46	30.28	31.1	31.92	32.7		
Linear Speed mm/s	Lead200 5000*																										

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000		
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014		
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522		
KG	33.56	34.38	35.2	36.02	36.84	37.66	38.48	39.3	40.12	40.94	41.76	42.58	43.4	44.22	45.04	45.86	46.68	47.5	48.32	49.14	49.96	50.78	51.6	52.42	53.24		
Linear Speed mm/s	Lead200 5000*																										

*Speed will be vary with the condition of use. Please refer to load curve on P.285.

LL Motor Shaft Left Side   Download CAD data at www.toyorobot.com

Unit : mm



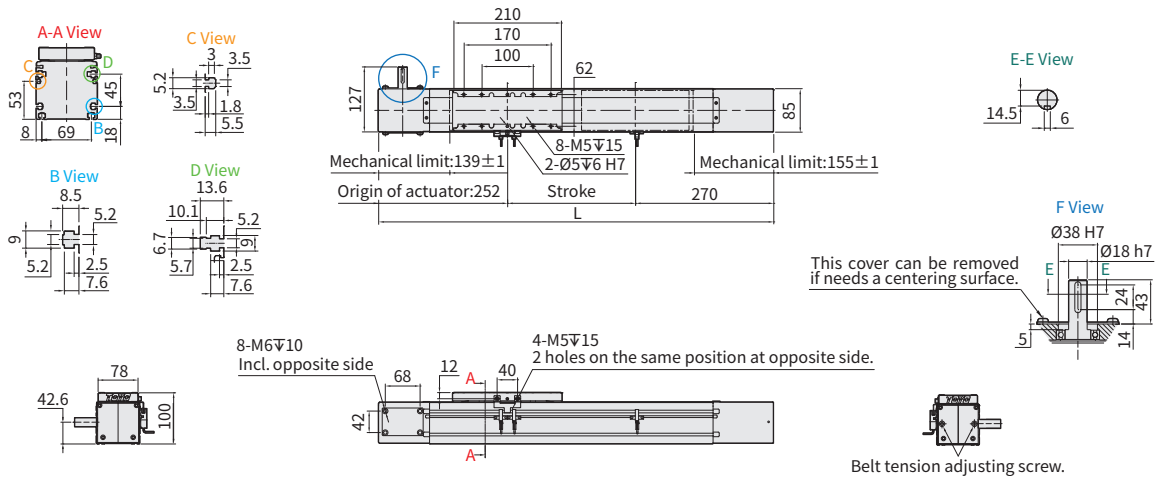
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022	
KG	10.55	11.37	12.19	13.01	13.83	14.65	15.47	16.29	17.11	17.93	18.75	19.57	20.39	21.21	22.03	22.85	23.67	24.49	25.31	26.13	26.95	27.77	28.59	29.41	30.23	
Linear Speed mm/s	Lead200 5000*																									

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014	
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522	
KG	31.05	31.87	32.69	33.51	34.33	35.15	35.97	36.79	37.61	38.43	39.25	40.07	40.89	41.71	42.53	43.35	44.17	44.99	45.81	46.63	47.45	48.27	49.09	49.91	50.73	
Linear Speed mm/s	Lead200 5000*																									

*Speed will be vary with the condition of use. Please refer to load curve on P. 285.

RR Motor Shaft Right Side   Download CAD data at www.toyorobot.com

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414	2514	
L	622	722	822	922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2022	2122	2222	2322	2422	2522	2622	2722	2822	2922	3022	
KG	10.55	11.37	12.19	13.01	13.83	14.65	15.47	16.29	17.11	17.93	18.75	19.57	20.39	21.21	22.03	22.85	23.67	24.49	25.31	26.13	26.95	27.77	28.59	29.41	30.23	
Linear Speed mm/s	Lead200 5000*																									

Stroke	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	
Limit Stroke (±1)	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814	4914	5014	
L	3122	3222	3322	3422	3522	3622	3722	3822	3922	4022	4122	4222	4322	4422	4522	4622	4722	4822	4922	5022	5122	5222	5322	5422	5522	
KG	31.05	31.87	32.69	33.51	34.33	35.15	35.97	36.79	37.61	38.43	39.25	40.07	40.89	41.71	42.53	43.35	44.17	44.99	45.81	46.63	47.45	48.27	49.09	49.91	50.73	
Linear Speed mm/s	Lead200 5000*																									

*Speed will be vary with the condition of use. Please refer to load curve on P. 285.



Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

Memo

Large empty rectangular area for taking notes or memos.

M Series

MH65

MH80

MK65

MK85

MK110

MG65



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MK110 - 2000 - L - M7B - C 4 - NL - 10 - A001

Model

Stroke

100-4800mm
100 mm Increments

Motor Position

L	Motor Left Side
LU	Motor Left Upper Side
LD	Motor Left Lower Side
LT	Reducer With Motor Left Side
LL	Motor Shaft Left Side
R	Motor Right Side
RU	Motor Right Upper Side
RD	Motor Right Lower Side
RT	Reducer With Motor Right Side
RR	Motor Shaft Right Side

Dimensions

M7	Servo motor: PCD90-M6-shift Φ19mm	B
P7	Servo motor: PCD90-M5-shift Φ19mm	

*If No Brake, No Description.

Grease Fitting Position

NL	On The Left of The Slider
NR	On The Right of The Slider

Special Order No.

Home Sensor

Out Side	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

Limit Sensor

Out Side	
3	1Pc
4	2Pc
No Sensor	
5	No Sensor

Gearbox Ratio

10	10:1
15	15:1
20	20:1
N	None Gearbox Type

*It's optional N when using LL/RR only.



Specification

Item	Belt	Reducers Ratio		10	15	20	
		Lead with gearbox		mm	25	16.6	12.5
		Maximum Rotating speed		rpm	3600	3600	3600
		Maximum linear speed		mm/s	1500	1000	750
		Load factor			1.75	1.35	1.35
		Tis (Nominal Tension)		N	376		
		Timax (Maximum Tension)		N	651		
	Linear Guide	Dynamic horizontal	100 Km of travel		N	27873	
			1000 Km of travel		N	12938	
			10000 Km of travel		N	6005	
	Fixed bearing	Static horizontal		N	59920		
		Basic dynamic load rating Cr		N	16600		
	Common Spec	Static load rating Cor		N	26400		
		Repeatability		mm	±0.1		
	Common Spec	Allowable input torque		N.m	84	126	168
		Maximum acceleration		m/s ²	5		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-4800mm (100 increments)		
		Ambient temperature ^{※1}		°C	0~+40		

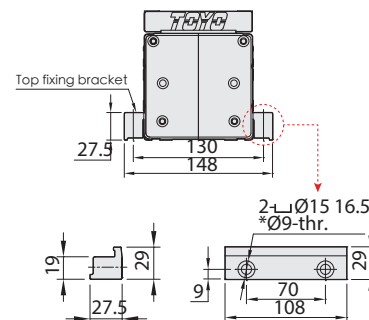
※1 For extreme temperatures: -20°C ~80°C special greases are required.
*When the actuator is not attached with reducer to drive, the lead is 250mm.

Numbers of Fixing Screws

M6 nuts Qty.(by stroke)			
Stroke	Quantity	Stroke	Quantity
100~500	4	2600~3000	14
600~1000	6	3100~3500	16
1100~1500	8	3600~4000	18
1600~2000	10	4100~4500	20
2100~2500	12	4600~5000	22

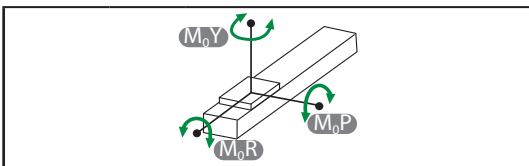
*Standard mounting method is fix from the bottom, using the M6 bolt and nut.

Installation Reference



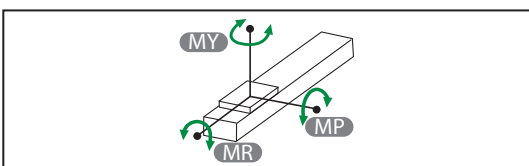
※Top fixing plate is optional.

Static Loading Moment



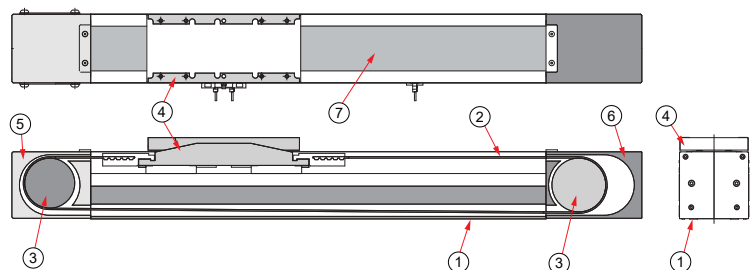
M_{0Y}	N.m	1479
M_{0P}	N.m	1479
M_{0R}	N.m	190

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	501.8	232.9	108.1
MP	N.m	501.8	232.9	108.1
MR	N.m	50.2	23.3	10.8

Parts list



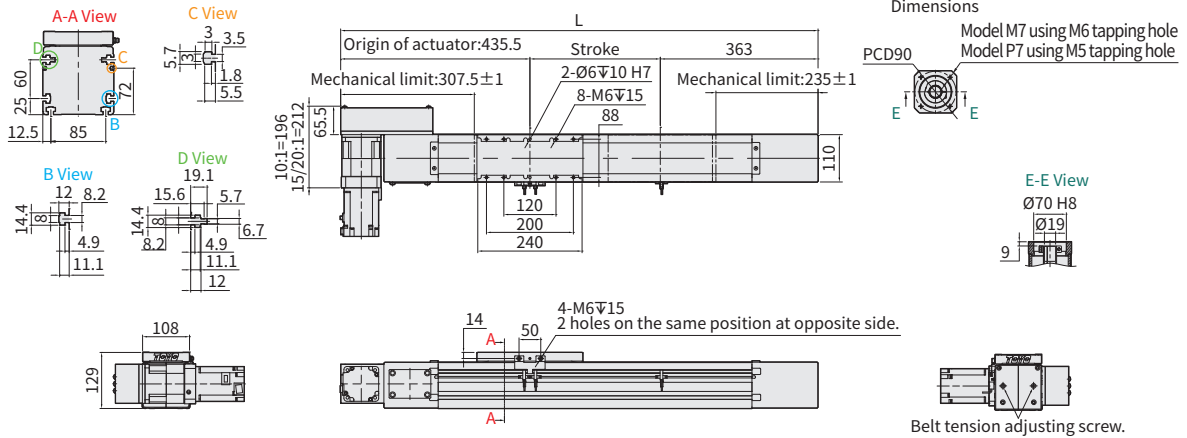
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6061
6	Output pulley support block	AL6061
7	Steel Band	SUS430

MK110

▶ Belt Drive

L Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



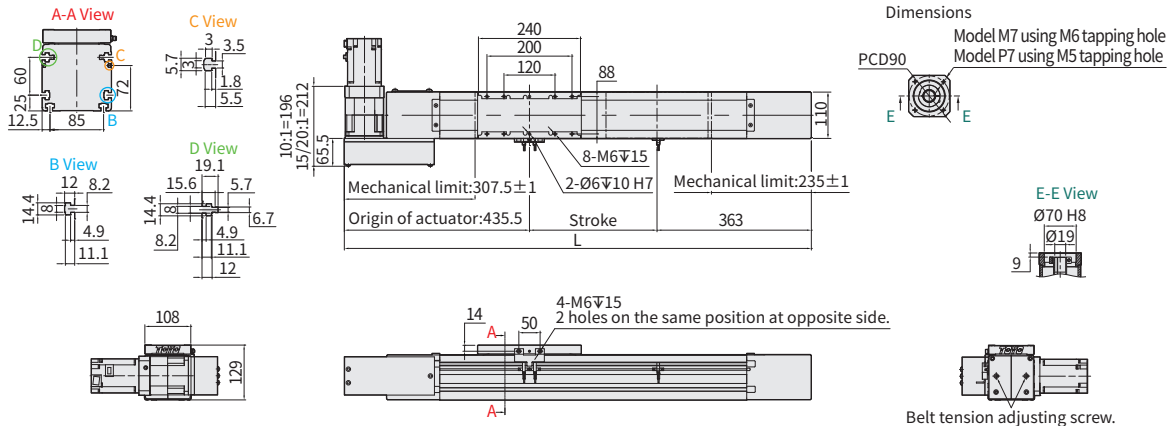
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	898.5	998.5	1098.5	1198.5	1298.5	1398.5	1498.5	1598.5	1698.5	1798.5	1898.5	1998.5	2098.5	2198.5	2298.5	2398.5	2498.5	2598.5	2698.5	2798.5	2898.5	2988.5	3098.5	3198.5
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	Lead250	5000*																						

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3298.5	3398.5	3498.5	3598.5	3698.5	3798.5	3898.5	3998.5	4098.5	4198.5	4298.5	4398.5	4498.5	4598.5	4698.5	4798.5	4898.5	4998.5	5098.5	5198.5	5298.5	5398.5	5498.5	5598.5
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	Lead250	5000*																						

*Speed will be vary with the condition of use. Please refer to load curve on P. 293.

R Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



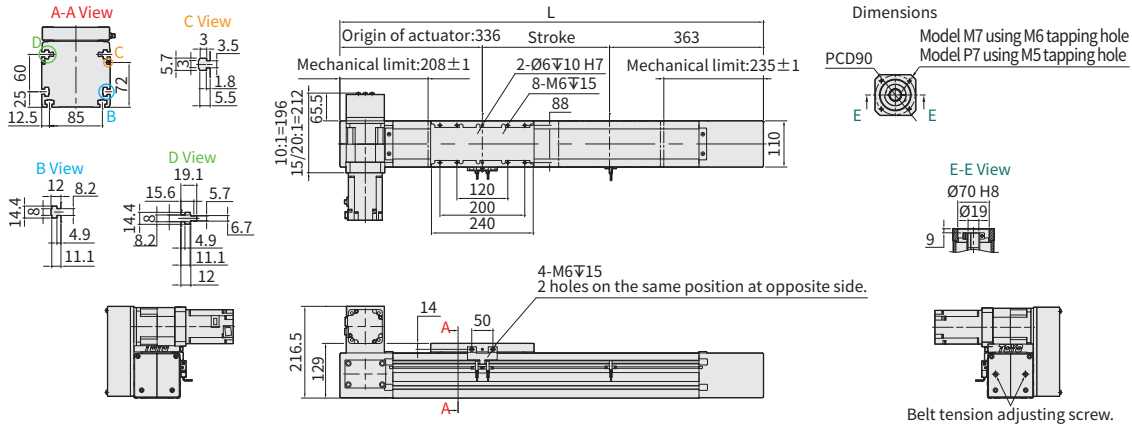
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	898.5	998.5	1098.5	1198.5	1298.5	1398.5	1498.5	1598.5	1698.5	1798.5	1898.5	1998.5	2098.5	2198.5	2298.5	2398.5	2498.5	2598.5	2698.5	2798.5	2898.5	2988.5	3098.5	3198.5
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	Lead250	5000*																						

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3298.5	3398.5	3498.5	3598.5	3698.5	3798.5	3898.5	3998.5	4098.5	4198.5	4298.5	4398.5	4498.5	4598.5	4698.5	4798.5	4898.5	4998.5	5098.5	5198.5	5298.5	5398.5	5498.5	5598.5
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	Lead250	5000*																						

*Speed will be vary with the condition of use. Please refer to load curve on P. 293.

LU Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



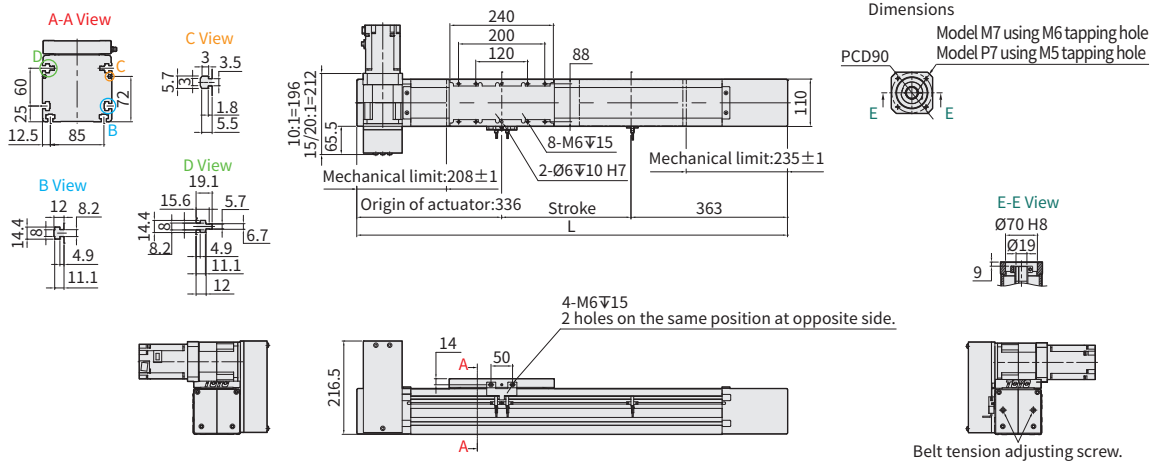
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	Lead250 5000*																							

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	Lead250 5000*																							

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

RU Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



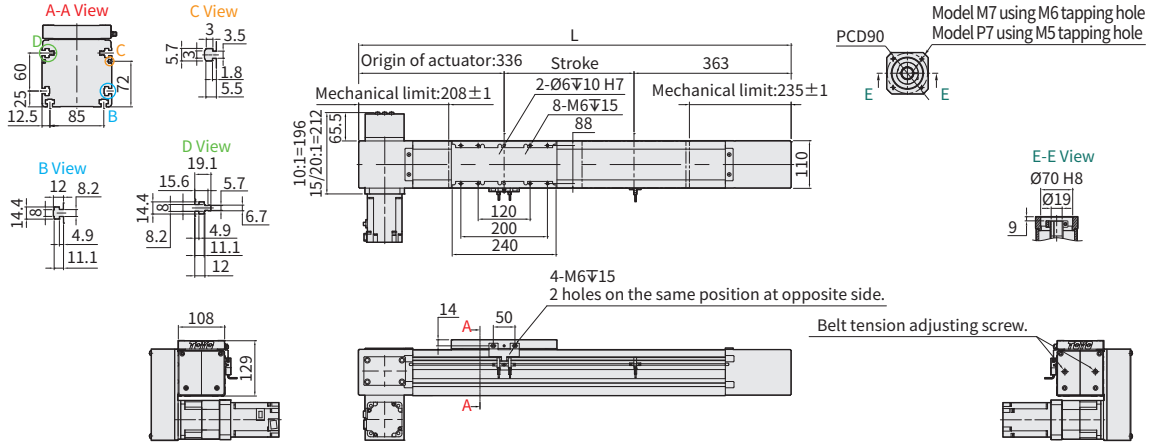
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	Lead250 5000*																							

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	Lead250 5000*																							

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

LD Motor Left Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



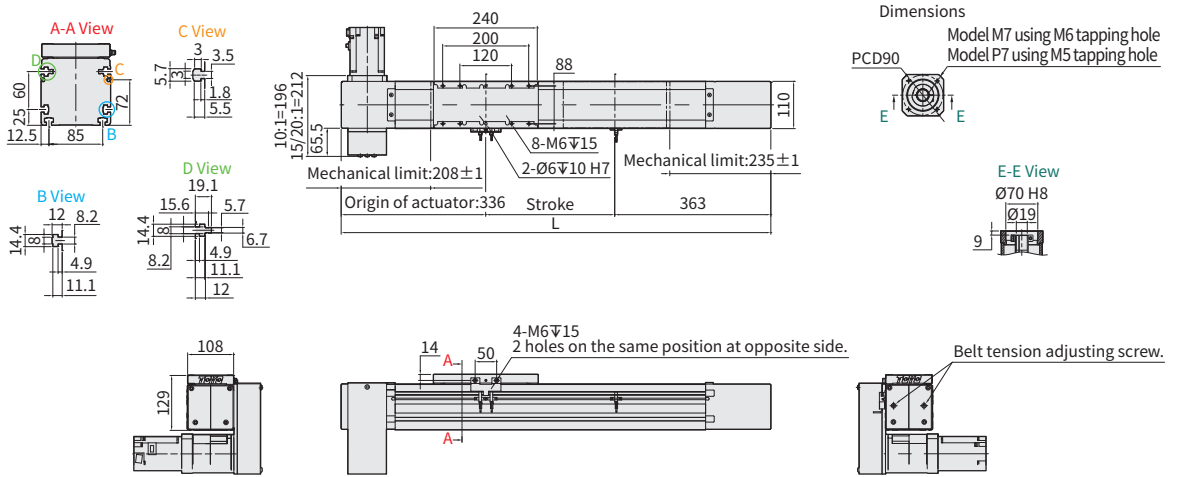
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	5000*																							
Lead250																								

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	5000*																							
Lead250																								

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

RD Motor Right Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



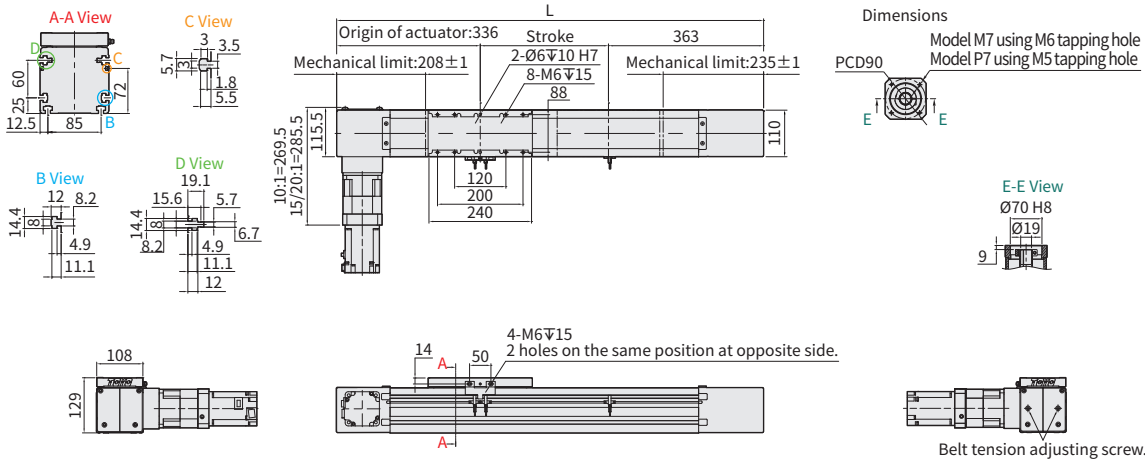
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	24.09	25.33	26.57	27.81	29.05	30.29	31.53	32.77	34.01	35.25	36.49	37.73	38.97	40.21	41.45	42.69	43.93	45.17	46.41	47.65	48.89	50.13	51.37	52.61
Linear Speed mm/s	5000*																							
Lead250																								

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	53.85	55.09	56.33	57.57	58.81	60.05	61.29	62.53	63.77	65.01	66.25	67.49	68.73	69.97	71.21	72.45	73.69	74.93	76.17	77.41	78.65	79.89	81.13	82.37
Linear Speed mm/s	5000*																							
Lead250																								

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

LT Reducer With Motor Left Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



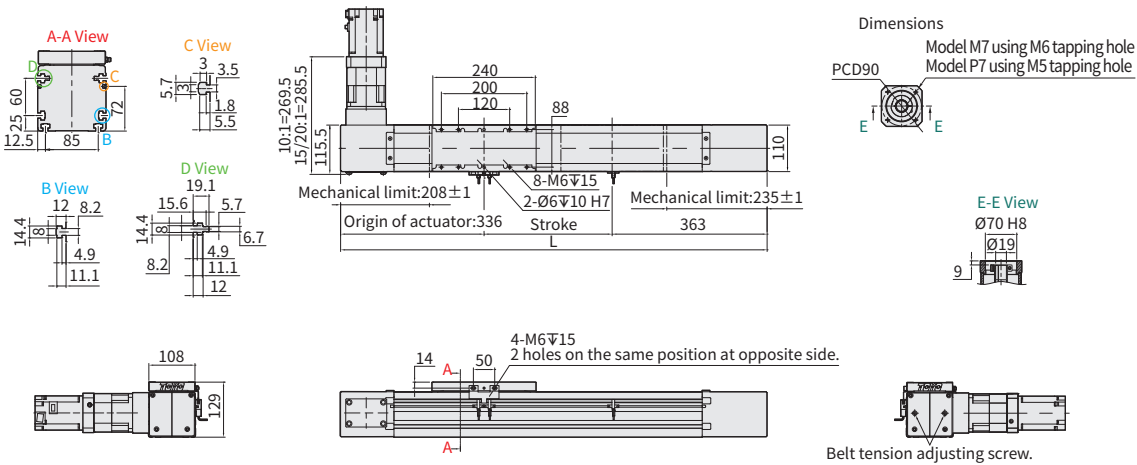
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	21.33	22.57	23.81	25.05	26.29	27.53	28.77	30.01	31.25	32.49	33.73	34.97	36.21	37.45	38.69	39.93	41.17	42.41	43.65	44.89	46.13	47.37	48.61	49.85
Linear Speed mm/s	Lead250	5000*																						

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	51.09	52.33	53.57	54.81	56.05	57.29	58.53	59.77	61.01	62.25	63.49	64.73	65.97	67.21	68.45	69.69	70.93	72.17	73.41	74.65	75.89	77.13	78.37	79.61
Linear Speed mm/s	Lead250	5000*																						

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

RT Reducer With Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



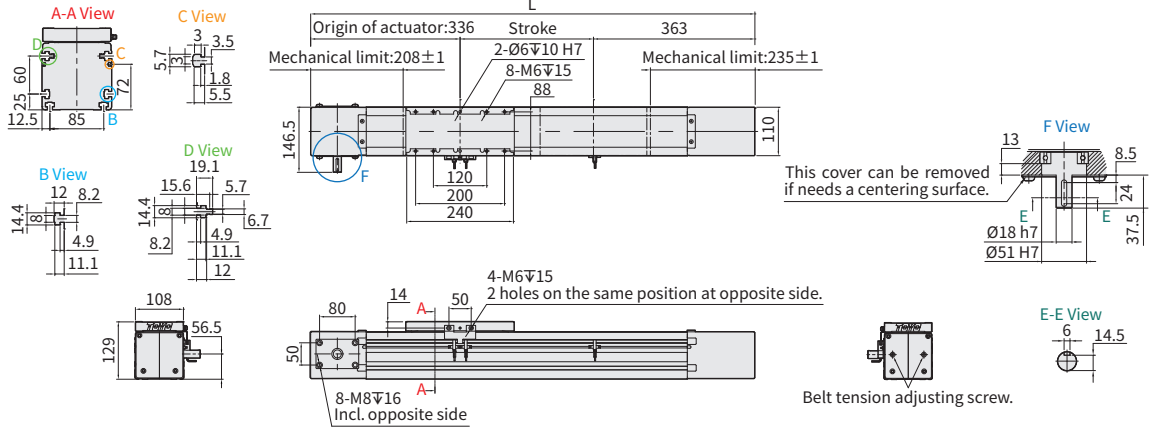
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	21.33	22.57	23.81	25.05	26.29	27.53	28.77	30.01	31.25	32.49	33.73	34.97	36.21	37.45	38.69	39.93	41.17	42.41	43.65	44.89	46.13	47.37	48.61	49.85
Linear Speed mm/s	Lead250	5000*																						

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	51.09	52.33	53.57	54.81	56.05	57.29	58.53	59.77	61.01	62.25	63.49	64.73	65.97	67.21	68.45	69.69	70.93	72.17	73.41	74.65	75.89	77.13	78.37	79.61
Linear Speed mm/s	Lead250	5000*																						

*Speed will vary with the condition of use. Please refer to load curve on P. 293.

LL Motor Shaft Left Side   Download CAD data at www.toyorobot.com

Unit : mm



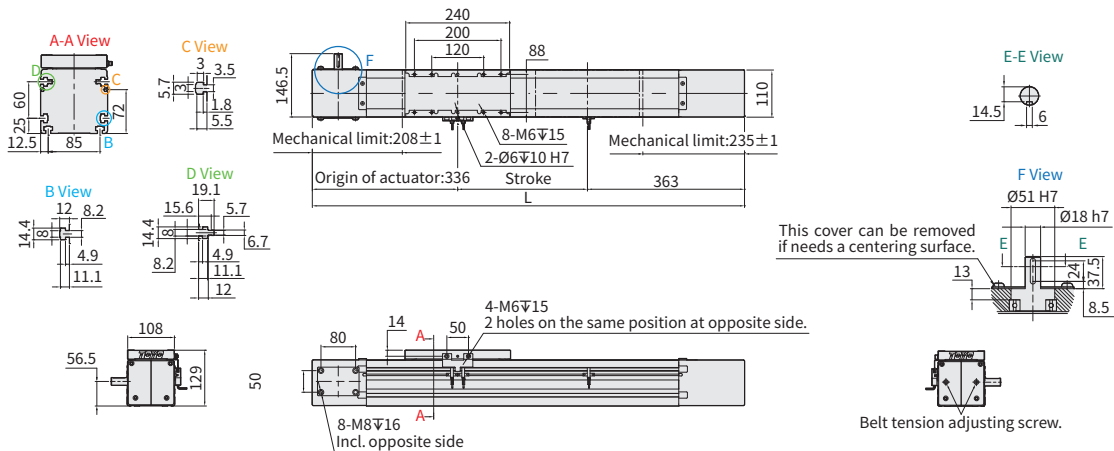
Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	18.86	20.1	21.34	22.58	23.82	25.06	26.3	27.54	28.78	30.02	31.26	32.5	33.74	34.98	36.22	37.46	38.7	39.94	41.18	42.42	43.66	44.9	46.14	47.38
Linear Speed mm/s	Lead250 5000*																							

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	48.62	49.86	51.1	52.34	53.58	54.82	56.06	57.3	58.54	59.78	61.02	62.26	63.5	64.74	65.98	67.22	68.46	69.7	70.94	72.18	73.42	74.66	75.9	77.14
Linear Speed mm/s	Lead250 5000*																							

*Speed will be vary with the condition of use. Please refer to load curve on P. 293.

RR Motor Shaft Right Side   Download CAD data at www.toyorobot.com

Unit : mm



Stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Limit Stroke (±1)	114	214	314	414	514	614	714	814	914	1014	1114	1214	1314	1414	1514	1614	1714	1814	1914	2014	2114	2214	2314	2414
L	799	899	999	1099	1199	1299	1399	1499	1599	1699	1799	1899	1999	2099	2199	2299	2399	2499	2599	2699	2799	2899	2999	3099
KG	18.86	20.1	21.34	22.58	23.82	25.06	26.3	27.54	28.78	30.02	31.26	32.5	33.74	34.98	36.22	37.46	38.7	39.94	41.18	42.42	43.66	44.9	46.14	47.38
Linear Speed mm/s	Lead250 5000*																							

Stroke	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800
Limit Stroke (±1)	2514	2614	2714	2814	2914	3014	3114	3214	3314	3414	3514	3614	3714	3814	3914	4014	4114	4214	4314	4414	4514	4614	4714	4814
L	3199	3299	3399	3499	3599	3699	3799	3899	3999	4099	4199	4299	4399	4499	4599	4699	4799	4899	4999	5099	5199	5299	5399	5499
KG	48.62	49.86	51.1	52.34	53.58	54.82	56.06	57.3	58.54	59.78	61.02	62.26	63.5	64.74	65.98	67.22	68.46	69.7	70.94	72.18	73.42	74.66	75.9	77.14
Linear Speed mm/s	Lead250 5000*																							

*Speed will be vary with the condition of use. Please refer to load curve on P. 293.



Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

Memo

Large empty rectangular area for taking notes or providing additional information.

M Series

MH65

MH80

MK65

MK85

MK110

MG65



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

MG65 - 2000 - L - M40B - C4 - 02 - A001

<p>Model</p> <p>Stroke 300-3700mm 50 mm Increments</p> <p>Motor Position</p> <table border="1"> <tr><td>L</td><td>Motor Left Side</td></tr> <tr><td>LU</td><td>Motor Left Upper Side</td></tr> <tr><td>LD</td><td>Motor Left Lower Side</td></tr> <tr><td>LT</td><td>Reducer With Motor Left Side</td></tr> <tr><td>LL</td><td>Motor Shaft Left Side</td></tr> <tr><td>R</td><td>Motor Right Side</td></tr> <tr><td>RU</td><td>Motor Right Upper Side</td></tr> <tr><td>RD</td><td>Motor Right Lower Side</td></tr> <tr><td>RT</td><td>Reducer With Motor Right Side</td></tr> <tr><td>RR</td><td>Motor Shaft Right Side</td></tr> </table>	L	Motor Left Side	LU	Motor Left Upper Side	LD	Motor Left Lower Side	LT	Reducer With Motor Left Side	LL	Motor Shaft Left Side	R	Motor Right Side	RU	Motor Right Upper Side	RD	Motor Right Lower Side	RT	Reducer With Motor Right Side	RR	Motor Shaft Right Side	<p>Dimensions</p> <table border="1"> <tr><td>M</td><td>Mitsubishi</td><td>10</td><td>-</td><td>B¹</td></tr> <tr><td>P</td><td>Panasonic</td><td>20</td><td>-</td><td></td></tr> <tr><td>Y</td><td>Yaskawa</td><td>40</td><td>400W</td><td></td></tr> <tr><td>T</td><td>Delta</td><td>75</td><td>-</td><td></td></tr> </table>	M	Mitsubishi	10	-	B ¹	P	Panasonic	20	-		Y	Yaskawa	40	400W		T	Delta	75	-		<p>Home Sensor</p> <table border="1"> <tr><th colspan="2">Out Side</th></tr> <tr><td>C</td><td>Motor Side</td></tr> <tr><td>D</td><td>Opposite Motor Side</td></tr> <tr><th colspan="2">No Sensor</th></tr> <tr><td>E</td><td>No Sensor</td></tr> </table>	Out Side		C	Motor Side	D	Opposite Motor Side	No Sensor		E	No Sensor	<p>Limit Sensor</p> <table border="1"> <tr><th colspan="2">Out Side</th></tr> <tr><td>3</td><td>1Pc</td></tr> <tr><td>4</td><td>2Pc</td></tr> <tr><th colspan="2">No Sensor</th></tr> <tr><td>5</td><td>No Sensor</td></tr> </table>	Out Side		3	1Pc	4	2Pc	No Sensor		5	No Sensor	<p>Special Order No.</p> <p>Gearbox Ratio²</p> <table border="1"> <tr><td>02</td><td>With 2:1 Gear ratio Suit for L/LU/LD/R/RU/RD</td></tr> <tr><td>03</td><td>With 3:1 Reducer Suit for L/LU/LD/LT/R/RU/RD/RT</td></tr> <tr><td>N</td><td>None powered support axis Suit for LL/RR</td></tr> <tr><td>00</td><td>Motor direct drive, without reducer (Gear box) Suit for LT/RT</td></tr> </table>	02	With 2:1 Gear ratio Suit for L/LU/LD/R/RU/RD	03	With 3:1 Reducer Suit for L/LU/LD/LT/R/RU/RD/RT	N	None powered support axis Suit for LL/RR	00	Motor direct drive, without reducer (Gear box) Suit for LT/RT
L	Motor Left Side																																																																							
LU	Motor Left Upper Side																																																																							
LD	Motor Left Lower Side																																																																							
LT	Reducer With Motor Left Side																																																																							
LL	Motor Shaft Left Side																																																																							
R	Motor Right Side																																																																							
RU	Motor Right Upper Side																																																																							
RD	Motor Right Lower Side																																																																							
RT	Reducer With Motor Right Side																																																																							
RR	Motor Shaft Right Side																																																																							
M	Mitsubishi	10	-	B ¹																																																																				
P	Panasonic	20	-																																																																					
Y	Yaskawa	40	400W																																																																					
T	Delta	75	-																																																																					
Out Side																																																																								
C	Motor Side																																																																							
D	Opposite Motor Side																																																																							
No Sensor																																																																								
E	No Sensor																																																																							
Out Side																																																																								
3	1Pc																																																																							
4	2Pc																																																																							
No Sensor																																																																								
5	No Sensor																																																																							
02	With 2:1 Gear ratio Suit for L/LU/LD/R/RU/RD																																																																							
03	With 3:1 Reducer Suit for L/LU/LD/LT/R/RU/RD/RT																																																																							
N	None powered support axis Suit for LL/RR																																																																							
00	Motor direct drive, without reducer (Gear box) Suit for LT/RT																																																																							

² Depending on the drive mode, the corresponding motor position is limited.

¹ If No Brake, No Description.

Specification

Item	Belt	Reduce Model code			02	03	00
		Drive Deceleration			Gear Box	Reducer	Motor directdrive
		Reduce Ratio			2:1	3:1	1:1
		Maximum Rotating speed ^{※1}		rpm	3600	3600	2333
		Maximum linear speed ^{※2}		mm/s	2700	1800	3500
		Load factor			1.75	1.35	1.75
		Tis (Nominal Tension)		N	98		
		Timax (Maximum Tension)		N	195		
	Linear Guide	Dynamic horizontal	100 Km of travel	N	12971		
			1000 Km of travel	N	6020		
			10000 Km of travel	N	2795		
	Static horizontal		N	31272			
	Fixed bearing	Basic dynamic load rating Cr		N	6500		
		Static load rating Cor		N	12000		
	Common Spec	Repeatability		mm	±0.04		±0.06
		Allowable input torque		N.m	9	13.5	4.5
		Maximum acceleration		m/s ²	5		
		Friction coefficient			0.03		
		Stroke (increments)		mm	300-3700mm (50 increments)		
	Ambient temperature		°C	0~+40			

※1 Acceleration and deceleration value is set 0.4 second.

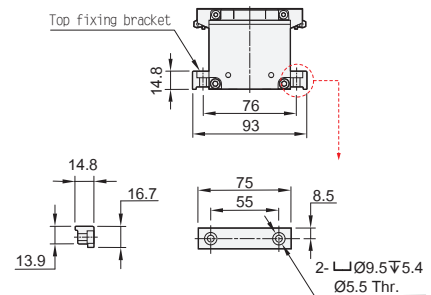
※2 The lead is 90 when the reducer is not installed on the actuator.

Numbers of Fixing Screws

M5 nuts Qty.(by stroke)					
Stroke	Quantity	Stroke	Quantity	Stroke	Quantity
300~450	8	1500~1650	20	2700~2850	32
500~650	10	1700~1850	22	2900~3050	34
700~850	12	1900~2050	24	3100~3250	36
900~1050	14	2100~2250	26	3300~3450	38
1100~1250	16	2300~2450	28	3500~3650	70
1300~1450	18	2500~2650	30	3700	42

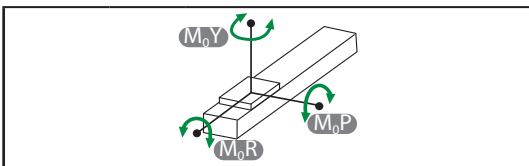
*Standard mounting method is fix from the bottom, using the M5 bolt and nut.

Installation Reference



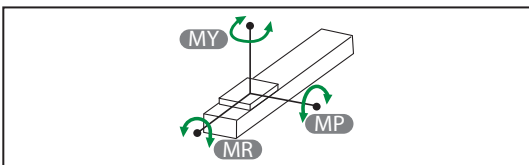
*Top fixing plate is optional.

Static Loading Moment



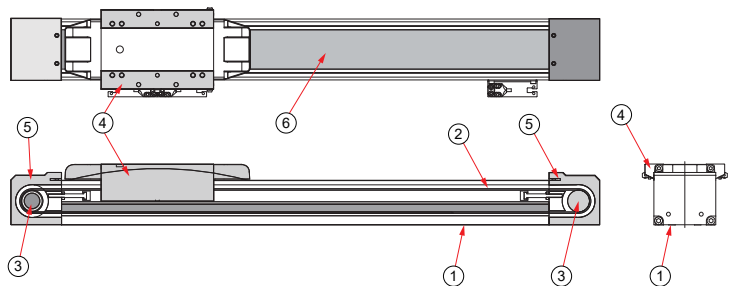
M₀Y	N.m	540
M₀P	N.m	540
M₀R	N.m	599

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	116	53.9	25
MP	N.m	116	53.9	25
MR	N.m	128.6	59.7	27.7

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Belt	PU
3	Timing pulley	S45C
4	Carriage	AL6463
5	Input pulley support block	AL6061
6	Steel Band	SUS430

M Series

MH65

MH80

MK65

MK85

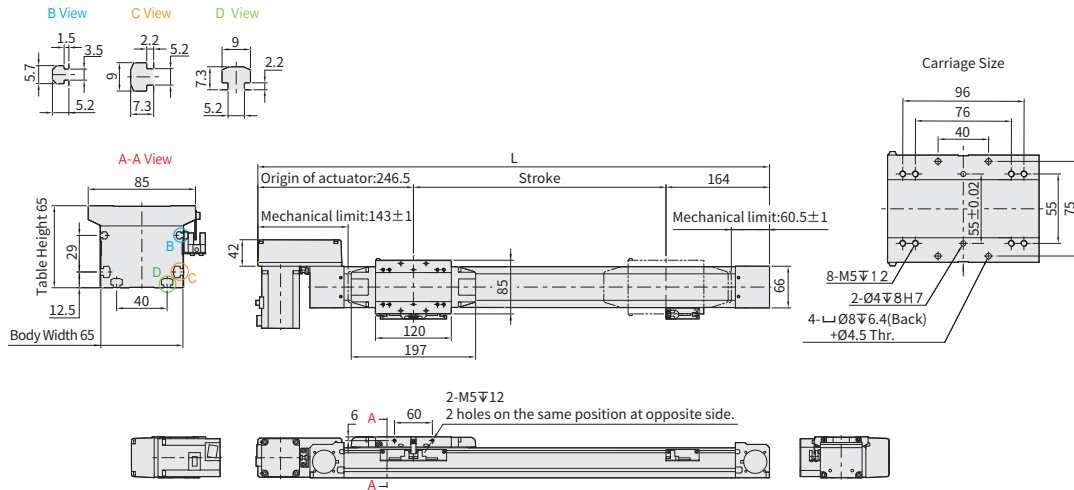
MK110

MG65

2:1 Gear ratio

L Motor left side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



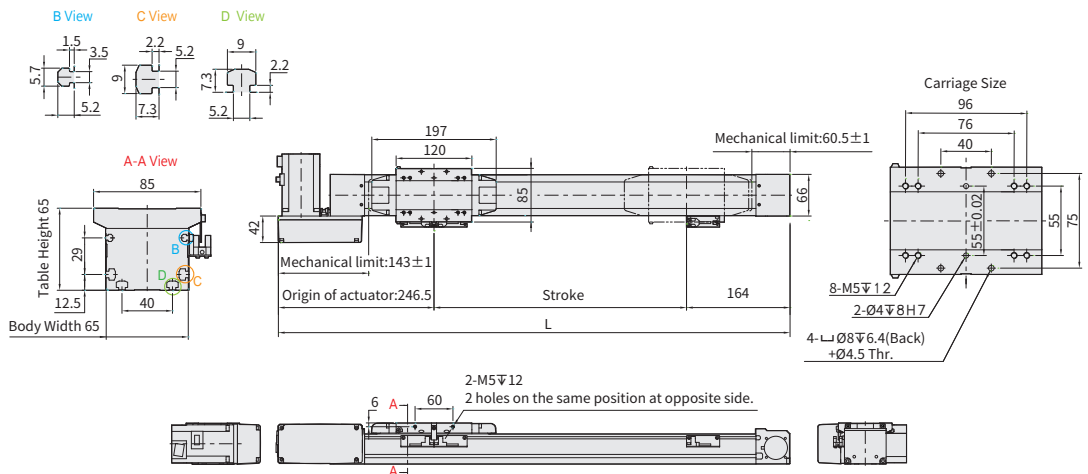
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	710.5	810.5	910.5	1010.5	1110.5	1210.5	1310.5	1410.5	1510.5	1610.5	1710.5	1810.5	1910.5	2010.5	2110.5	2210.5	2310.5	2410.5
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	
Lead	45																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2510.5	2610.5	2710.5	2810.5	2910.5	3010.5	3110.5	3210.5	3310.5	3410.5	3510.5	3610.5	3710.5	3810.5	3910.5	4010.5	4110.5
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.2	14.52
Linear Speed mm/s	2700																
Lead	45																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+410.5 and the stroke limit is +10 of the stroke range.

R Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	710.5	810.5	910.5	1010.5	1110.5	1210.5	1310.5	1410.5	1510.5	1610.5	1710.5	1810.5	1910.5	2010.5	2110.5	2210.5	2310.5	2410.5
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	
Lead	45																	

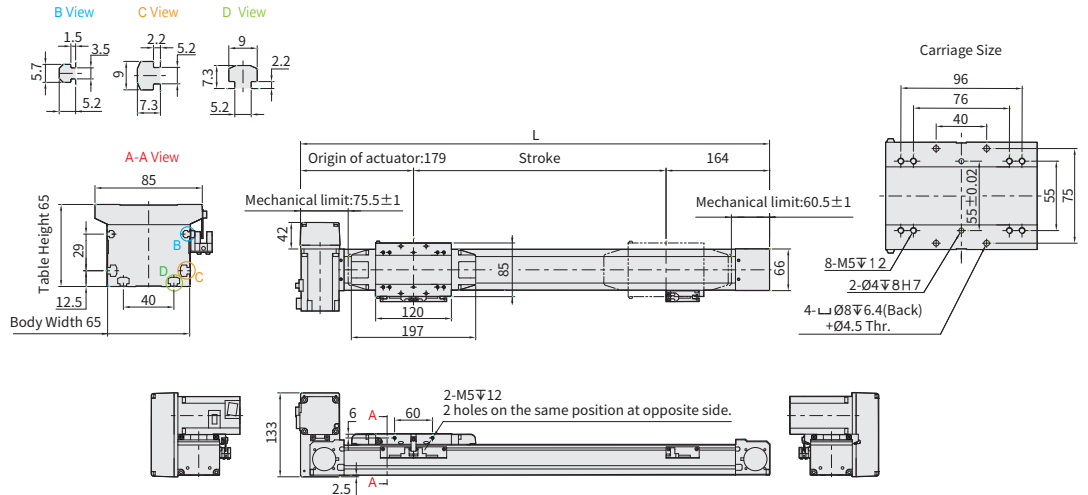
Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2510.5	2610.5	2710.5	2810.5	2910.5	3010.5	3110.5	3210.5	3310.5	3410.5	3510.5	3610.5	3710.5	3810.5	3910.5	4010.5	4110.5
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.2	14.52
Linear Speed mm/s	2700																
Lead	45																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+410.5 and the stroke limit is +10 of the stroke range.

2:1 Gear ratio

LU Motor Left Upper Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



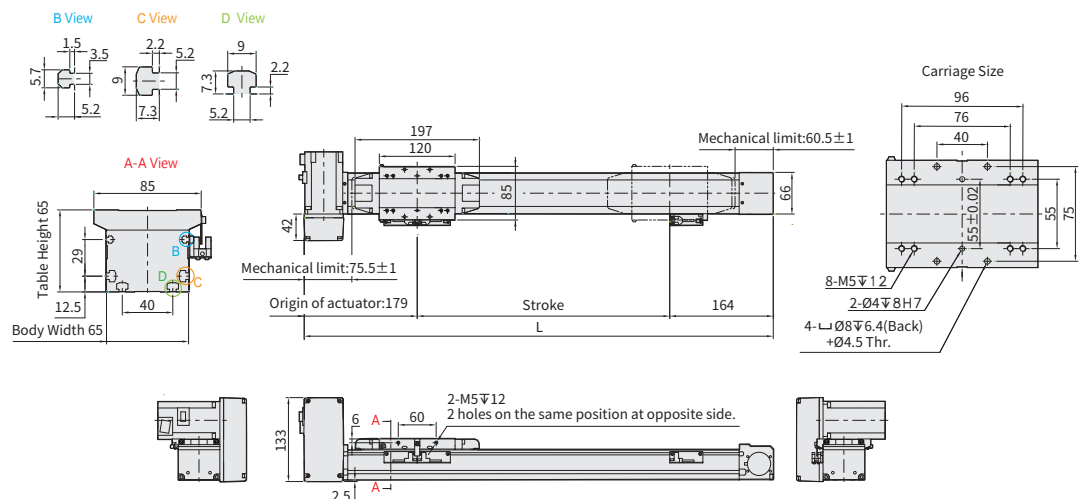
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.2	14.52
Linear Speed mm/s	2700																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke + 343 and the stroke limit is +10 of the stroke range.

RU Motor Right Upper Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	

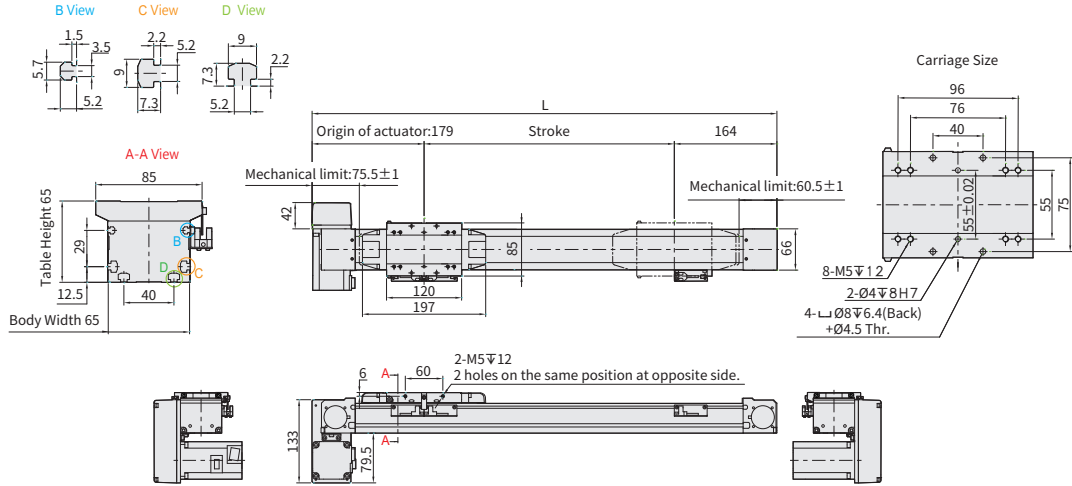
Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.2	14.52
Linear Speed mm/s	2700																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke + 343 and the stroke limit is +10 of the stroke range.

2:1 Gear ratio

LD Motor Left Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



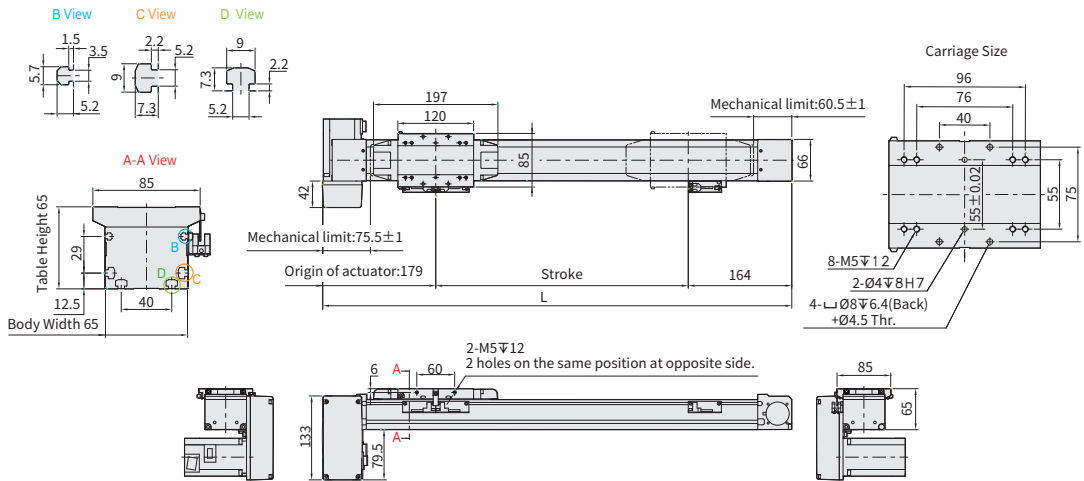
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	
Lead	45																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.20	14.52
Linear Speed mm/s	2700																
Lead	45																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.

RD Motor Right Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm




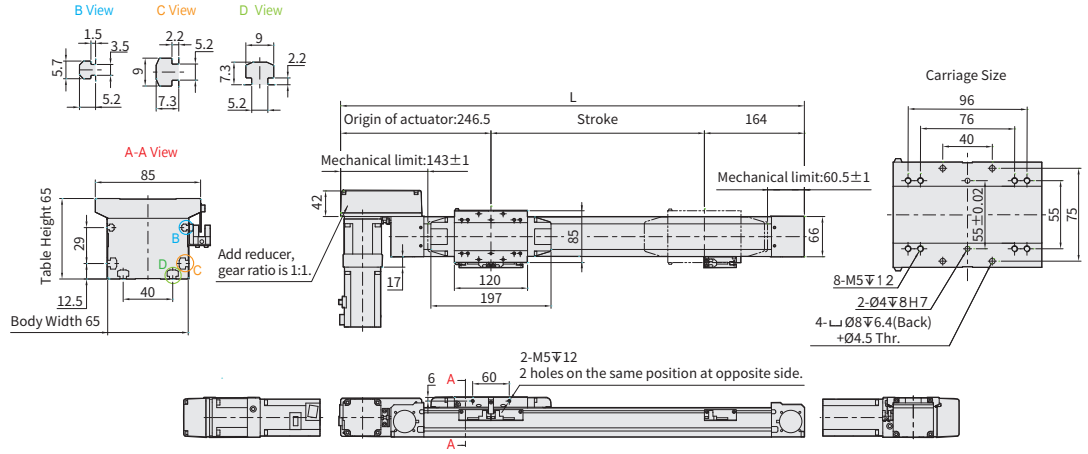
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	3.44	3.76	4.09	4.42	4.74	5.07	5.39	5.72	6.05	6.37	6.7	7.02	7.35	7.68	8	8.33	8.65	8.98
Linear Speed mm/s	2700																	
Lead	45																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	9.31	9.63	9.96	10.28	10.61	10.94	11.26	11.59	11.91	12.24	12.57	12.89	13.22	13.54	13.87	14.20	14.52
Linear Speed mm/s	2700																
Lead	45																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.

3:1 Reducer

L Motor left side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com) Unit : mm

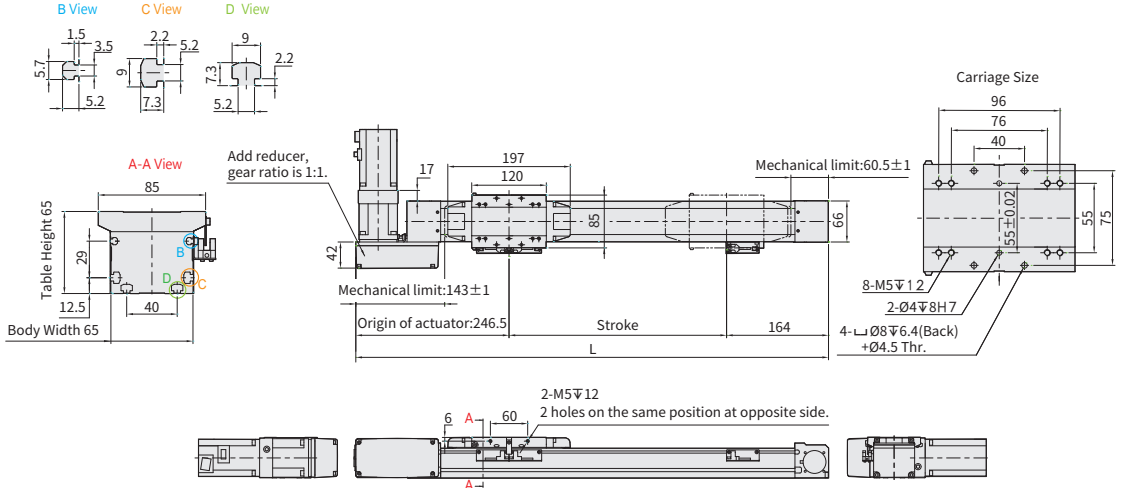


Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	710.5	810.5	910.5	1010.5	1110.5	1210.5	1310.5	1410.5	1510.5	1610.5	1710.5	1810.5	1910.5	2010.5	2110.5	2210.5	2310.5	2410.5
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2510.5	2610.5	2710.5	2810.5	2910.5	3010.5	3110.5	3210.5	3310.5	3410.5	3510.5	3610.5	3710.5	3810.5	3910.5	4010.5	4110.5
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+410.5 and the stroke limit is +10 of the stroke range.

R Motor Right Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com) Unit : mm

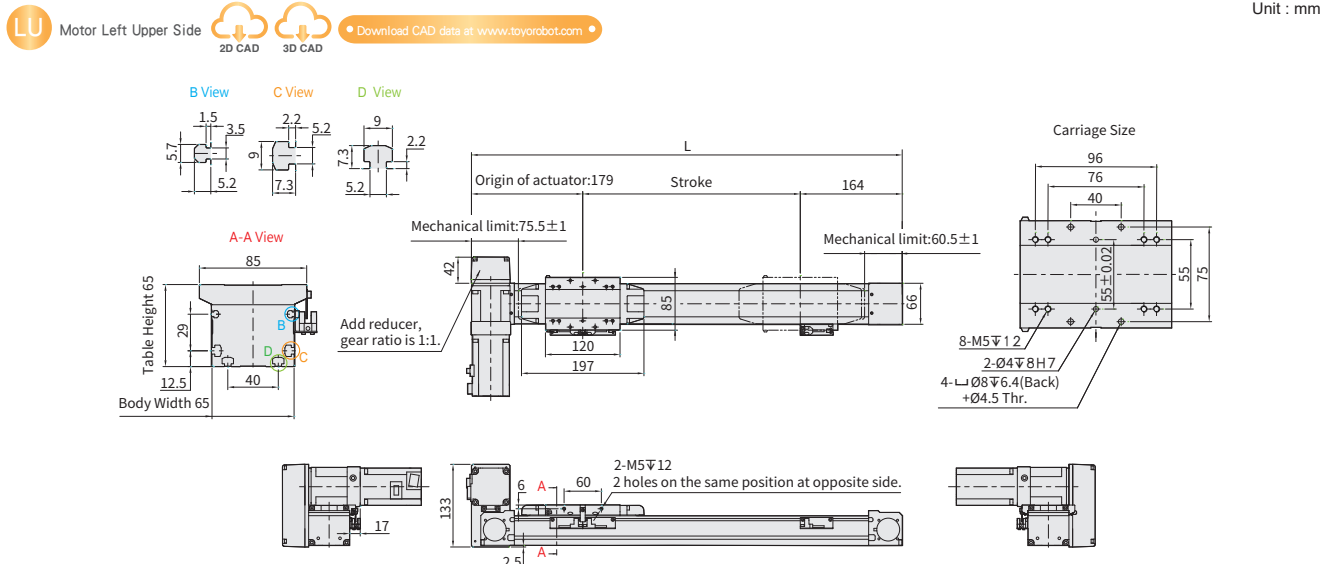


Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	710.5	810.5	910.5	1010.5	1110.5	1210.5	1310.5	1410.5	1510.5	1610.5	1710.5	1810.5	1910.5	2010.5	2110.5	2210.5	2310.5	2410.5
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2510.5	2610.5	2710.5	2810.5	2910.5	3010.5	3110.5	3210.5	3310.5	3410.5	3510.5	3610.5	3710.5	3810.5	3910.5	4010.5	4110.5
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+410.5 and the stroke limit is +10 of the stroke range.

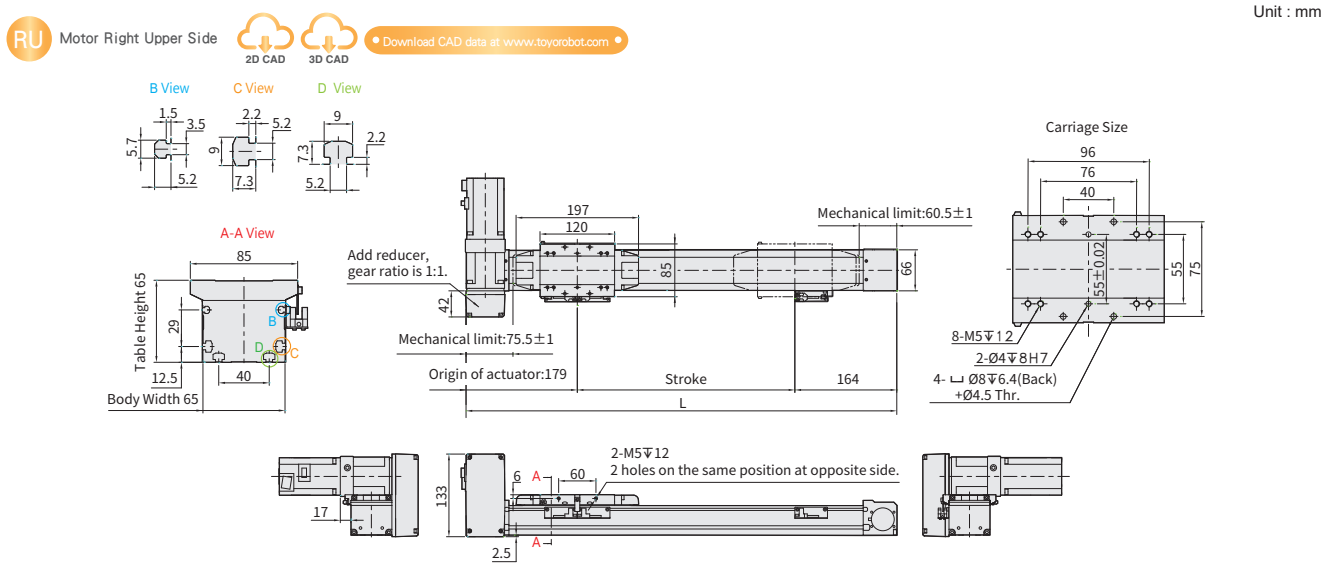
3:1 Reducer



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (± 1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (± 1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (± 1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

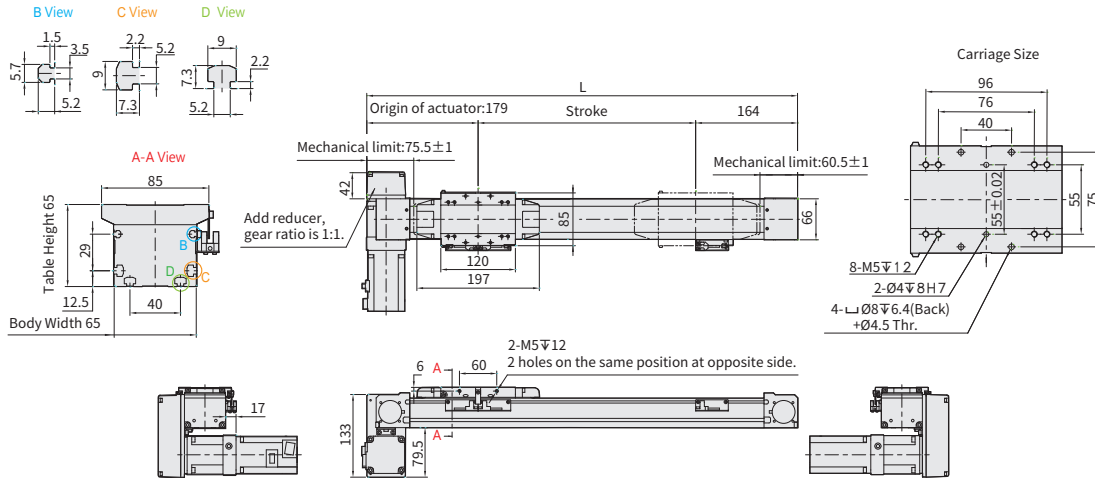
Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (± 1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.

3:1 Reducer

LD Motor Left Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



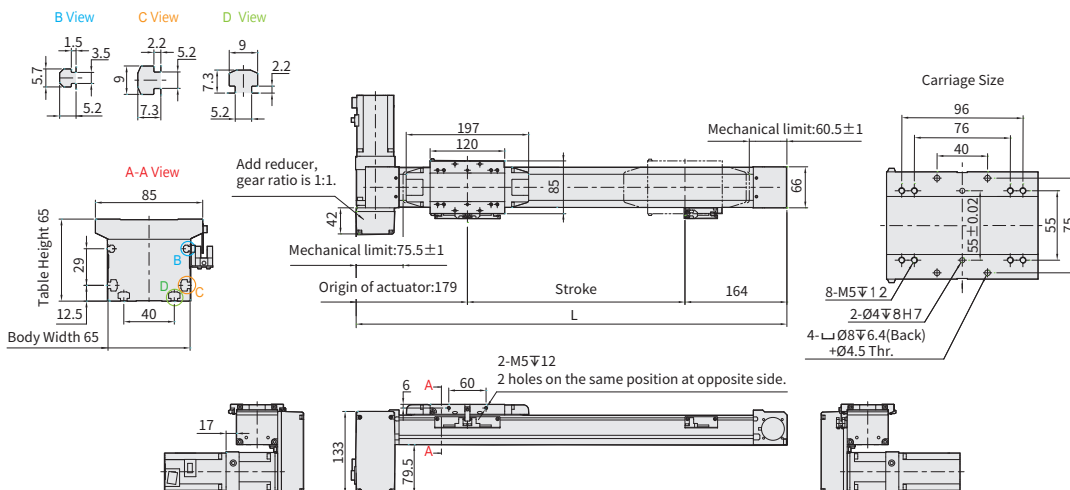
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.

RD Motor Right Lower Side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	643	743	843	943	1043	1143	1243	1343	1443	1543	1643	1743	1843	1943	2043	2143	2243	2343
KG	5.24	5.56	5.89	6.22	6.54	6.87	7.19	7.52	7.85	8.17	8.5	8.82	9.15	9.48	9.8	10.13	10.45	10.78
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2443	2543	2643	2743	2843	2943	3043	3143	3243	3343	3443	3543	3643	3743	3843	3943	4043
KG	11.11	11.43	11.76	12.08	12.41	12.74	13.06	13.39	13.71	14.04	14.37	14.69	15.02	15.34	15.67	16	16.32
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+343 and the stroke limit is +10 of the stroke range.

M Series

MH65

MH80

MK65

MK85

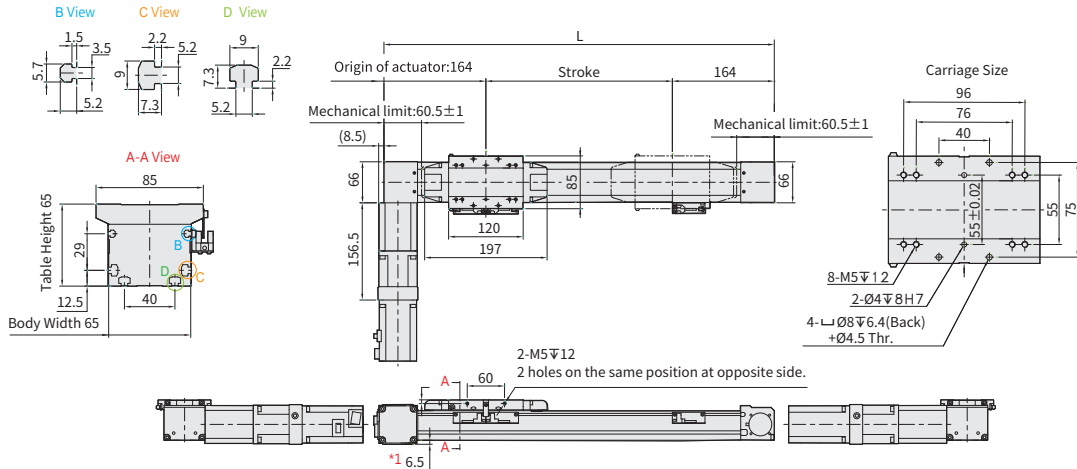
MK110

MG65

3:1 Reducer

LT Reducer With Motor Left Side   [Download CAD data at www.toyrobot.com](http://www.toyrobot.com)

Unit : mm



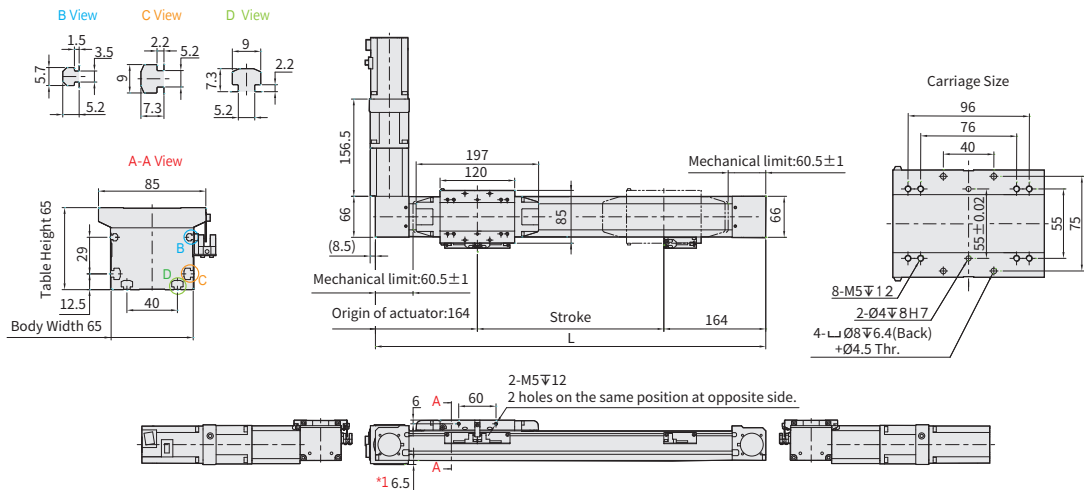
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	4.84	5.16	5.49	5.82	6.14	6.47	6.79	7.12	7.45	7.77	8.1	8.42	8.75	9.08	9.4	9.73	10.05	10.38
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	10.71	11.03	11.36	11.68	12.01	12.34	12.66	12.99	13.31	13.64	13.97	14.29	14.62	14.94	15.27	15.60	15.92
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.
 * 1 When motor is installed, it will be lower than the body by 6.5mm. Because the size of the motor frame of each brand is different, it's recommended to reserve 3-5mm more space at the bottom to prevent interference.

RT Reducer With Motor Right Side   [Download CAD data at www.toyrobot.com](http://www.toyrobot.com)

Unit : mm

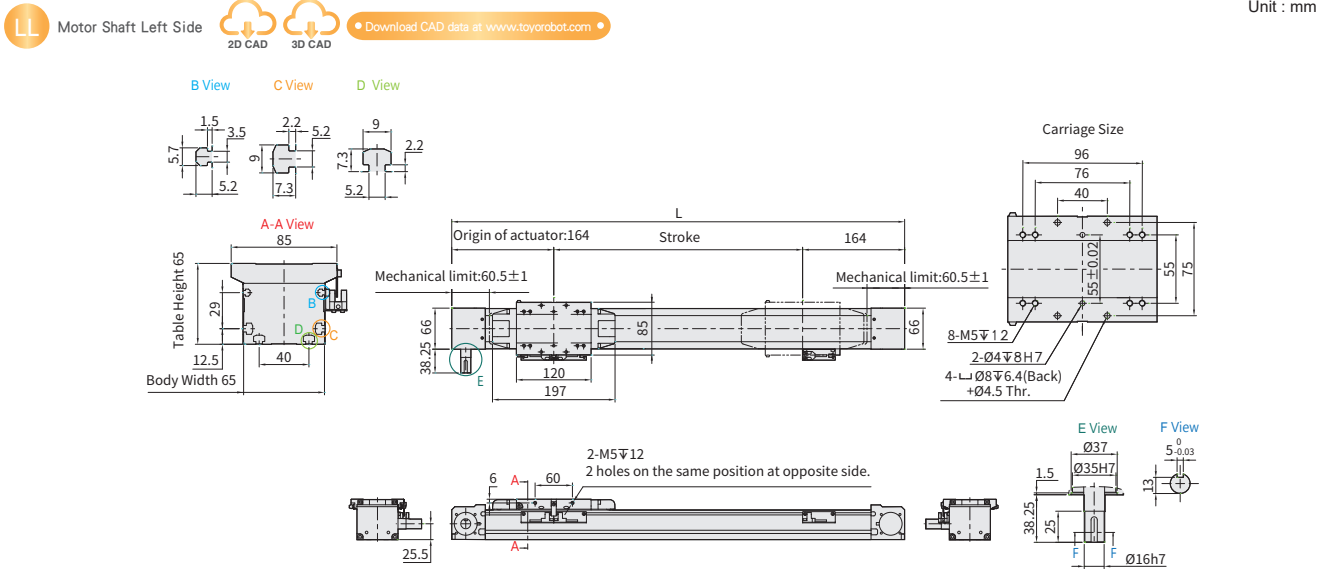


Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	4.84	5.16	5.49	5.82	6.14	6.47	6.79	7.12	7.45	7.77	8.1	8.42	8.75	9.08	9.4	9.73	10.05	10.38
Linear Speed mm/s	1800																	
Lead	30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	10.71	11.03	11.36	11.68	12.01	12.34	12.66	12.99	13.31	13.64	13.97	14.29	14.62	14.94	15.27	15.60	15.92
Linear Speed mm/s	1800																
Lead	30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.
 * 1 When motor is installed, it will be lower than the body by 6.5mm. Because the size of the motor frame of each brand is different, it's recommended to reserve 3-5mm more space at the bottom to prevent interference.

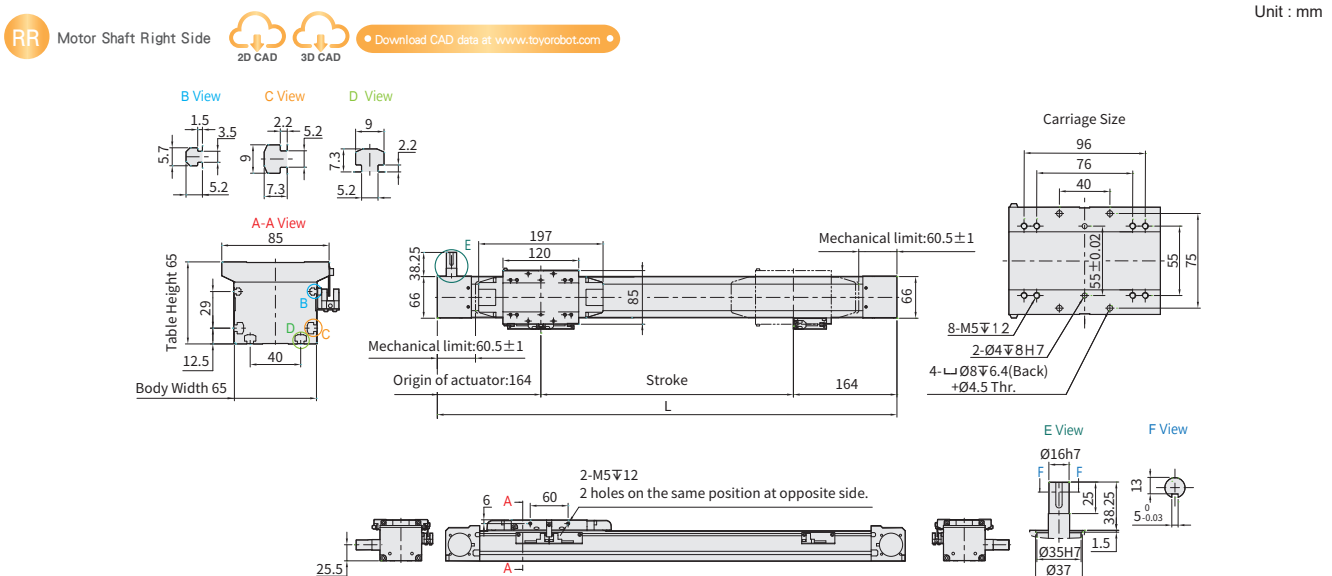
No support axis(Without Reducer & Gear Box)



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	3.04	3.36	3.69	4.02	4.34	4.67	4.99	5.32	5.65	5.97	6.3	6.62	6.95	7.28	7.6	7.93	8.25	8.58
Linear Speed mm/s	Lead 30																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	8.91	9.23	9.56	9.88	10.21	10.54	10.86	11.19	11.51	11.84	12.17	12.49	12.82	13.14	13.47	13.8	14.12
Linear Speed mm/s	Lead 30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	3.04	3.36	3.69	4.02	4.34	4.67	4.99	5.32	5.65	5.97	6.3	6.62	6.95	7.28	7.6	7.93	8.25	8.58
Linear Speed mm/s	Lead 30																	

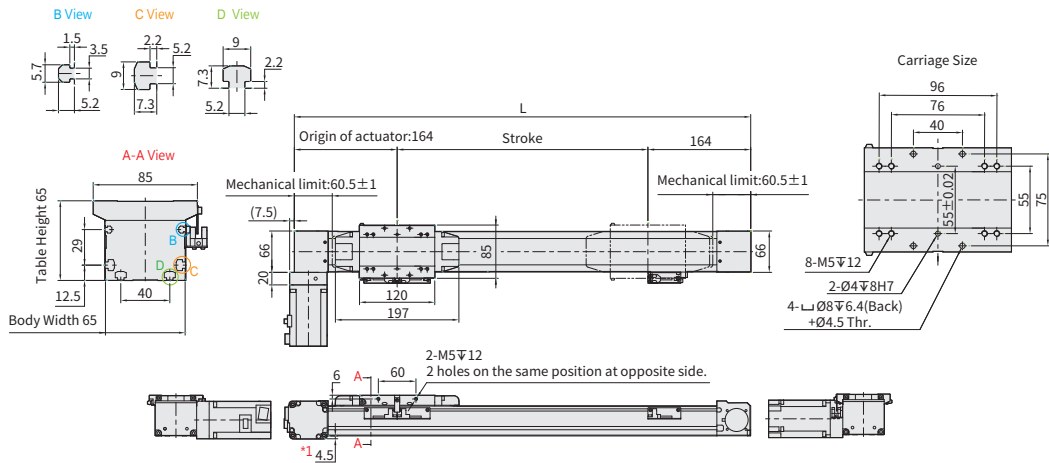
Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	8.91	9.23	9.56	9.88	10.21	10.54	10.86	11.19	11.51	11.84	12.17	12.49	12.82	13.14	13.47	13.8	14.12
Linear Speed mm/s	Lead 30																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.

Motor direct drive(Without Reducer & Gear Box)

LT Motor Left side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



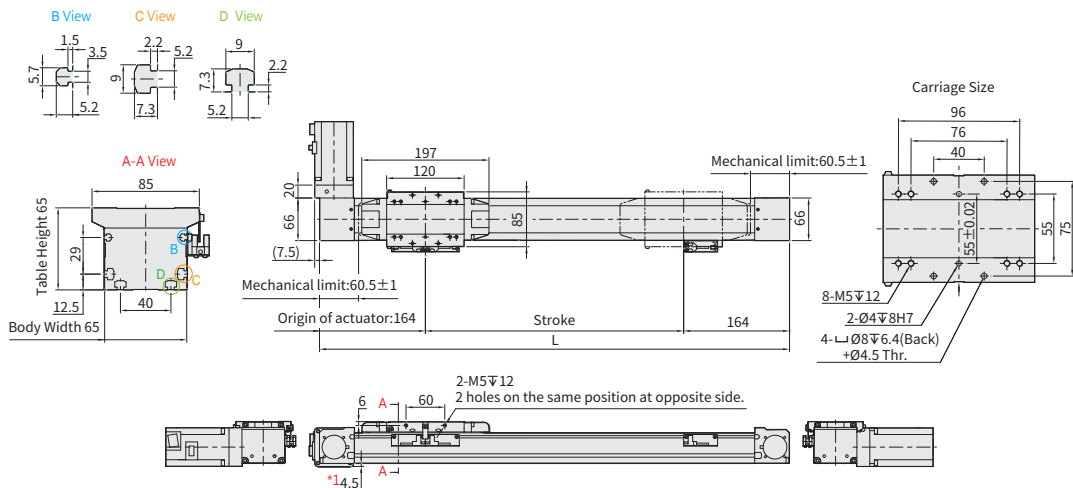
Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	3.2	3.52	3.85	4.18	4.5	4.83	5.15	5.48	5.81	6.13	6.46	6.78	7.11	7.44	7.76	8.09	8.41	8.74
Linear Speed mm/s	3500																	
Lead	90																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	9.07	9.39	9.72	10.04	10.37	10.7	11.02	11.35	11.67	12	12.33	12.65	12.98	13.3	13.63	13.96	14.28
Linear Speed mm/s	3500																
Lead	90																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.
 * 1 When motor is installed, it will be lower than the body by 4.5mm. Because the size of the motor frame of each brand is different, it's recommended to reserve 3-5mm more space at the bottom to prevent interference.

RT Motor Right side   [Download CAD data at www.toyorobot.com](http://www.toyorobot.com)

Unit : mm



Stroke	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Limit Stroke (±1)	310	410	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	2010
L	628	728	828	928	1028	1128	1228	1328	1428	1528	1628	1728	1828	1928	2028	2128	2228	2328
KG	3.2	3.52	3.85	4.18	4.5	4.83	5.15	5.48	5.81	6.13	6.46	6.78	7.11	7.44	7.76	8.09	8.41	8.74
Linear Speed mm/s	3500																	
Lead	90																	

Stroke	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700
Limit Stroke (±1)	2110	2210	2310	2410	2510	2610	2710	2810	2910	3010	3110	3210	3310	3410	3510	3610	3710
L	2428	2528	2628	2728	2828	2928	3028	3128	3228	3328	3428	3528	3628	3728	3828	3928	4028
KG	9.07	9.39	9.72	10.04	10.37	10.7	11.02	11.35	11.67	12	12.33	12.65	12.98	13.3	13.63	13.96	14.28
Linear Speed mm/s	3500																
Lead	90																

* Due to the limitation of the layout, it's not able to list out full information of the stroke. Total Length of L = Stroke+328 and the stroke limit is +10 of the stroke range.
 * 1 When motor is installed, it will be lower than the body by 4.5mm. Because the size of the motor frame of each brand is different, it's recommended to reserve 3-5mm more space at the bottom to prevent interference.



Memo

Application

Standard
Ball Screw Type
GTH / GTY / ETH

Standard
Belt Type
M Series

Cleanroom
Ball Screw Type
GCH / ECH

Cleanroom
Belt Type
ECB

Reference

M Series

MH65

MH80

MK65

MK85

MK110

MG65