SINGLE-AXIS ROBOTS

General-purpose single-axis robots can be used for various applications, such as assembly and inspection work.
6 types and 28 models ranging from compact size to long-stroke robots are available.

Various custom specifications are also supported.

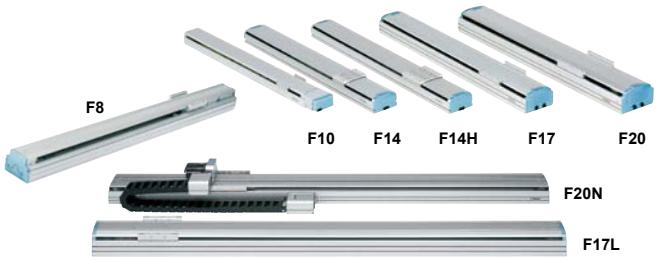
Various custom specifications, such as double-slider and wide slider are also supported.
For details, please consult YAMAHA.

Six types with high reliability and durability

T type Frame-less structure model

- Double appeal of compact body and low price.
- Ideal in applications as an actuator directly installed on an installation base.

F type Model with high rigidity frame

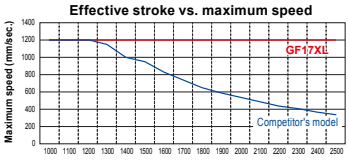


- Tolerable load moment is large and highly resistant to the offset load.
- Suitable for Cartesian robots needing rigid arm or moving arms that move the entire axis.

R type Rotation axis model

- Repeated positioning accuracy +/- 30 sec. (0.0083 °)
- The robot can be used as the rotation axis when combined with other robots or utilized for a wide variety of applications, such as index tables.
- High rigidity and high accuracy by harmonic drive.

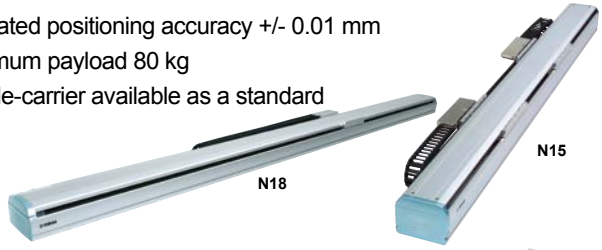
GF type Long stroke model with high rigidity frame

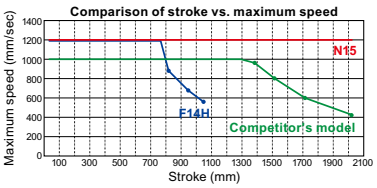


- Movable at 1200 mm/sec. in the whole area without critical speed.
- Suitable for long distance transfer.

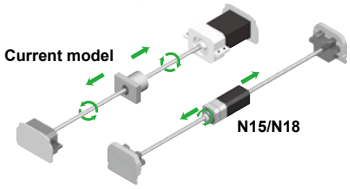
N type Nut rotation type model

- Repeated positioning accuracy +/- 0.01 mm
- Maximum payload 80 kg
- Double-carrier available as a standard

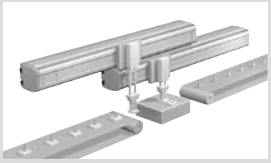




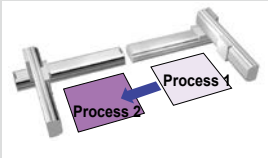
Critical speed is not restricted and high-speed transfer is possible.
Stroke: 2500 mm
Maximum speed: 1200 mm/sec.



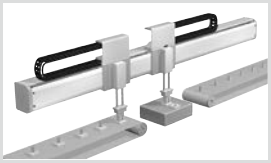
In this structure, the hollow motor is connected to the nut of the ball screw and the nut is rotated with the screw shaft secured to perform the movement.



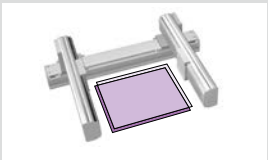
Layout using two conventional single-axis robots



Layout using two conventional cartesian robots

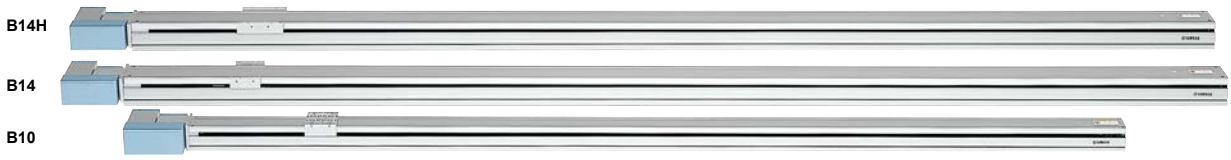


Space saving using double-carrier of N15/N18



Space saving and process integration using double-carrier of N15/N18

B type Timing belt drive model



- Maximum stroke is 3050 mm. Long-distance transfer between the processes is possible.

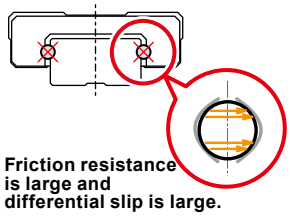
POINT 1

4-row circular arc groove type 2-point contact guide that is resistant to large moment load is adopted.[Note 1]

4-row circular arc groove type 2-point contact guide with less differential slip is used for the linear guide. This guide has less ball differential slip due to its structure when compared to the 2-row Gothic arch type 4-point contact guide and maintains a satisfactory rolling movement even if a large moment load is applied or the installation surface precision is poor. The guide has characteristics that are difficult to malfunction, such as unusual wear and provides excellent reliability.

Note 1. Except for T4L/T4LH and T5L/T5LH

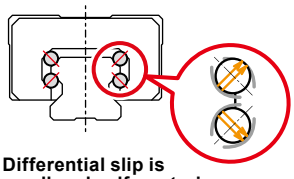
2-row gothic arch groove type 4-point contact guide



Friction resistance is large and differential slip is large.

- Easy to receive adverse effects of installation surface accuracy, friction, and elastic deformation.
- Breakage may occur before expiration of calculation service life.

4-row circular arc groove type 2-point contact guide

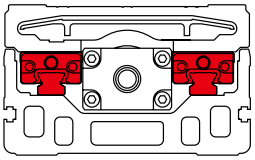


Differential slip is small and self-centering function is high.

- Resistant to alignment changes and moment loads.
- Difficult to break.

F/N/B type [Note 2]

For the F type, N type, and B type, two guide frames are laid out on the high rigidity aluminum extruded material frame. Two bearing units per rail, four bearing units in total, support a large load firmly. As a large moment load is mainly converted into vertical force, the moment applied to one bearing unit becomes small to ensure excellent durability.

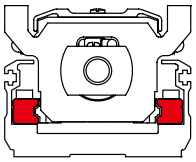


(F14)

Note 2. Except for F8 series/F10/B10.

F8 series

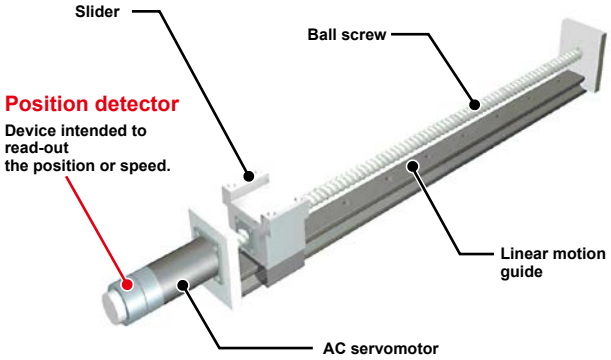
The F8 series uses a newly developed module guide to greatly reduce the cross-sectional area (70 % when compared to F10). The rail is laid out in the full width of the frame to ensure the high rigidity even with compact design. Of course, this series also uses the 4-row circular arc groove type 2-point contact guide.



(F8)

POINT 2

Resolver with excellent environment resistance is used for the position detector.



Optical encoder

- Optical type
- Electronic components are required and structure is complicated.
- Damaged easily by electronic component breakdown, dew condensation on or oil sticking to the disk.

Detection failure

Resolver

- Magnetic type
- Simple structure only with iron core and winding has less potential failure factors.
- Immune to shock and electric noise.

High reliability

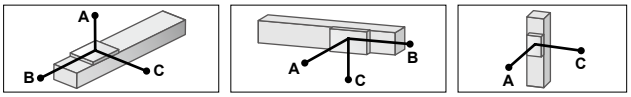
A resolver is used for the position detector. The resolver has a simple and rigid structure without using electronic components and optical elements. Detection problems due to electronic component breakdown, dew condensation on or oil sticking to the disk that may occur in optical encoders do not occur in the resolver. The resolver provides excellent durability. Additionally, as the absolute specifications and incremental specifications use the same mechanical specifications and common controller, desired specifications can be selected only by setting parameters. Furthermore, even when the absolute battery is consumed completely, the robot can still operate as the incremental specifications. So, even if a trouble occurs, the line stop is not needed to ensure the safe production line. Furthermore, the backup circuit has been completely renovated and now has a backup period of one year in the non-energizing state.

POINT 3

Long service life greatly reduces the maintenance cost.

As the acceleration is determined by the weight parameter, the service life can be assured when the weight and position of center of gravity are known.

Allowable overhang Note



Horizontal installation (Unit: mm)

		A	B	C
Lead30	5kg	864	501	383
	15kg	491	156	140
Lead 20	5kg	1292	505	462
	15kg	572	158	151
	30kg	455	73	75
Lead 10	20kg	617	119	127
	40kg	422	53	59
	55kg	420	36	40
Lead 5	50kg	722	42	47
	60kg	657	33	37
	80kg	577	23	25

Wall installation (Unit: mm)

		A	B	C
Lead30	5kg	348	384	776
	15kg	87	40	306
Lead 20	5kg	416	388	1186
	15kg	92	42	386
	30kg	0	0	61
Lead 10	10kg	193	132	910
	20kg	53	0	400
	30kg	0	0	109
Lead 5	10kg	197	133	2360
	20kg	54	0	985
	30kg	0	0	427

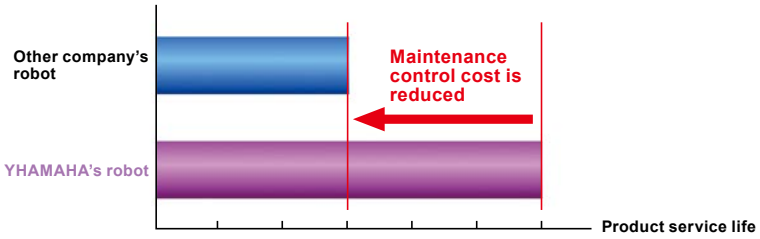
Vertical installation (Unit: mm)

		A	C
Lead 20	1kg	600	600
	2kg	1098	1098
	4kg	545	545
Lead 10	4kg	594	594
	8kg	280	280
	10kg	217	217
Lead 5	10kg	221	221
	15kg	135	135
	20kg	92	92

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

As YAMAHA's robot uses high rigidity ball screw or guide, it provides excellent durability. This greatly contributes to reduction of the customer's maintenance cost.

Cost reduction by high durability



POINT 4

Controllers suitable for applications are prepared.

In addition to the robot program operation and pulse train control, a positioner that is operated by specifying a point number was added to the product lineup. Additionally, multi specifications that control multiple robots using one controller are also supported. You can select an optimal controller suitable for your application.

Program			I/O point trace (Positioner)	Pulse-train control
SR1-X	RCX320	RCX340	TS-X	RDV-X

P.119 P.121 P.121 P.115 P.112

POINT 5

Various custom specifications are supported.

YAMAHA supports custom orders flexibility to meet the customers' various needs.

Addition of free slider	Free slider is added. Various applications, such as rigidity increase or use of two heads are supported.
Wide slider	To increase the slider rigidity, the standard slider is processed to the wide slider.
Specified stroke	A stroke smaller than the minimum stroke may be supported. For details, please consult YAMAHA.
Lead beyond catalog	The lead may be changed to that not stated in the catalog. For details, please consult YAMAHA.
Origin non-motor specifications	Even when not stated in the catalog, the origin may be changed to the non-motor side. For details, please consult YAMAHA.

YAMAHA has a wide variety of custom order results other than those shown above. If you have any requirement or request, please feel free to contact YAMAHA.

Type	Size (mm) Note 1	Model	Lead (mm)	Maximum payload (kg)		Maximum speed (mm/sec.)	Stroke (mm)
				Horizontal	Vertical		
T type Frame-less structure model	W45 × H53	T4L/T4LH	12	4.5	1.2	720	50 to 400
			6	6	2.4	360	
			2	6	7.2	120	
	W55 × H52	T5L/T5LH	20	3	-	1200	50 to 800
			12	5	1.2	800	
			6	9	2.4	400	
	W65 × H56	T6L	20	10	-	1333	50 to 800
			12	12	4	800	
			6	30	8	400	
	W94 × H98	T9 (Standard)	30	15	-	1800	150 to 1050
			20	30	4	1200	
			10	55	10	600	
			5	80	20	300	
		T9H (High thrust)	30	25	-	1800	150 to 1050
			20	40	8	1200	
			10	80	20	600	
			5	100	30	300	
F type Model with high rigidity frame	W80 × H65	F8	20	12	-	1200	150 to 800
			12	20	4	720	
			6	40	8	360	
	W80 × H65	F8L	30	7	-	1800	150 to 1050
			20	20	4	1200	
			10	40	8	600	
			5	50	16	300	
	W80 × H65	F8LH	20	30	-	1200	150 to 1050
			10	60	-	600	
			5	80	-	300	
	W110 × H71	F10 (Standard)	30	15	-	1800	150 to 1050
			20	20	4	1200	
			10	40	10	600	
			5	60	20	300	
		F10H (High thrust)	30	25	-	1800	150 to 1000
			20	40	8	1200	
			10	80	20	600	
			5	100	30	300	
	W136 × H83	F14 (Standard)	30	15	-	1800	150 to 1050
			20	30	4	1200	
			10	55	10	600	
			5	80	20	300	
		F14H (High thrust)	30	25	-	1800	
			20	40	8	1200	
			10	80	20	600	
			5	100	30	300	
	W168 × H100	F17L	50	50	10	2200	1100 to 2050
		F17	40	40	-	2400	200 to 1450
			20	80	15	1200	200 to 1250
			10	120	35	600	
	W202 × H115	F20	40	60	-	2400	200 to 1450
			20	120	25	1200	200 to 1250
			10	-	45	600	
	W202 × H120	F20N	20	80	-	1200	1150 to 2050
GF type	W140 × H91.5	GF14XL	20	45	-	1200	750 to 2000
	W168 × H105.5	GF17XL	20	90	-	1200	850 to 2500
N type Nut rotation type model	W145 × H120	N15 (Single-carrier)	20	50	-	1200	500 to 2000
		N15D (Double-carrier)					250 to 1750
	W180 × H115	N18 (Single-carrier)		80	-		500 to 2500
		N18D (Double-carrier)					250 to 2250
B type Timing belt drive model	W100 × H81	B10	Belt drive	10	-	1875	150 to 2550
	W146 × H94	B14 (Standard)	Belt drive	20	-	1875	150 to 3050
		B14H (High thrust)	Belt drive	30	-	1875	
R type Rotation axis model	-	R5	-	0.12kgm^2	-	360°/sec	360°
		R10		0.36kgm^2	-		
		R20		1.83kgm^2	-		
Clean model	See P.105						

Note 1. The size shows approximate maximum cross sectional size.

Multi-robot MULTI-FLIP/MULTI-PHASER

This robot has multi specifications that control multiple robots using one controller.

Advantages of control with multi-axis controller

- Sequence control is easy. System upgrades are easy at less expensive price.
- Compact and space saving when compared to the operation with multiple single-axis controllers.
- More advanced control is possible.
- RCX320, RCX340 provide mixed control of the FLIP-X series and PHASER series (linear single-axis).

Multi-robot ordering method

MLTX Note 1	–	1st unit Note 2	–	2nd unit Note 2	–	3rd unit Note 2	• • •	–		–		–	
Multi-robot model prefix	–	1st unit robot type	–	2nd unit robot type	–	3rd unit robot type		–	Cable length	–	Controller	–	Controller option
									3K: 3.5m		RCX320		
									5K: 5m		RCX340		
									10K: 10m				

Up to 16 units can be controlled.

Note 1. When ordering a multi-robot, prefix "MLTX" to the top of the order model.
Note 2. Select either MULTI-FLIP or MULTI-PHASER shown below.
Note 3. For details about the controller and controller option models, please refer to relevant page of each controller.

Robot settings

Multiple-robot setting

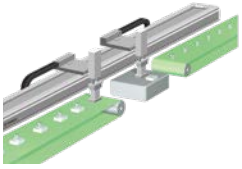
Multiple-robot setting and multi-task program allow for asynchronous independent movements. As the auxiliary axis setting is used together, more free axis assignment can be made.

Main auxiliary axis setting

This auxiliary axis setting is used when it is inconvenient that two axes move simultaneously by the MOVE command. The axis set for the main auxiliary axis does not operate by the MOVE command and it operates only by the DRIVE command (movement command in axis units). This setting is recommended for the axis that needs to be operated asynchronously from the main robot.

Double-carrier

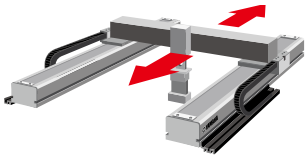
In robot types that the motor runs separately, such as linear motor single-axis PHASER series or N type (nut rotation type) of FLIP-X series, two motors can be added to one axis.



PHASER is available for 3 or more carriers by special order.

Dual setting

This setting is used when performing the dual drive (2-axis synchronous control). This setting is used when the gantry type Cartesian robot with a long Y-axis stroke stabilizes the high acceleration/deceleration or when a high load or high thrust is needed.



Applicable controllers

Name		1 to 2 axes controller RCX320	1 to 4 axes controller RCX340
Appearance		P.121	P.121
Position detection		Incremental/Absolute	
Control model		FLIP-X and PHASER can be mixed.	
Maximum number of programs		100 programs	
Maximum number of points		30,000 points	
Number of input/output points	Standard	Dedicated input 8 points/dedicated output 9 points General-purpose input 16 points/general-purpose output 8 points	
	Expansion	24 general-purpose inputs and 16 general-purpose outputs (per board. Up to 3 boards can be expanded.)	
Network option		CC-Link, DeviceNet™, EtherNet/IP™, Ethernet, PROFIBUS, PROFINET, EtherCAT	

MULTI-FLIP

Type	Model	Lead (mm)	Stroke (mm)
T type Frame-less structure model	T4L/T4LH	12	50 to 400
		6	
		2	
	T5L/T5LH	20	50 to 800
		12	
		6	
	T6L	20	50 to 800
		12	
		6	
	T9 (Standard)	30	150 to 1050
		20	
		10	
		5	
	T9H (High thrust)	30	150 to 1050
		20	
		10	
		5	
F type Model with high rigidity frame	F8	20	150 to 800
		12	
		6	
	F8L	30	150 to 1050
		20	
		10	
		5	
	F8LH	20	150 to 1050
		10	
		5	
	F10 (Standard)	30	150 to 1050
		20	
		10	
		5	
	F10H (High thrust)	30	150 to 1000
		20	
		10	
		5	
	F14 (Standard)	30	150 to 1050
		20	
		10	
		5	
	F14H (High thrust)	30	
		20	
		10	
		5	
	F17L	50	1100 to 2050
	F17	40	200 to 1450
		20	200 to 1250
		10	
	F20	40	200 to 1450
		20	200 to 1250
		10	
	F20N	20	1150 to 2050
GF type	GF14XL	20	750 to 2000
	GF17XL	20	850 to 2500
N type Nut rotation type model	N15 (Single-carrier)	20	500 to 2000
	N15D (Double-carrier)		250 to 1750
	N18 (Single-carrier)		500 to 2500
	N18D (Double-carrier)		250 to 2250
B type Timing belt drive model	B10	Belt drive	150 to 2550
	B14 (Standard)	Belt drive	150 to 3050
	B14H (High thrust)	Belt drive	
R type Rotation axis model	R5	-	360°
	R10		
	R20		

MULTI-PHASER

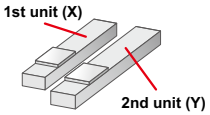
Type	Model	Carrier	Stroke (mm)
MF type Flat type with core Linear motor specifications	MF7	Single	100 to 4000
	MF7D	Double	100 to 3800
	MF15	Single	300 to 4000
	MF15D	Double	100 to 3800
	MF20	Single	150 to 4050
	MF20D	Double	150 to 3850
	MF30	Single	100 to 4000
	MF30D	Double	150 to 3750
	MF75	Single	1000 to 4000
	MF75D	Double	680 to 3680

Examples of multi-robot ordering methods

Separate single axes

<Example> F14H and F10 are installed separately.

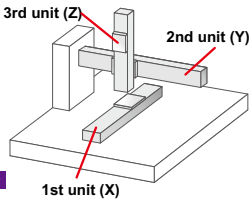
MLTX - F14H - 20 - U - 500 1st unit
- F10 - 20 - 300 2nd unit
- 5K - RCX340 - 2 - N - NS - 2 Controller



2 axes + 1 axis

<Example> T6 is installed on the base for the 1st axis, C6 is secured to the upper portion for the 2nd axis, and CH4 is secured to the upper portion for the 3rd axis to assemble the C6 and C4H to the XZ. (Either 2 axes + 1 axis or 3 axes simultaneous control can be made by the setting.)

MLTX - T6L - 6 - 300 1st unit
- C6L - 6 - 300 2nd unit
- C4HL - 6 - BK - 100 3rd unit
- 3K - RCX340 - 3 - N - NS - 3 Controller



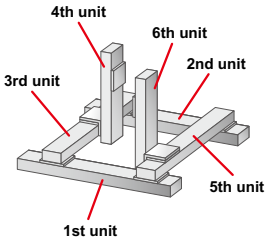
Note. When the customer combines each axis, it is recommended to use the cable terminal (relay cable) for the wiring among axes. For details about cable terminal, please contact YAMAHA.

Double-carrier/dual drive (2-axis simultaneous control)

Example of 8-axis control

<Example> Two double-carriers of the MF30 are arranged in parallel and two MF20 installed on the top are moved by the dual-drive.
T6 is attached to each tip of the MF20 and the robots are controlled using two controllers.

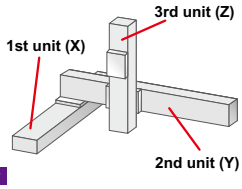
MLTX - MF30D - H - L - 950 1st unit
- MF30D - H - L - 950 2nd unit
- MF20 - H - 1350 3rd unit
- T6L - 6 - BK - 100 4th unit
- MF20 - H - 1350 5th unit
- T6L - 6 - BK - 100 6th unit
- 3K - RCX340 - 4 - N - YM1 - NS - 0 - RCX340 - 4 - N - YS - 2 Controller



3 axes combination

<Example> C17L, C14H, and C14H are used for the X-axis, Y-axis, and Z-axis, respectively to form a 3-axis XYZ combination.

MLTX - C17L - 50 - Z - 1500 1st unit
- C14H - 20 - 450 2nd unit
- C14H - 10 - BK - 150 3rd unit
- 3K - RCX340 - 3 - N - NS - 3 Controller

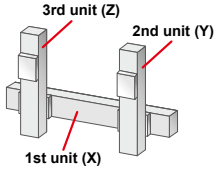


Double-carrier

Example of 4-axis control

<Example> Two T6 are assembled to the double-carrier of the MF20A, and they are used as XZ type and controlled using one controller.

MLTX - MF20AD - W - M - 850 1st unit
- T6 - 12 - BK - 100 2nd unit
- T6 - 12 - BK - 100 3rd unit
- 3K - RCX240S - N1 - B Controller



Note. For the double-carrier, since one robot occupies two axes of the controller, the number of robots may differ from the number of controllable axes.

CAUTION

RCX340 requires no regenerative unit.

Conditions needing regenerative unit on multi-robot

- The total motor capacity exceeds 450 W.
- The total motor capacity of the vertical axis exceeds 240 W.
- The B14H performs the operation at a maximum speed of more than 1250 mm/s.
- When the vertical axis is 240 W or less, the conditions shown below are satisfied.
  - There is a 200 W-vertical axis.
  - A 100 W-vertical axis has a stroke of 700 mm or more.
  - There are two 100 W-vertical axes with a 5 mm-lead.

FLIP-X terminology

High lead

This term indicates models supporting ball screw leads that exceed the standard lead (12 mm or 20 mm). (The standard lead of the F17L and C17L is 50.)

Origin on non-motor side

This term indicates models that are applicable to the origin non-motor specifications as standard. The origin on the non-motor side in the standard state is not supported with a lead not stated in the catalog. If special specifications are needed, please consult YAMAHA.

Maximum speed

This term indicates the maximum transfer speed. YAMAHA's single-axis robots can transfer a workpiece at this speed regardless of the transfer weight as long as it is within the maximum payload. However, as the workpiece is heavier, the acceleration/deceleration curve becomes gentle. If the movement distance is short, the speed does not reach the maximum speed stated in the catalog.

CAUTION
When the stroke of the ball screw drive type is long, noise or vibration is produced due to resonance of the ball screw if moved at the maximum speed. If this happens, lower the speed to that stated in the note column. (It is also possible to lower the transfer speed of the entire program using the SPEED setting or make the adjustment for each movement command.)

Maximum payload

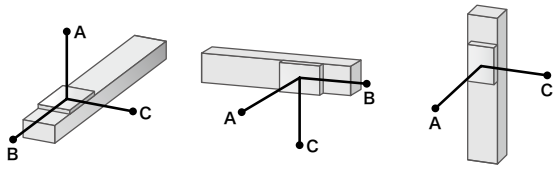
This term indicates the maximum weight that can be loaded on the slider and transferred. Select an appropriate model so that the total weight of the customer's tools (air cylinder or chuck) and workpiece is less than this data. When the center of gravity of the tool or workpiece is offset from the center of the slider, the allowable overhang needs to be taken into consideration. Additionally, when entering the total weight of the tool and workpiece for the payload parameter of the controller, optimal acceleration/deceleration and servo parameter are automatically set.

Rated thrust

This term indicates the force to be applied in the slider advancing direction in the slider stationary (hold) state. When using vertically, the weight of the loaded workpiece is subtracted from this value (when the force is applied downward from the top). The slider can move only at a low speed (approximately 10 % of the maximum speed), but this value becomes lower than the specification value. Additionally, the type B of the timing belt drive cannot be used for applications, in which thrust is applied.

Allowable overhang

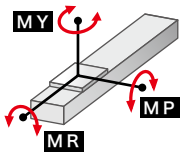
This term indicates an allowable overhang of an object to be transferred. In the specification data, this indicates the distance from the center of the top face of the slider to the center of gravity of an object to be transferred by the weight. This value is determined according to the service life of the linear guide. Under normal operation conditions[Note], the 90 %-service life of the linear guide is 10,000 km or more if gravity centers of the workpiece and tool are kept within the allowable overhang. When using with an overhang amount exceeding the specification data, it is necessary to install a separate support guide or restrict operating conditions (speed, acceleration) so that a load is not applied to the linear guide of the single-axis robot. For detail, please consult YAMAHA.



Note. Speed, acceleration 100 % (It is preconditioned that the weight parameters are set correctly.)
There shall be no impact load or excessive vibration during operation. Additionally, the alignment is correct.

Static tolerance moment

This term indicates the load moment applied to the slider in the robot stationary state.



Critical speed

When the stroke of the ball screw drive type is long, noise or vibration is produced due to resonance of the ball screw if moved at the maximum speed. If this happens, lower the speed to that stated in the note column. (It is also possible to lower the transfer speed of the entire program using the SPEED setting or make the adjustment for each movement command.)

SINGLE-AXIS ROBOTS

FLIP-X SERIES

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FLIP-X SPECIFICATION SHEET

Type	Model	Motor output (W)	Repeat-ability (mm)	Lead (mm)	Payload (kg) Hori-zontal	Payload (kg) Ver-tical	Stroke (mm) and maximum speed (mm/s) 50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
T type	T4L/ T4LH	30	+/-0.02	12	4.5	1.2	720																			
				6	6	2.4	360																			
				2	6	7.2	120																			
	T5L/ T5LH	30	+/-0.02	20	3	–	1200												960	840	720	660				
				12	5	1.2	800												640	560	480	440				
				6	9	2.4	400												320	280	240	220				
	T6L	60	+/-0.02	20	10	–	1333												1133	1000	866	800				
				12	12	4	800												680	600	520	480				
				6	30	8	400												340	300	260	240				
	T9	100	+/-0.01	30	15	–			1800												1440		1170		900	
				20	30	4			1200												960		780		600	
				10	55	10			600												480		390		300	
				5	80	20			300												240		195		150	
	T9H	200	+/-0.01	30	25	–			1800												1440		1170		900	
				20	40	8			1200												960		780		600	
				10	80	20			600												480		390		300	
				5	100	30			300												240		195		150	
F type	F8	100	+/-0.02	20	12	–			1200									1080	900	780	720	600				
				12	20	4			720									648	540	468	432	360				
				6	40	8			360									324	270	234	216	180				
	F8L	100	+/-0.01	30	7	–			1800											1530	1350	1170	1080	990	900	810
				20	20	4			1200											1020	900	780	720	660	600	540
				10	40	8			600											510	450	390	360	330	300	270
				5	50	16			300											255	225	195	180	165	150	135
	F8LH	100	+/-0.01	20	30	–			1200										1020	900	780	720	660	600	540	480
				10	60	–			600										510	450	390	360	330	300	270	240
				5	80	–			300										255	225	195	180	165	150	135	120
	F10	100	+/-0.01	30	15	–			1800												1440		1170		900	
				20	20	4			1200												960		780		600	
				10	40	10			600												480		390		300	
				5	60	20			300												240		195		150	
	F10H	200	+/-0.01	30	25	–			1800										1440	1260	1080	900		720		630
				20	40	8			1200										960	840	720	600		480		420
				10	80	20			600										480	420	360	300		240		210
				5	100	30			300										240	210	180	150		120		105
	F14	100	+/-0.01	30	15	–			1800												1440		1170		900	
				20	30	4			1200												960		780		600	
				10	55	10			600												480		390		300	
				5	80	20			300												240		195		150	
	F14H	200	+/-0.01	30	25	–			1800												1440		1170		900	
				20	40	8			1200												960		780		600	
				10	80	20			600												480		390		300	
				5	100	30			300												240		195		150	
	F17	400	+/-0.01	40	40	–				2400													1920		1680	
				20	80	15				1200													960		840	
				10	120	35				600													480		420	
	F17L	600	+/-0.02	50	50	10																				
	F20	600	+/-0.01	40	60	–				2400													1920		1680	
				20	120	25				1200													960		840	
				10	–	45				600													480		420	
	F20N	400	+/-0.04	20	80	–																				
GF type	GF14XL	200	+/-0.01	20	45	–																				
	GF17XL	400	+/-0.01	20	90	–																				
N type	N15	400	+/-0.01	20	50	–																				
	N15D	400	+/-0.01	20	50	–																			1200	
	N18	400	+/-0.01	20	80	–																				
	N18D	400	+/-0.01	20	80	–																				
B type	B10	100	+/-0.04	–	10	–																				
	B14	100	+/-0.04	–	20	–																				
	B14H	200	+/-0.04	–	30	–																				

Type	Model	Motor output (W)	Repeat-ability (sec)	Speed reduction ratio	Maximum speed (°/sec)	Detailed info page
R type	R5	50	+/-30	1/50	360	P.332
	R10	100	+/-30	1/50	360	P.333
	R20	200	+/-30	1/50	360	P.334

⚠ Precautions for use

■ **Handling**
Fully understand the contents stated in the "FLIP-X Series User's Manual" and strictly observe the handling precautions during operation.

■ **Allowable installation ambient temperature**
0 to 45 ºC

1050	1100	1150	1200	1250	1300	1350	1400	1450	1500 to 1600	1650	1700	1750	1800	1850 to 2000	2050	2150	2250	2350	2400 to 2500	2550	2650 to 3050	Detailed info page
																						T4L:P.294 T4LH:P.295
																						T5L:P.296 T5LH:P.297
																						P.298
810																						P.299
540																						
270																						
135																						
810																						P.300
540																						
270																						
135																						
																						P.301
720																						P.302
480																						
240																						
120																						
420																						P.304
210																						
105																						
810																						P.305
540																						
270																						
135																						
																						P.306
810																						P.308
540																						
270																						
135																						
810																						P.309
540																						
270																						
135																						
1440		1200		960		840		720														P.311
720		600		480																		
360		300		240																		
	2200			1900				1500			1200			900	800							P.313
1440		1200		960		840		720														P.315
720		600		480																		
360		300		240																		
		1200																				P.317
1200																						P.310
1200																						P.314
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																						P.320
1200																						P.322
1200																						P.324
1875																						P.326
1875																						P.328
1875																						P.330

Robot ordering method description

In the order format for the YAMAHA single-axis robots FLIP-X series, the notation (letters/numbers) for the mechanical section is shown linked to the controller section notation.

[Example]

● Mechanical ▶ F8

- Lead ▷ 20mm
- Brake ▷ Yes
- Origin position ▷ Non-motor side
- Grease ▷ Standard
- Stroke ▷ 500mm
- Cable length ▷ 3.5m

● Controller ▶ SR1-X

- Usable for CE ▷ Not required
- Regenerative unit ▷ Not required
- I/O selection ▷ NPN
- Battery ▷ With battery

● Ordering method

F8-20-BK-Z-500-3L-SR1-X05-N-B

Mechanical section — Controller section

This page describes using the ordering form for mechanical components.
To find detailed controller information see the controller page.

SR1-X▶ P.618, TS-X▶ P.592, RDV-X▶ P.606

Mechanical section

● T type / F type (F8 / F8L / F8LH)

①Model	
T4L	F8
T4LH	F8L
T5L	F8LH
T5LH	
T6L	
T9	
T9H	

③Lead designation	
30	30mm
20	20mm
12	12mm
10	10mm
6	6mm
5	5mm
2	2mm

④Brake	
No entry	No brakes
BK	Brakes provided

⑩Option					
Origin position change	None	Standard	Grease type	None	Standard
	Z	Non-motor side		GC	Clean

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

● F type (Except F8 / F8L / F8LH)

①Model	
F10	F20
F10H	F20N
F14	
F14H	
F17	
F17L	

③Lead designation	
50	50mm
40	40mm
30	30mm
20	20mm
10	10mm
5	5mm

④Brake	
No entry	No brakes
BK	Brakes provided

⑥Cable entry location	
No entry	Standard (S)
U	From the top
R	From the right
L	From the left

⑩Option					
Origin position change	None	Standard	Grease type	None	Standard
	Z	Non-motor side		GC	Clean

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

● GF type

①Model
GF14XL
GF17XL

②Model	
S	Straight model

⑤Take out direction	
H	Horizontal installation

③Lead designation	
20	20mm

⑥Cable entry location	
No entry	Standard (S)
U	From the top
R	From the right
L	From the left

⑩Option							
Origin position change		Frame		Grease type			
None	Standard	No entry	Standard (Spot facing)	None	Standard		
Z	Non-motor side	T	Tapping	GC	Clean		

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

● N type (Single carriage)

①Model
N15
N18

③Lead designation	
20	20mm

⑦Cable carrier entry location	
RH	Horizontal, right
LH	Horizontal, left
RW	Wall, right
LW	Wall, left

⑧Cable carrier specification	
S	Standard cable carrier
M	Optional cable carrier

⑩Option					
Origin position change	None	Standard	Grease type	None	Standard
	Z	Non-motor side		GC	Clean

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

● N type (Double carriage)

①Model
N15D
N18D

③Lead designation	
20	20mm

⑤Take out direction	
H	Horizontal installation
W	Wall hanging installation

⑧Cable carrier specification	
S	Standard cable carrier
M	Optional cable carrier

⑩Option		
Grease type	None	Standard
	GC	Clean

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

● B type

①Model
B10
B14
B14H

⑨Motor installation direction	
L	Motor leftward, horizontal position
R	Motor rightward, horizontal position
LU	Motor leftward, upper position
RU	Motor rightward, upper position
LD	Motor leftward, lower position
RD	Motor rightward, lower position

⑩Option		
Grease type	None	Standard
	GC	Clean

⑪Stroke

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

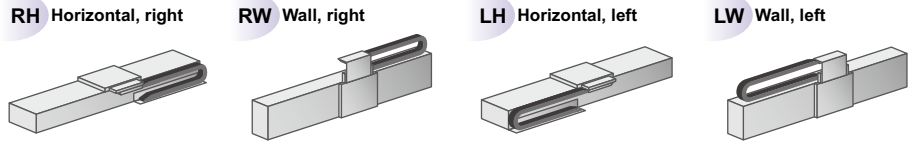
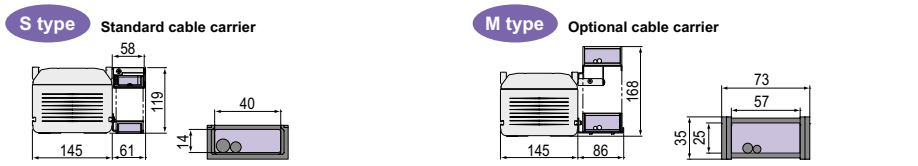
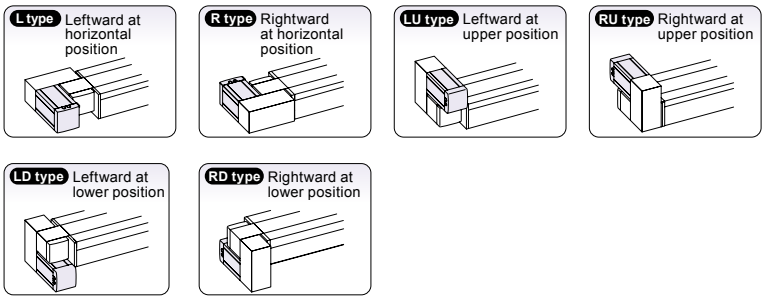
● R type

①Model
R5
R10
R20

⑥Cable entry location	
No entry	Standard (S)
B	From the side

⑫Cable length	
3L	3.5m
5L	5m
10L	10m
3K	3.5m
5K	5m
10K	10m

Robot ordering method terminology

① **Model**	Enter the robot unit model.
② **Model**	Straight model only (GF type)
③ **Lead designation**	Select the ball screw lead.
④ **Brake**	Select Brake or No-brake. **Horizontal specs** : No-brake **Vertical specs** : with Brake
⑤ **Take out direction**	Select what direction to install the robot (horizontal / wall mounted).
⑥ **Cable entry location**	Select what direction to extract the robot cable connecting the robot and controller.
⑦ **Cable carrier entry location**	Select what direction to install the robot (horizontal / wall mounted) and what direction to extract the robot cable carrier.  Note. Be sure to install in the direction as specified (in cable carrier take-out direction drawing and various specification drawings) individually. Installation in any other way will cause a failure. For requirement of installation in any way other than the above standard installation, please consult YAMAHA as special arrangement will be available.
⑧ **Cable carrier specification**	Select the cable carrier size for the customer wiring.  Note. Cannot pass more than 3 urethane hoses (ϕ6 x 4). Space for optional cable for users
⑨ **Motor installation direction**	Select what direction to install the motor. 
⑩ **Option**	**Origin position change**: Origin point position can be changed.
	Frame: Hole to secure the frame can be selected. (Spot facing/tapping)
	Grease type: Clean grease can be selected.
⑪ **Stroke**	Select the stroke for the robot movement range.
⑫ **Cable length**	Select the robot cable length to use for connecting the robot to the controller. **3L** : 3.5m (Standard) **5L** : 5m **10L** : 10m **1K** : 1m (You can select a 1m cable only when you use T4L/T5L. Flexible cable) **3K** : 3.5m (Flexible cable) **5K** : 5m (Flexible cable) **10K** : 10m (Flexible cable)

T4L

● Origin on the non-motor side is selectable

● Controller: 24V

Ordering method

T4L - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - ERCD - [ ]

Model	Lead designation	Brake	Origin position change	Grease type	Stroke	Cable length Note 1	Controller	I/O connector specification
	12: 12mm 6: 6mm 2: 2mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	50 to 400 (50mm pitch)	1K: 1m 3K: 3.5m 5K: 5m 10K: 10m		CN1: I/O flat cable 1m (Standard) CN2: Twisted-pair cable 2m (pulse train function)

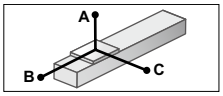
Note 1. The robot cable is flexible and resists bending. See P.692 for details on robot cable.

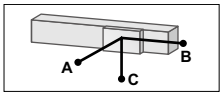
Specifications

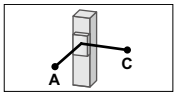
AC servo motor output (W)		30		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw ϕ8		
Ball screw lead (mm)		12	6	2
Maximum speed (mm/sec)		720	360	120
Maximum payload (kg)	Horizontal	4.5	6	6
	Vertical	1.2	2.4	7.2
Rated thrust (N)		32	64	153
Stroke (mm)		50 to 400 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+198		
	Vertical	Stroke+236		
Maximum dimensions of cross section of main unit (mm)		W45 × H53		
Cable length (m)		Standard: 3.5 / Option: 1,5,10		
Linear guide type		2 rows of gothic arch grooves × 1 rail		
Position detector		Resolvers Note 2		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 12	2kg	433	87	180
	4.5kg	223	33	75
Lead 6	3kg	515	58	135
	6kg	340	26	62
Lead 2	3kg	1585	58	142
	6kg	755	27	66

Wall installation (Unit: mm)

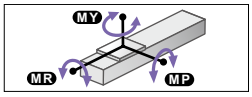
		A	B	C
Lead 12	2kg	149	54	376
	4.5kg	50	1	148
Lead 6	3kg	107	24	380
	6kg	31	0	195
Lead 2	3kg	113	24	1180
	6kg	32	0	440

Vertical installation (Unit: mm)

		A	C
Lead 12	1.2kg	125	125
Lead 6	2.4kg	56	57
Lead 2	3kg	41	42
	7.2kg	0	0

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 300mm stroke models.

Static loading moment



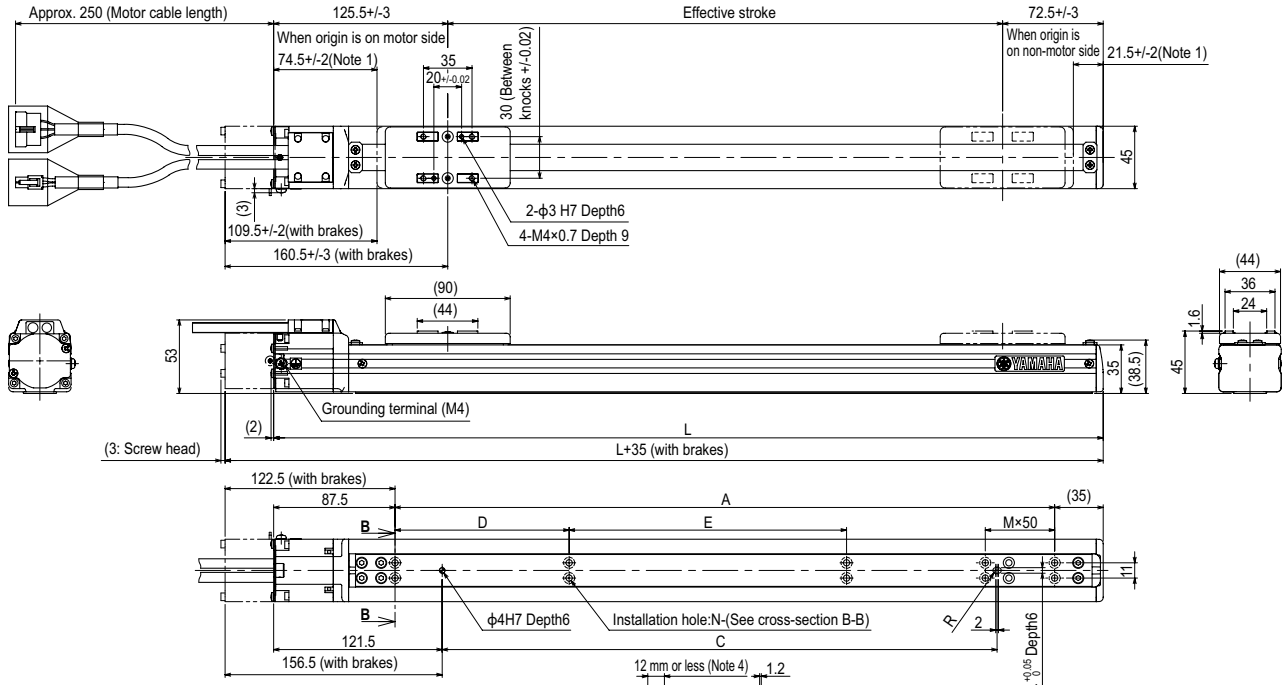
(Unit: N·m)

MY	MP	MR
15	19	18

Controller

Controller	Operation method
ERCD	Pulse train control / Programming / I/O point trace / Remote command / Operation using RS-232C communication

T4L



Effective stroke		50	100	150	200	250	300	350	400
L		248	298	348	398	448	498	548	598
A		125.5	175.5	225.5	275.5	325.5	375.5	425.5	475.5
C		50	100	150	200	250	300	350	400
D		-	-	-	-	125.5	125.5	125.5	125.5
E		-	-	-	-	-	-	200	200
M		0	1	2	3	0	1	0	1
N		4	6	8	10	6	8	8	10
Weight (kg) Note 3		1.1	1.2	1.4	1.5	1.6	1.7	1.8	1.9
Maximum speed for each stroke (mm/sec)	Lead 12	720							
	Lead 6	360							
	Lead 2	120							

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Minimum bend radius of motor cable is R30.
Note 3. Weight of models with no brake. The weight of brake-attached models is 0.2 kg heavier than the models with no brake shown in the table.
Note 4. The under-head length of the hex socket-head bolt (M4×0.7) to be used for the installation work is 12mm or less.
Note 5. External view of T4LH is identical to T4L.

T4LH

● Origin on the non-motor side is selectable

● Controller: 100V / 200V

Ordering method

T4LH - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake	Origin position change	Grease type	Stroke	Cable length Note 1
	12: 12mm 6: 6mm 2: 2mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	50 to 400 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X **05** [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X **2** **05**

Driver	Power-supply voltage	Driver: Power capacity
	2: AC200V	05: 100W or less

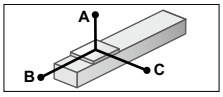
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

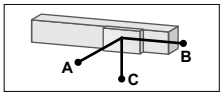
Specifications

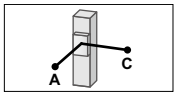
AC servo motor output (W)		30		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw ϕ8		
Ball screw lead (mm)		12	6	2
Maximum speed (mm/sec)		720	360	120
Maximum payload (kg)	Horizontal	4.5	6	6
	Vertical	1.2	2.4	7.2
Rated thrust (N)		32	64	153
Stroke (mm)		50 to 400 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+198		
	Vertical	Stroke+236		
Maximum dimensions of cross section of main unit (mm)		W45 × H53		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		2 rows of gothic arch grooves × 1 rail		
Position detector		Resolvers Note 2		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 12	2kg	341	90	174
	4.5kg	172	37	72
Lead 6	3kg	355	58	134
	6kg	235	27	62
Lead 2	3kg	1105	59	142
	6kg	520	27	66

Wall installation (Unit: mm)

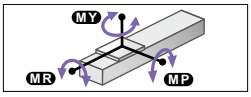
		A	B	C
Lead 12	2kg	140	73	300
	4.5kg	47	22	119
Lead 6	3kg	105	42	260
	6kg	31	11	135
Lead 2	3kg	113	42	810
	6kg	32	11	305

Vertical installation (Unit: mm)

		A	C
Lead 12	1.2kg	122	121
Lead 6	2.4kg	56	57
Lead 2	3kg	41	42
	7.2kg	0	0

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 300mm stroke models.

Static loading moment



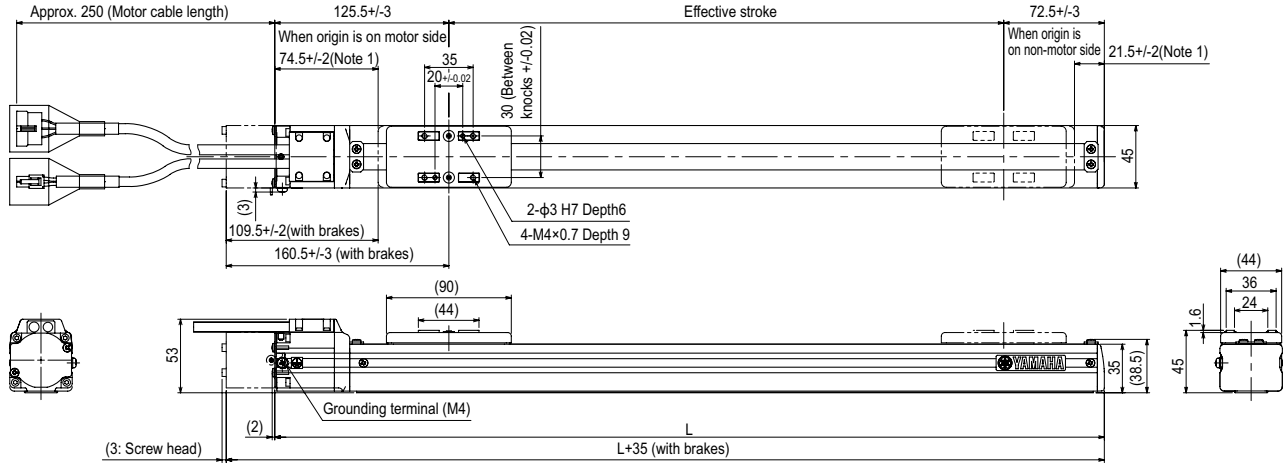
(Unit: N·m)

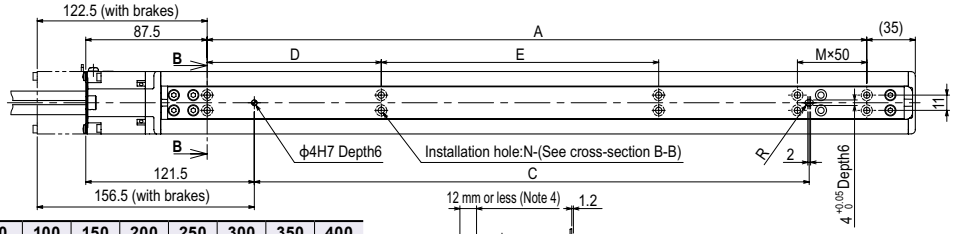
MY	MP	MR
15	19	18

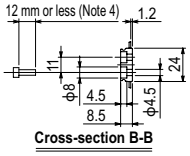
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205	Pulse train control

T4LH







Cross-section B-B

Effective stroke		50	100	150	200	250	300	350	400
L		248	298	348	398	448	498	548	598
A		125.5	175.5	225.5	275.5	325.5	375.5	425.5	475.5
C		50	100	150	200	250	300	350	400
D		-	-	-	-	125.5	125.5	125.5	125.5
E		-	-	-	-	-	-	200	200
M		0	1	2	3	0	1	0	1
N		4	6	8	10	6	8	8	10
Weight (kg) Note 3		1.1	1.2	1.4	1.5	1.6	1.7	1.8	1.9
Maximum speed for each stroke (mm/sec)	Lead 12	720							
	Lead 6	360							
	Lead 2	120							

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Minimum bend radius of motor cable is R30.
Note 3. Weight of models with no brake. The weight of brake-attached models is 0.2 kg heavier than the models with no brake shown in the table.
Note 4. The under-head length of the hex socket-head bolt (M4×0.7) to be used for the installation work is 12mm or less.
Note 5. External view of T4LH is identical to T4L.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

T5L

High lead: Lead 20 **Origin on the non-motor side is selectable**

Controller: 24V

Ordering method

T5L -	[ ] -	[ ] -	[ ] -	[ ] -	[ ] -	[ ] -	ERCD -	[ ]
Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 2	Controller	I/O connector specification
	20: 20mm 12: 12mm 6: 6mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	50 to 800 (50mm pitch)	1K: 1m 3K: 3.5m 5K: 5m 10K: 10m		CN1: I/O flat cable 1m (Standard) CN2: Twisted-pair cable 2m (pulse train function)

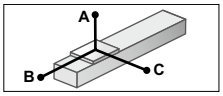
Note 1. The model with a lead of 20mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is flexible and resists bending. See P.692 for details on robot cable.

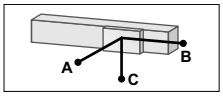
Specifications

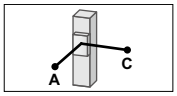
AC servo motor output (W)		30		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw φ12		
Ball screw lead (mm)		20	12	6
Maximum speed Note 2 (mm/sec)		1200	800	400
Maximum payload (kg)	Horizontal	3	5	9
	Vertical	-	1.2	2.4
Rated thrust (N)		19	32	64
Stroke (mm)		50 to 800 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+201.5		
	Vertical	Stroke+239.5		
Maximum dimensions of cross section of main unit (mm)		W55×H52		
Cable length (m)		Standard: 3.5 / Option: 1,5,10		
Linear guide type		2 rows of gothic arch grooves × 1 rail		
Position detector		Resolvers Note 3		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 20	1kg	600	323	683
	3kg	675	103	247
Lead 12	2kg	1170	159	406
	5kg	555	59	155
Lead 6	3kg	1498	104	294
	9kg	628	31	89

Wall installation (Unit: mm)

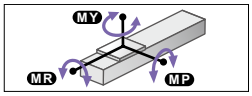
		A	B	C
Lead 20	1kg	600	291	600
	3kg	215	73	589
Lead 12	2kg	368	127	1082
	5kg	127	30	449
Lead 6	3kg	263	73	970
	9kg	54	0	400

Vertical installation (Unit: mm)

		A	C
Lead 12	1.2kg	242	240
Lead 6	2.4kg	113	113

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600mm stroke models.

Static loading moment



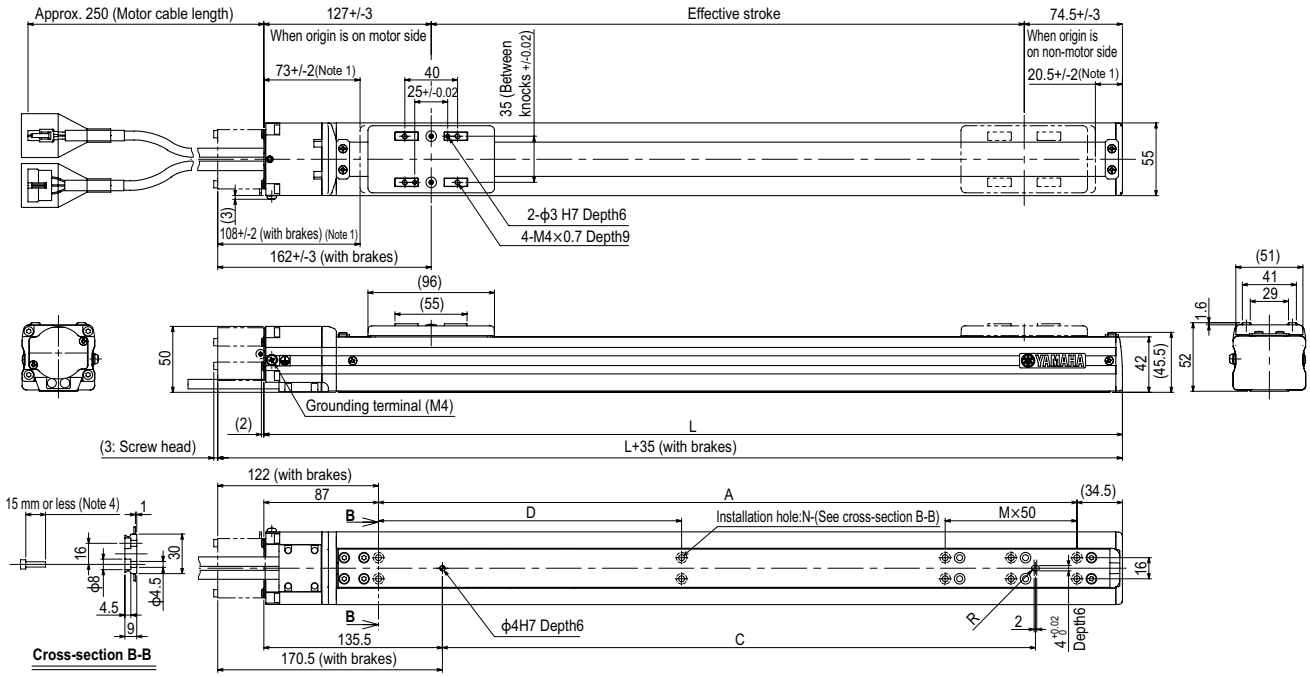
(Unit: N·m)

MY	MP	MR
30	34	40

Controller

Controller	Operation method
ERCD	Pulse train control / Programming / I/O point trace / Remote command / Operation using RS-232C communication

T5L



Effective stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		251.5	301.5	351.5	401.5	451.5	501.5	551.5	601.5	651.5	701.5	751.5	801.5	851.5	901.5	951.5	1001.5
A		130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880
C		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
D		-	-	-	-	-	-	230	230	230	230	230	230	230	230	230	230
M		0	1	2	3	4	5	0	1	2	3	4	5	6	7	8	9
N		4	6	8	10	12	14	6	8	10	12	14	16	18	20	22	24
Weight (kg) Note 3		1.7	1.8	2.0	2.2	2.3	2.5	2.7	2.8	3.0	3.2	3.3	3.5	3.7	3.8	4.0	4.2
Maximum speed for each stroke Note 5 (mm/sec)	Lead 20	1200												960	840	720	660
	Lead 12	800												640	560	480	440
	Lead 6	400												320	280	240	220
	Speed setting	-												80%	70%	60%	55%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Minimum bend radius of motor cable is R30.
Note 3. Weight of models with no brake. The weight of brake-attached models is 0.2 kg heavier than the models with no brake shown in the table.
Note 4. The under-head length of the hex socket-head bolt (M4×0.7) to be used for the installation work is 15mm or less.
Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed).
In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table at the left.
Note 6. External view of T5LH is identical to T5L.

Controller ERCD ▶ 612

T5LH

● High lead: Lead 20 ● Origin on the non-motor side is selectable

● Controller: 100V / 200V

Ordering method

T5LH - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] -

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 2
	20: 20mm 12: 12mm 6: 6mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	50 to 800 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05**

Driver	Power-supply voltage	Driver: Power capacity
	2: AC200V	05: 100W or less

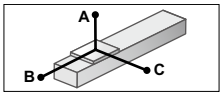
Note 1. The model with a lead of 20mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

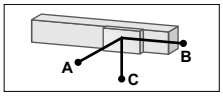
Specifications

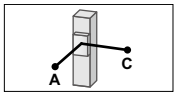
AC servo motor output (W)		30		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw ϕ12		
Ball screw lead (mm)		20	12	6
Maximum speed Note 2 (mm/sec)		1200	800	400
Maximum payload (kg)	Horizontal	3	5	9
	Vertical	-	1.2	2.4
Rated thrust (N)		19	32	64
Stroke (mm)		50 to 800 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+201.5		
	Vertical	Stroke+239.5		
Maximum dimensions of cross section of main unit (mm)		W55×H52		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		2 rows of gothic arch grooves × 1 rail		
Position detector		Resolvers Note 3		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 20	1kg	967	324	598
	3kg	429	104	226
Lead 12	2kg	916	159	398
	5kg	436	60	152
Lead 6	3kg	1194	105	294
	9kg	624	31	89

Wall installation (Unit: mm)

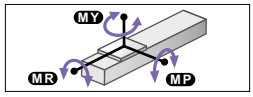
		A	B	C
Lead 20	1kg	551	304	925
	3kg	185	89	378
Lead 12	2kg	347	141	800
	5kg	119	44	355
Lead 6	3kg	259	87	950
	9kg	50	15	385

Vertical installation (Unit: mm)

		A	C
Lead 12	1.2kg	240	239
Lead 6	2.4kg	109	110

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600mm stroke models.

Static loading moment



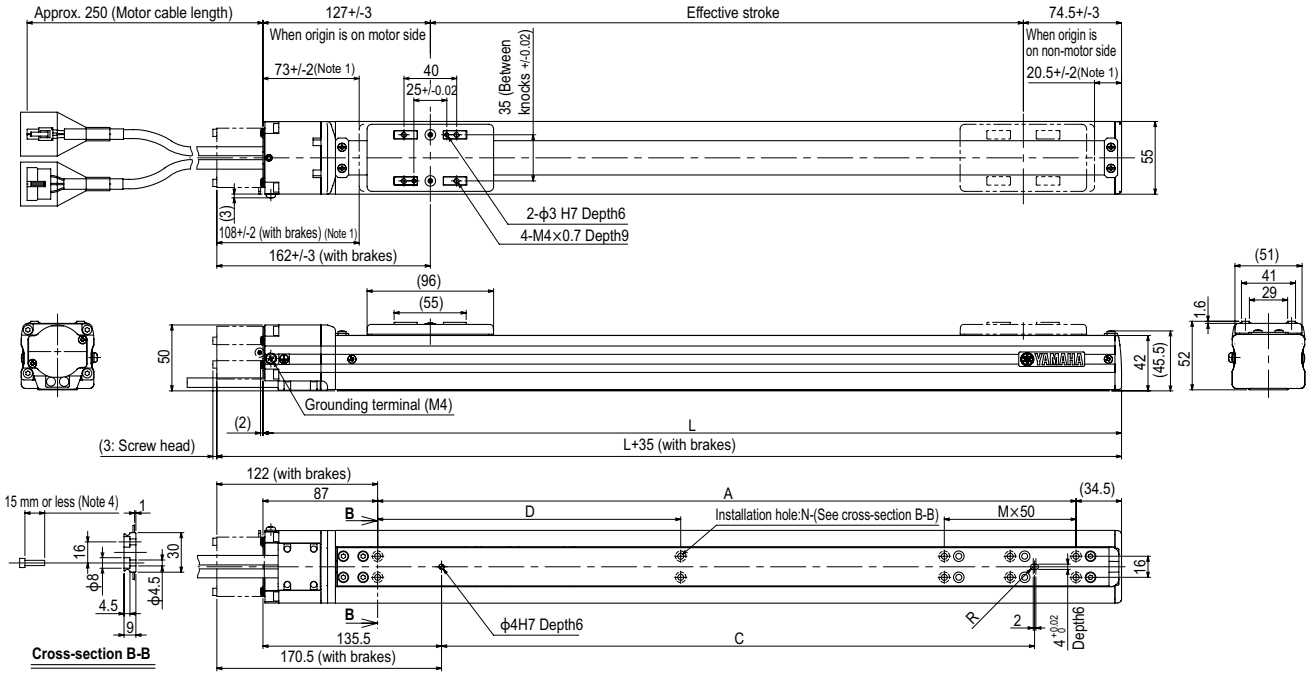
(Unit: N·m)

MY	MP	MR
30	34	40

Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205	Pulse train control

T5LH



Effective stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		251.5	301.5	351.5	401.5	451.5	501.5	551.5	601.5	651.5	701.5	751.5	801.5	851.5	901.5	951.5	1001.5
A		130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880
C		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
D		-	-	-	-	-	-	230	230	230	230	230	230	230	230	230	230
M		0	1	2	3	4	5	0	1	2	3	4	5	6	7	8	9
N		4	6	8	10	12	14	6	8	10	12	14	16	18	20	22	24
Weight (kg) Note 3		1.7	1.8	2.0	2.2	2.3	2.5	2.7	2.8	3.0	3.2	3.3	3.5	3.7	3.8	4.0	4.2
Maximum speed for each stroke Note 5 (mm/sec)	Lead 20	1200												960	840	720	660
	Lead 12	800												640	560	480	440
	Lead 6	400												320	280	240	220
	Speed setting	-												80%	70%	60%	55%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Minimum bend radius of motor cable is R30.
Note 3. Weight of models with no brake. The weight of brake-attached models is 0.2 kg heavier than the models with no brake shown in the table.
Note 4. The under-head length of the hex socket-head bolt (M4×0.7) to be used for the installation work is 15mm or less.
Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed).
In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table at the left.
Note 6. External view of T5LH is identical to T5L.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

T6L

● High lead: Lead 20 ● Origin on the non-motor side is selectable

● Controller: 100V / 200V

Ordering method

T6L - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 2
	20: 20mm 12: 12mm 6: 6mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	50 to 800 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X **05** [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X **2** **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

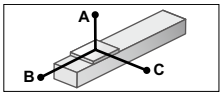
Note 1. The model with a lead of 20mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

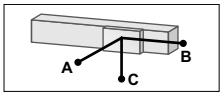
Specifications

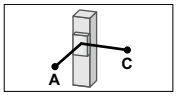
AC servo motor output (W)		60		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw φ12		
Ball screw lead (mm)		20	12	6
Maximum speed Note 2 (mm/sec)		1333	800	400
Maximum payload (kg)	Horizontal	10	12	30
	Vertical	-	4	8
Rated thrust (N)		51	85	170
Stroke (mm)		50 to 800 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+247.5		
	Vertical	Stroke+285.5		
Maximum dimensions of cross section of main unit (mm)		W65×H56		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		2 rows of gothic arch grooves × 1 rail		
Position detector		Resolvers Note 3		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 20	2kg	319	184	234
	6kg	98	37	77
	10kg	64	0	55
Lead 12	3kg	624	125	335
	8kg	273	41	121
	12kg	216	24	77
Lead 6	5kg	694	73	236
	10kg	374	33	109
	30kg	159	0	25

Wall installation (Unit: mm)

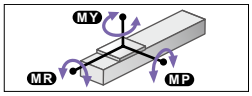
		A	B	C
Lead 20	2kg	234	152	265
	6kg	61	13	71
	10kg	30	0	42
Lead 12	3kg	293	96	510
	8kg	89	14	210
	12kg	43	0	130
Lead 6	5kg	204	45	530
	10kg	72	0	245
	30kg	0	0	0

Vertical installation (Unit: mm)

		A	C
Lead 12	1kg	355	352
	2kg	165	165
	4kg	70	72
Lead 6	2kg	171	172
	4kg	73	74
	8kg	23	26

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600mm stroke models.

Static loading moment



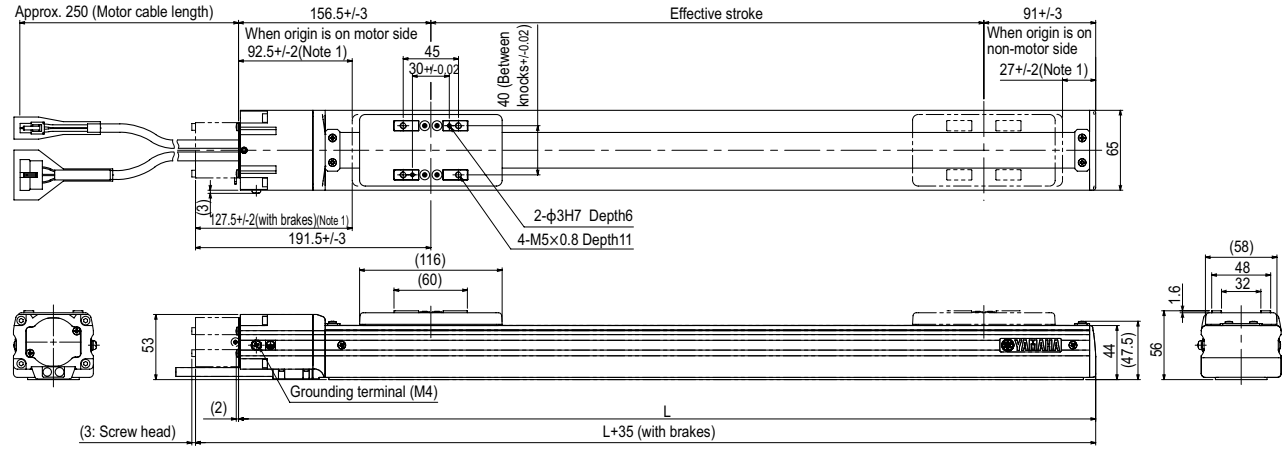
(Unit: N·m)

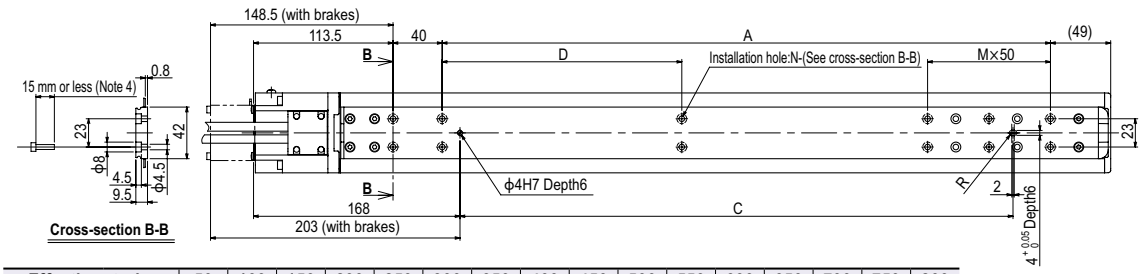
MY	MP	MR
35	40	50

Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

T6L





Effective stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		297.5	347.5	397.5	447.5	497.5	547.5	597.5	647.5	697.5	747.5	797.5	847.5	897.5	947.5	997.5	1047.5
A		95	145	195	245	295	345	395	445	495	545	595	645	695	745	795	845
C		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
D		-	-	-	-	-	-	195	195	195	195	195	195	195	195	195	195
M		0	1	2	3	4	5	0	1	2	3	4	5	6	7	8	9
N		6	8	10	12	14	16	8	10	12	14	16	18	20	22	24	26
Weight (kg) Note 3		2.4	2.6	2.8	3.1	3.3	3.5	3.7	4.0	4.2	4.4	4.6	4.8	5.1	5.3	5.5	5.7
Maximum speed for each stroke Note 5 (mm/sec)	Lead 20	1333												1133	1000	866	800
	Lead 12	800												680	600	520	480
	Lead 6	400												340	300	260	240
	Speed setting	-												85%	75%	65%	60%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Minimum bend radius of motor cable is R30.
Note 3. Weight of models with no brake. The weight of brake-attached models is 0.2 kg heavier than the models with no brake shown in the table.
Note 4. The under-head length of the hex socket-head bolt (M4×0.7) to be used for the installation work is 15mm or less.
Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table at the left.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

T9

High lead: Lead 30

Origin on the non-motor side is selectable: Lead 10·20·30

Note. Strokes longer than 1050mm are special order items. Please consult us for delivery time.

Ordering method

T9 – [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 3
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry:No brakes BK: Brakes provided	None: Standard Z: Non-motor side Note 2	None: Standard GC: Clean	Lead 20·10·5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX – [ ] – [ ] – [ ] – [ ] – [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X – **05** – [ ] – [ ] – [ ] – [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X – **2** – **05** – **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

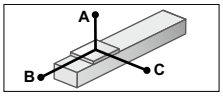
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. If selecting 5mm lead specifications then the origin point cannot be changed to the non-motor side.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function.

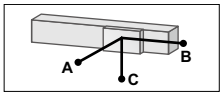
Specifications

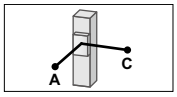
AC servo motor output (W)		100			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	15	30	55	80
	Vertical	–	4	10	20
Rated thrust (N)		56	84	169	339
Stroke (mm)		150 to 1250 Note 3 (50mm pitch)			
Overall length (mm)	Horizontal	Stroke+259			
	Vertical	Stroke+289			
Maximum dimensions of cross section of main unit (mm)		W94 × H98			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 1 rail			
Position detector		Resolvers Note 4			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Strokes longer than 1050mm are available only for high lead (Lead 30). (Special order item)
Note 4. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	5kg	864	501	383
	15kg	491	156	140
Lead 20	5kg	1292	505	462
	15kg	572	158	151
	30kg	455	73	75
Lead 10	20kg	617	119	127
	40kg	422	53	59
	55kg	420	36	40
Lead 5	50kg	722	42	47
	60kg	657	33	37
	80kg	577	23	25

Wall installation (Unit: mm)

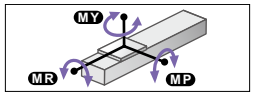
		A	B	C
Lead 30	5kg	348	384	776
	15kg	87	40	306
Lead 20	5kg	416	388	1186
	15kg	92	42	386
	30kg	0	0	61
Lead 10	10kg	193	132	910
	20kg	53	0	400
	30kg	0	0	109
Lead 5	10kg	197	133	2360
	20kg	54	0	985
	30kg	0	0	427

Vertical installation (Unit: mm)

		A	C
Lead 20	1kg	600	600
	2kg	1098	1098
	4kg	545	545
Lead 10	4kg	594	594
	8kg	280	280
	10kg	217	217
Lead 5	10kg	221	221
	15kg	135	135
	20kg	92	92

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

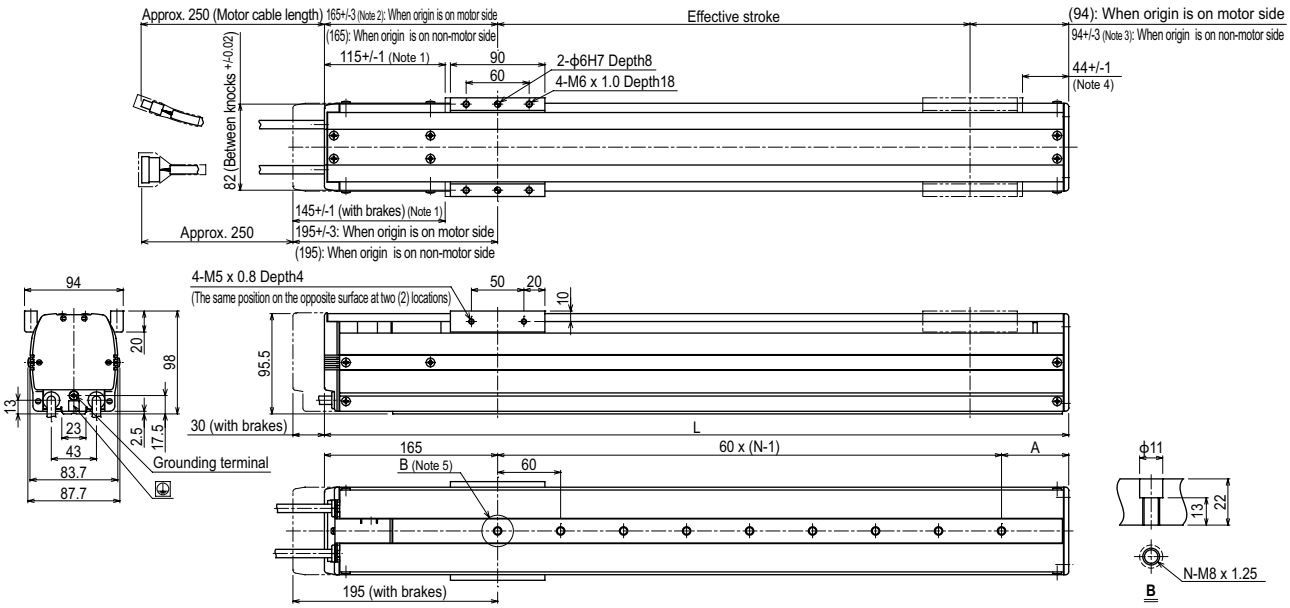
MY	MP	MR
86	133	117

Controller

Controller	Operation method
SR1-X05 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 Note TS-X205 Note	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

Note. Regenerative unit is required when the models used vertically and with 700mm or larger stroke.

T9



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. 167.5+/-4 when the high lead specification (Lead 30) is used.
Note 3. 94+/-4 when the high lead specification (Lead 30) is used.
Note 4. 41.5+/-1 when the high lead specification (Lead 30) is used.
Note 5. When installing the unit, washers, etc., cannot be used in the ϕ11 counter bore hole.
Note 6. Minimum bend radius of motor cable is R5.
Note 7. Weight of models with no brake. The weight of brake-attached models is 0.5 kg heavier than the models with no brake shown in the table.

Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100 Note 9	1150 Note 9	1200 Note 9	1250 Note 9
L		409	459	509	559	609	659	709	759	809	859	909	959	1009	1059	1109	1159	1209	1259	1309	1359	1409	1459	1509
A		64	54	44	94	84	74	64	54	44	94	84	74	64	54	44	94	84	74	64	54	44	94	84
N		4	5	6	6	7	8	9	10	11	11	12	13	14	15	16	16	17	18	19	20	21	21	22
Weight (kg) Note 7		5.5	5.9	6.2	6.6	6.9	7.3	7.6	8.0	8.3	8.7	9.0	9.4	9.7	10.0	10.3	10.7	11.0	11.4	11.7	12.1	12.5	12.9	13.3
Maximum speed Note 8 (mm/sec)	Lead 30	1800												1440		1170		900		810				
	Lead 20	1200												960		780		600		540				
	Lead 10	600												480		390		300		270				
	Lead 5	300												240		195		150		135				
	Speed setting	–												80%		65%		50%		45%				

Note 8. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 9. Strokes longer than 1050mm are special order items. Please contact us for speed setting.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

T9H

- High lead: Lead 30
- Origin on the non-motor side is selectable: Lead 20·30

Note. Strokes longer than 1050mm are special order items. Please consult us for delivery time.

Ordering method

T9H - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - **TSX** [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 3
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry:No brakes BK: Brakes provided	None: Standard Z: Non-motor side Note 2	None: Standard GC: Clean	Lead 20·10·5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	3L:3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX					
Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	110: 100V/200W 210: 200V/200W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X	10				
Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	10: 200W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X	2	10	RBR1
Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	10: 200W or less	

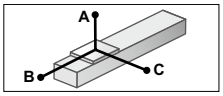
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. If selecting 10mm·5mm lead specifications then the origin point cannot be changed to the non-motor side.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function.

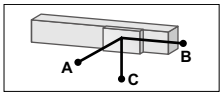
Specifications

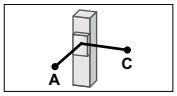
AC servo motor output (W)		200			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	25	40	80	100
	Vertical	–	8	20	30
Rated thrust (N)		113	170	341	683
Stroke (mm)		150 to 1250 Note 3 (50mm pitch)			
Overall length (mm)	Horizontal	Stroke+273			
	Vertical	Stroke+303			
Maximum dimensions of cross section of main unit (mm)		W94 × H98			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 1 rail			
Position detector		Resolvers Note 4			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Strokes longer than 1050mm are available only for high lead (Lead 30). (Special order item)
Note 4. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	10kg	415	286	183
	20kg	270	105	93
Lead 20	10kg	667	244	225
	20kg	330	112	107
	40kg	162	42	47
Lead 10	30kg	392	75	81
	50kg	297	40	44
	80kg	265	21	24
Lead 5	60kg	477	22	37
	80kg	412	22	25
	100kg	362	16	18

Wall installation (Unit: mm)

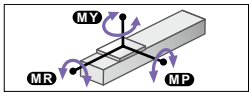
		A	B	C
Lead 30	10kg	140	120	323
	20kg	41	0	123
Lead 20	10kg	170	128	549
	20kg	46	0	182
	40kg	0	0	0
Lead 10	20kg	52	0	335
	25kg	24	0	235
	30kg	0	0	108
Lead 5	20kg	54	0	710
	25kg	25	0	505
	30kg	0	0	355

Vertical installation (Unit: mm)

		A	C
Lead 20	4kg	515	515
	6kg	334	334
	8kg	244	244
Lead 10	10kg	217	217
	15kg	133	133
	20kg	90	90
Lead 5	15kg	135	135
	20kg	92	92
	30kg	49	49

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

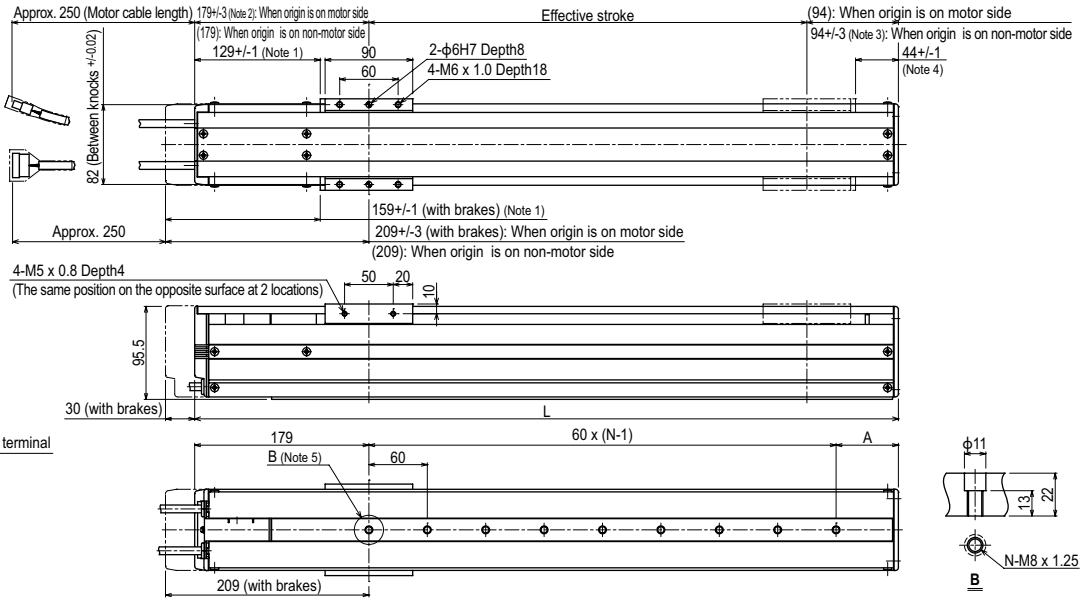
MY	MP	MR
86	133	117

Controller

Controller	Operation method
SR1-X10 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 Note	I/O point trace /
TS-X210 Note	Remote command
RDV-X210-RBR1	Pulse train control

Note. When using the unit vertically, a regeneration unit is required.

T9H



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. 181.5+/-4 when the high lead specification (Lead 30) is used.
Note 3. 94+/-4 when the high lead specification (Lead 30) is used.
Note 4. 41.5+/-1 when the high lead specification (Lead 30) is used.
Note 5. When installing the unit, washers, etc., cannot be used in the ϕ11 counter bore hole.
Note 6. Minimum bend radius of motor cable is R5.
Note 7. Weight of models with no brake. The weight of brake-attached models is 0.5 kg heavier than the models with no brake shown in the table.

Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100 Note 9	1150 Note 9	1200 Note 9	1250 Note 9
L		423	473	523	573	623	673	723	773	823	873	923	973	1023	1073	1123	1173	1223	1273	1323	1373	1423	1473	1523
A		64	54	44	94	84	74	64	54	44	94	84	74	64	54	44	94	84	74	64	54	44	94	84
N		4	5	6	6	7	8	9	10	11	11	12	13	14	15	16	16	17	18	19	20	21	21	22
Weight (kg) Note 7		5.8	6.2	6.5	6.9	7.3	7.7	8.0	8.4	8.8	9.1	9.5	9.9	10.2	10.6	11.0	11.4	11.7	12.1	12.5	12.9	13.3	13.7	14.1
Maximum speed Note 8 (mm/sec)	Lead 30	1800												1440		1170		900		810				
	Lead 20	1200												960		780		600		540				
	Lead 10	600												480		390		300		270				
	Lead 5	300												240		195		150		135				
	Speed setting	–												80%		65%		50%		45%				

Note 8. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 9. Strokes longer than 1050mm are special order items. Please contact us for speed setting.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F8

- High lead: Lead 20
- Origin on the non-motor side is selectable

Ordering method

F8 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 2
	20: 20mm 12: 12mm 6: 6mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	150 to 800 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

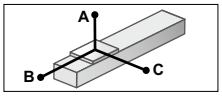
Note 1. The model with a lead of 20mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

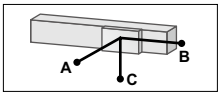
Specifications

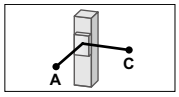
AC servo motor output (W)		100		
Repeatability Note 1 (mm)		+/-0.02		
Deceleration mechanism		Ball screw ϕ12		
Ball screw lead (mm)		20	12	6
Maximum speed Note 2 (mm/sec)		1200	720	360
Maximum payload (kg)	Horizontal	12	20	40
	Vertical	–	4	8
Rated thrust (N)		84	141	283
Stroke (mm)		150 to 800 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+286		
	Vertical	Stroke+316		
Maximum dimensions of cross section of main unit (mm)		W80 × H65		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		4 rows of circular arc grooves × 1 rail		
Position detector		Resolvers Note 3		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 550mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 20	5kg	197	76	120
	10kg	100	32	54
	12kg	85	25	43
Lead 12	5kg	364	89	188
	10kg	203	39	87
	15kg	139	22	51
	20kg	103	14	33
Lead 6	10kg	403	43	113
	20kg	214	16	43
	30kg	140	6	20
	40kg	113	0	8

Wall installation (Unit: mm)

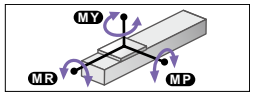
		A	B	C
Lead 20	5kg	104	67	174
	10kg	37	23	72
	12kg	27	15	55
Lead 12	5kg	171	81	340
	10kg	69	32	172
	15kg	33	15	100
	20kg	15	6	55
Lead 6	10kg	94	36	369
	20kg	25	9	157
	30kg	0	0	14
	40kg	0	0	0

Vertical installation (Unit: mm)

		A	C
Lead 12	1kg	447	448
	2kg	214	216
	3kg	137	138
	4kg	98	99
Lead 6	2kg	244	245
	4kg	113	113
	6kg	69	69
	8kg	46	46

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



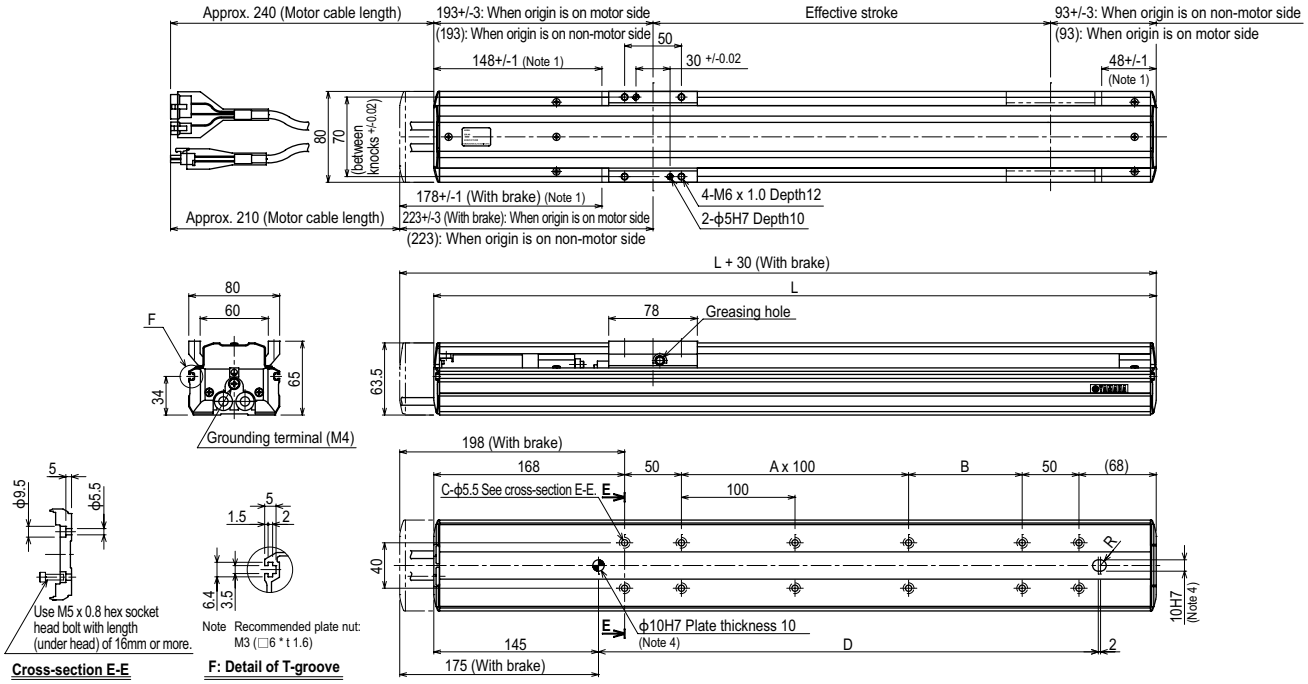
(Unit: N·m)

MY	MP	MR
70	95	110

Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

F8



Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		436	486	536	586	636	686	736	786	836	886	936	986	1036	1086
A		0	0	1	1	2	2	3	3	4	4	5	5	6	6
B		100	150	100	150	100	150	100	150	100	150	100	150	100	150
C		8	8	10	10	12	12	14	14	16	16	18	18	20	20
D		240	290	340	390	440	490	540	590	640	690	740	790	840	890
Weight (kg) Note 5		3.6	3.9	4.2	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.4	6.7	7.0	7.3
Maximum speed Note 6 (mm/sec)	Lead 20	1200									1080	900	780	720	600
	Lead 12	720									648	540	468	432	360
	Lead 6	360									324	270	234	216	180
	Speed setting	–									90%	75%	65%	60%	50%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.
Note 5. Weight of models with no brake. The weight of brake-attached models is 0.3 kg heavier than the models with no brake shown in the table.
Note 6. When the stroke is longer than 550mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F8L

- High lead: Lead 30
- Origin on the non-motor side is selectable

Ordering method

F8L - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Origin position change	Grease type	Stroke	Cable length Note 2
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry:No brakes BK:Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	150 to 1050 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX [ ] - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X **2** **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

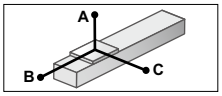
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

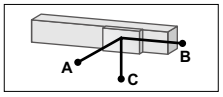
Specifications

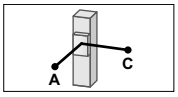
AC servo motor output (W)		100			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	7	20	40	50
	Vertical	–	4	8	16
Rated thrust (N)		56	84	169	339
Stroke (mm)		150 to 1050 (50mm pitch)			
Overall length (mm)	Horizontal	Stroke +300	Stroke+292		
	Vertical	–	Stroke+322		
Maximum dimensions of cross section of main unit (mm)		W80 × H65			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 1 rail			
Position detector		Resolvers Note 3			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 650mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	5kg	112	80	80
	7kg	78	43	49
Lead 20	5kg	211	108	147
	10kg	116	45	69
	15kg	76	24	39
	20kg	58	14	26
Lead 10	10kg	251	56	122
	20kg	121	20	46
	30kg	74	8	20
	40kg	35	0	6
Lead 5	20kg	249	23	62
	30kg	170	10	29
	40kg	138	4	12
	50kg	51	0	0

Wall installation (Unit: mm)

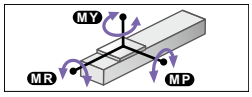
		A	B	C
Lead 30	5kg	55	57	77
	7kg	21	19	34
Lead 20	5kg	119	89	176
	10kg	38	26	69
	15kg	7	0	16
	20kg	0	0	0
Lead 10	10kg	85	39	202
	20kg	7	0	30
	30kg	0	0	0
	40kg	0	0	0
Lead 5	20kg	19	7	140
	30kg	0	0	0
	40kg	0	0	0
	50kg	0	0	0

Vertical installation (Unit: mm)

		A	C
Lead 20	2kg	236	240
	4kg	106	110
Lead 10	2kg	310	311
	4kg	141	143
	6kg	85	86
	8kg	57	58
Lead 5	5kg	123	124
	10kg	47	48
	15kg	22	22
	16kg	19	19

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



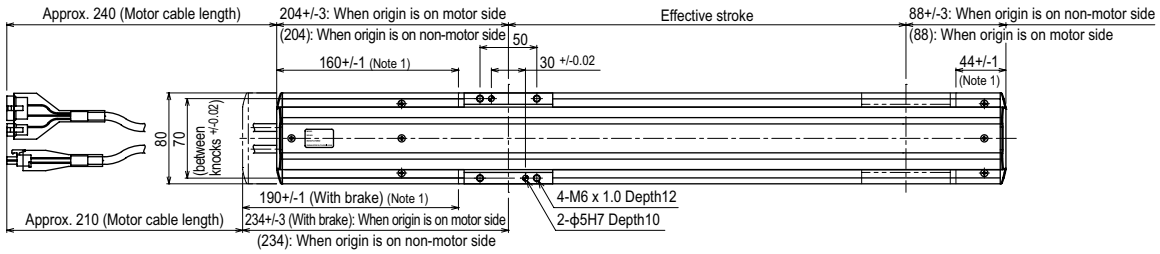
(Unit: N·m)

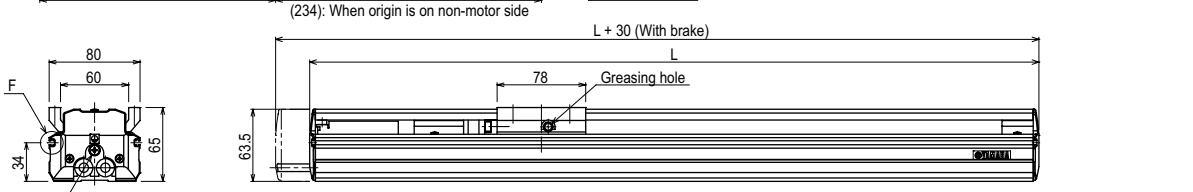
MY	MP	MR
70	95	110

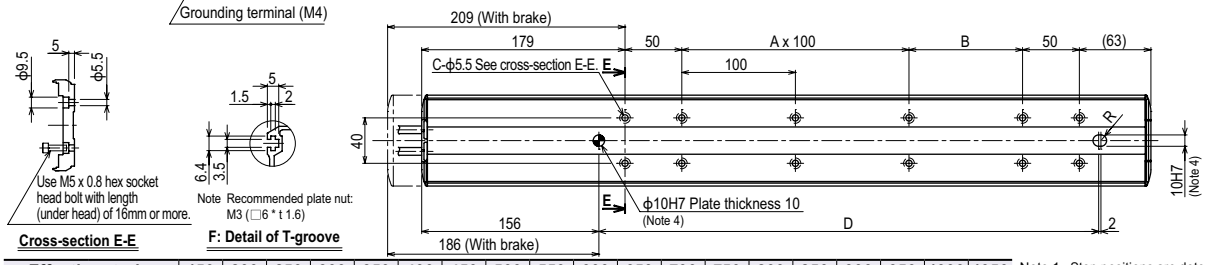
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

F8L



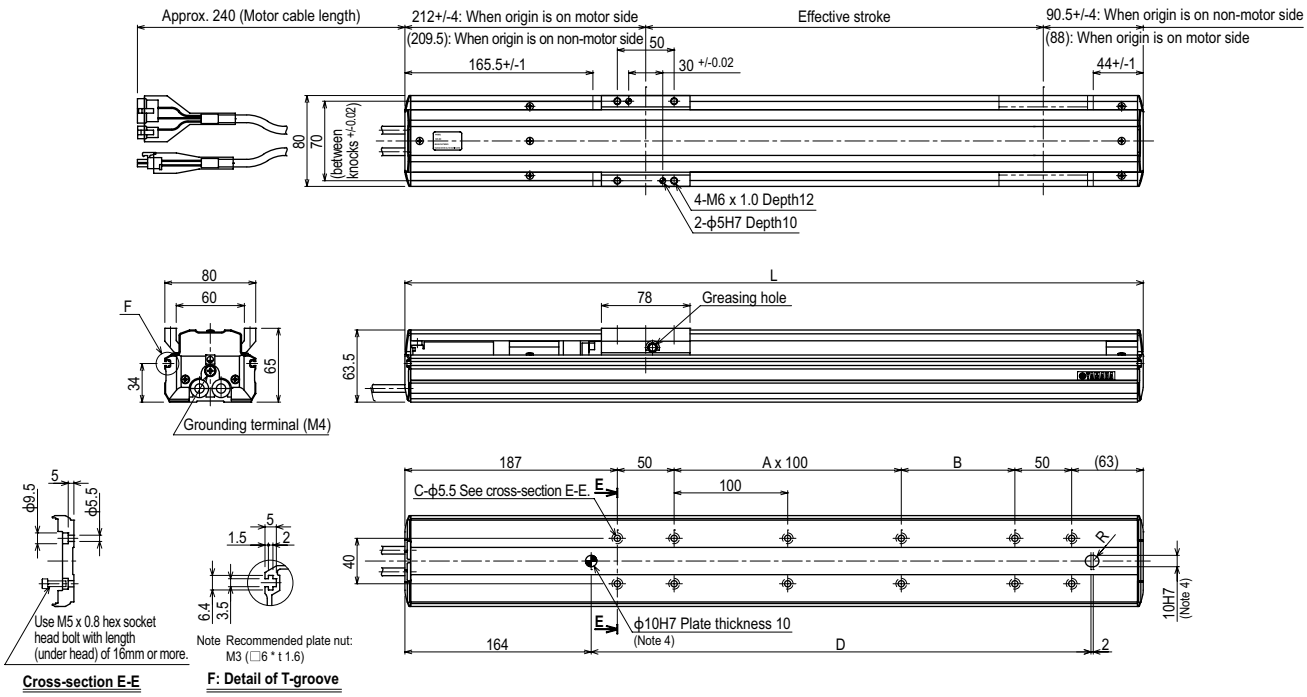




Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L		442	492	542	592	642	692	742	792	842	892	942	992	1042	1092	1142	1192	1242	1292	1342
A		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
B		100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100
C		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
D		240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140
Weight (kg) Note 5		3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.2	9.5
Maximum speed Note 6 (mm/sec)	Lead 20	1200											1020	900	780	720	660	600	540	480
	Lead 10	600											510	450	390	360	330	300	270	240
	Lead 5	300											255	225	195	180	165	150	135	120
	Speed setting	–											85%	75%	65%	60%	55%	50%	45%	40%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.
Note 5. Weight of models with no brake. The weight of brake-attached models is 0.3 kg heavier than the models with no brake shown in the table.
Note 6. When the stroke is longer than 650mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

F8L High lead type: Lead 30



Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L		450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
A		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
B		100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100
C		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
D		240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140
Weight (kg)		3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.2	9.5
Maximum speed Note 5 (mm/sec)	Lead 30	1800											1530	1350	1170	1080	990	900	810	720
	Speed setting	–											85%	75%	65%	60%	55%	50%	45%	40%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.

Note 5. When the stroke is longer than 650mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

F8LH

Origin on the non-motor side is selectable

Ordering method

F8LH - [ ] - [ ] - [ ] - [ ] - [ ] - **TSX** [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Origin position change	Grease type	Stroke	Cable length Note 1
	20: 20mm 10: 10mm 5: 5mm	None: Standard Z: Non-motor side	None: Standard GC: Clean	150 to 1050 (50mm pitch)	3L:3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

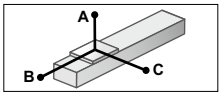
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

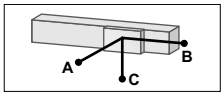
Specifications

AC servo motor output (W)		100		
Repeatability Note 1 (mm)		+/-0.01		
Deceleration mechanism		Ball screw ϕ15		
Ball screw lead (mm)		20	10	5
Maximum speed Note 2 (mm/sec)		1200	600	300
Maximum payload (kg)	Horizontal	30	60	80
Rated thrust (N)		84	169	339
Stroke (mm)		150 to 1050 (50mm pitch)		
Overall length (mm)	Horizontal	Stroke+368		
Maximum dimensions of cross section of main unit (mm)		W80 × H65		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		4 rows of circular arc grooves × 1 rail		
Position detector		Resolvers Note 3		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

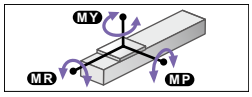
		A	B	C
Lead 20	10kg	573	256	176
	20kg	334	116	81
	30kg	279	70	50
Lead 10	20kg	629	137	111
	20kg	479	57	47
	60kg	382	30	25
Lead 5	20kg	1094	148	127
	40kg	851	63	54
	60kg	714	34	29
	80kg	601	20	17

Wall installation (Unit: mm)

		A	B	C
Lead 20	10kg	147	215	515
	20kg	53	75	255
	30kg	20	29	160
Lead 10	20kg	80	99	545
	40kg	15	19	270
	60kg	-	-	-
Lead 5	20kg	96	112	1005
	40kg	22	26	604
	60kg	-	-	-
	80kg	-	-	-

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



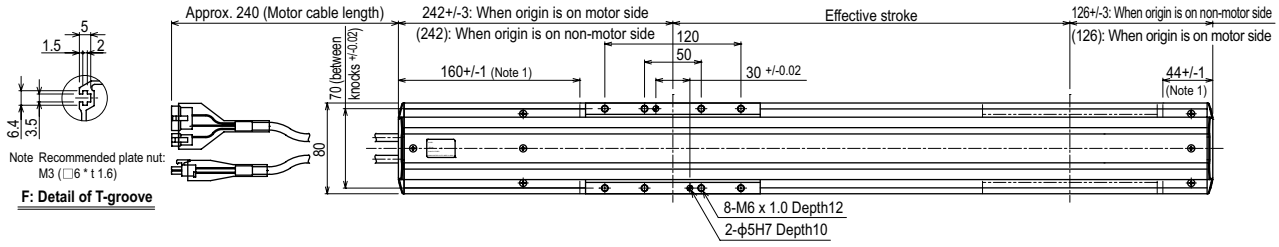
(Unit: N·m)

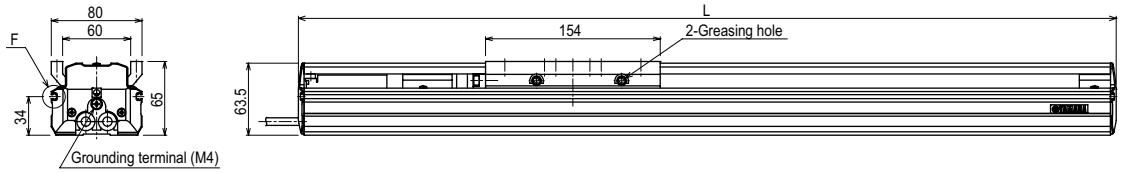
MY	MP	MR
128	163	143

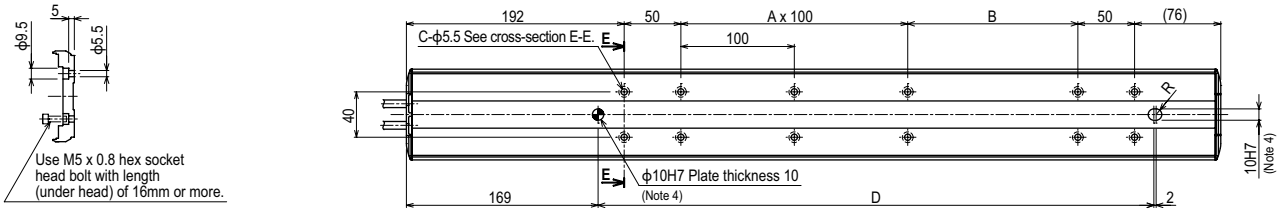
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

F8LH







Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L		518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418
A		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
B		150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150
C		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
D		290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	1190
Weight (kg)		4.7	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.7	10.0	10.3
Maximum speed Note 5 (mm/sec)	Lead 20	1200										1020	900	780	720	660	600	540	480	420
	Lead 10	600										510	450	390	360	330	300	270	240	210
	Lead 5	300										255	225	195	180	165	150	135	120	105
	Speed setting	–										85%	75%	65%	60%	55%	50%	45%	40%	35%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.

Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

F10

- High lead: Lead 30
- Origin on the non-motor side is selectable: Lead 10·20·30

Note. Strokes longer than 1050mm are special order items. Please consult us for delivery time.

Ordering method

F10 – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 3
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U:From the top	None: Standard Z: Non-motor side Note 2	None: Standard GC: Clean	Lead 20·10·5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX – [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X – **05** – [ ] – [ ] – [ ] – [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X – **2** – **05** – **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

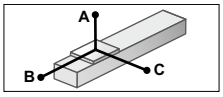
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. If selecting 5mm lead specifications then the origin point cannot be changed to the non-motor side.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function.

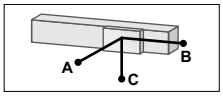
Specifications

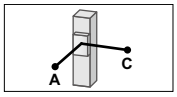
AC servo motor output (W)		100			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	15	20	40	60
	Vertical	–	4	10	20
Rated thrust (N)		56	84	169	339
Stroke (mm)		150 to 1250 Note 3 (50mm pitch)			
Overall length (mm)	Horizontal	Stroke+260			
	Vertical	Stroke+290			
Maximum dimensions of cross section of main unit (mm)		W110 × H71			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 1 rail			
Position detector		Resolvers Note 4			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Strokes longer than 1050mm are available only for high lead (Lead 30). (Special order item)
Note 4. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	5kg	491	273	215
	15kg	223	61	63
Lead 20	5kg	937	282	259
	10kg	487	121	116
	20kg	236	40	44
Lead 10	15kg	389	71	74
	30kg	179	17	20
	40kg	106	0	0
Lead 5	30kg	419	19	20
	50kg	0	0	0
	60kg	0	0	0

Wall installation (Unit: mm)

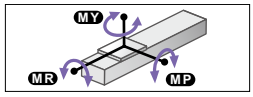
		A	B	C
Lead 30	5kg	206	209	480
	15kg	45	0	177
Lead 20	5kg	250	213	905
	10kg	99	51	438
	20kg	21	0	149
Lead 10	10kg	105	53	550
	20kg	22	0	230
	30kg	0	0	0
Lead 5	10kg	107	54	1410
	20kg	22	0	540
	30kg	0	0	0

Vertical installation (Unit: mm)

		A	C
Lead 20	1kg	600	600
	2kg	649	691
	4kg	306	347
Lead 10	4kg	338	380
	8kg	142	183
	10kg	102	144
Lead 5	10kg	105	146
	15kg	51	93
	20kg	25	66

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

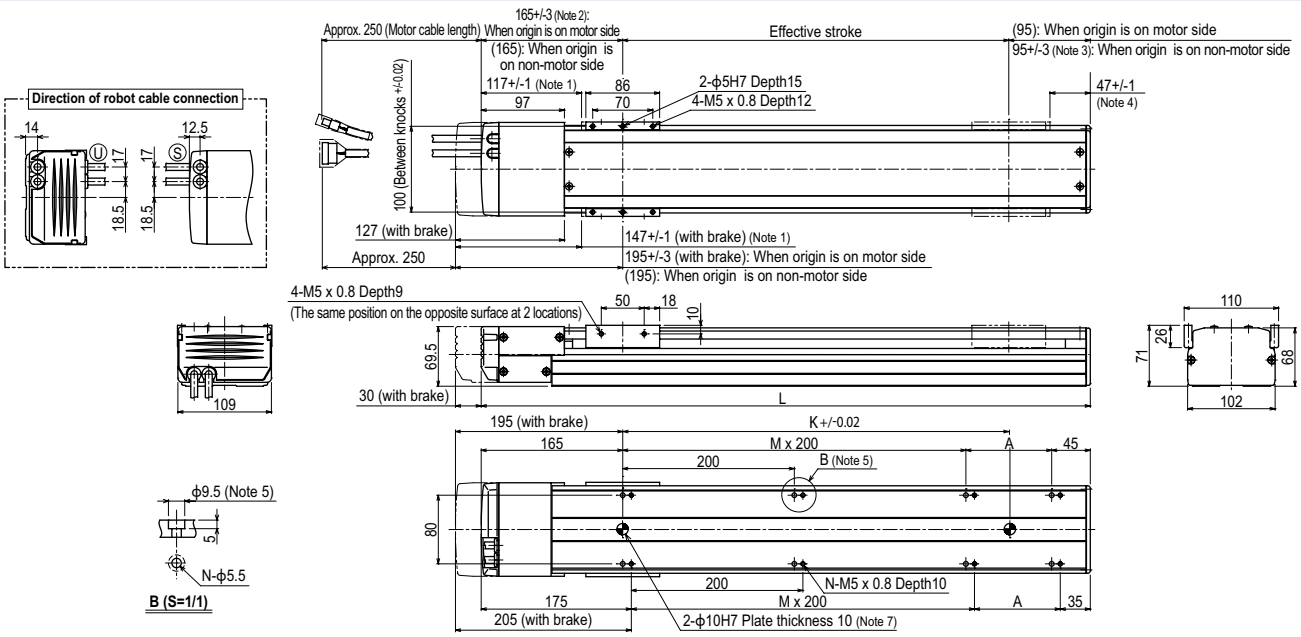
MY	MP	MR
131	131	115

Controller

Controller	Operation method
SR1-X05 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 Note TS-X205 Note	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

Note. Regenerative unit is required when the models used vertically and with 700mm or larger stroke.

F10



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. 167.5+/-4 when the high lead specification (Lead 30) is used.
Note 3. 95+/-4 when the high lead specification (Lead 30) is used.
Note 4. 44.5+/-1 when the high lead specification (Lead 30) is used.
Note 5. When installing the unit, washers, etc., cannot be used in the ϕ9.5 counter bore hole.
Note 6. Minimum bend radius of motor cable is R50.
Note 7. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.
Note 8. Weight of models with no brake. The weight of brake-attached models is 0.6 kg heavier than the models with no brake shown in the table.

Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100 Note 10	1150 Note 10	1200 Note 10	1250 Note 10
L		410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M		0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
N		4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
K		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Weight (kg) Note 8		5.5	5.7	5.8	6.2	6.5	6.9	7.3	7.7	8.1	8.5	8.8	9.2	9.6	10.0	10.4	10.8	11.1	11.5	11.9	12.3	12.7	13.1	13.5
Maximum speed Note 9 (mm/sec)	Lead 30	1800												1440		1170		900		810				
	Lead 20	1200												960		780		600		540				
	Lead 10	600												480		390		300		270				
	Lead 5	300												240		195		150		135				
	Speed setting	–												80%		65%		50%		45%				

Note 9. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 10.Strokes longer than 1050mm are special order items. Please contact us for speed setting.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F10H

- High lead: Lead 30
- Origin on the non-motor side is selectable: Lead 10·20·30

Ordering method

F10H - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 3
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U:From the top	None: Standard Z: Non-motor side Note 2	None: Standard GC: Clean	Lead 20·10·5: 150 to 1000 (50mm pitch) Lead 30: 150 to 1000 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	110: 100V/200W 210: 200V/200W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X - **10** - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	10: 200W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: Profibus	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **10** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	10: 200W or less	

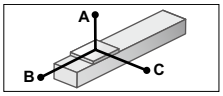
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. If selecting 5mm lead specifications then the origin point cannot be changed to the non-motor side.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function.

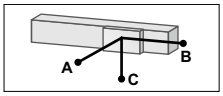
Specifications

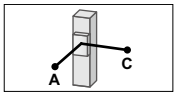
AC servo motor output (W)		200			
Repeatability Note 1 (mm)		+/- 0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	25	40	80	100
	Vertical	–	8	20	30
Rated thrust (N)		113	170	341	683
Stroke (mm)		150 to 1000			
Overall length (mm)	Horizontal	Stroke+355			
	Vertical	Stroke+385			
Maximum dimensions of cross section of main unit (mm)		W110 × H71			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 1 rail			
Position detector		Resolvers Note 3			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below. When the movement distance is short, the speed may not reach the maximum speed according to the payload.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	10kg	1181	681	219
	20kg	772	298	99
Lead 20	10kg	1961	685	232
	20kg	949	301	103
	40kg	432	109	38
Lead 10	30kg	1615	239	84
	50kg	1131	112	39
	80kg	812	40	14
Lead 5	60kg	3091	112	39
	80kg	2330	64	23
	100kg	1733	36	12

Wall installation (Unit: mm)

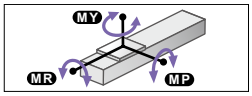
		A	B	C
Lead 30	10kg	193	570	1062
	20kg	65	187	549
Lead 20	10kg	198	570	1786
	20kg	65	187	732
	40kg	0	0	0
Lead 10	20kg	100	283	1981
	25kg	66	187	1546
	30kg	43	123	1223
Lead 5	20kg	134	379	7629
	25kg	93	264	5987
	30kg	66	187	4841

Vertical installation (Unit: mm)

		A	C
Lead 20	4kg	1650	1650
	6kg	1104	1104
	8kg	832	832
Lead 10	10kg	927	927
	15kg	614	614
	20kg	458	458
Lead 5	15kg	752	752
	20kg	560	560
	30kg	369	369

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600mm stroke models.

Static loading moment



(Unit: N·m)

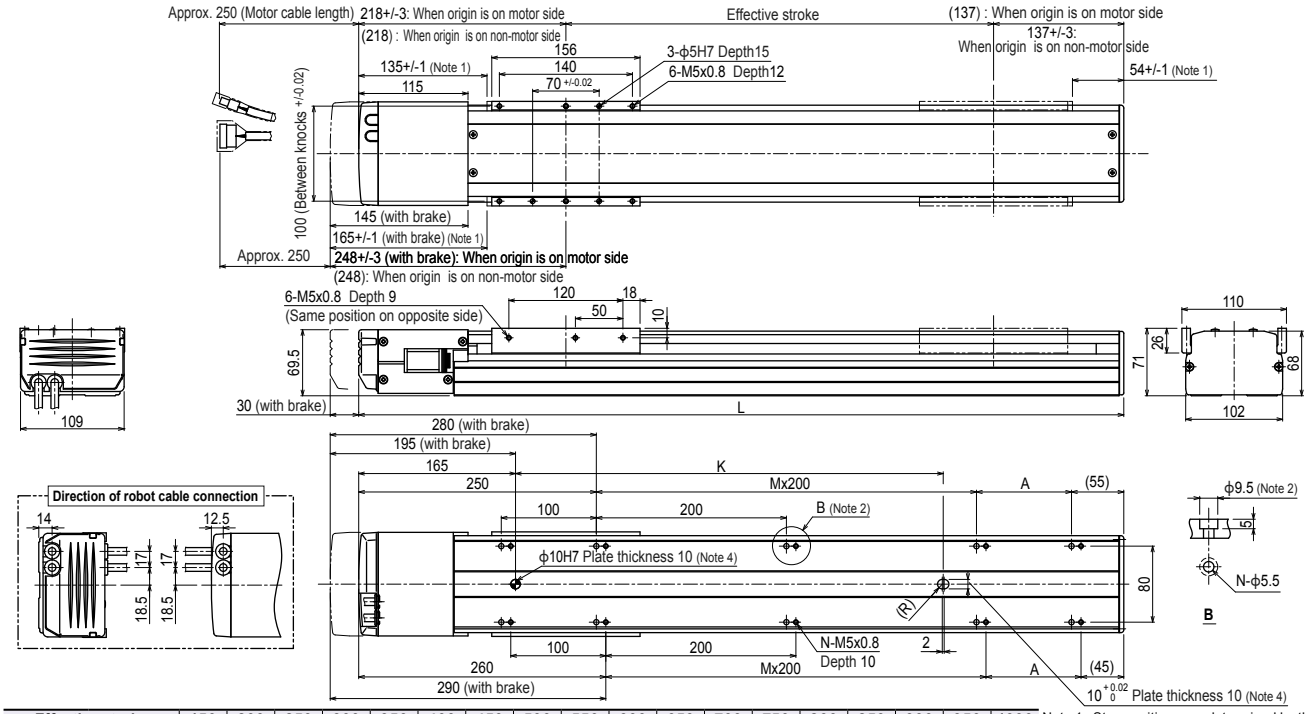
MY	MP	MR
348	348	160

Controller

Controller	Operation method
SR1-X10 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 Note TS-X210 Note	I/O point trace / Remote command
RDV-X210-RBR1	Pulse train control

Note. When using the unit vertically, a regeneration unit is required.

F10H



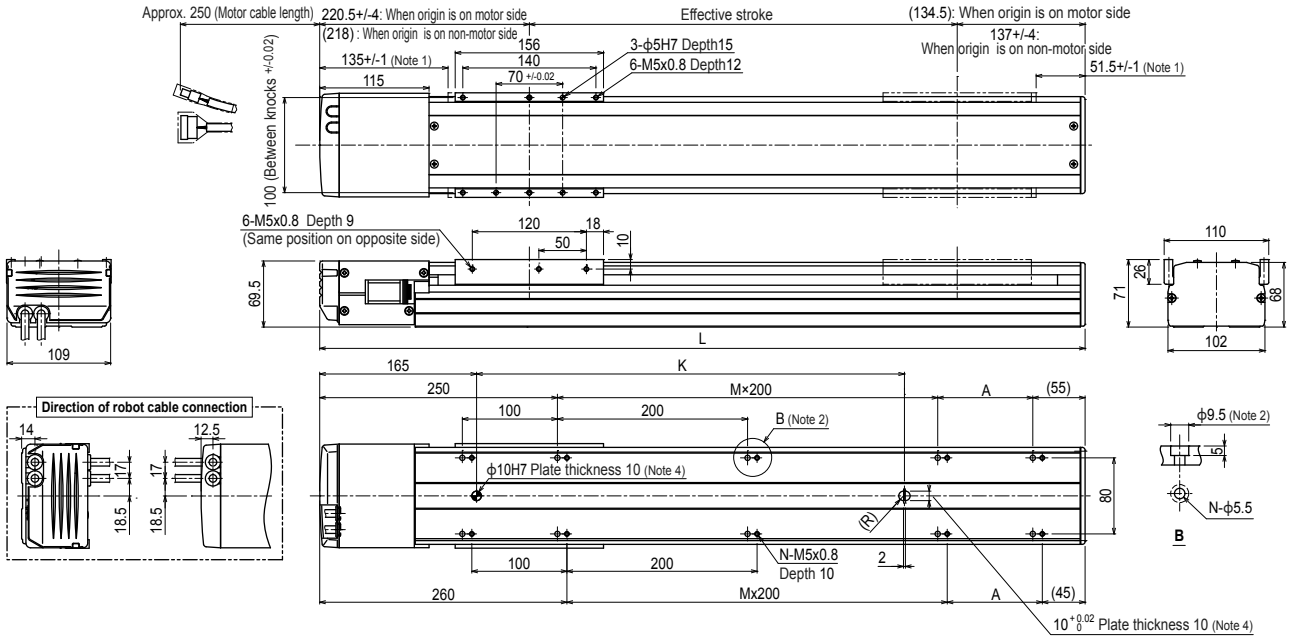
Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L		505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M		0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
N		6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16
K		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Weight (kg) Note 5		6.9	7.3	7.7	8.1	8.4	8.8	9.2	9.6	10.0	10.3	10.7	11.1	11.5	11.9	12.2	12.6	13.0	13.4
Maximum speed Note 6 (mm/sec)	Lead 30	1800										1440	1260	1080	900		720		630
	Lead 20	1200										960	840	720	600		480		420
	Lead 10	600										480	420	360	300		240		210
	Lead 5	300										240	210	180	150		120		105
	Speed setting	–										80%	70%	60%	50%		40%		35%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the unit, washers, etc., cannot be used in the ϕ9.5 counter bore hole.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.
Note 5. Weight of models with no brake. The weight of brake-attached models is 0.5 kg heavier than the models with no brake shown in the table.

Note 6. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F10H High lead type: Lead 30



Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L		505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M		0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
N		6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16
K		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Weight (kg)		6.9	7.3	7.7	8.1	8.4	8.8	9.2	9.6	10.0	10.3	10.7	11.1	11.5	11.9	12.2	12.6	13.0	13.4
Maximum speed Note 5 (mm/sec)	Lead 30	1800										1440	1260	1080	900		720		630
	Lead 20	1200										960	840	720	600		480		420
	Lead 10	600										480	420	360	300		240		210
	Lead 5	300										240	210	180	150		120		105
	Speed setting	–										80%	70%	60%	50%		40%		35%

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the unit, washers, etc., cannot be used in the ϕ9.5 counter bore hole.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. When using this ϕ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.

Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F14

High lead: Lead 30

Origin on the non-motor side is selectable

Note. Strokes longer than 1050mm are special order items. Please consult us for delivery time.

Ordering method

F14 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 2
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U: From the top R: From the right L: From the left	None: Standard Z: Non-motor side	None: Standard GC: Clean	Lead 20·10·5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

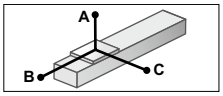
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

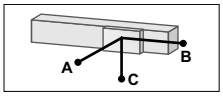
Specifications

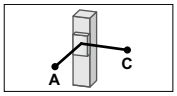
AC servo motor output (W)		100			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	**Horizontal**	15	30	55	80
	Vertical	–	4	10	20
Rated thrust (N)		56	84	169	339
Stroke (mm)		150 to 1250 Note 3 (50mm pitch)			
Overall length (mm)	**Horizontal**	Stroke+255			
	Vertical	Stroke+285			
Maximum dimensions of cross section of main unit (mm)		W136 × H83			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 2 rail			
Position detector		Resolvers Note 4			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Strokes longer than 1050mm are available only for high lead (Lead 30). (Special order item)
Note 4. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	5kg	1756	1364	863
	15kg	1236	467	438
Lead 20	5kg	2153	1366	980
	15kg	1193	465	430
	30kg	1266	245	294
Lead 10	20kg	1132	353	361
	40kg	872	183	218
	55kg	946	140	184
Lead 5	50kg	1575	158	222
	60kg	1493	135	194
	80kg	1466	107	159

Wall installation (Unit: mm)

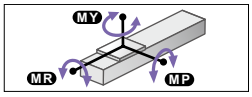
		A	B	C
Lead 30	5kg	951	969	1286
	15kg	408	277	803
Lead 20	5kg	1066	974	1578
	15kg	402	276	775
	30kg	219	105	678
Lead 10	20kg	312	189	690
	40kg	140	57	402
	55kg	92	0	345
Lead 5	30kg	246	107	1095
	40kg	167	64	798
	60kg	88	20	508

Vertical installation (Unit: mm)

		A	C
Lead 20	1kg	600	600
	2kg	1200	1200
	4kg	1154	895
Lead 10	4kg	1232	956
	8kg	634	492
	10kg	499	387
Lead 5	10kg	587	456
	15kg	383	297
	20kg	281	218

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

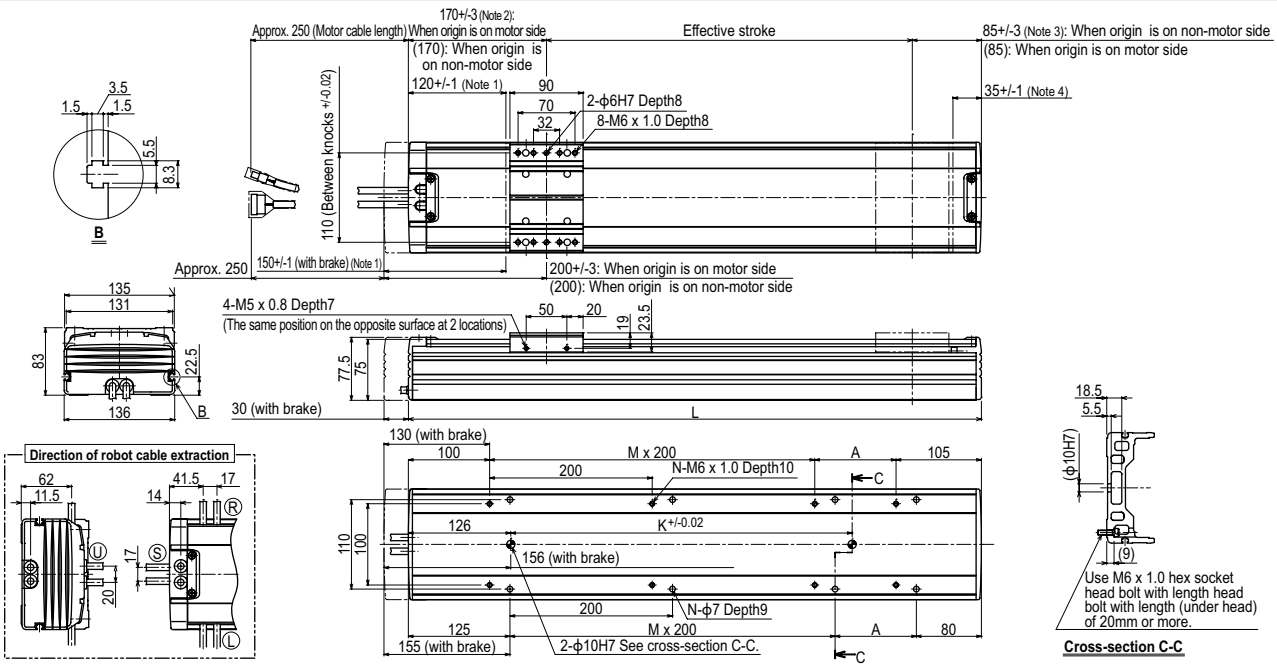
MY	MP	MR
232	233	204

Controller

Controller	Operation method
SR1-X05 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 Note TS-X205 Note	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

Note. Regenerative unit is required when the models used vertically and with 700mm or larger stroke.

F14



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. 172.5+/-4 when the high lead specification (Lead 30) is used.
Note 3. 85+/-4 when the high lead specification (Lead 30) is used.
Note 4. 32.5+/-1 when the high lead specification (Lead 30) is used.
Note 5. Minimum bend radius of motor cable is R50.
Note 6. Weight of models with no brake. The weight of brake-attached models is 0.7 kg heavier than the models with no brake shown in the table.

Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100 Note 8	1150 Note 8	1200 Note 8	1250 Note 8
L		405	455	505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355	1405	1455	1505
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M		0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
N		4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
K		240	240	240	240	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140
Weight (kg) Note 6		6.2	6.9	7.5	8.2	8.8	9.5	10.1	10.8	11.4	12.1	12.6	13.4	13.9	14.6	15.2	15.9	16.5	17.2	17.8	18.5	19.1	19.8	20.4
Maximum speed Note 7 (mm/sec)	**Lead 30**	1800												1440		1170		900		810				
	Lead 20	1200												960		780		600		540				
	Lead 10	600												480		390		300		270				
	Lead 5	300												240		195		150		135				
	Speed setting	–												80%		65%		50%		45%				

Note 7. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 8. Strokes longer than 1050mm are special order items. Please contact us for speed setting.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F14H

High lead: Lead 30

Origin on the non-motor side is selectable: Lead 10·20·30

Note. Strokes longer than 1050mm are special order items. Please consult us for delivery time.

Ordering method

F14H - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 3
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U: From the top R: From the right L: From the left	None: Standard Z: Non-motor side Note 2	None: Standard GC: Clean	Lead 20·10·5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	110: 100V/200W 210: 200V/200W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X - **10** - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	10: 200W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **10** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	10: 200W or less	

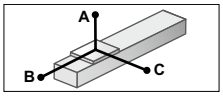
Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
Note 2. If selecting 5mm lead specifications then the origin point cannot be changed to the non-motor side.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function.

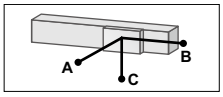
Specifications

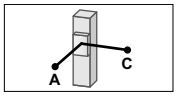
AC servo motor output (W)		200			
Repeatability Note 1 (mm)		+/-0.01			
Deceleration mechanism		Ball screw ϕ15			
Ball screw lead (mm)		30	20	10	5
Maximum speed Note 2 (mm/sec)		1800	1200	600	300
Maximum payload (kg)	Horizontal	25	40	80	100
	Vertical	–	8	20	30
Rated thrust (N)		113	170	341	683
Stroke (mm)		150 to 1250 Note 3 (50mm pitch)			
Overall length (mm)	Horizontal	Stroke+320			
	Vertical	Stroke+350			
Maximum dimensions of cross section of main unit (mm)		W136 × H83			
Cable length (m)		Standard: 3.5 / Option: 5,10			
Linear guide type		4 rows of circular arc grooves × 2 rail			
Position detector		Resolvers Note 4			
Resolution (Pulse/rotation)		16384			

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Strokes longer than 1050mm are available only for high lead (Lead 30). (Special order item)
Note 4. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 30	10kg	2152	1673	934
	25kg	1847	691	533
Lead 20	10kg	2265	1674	961
	20kg	1402	855	537
	40kg	1047	445	324
Lead 10	30kg	1953	583	485
	50kg	1655	365	328
	80kg	1720	242	238
Lead 5	60kg	2443	311	317
	80kg	2193	242	253
	100kg	2000	202	214

Wall installation (Unit: mm)

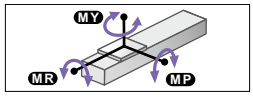
		A	B	C
Lead 30	10kg	975	1219	1625
	25kg	482	426	1257
Lead 20	10kg	999	1220	1711
	20kg	515	558	987
	40kg	263	227	635
Lead 10	30kg	419	338	1282
	50kg	240	162	934
	80kg	134	62	756
Lead 5	60kg	209	117	1398
	80kg	135	62	1120
	100kg	90	29	900

Vertical installation (Unit: mm)

		A	C
Lead 20	4kg	2400	2016
	6kg	1699	1364
	8kg	1301	1051
Lead 10	10kg	1370	1106
	15kg	906	732
	20kg	678	548
Lead 5	20kg	767	619
	25kg	612	494
	30kg	503	407

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

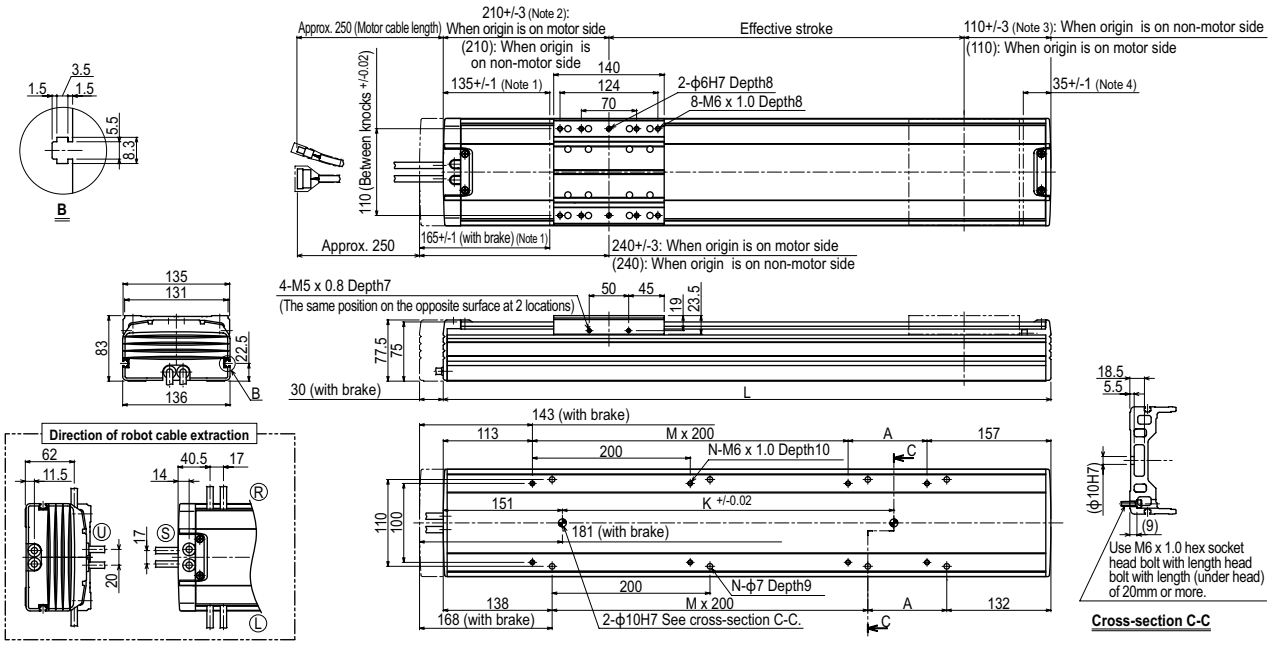
MY	MP	MR
551	552	485

Controller

Controller	Operation method
SR1-X10 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 Note	I/O point trace /
TS-X210 Note	Remote command
RDV-X210-RBR1	Pulse train control

Note. When using the unit vertically, a regeneration unit is required.

F14H



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. 212.5+/-4 when the high lead specification (Lead 30) is used.
Note 3. 110+/-4 when the high lead specification (Lead 30) is used.
Note 4. 32.5+/-1 when the high lead specification (Lead 30) is used.
Note 5. Minimum bend radius of motor cable is R50.
Note 6. Weight of models with no brake. The weight of brake-attached models is 0.7 kg heavier than the models with no brake shown in the table.

Effective stroke		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100 Note 8	1150 Note 8	1200 Note 8	1250 Note 8
L		470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M		0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
N		4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
K		240	240	240	420	420	420	420	600	600	600	600	780	780	780	960	960	960	960	1140	1140	1140	1140	1320
Weight (kg) Note 6		7.5	8.2	8.8	9.5	10.1	10.8	11.4	12.1	12.7	13.4	13.9	14.6	15.2	15.9	16.5	17.2	17.8	18.5	19.1	19.8	20.4	21.1	21.7
Maximum speed Note 7 (mm/sec)	Lead 30	1800												1440		1170		900		810				
	Lead 20	1200												960		780		600		540				
	Lead 10	600												480		390		300		270				
	Lead 5	300												240		195		150		135				
	Speed setting	–												80%		65%		50%		45%				

Note 7. When the stroke is longer than 700mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 8. Strokes longer than 1050mm are special order items. Please contact us for speed setting.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

GF14XL

Origin on the non-motor side is selectable

Note. If you need an installation posture other than the horizontal installation, please contact us.

Ordering method

GF14XL - S H - 20 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Model	Installation direction	Lead designation	Cable entry location	Origin position change	Frame	Grease type	Stroke	Cable length Note 1
	S: Straight model	H: Horizontal installation		No entry: Standard (S) U: From the top R: From the right L: From the left	None: Standard Z: Non-motor side	No entry: Standard (Spot facing) T: Tapping	None: Standard GC: Clean	750 to 2000 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	110: 100V/200W 210: 200V/200W	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X - 10 - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	10: 200W	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - 2 - 20 - RBR1

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	20: 600W or less	

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

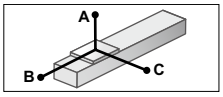
[Cautions after purchase]
- When changing the origin position, contact us since the adjustment is needed.
- When changing the cable entry location, contact us since necessary parts may vary depending on the cable entry location.
- Do not install the robot with the horizontal installation specifications in a direction other than the horizontal direction.

Specifications

AC servo motor output (W)	200
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ15
Ball screw lead (mm)	20
Maximum speed (mm/sec)	1200
Maximum payload (kg)	45
Rated thrust (N)	170
Stroke (mm)	750 to 2000 (50mm pitch)
Overall length (mm)	Stroke+561
Maximum dimensions of cross section of main unit (mm)	W140×H91.5
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 2
Resolution (Pulse/rotation)	20480

Note 1. Positioning repeatability in one direction.
Note 2. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note

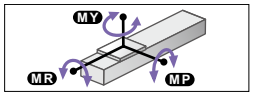


Horizontal installation (Unit: mm)

		A	B	C
Lead 20	10kg	3550	1340	1210
	20kg	2075	685	633
	45kg	1280	326	308

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 1000mm stroke models.

Static loading moment



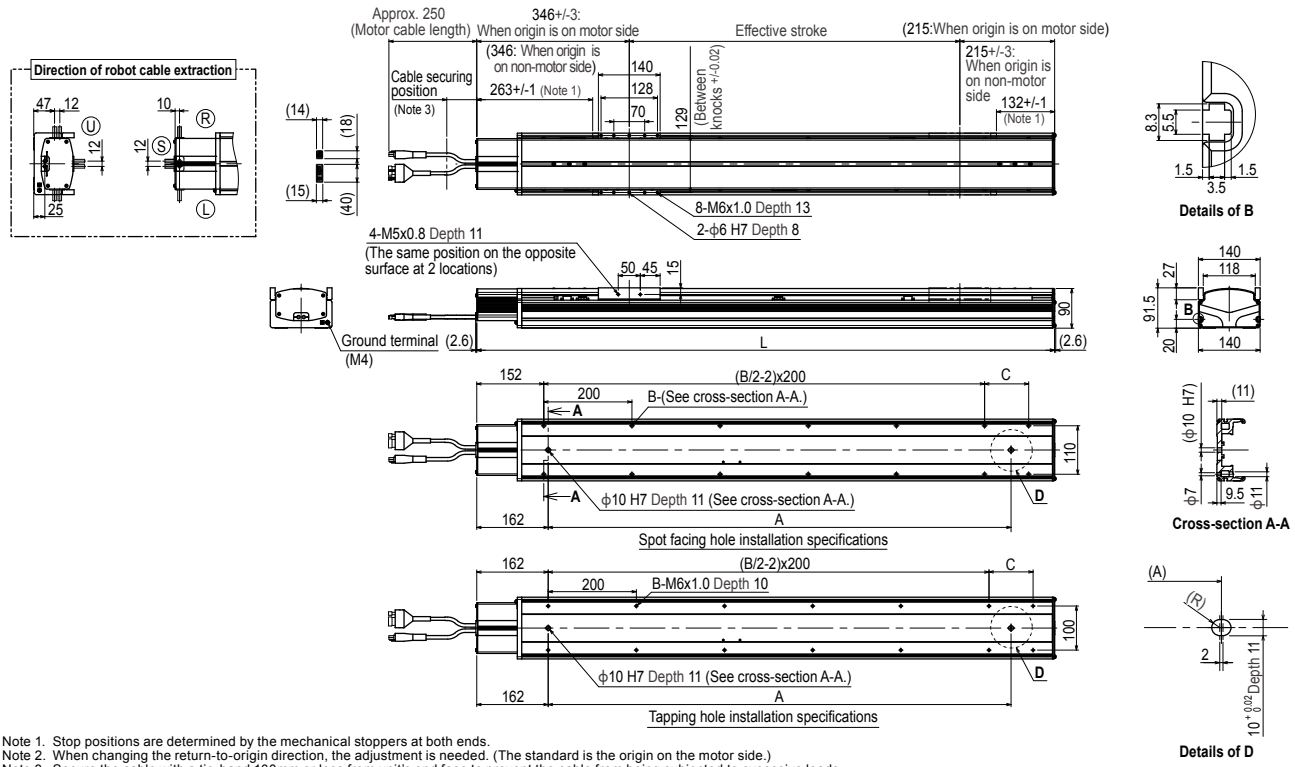
(Unit: N·m)

MY	MP	MR
551	552	485

Controller

Controller	Operation method
SR1-X10 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 TS-X210	I/O point trace/ Remote command
RDV-X220-RBR1	Pulse train control

GF14XL



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When changing the return-to-origin direction, the adjustment is needed. (The standard is the origin on the motor side.)
Note 3. Secure the cable with a tie-band 100mm or less from unit's end face to prevent the cable from being subjected to excessive loads.
Note 4. The cable's minimum bend radius is R30.
Note 5. The length under head of the hexagonal socket head bolts (M6 x 1.0) that are used to install the main body with the spot facing hole installation specifications is 20mm or more. It is recommended that the length under head of the hexagonal socket head bolts (M6 x 1.0) that are used to install the main body with the tapping hole installation specifications is the thickness of the installation base + 10mm or less.

Effective stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000
L	1311	1361	1411	1461	1511	1561	1611	1661	1711	1761	1811	1861	1911	1961	2011	2061	2111	2161	2211	2261	2311	2361	2411	2461	2511	2561
A	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300
B	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26
C	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
Weight (kg)	22.5	23.2	23.8	24.5	25.2	25.9	26.5	27.2	27.9	28.6	29.2	29.9	30.6	31.3	31.9	32.6	33.3	33.9	34.6	35.3	36.0	36.6	37.3	38.0	38.7	39.3

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F17

High lead: Lead 40

Origin on the non-motor side is selectable

Note. Upper robot cable (U) on models with brakes is a special order item, so please consult our sales office or sales representative for assistance.
(External dimensions: overall length + 20 mm)

Ordering method

F17 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 3
	40: 40mm 20: 20mm 10: 10mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U: From the top Note 2 R: From the right L: From the left	None: Standard Z: Non-motor side	None: Standard GC: Clean	Lead 20·10: 200 to 1250 (50mm pitch) Lead 40: 200 to 1450 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - **220** - [ ] - [ ] - [ ] - [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity	Regenerative unit Note 5	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 6	B: With battery (Absolute) N: None (Incremental)

SR1-X - **20** - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit Note 5	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **20** - [ ]

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit Note 5
	2: AC200V	20: 600W or less	RBR1 (Horizontal) RBR2 (Vertical)

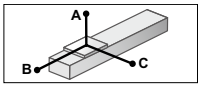
Note 1. The model with a lead of 40mm cannot select specifications with brake (vertical specifications).
Note 2. Upper robot cable (U) on models equipped with brake is a special-order item.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. The robot with the high lead specifications (lead 40) needs a regenerative unit.
Note 6. Select this selection when using the gateway function.

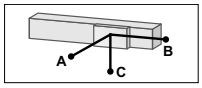
Specifications

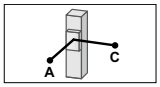
AC servo motor output (W)		400		
Repeatability Note 1 (mm)		+/-0.01		
Deceleration mechanism		Ball screw ϕ20		
Ball screw lead (mm)		40	20	10
Maximum speed Note 2 (mm/sec)		2400	1000 (1200 Note 3)	600
Maximum payload (kg)	**Horizontal**	40	80	120
	Vertical	–	15	35
Rated thrust (N)		169	339	678
Stroke (mm)		200 to 1450 Note 4 (50mm pitch)		
Overall length (mm)	**Horizontal**	Stroke+375	Stroke+365	
	Vertical	–	Stroke+395	
Maximum dimensions of cross section of main unit (mm)		W168 × H100		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		4 rows of circular arc grooves × 2 rail		
Position detector		Resolvers Note 5		
Resolution (Pulse/rotation)		16384		

Note 1. Repeatability for single oscillation.
Note 2. When the stroke exceeds 800mm, although depending on the moving range, the ball screw may resonate (critical speed). In that case, make adjustment to lower the speed on the program using the maximum speed given in the below table as a guide.
Note 3. To operate the unit at a speed exceeding 1,000mm/sec. (Max. speed), a regeneration unit RG1 is required.
Note 4. Longer than 1250mm stroke can be handled by the high lead specification (Lead 40) only.
Note 5. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 40	**10kg**	3540	2753	1999
Lead 20	**20kg**	2541	1357	1181
	40kg	2639	661	736
	30kg	2647	894	989
	50kg	1770	521	588
	80kg	1391	312	362
Lead 10	**60kg**	2443	430	572
	100kg	2000	243	326
	120kg	1841	197	264

Wall installation (Unit: mm)

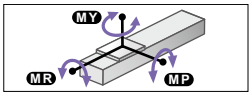
		A	B	C
Lead 40	**10kg**	2022	2670	3501
	20kg	1202	1283	2483
	40kg	752	587	2516
Lead 20	**30kg**	987	820	2578
	50kg	574	447	1685
	80kg	342	237	1263
Lead 10	**60kg**	535	355	2443
	100kg	283	169	2000
	120kg	220	123	1841

Vertical installation (Unit: mm)

		A	C
Lead 20	**5kg**	3000	3000
	10kg	2447	2447
	15kg	1650	1650
Lead 10	**15kg**	1782	1782
	25kg	1054	1054
	35kg	742	742

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

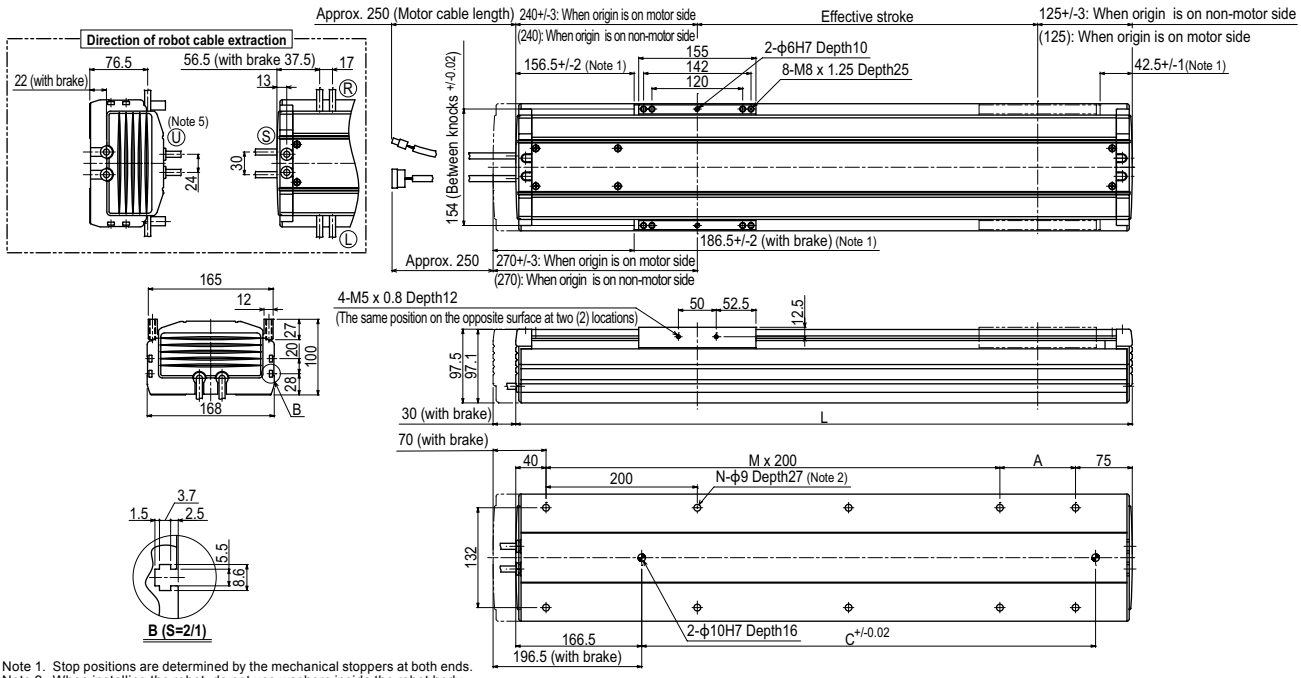
MY	MP	MR
1032	1034	908

Controller

Controller	Operation method
SR1-X20 Note RCX320, RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220 Note	I/O point trace / Remote command
RDV-X220-RBR1 (Horizontal) RDV-X220-RBR2 (Vertical)	Pulse train control

Note. [The following arrangements require a regeneration unit.]
- Using in the upright position.
- To move at a speed exceeding 1,000 mm/sec horizontally.
- High lead (40) used horizontally.

F17

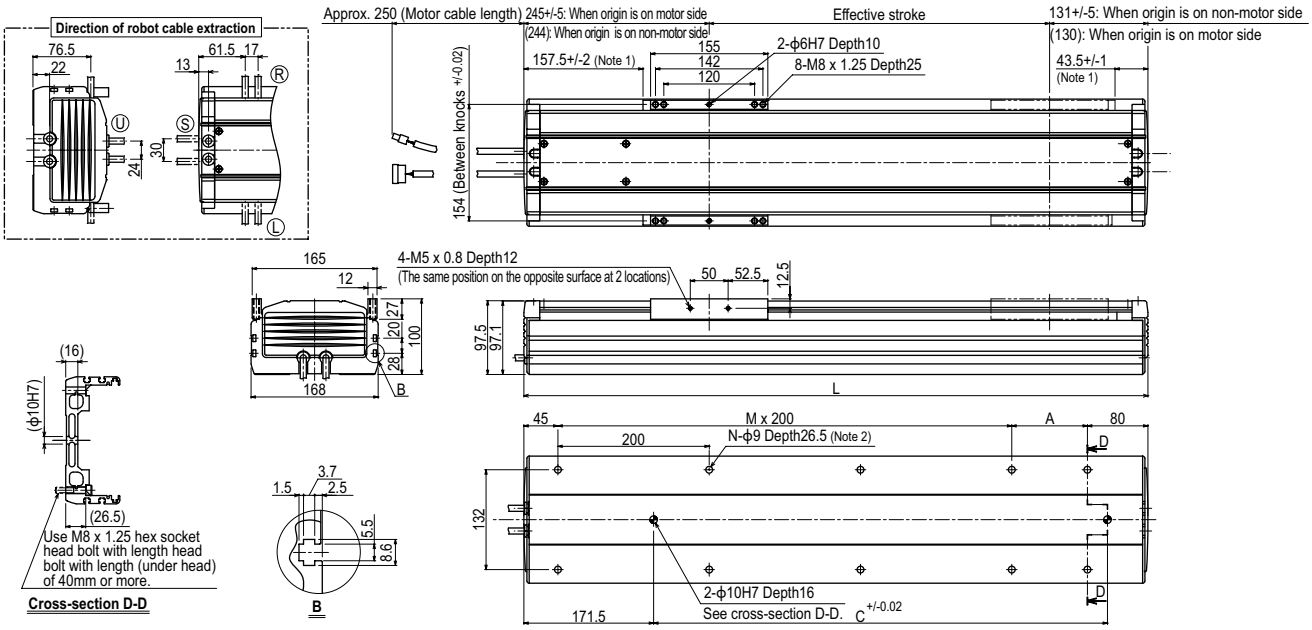


Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. Weight of models with no brake. The weight of brake-attached models is 1.2 kg heavier than the models with no brake shown in the table.
Note 5. Make a separate consultation with us regarding robot cable (brake specifications) U extraction. (External dimensions: overall length + 20 mm)
Note 6. When the stroke is longer than 800mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 7. To operate the unit at a speed exceeding 1,000mm/sec. (Max. speed), a regeneration unit RG1 is required.

Effective stroke		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L		565	615	665	715	765	815	865	915	965	1015	1065	1115	1165	1215	1265	1315	1365	1415	1465	1515	1565	1615
A		50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M		2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7
N		8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18
C		240	240	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1140	1320
Weight (kg) Note 4		14.5	15.3	16.2	17.0	17.8	18.6	19.5	20.3	21.1	21.9	22.8	23.6	24.4	25.2	26.1	26.9	27.7	28.5	29.4	30.2	31.0	31.8
Maximum speed Note 6 (mm/sec)	**Lead 20**	1000(1200 Note 7)													960		840		720		600		480
	Lead 10	600													480		420		360		300		240
	Speed setting	–													80%		70%		60%		50%		40%

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F17 High lead type: Lead 40



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.

Effective stroke	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
L	575	625	675	725	775	825	875	925	975	1025	1075	1125	1175	1225	1275	1325	1375	1425	1475	1525	1575	1625	1675	1725	1775	1825
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
C	240	240	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1140	1320	1320	1320	1320	1320
Weight (kg)	14.7	15.5	16.4	17.2	18.0	18.8	19.7	20.5	21.3	22.1	23.0	23.8	24.6	25.4	26.3	27.1	27.9	28.7	29.6	30.4	31.2	32.0	32.8	33.6	34.4	35.2
Maximum speed Note 4 (mm/sec) Lead 40	2400													1920		1680		1440		1200		960		840		720
Maximum speed Note 4 (mm/sec) Speed setting	–													80%		70%		60%		50%		40%		35%		30%

Note 4. When the stroke is longer than 800mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F17L

Origin on the non-motor side is selectable

Note. Upper robot cable (U) on models with brakes is a special order item, so please consult our sales office or sales representative for assistance. (External dimensions: overall length + 20 mm)

Ordering method

F17L - 50 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 2
		No entry: No brakes BK: Brakes provided	No entry: Standard (S) U: From the top Note 1 R: From the right L: From the left	None: Standard Z: Non-motor side	None: Standard GC: Clean	1100 to 2050 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - **220** - **R** - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity Note 4	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 5	B: With battery (Absolute) N: None (Incremental)

SR1-X - **20** - [ ] - **R** - [ ] - [ ]

Controller	Driver: Power capacity Note 4	Usable for CE	Regenerative unit	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **20** - [ ]

Driver	Power-supply voltage	Driver: Power capacity Note 4	Regenerative unit
	2: AC200V	20: 600W or less	RBR1 (Horizontal) RBR2 (Vertical)

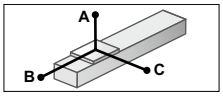
Note 1. Upper robot cable (U) on models equipped with brake is a special-order item.
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Acceleration / deceleration is different depending the Positioner or Controller or Driver.
Note 5. Select this selection when using the gateway function.

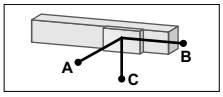
Specifications

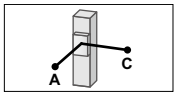
AC servo motor output (W)		600
Repeatability Note 1 (mm)		+/-0.02
Deceleration mechanism		Ball screw ϕ25
Ball screw lead (mm)		50
Maximum speed Note 2 (mm/sec)		2200
Maximum payload (kg)	Horizontal	50
	Vertical	10
Rated thrust (N)		204
Stroke (mm)		1100 to 2050 (50mm pitch)
Overall length (mm)	Horizontal	Stroke+475
	Vertical	Stroke+505
Maximum dimensions of cross section of main unit (mm)		W168 × H100
Cable length (m)		Standard: 3.5 / Option: 5,10
Linear guide type		4 rows of circular arc grooves × 2 rail
Position detector		Resolvers Note 3
Resolution (Pulse/rotation)		16384

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 1200mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 50	10kg	4000	2755	2608
	30kg	3045	895	1175
	50kg	2602	523	715

Wall installation (Unit: mm)

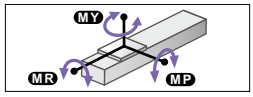
		A	B	C
Lead 50	10kg	2720	2681	4000
	30kg	1185	821	3045
	50kg	680	449	2602

Vertical installation (Unit: mm)

		A	C
Lead 50	2kg	1200	1200
	5kg	3000	3000
	10kg	2650	2650

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



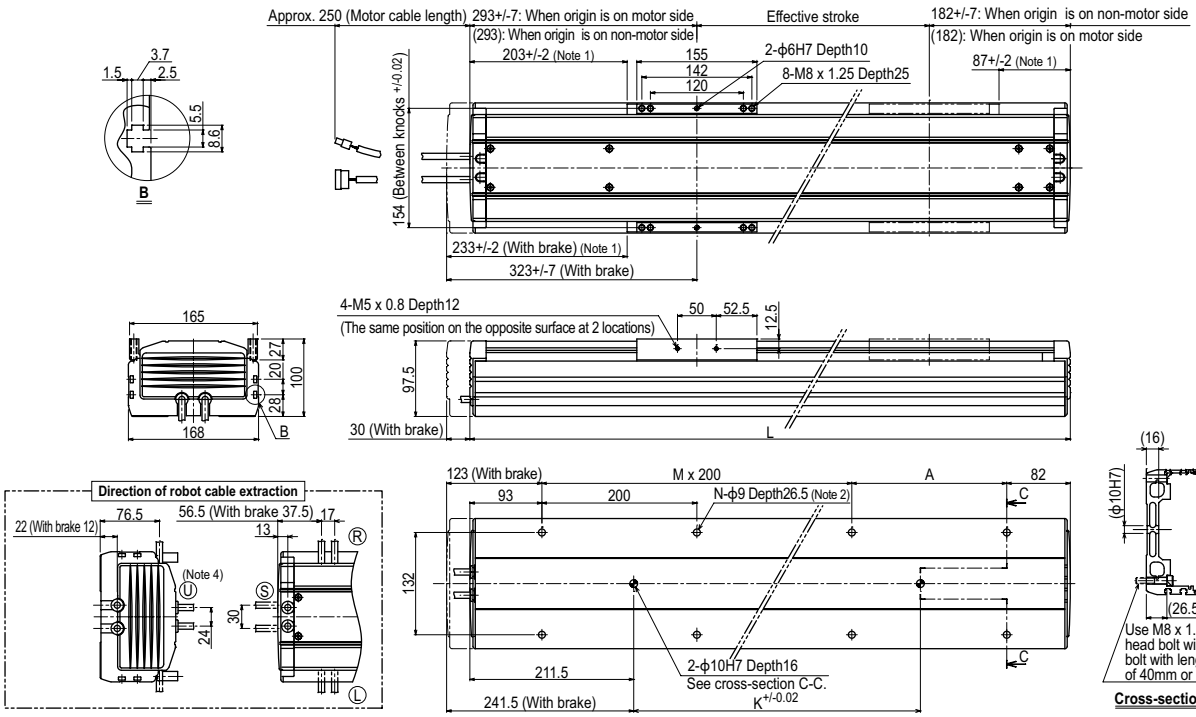
(Unit: N·m)

MY	MP	MR
1032	1034	908

Controller

Controller	Operation method
SR1-X20-R RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220-R	I/O point trace / Remote command
RDV-X220-RBR1 (Horizontal) RDV-X220-RBR2 (Vertical)	Pulse train control

F17L



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. It is not allowed to use a counter bore washer, etc. when installing the main unit.
Note 3. This is the weight of the model without a brake. The weight of the model equipped with a brake is 1.2kg heavier than this value.
Note 4. Make a separate consultation with us regarding robot cable (brake specifications) U extraction. (External dimensions: overall length + 20 mm)

Effective stroke		1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050
L		1575	1625	1675	1725	1775	1825	1875	1925	1975	2025	2075	2125	2175	2225	2275	2325	2375	2425	2475	2525
A		200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M		6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11
N		16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26
K		1140	1140	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
Weight (kg) Note 3		34.1	34.9	35.8	36.7	37.6	38.4	39.3	40.2	41.1	42	42.9	43.8	44.7	45.6	46.5	47.3	48.2	49.1	50	50.9
Maximum speed Note 5 (mm/sec)	Lead 50	2200			1900				1500				1200				900			800	
	Speed setting	–			86%				68%				54%				40%			36%	

Note 5. When the stroke exceeds 1200mm, although depending on the moving range, the ball screw may resonate (critical speed). In that case, make adjustment to lower the speed on the program using the maximum speed given in the above table as a guide.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

GF17XL

Origin on the non-motor side is selectable

Note. If you need an installation posture other than the horizontal installation, please contact us.

Ordering method

GF17XL - S H - 20 [ ] [ ] [ ] [ ] [ ] [ ]

Model	Model	Installation direction	Lead designation	Cable entry location	Origin position change	Frame	Grease type	Stroke	Cable length Note 1
	S: Straight model	H: Horizontal installation		No entry: Standard (S) U: From the top R: From the right L: From the left	None: Standard Z: Non-motor side	No entry: Standard (Spot facing) T: Tapping	None: Standard GC: Clean	850 to 2500 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX 220 [ ] [ ] [ ] [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X 20 [ ] R Note 4 [ ] [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X 2 20 - RBR1

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	20: 600W or less	

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.
Note 4. When operating the robot at a speed that is a maximum speed of 750 mm/sec or less, the regenerative unit is not needed.

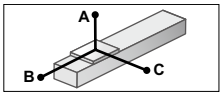
[Cautions after purchase]
- When changing the origin position, contact us since the adjustment is needed.
- When changing the cable entry location, contact us since necessary parts may vary depending on the cable entry location.
- Do not install the robot with the horizontal installation specifications in a direction other than the horizontal direction.

Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ20
Ball screw lead (mm)	20
Maximum speed (mm/sec)	1200 Note 2
Maximum payload (kg)	90
Rated thrust (N)	339
Stroke (mm)	850 to 2500 (50mm pitch)
Overall length (mm)	Stroke+686
Maximum dimensions of cross section of main unit (mm)	W168×H105.5
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	20480

Note 1. Positioning repeatability in one direction.
Note 2. To operate the unit at a speed exceeding 750 mm/sec. (Max. speed), a regeneration unit is required.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note

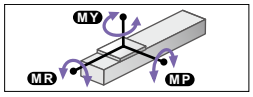


Horizontal installation (Unit: mm)

		A	B	C
Lead 20	30kg	4050	1090	1405
	50kg	2755	650	835
	90kg	1610	345	450

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 1000mm stroke models.

Static loading moment



(Unit: N·m)

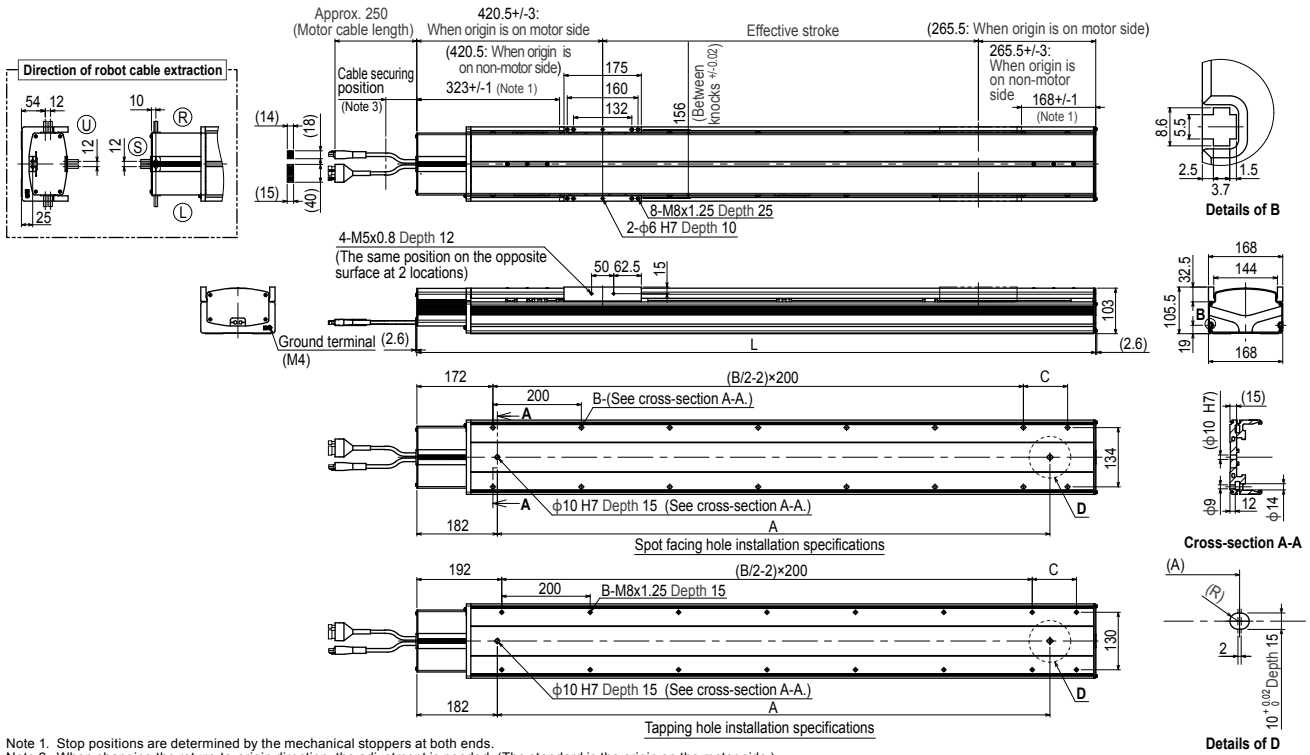
MY	MP	MR
1032	1034	908

Controller

Controller	Operation method
SR1-X20 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220	I/O point trace/ Remote command
RDV-X220-RBR1	Pulse train control

Note. To operate the unit at a speed exceeding 750 mm/sec. (Max. speed), a regeneration unit is required.

GF17XL



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When changing the return-to-origin direction, the adjustment is needed. (The standard is the origin on the motor side.)
Note 3. Secure the cable with a tie-band 100mm or less from unit's end face to prevent the cable from being subjected to excessive loads.
Note 4. The cable's minimum bend radius is R30.
Note 5. The length under head of the hexagonal socket head bolts (M8 x 1.25) that are used to install the main body with the spot facing hole installation specifications is 45 mm or more. It is recommended that the length under head of the hexagonal socket head bolts (M8 x 1.25) that are used to install the main body with the tapping hole installation specifications is the thickness of the installation base + 15 mm or less.

Effective stroke	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500
L	1536	1586	1636	1686	1736	1786	1836	1886	1936	1986	2036	2086	2136	2186	2236	2286	2336	2386	2436	2486	2536	2586	2636	2686	2736	2786	2836	2886	2936	2986	3036	3086	3136	3186
A	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900
B	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32
C	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
Weight (kg)	37.4	38.4	39.4	40.3	41.3	42.3	43.2	44.2	45.2	46.1	47.1	48.1	49.0	50.0	51.0	51.9	52.9	53.9	54.8	55.8	56.8	57.7	58.7	59.7	60.6	61.6	62.6	63.5	64.5	65.5	66.4	67.4	68.4	69.3

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F20

High lead: Lead 40

Origin on the non-motor side is selectable

Note. Upper robot cable (U) on models with brakes is a special order item, so please consult our sales office or sales representative for assistance. (External dimensions: overall length + 20 mm)

Ordering method

F20 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Brake Note 1	Cable entry location	Origin position change	Grease type	Stroke	Cable length Note 3
	40: 40mm 20: 20mm 10: 10mm	No entry: No brakes BK: Brakes provided	No entry: Standard (S) U: From the top Note 2 R: From the right L: From the left	None: Standard Z: Non-motor side	None: Standard GC: Clean	Lead 20: 10: 200 to 1250 (50mm pitch) Lead 40: 200 to 1450 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - **220** - [ ] - [ ] - [ ] - [ ]

Positioner Note 4	Driver: Power-supply voltage / Power capacity Note 5	Regenerative unit Note 6	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 7	B: With battery (Absolute) N: None (Incremental)

SR1-X - **20** - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity Note 5	Usable for CE	Regenerative unit Note 6	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **20** - [ ]

Driver	Power-supply voltage	Driver: Power capacity Note 5	Regenerative unit Note 6
	2: AC200V	20: 600W or less	RBR1 (Horizontal) RBR2 (Vertical)

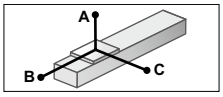
Note 1. The model with a lead of 10mm cannot select specifications without brake (horizontal specifications).
The model with a lead of 40mm cannot select specifications with brake (vertical specifications).
Note 2. Upper robot cable (U) on models equipped with brake is a special-order item.
Note 3. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 4. See P.600 for DIN rail mounting bracket.
Note 5. Acceleration / deceleration is different depending the Positioner or Controller or Driver.
Note 6. The robot with the high lead specifications (lead 40) needs a regenerative unit.
Note 7. Select this selection when using the gateway function.

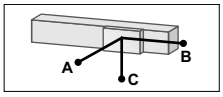
Specifications

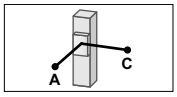
AC servo motor output (W)		600		
Repeatability Note 1 (mm)		+/-0.01		
Deceleration mechanism		Ball screw ϕ20		
Ball screw lead (mm)		40	20	10
Maximum speed Note 2 (mm/sec)		2400	1000 (1200 Note 3)	600
Maximum payload (kg)	**Horizontal**	60	120	–
	Vertical	–	25	45
Rated thrust (N)		255	510	1020
Stroke (mm)		200 to 1450 Note 4 (50mm pitch)		
Overall length (mm)	**Horizontal**	Stroke+427	Stroke+417	–
	Vertical	–	Stroke+447	
Maximum dimensions of cross section of main unit (mm)		W202 × H115		
Cable length (m)		Standard: 3.5 / Option: 5,10		
Linear guide type		4 rows of circular arc grooves × 2 rail		
Position detector		Resolvers Note 5		
Resolution (Pulse/rotation)		16384		

Note 1. Positioning repeatability in one direction.
Note 2. When the stroke is longer than 800mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.
Note 3. To operate the unit at a speed exceeding 1,000mm/sec. (Max. speed), a regeneration unit RG1 is required.
Note 4. Longer than 1250mm stroke can be handled by the high lead specification (Lead 40) only.
Note 5. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note







Horizontal installation (Unit: mm)

		A	B	C
Lead 40	10kg	4000	4000	3450
	20kg	3397	2235	2073
	60kg	2443	718	977
Lead 20	50kg	2602	869	1083
	80kg	2193	528	703
	120kg	1841	339	505

Wall installation (Unit: mm)

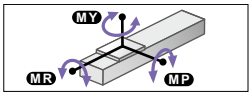
		A	B	C
Lead 40	10kg	3571	4000	4000
	20kg	2118	2164	3397
	60kg	1000	648	2443
Lead 20	50kg	1097	799	2602
	80kg	708	458	2193
	120kg	468	268	1841

Vertical installation (Unit: mm)

		A	C
Lead 20	15kg	2635	2635
	20kg	2000	2000
	25kg	1621	1621
Lead 10	20kg	2188	2188
	30kg	1446	1446
	45kg	951	951

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

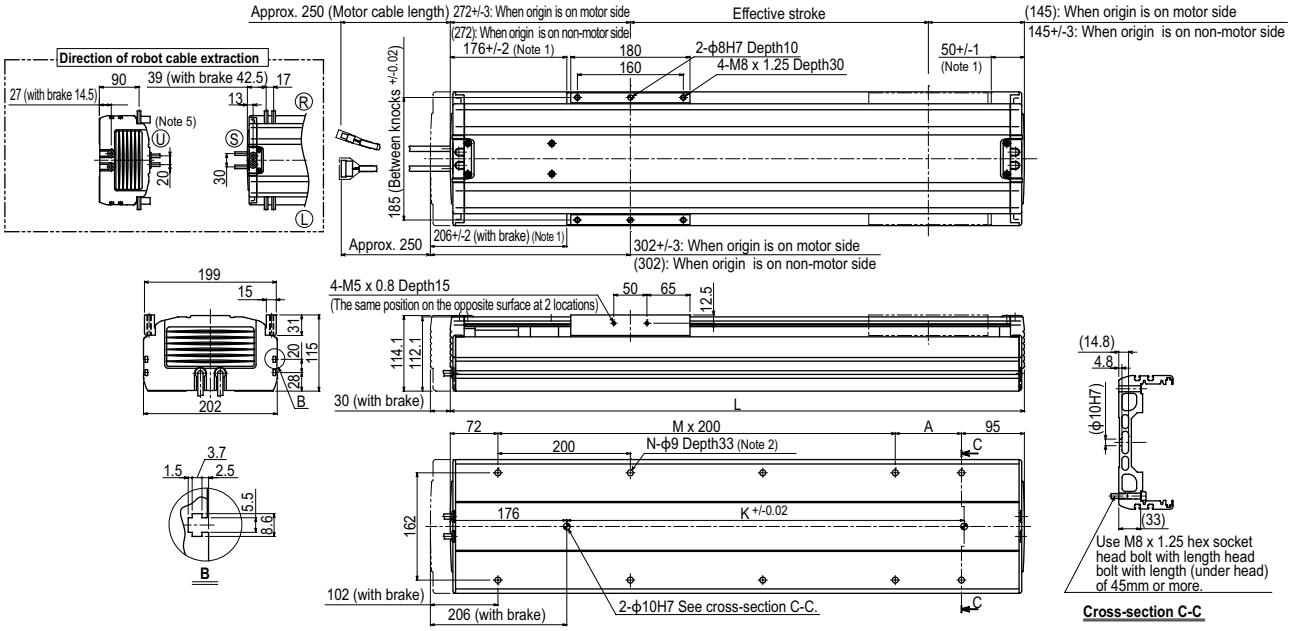
MY	MP	MR
1196	1199	1052

Controller

Controller	Operation method
SR1-X20 Note RCX320, RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220 Note	I/O point trace / Remote command
RDV-X220-RBR1 (Horizontal) RDV-X220-RBR2 (Vertical)	Pulse train control

Note. [The following arrangements require a regeneration unit.]
- Using in the upright position.
- To move at a speed exceeding 1,000 mm/sec horizontally.
- High lead (40) used horizontally.

F20



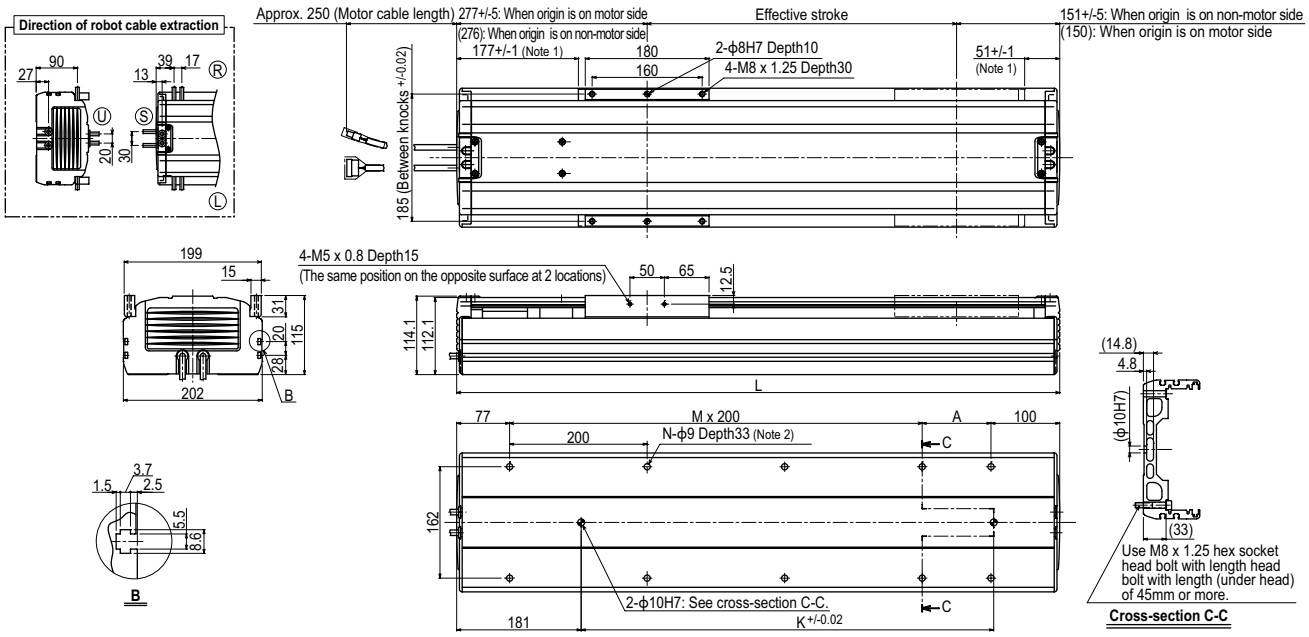
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.
Note 4. Weight of models with no brake. The weight of brake-attached models is 1.5 kg heavier than the models with no brake shown in the table.
Note 5. Make a separate consultation with us regarding robot cable (brake specifications) U extraction. (External dimensions: overall length + 20 mm)

Effective stroke		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L		617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367	1417	1467	1517	1567	1617	1667
A		50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M		2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7
N		8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18
K		420	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1320	1320	1320
Weight (kg) Note 4		21.0	22.0	22.9	23.8	24.8	25.7	26.6	27.5	28.5	29.4	30.3	31.2	32.1	33.0	34.0	34.9	35.8	36.7	37.7	38.6	39.5	40.4
Maximum speed Note 6 (mm/sec)	Lead 20	1000 (1200 Note 7)													960		840		720		600		480
	Lead 10	600													480		420		360		300		240
	Speed setting	–													80%		70%		60%		50%		40%

Note 6. When the stroke exceeds 800mm, although depending on the moving range, the ball screw may resonate (critical speed). In that case, make adjustment to lower the speed on the program using the maximum speed given in the above table as a guide.
Note 7. To operate the unit at a speed exceeding 1,000mm/sec. a regeneration unit RG1 is required.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F20 High lead type: Lead 40



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When installing the robot, do not use washers inside the robot body.
Note 3. Minimum bend radius of motor cable is R50.

Effective stroke	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
L	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
K	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1320	1320	1320	1320	1320	1320	1320
Weight (kg)	21.2	22.2	23.1	24.0	25.0	25.9	26.8	27.7	28.7	29.6	30.5	31.4	32.3	33.2	34.2	35.1	36.0	36.9	37.9	38.8	39.7	40.6	41.5	42.4	43.3	44.2
Maximum speed (mm/sec) Note 4 — Lead 40	2400													1920		1680		1440		1200		960		840		720
Maximum speed (mm/sec) Note 4 — Speed setting	–													80%		70%		60%		50%		40%		35%		30%

Note 4. When the stroke is longer than 800mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.
Note 5. Longer than 1250mm stroke can be handled by the high lead specification (Lead 40) only.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

F20N

Ordering method

F20N - 20 - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Origin position change	Grease type	Stroke	Cable length Note 1
F20N	20	None: Standard Z: Non-motor side	None: Standard GC: Clean	1150 to 2050 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX 220 - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X 20 - [ ] - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	No entry: None R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X 2 20 - RBR1

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	20: 600W or less	

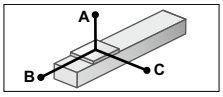
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.04
Deceleration mechanism	Ball screw ϕ20
Ball screw lead (mm)	20
Maximum speed (mm/sec)	1000 (1200 Note 2)
Maximum payload (kg)	80
Rated thrust (N)	339
Stroke (mm)	1150 to 2050 (100mm pitch)
Overall length (mm)	Stroke+420
Maximum dimensions of cross section of main unit (mm)	W202 × H120
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	16384

Note 1. Positioning repeatability in one direction.
Note 2. A regenerative unit is needed if using the SR1-X, TS-X at maximum speeds exceeding 1000mm /sec.. If using the RDV-X, then the regenerative unit RBR1 is required regardless of the installation conditions.
Note 3. Position detectors(resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note

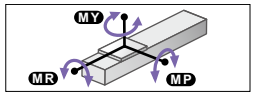


Horizontal installation (Unit: mm)

		A	B	C
Lead 20	20kg	3397	2332	2683
	40kg	2795	1144	1361
	60kg	2443	749	914
	80kg	2193	551	695

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

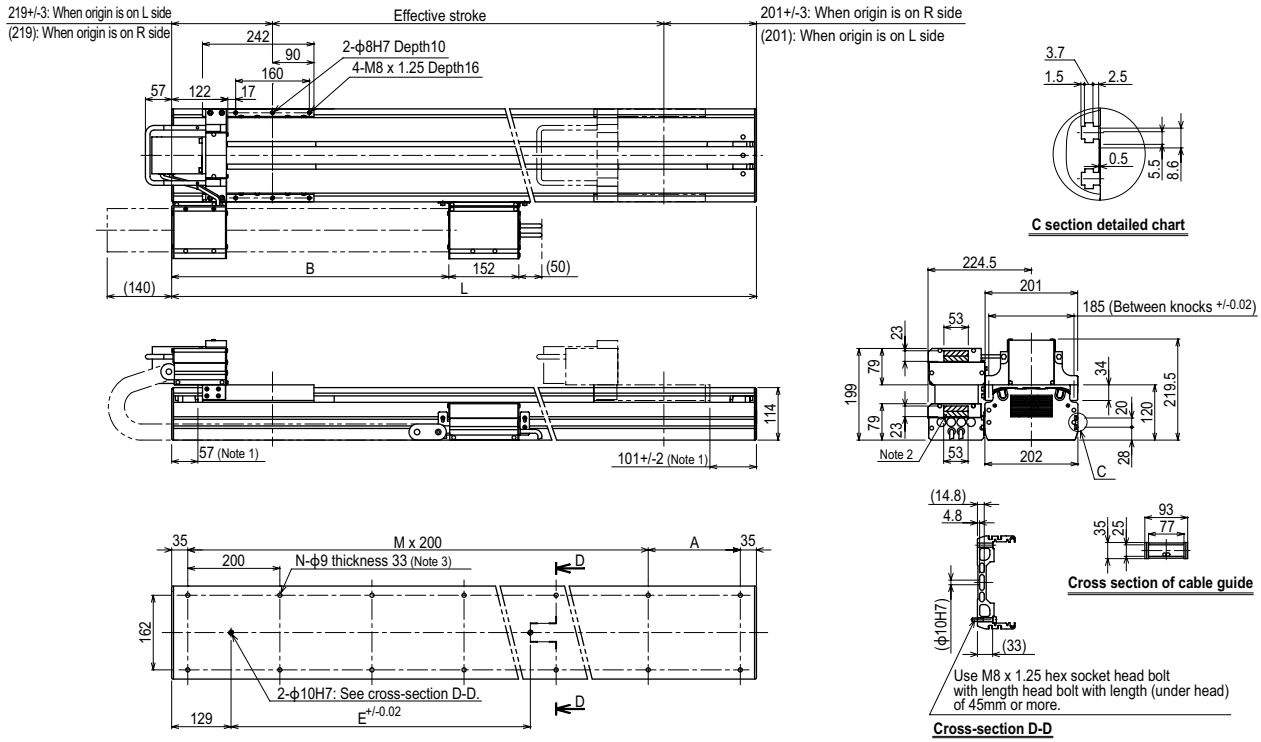
MY	MP	MR
1196	1199	1052

Controller

Controller	Operation method
SR1-X20 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220 Note	I/O point trace / Remote command
RDV-X220-RBR1	Pulse train control

Note. When the unit is operated at a speed exceeding the maximum speed of 1,000mm/sec., a regeneration unit is required.

F20N



Effective stroke	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050
L	1570	1670	1770	1870	1970	2070	2170	2270	2370	2470
A	100	200	100	200	100	200	100	200	100	200
B	602	648	694	740	786	832	878	924	970	1016
E	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
M	7	7	8	8	9	9	10	10	11	11
N	18	18	20	20	22	22	24	24	26	26
Weight (kg)	54.0	56.2	58.4	60.6	62.9	65.1	67.3	69.6	71.8	74.0

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. The shaded position indicates the user cable extraction port.
Note 3. When installing the robot, do not use washers inside the robot body.
Note 4. The origin is set on the left (L) side at shipping.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

N15

Ordering method

N15- 20 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Cable carrier entry location Note 1	Cable carrier specification	Origin position change	Grease type	Stroke	Cable length Note 2
		RH: Horizontal, right LH: Horizontal, left RW: Wall, right LW: Wall, left	S: Standard Cable carrier M: Optional Cable carrier	Horizontal: None: R side (Standard); Z: L side Wall: None: L side (Standard); Z: R side	None: Standard GC: Clean	500 to 2000 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - 220 - R - [ ] - [ ] - [ ]

Positioner Note 3	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	220: 200V/400 to 600W	R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

SR1-X - 20 - [ ] - R - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
	20: 400 to 600W	No entry: Standard E: CE marking	R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - 2 - 20 - RBR1

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	20: 600W or less	

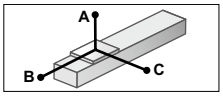
Note 1. To find information on cable carrier extraction directions see P.293.
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

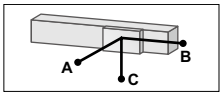
Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ15
Ball screw lead (mm)	20
Maximum speed Note 2 (mm/sec)	1200
Maximum payload (kg)	50
Rated thrust (N)	339
Stroke (mm)	500 to 2000 (100mm pitch)
Overall length (mm)	Stroke+330
Maximum dimensions of cross section of main unit (mm)	W145 × H120
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	16384

Note 1. Positioning repeatability in one direction.
Note 2. The maximum speed may not be reached when the moving distance is short.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

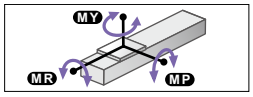
		A	B	C
Lead 20	10kg	3048	2322	1259
	30kg	1489	841	500
	50kg	1278	544	344

Wall installation (Unit: mm)

		A	B	C
Lead 20	10kg	1258	1823	2449
	30kg	428	545	1039
	50kg	248	289	749

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

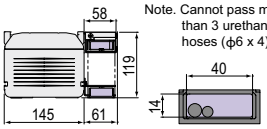
MY	MP	MR
691	692	608

Controller

Controller	Operation method
SR1-X20-R RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220-R	I/O point trace / Remote command
RDV-X220-RBR1	Pulse train control

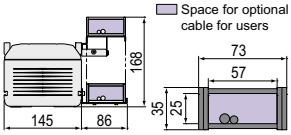
Cable carrier for users

S type Standard cable carrier

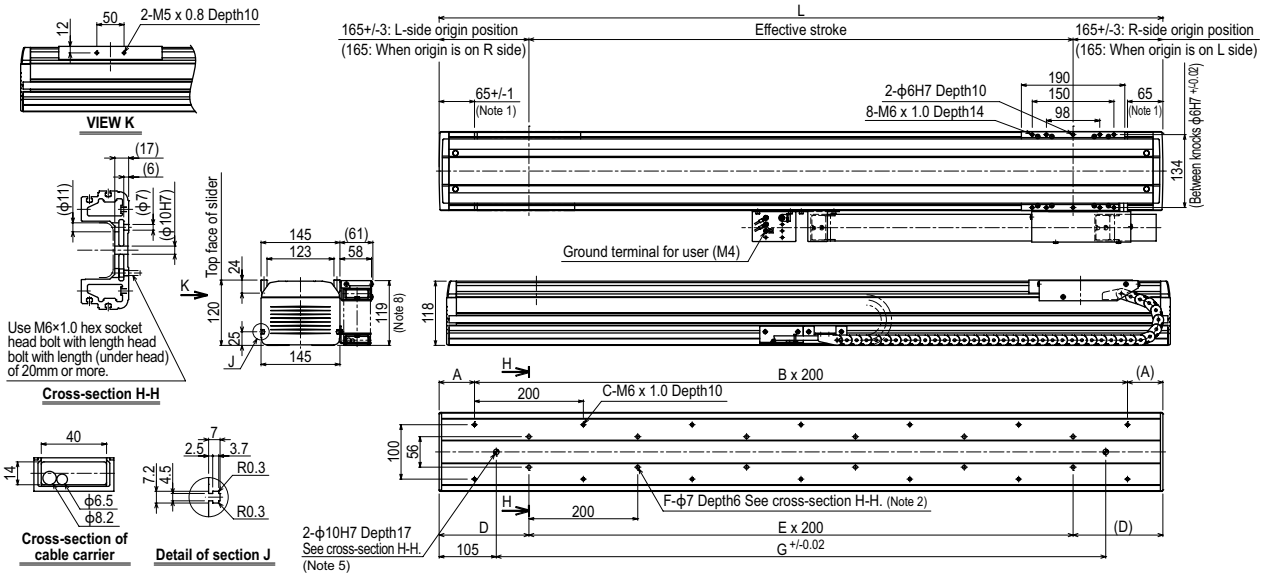


Note. Cannot pass more than 3 urethane hoses (ϕ6 x 4).

M type Optional cable carrier



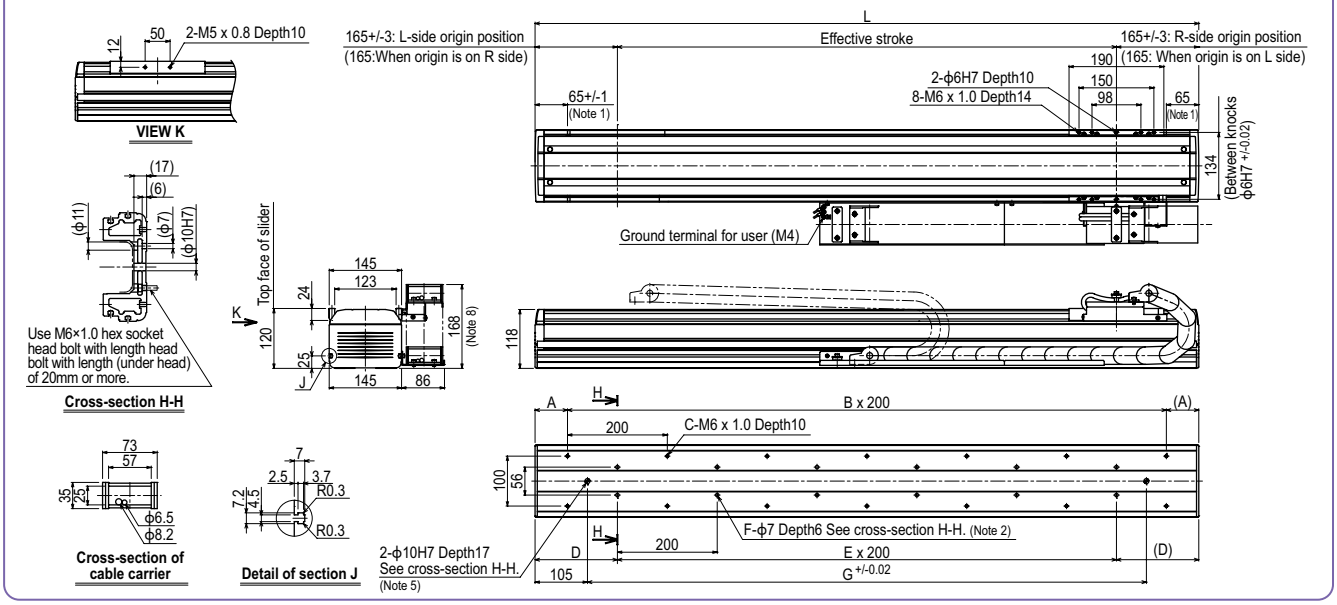
N15: Horizontal installation / Standard Cable carrier specification RH



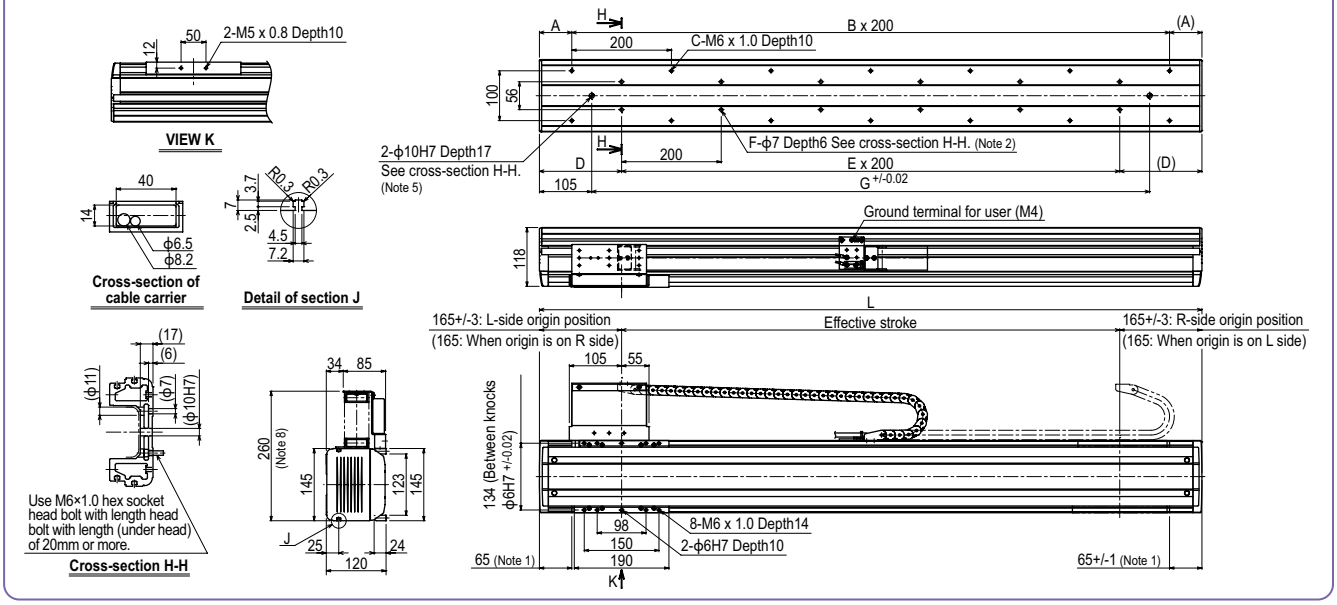
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When using ϕ7 holes for installation, do not use a washer, spring washer, etc. in the main unit.
Note 3. When shipped from the factory, the horizontal model has the origin on the right side and the wall model has the origin on the left side. (This diagram shows the machine whose cable carrier taken out from right.)
Note 4. If the model is a standard cable carrier specification, it is not possible to pass 3 or more ϕ6 × 4 urethane air hoses.
Note 5. When using a ϕ10H7 hole, make sure that the pin does not go into deeper than as shown in the drawing.
Note 6. Contact us for vertical installation.
Note 7. Weight of models with no brake. The weight of brake-attached models is 1 kg heavier than the models with no brake shown in the table.
Note 8. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
A	15	65	15	65	15	65	15	65	15	65	15	65	15	65	15	65
B	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
C	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
D	115	165	115	165	115	165	115	165	115	165	115	165	115	165	115	165
E	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
F	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
G	620	720	820	920	1020	1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120
Weight (kg) Note 7	19	20	22	23	24	26	27	29	30	32	33	35	36	38	39	40

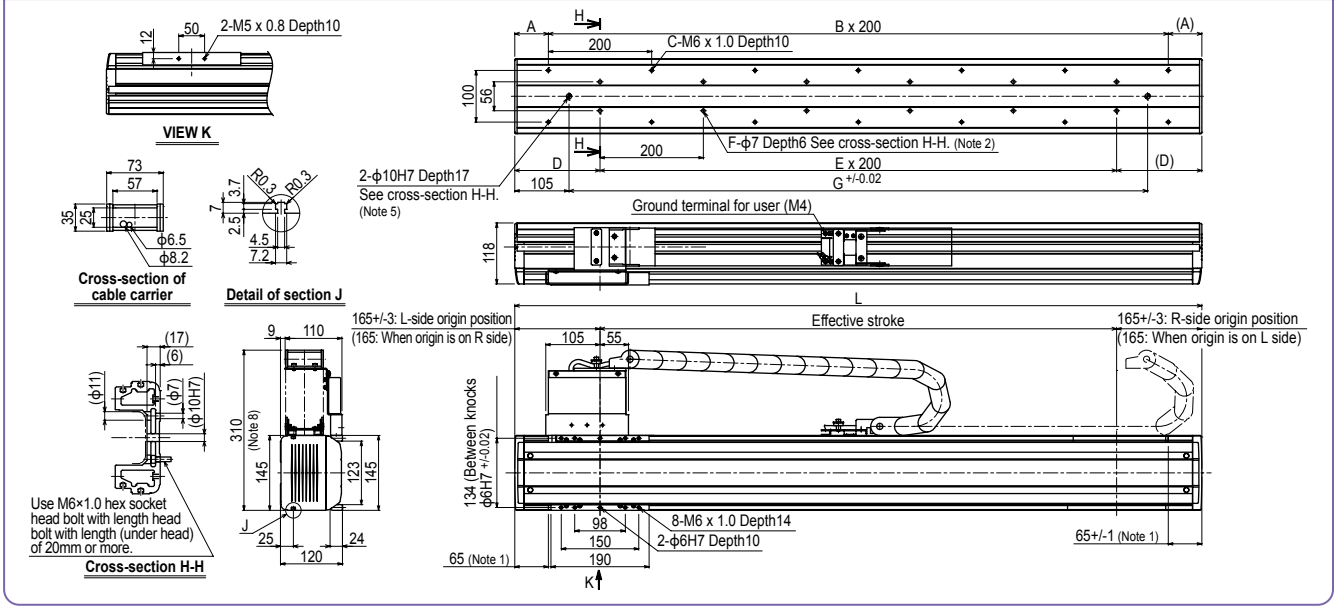
N15: Horizontal installation / Optional Cable carrier specification RH



N15: Wall installation / Standard Cable carrier specification RW



N15: Wall installation / Optional Cable carrier specification RW



N15D

Double carriage

Ordering method

N15D - 20 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Installation direction	Cable carrier specification	Option	Stroke	Cable length	Controller Note 1
N15D	20	H: Horizontal installation W: Wall installation	S: Standard Cable carrier M: Optional Cable carrier	Grease type: None: Standard, GC: Clean	250 to 1750 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable) Note 3	RCX320 SR1-X (2 units) Note 2 TS-X (2 units) Note 2 RDV-X (2 units) Note 2

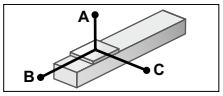
Note 1. To find controller selection options, see the ordering method on each controller page.
Note 2. 2 units are required when using SR1-X, TS-X or RDV-X.
Note 3. If a flexible cable is needed for the SR1-X, TS-X, or RDV-X, then select 3K/5K/10K. On the RCX320 the standard cable is a flexible cable, so enter 3L/5L/10L when ordering.

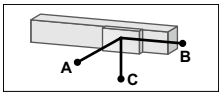
Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ15
Ball screw lead (mm)	20
Maximum speed Note 2 (mm/sec)	1200
Maximum payload (kg)	50
Rated thrust (N)	339
Stroke (mm)	250 to 1750 (100mm pitch)
Overall length (mm)	Stroke+330
Maximum dimensions of cross section of main unit (mm)	W145 × H120
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	16384

Note 1. Positioning repeatability in one direction.
Note 2. The maximum speed may not be reached when the moving distance is short.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

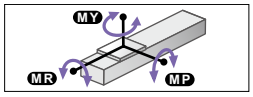
		A	B	C
Lead 20	10kg	3048	2322	1259
	30kg	1489	841	500
	50kg	1278	544	344

Wall installation (Unit: mm)

		A	B	C
Lead 20	10kg	1258	1823	2449
	30kg	428	545	1039
	50kg	248	289	749

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment

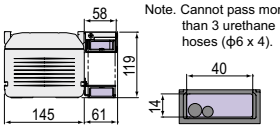


(Unit: N·m)

MY	MP	MR
691	692	608

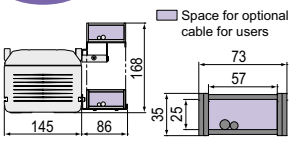
Cable carrier for users

S type Standard cable carrier



Note. Cannot pass more than 3 urethane hoses (ϕ6 x 4).

M type Optional cable carrier

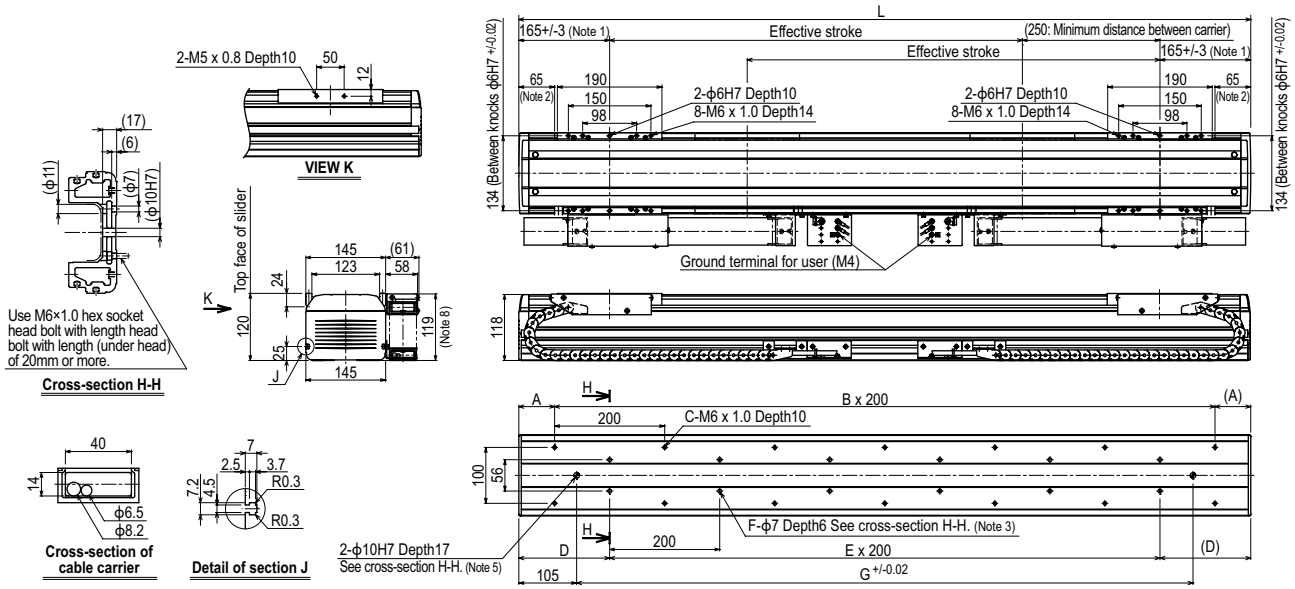


Controller

Controller	Operation method
RCX320-R	Programming / I/O point trace / Remote command / Operation using RS-232C communication
SR1-X20-R Note	
TS-X220-R Note	I/O point trace / Remote command
RDV-X20-RBR1 Note	Pulse train control

Note. 2 units are required when using SR-1, TS-X or RDV-X.

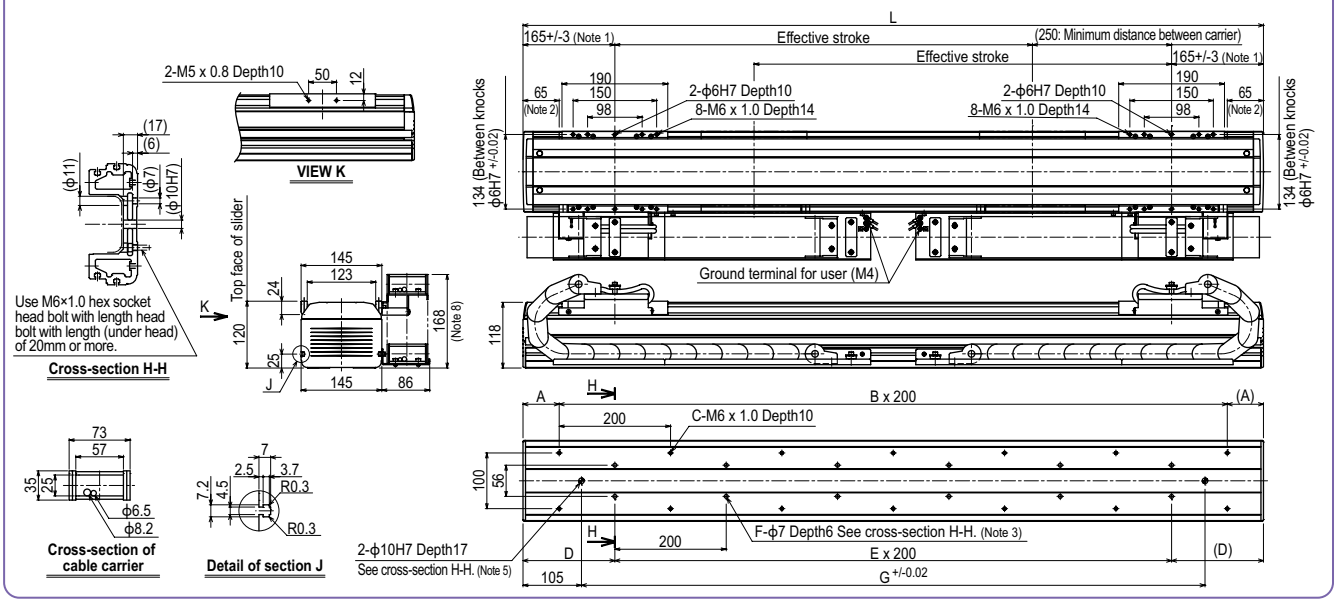
N15D: Horizontal installation / Standard Cable carrier specification



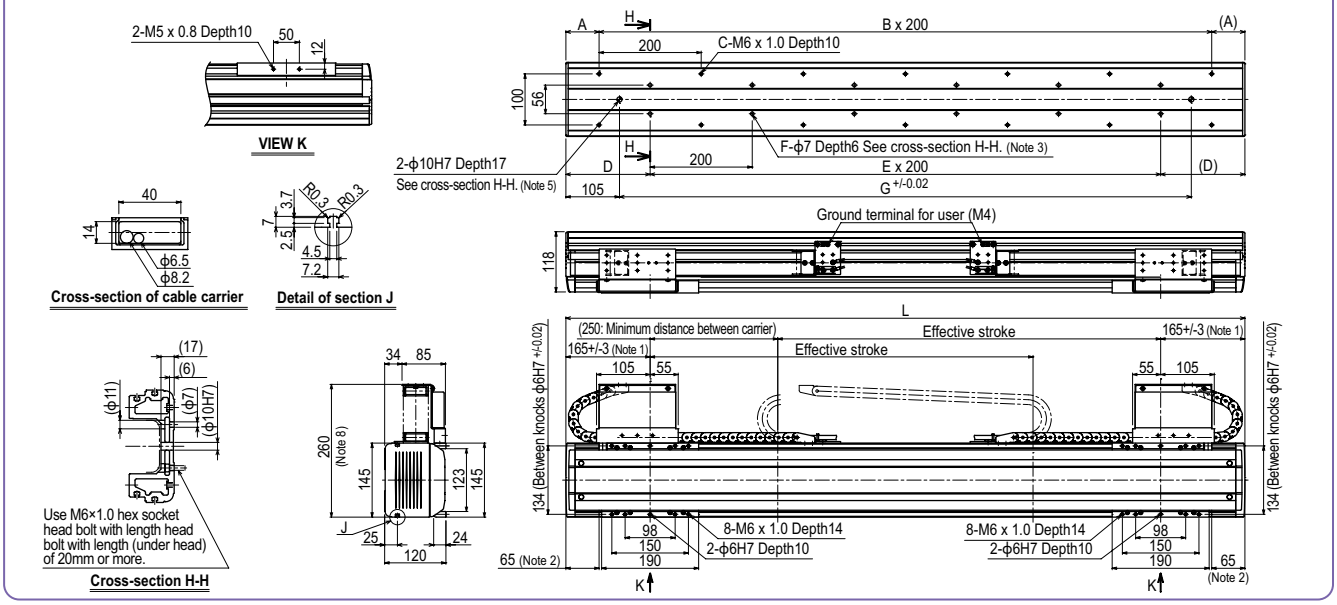
Note 1. Position of table carriage when searched to the origin.
Note 2. Stop positions are determined by the mechanical stoppers at both ends.
Note 3. When using ϕ7 holes for installation, do not use a washer, spring washer, etc. in the main unit.
Note 4. If the model is a standard cable carrier specification, it is not possible to pass 3 or more ϕ6 × 4 urethane air hoses.
Note 5. When using a ϕ10H7 hole, make sure that the pin does not go into deeper than as shown in the drawing.
Note 6. Contact us for vertical installation.
Note 7. Weight of models with no brake. The weight of brake-attached models is 1 kg heavier than the models with no brake shown in the table.
Note 8. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	250	350	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750
L	830	930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
A	15	65	15	65	15	65	15	65	15	65	15	65	15	65	15	65
B	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
C	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
D	115	165	115	165	115	165	115	165	115	165	115	165	115	165	115	165
E	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
F	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
G	620	720	820	920	1020	1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120
Weight (kg) Note 7	24	26	27	29	30	32	33	35	36	38	39	40	42	43	45	46

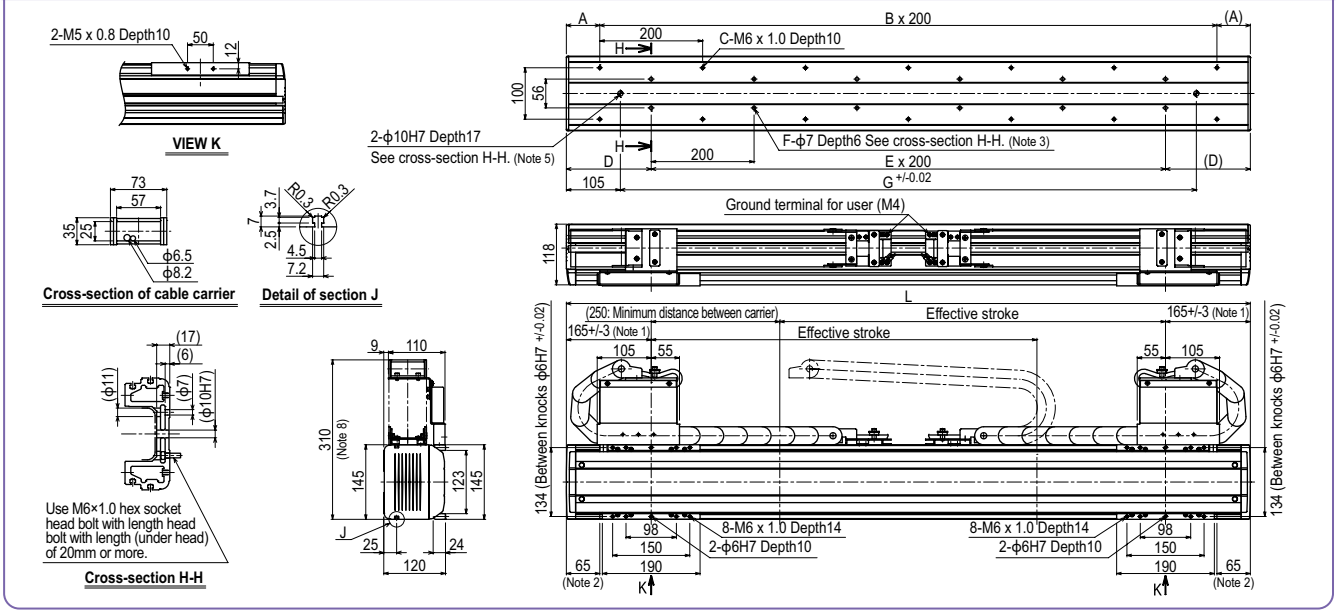
N15D: Horizontal installation / Optional Cable carrier specification



N15D: Wall installation / Standard Cable carrier specification



N15D: Wall installation / Optional Cable carrier specification



Controller RCX320 ▶ 626 SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

N18

Ordering method

N18 - 20 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Model	Lead designation	Cable carrier entry location Note 1	Cable carrier specification	Origin position change	Grease type	Stroke	Cable length Note 2
		RH: Horizontal, right LH: Horizontal, left RW: Wall, right LW: Wall, left	S: Standard Cable carrier M: Optional Cable carrier	Horizontal: None: R side (Standard) / Z: L side Wall: None: L side (Standard) / Z: R side	None: Standard GC: Clean	500 to 2500 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

Model	Positioner Note 3	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX	TSX: TS-X	220: 200V/400 to 600W	R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 4	B: With battery (Absolute) N: None (Incremental)

Model	Driver: Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery
SR1-X	20: 400 to 600W	No entry: Standard E: CE marking	R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
RDV-X	2: AC200V	20: 600W or less	RBR1

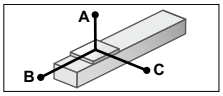
Note 1. To find information on cable carrier extraction directions see P.293.
Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.692 for details on robot cable.
Note 3. See P.600 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function.

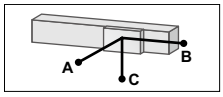
Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ20
Ball screw lead (mm)	20
Maximum speed Note 2 (mm/sec)	1200
Maximum payload (kg)	80
Rated thrust (N)	339
Stroke (mm)	500 to 2500 (100mm pitch)
Overall length (mm)	Stroke+362
Maximum dimensions of cross section of main unit (mm)	W180 × H115
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	16384

Note 1. Repeatability for single oscillation.
Note 2. The maximum speed may not be reached when the moving distance is short.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

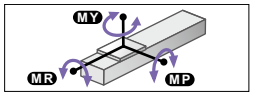
		A	B	C
Lead 20	30kg	3045	1629	1902
	50kg	2602	961	1150
	80kg	2193	586	716

Wall installation (Unit: mm)

		A	B	C
Lead 20	30kg	1928	1553	3045
	50kg	1157	885	2602
	80kg	707	509	2193

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

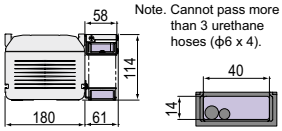
MY	MP	MR
1161	1163	1021

Controller

Controller	Operation method
SR1-X20-R RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220-R	I/O point trace / Remote command
RDV-X220-RBR1	Pulse train control

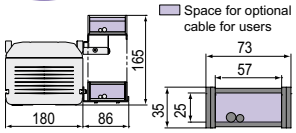
Cable carrier for users

S type Standard cable carrier

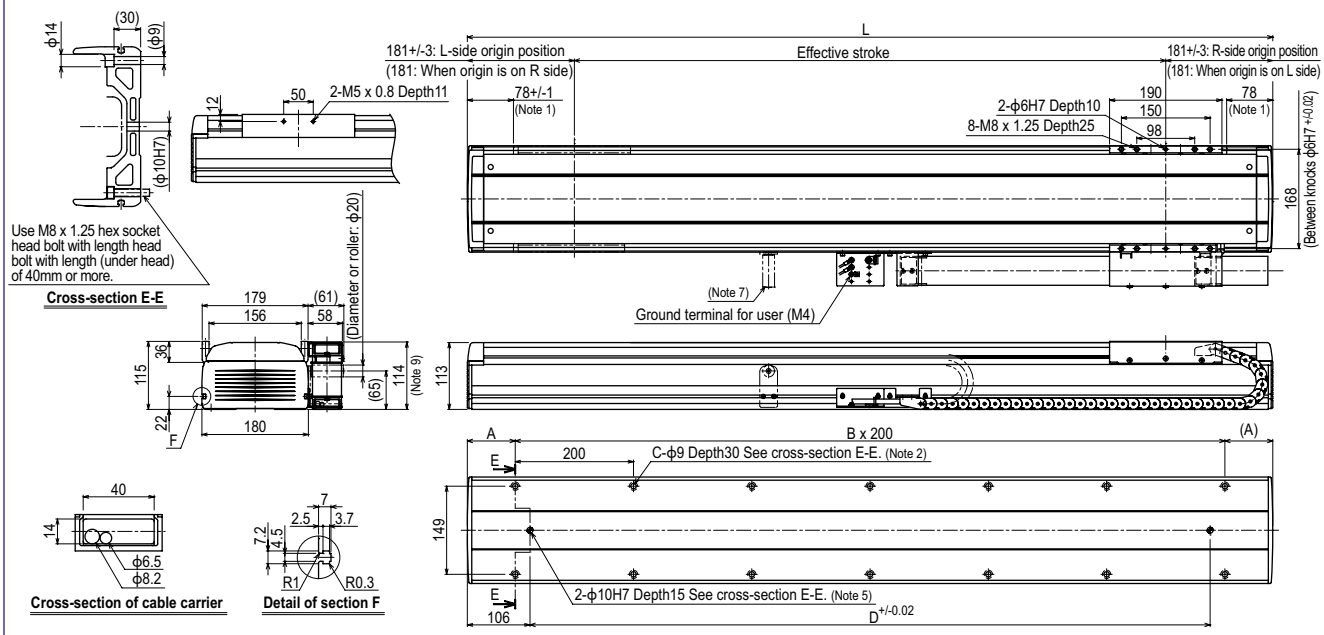


Note. Cannot pass more than 3 urethane hoses (ϕ6 x 4).

M type Optional cable carrier



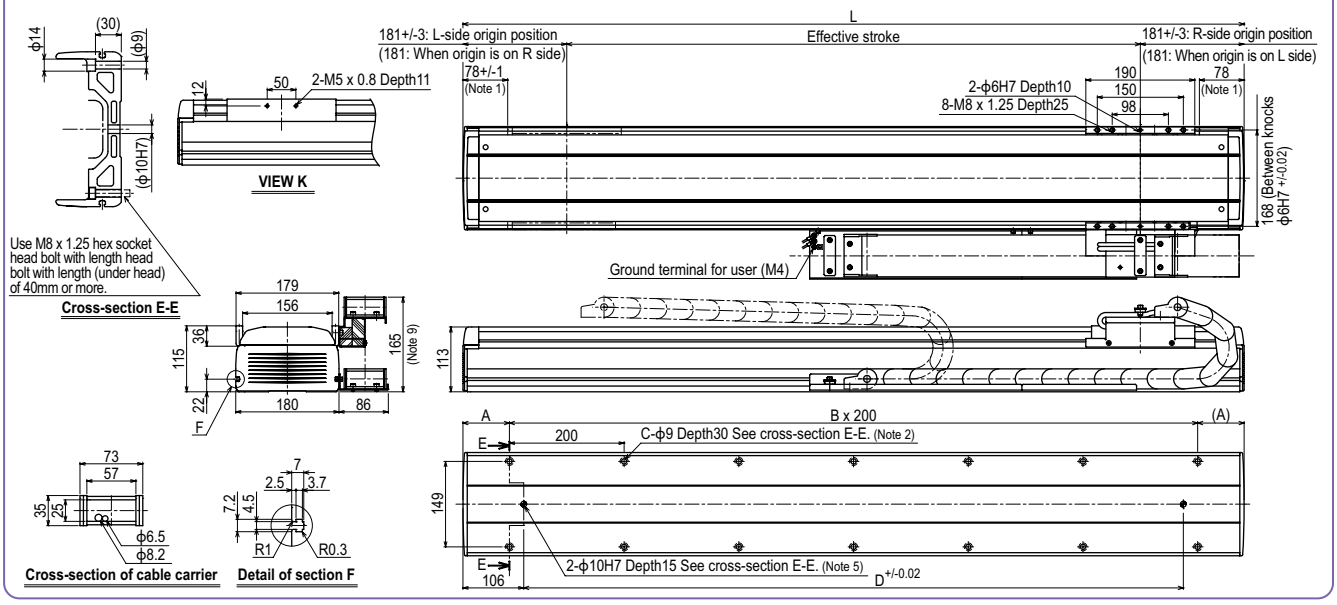
N18: Horizontal installation / Standard Cable carrier specification RH



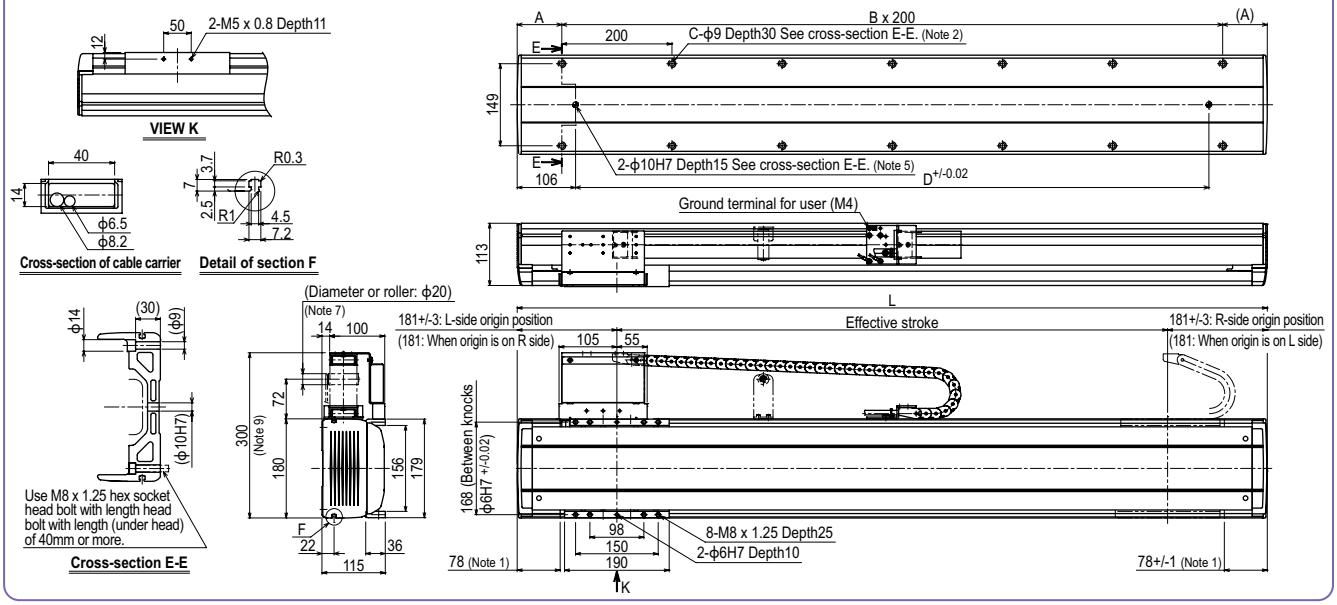
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When using ϕ9 holes for installation, do not use a washer, spring washer, etc. in the main unit.
Note 3. When shipped from the factory, the horizontal model has the origin on the right side and the wall model has the origin on the left side. (This diagram shows the machine whose cable carrier taken out from right.)
Note 4. If the model is a standard cable carrier specification, it is not possible to pass 3 or more ϕ6 × 4 urethane air hoses.
Note 5. When using a ϕ10H7 hole, make sure that the pin does not go into deeper than as shown in the drawing.
Note 6. Contact us for vertical installation.
Note 7. For the robot with more than 2,100 stroke, a roller is installed to prevent the cable carrier hanging.
Note 8. Weight of models with no brake. The weight of brake-attached models is 1 kg heavier than the models with no brake shown in the table.
Note 9. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
L	862	962	1062	1162	1262	1362	1462	1562	1662	1762	1862	1962	2062	2162	2262	2362	2462	2562	2662	2762	2862
A	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131
B	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
C	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28
D	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050	2150	2250	2350	2450	2550	2650
Weight (kg) Note 8	27	29	31	33	35	37	39	41	43	45	47	48	50	52	54	56	58	60	62	64	66

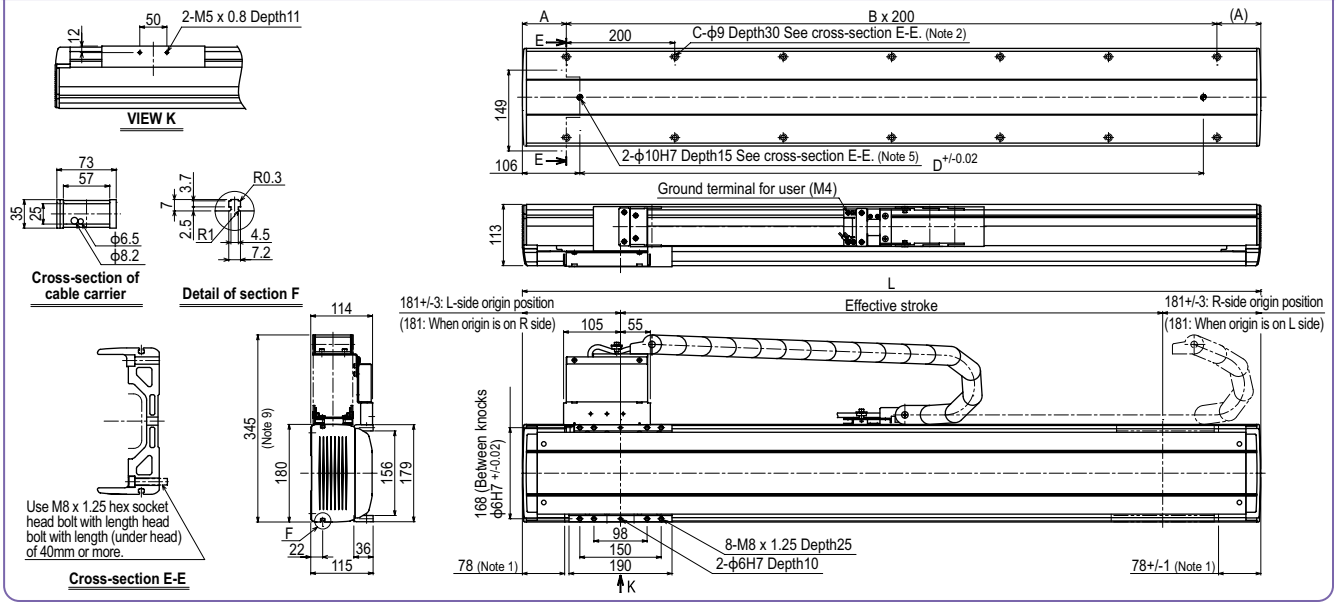
N18: Horizontal installation / Optional Cable carrier specification RH



N18: Wall installation / Standard Cable carrier specification RW



N18: Wall installation / Optional Cable carrier specification RW



N18D

Double carriage

Ordering method

N18D -	20	-		-		-		-		-		-	
Model	Lead designation		Installation direction		Cable carrier specification		Option		Stroke		Cable length		Controller Note 1
			H: Horizontal installation W: Wall installation		S: Standard Cable carrier M: Optional Cable carrier		Grease type: None: Standard GC: Clean		250 to 2250 (100mm pitch)		3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable) Note 3		RCX320 SR1-X (2 units) Note 2 TS-X (2 units) Note 2 RDV-X (2 units) Note 2

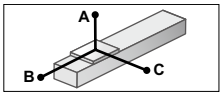
Note 1. To find controller selection options, see the ordering method on each controller page.
Note 2. 2 units are required when using SR1-X, TS-X or RDV-X.
Note 3. If a flexible cable is needed for the SR1-X, TS-X, or RDV-X, then select 3K/5K/10K. On the RCX320 the standard cable is a flexible cable, so enter 3L/5L/10L when ordering.

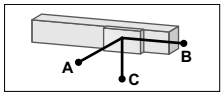
Specifications

AC servo motor output (W)	400
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw ϕ20
Ball screw lead (mm)	20
Maximum speed Note 2 (mm/sec)	1200
Maximum payload (kg)	80
Rated thrust (N)	339
Stroke (mm)	250 to 2250 (100 pitch)
Overall length (mm)	Stroke+362
Maximum dimensions of cross section of main unit (mm)	W180 × H115
Cable length (m)	Standard: 3.5 / Option: 5,10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers Note 3
Resolution (Pulse/rotation)	16384

Note 1. Positioning repeatability in one direction.
Note 2. The maximum speed may not be reached when the moving distance is short.
Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

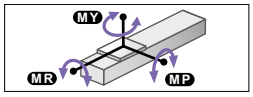
		A	B	C
Lead 20	30kg	3045	1629	1902
	50kg	2602	961	1150
	80kg	2193	586	716

Wall installation (Unit: mm)

		A	B	C
Lead 20	30kg	1928	1553	3045
	50kg	1157	885	2602
	80kg	707	509	2193

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

MY	MP	MR
1161	1163	1021

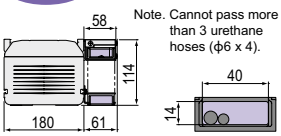
Controller

Controller	Operation method
RCX320-R	Programming / I/O point trace / Remote command / Operation using RS-232C communication
SR1-X20-R Note	
TS-X220-R Note	I/O point trace / Remote command
RDV-X20-RBR1 Note	Pulse train control

Note. 2 units are required when using SR1-X, TS-X or RDV-X.

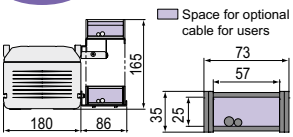
Cable carrier for users

S type Standard cable carrier

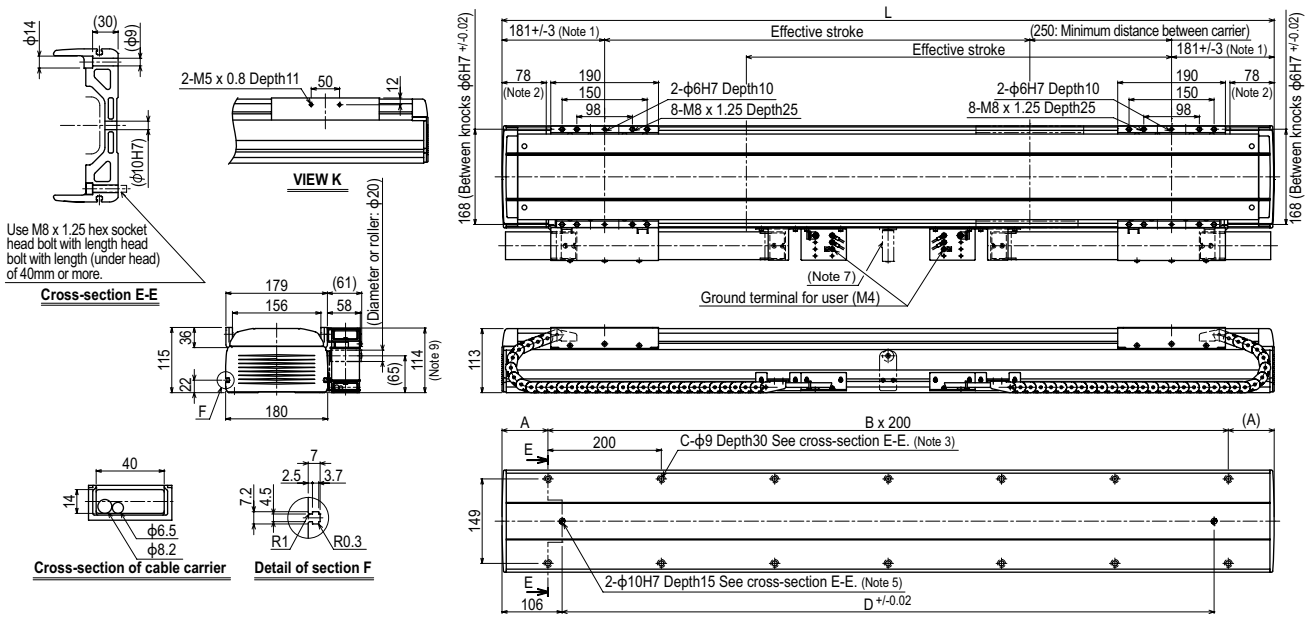


Note. Cannot pass more than 3 urethane hoses (ϕ6 x 4).

M type Optional cable carrier



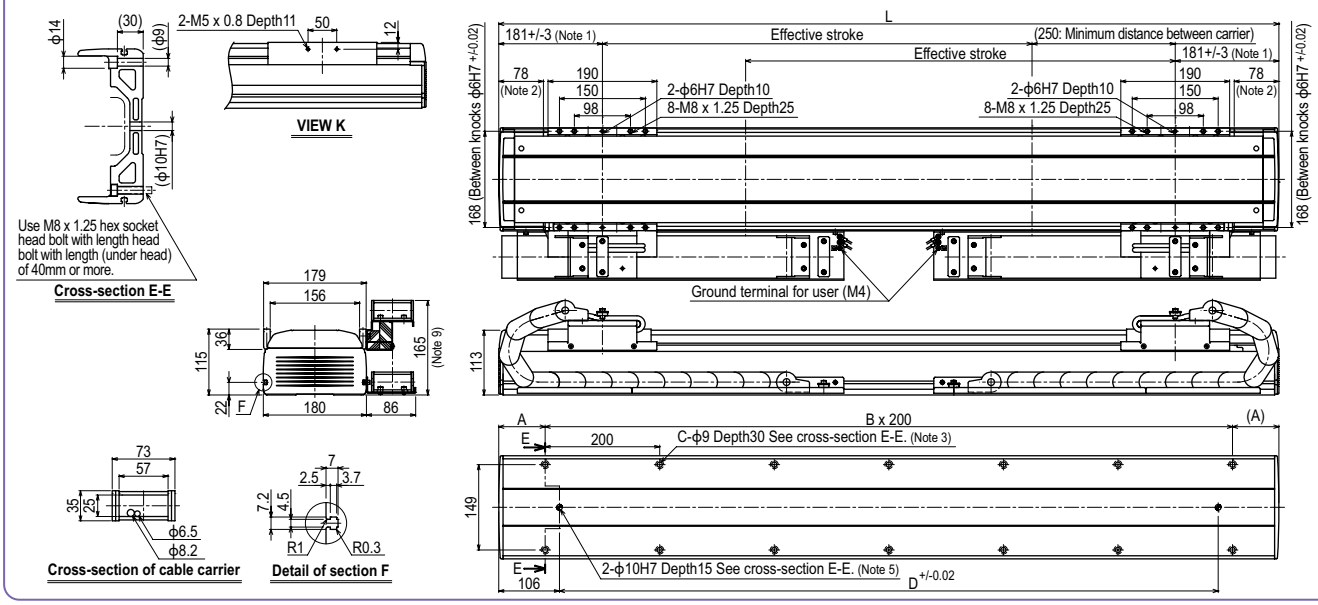
N18D: Horizontal installation / Standard Cable carrier specification



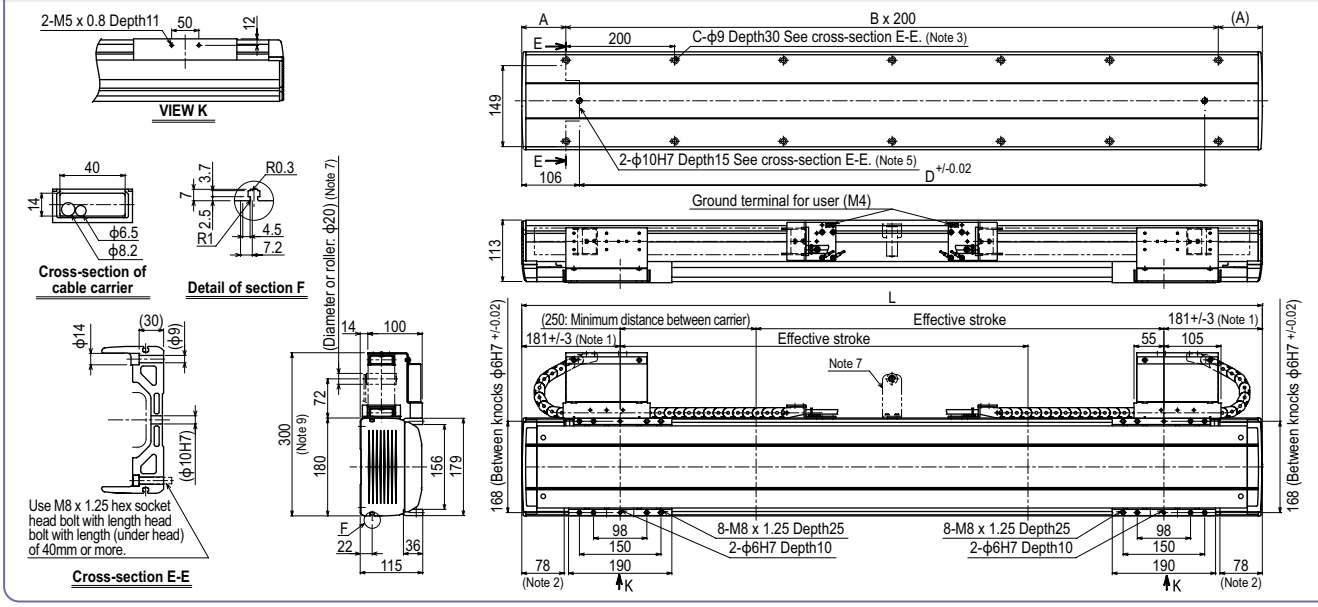
Note 1. Position of table carriage when searched to the origin.
Note 2. Stop positions are determined by the mechanical stoppers at both ends.
Note 3. When using ϕ9 holes for installation, do not use a washer, spring washer, etc. in the main unit.
Note 4. If the model is a standard cable carrier specification, it is not possible to pass 3 or more ϕ6 × 4 urethane air hoses.
Note 5. When using a ϕ10H7 hole, make sure that the pin does not go into deeper than as shown in the drawing.
Note 6. Contact us for vertical installation.
Note 7. For the robot with more than 2,050 stroke, a roller to prevent the cable carrier from hanging is provided.
Note 8. Weight of models with no brake. The weight of brake-attached models is 1 kg heavier than the models with no brake shown in the table.
Note 9. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	250	350	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050	2150	2250
L	862	962	1062	1162	1262	1362	1462	1562	1662	1762	1862	1962	2062	2162	2262	2362	2462	2562	2662	2762	2862
A	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131	81	131
B	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
C	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28
D	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750	1850	1950	2050	2150	2250	2350	2450	2550	2650
Weight (kg) Note 8	35	37	39	41	43	45	47	48	50	52	54	56	58	60	62	64	66	68	70	72	74

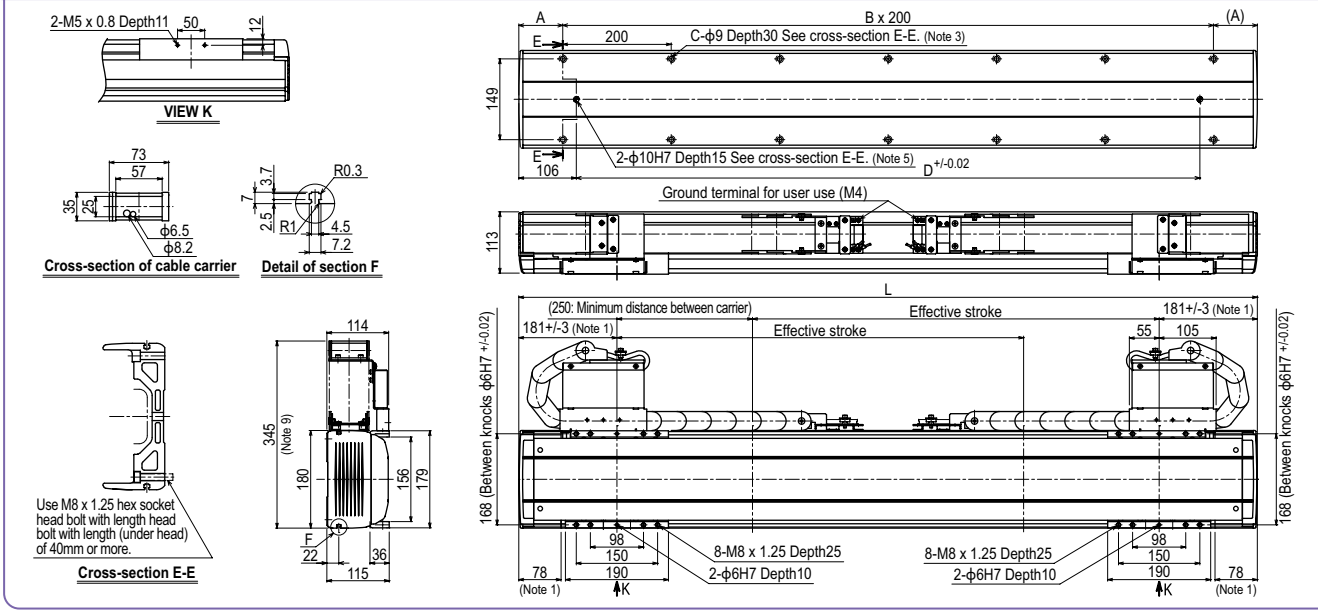
N18D: Horizontal installation / Optional Cable carrier specification



N18D: Wall installation / Standard Cable carrier specification



N18D: Wall installation / Optional Cable carrier specification



B10

Ordering method

B10 - [ ] - [ ] - [ ] - [ ]

Model	Motor installation direction	Option	Stroke	Cable length Note 1
	L: Motor leftward, horizontal position R: Motor rightward, horizontal position LU: Motor leftward, upper position RU: Motor rightward, upper position LD: Motor leftward, lower position RD: Motor rightward, lower position	Grease type: None: Standard; GC: Clean	150 to 2550 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

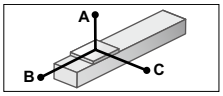
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

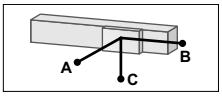
Specifications

AC servo motor output (W)			100
Repeatability Note 1 (mm)			+/-0.04
Belt (mm)			Equivalent to lead 25
Maximum speed (mm/sec)			1875
Maximum payload (kg)			10
Stroke (mm)			150 to 2550 (100mm pitch)
Overall length (mm)	Motor installation	L/R type	Stroke+397.5
		Another	Stroke+310
Maximum dimensions of cross section of main unit (mm)			W100 × H81
Cable length (m)			Standard: 3.5 / Option: 5,10
Linear guide type			4 rows of circular arc grooves × 1 rail
Position detector			Resolvers Note 2
Resolution (Pulse/rotation)			16384

Note 1. Positioning repeatability in one direction.
Note 2. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

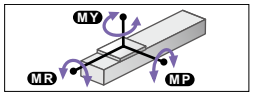
	A	B	C
3kg	1800	1392	1084
5kg	1574	826	696
8kg	1221	509	474
10kg	1171	403	407

Wall installation (Unit: mm)

	A	B	C
3kg	1144	1005	1734
5kg	724	576	1199
8kg	493	333	918
10kg	414	254	869

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

MY	MP	MR
188	188	165

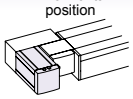
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command /Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

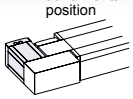
Motor installation

The line-up consisting of six models of deferent motor installation position as follows.

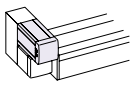
L type Leftward at horizontal position



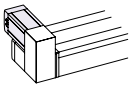
R type Rightward at horizontal position



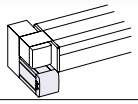
LU type Leftward at upper position



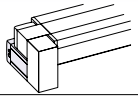
RU type Rightward at upper position



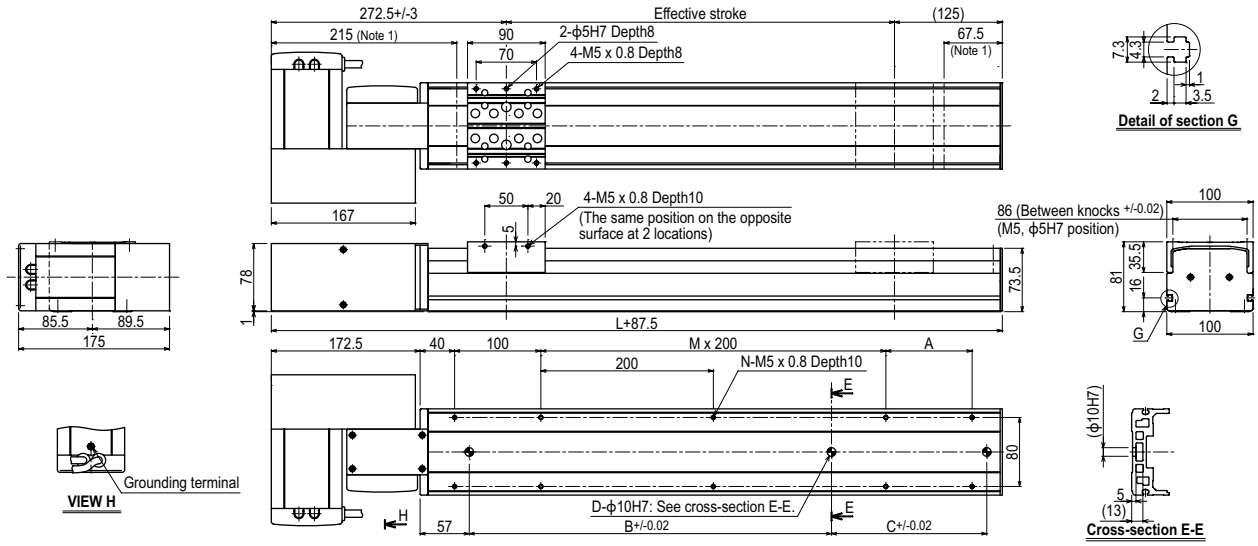
LD type Leftward at lower position



RD type Rightward at lower position



B10 R type (Motor rightward, horizontal position)



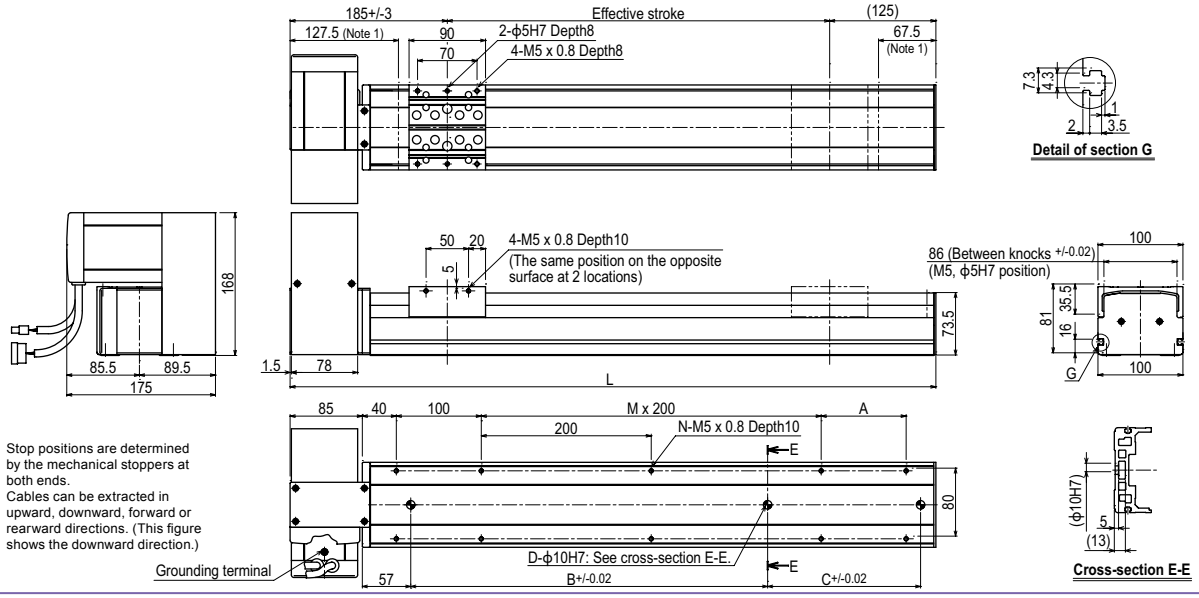
Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
L	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610	1660
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
B	240	240	240	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1140	1320	1320	1320
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
M	–	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18
Weight (kg)	7.4	7.8	8.2	8.6	9.0	9.4	9.8	10.1	10.5	10.9	11.3	11.7	12.1	12.5	12.9	13.3	13.7	14.1	14.5	14.9	15.3	15.7	16.1	16.5	16.9

Effective stroke	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
B	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
C	–	240	240	240	420	420	420	420	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1140	1320
D	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12
N	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30
Weight (kg)	17.3	17.7	18.0	18.4	18.8	19.2	19.6	20.0	20.4	20.8	21.2	21.6	22.0	22.4	22.8	23.2	23.6	24.0	24.4	24.8	25.2	25.6	25.9	26.3

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the forward direction.)

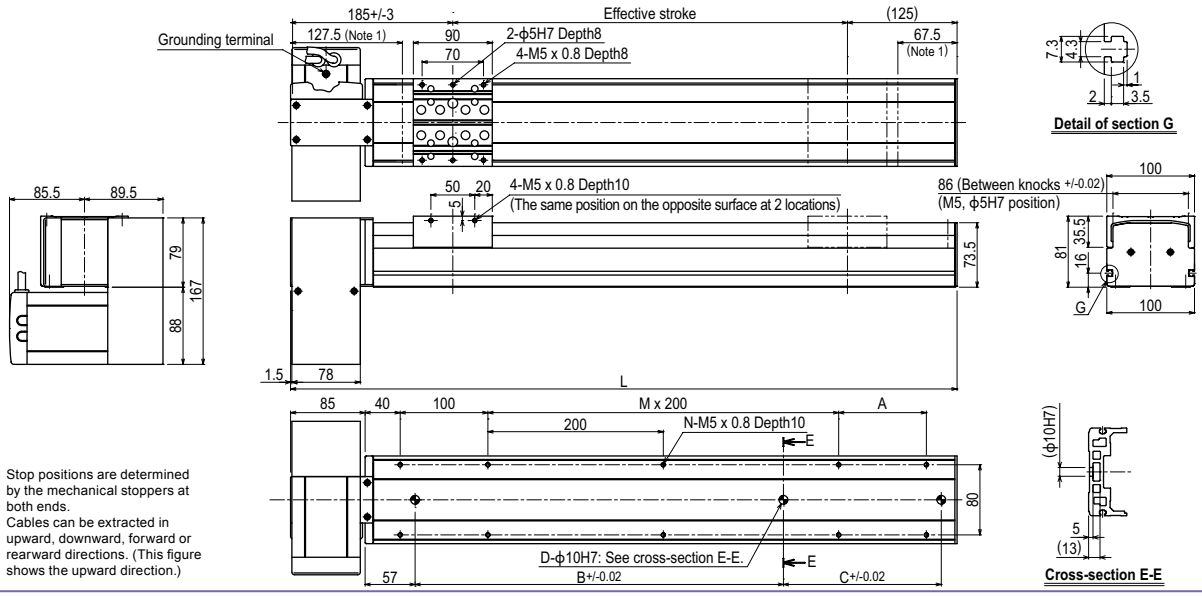
Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606

B10 RU type (Motor rightward, upper position)



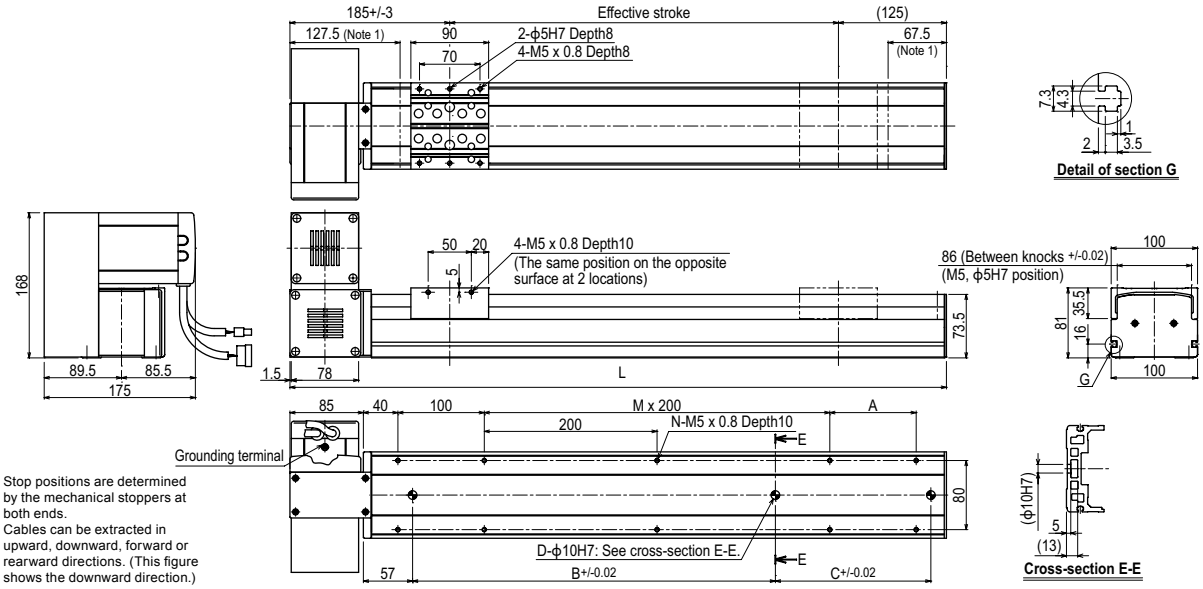
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

B10 RD type (Motor rightward, lower position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the upward direction.)

B10 LU type (Motor leftward, upper position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

Controller | SR1-X ▶ 618 | TS-X ▶ 592 | RDV-X ▶ 606

B14

Ordering method

B14 - [ ] - [ ] - [ ] - [ ]

Model	Motor installation direction	Option	Stroke	Cable length Note 1
	L: Motor leftward, horizontal position R: Motor rightward, horizontal position LU: Motor leftward, upper position RU: Motor rightward, upper position LD: Motor leftward, lower position RD: Motor rightward, lower position	Grease type: None: Standard; GC: Clean	150 to 3050 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

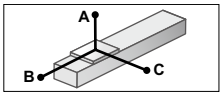
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

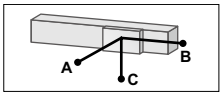
Specifications

AC servo motor output (W)			100
Repeatability Note 1 (mm)			+/-0.04
Belt (mm)			Equivalent to lead 25mm
Maximum speed (mm/sec)			1875
Maximum payload (kg)			20
Stroke (mm)			150 to 3050 (100mm pitch)
Overall length (mm)	Motor installation	L/R type	Stroke+425.5
		Another	Stroke+338
Maximum dimensions of cross section of main unit (mm)			W146 × H94
Cable length (m)			Standard: 3.5 / Option: 5,10
Linear guide type			4 rows of circular arc grooves × 2 rail
Position detector			Resolvers Note 2
Resolution (Pulse/rotation)			16384

Note 1. Positioning repeatability in one direction.
Note 2. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

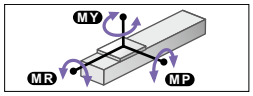
	A	B	C
5kg	2159	1228	943
10kg	1389	623	548
20kg	1102	320	348

Wall installation (Unit: mm)

	A	B	C
5kg	1064	816	1468
10kg	564	377	888
20kg	305	156	615

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

MY	MP	MR
226	227	199

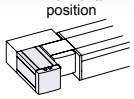
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

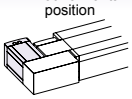
Motor installation

The line-up consisting of six models of deferent motor installation position as follows.

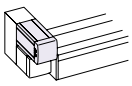
L type Leftward at horizontal position



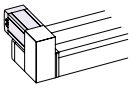
R type Rightward at horizontal position



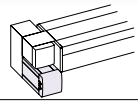
LU type Leftward at upper position



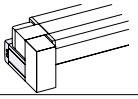
RU type Rightward at upper position



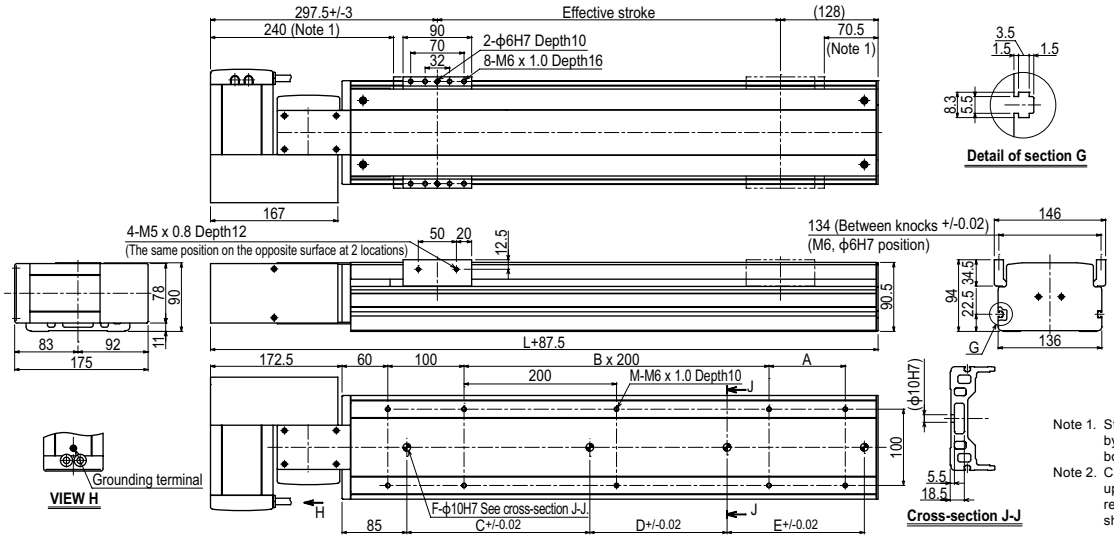
LD type Leftward at lower position



RD type Rightward at lower position



B14 R type (Motor rightward, horizontal position)

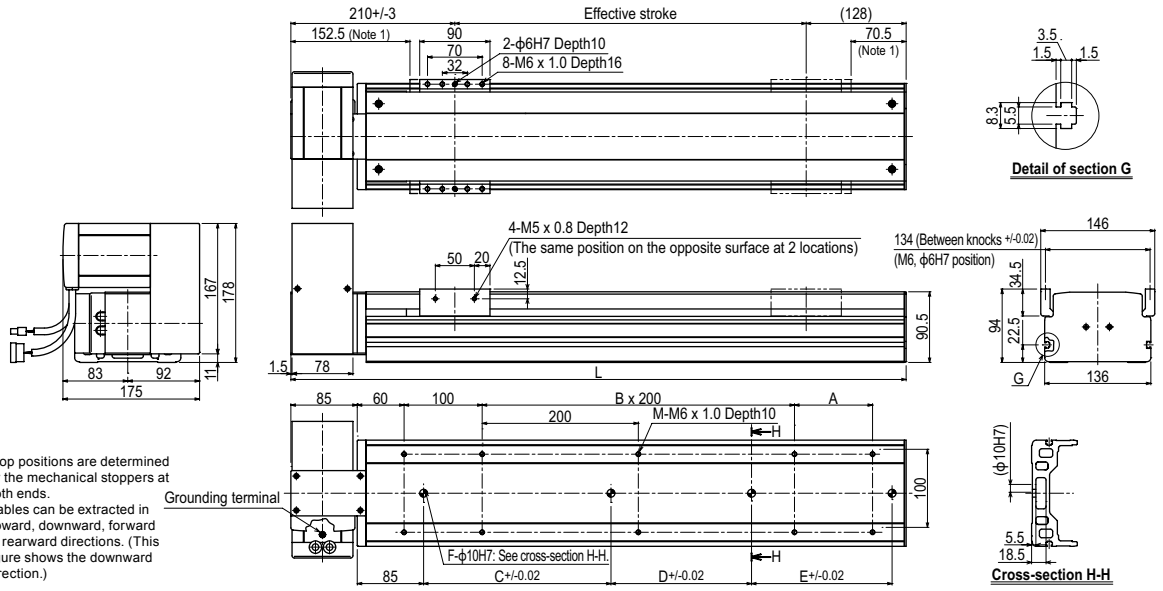


Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the forward direction.)

Effective stroke	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	1400	1450	1500	1550	1600
L	488	538	588	638	688	738	788	838	888	938	988	1038	1088	1138	1188	1238	1288	1338	1388	1438	1488	1538	1588	1638	1688	1738	1788	1838	1888	1938
M	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22
A	-	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
B	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8
C	240	240	240	420	420	420	600	600	600	600	780	780	780	780	960	960	960	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240	240	240	240	420	420	420	600
E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
Weight (kg)	9.6	10.2	10.8	11.4	12	12.5	13.1	13.7	14.3	14.9	15.5	16.0	16.6	17.2	17.8	18.4	19	19.5	20.2	20.7	21.3	21.9	22.5	23.1	23.7	24.2	24.8	25.4	26	26.6

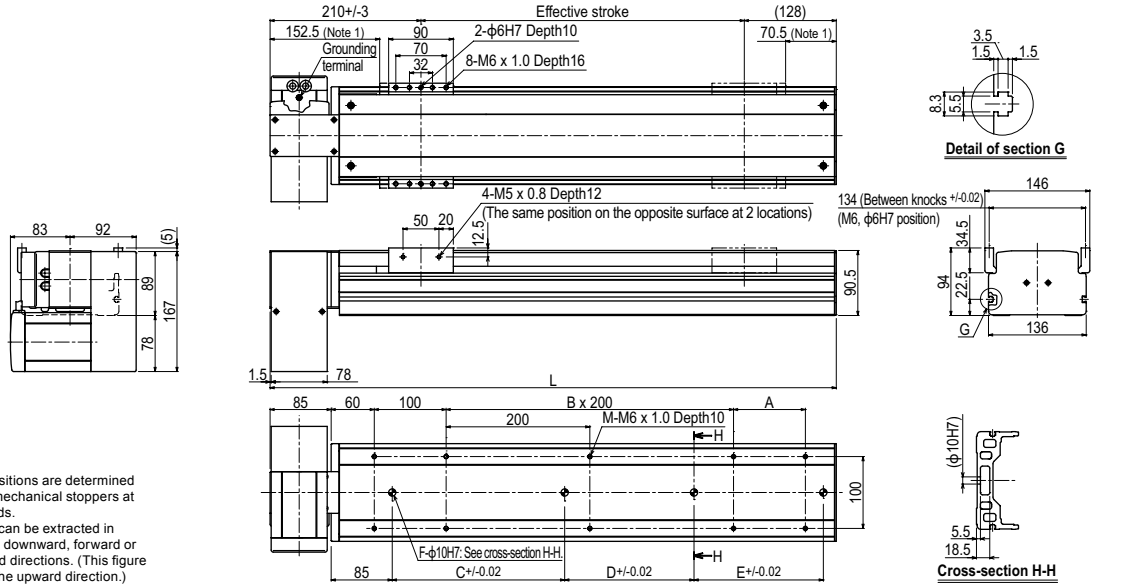
Effective stroke	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1988	2038	2088	2138	2188	2238	2288	2338	2388	2438	2488	2538	2588	2638	2688	2738	2788	2838	2888	2938	2988	3038	3088	3138	3188	3238	3288	3338	3388
M	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36	36
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
B	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15
C	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
D	600	600	600	780	780	780	780	960	960	960	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240	240	240	240	420	420	420	600	600	600	600	780	780	780
F	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Weight (kg)	27.2	27.7	28.3	28.9	29.5	30.1	30.7	31.3	31.9	32.4	33	33.6	34.2	34.8	35.4	35.9	36.5	37.1	37.7	38.3	38.9	39.4	40	40.6	41.2	41.8	42.4	43.0	43.6

B14 RU type (Motor rightward, upper position)



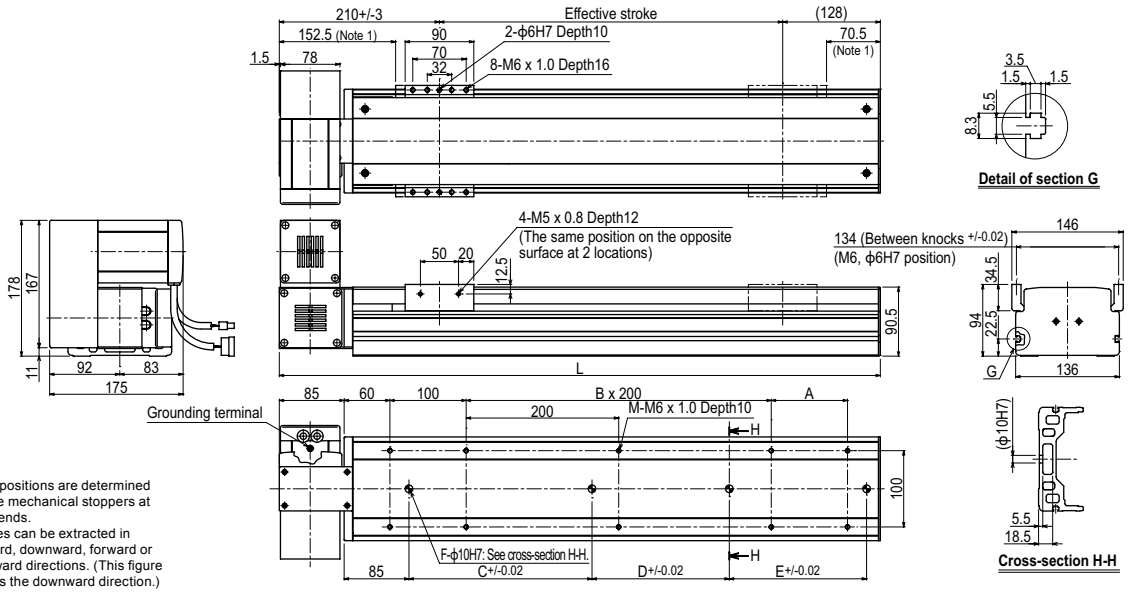
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

B14 RD type (Motor rightward, lower position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the upward direction.)

B14 LU type (Motor leftward, upper position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

Controller | SR1-X ▶ 618 | TS-X ▶ 592 | RDV-X ▶ 606

B14H

Ordering method

B14H - [ ] - [ ] - [ ] - [ ]

Model

Motor installation direction
- L: Motor leftward, horizontal position
- R: Motor rightward, horizontal position
- LU: Motor leftward, upper position
- RU: Motor rightward, upper position
- LD: Motor leftward, lower position
- RD: Motor rightward, lower position

Option
- Grease type: None: Standard; GC: Clean

Stroke
- 150 to 3050 (50mm pitch)

Cable length Note 1
- 3L: 3.5m
- 5L: 5m
- 10L: 10m
- 3K/5K/10K (Flexible cable)

TSX - [ ] - **R** - [ ] - [ ] - [ ]

- **Positioner** Note 2: TSX: TS-X
- **Driver: Power-supply voltage / Power capacity**: 105: 100V/100W or less; 205: 200V/100W or less
- **Regenerative unit**: R: With RGT
- **LCD monitor**: No entry: None; L: With LCD
- **I/O selection**: NP: NPN; PN: PNP; CC: CC-Link; DN: DeviceNet™; EP: EtherNet/IP™; PT: PROFINET; GW: No I/O board Note 3
- **Battery**: B: With battery (Absolute); N: None (Incremental)

SR1-X - **05** - [ ] - **R** - [ ] - [ ]

- **Controller**: SR1-X
- **Driver: Power capacity**: 05: 100W or less
- **Usable for CE**: No entry: Standard; E: CE marking
- **Regenerative unit**: R: With RG1
- **I/O selection**: N: NPN; P: PNP; CC: CC-Link; DN: DeviceNet™; PB: PROFIBUS
- **Battery**: B: With battery (Absolute); N: None (Incremental)

RDV-X - **2** - **10** - **RBR1**

- **Driver**: RDV-X
- **Power-supply voltage**: 2: AC200V
- **Driver: Power capacity**: 10: 200W or less
- **Regenerative unit**: RBR1

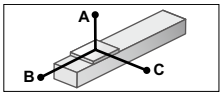
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

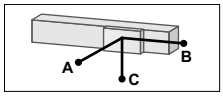
Specifications

AC servo motor output (W)			200
Repeatability Note 1 (mm)			+/-0.04
Belt (mm)			Equivalent to lead 25mm
Maximum speed (mm/sec)			1250 (1875 Note 2)
Maximum payload (kg)			30
Stroke (mm)			150 to 3050(100mm pitch)
Overall length (mm)	Motor installation	L/R type	Stroke+475.5
		Another	Stroke+388
Maximum dimensions of cross section of main unit (mm)			W146 × H94
Cable length (m)			Standard: 3.5 / Option: 5,10
Linear guide type			4 rows of circular arc grooves × 2 rail
Position detector			Resolvers Note 3
Resolution (Pulse/rotation)			16384

Note 1. Positioning repeatability in one direction.
Note 2. A regenerative unit is needed if using the SR1-X, TS-X at maximum speeds exceeding 1250mm sec. If using the RDV-X, then the regenerative unit RBR1 is required regardless of the installation conditions
Note 3. Position detectors(resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang Note





Horizontal installation (Unit: mm)

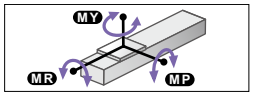
	A	B	C
5kg	3000	3000	1941
10kg	2742	1697	1064
20kg	2158	867	651
30kg	1708	590	466

Wall installation (Unit: mm)

	A	B	C
5kg	2074	2585	3000
10kg	1087	1236	2071
20kg	604	561	1512
30kg	397	336	1106

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Static loading moment



(Unit: N·m)

MY	MP	MR
610	555	488

Controller

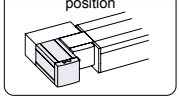
Controller	Operation method
SR1-X05 Note RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 Note TS-X205 Note	I/O point trace / Remote command
RDV-X210-RBR1	Pulse train control

Note. A regenerative unit is needed if using the SR1-X, TS-X at maximum speeds exceeding 1250mm sec.

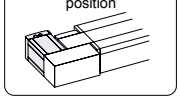
Motor installation

The line-up consisting of six models of deferent motor installation position as follows.

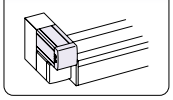
L type Leftward at horizontal position



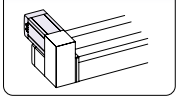
R type Rightward at horizontal position



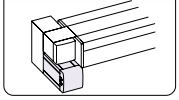
LU type Leftward at upper position



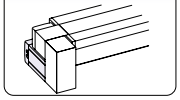
RU type Rightward at upper position



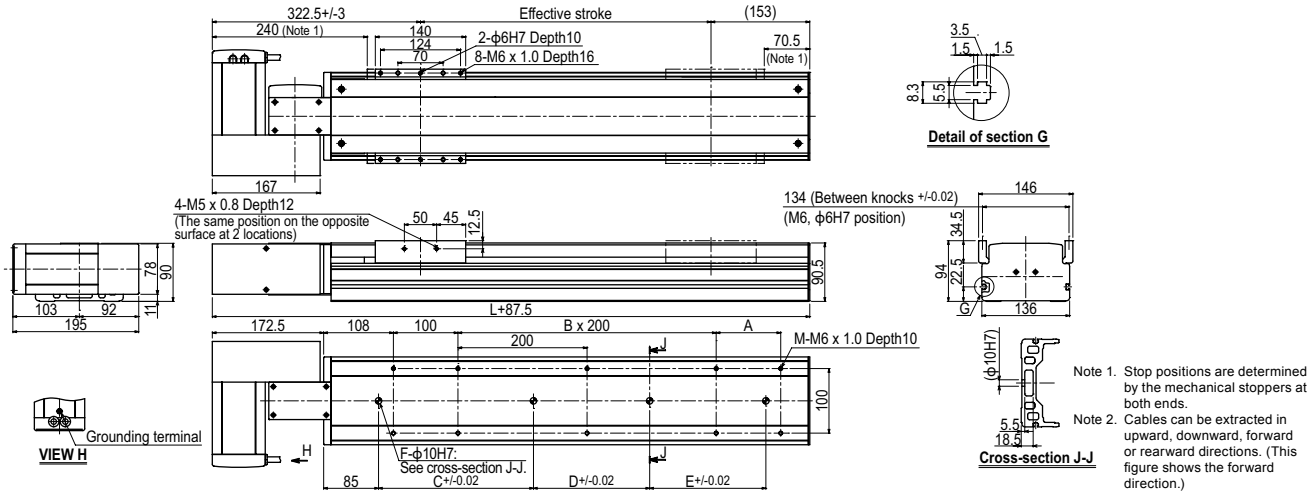
LD type Leftward at lower position



RD type Rightward at lower position



B14H R type (Motor rightward, horizontal position)

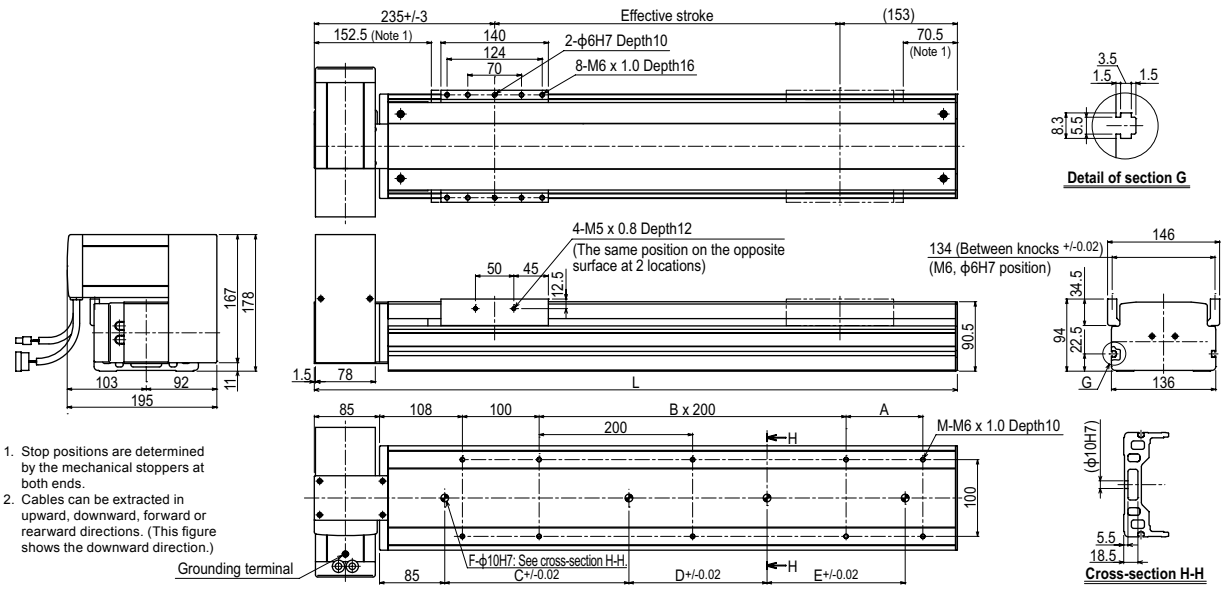


Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the forward direction.)

Effective stroke	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	1400	1450	1500	1550	1600
L	538	588	638	688	738	788	838	888	938	988	1038	1088	1138	1188	1238	1288	1338	1388	1438	1488	1538	1588	1638	1688	1738	1788	1838	1888	1938	1988
M	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22
A	–	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
B	1	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8
C	240	240	420	420	420	600	600	600	600	780	780	780	780	960	960	960	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	240	240	240	240	420	420	420	600	600
E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Weight (kg)	10.9	11.5	12.1	12.7	13.2	13.9	14.4	15.0	15.6	16.2	16.7	17.4	17.9	18.5	19.1	19.7	20.2	20.9	22.0	22.1	22.6	23.3	23.8	24.4	24.9	25.6	26.1	26.8	27.3	27.9

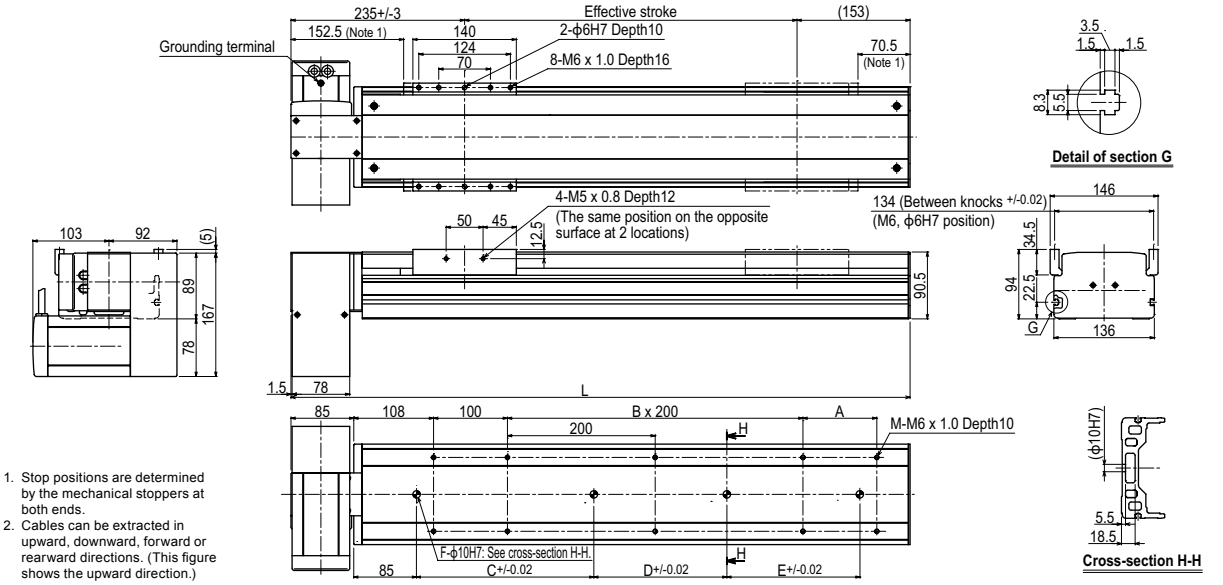
Effective stroke	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2038	2088	2138	2188	2238	2288	2338	2388	2438	2488	2538	2588	2638	2688	2738	2788	2838	2888	2938	2988	3038	3088	3138	3188	3238	3288	3338	3388	3438
M	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36	36
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
B	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15
C	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
D	600	600	780	780	780	960	960	960	960	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	240	240	240	420	420	420	420	600	600	600	600	780	780	780	960
F	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Weight (kg)	28.4	29.1	29.6	30.3	30.8	31.4	31.9	32.6	33.1	33.8	34.3	35.0	35.5	36.1	36.6	37.3	37.8	38.5	39.0	39.6	40.1	40.8	41.3	42.0	42.5	43.1	43.6	44.3	45.4

B14H RU type (Motor rightward, upper position)



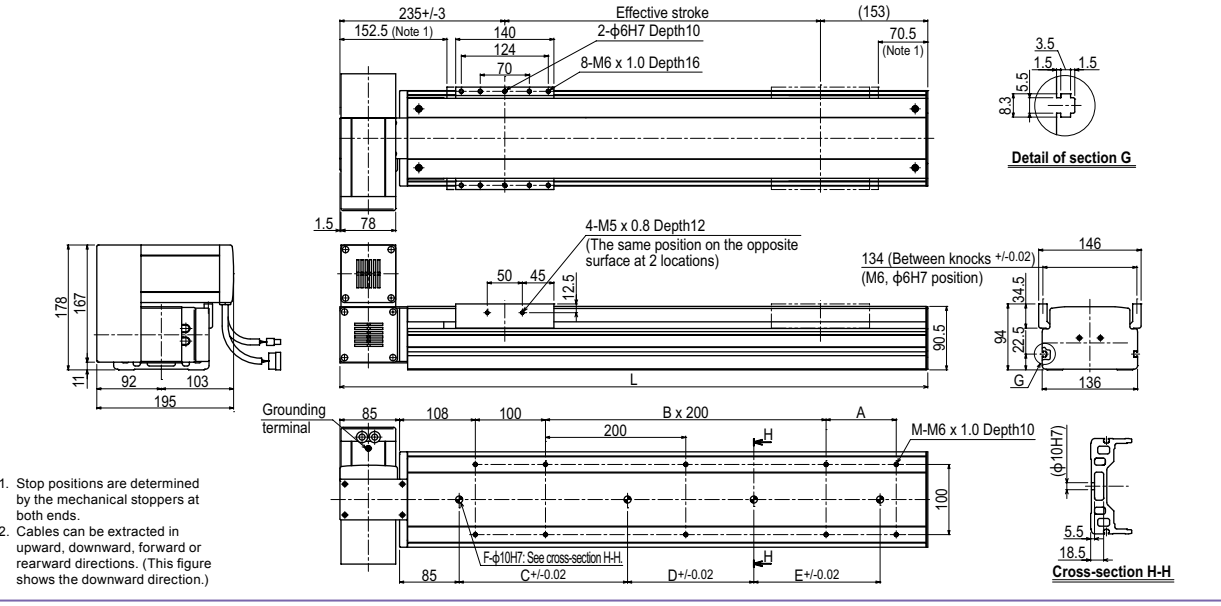
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

B14H RD type (Motor rightward, lower position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the upward direction.)

B14H LU type (Motor leftward, upper position)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Cables can be extracted in upward, downward, forward or rearward directions. (This figure shows the downward direction.)

Controller | SR1-X ▶ 618 | TS-X ▶ 592 | RDV-X ▶ 606

R5

Ordering method

R5 – [ ] – [ ]

Model	Cable entry location	Cable length Note 1
	No entry: Standard (S) B: From the side	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX – [ ] – [ ] – [ ] – [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X – **05** – [ ] – [ ] – [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X – **2** – **05** – **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

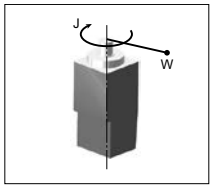
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

Specifications

AC servo motor output (W)	50
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm²[kgfcms²])	0.12 [1.2]
Rated torque (Nm[kgfm])	5.29 [0.54]
Speed reduction ratio	1/50
Rotation range (°)	360
Cable length (m)	Standard: 3.5 / Option: 5,10
Speed reducer type	Harmonic drive
Position detector	Resolvers
Resolution (Pulse/rotation)	16384

Maximum allowable moment inertia

Payload parameters W (kg)	1	2	3	4	5	6	7	8	9	10
Maximum allowable moment inertia J (kgfcms²)	0.12	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.20



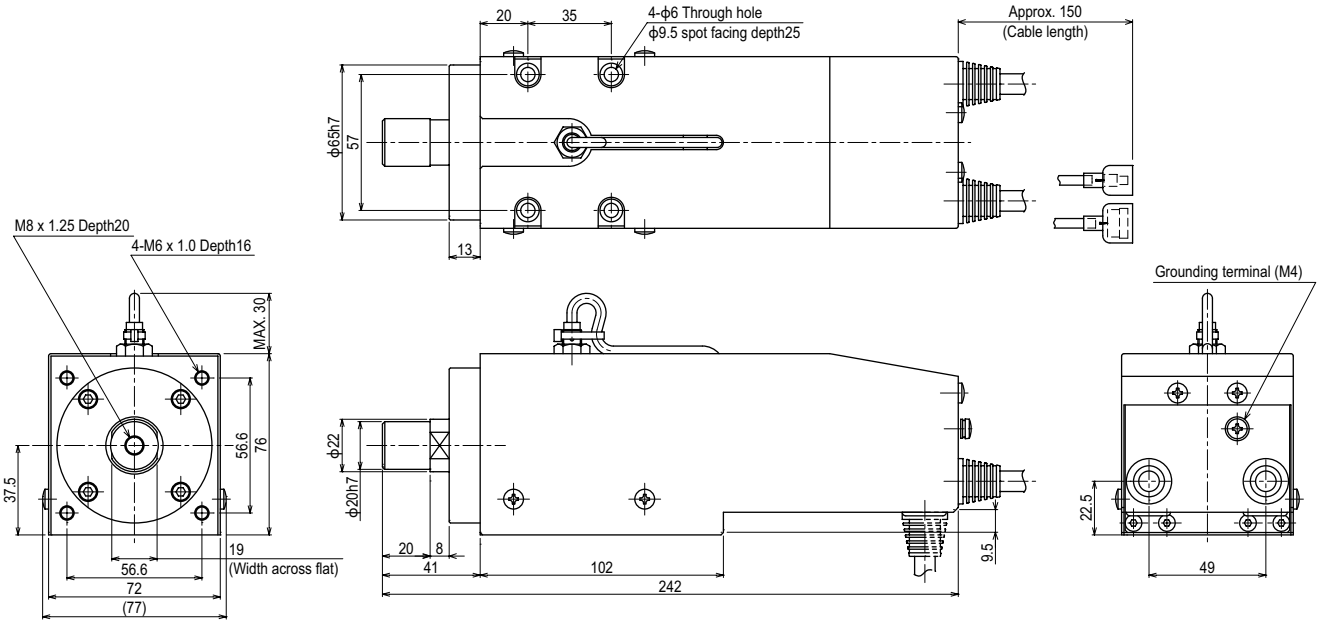
Note. When the weight of a tool or workpiece attached to the shaft R5 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 0.48kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration is automatically set based on this value.

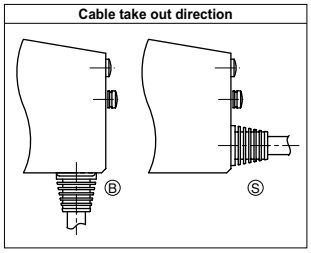
Note. For calculation (equation) of the inertia moment, please refer to P.708.

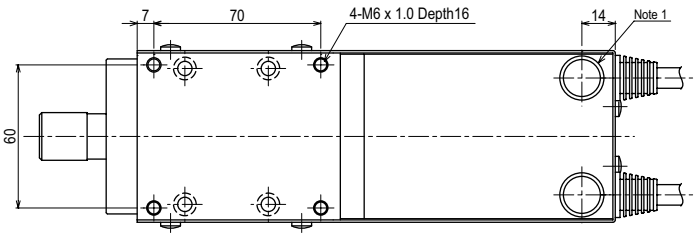
Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

R5







Weight (kg)	3.0

Note 1.The cable extraction port can be changed.

R10

Ordering method

R10 - [ ] - [ ]

Model	Cable entry location	Cable length Note 1
	No entry: Standard (S) B: From the side	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX - [ ] - [ ] - [ ] - [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X - **05** - [ ] - [ ] - [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X - **2** - **05** - **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
	2: AC200V	05: 100W or less	

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

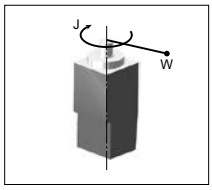
Specifications

AC servo motor output (W)	100
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm²[kgfcms²])	0.36 [3.71]
Rated torque (Nm[kgfm])	10.78 [1.10]
Speed reduction ratio	1/50
Rotation range (°)	360
Cable length (m)	Standard: 3.5 / Option: 5,10
Speed reducer type	Harmonic drive
Position detector	Resolvers
Resolution (Pulse/rotation)	16384

Maximum allowable moment inertia

Payload parameters W (kg)	1	2	3	4	5	6	7	8	9	10
Maximum allowable moment inertia J (kgfcms²)	0.25	0.49	0.74	0.99	1.24	1.48	1.73	1.98	2.23	2.47

Payload parameters W (kg)	11	12	13	14	15
Maximum allowable moment inertia J (kgfcms²)	2.72	2.97	3.22	3.46	3.71



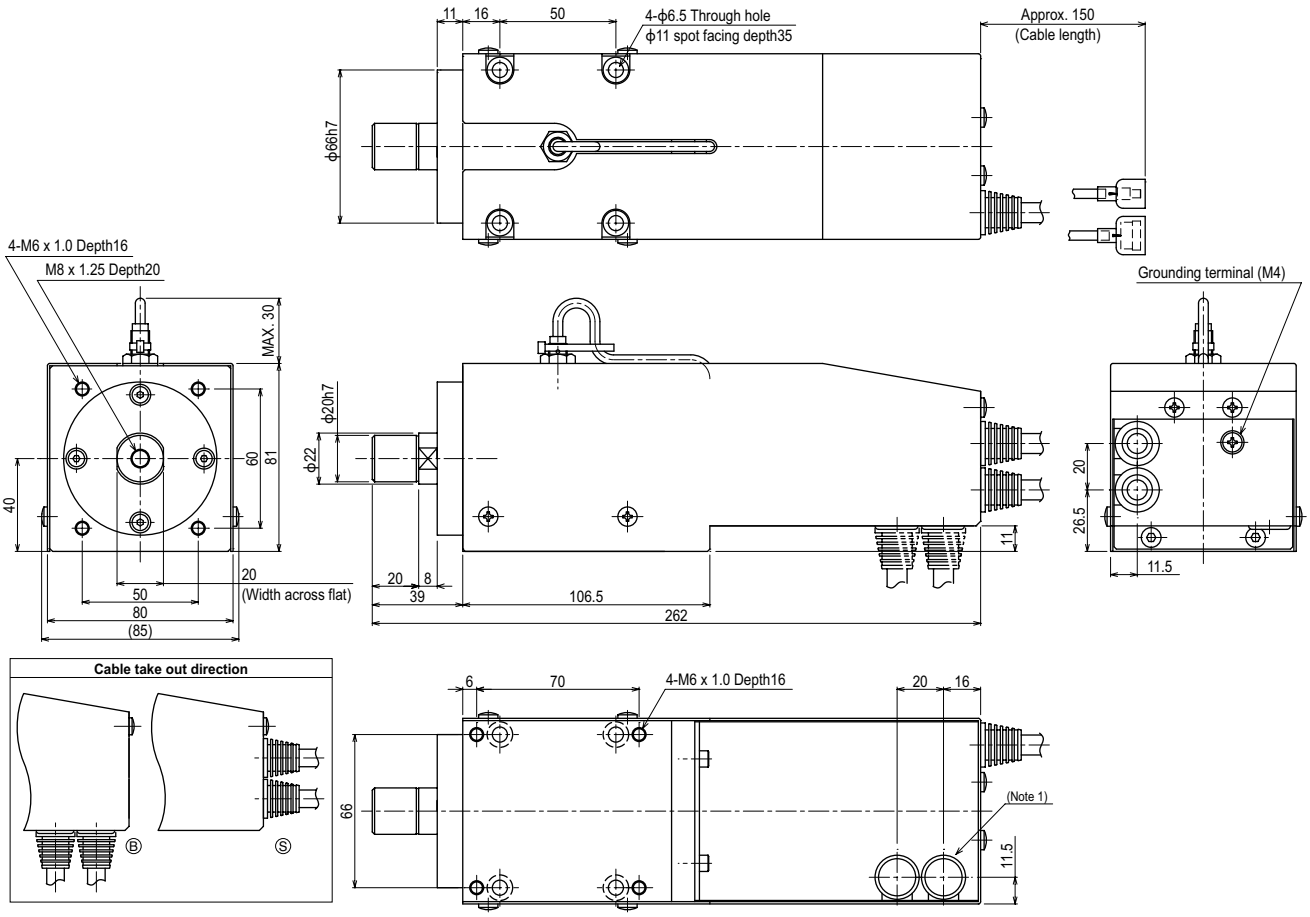
Note. When the weight of a tool or workpiece attached to the shaft R10 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 0.99kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration is automatically set based on this value.

Note. For calculation (equation) of the inertia moment, please refer to P.708.

Controller

Controller	Operation method
SR1-X05 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105	I/O point trace / Remote command
TS-X205	
RDV-X205-RBR1	Pulse train control

R10



Weight (kg)	3.5

Note 1.The cable extraction port can be changed.

R20

Ordering method

R20 – [ ] – [ ]

Model	Cable entry location	Cable length Note 1
R20	No entry: Standard (S) B: From the side	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

TSX – [ ] – [ ] – [ ] – [ ]

Positioner Note 2	Driver: Power-supply voltage / Power capacity	LCD monitor	I/O selection	Battery
TSX: TS-X	110: 100V/200W or less 210: 200V/200W or less	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board Note 3	B: With battery (Absolute) N: None (Incremental)

SR1-X – **10** – [ ] – [ ] – [ ]

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
SR1-X	10: 200W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)

RDV-X – **2** – **10** – **RBR1**

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
RDV-X	2: AC200V	10: 200W or less	RBR1

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.692 for details on robot cable.
Note 2. See P.600 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function.

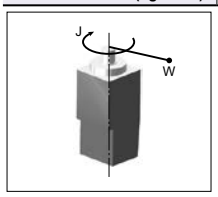
Specifications

AC servo motor output (W)	200
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm²[kgfcms²])	1.83 [18.7]
Rated torque (Nm[kgfm])	21.46 [2.19]
Speed reduction ratio	1/50
Rotation range (°)	360
Cable length (m)	Standard: 3.5 / Option: 5,10
Speed reducer type	Harmonic drive
Position detector	–
Resolution (Pulse/rotation)	16384

Maximum allowable moment inertia

Payload parameters W (kg)	1	2	3	4	5	6	7	8	9	10
Maximum allowable moment inertia J (kgfcms²)	0.93	1.8	2.8	3.7	4.6	5.6	6.5	7.4	8.4	9.3

Payload parameters W (kg)	11	12	13	14	15	16	17	18	19	20
Maximum allowable moment inertia J (kgfcms²)	10.2	11.2	12.1	13.1	14	14.9	15.9	16.8	17.7	18.7



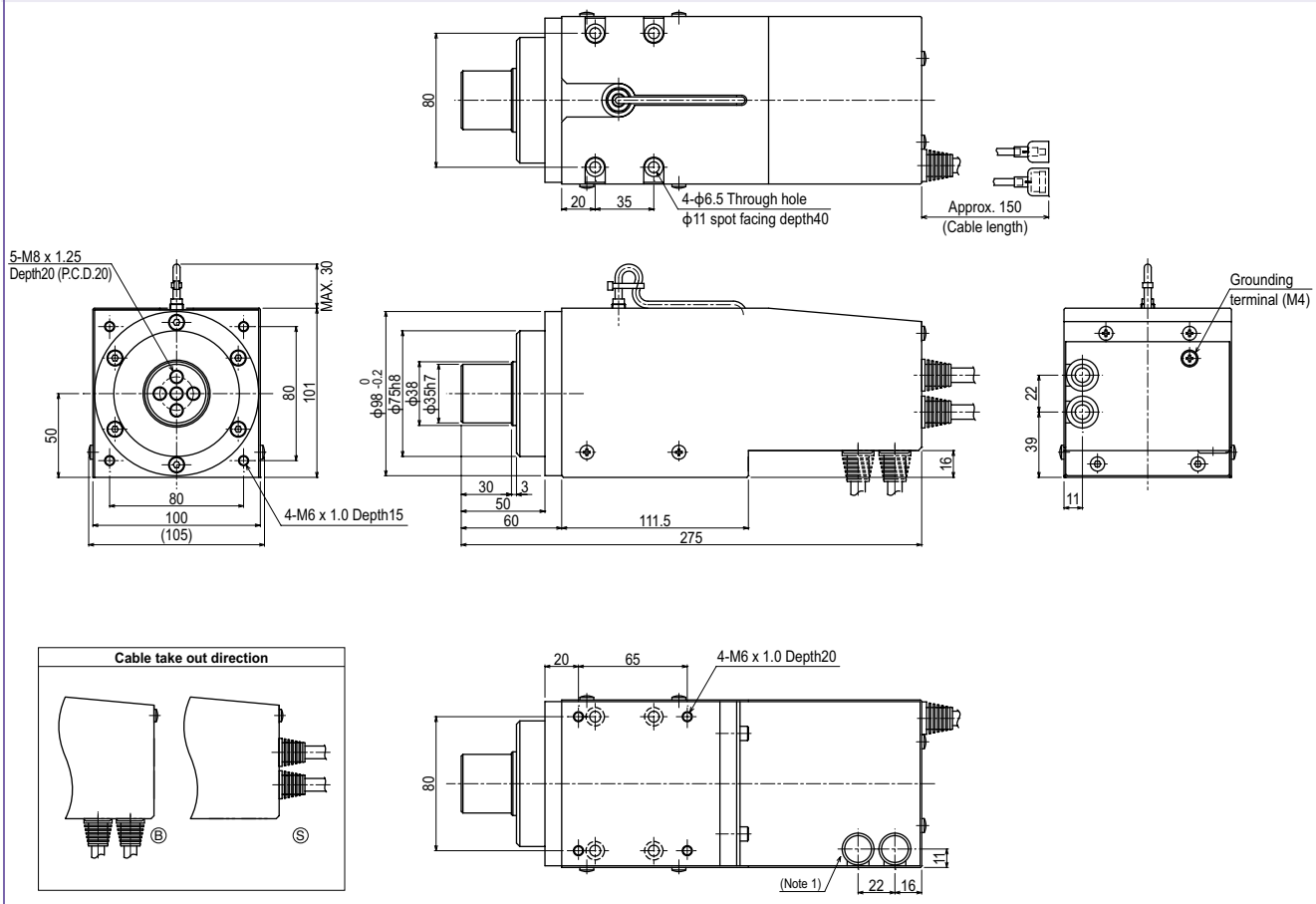
Note. When the weight of a tool or workpiece attached to the shaft R20 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 3.7kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration is automatically set based on this value.

Note. For calculation (equation) of the inertia moment, please refer to P.708.

Controller

Controller	Operation method
SR1-X10 RCX320 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110	I/O point trace / Remote command
TS-X210	
RDV-X210-RBR1	Pulse train control

R20



Weight (kg)	5.5

Note 1.The cable extraction port can be changed.

Controller SR1-X ▶ 618 TS-X ▶ 592 RDV-X ▶ 606