

GCH Series

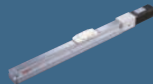


Standard Environment Integrated Linear Bearing Ball Screw Actuator

CONTENTS

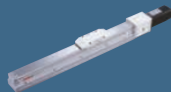
Standard/Ball Screw

SMALL

GCH4

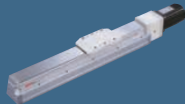
Width 44mm
Max. stroke 1000mm087
Max. payload 25kg

SMALL

GCH5

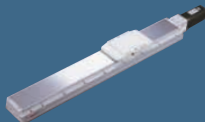
Width 54mm
Max. stroke 1050mm095
Max. payload 30kg

MEDIUM

GCH8

Width 82mm
Max. stroke 1250mm099
Max. payload 50kg

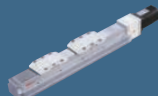
LARGE

GCH12

Width 120mm
Max. stroke 1250mm107
Max. payload 110kg

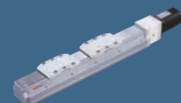
Dual Carriage Synchronous Movement In Reverse Direction

MEDIUM

GCH5S

Width 54mm
Max. stroke 450mm111
Max. payload 30kg

MEDIUM

GCH8S

Width 82mm
Max. stroke 525mm115
Max. payload 50kg

Spec Index of Electric Actuator

GTH Built - in Linear Motion Guide Ball Screw Actuator - Slider Type

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed ^{*1} (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
		GCH4	50W	44	±0.005	10	2	25	8	100
							6	20	5	360
							12	12	2	720
			100W				2	25	8	100
							6	20	8	360
							12	12	3.5	720
		GCH5	100W	54	±0.005	12	2	30	10	100
							5	30	10	300
							10	15	5	600
							20	10	2.5	1200
		GCH8	200W	82	±0.005	16	5	50	15	300
							10	30	8	600
							20	18	3	1200
		GCH12	400W	120	±0.005	16	5	110	33	300
							10	88	22	600
							20	40	10	1200
							32	30	8	1920

*1:The highest speed is based on the maximum servo motor's rpm (3000).

*2:Written here is the standard stork's maximum safe speed. If over this speed, it may casue serious virbration.

Dual Carriage Synchronous Movement In Reverse Direction

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed ^{*1} (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
Standard Environment	Ball screw	GCH5S	100W	54	±0.005	12	2	30	10	100
		GCH8S	200W	82	±0.005	16	5	50	15	300

*1:The highest speed is based on the maximum servo motor's rpm (3000).

*2:Written here is the standard stork's maximum safe speed. If over this speed, it may casue serious virbration.

Stroke(mm) & Maximum Speed(mm/s) ^{1,2}																											Speed					Page
	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350				
087	100												90	80	70	60	50	43	40	37	33											
	360										330	320	270	240	210	180	150	130	120	110	100											
	720										660	640	540	480	420	360	300	260	240	220	200											
	100												90	80	70	60	50	43	40	37	33											
	360										330	320	270	240	210	180	150	130	120	110	100											
	720										660	640	540	480	420	360	300	260	240	220	200											
095	100												90	80	70	60	50	47	40	37	33											
	300										292	250	225	200	175	150	125	117	100	92	83											
	600										583	500	450	400	350	300	250	233	200	183	167											
	1200										1167	1000	900	800	700	600	500	467	400	367	333											
099	300												292	250	225	200	175	150	142	133	117	108	100	92	83							
	600												583	500	450	400	350	300	283	267	233	217	200	183	167							
	1200												1167	1000	900	800	700	600	567	533	467	433	400	367	333							
107	300													250	200	175	167	158	142	133	125	117										
	600												500			450	400	350	333	317	283	267	250	233								
	1200												1000			900	800	700	667	633	567	533	500	467								
	1920													1600			1440	1280	1120	1067	1013	907	853	800	747							

Stroke(mm) & Maximum Speed(mm/s) ^{1,2}																												Speed										Page
Stroke	25	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350											

GCH4

► Integrated Linear Bearing

► Ball Screw Drive



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

The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH4 - L2 - 100 - BC - X - C4 - 0001

Model

Special Order No.

Stroke

50-1000mm
50mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- ^{*2}	No Motor Position

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	50W	B
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	-	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

Home Sensor

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

Limit Sensor

	Outside
3	1 Pc
4	2 Pc
	No Sensor
5	No Sensor

Ball Screw Lead

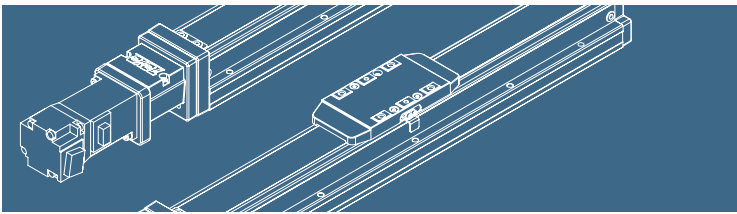
2	2mm
6	6mm
12	12mm

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*When the stroke is 50mm, the sensor installation has the following restrictions:}

- 1.The home sensor and the limit sensor must be installed on different sides of the body.
- 2.The sensor trigger device must be installed on both sides of the device.



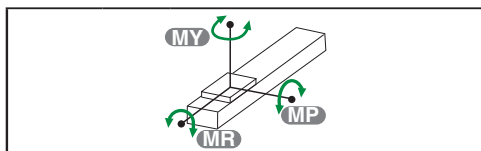
Specification

Item	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7		
		Lead		mm	2	6	12
		Maximum Rotating speed		rpm	3000	3600	3600
		Maximum linear speed ^{※1}		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	493		
			1000 Km of travel	kgf	229		
			10000 Km of travel	kgf	106		
		Static horizontal		kg	1293		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torque		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s ²	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-1000 (50 increments)		
		Ambient temperature ^{※2}		°C	0~+40		

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

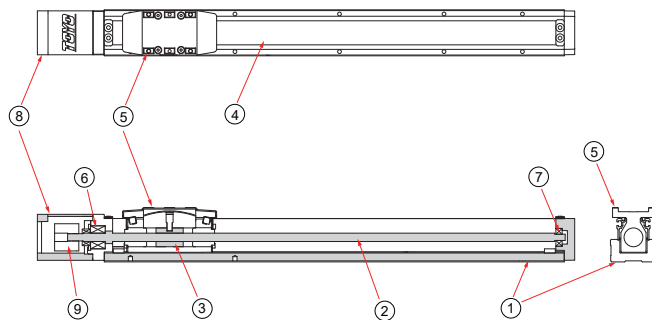


MY	N.m	79
MP	N.m	79
MR	N.m	116

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

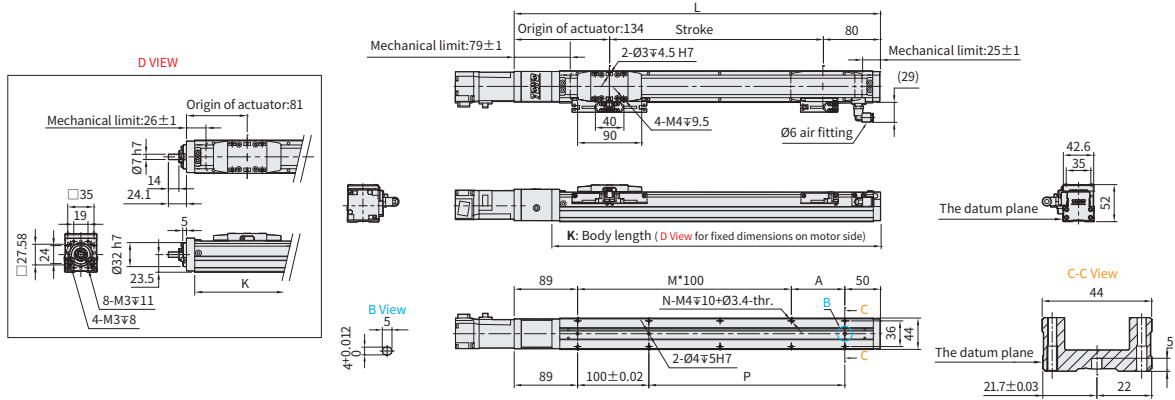
GCH4

► Integrated Linear Bearing

► Ball Screw Drive

BC Motor Exposed   Download CAD data at www.toyorobot.com

Unit : mm



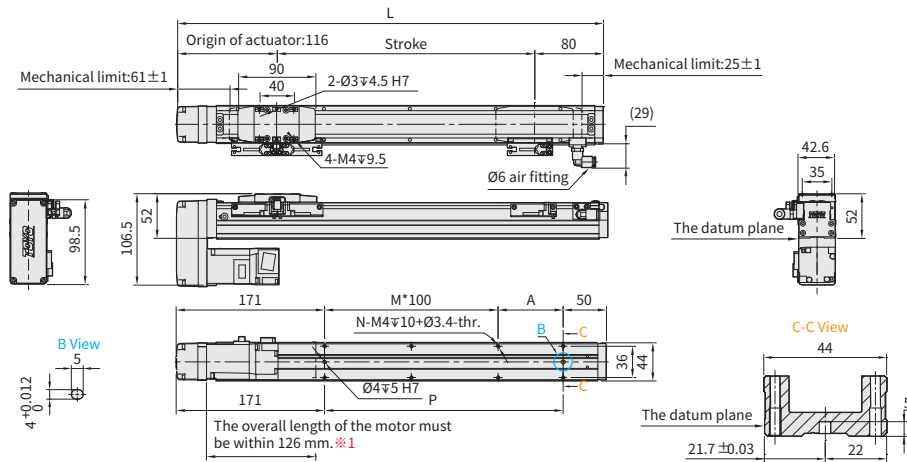
Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG ^{※1}	1.25	1.42	1.59	1.77	1.95	2.13	2.31	2.49	2.67	2.85	3.03	3.21	3.39	3.57	3.75	3.93	4.11	4.29	4.47	4.65
K	211	261	311	361	411	461	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161
Linear Speed mm/s	Lead 2																			
	Lead 6																			
	Lead 12																			
	100										330	320	270	240	210	180	150	130	120	100
	720										660	640	540	480	420	360	300	260	240	200

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

BM Motor Bottom Side   Download CAD data at www.toyorobot.com

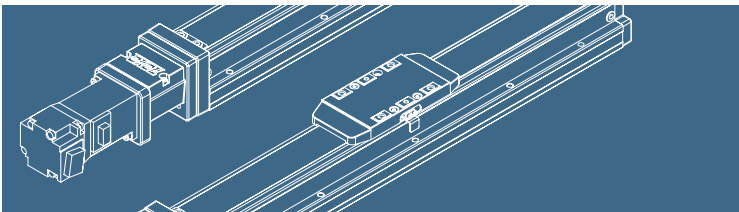
Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
N	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG	1.34	1.52	1.7	1.88	2.06	2.24	2.42	2.6	2.78	2.96	3.14	3.32	3.5	3.68	3.86	4.04	4.22	4.4	4.58	4.76
Linear Speed mm/s	Lead 2																			
	Lead 6																			
	Lead 12																			
	100										330	320	270	240	210	180	150	130	120	100
	720										660	640	540	480	420	360	300	260	240	200

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

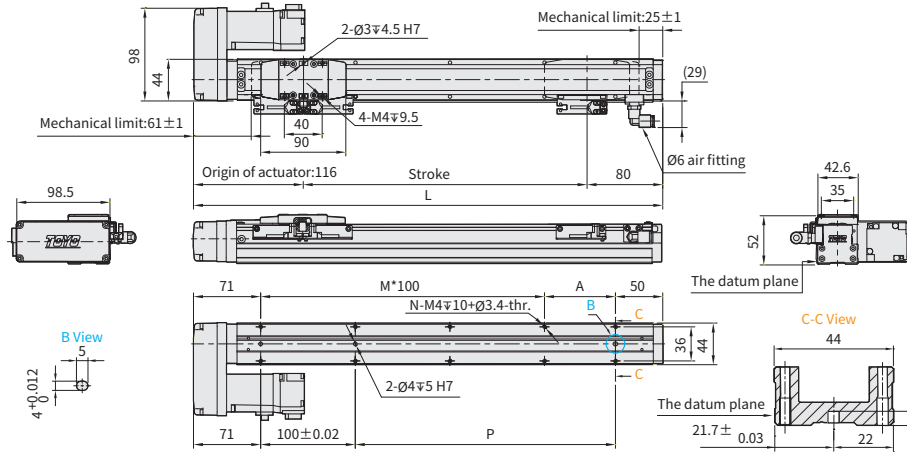


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG	1.34	1.52	1.7	1.88	2.06	2.24	2.42	2.6	2.78	2.96	3.14	3.32	3.5	3.68	3.86	4.04	4.22	4.4	4.58	4.76
Linear Speed mm/s	100																			
	Lead 2										90									
	Lead 6										330									
Lead 12	720										660									

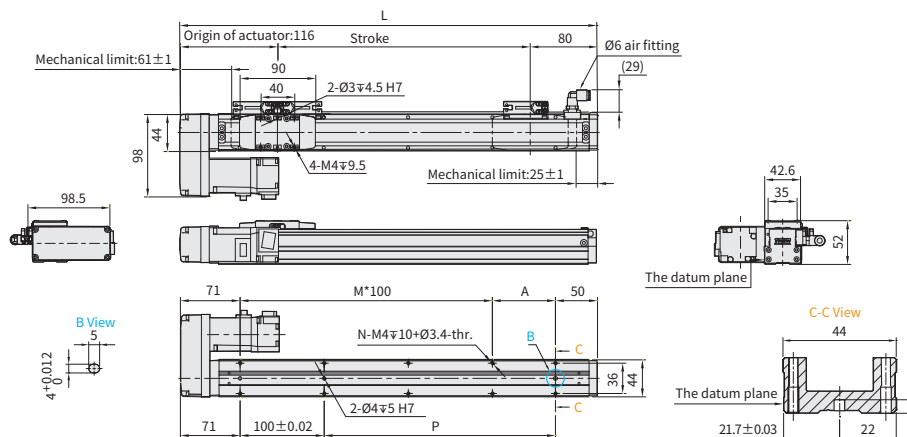
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG	1.34	1.52	1.7	1.88	2.06	2.24	2.42	2.6	2.78	2.96	3.14	3.32	3.5	3.68	3.86	4.04	4.22	4.4	4.58	4.76
Linear Speed mm/s	100																			
	Lead 2										90									
	Lead 6										330									
Lead 12	720										660									

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

GCH4

► Integrated Linear Bearing

► Ball Screw Drive



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

The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH4 - L2 - 100 - BC - X - C4 - 0001

Model

Special Order No.

Stroke

50-1000mm
50mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- ^{*2}	No Motor Position

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

Home Sensor

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

Limit Sensor

	Outside
3	1 Pc
4	2 Pc
	No Sensor
5	No Sensor

Ball Screw Lead

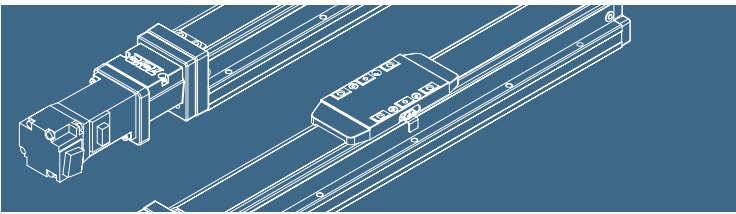
2	2mm
6	6mm
12	12mm

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*3} When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



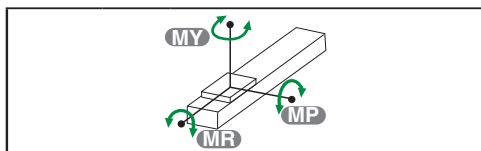
Specification

Item	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7		
		Lead		mm	2	6	12
		Maximum Rotating speed		rpm	3000	3600	3600
		Maximum linear speed ^{※1}		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	493		
			1000 Km of travel	kgf	229		
			10000 Km of travel	kgf	106		
		Static horizontal		kg	1293		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torque		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s ²	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-1000 (50 increments)		
		Ambient temperature ^{※2}		°C	0~+40		

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

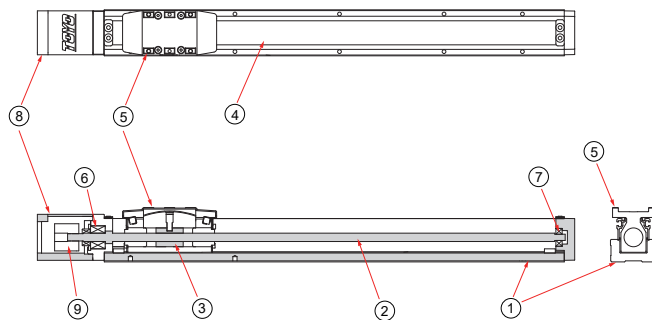


MY	N.m	79
MP	N.m	79
MR	N.m	116

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

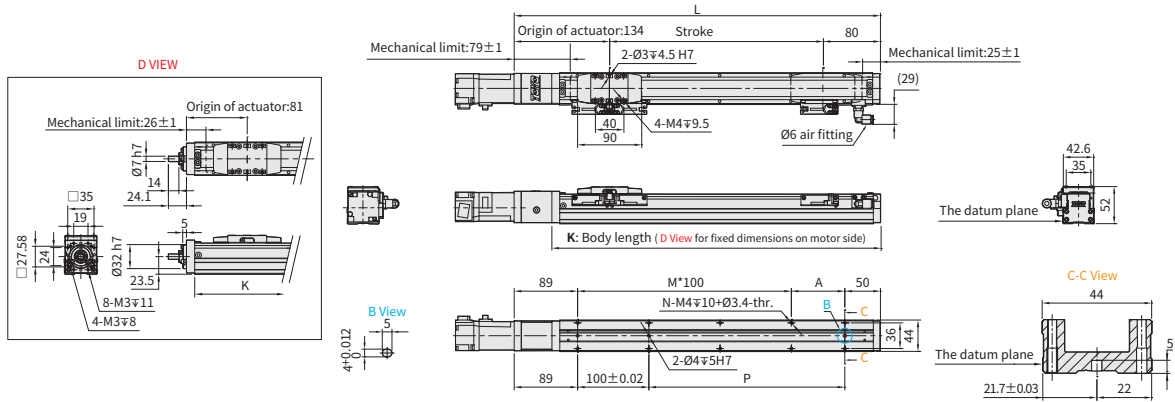
GCH4

► Integrated Linear Bearing

► Ball Screw Drive

BC Motor Exposed   Download CAD data at www.toyorobot.com

Unit : mm

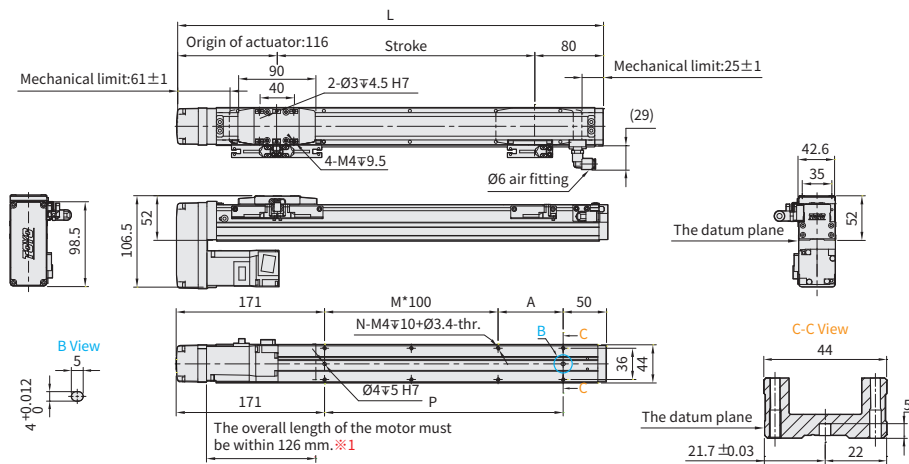


※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

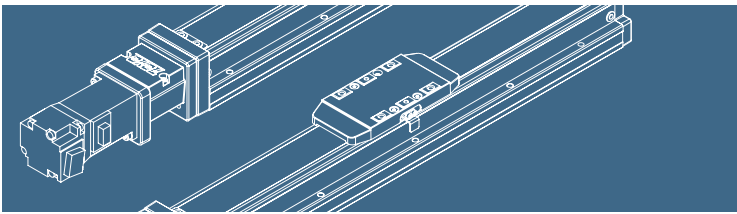
BM Motor Bottom Side   Download CAD data at www.toyorobot.com

Unit : mm



※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

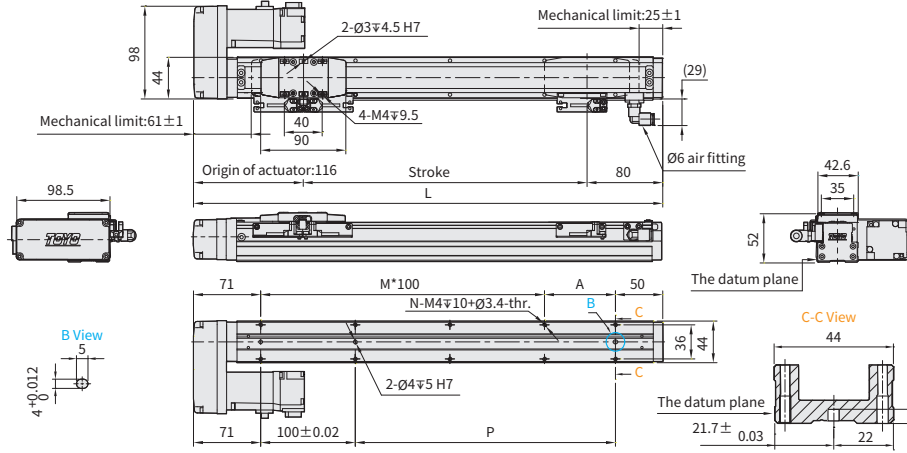


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG	1.34	1.52	1.7	1.88	2.06	2.24	2.42	2.6	2.78	2.96	3.14	3.32	3.5	3.68	3.86	4.04	4.22	4.4	4.58	4.76
Linear Speed mm/s	100																			
	Lead 2										90									
	Lead 6										330									
Lead 12	720										660									

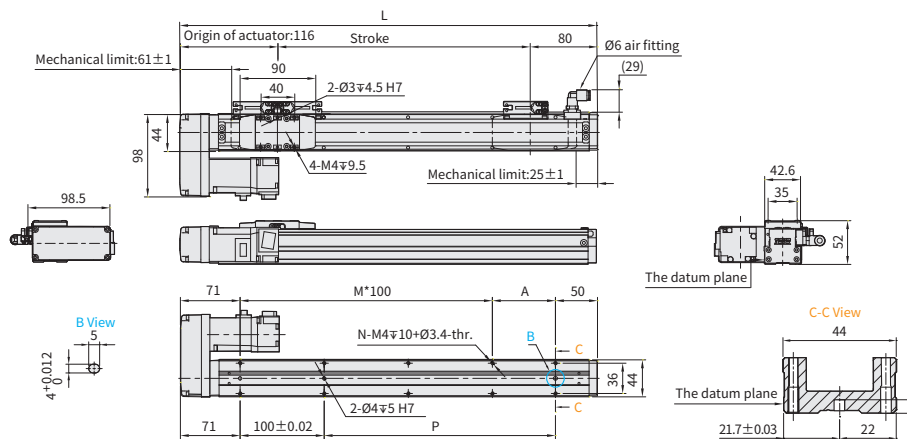
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG	1.34	1.52	1.7	1.88	2.06	2.24	2.42	2.6	2.78	2.96	3.14	3.32	3.5	3.68	3.86	4.04	4.22	4.4	4.58	4.76
Linear Speed mm/s	100																			
	Lead 2										90									
	Lead 6										330									
Lead 12	720										660									

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix, as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

GCH5

► Integrated Linear Bearing

► Ball Screw Drive



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

The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH5- L 5 - 100 - BC - X - C4 - 0001

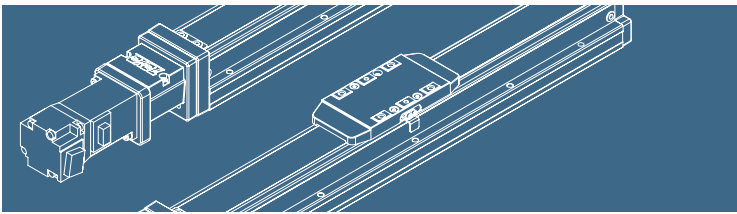
Model		Stroke		Special Order No.	
Ball Screw Accuracy Grade		Rolled Ballscrews			
L	Rolled Ballscrews	50-1050mm(50mm increments)			
C Ground Ballscrews		Ground Ballscrews			
		50-300mm(50mm increments)			
*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.					
Motor Position		Motor Flange · Power Output		Home Sensor	
BC Motor Exposed		With Motor Flange & Coupling		Outside	
BM Motor Bottom Side		M Mitsubishi	05 - B	C Motor Side	
BL Motor Left Side		P Panasonic	10 100W	D Opposite Motor Side	
BR Motor Right Side		Y Yaskawa	20 -	No Sensor	
- *2 No Motor Position		T Delta	40 -	E No Sensor	
		Without Motor Flange & Coupling			
		K No Motor Flange & Coupling *2			
Ball Screw Lead				Limit Sensor	
2	2mm			Outside	
5	5mm			3 1 Pc	
10	10mm			4 2 Pc	
20	20mm			No Sensor	
				5 No Sensor	

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*When the stroke is 50mm, the sensor installation has the following restrictions:}

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



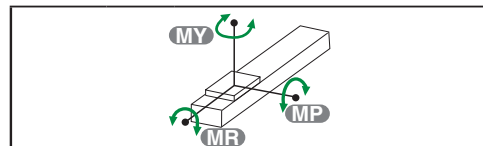
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C	
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews	
		Repeatability		mm	±0.005		±0.003	
		Stroke (increments)		mm	50-1050mm (50 increments)		50-300mm (50 increments)	
Item	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7			
		Lead		mm	2	5	10	20
		Maximum Rotating speed		rpm	3000	3600	3600	3600
		Maximum linear speed ※1		mm/s	100	300	600	1200
		Basic dynamic load rating Ca		N	2411	4829	4680	11284
		Basic static load rating Coa		N	5779	7836	7649	20410
		Load factor			1.2	1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	602			
			1000 Km of travel	kgf	279			
			10000 Km of travel	kgf	130			
		Static horizontal		kg	1724			
	Fixed bearing	Basic dynamic load rating Cr		N	1730			
		Static load rating Cor		N	3800			
	Common Spec	Start torque		N.cm	7			
		Allowable input torque		N.m	1.1			
		Maximum acceleration		m/s ²	10			
		Friction coefficient			0.03			
		Ambient temperature ※2		°C	0~+40			

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

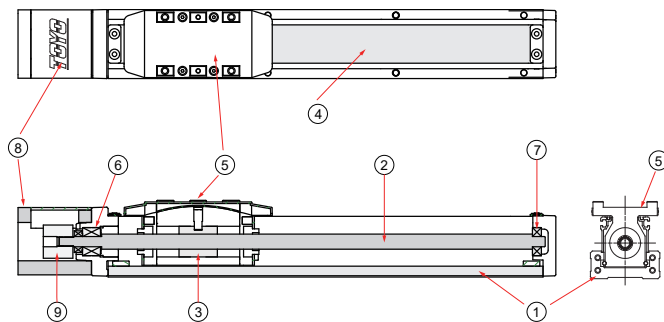


MY	N.m	103
MP	N.m	103
MR	N.m	144

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	40.8	18.9	8.8
MP	N.m	40.8	18.9	8.8
MR	N.m	58.5	27.2	12.6

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

GCH5

► Integrated Linear Bearing

► Ball Screw Drive

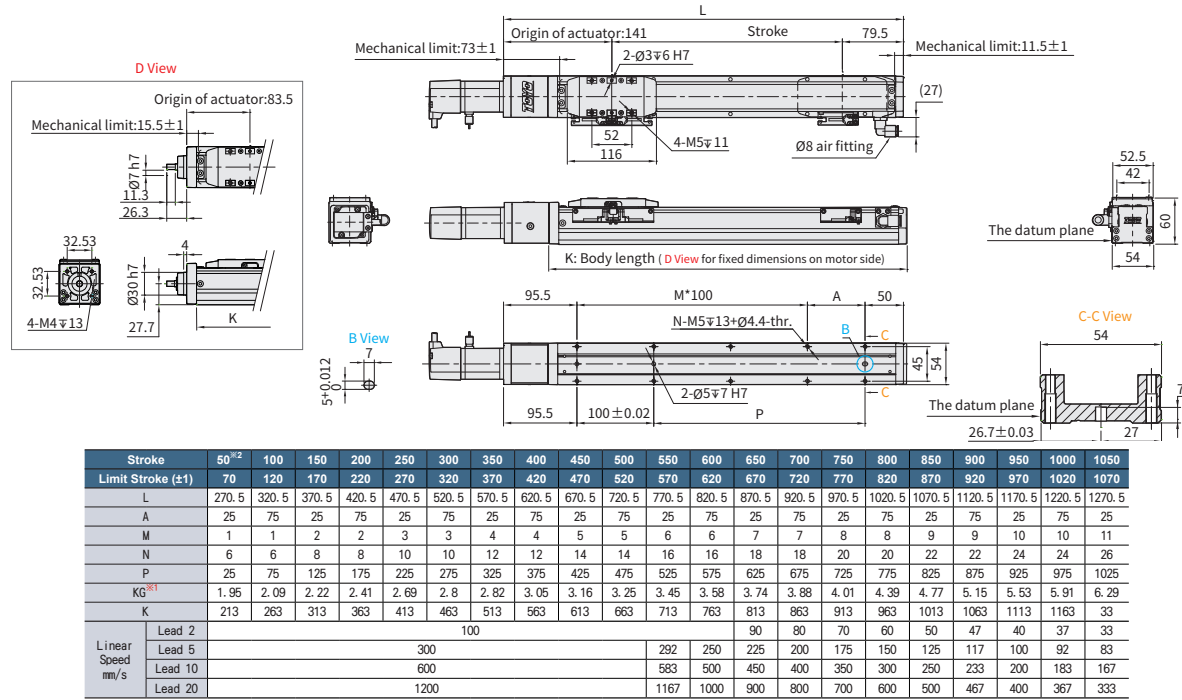
BC

Motor Exposed



Download CAD data at www.toyorobot.com

Unit : mm



※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

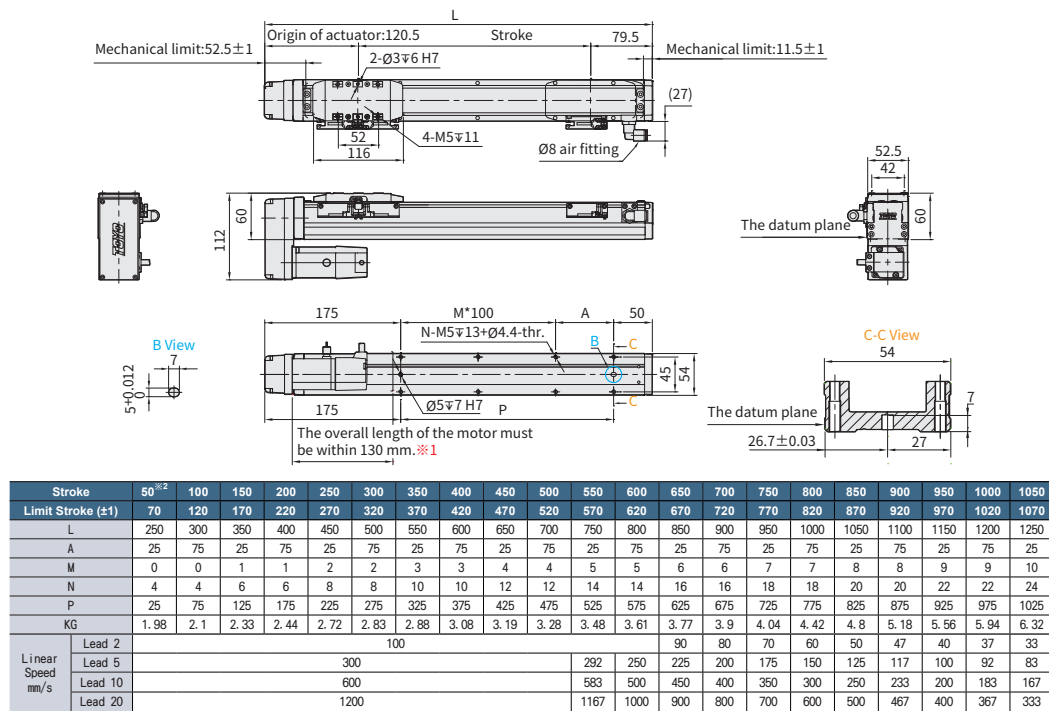
BM

Motor Bottom Side



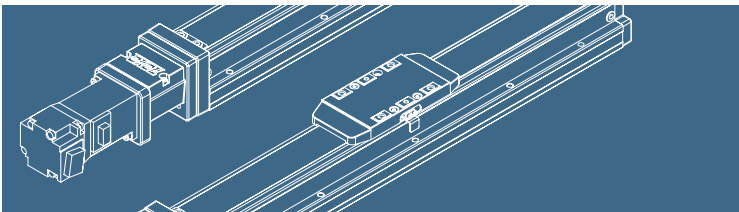
Download CAD data at www.toyorobot.com

Unit : mm



※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

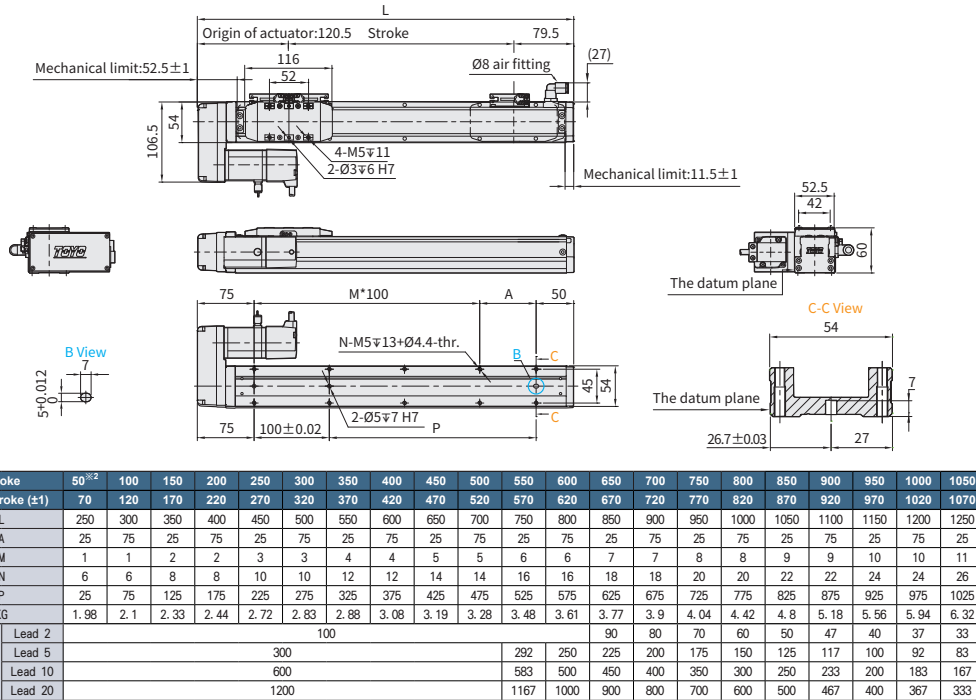


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



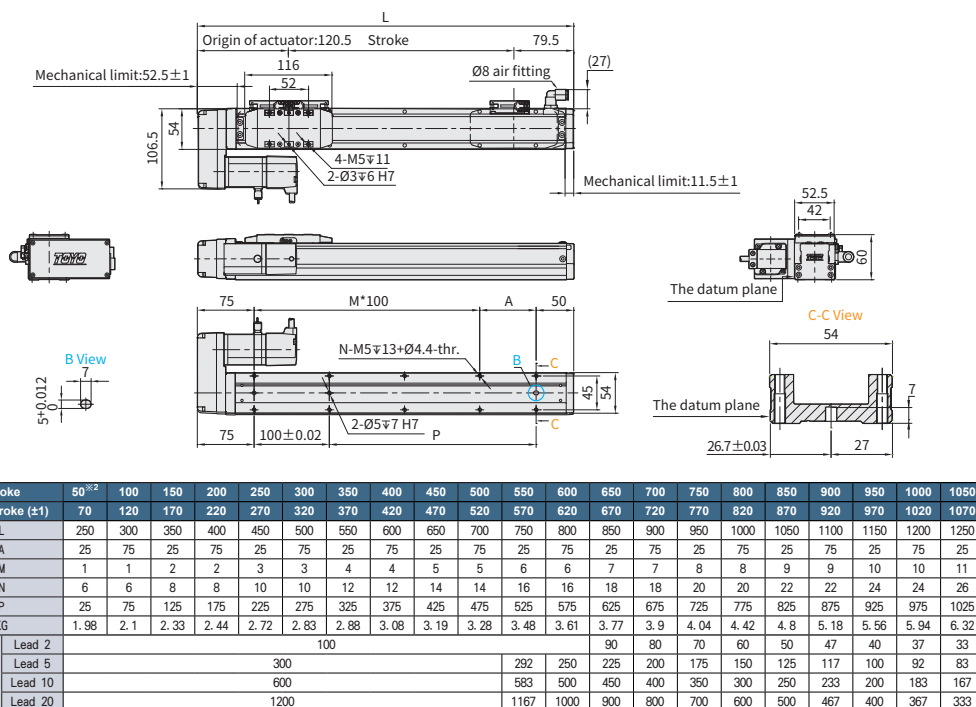
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

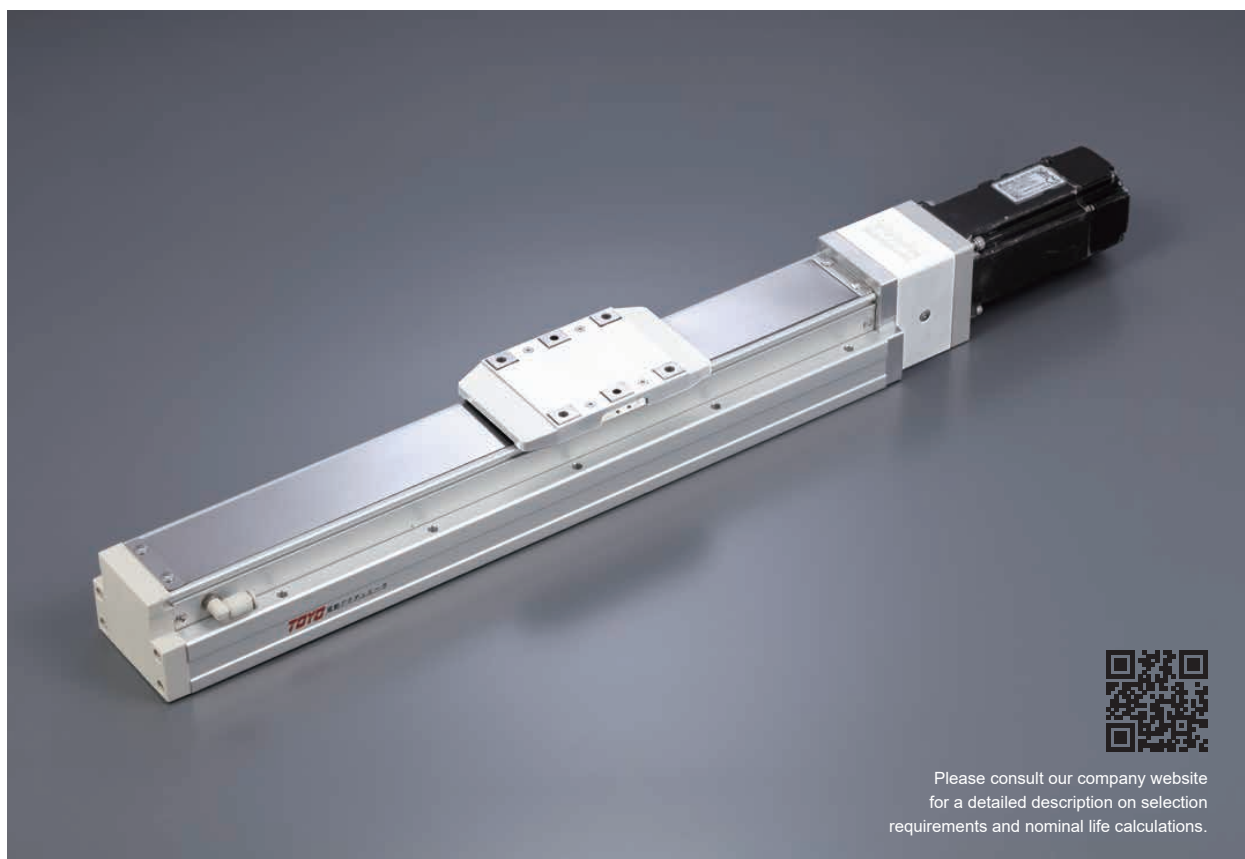
GCH5S

GCH8S

GCH8

► Integrated Linear Bearing

► Ball Screw Drive



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

The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH8 - L10 - 100 - BC - X - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Stroke

Rolled Ballscrews
50-1250mm(50mm increments)
Ground Ballscrews
50-700mm(50mm increments)

Special Order No.

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- ^{*2}	No Motor Position

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

Home Sensor

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

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Ball Screw Lead

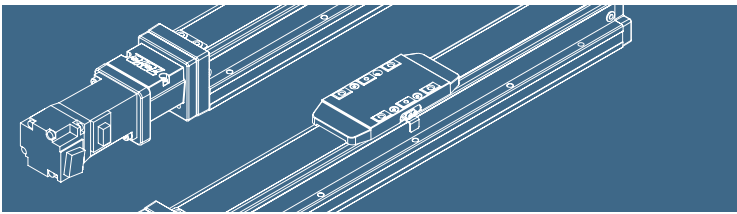
5	5mm
10	10mm
20	20mm

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*When the stroke is 50mm, the sensor installation has the following restrictions:}

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



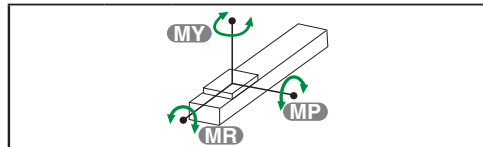
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C	
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews	
		Repeatability		mm	±0.005		±0.003	
		Stroke (increments)		mm	50-1250mm (50 increments)		50-700mm (50 increments)	
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16 & C7			
		Lead		mm	5	10	20	
		Maximum Rotating speed		rpm	3600	3600	3600	
		Maximum linear speed ※1		mm/s	300	600	1200	
		Basic dynamic load rating Ca		N	8042	6300	4152	
		Basic static load rating Coa		N	15088	11596	7439	
		Load factor			1.2	1.35	1.35	
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	1899			
			1000 Km of travel	kgf	881			
			10000 Km of travel	kgf	409			
		Static horizontal		kg	3490			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Start torpue		N.cm	10			
		Allowable input torque		N.m	2.2			
		Maximum acceleration		m/s ²	10			
		Friction coefficient			0.03			
		Ambient temperature ※2		°C	0~+40			

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

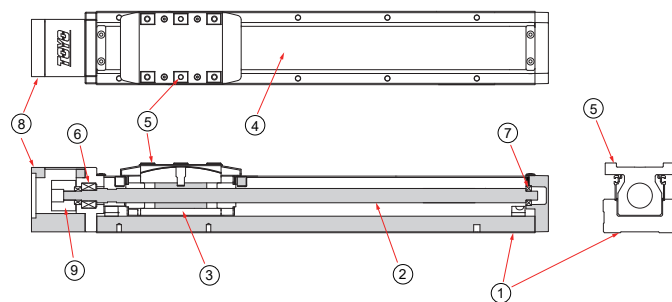


MY	N.m	318
MP	N.m	318
MR	N.m	626

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

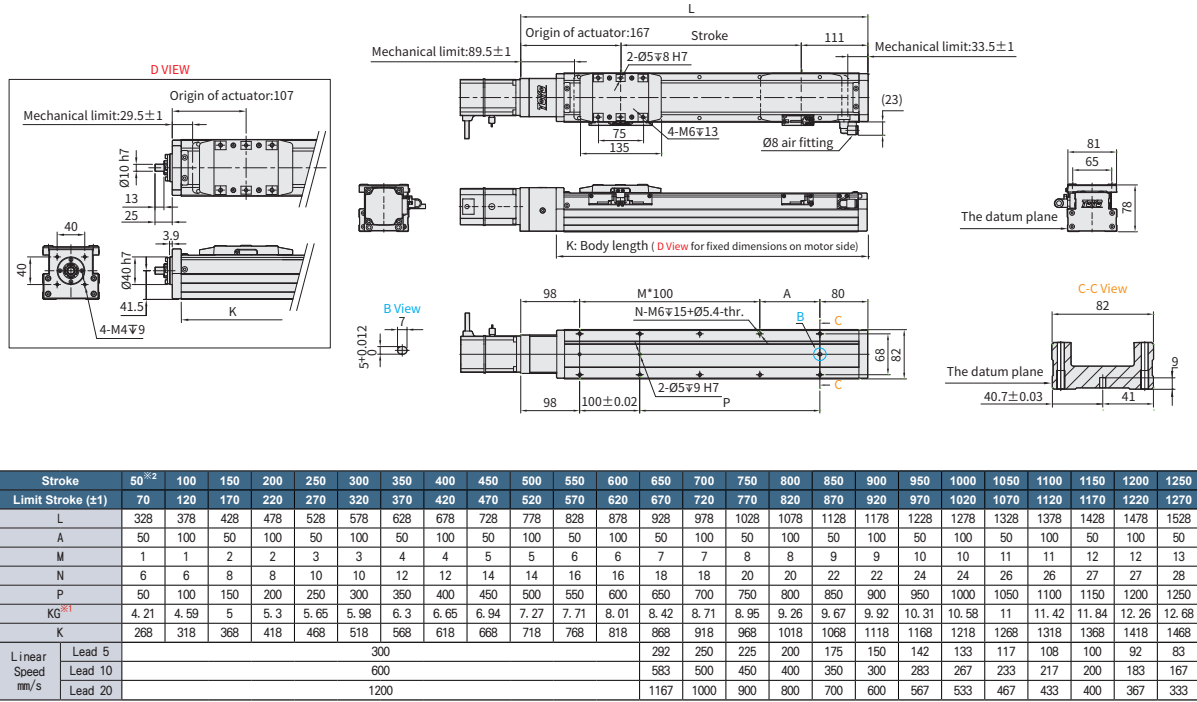
GCH8

► Integrated Linear Bearing

► Ball Screw Drive

BC Motor Exposed   Download CAD data at www.toyorobot.com

Unit : mm

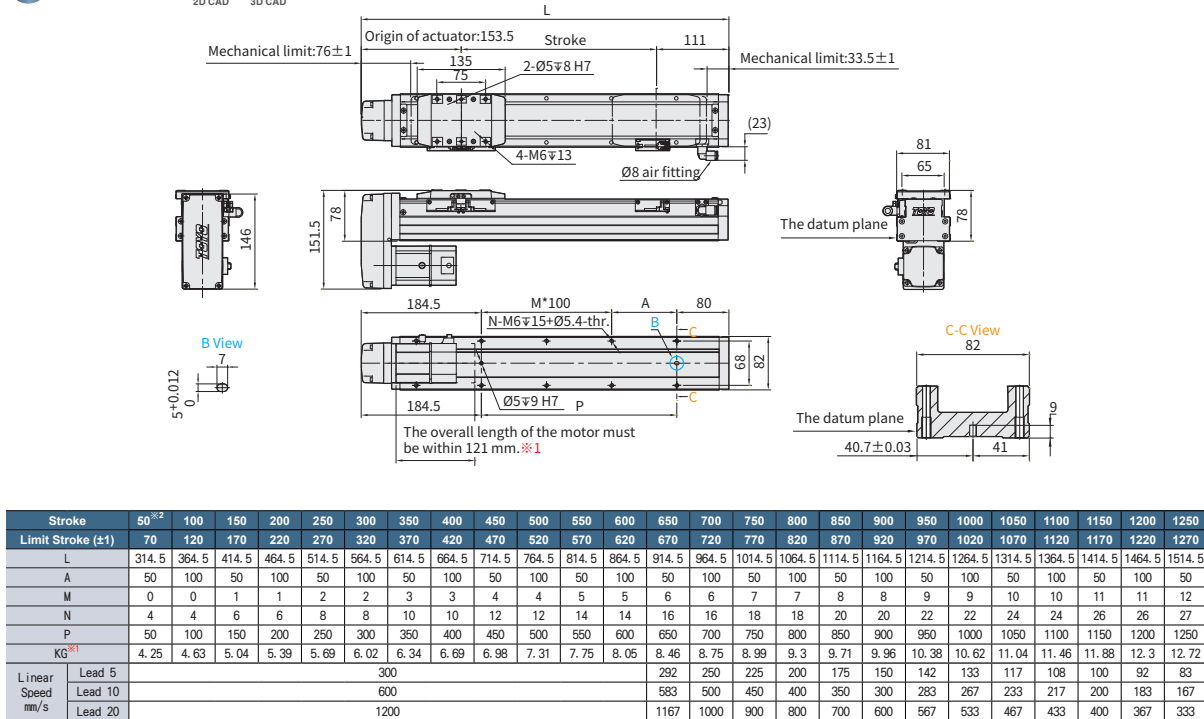


※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

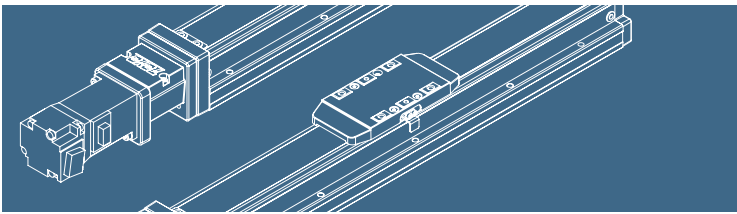
BM Motor Bottom Side   Download CAD data at www.toyorobot.com

Unit : mm



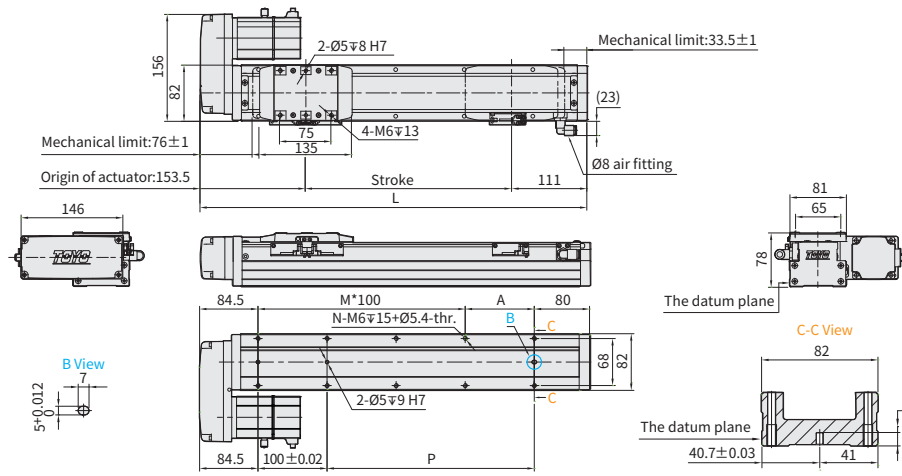
※1 ※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.



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

Unit : mm

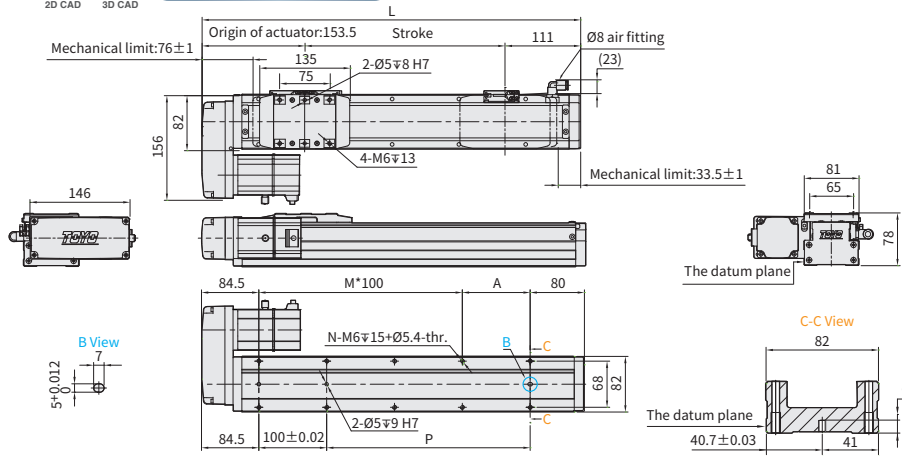


Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L	314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	4.25	4.63	5.04	5.39	5.69	6.02	6.34	6.69	6.98	7.31	7.75	8.05	8.46	8.75	8.99	9.3	9.71	9.96	10.38	10.62	11.04	11.46	11.88	12.3	12.72
Linear Speed mm/s	Lead 5	300											292												
	Lead 10	600											583												
	Lead 20	1200											1167												

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

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

Unit : mm



Stroke	50 ^{*2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250												
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270												
L	314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5												
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50												
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13												
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28												
P	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250												
KG ^{*1}	4.25	4.63	5.04	5.39	5.69	6.02	6.34	6.69	6.98	7.31	7.75	8.05	8.46	8.75	8.99	9.3	9.71	9.96	10.38	10.62	11.04	11.46	11.88	12.3	12.72												
Linear Speed mm/s	Lead 5	300												292												250	225	200	175	150	142	133	117	108	100	92	83
	Lead 10	600												583												500	450	400	350	300	283	267	233	217	200	183	167
	Lead 20	1200												1167												1000	900	800	700	600	567	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

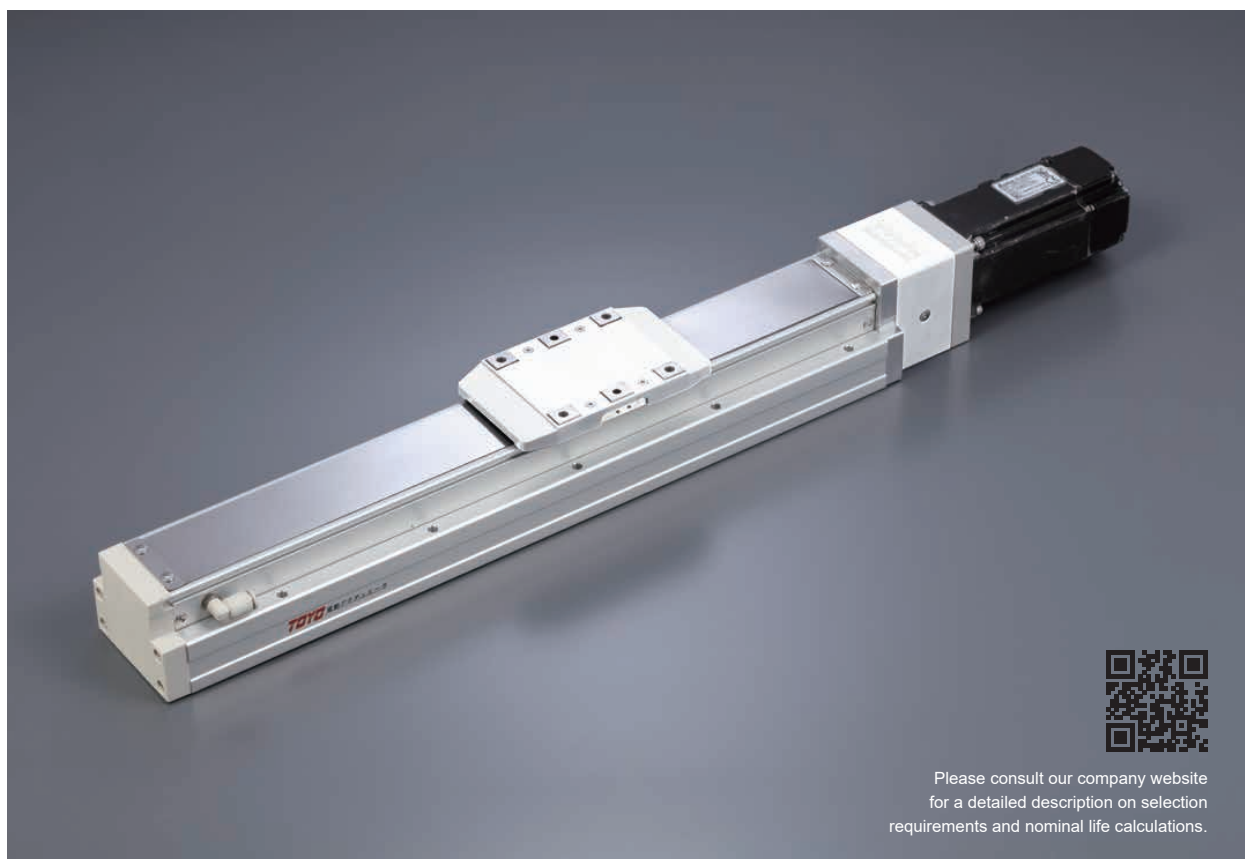
GCH5S

GCH8S

GCH8

► Integrated Linear Bearing

► Ball Screw Drive



The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH8 - L10 - 100 - BC - X - C4 - 0001

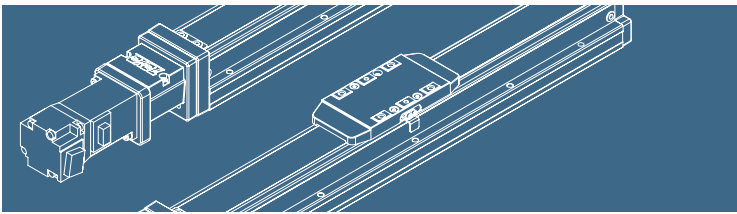
Model		Stroke		Special Order No.	
■ Ballscrew Accuracy Grade					
L	Rolled Ballscrews	Rolled Ballscrews			
C	Ground Ballscrews	50-1250mm[50mm increments]			
*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.		Ground Ballscrews			
		50-700mm[50mm increments]			
■ Motor Position		■ Motor Flange · Power Output			
BC	Motor Exposed	With Motor Flange & Coupling			
BM	Motor Bottom Side	M	Mitsubishi	05	- B
BL	Motor Left Side	P	Panasonic	10	-
BR	Motor Right Side	Y	Yaskawa	20	-
		T	Delta	40	400W
- ^{*2}	No Motor Position	X	Others ^{*1}		
		Without Motor Flange & Coupling			
		K	No Motor Flange & Coupling ^{*2}		
■ Ball Screw Lead		■ Home Sensor		■ Limit Sensor	
5	5mm	Outside		Outside	
10	10mm	C	Motor Side	3	1 Pc
20	20mm	D	Opposite Motor Side	4	2 Pc
		No Sensor		No Sensor	
		E	No Sensor	5	No Sensor

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*When the stroke is 50mm, the sensor installation has the following restrictions:}

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



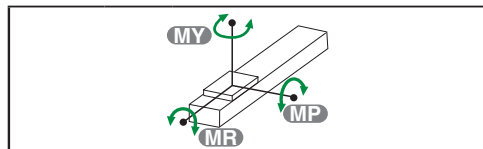
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C	
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews	
		Repeatability		mm	±0.005		±0.003	
		Stroke (increments)		mm	50-1250mm (50 increments)		50-700mm (50 increments)	
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16 & C7			
		Lead		mm	5	10	20	
		Maximum Rotating speed		rpm	3600	3600	3600	
		Maximum linear speed ※1		mm/s	300	600	1200	
		Basic dynamic load rating Ca		N	8042	6300	4152	
		Basic static load rating Coa		N	15088	11596	7439	
		Load factor			1.2	1.35	1.35	
	Linear Guide	Dynamic horizontal	100 Km of travel		kgf	1899		
			1000 Km of travel		kgf	881		
			10000 Km of travel		kgf	409		
		Static horizontal		kg	3490			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Start torpue		N.cm	10			
		Allowable input torque		N.m	2.2			
		Maximum acceleration		m/s ²	10			
		Friction coefficient			0.03			
		Ambient temperature ※2		°C	0~+40			

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

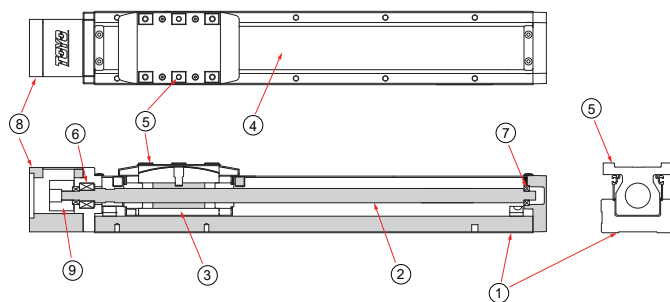


MY	N.m	318
MP	N.m	318
MR	N.m	626

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

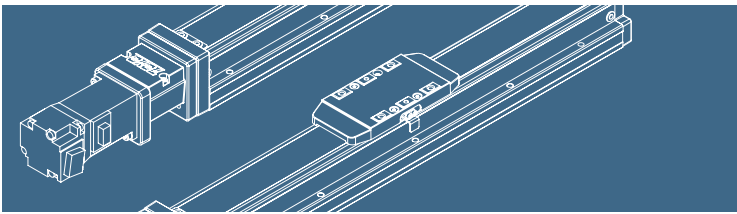
GCH12

GCH5S

GCH8S

▶ Ball Screw Drive



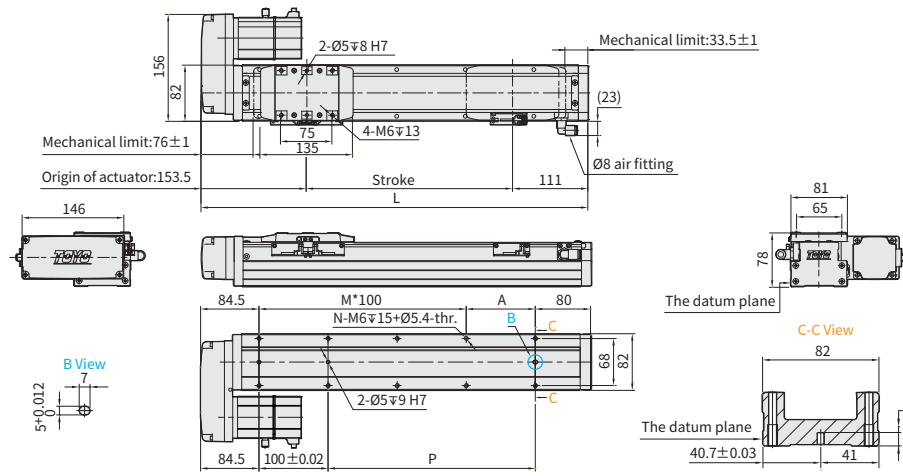


BR Motor Left Side



Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L	314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	4.25	4.63	5.04	5.39	5.69	6.02	6.34	6.69	6.98	7.31	7.75	8.05	8.46	8.75	8.99	9.3	9.71	9.96	10.38	10.62	11.04	11.46	11.88	12.3	12.72
Linear Speed mm/s	Lead 5	300											292 250 225 200 175 150 142 133 117 108 100 92 83												
	Lead 10	600											583 500 450 400 350 300 283 267 233 217 200 183 167												
	Lead 20	1200											1167 1000 900 800 700 600 567 533 467 433 400 367 333												

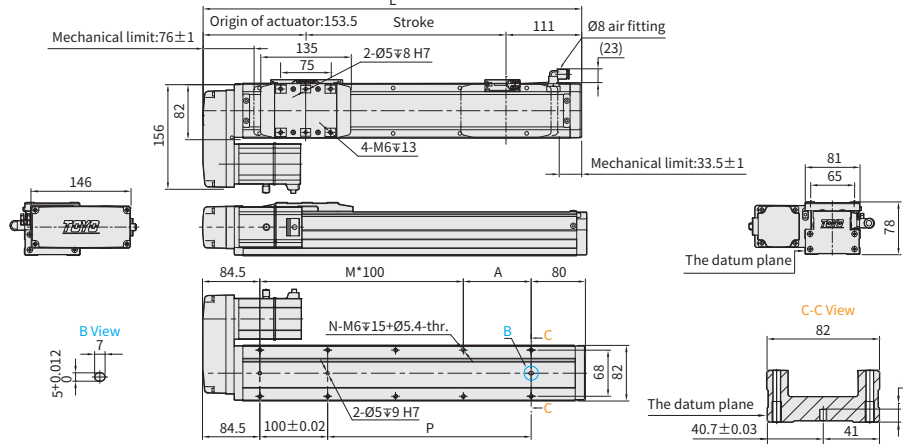
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

BL Motor Right Side



Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L	314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	4.25	4.63	5.04	5.39	5.69	6.02	6.34	6.69	6.98	7.31	7.75	8.05	8.46	8.75	8.99	9.3	9.71	9.96	10.38	10.62	11.04	11.46	11.88	12.3	12.72
Linear Speed mm/s	Lead 5	300											292												
	Lead 10	600											583												
	Lead 20	1200											1167												

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

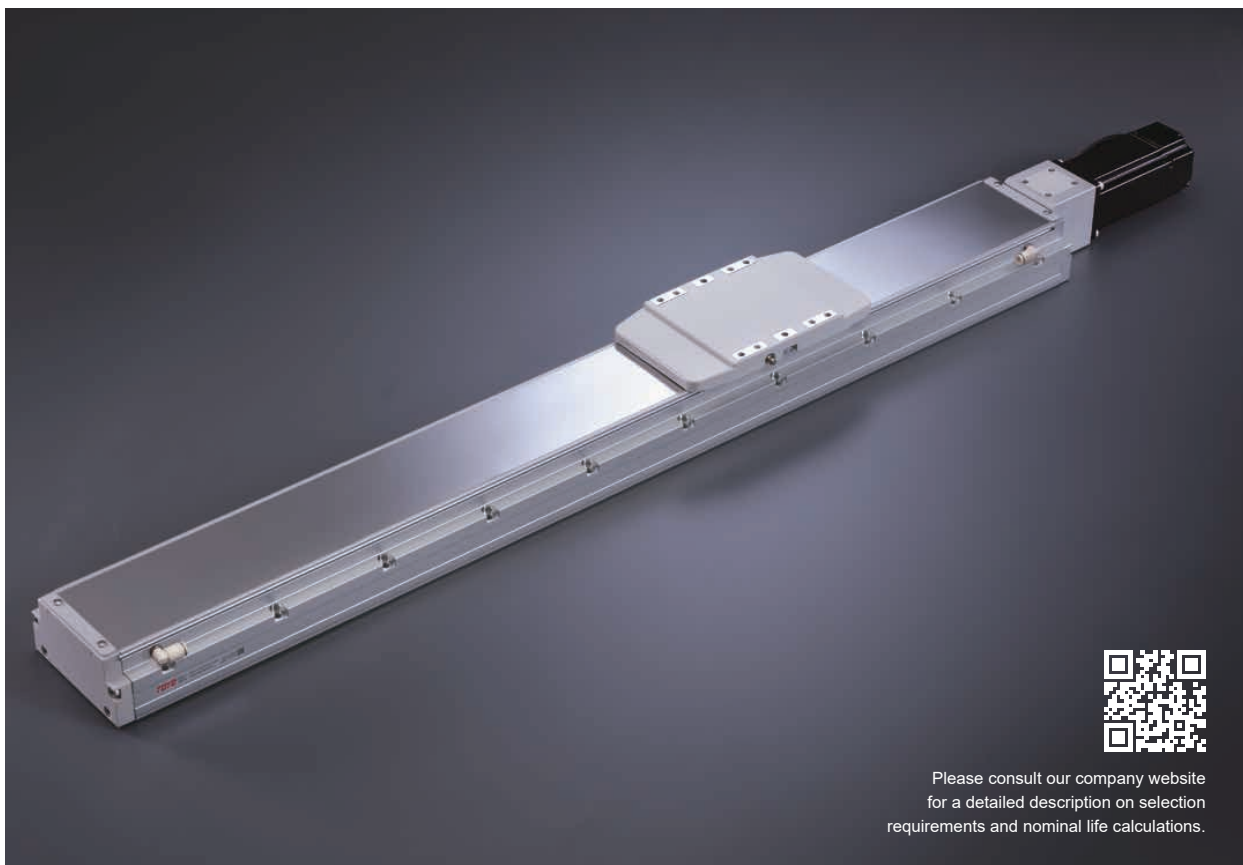
GCH5S

GCH8S

GCH12

► Integrated Linear Bearing

► Ball Screw Drive



The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH12- L5 - 100 - BC - X - C4 - 0001

Model

Ballcrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Stroke

Rolled Ballscrews	50-1250mm(50mm increments)
Ground Ballscrews	50-700mm(50mm increments)

Special Order No.

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- ^{*2}	No Motor Position

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

Ball Screw Lead

5	5mm
10	10mm
20	20mm
32	32mm

Home Sensor

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

Limit Sensor

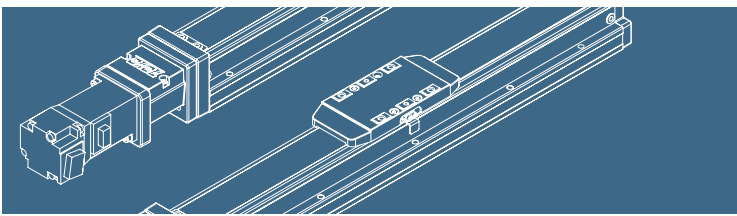
Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

^{*When the stroke is 50mm, the sensor installation has the following restrictions:}

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



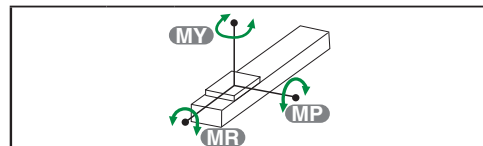
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C	
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews	
		Repeatability		mm	±0.005		±0.003	
		Stroke (increments)		mm	50-1250mm (50 increments)		50-700mm (50 increments)	
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16 & C7			
		Lead		mm	5	10	20	32
		Maximum Rotating speed		rpm	3600	3600	3600	3600
		Maximum linear speed ※1		mm/s	300	600	1200	1920
		Basic dynamic load rating Ca		N	11570	6300	4152	7326
		Basic static load rating Coa		N	23030	11596	7439	14157
		Load factor			1.2	1.35	1.35	1.75
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	5639			
			1000 Km of travel	kgf	2618			
			10000 Km of travel	kgf	1215			
		Static horizontal		kg	9696			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Start torpue		N.cm	10			
		Allowable input torque		N.m	3.1			
		Maximum acceleration		m/s²	10			
		Friction coefficient			0.03			
		Ambient temperature ※2		°C	0~+40			

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

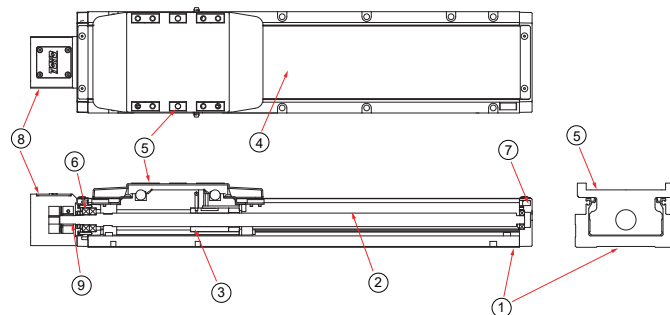


MY	N.m	606
MP	N.m	606
MR	N.m	1168

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	602.1	279.5	129.7
MP	N.m	602.1	29.5	129.7
MR	N.m	1037.0	481.3	233.4

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

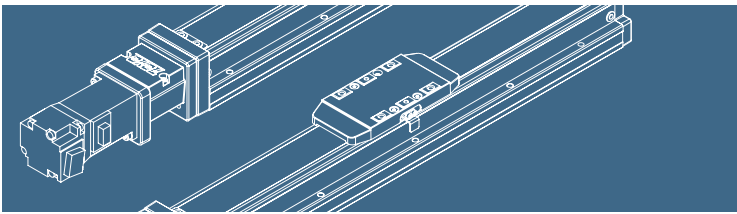
GCH12

GCH5S

GCH8S

▶ Ball Screw Drive

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

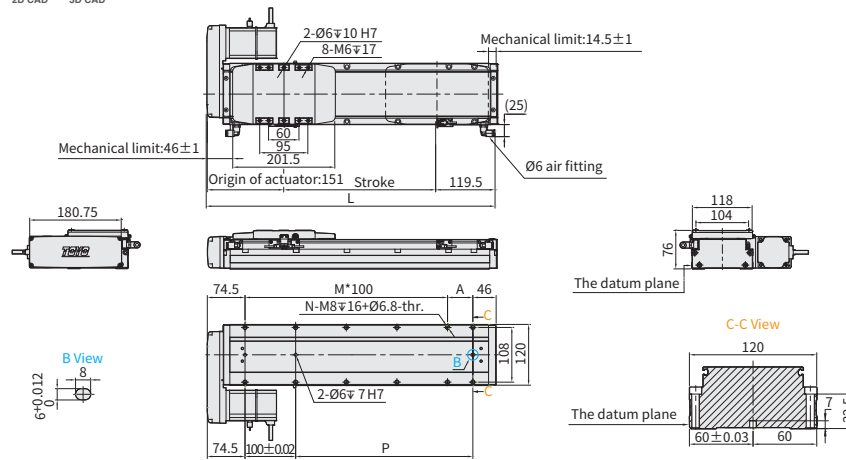


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)	58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG ^{※1}	5.21	5.56	5.91	6.56	6.91	7.26	7.61	7.96	8.31	8.66	9.01	9.36	9.71	10.06	10.41	10.76	11.11	11.46	11.81	12.16	12.51	12.86	13.21	13.56	13.91
Linear Speed mm/s	Lead 5	300												250											
	Lead 10	600												500											
	Lead 20	1200												1000											
	Lead 32	1920												1600											
Linear Speed mm/s	Lead 5	225												225											
	Lead 10	450												450											
	Lead 20	900												900											
	Lead 32	1440												1440											

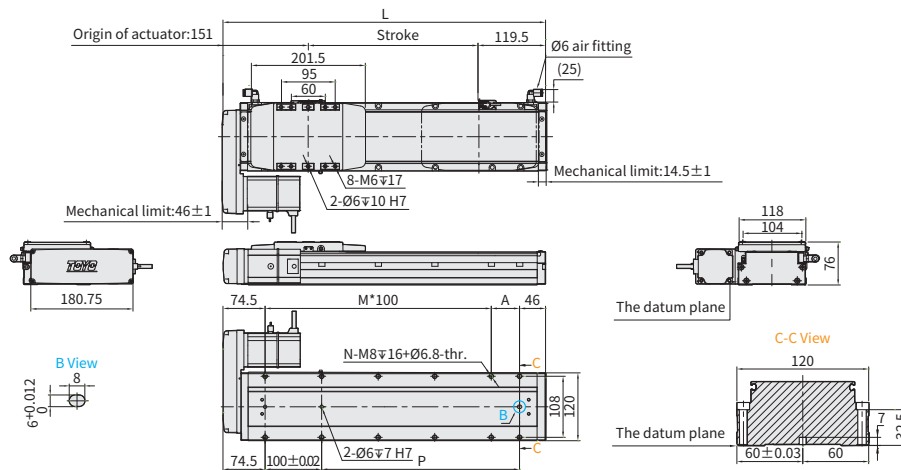
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fixas a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



Stroke	50 ^{※2}	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)	58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG ^{※1}	5.21	5.56	5.91	6.56	6.91	7.26	7.61	7.96	8.31	8.66	9.01	9.36	9.71	10.06	10.41	10.76	11.11	11.46	11.81	12.16	12.51	12.86	13.21	13.56	13.91
Linear Speed mm/s	Lead 5	300												250											
	Lead 10	600												500											
	Lead 20	1200												1000											
	Lead 32	1920												1600											
Linear Speed mm/s	Lead 5	225												225											
	Lead 10	450												450											
	Lead 20	900												900											
	Lead 32	1440												1440											

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fixas a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

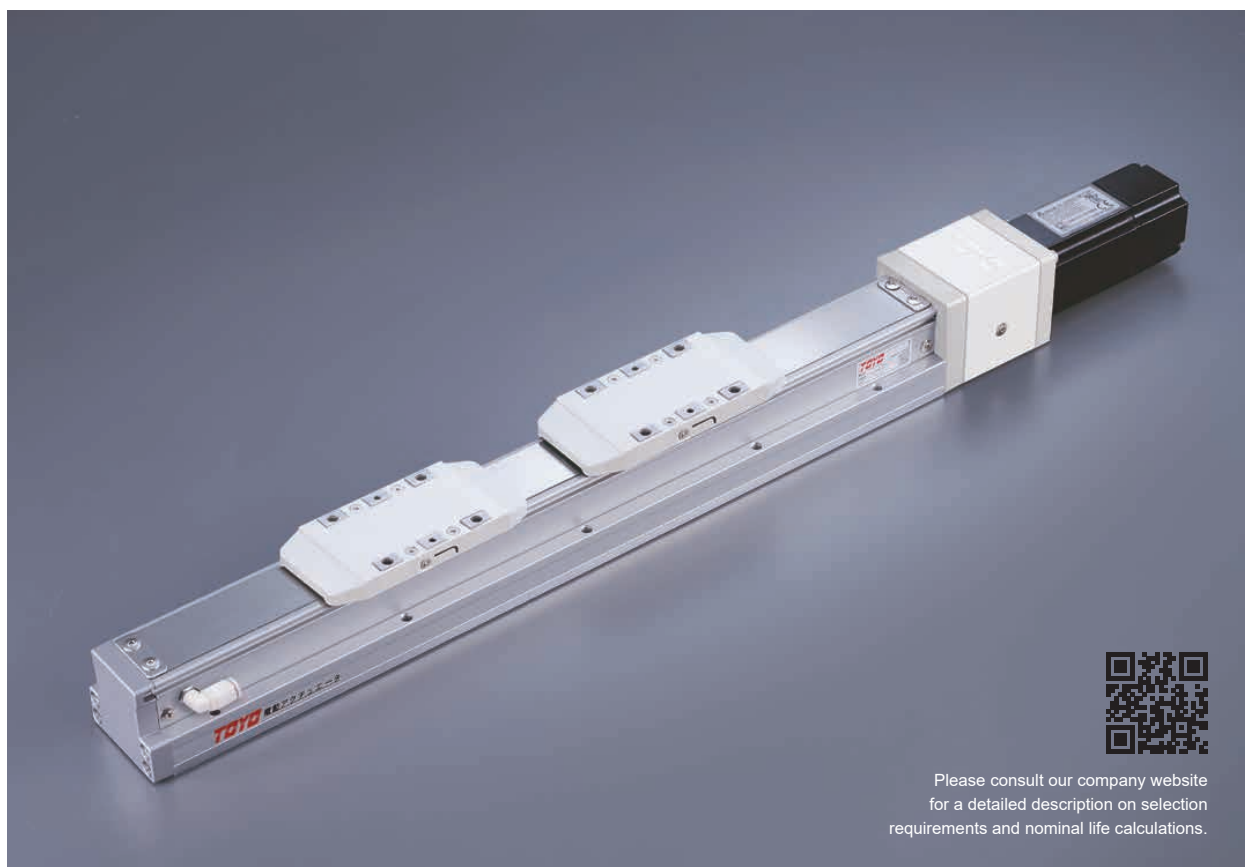
GCH5S

GCH8S

GCH5S

► Integrated Linear Bearing

► Ball Screw Drive



The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH5S- L2 - 100 - BC - X - C4 - 0001

Model

Stroke

25-450mm

25mm increments

Special
Order No.

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side

*2 No Motor Position

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

Home Sensor

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

Limit Sensor

	Outside
3	1 Pc
4	2 Pc
	No Sensor
5	No Sensor

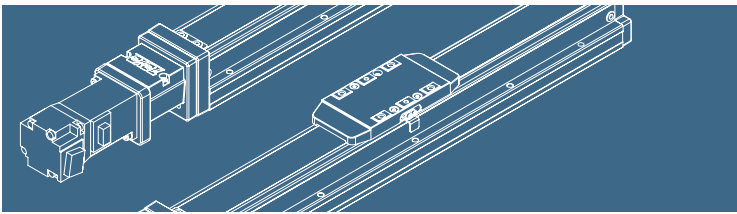
^{*}When the stroke is 25/50/75mm, the sensor installation has the following restrictions:

- 1.The home sensor and the limit sensor must be installed on different sides of the body.
- 2.The sensor trigger device must be installed on both sides of the device.

Ball Screw Lead

2 2mm

^{*}Dual carriage synchronous movement in reverse direction can only fit at lead of 5mm.



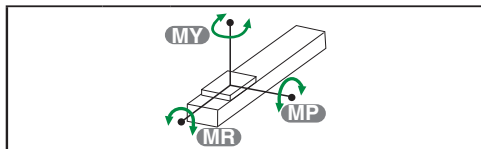
Specification

Item	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7
		Lead		mm	2
		Maximum Rotating speed		rpm	3000
		Maximum linear speed ^{※1}		mm/s	100
		Basic dynamic load rating Ca		N	2411
		Basic static load rating Coa		N	5779
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	602
			1000 Km of travel	kgf	279
			10000 Km of travel	kgf	130
		Static horizontal		kg	1724
	Fixed bearing	Basic dynamic load rating Cr		N	1730
		Static load rating Cor		N	3800
	Common Spec	Repeatability		mm	±0.005
		Start torque		N.cm	7
		Allowable input torque		N.m	1.1
		Maximum acceleration		m/s ²	10
		Friction coefficient			0.03
		Stroke (increments)		mm	25-325 (25 increments)
		Ambient temperature ^{※2}		°C	0~+40

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.

Static Loading Moment

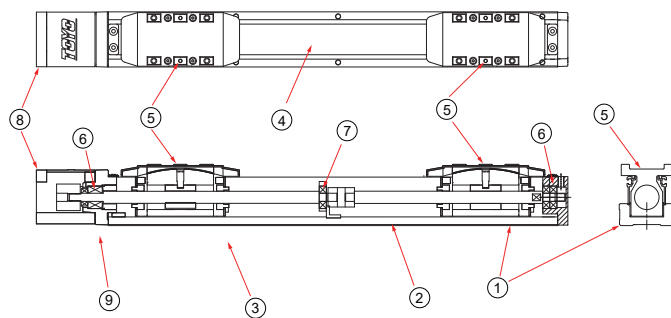


MY	N.m	103
MP	N.m	103
MR	N.m	144

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	40.8	18.9	8.8
MP	N.m	40.8	18.9	8.8
MR	N.m	58.5	27.2	12.6

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

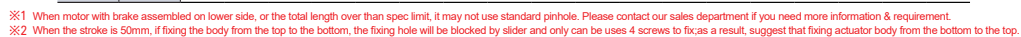
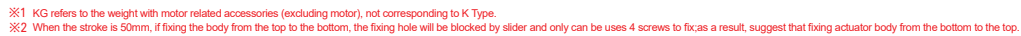
GCH8

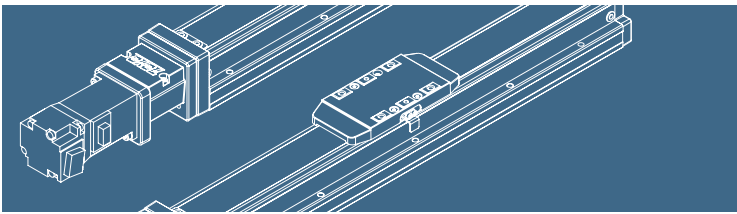
GCH12

GCH5S

GCH8S

▶ Ball Screw Drive



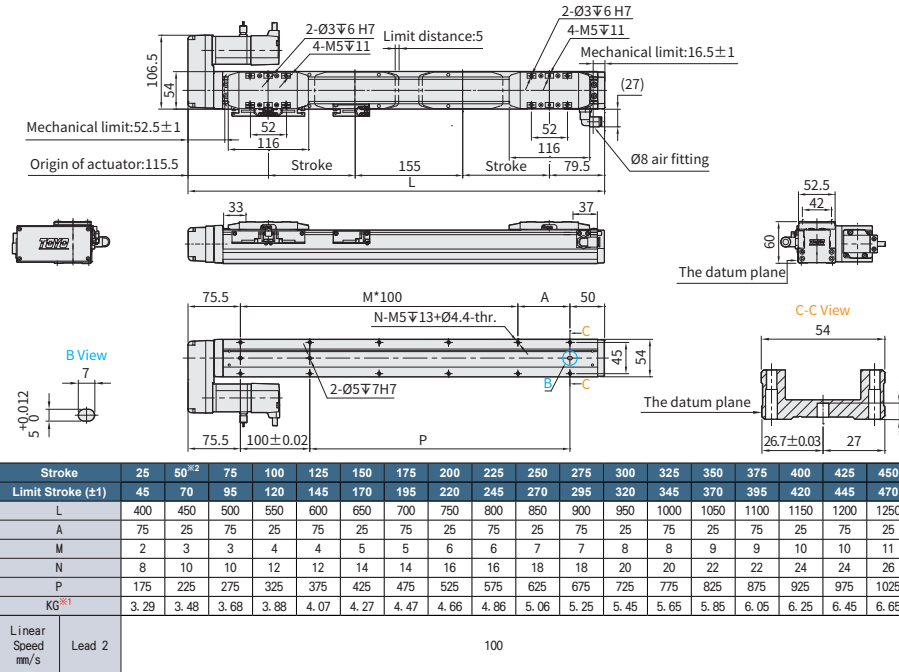


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



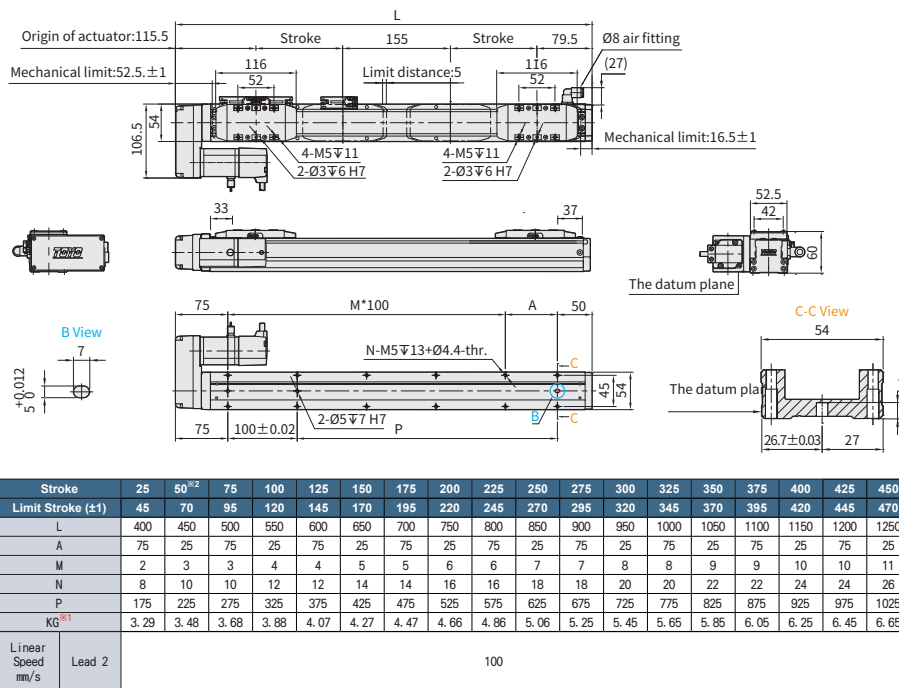
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

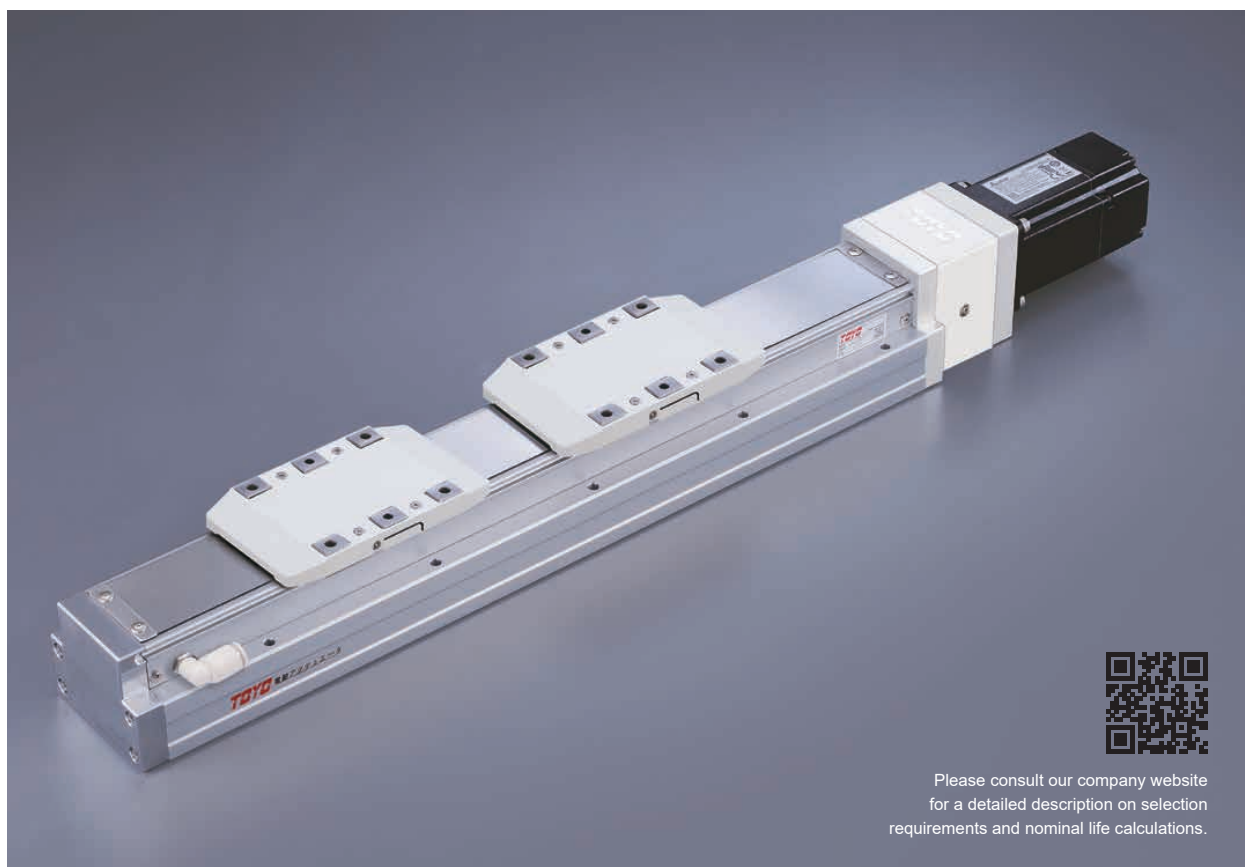
GCH5S

GCH8S

GCH8S

► Integrated Linear Bearing

► Ball Screw Drive



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

The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH8S- L2 - 100 - BC - X - C4 - 0001

Model

Stroke

25-525mm

25mm increments

Special Order No.

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- ^{*2}	No Motor Position

Ball Screw Lead

5 5mm

^{*}Dual carriage synchronous movement in reverse direction can only fit at lead of 5mm.

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
X	Others ^{*1}			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling ^{*2}			

^{*1} When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

^{*2} When K is selected, the motor position need no description.

Home Sensor

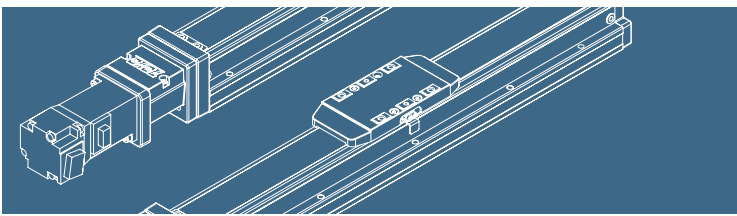
	Outside
C	Motor Side
D	Opposite Motor Side
	No Sensor
E	No Sensor

Limit Sensor

	Outside
3	1 Pc
4	2 Pc
	No Sensor
5	No Sensor

^{*}When the stroke is 25/50/75mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



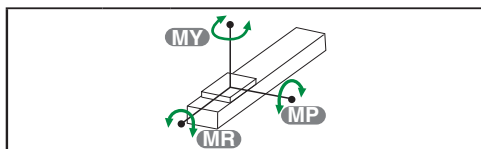
Specification

Item	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7
		Lead		mm	5
		Maximum Rotating speed		rpm	3600
		Maximum linear speed ^{※1}		mm/s	300
		Basic dynamic load rating Ca		N	8042
		Basic static load rating Coa		N	15088
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	1899
			1000 Km of travel	kgf	881
			10000 Km of travel	kgf	409
		Static horizontal		kg	3490
	Fixed bearing	Basic dynamic load rating Cr		N	2600
		Static load rating Cor		N	4750
	Common Spec	Repeatability		mm	±0.005
		Start torque		N.cm	10
		Allowable input torque		N.m	2.2
		Maximum acceleration		m/s ²	10
		Friction coefficient			0.03
		Stroke (increments)		mm	25-325 (25 increments)
		Ambient temperature ^{※2}		°C	0~+40

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.)

Static Loading Moment

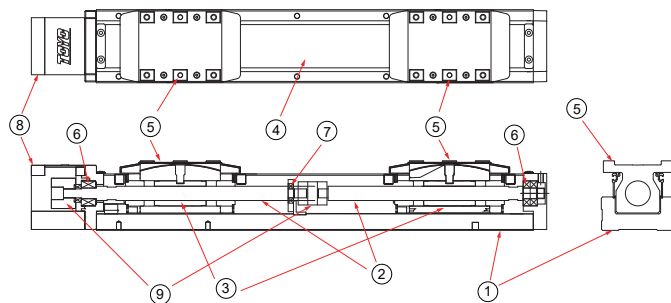


MY	N.m	318
MP	N.m	318
MR	N.m	626

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S

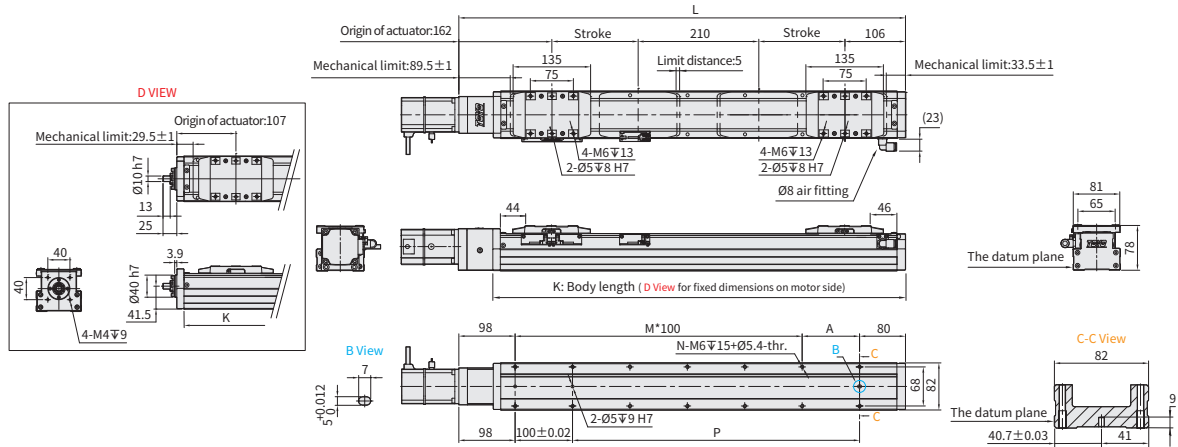
GCH8S

► Integrated Linear Bearing

► Ball Screw Drive

BC Motor Exposed   Download CAD data at www.toyorobot.com

Unit : mm



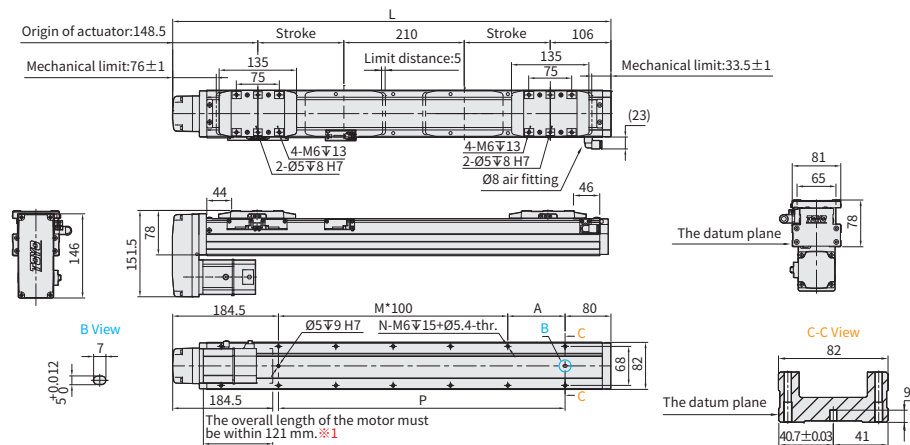
Stroke	25	50 ^{※2}	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	45	70	95	120	145	170	195	220	245	270	295	320	345	370	395	420	445	450	495	520	545
L	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	6.94	7.3	7.67	8.03	8.4	8.76	9.13	9.49	9.86	10.22	10.59	10.95	11.32	11.68	12.05	12.41	12.78	13.15	13.52	13.89	14.26
K	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s	Lead 5	300																			

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

BM Motor Bottom Side   Download CAD data at www.toyorobot.com

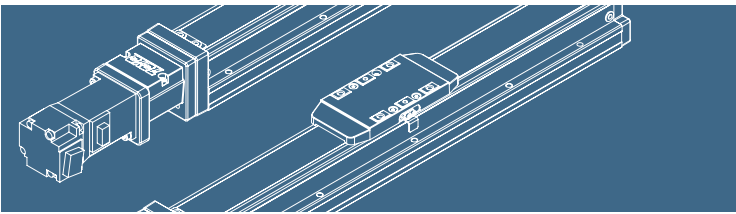
Unit : mm



Stroke	25	50 ^{※2}	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	45	70	95	120	145	170	195	220	245	270	295	320	345	370	395	420	445	450	495	520	545
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	7.46	7.98	8.5	9.02	9.54	10.06	10.58	11.1	11.62	12.14	12.66	13.28	13.7	14.22	14.74	15.26	15.78	16.3	16.82	17.34	17.86
Linear Speed mm/s	Lead 5	300																			

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be used 4 screws to fix; as a result, suggest that fixing actuator body from the bottom to the top.

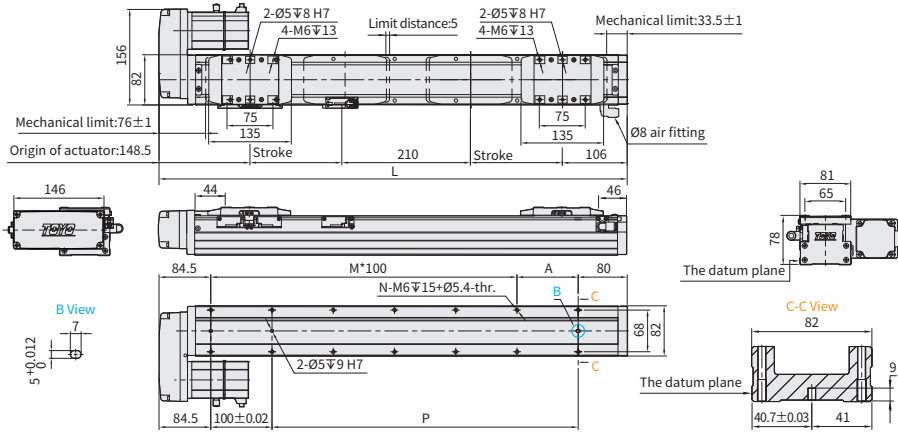


BR Motor Left Side



Download CAD data at www.toyorobot.com

Unit : mm



Stroke	25	50 ^{※2}	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	45	70	95	120	145	170	195	220	245	270	295	320	345	370	395	420	445	450	495	520	545
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	7.46	7.98	8.5	9.02	9.54	10.06	10.58	11.1	11.62	12.14	12.66	13.28	13.7	14.22	14.74	15.26	15.78	16.3	16.82	17.34	17.86
Linear Speed mm/s	300																				
Lead	5																				

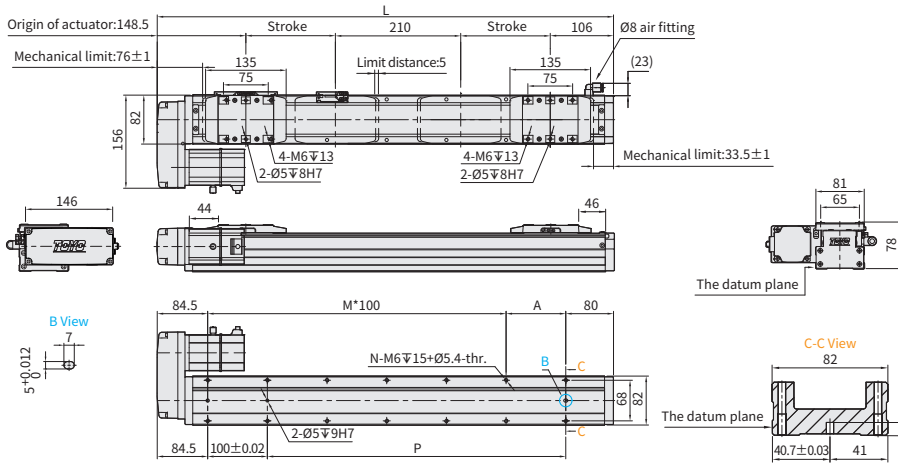
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

BL Motor Right Side



Download CAD data at www.toyorobot.com

Unit : mm



Stroke	25	50 ^{※2}	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	45	70	95	120	145	170	195	220	245	270	295	320	345	370	395	420	445	450	495	520	545
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG ^{※1}	7.46	7.98	8.5	9.02	9.54	10.06	10.58	11.1	11.62	12.14	12.66	13.28	13.7	14.22	14.74	15.26	15.78	16.3	16.82	17.34	17.86
Linear Speed mm/s	300																				
Lead	5																				

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

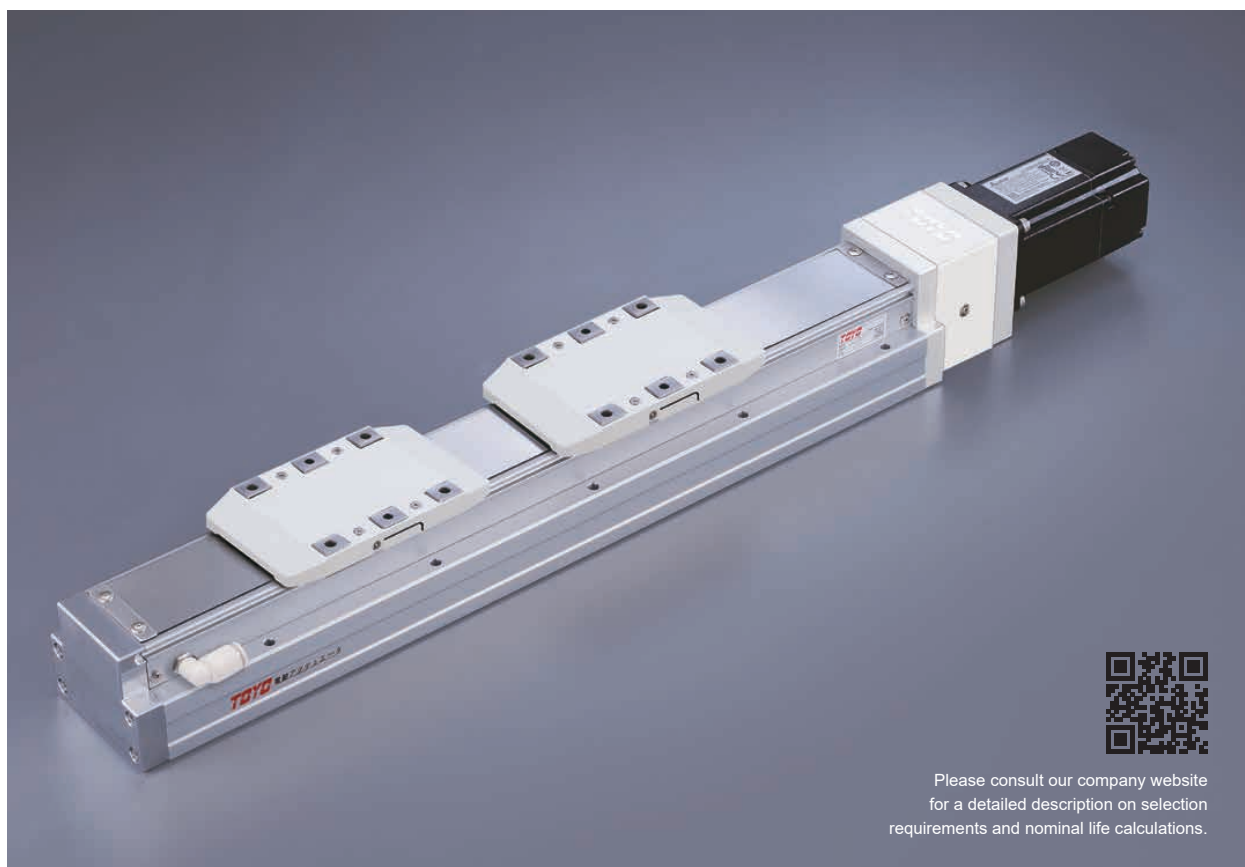
GCH5S

GCH8S

GCH8S

► Integrated Linear Bearing

► Ball Screw Drive



The picture is just for the reference. Please check the the actual dimensions on the drawing.

Ordering Method

GCH8S- L2 - 100 - BC - X - C4 - 0001

Model

Stroke

25-525mm

25mm increments

Special
Order No.

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Ball Screw Lead

5 5mm

*Dual carriage synchronous movement in reverse direction can only fit at lead of 5mm.

Motor Flange · Power Output

With Motor Flange & Coupling				
M	Mitsubishi	05	-	B
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
X	Others*1			
Without Motor Flange & Coupling				
K	No Motor Flange & Coupling*2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected, the motor position need no description.

Home Sensor

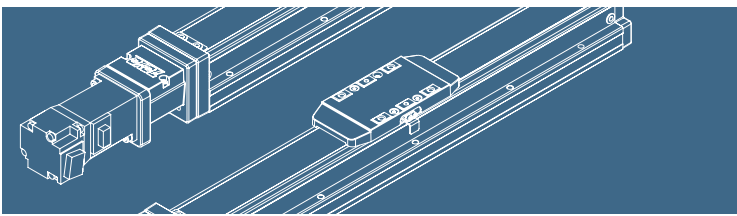
	Outside
C	Motor Side
D	Opposite Motor Side
	No Sensor
E	No Sensor

Limit Sensor

	Outside
3	1 Pc
4	2 Pc
	No Sensor
5	No Sensor

*When the stroke is 25/50/75mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.
2.The sensor trigger device must be installed on both sides of the device.



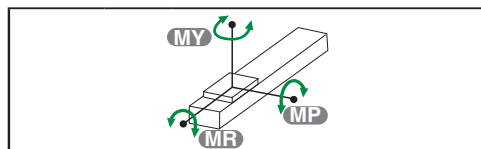
Specification

Item	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7
		Lead		mm	5
		Maximum Rotating speed		rpm	3600
		Maximum linear speed ^{※1}		mm/s	300
		Basic dynamic load rating Ca		N	8042
		Basic static load rating Coa		N	15088
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	kgf	1899
			1000 Km of travel	kgf	881
			10000 Km of travel	kgf	409
		Static horizontal		kg	3490
	Fixed bearing	Basic dynamic load rating Cr		N	2600
		Static load rating Cor		N	4750
	Common Spec	Repeatability		mm	±0.005
		Start torque		N.cm	10
		Allowable input torque		N.m	2.2
		Maximum acceleration		m/s ²	10
		Friction coefficient			0.03
		Stroke (increments)		mm	25-325 (25 increments)
		Ambient temperature ^{※2}		°C	0~+40

※1 Estimated max speed and max payload when using a standard 100W servo motor.
(Confirm max speed and payload at the same time.)

※2 Customized temperature:-20°C~ 80°C. special grease requirement need to follow customization process.)

Static Loading Moment

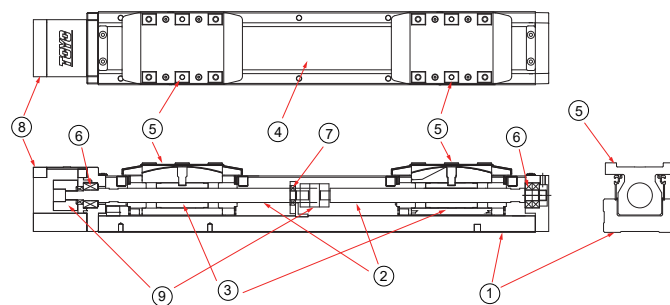


MY	N.m	318
MP	N.m	318
MR	N.m	626

Dynamic Loading Moment

Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



No.	Part Description	Material
1	Housing	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GCH Series

GCH4

GCH5

GCH8

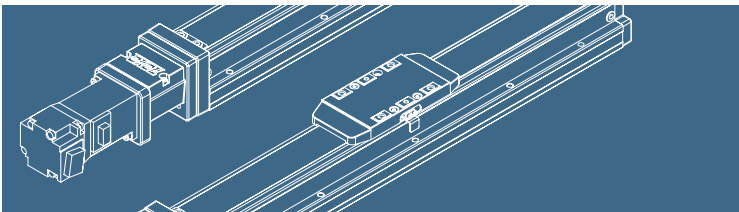
GCH12

GCH5S

GCH8S

▶ Ball Screw Drive



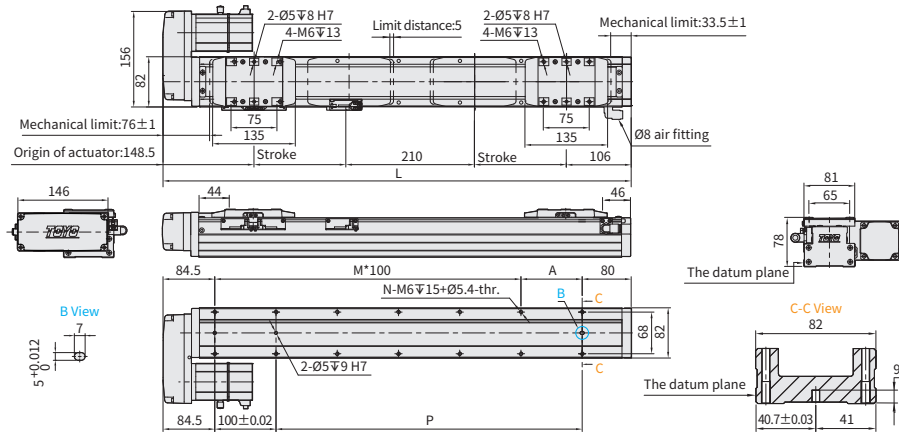


BR

Motor Left Side


Download CAD data at www.toyorobot.com

Unit : mm



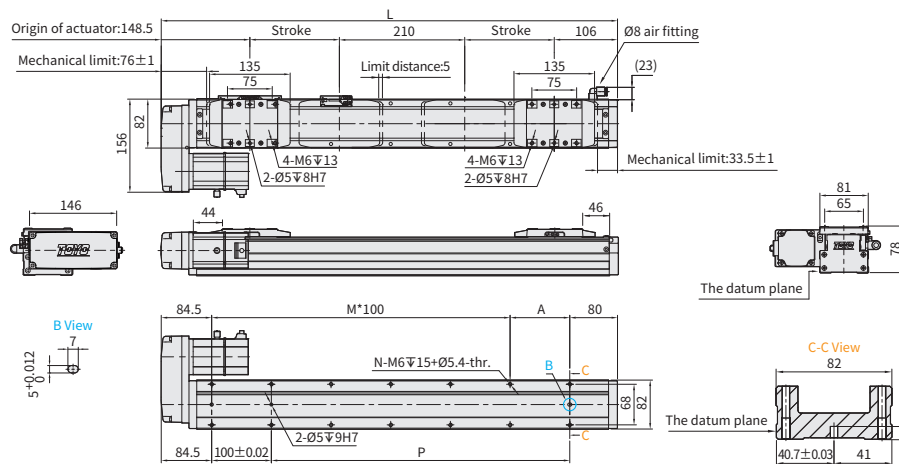
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

BL

Motor Right Side


Download CAD data at www.toyorobot.com

Unit : mm



※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix as a result, suggest that fixing actuator body from the bottom to the top.

GCH Series

GCH4

GCH5

GCH8

GCH12

GCH5S

GCH8S