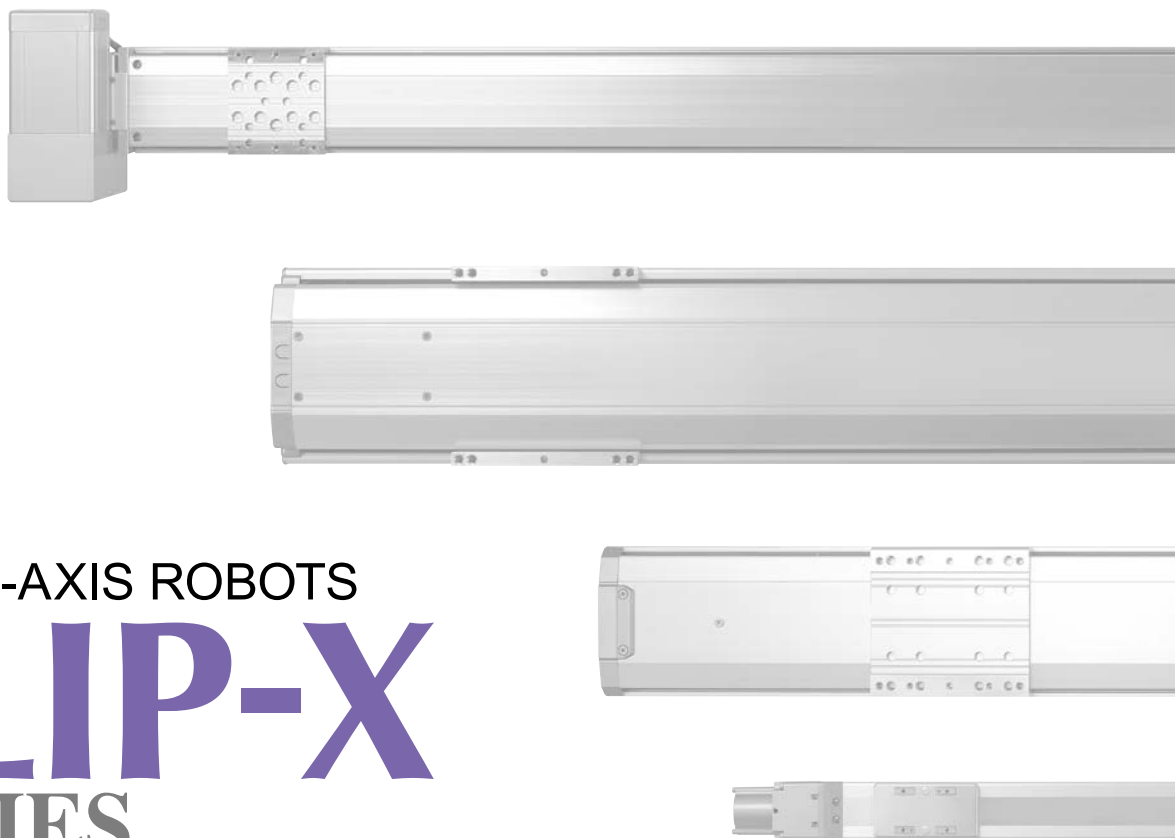




SINGLE-AXIS ROBOTS

FLIP-X

SERIES

CONTENTS

■ FLIP-X SPECIFICATION SHEET 172

■ Robot ordering method description 174

■ Robot ordering method terminology 175

T TYPE FRAME-LESS STRUCTURE MODEL

T4L.....	176
T4LH.....	177
T5L.....	178
T5LH.....	179
T6L.....	180
T9.....	181
T9H.....	182

F TYPE / GF TYPE HIGH RIGIDITY FRAME MODEL

F8.....	183
F8L.....	184
F8LH.....	186
F10.....	187
F10H.....	188
F14.....	190
F14H.....	191
GF14XL.....	192
F17.....	193

F17L.....	195
GF17XL.....	196
F20.....	197
F20N.....	199

N TYPE NUT ROTATION TYPE MODEL

N15.....	200
N15D.....	202
N18.....	204
N18D.....	206

B TYPE TIMING BELT DRIVE MODEL

B10.....	208
B14.....	210
B14H.....	212

R TYPE ROTATION AXIS TYPE MODEL

R5.....	214
R10.....	215
R20.....	216

																										Detailed info page
	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				
																										T4L: P.176
																										T4LH: P.177
																										T5L: P.178
																										T5LH: P.179
																										P.180
	810																									P.181
	540																									
	270																									
	135																									
	810																									P.182
	540																									
	270																									
	135																									
																										P.183
																										P.184
	720																									
	480																									
	240																									
	120																									
	420																									P.186
	210																									
	105																									
	810																									
	540																									P.187
	270																									
	135																									
																										P.188
	810																									P.190
	540																									
	270																									
	135																									
	810																									P.191
	540																									
	270																									
	135																									
	1440		1200		960		840	720																		P.193
	720		600	480																						
	360		300	240																						
			2200			1900				1500		1200		900	800											P.195
	1440		1200		960		840	720																		P.197
	720		600	480																						
	360		300	240																						
										1200																P.199
																										P.192
																										P.196
																										P.200
																										P.202
																										P.204
																										P.206
																										P.208
																										P.210
																										P.212

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.518](#), TS-X ▶ [P.492](#), RDV-X ▶ [P.506](#)

Mechanical section

● T type / F type (F8 / F8L / F8LH)

① Model	③ Lead designation	④ Brake	⑩ Option	⑪ Stroke	⑫ Cable length
T4L F8 T4LH F8L T5L F8LH T5LH T6 T9 T9H	30 30mm 20 20mm 12 12mm 10 10mm 6 6mm 5 5mm 2 2mm	No entry No brakes BK Brakes provided	Origin position change None Z Non-motor side Standard Non-motor side Grease type None GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

● F type (Except F8 / F8L / F8LH)

① Model	③ Lead designation	④ Brake	⑥ Cable entry location	⑩ Option	⑪ Stroke	⑫ Cable length
F10 F20 F10H F20N F14 F14H F17 F17L	50 50mm 40 40mm 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	Origin position change None Z Non-motor side Standard Non-motor side Grease type None GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

● GF type

① Model	② Model	⑤ Take out direction	③ Lead designation	⑥ Cable entry location	⑩ Option	⑪ Stroke	⑫ Cable length
GF14XL GF17XL	S Straight model	H Horizontal installation	20 20mm	No entry Standard (S) U From the top R From the right L From the left	Origin position change None Z Non-motor side Standard Non-motor side Frame No entry (Spot facing) T Tapping Grease type None GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

● N type (Single carriage)

① Model	③ Lead designation	⑦ Cable carrier entry location	⑧ Cable carrier specification	⑩ Option	⑪ Stroke	⑫ Cable length
N15 N18	20 20mm	RH Horizontal, right LH Horizontal, left RW Wall, right LW Wall, left	S Standard cable carrier M Optional cable carrier	Origin position change None Z Non-motor side Standard Non-motor side Grease type None GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

● N type (Double carriage)

① Model	③ Lead designation	⑤ Take out direction	⑧ Cable carrier specification	⑩ Option	⑪ Stroke	⑫ Cable length
N15D N18D	20 20mm	H Horizontal installation W Wall hanging installation	S Standard cable carrier M Optional cable carrier	Grease type None GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

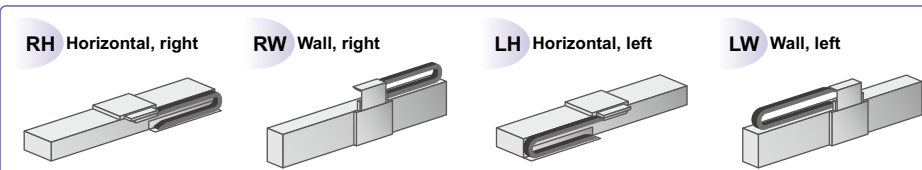
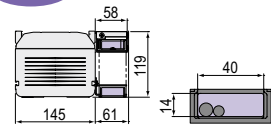
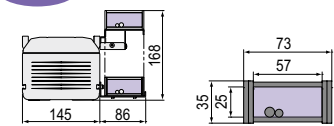
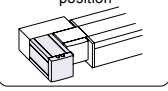
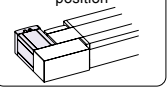
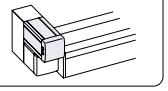
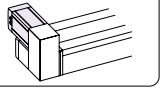
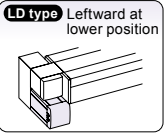
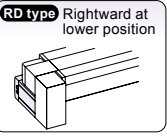
● B type

① Model	⑨ Motor installation direction	⑩ Option	⑪ Stroke	⑫ Cable length
B10 B14 B14H	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 GC Clean		3L 3.5m 5L 5m 10L 10m 3K 3.5m 5K 5m 10K 10m

● R type

① Model	⑥ Cable entry location	⑫ Cable length
R5 R10 R20	No entry Standard (S) B From the side	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. RH Horizontal, right RW Wall, right LH Horizontal, left LW Wall, left  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. S type Standard cable carrier  M type Optional cable carrier  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. 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 
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. 1L : 1m (You can select a 1m cable only when you use T4L/T5L.) 3L : 3.5m (Standard) 5L : 5m 10L : 10m 3K : 3.5m (Flexible cable) 5K : 5m (Flexible cable) 10K : 10m (Flexible cable)

Articulated robots
YA

Linear conveyor modules
LCM100

Compact single-axis robots
TRANSERO

Single-axis robots
FLIP-X

Linear motor single-axis robots
PHASER

Cartesian robots
XY-X

SCARA robots
YK-X

Pick & place robots
YP-X

CLEAN

CONTROLLER

INFORMATION

T type

F type

GF type

N type

B/R type



Ordering method

T4L						ERCD	
Model	Lead designation	Brake	Origin position change	Grease type	Stroke	Cable length ^{Note 1}	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)	1L: 1m 3L: 3.5m 5L: 5m 10L: 10m 1K/3K/5K/10K (Flexible cable)	CN1: I/O flat cable 1m (Standard) CN2: Twisted-pair cable 2m (pulse train function)

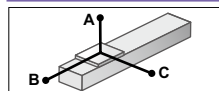
Note 1. The robot cable is standard cable (1L/3L/5L/10L), but can be changed to flexible cable. See P.596 for details on robot cable.

Specifications

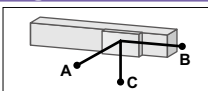
AC servo motor output (W)	30		
Repeatability ^{Note 1} (mm)	+/- 0.02		
Deceleration mechanism	Ball screw φ8		
Ball screw lead (mm)	12	6	2
Maximum speed (mm/sec)	720	360	120
Maximum payload (kg)	Horizontal	4.5	6
	Vertical	1.2	2.4
Rated thrust (N)	32	64	153
Stroke (mm)	50 to 400 (50mm pitch)		
Overall 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}

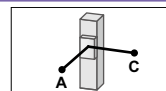
Horizontal installation (Unit: mm)		A	B	C
Lead 12	2kg	433	87	180
	4.5kg	223	33	75
Lead 6	3kg	515	58	135
	6kg	340	26	62
Lead 2	3kg	1585	58	142
	6kg	755	27	66



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

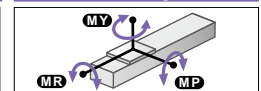
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 300mm stroke models.



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

Static loading moment

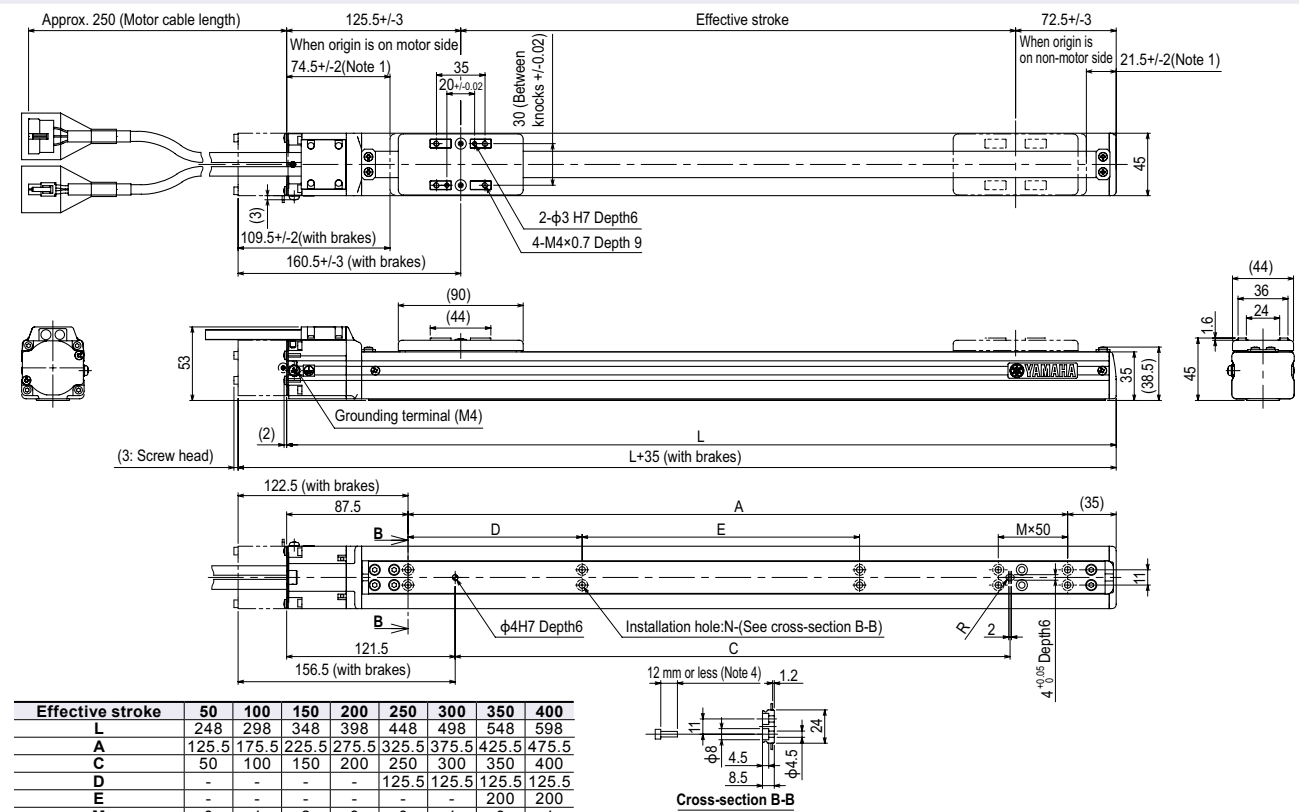


(Unit: N·m)		
MY	MP	MR
15	19	18

Controller

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

T4L



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
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

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
05	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

Driver	Power-supply voltage	Driver: Power capacity
2	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.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

Note 3. Select this selection when using the gateway function. For details, see P.62.

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)				Wall installation (Unit: mm)				Vertical installation (Unit: mm)			
	A	B	C		A	B	C		A	C	
Lead 12	2kg 341	90	174	Lead 12	2kg 140	73	300	Lead 12	1.2kg 122	121	
	4.5kg 172	37	72		4.5kg 47	22	119				
Lead 6	3kg 355	58	134	Lead 6	3kg 105	42	260	Lead 6	2.4kg 56	57	
	6kg 235	27	62		6kg 31	11	135				
Lead 2	3kg 1105	59	142	Lead 2	3kg 113	42	810	Lead 2	3kg 41	42	
	6kg 520	27	66		6kg 32	11	305		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.

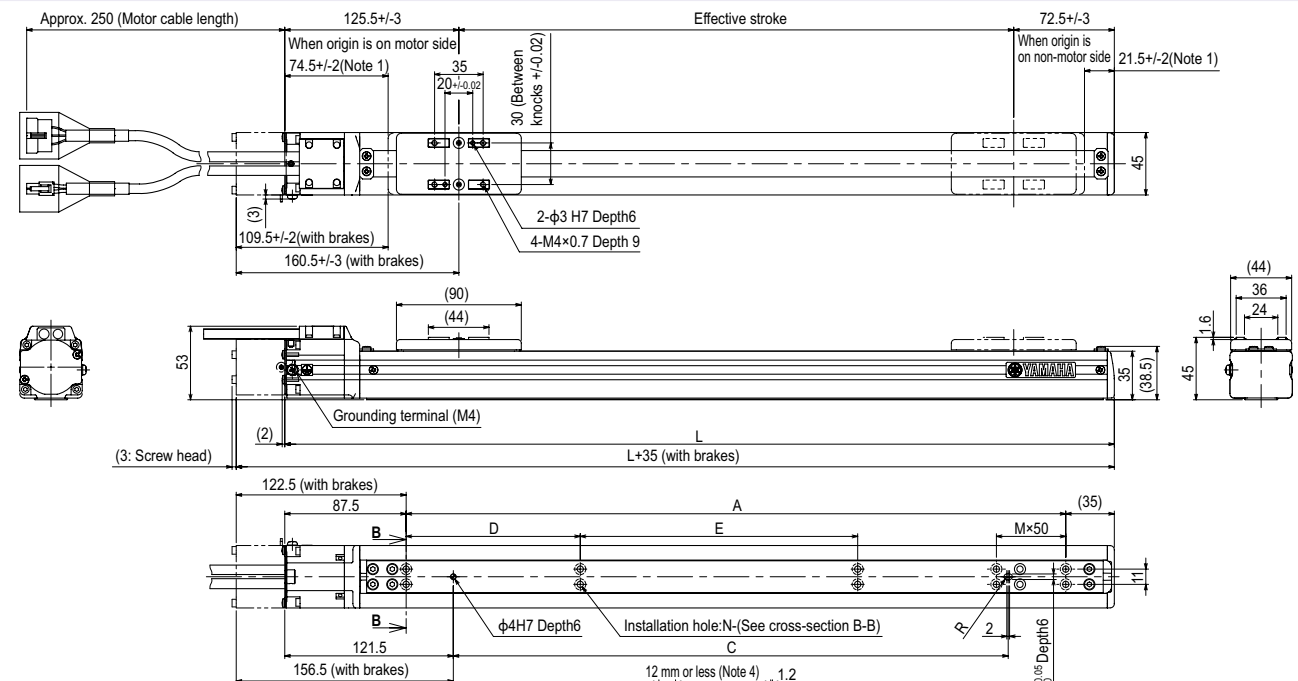
Static loading moment

(Unit: N·m)		
MY	MP	MR
15	19	18

Controller

Controller	Operation method
SR1-X05 RCX221/222 RCX240/340	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



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	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.



Ordering method

T5L						ERCD	
Model	Lead designation	Brake ^{Note 1}	Origin position change	Grease type	Stroke	Cable length ^{Note 2}	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)	1L: 1m 3L: 3.5m 5L: 5m 10L: 10m 1K/3K/5K/10K (Flexible cable)	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 standard cable (1L/3L/5L/10L), but can be changed to flexible cable. See P.596 for details on robot cable.

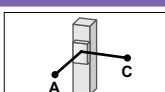
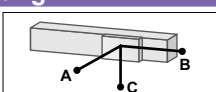
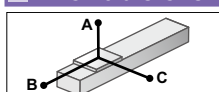
Specifications

AC servo motor output (W)	30
Repeatability ^{Note 1} (mm)	+/-0.02
Deceleration mechanism	Ball screw $\phi 12$
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

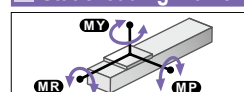
Vertical installation (Unit: mm)

		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

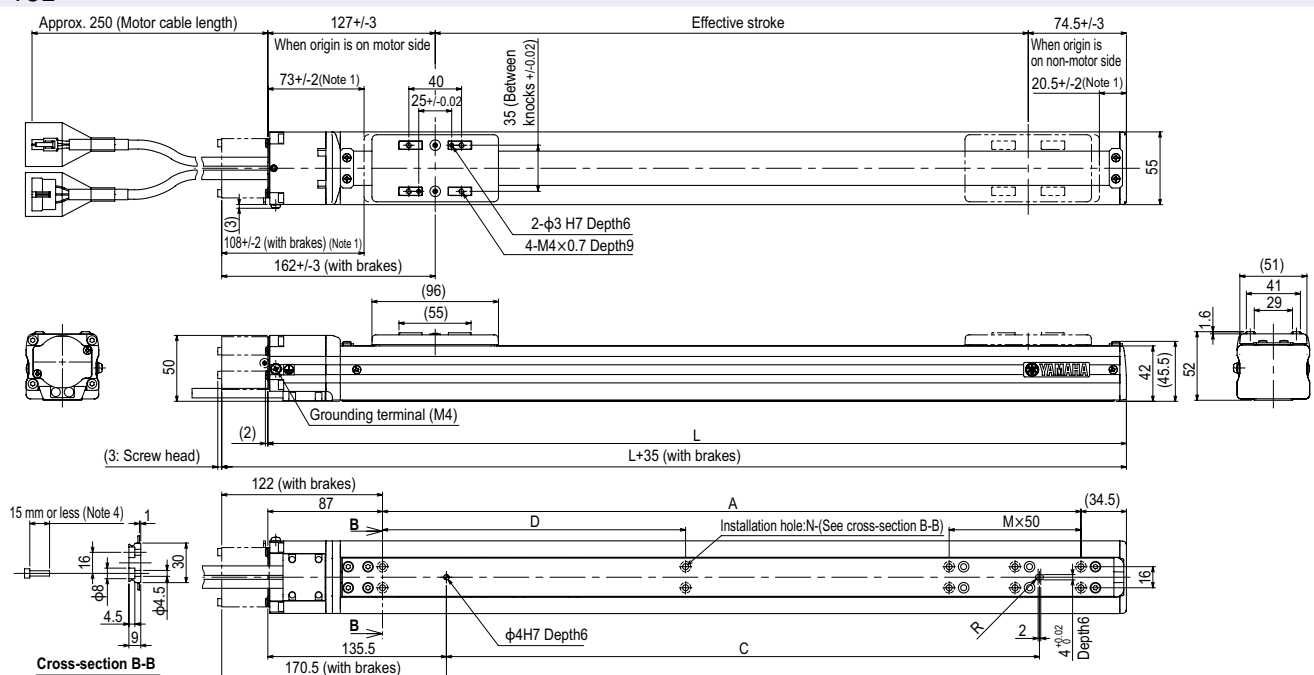


		MY	MP	MR
		30	34	40

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	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 ^{Note 5}	Lead 20	1200														
	Lead 12	800														
	Lead 6	400														
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.



Ordering method

T5LH						TSX				
Model	Lead designation	Brake	Origin position change	Grease type	Stroke	Positioner	Driver	LCD monitor	I/O selection	Battery
	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)	TS-X	Driver: Power-supply voltage / Power capacity 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	B: With battery (Absolute) N: None (Incremental)
						SR1-X	05			
						RDV-X	2			

- 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.596 for details on robot cable.
Note 3. See P.500 for DIN rail mounting bracket.
Note 4. Select this selection when using the gateway function. For details, see P.62

Specifications

AC servo motor output (W)	30
Repeatability (mm)	+/-0.02
Deceleration mechanism	Ball screw $\phi 12$
Ball screw lead (mm)	20 12 6
Maximum speed (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
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

Horizontal installation (Unit: mm)				Wall installation (Unit: mm)				Vertical installation (Unit: mm)			
Lead	1kg	A	B	C	Lead	1kg	A	B	C	Lead	1.2kg
20	967	324	598		20	551	304	925		12	240
12	429	104	226		12	185	89	378		6	239
6	916	159	398		6	347	141	800			
	436	60	152			5kg	119	44	355		
	1194	105	294			3kg	259	87	950		
	624	31	89			9kg	50	15	385		

- 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.

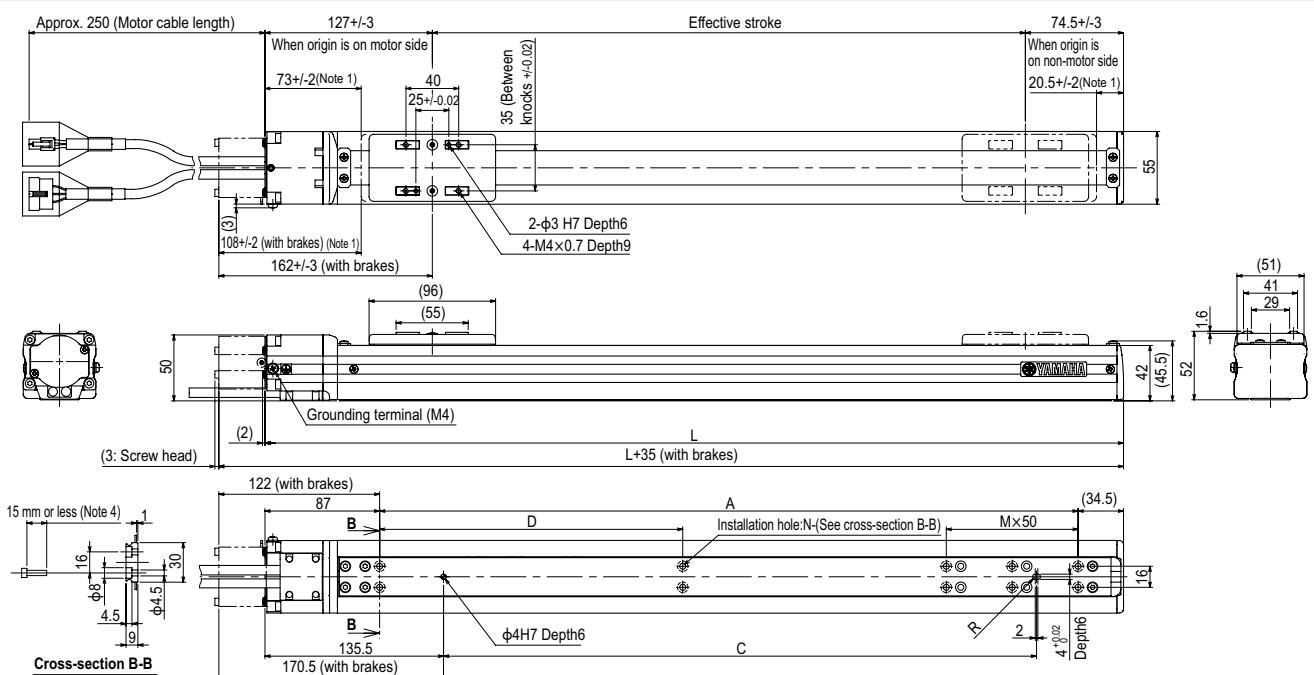
Static loading moment

(Unit: N·m)			
MY	MP	MR	
30	34	40	

Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221/222	
RCX240/340	
TS-X105	I/O point trace / Remote command
TS-X205	
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)	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 (mm/sec)	Lead 20	1200					960					640				
	Lead 12	800					640					560				
	Lead 6	400					320					280				
Speed setting		-					80%					70%				

- 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.

Ordering method

T6L

Model	Lead designation	Brake ^{Note 1}	Origin position change	Grease type	Stroke	Cable length ^{Note 3}
	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
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

Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery
05	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

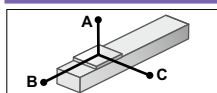
Driver	Power supply voltage	Driver: Power capacity	Regenerative unit
2	2: AC200V	05: 100W or less	RBR1

- 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.596 for details on robot cable.
 Note 3. See P.500 for DIN rail mounting bracket.
 Note 4. Select this selection when using the gateway function. For details, see P.62.

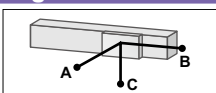
Specifications

AC servo motor output (W)	60
Repeatability ^{Note 1} (mm)	+/-0.02
Deceleration mechanism	Ball screw $\phi 12$
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

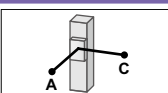
- Note 1. Positioning repeatability in one direction.
 Note 2. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table 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

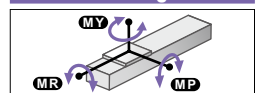


Wall installation (Unit: mm)	A	B	C
Lead 20	2kg 234	152	265
6kg	61	13	71
10kg	30	0	42
Lead 12	3kg 293	96	510
8kg	89	14	210
12kg	43	0	130
Lead 6	5kg 204	45	530
10kg	72	0	245
30kg	0	0	0



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

Static loading moment

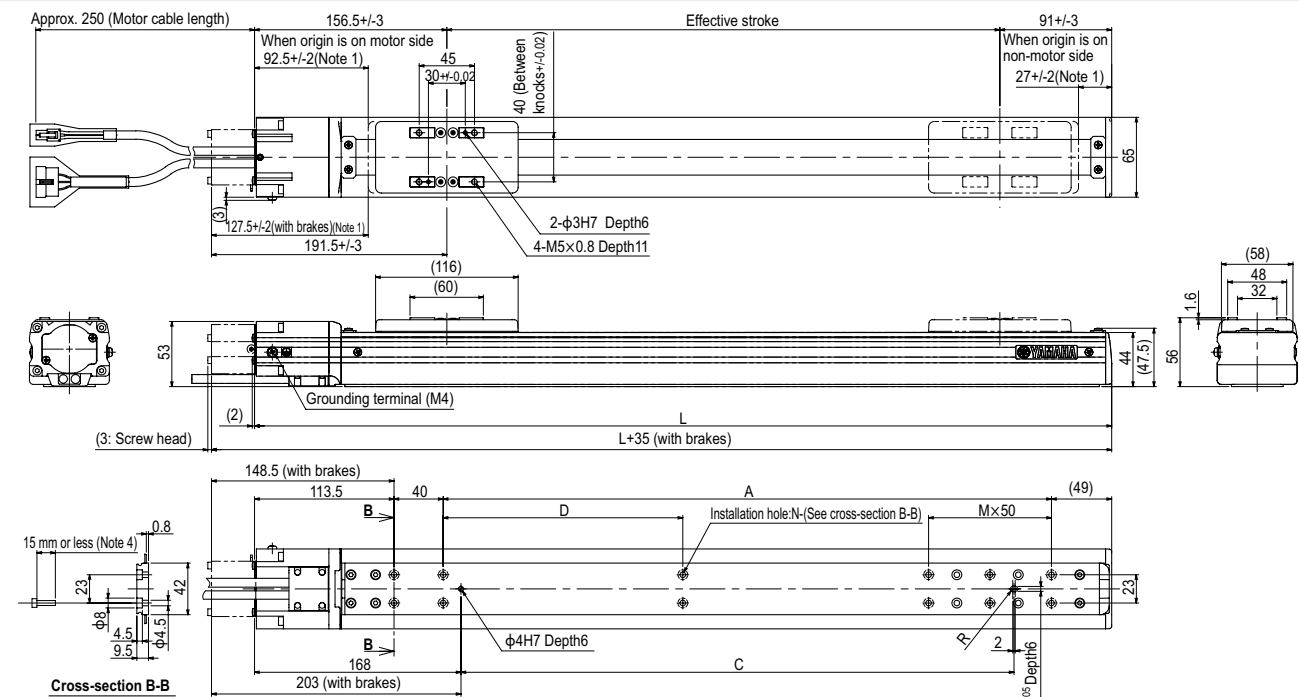


(Unit: N·m)	MY	MP	MR
	35	40	50

Controller

Controller	Operation method
SR1-X05 RCX221/222 RCX240/340	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					800					680				
	Lead 12	800					400					340				
	Lead 6	400					-					260				
	Speed setting	-					-					85%				

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

Ordering method

T9	Model	Lead designation 30: 30mm 20: 20mm 10: 10mm 5: 5mm	Brake ^{Note 1} No entry: No brakes BK: Brakes provided	Origin position change None: Standard Z: Non-motor side ^{Note 2}	Grease type None: Standard GC: Clean	Stroke Lead 20-10-5: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	Cable length ^{Note 3} 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	TSX	Positioner ^{Note 4} TS-X	Driver: Power-supply voltage Power capacity 105: 100V/100W or less 205: 200V/100W or less	Regenerative unit No entry: None 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 5}	Battery B: With battery (Absolute) N: None (Incremental)
	SR1-X	05						Controller	Driver: Power capacity 05: 100W or less	Usable for CE No entry: Standard E: CE marking	Regenerative unit No entry: None R: With RGT	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFINET	Battery B: With battery (Absolute) N: None (Incremental)	
	RDV-X	2						Driver	Power-supply voltage 2: AC200V		Driver: Power capacity 05: 100W or less	RBR1	Regenerative unit	

- 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.596 for details on robot cable.
 Note 4. See P.500 for DIN rail mounting bracket.
 Note 5. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	100
Repeatability ^{Note 1} (mm)	+/-0.01
Deceleration mechanism	Ball screw
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)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A B C
Lead 30	5kg 864 501 383 15kg 491 156 140 30kg 455 73 75	5kg 348 384 776 15kg 87 40 306 30kg 0 0 61	5kg 600 600 15kg 1098 1098 30kg 545 545
Lead 20	5kg 1292 505 462 15kg 572 158 151 30kg 455 73 75	5kg 416 388 1186 15kg 92 42 386 30kg 0 0 61	5kg 594 594 15kg 280 280 30kg 217 217
Lead 10	5kg 617 119 127 15kg 422 53 59 30kg 420 36 40	5kg 193 132 910 15kg 53 0 400 30kg 0 0 109	5kg 221 221 15kg 135 135 30kg 92 92
Lead 5	5kg 722 42 47 15kg 657 33 37 30kg 577 23 25	5kg 197 133 2360 15kg 54 0 985 30kg 0 0 427	5kg 135 135 15kg 92 92 30kg 0 0 427

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

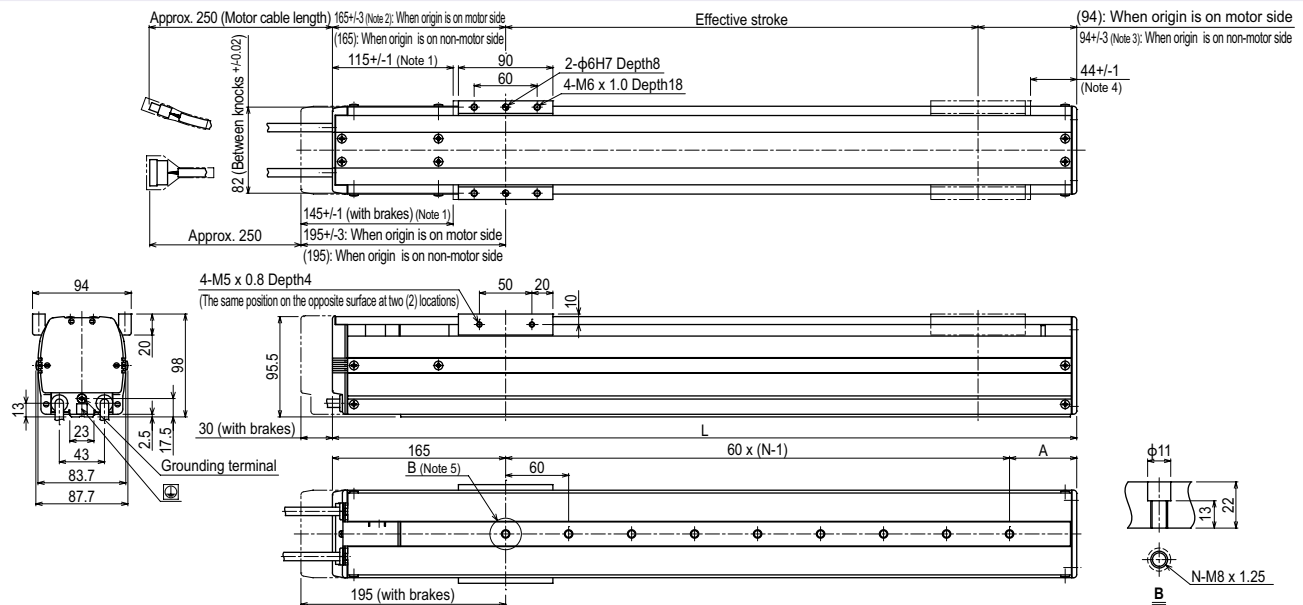
	MY	MP	MR
(Unit: N-m)	86	133	117

Controller

Controller	Operation method
SR1-X05 ^{Note} RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 ^{Note} TS-X205 ^{Note} RDV-X205-RBR1	I/O point trace / Remote command / Pulse train control

Note. Regenerative unit is required when the models used vertically 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	1150	1200	1250
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	Lead 20 1200	Lead 10 600	Lead 5 300	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.

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		SR1-X		RDV-X		RBR1				
Model	Lead designation 30: 30mm 20: 20mm 10: 10mm 5: 5mm	Brake Note 1 No entry: No brakes BK: Brakes provided	Origin position change None: Standard Z: Non-motor side Note 2	Grease type None: Standard GC: Clean	Stroke Lead 20-10: 150 to 1050 (50mm pitch) Lead 30: 150 to 1250 (50mm pitch)	Cable length Note 3 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	Positioner Note 4 TS-X	Driver: Power-supply voltage Power capacity 110: 100V/200W 210: 200V/200W	Regenerative unit No entry: None 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 5	Battery B: With battery (Absolute) N: None (Incremental)
						Controller	10	Usable for CE No entry: Standard E: CE marking	Regenerative unit No entry: None R: With RGT	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	Battery B: With battery (Absolute) N: None (Incremental)	
						Driver	2	Power-supply voltage 2: AC200V	10	Driver: Power capacity 10: 200W or less	Regenerative unit	

- 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.596 for details on robot cable.
- Note 4. See P.500 for DIN rail mounting bracket.
- Note 5. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	200
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw
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)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	B	C
Lead 30									
10kg	415	286	183	10kg	140	120	4kg	515	515
20kg	270	105	93	20kg	41	0	6kg	334	334
40kg	667	244	225	40kg	170	128	8kg	244	244
60kg	330	112	107	60kg	46	0	10kg	217	217
80kg	162	42	47	80kg	0	0	15kg	133	133
100kg	392	75	81	100kg	52	0	20kg	90	90
120kg	297	40	44	120kg	24	0	25kg	135	135
140kg	265	21	24	140kg	0	0	30kg	92	92
160kg	477	22	37	160kg	54	0	35kg	49	49
180kg	412	22	25	180kg	25	0			
200kg	362	16	18	200kg	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.

Static loading moment

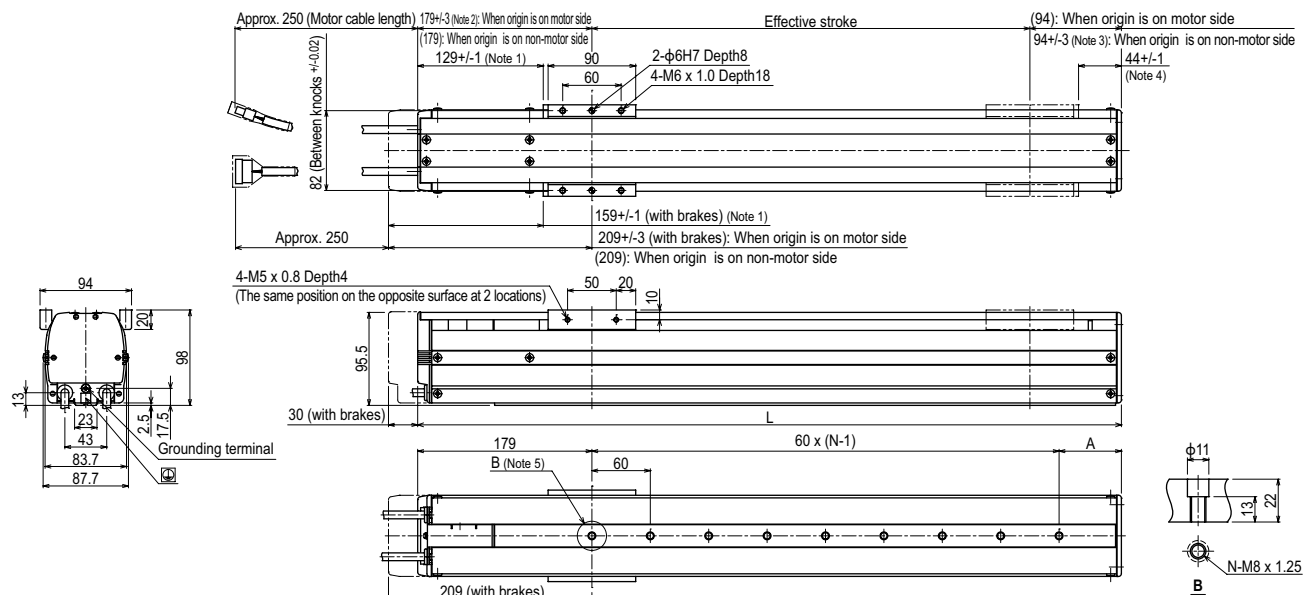
	MY	MP	MR
	86	133	117

Controller

Controller	Operation method
SR1-X10 Note RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 Note TS-X210 Note RDV-X210-RBR1	I/O point trace / Remote command / 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±0.4 when the high lead specification (Lead 30) is used.
- Note 3. 94±0.4 when the high lead specification (Lead 30) is used.
- Note 4. 41.5±0.1 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	1150	1200	1250
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										900		
	Lead 20 1200										960										600		
	Lead 10 600										480										300		
	Lead 5 300										240										150		
Speed setting	-										80%										65%		

- 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 ▶ 518

TS-X ▶ 492

RDV-X ▶ 506



Ordering method

F8						TSX			
Model	Lead designation 20: 20mm 12: 12mm 6: 6mm	Brake Note 1 No entry: No brakes BK: Brakes provided	Origin position change None: Standard Z: Non-motor side	Grease type None: Standard GC: Clean	Stroke 150 to 800 (50mm pitch)	Cable length ^{Note 2} 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	Positioner ^{Note 3} TS-X	Driver: Power supply voltage / Power capacity 105: 100V/100W or less 205: 200V/100W or less	LCD monitor No entry: None L: With LCD
							SR1-X	05	
							Controller	Driver: Power capacity 05: 100W or less	Usable for CE No entry: Standard E: CE marking
							RDV-X	2	05
							Driver	Power supply voltage 2: AC200V	Driver: Power capacity 05: 100W or less
									RBR1
									Regenerative unit
									I/O selection NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board ^{Note 4}
									Battery B: With battery (Absolute) N: None (Incremental)

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.596 for details on robot cable.

Note 3. See P.500 for DIN rail mounting bracket.

Note 4. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	100
Repeatability ^{Note 1} (mm)	+/-0.02
Deceleration mechanism	Ball screw
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 above.

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)				Wall installation (Unit: mm)				Vertical installation (Unit: mm)			
	A	B	C		A	B	C		A	C	
Lead 20				Lead 20				Lead 12			
5kg	197	76	120	5kg	104	67	174	1kg	447	448	
10kg	100	32	54	10kg	37	23	72	2kg	214	216	
12kg	85	25	43	12kg	27	15	55	3kg	137	138	
Lead 12				Lead 12				4kg	98	99	
5kg	364	89	188	5kg	171	81	340	2kg	244	245	
10kg	203	39	87	10kg	69	32	172	4kg	113	113	
15kg	139	22	51	15kg	33	15	100	6kg	69	69	
20kg	103	14	33	20kg	15	6	55	8kg	46	46	
Lead 6				Lead 6							
10kg	403	43	113	10kg	94	36	369				
20kg	214	16	43	20kg	25	9	157				
30kg	140	6	20	30kg	0	0	14				
40kg	113	0	8	40kg	0	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.

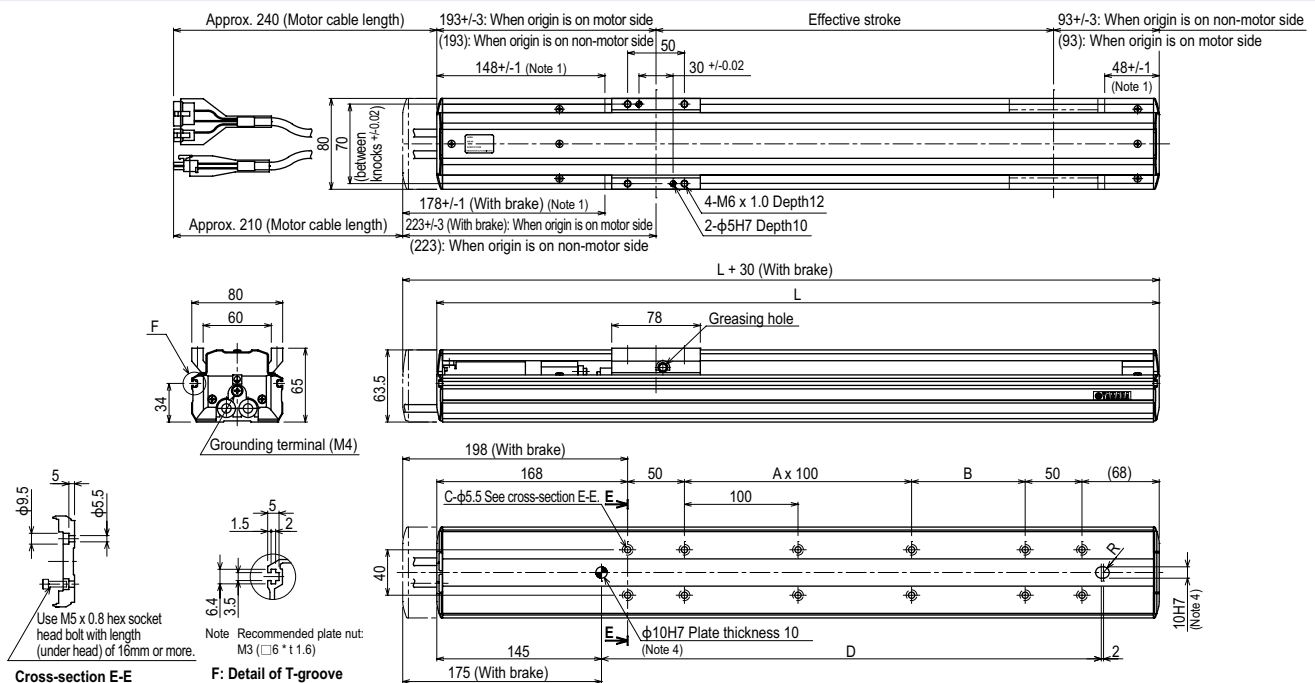
Static loading moment

(Unit: N·m)		
MY	MP	MR
70	95	110

Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221/222	
RCX240/340	
TS-X105	I/O point trace / Remote command
TS-X205	
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														
Lead 12														
Lead 6														
Speed setting														

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.

F8L

● High lead: Lead 30

● Origin on the non-motor side is selectable

Ordering method

F8L	Model	Lead designation 30: 30mm 20: 20mm 10: 10mm 5: 5mm	Brake Note 1 No entry: No brakes BK: Brakes provided	Origin position change None: Standard Z: Non-motor side	Grease type None: Standard GC: Clean	Stroke 150 to 1050 (50mm pitch)	Cable length Note 2 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	TSX	Positioner Note 3 TS-X	Driver: Power supply voltage / Power capacity 105: 100V/100W or less 205: 200V/100W or less	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 4	Battery B: With battery (Absolute) N: None (Incremental)
	SR1-X	Controller	05	Driver: Power capacity 05: 100W or less	Usable for CE No entry: Standard E: CE marking	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	Battery B: With battery (Absolute) N: None (Incremental)						
	RDV-X	Driver	2	Power supply voltage 2: AC200V	05	Driver: Power capacity 05: 100W or less	RBR1	Regenerative unit					

- 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.596 for details on robot cable.
 Note 3. See P.500 for DIN rail mounting bracket.
 Note 4. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	100
Repeatability Note 1 (mm)	+/-0.01
Deceleration mechanism	Ball screw
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
Vertical	Stroke+292
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

		A	B	C
Horizontal installation (Unit: mm)				
Lead 30	5kg	112	80	80
	7kg	78	43	49
	5kg	211	108	147
	10kg	116	45	69
	15kg	76	24	39
	20kg	58	14	26
Lead 20	10kg	251	56	122
	20kg	121	20	46
	30kg	74	8	20
	40kg	35	0	6
Lead 10	20kg	249	23	62
	30kg	170	10	29
	40kg	138	4	12
	50kg	51	0	0
Wall installation (Unit: mm)				
Lead 30	5kg	55	57	77
	7kg	21	19	34
	5kg	119	89	176
	10kg	38	26	69
	15kg	7	0	16
	20kg	0	0	0
Lead 20	10kg	85	39	202
	20kg	7	0	30
	30kg	0	0	0
	40kg	0	0	0
Lead 10	20kg	19	7	140
	30kg	0	0	0
	40kg	0	0	0
	50kg	0	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.

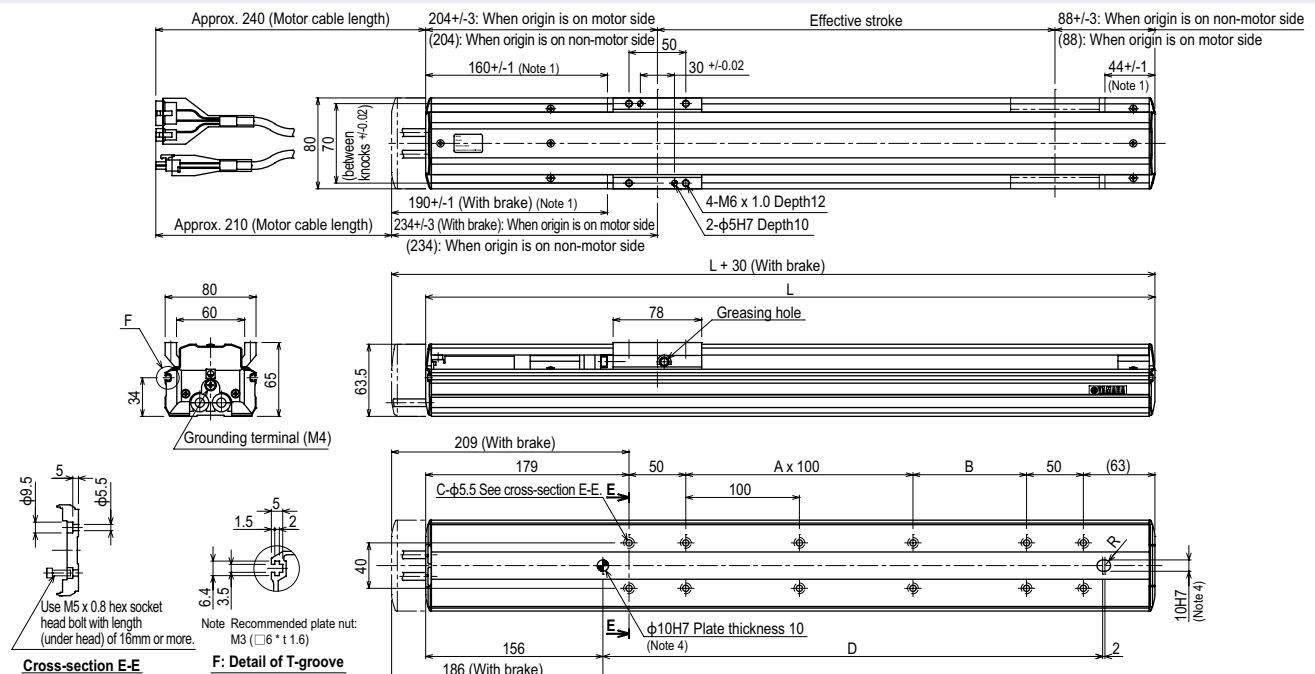
Static loading moment

	MY	MP	MR
(Unit: N·m)			
70	95	110	

Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221/222	
RCX240/340	
TS-X105	I/O point trace / Remote command
TS-X205	
RDV-X205-RBR1	Pulse train control

F8L



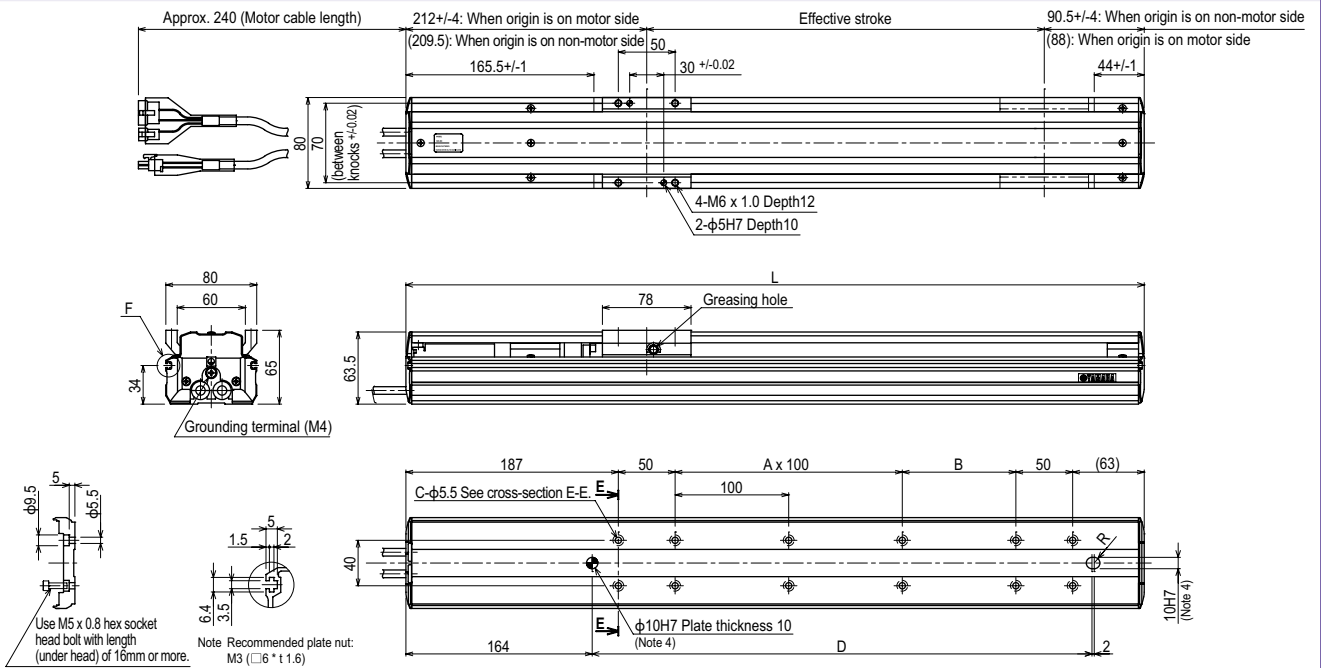
Cross-section E-E

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 $\phi 10$ knock-pin hole to position the robot body, the knock-pin must not protrude more than 10mm inside the robot body.
 Note 5. Weight of models with no brake.
 Note 6. 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



Cross-section E-E

F: Detail of T-groove

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)	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 knockpin 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.

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	Cable entry location	Origin position change	Grease type	Stroke	Cable length
	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	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)

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.596 for details on robot cable.

Note 4. See P.500 for DIN rail mounting bracket.

Note 5. Select this selection when using the gateway function. For details, see P.62.

TSX

Positioner	Driver: Power supply voltage	Regenerative unit	LCD monitor	I/O selection	Battery
TS-X	Power capacity 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	B: With battery (Absolute) N: None (Incremental)

SR1-X

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

RDV-X

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

Specifications

AC servo motor output (W)	100
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw
Ball screw lead (mm)	30 20 10 5
Maximum speed (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 (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 x 1 rail
Position detector	Resolvers
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

Horizontal installation	Wall installation	Vertical installation
(Unit: mm)	(Unit: mm)	(Unit: mm)
Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
Lead 30	Lead 30	Lead 30
5kg 491 273 215	5kg 206 209 480	1kg 600 600
15kg 223 61 63	15kg 45 0 177	2kg 649 691
20kg 937 282 259	20kg 250 213 905	4kg 306 347
10kg 487 121 116	10kg 99 51 438	4kg 338 380
20kg 236 40 44	20kg 21 0 149	8kg 142 183
15kg 389 71 74	10kg 105 53 550	10kg 102 144
30kg 179 17 20	20kg 22 0 230	10kg 105 146
40kg 106 0 0	30kg 0 0 0	15kg 51 93
30kg 419 19 20	10kg 107 54 1410	20kg 25 66
50kg 0 0 0	20kg 22 0 540	
60kg 0 0 0	30kg 0 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.

Static loading moment

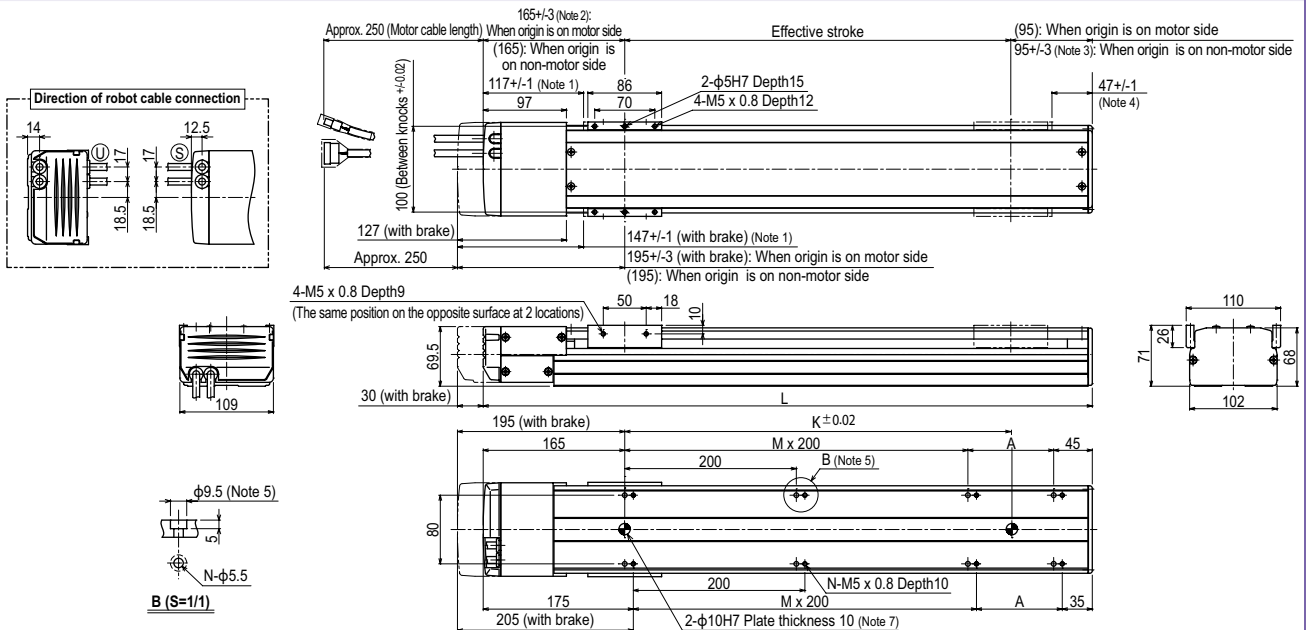
MY	MP	MR
131	131	115

Controller

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

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.

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
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	1	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)	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 (mm/sec)	Lead 30 1800	Lead 20 1200	Lead 10 600	Lead 5 300																			
Speed setting																							

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 ▶ 518

TS-X ▶ 492

RDV-X ▶ 506

F10H

● High lead: Lead 30

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

Ordering method

F10H

Model	Lead designation	Brake	Cable entry location	Origin position change	Grease type	Stroke	Cable length
	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	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	Driver: Power-supply voltage / Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
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	N: None (Incremental) B: With battery (Absolute)

SR1-X

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

RDV-X

Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
2	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.596 for details on robot cable.
- Note 4. See P.500 for DIN rail mounting bracket.
- Note 5. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	200
Repeatability (mm)	+/- 0.01
Deceleration mechanism	Ball screw
Ball screw lead (mm)	30 20 10 5
Maximum speed (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 x H71
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 1 rail
Position detector	Resolvers
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

Horizontal installation (Unit: mm)				Wall installation (Unit: mm)				Vertical installation (Unit: mm)			
	A	B	C		A	B	C		A	C	
Lead 30	10kg 1181	681	219	Lead 30	10kg 193	570	1062	Lead 20	4kg 1650	1650	
	20kg 772	298	99		20kg 65	187	549		6kg 1104	1104	
Lead 20	10kg 1961	685	232	Lead 20	10kg 198	570	1786	Lead 10	8kg 832	832	
	20kg 949	301	103		20kg 65	187	732		10kg 927	927	
Lead 10	10kg 432	109	38	Lead 10	40kg 0	0	0	Lead 5	15kg 614	614	
	30kg 1615	239	84		20kg 100	283	1981		20kg 458	458	
Lead 5	10kg 1131	112	39	Lead 5	25kg 66	187	1546		15kg 752	752	
	80kg 812	40	14		30kg 43	123	1223		20kg 560	560	
	60kg 3091	112	39		20kg 134	379	7629		30kg 369	369	
	80kg 2330	64	23		25kg 93	264	5987				
	100kg 1733	36	12		30kg 66	187	4841				

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

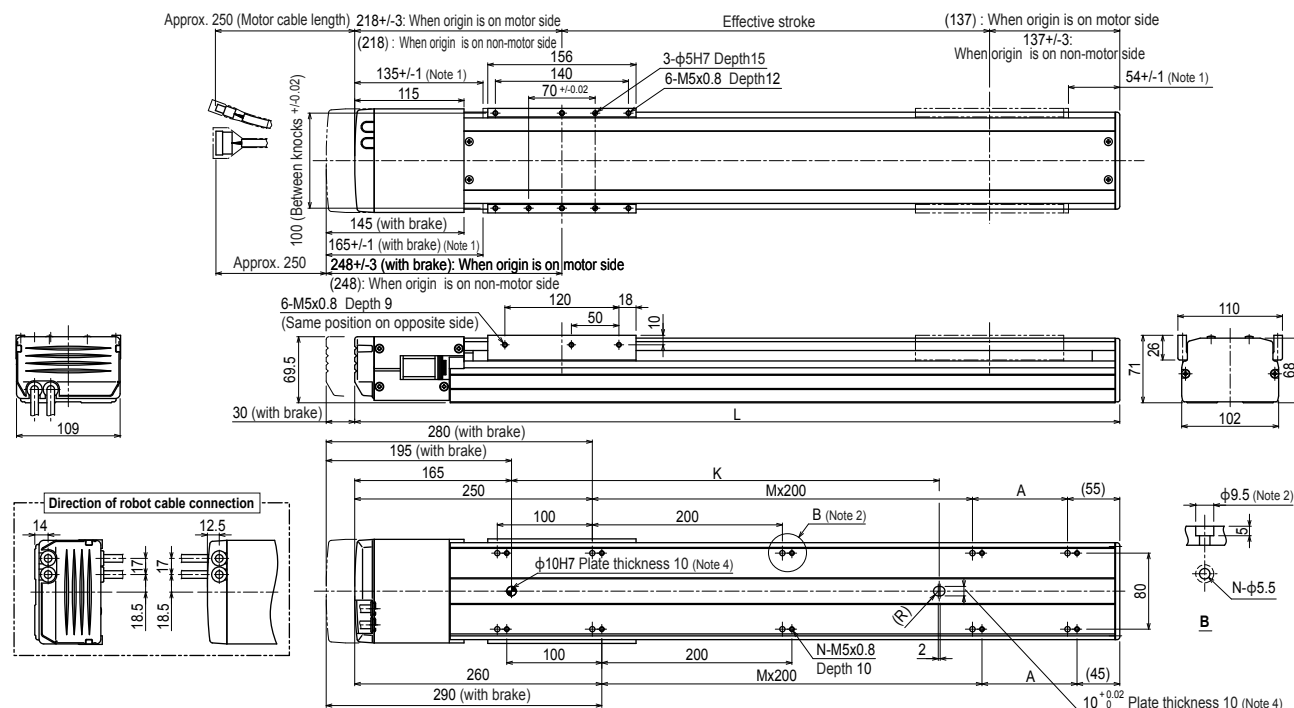
MY	MP	MR
348	348	160

Controller

Controller	Operation method
SR1-X10 RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 TS-X210 RDV-X210- RBR1	I/O point trace / Remote command / 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)	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 (mm/sec)	Lead 30 1800	Lead 20 1200	Lead 10 600	Lead 5 300														
Speed setting	80%	70%	60%	50%	40%	35%												

Note 1. Stop positions are determined by the mechanical stoppers at both ends. When installing the unit, washers, etc., cannot be used in the φ9.5 counter bore hole.

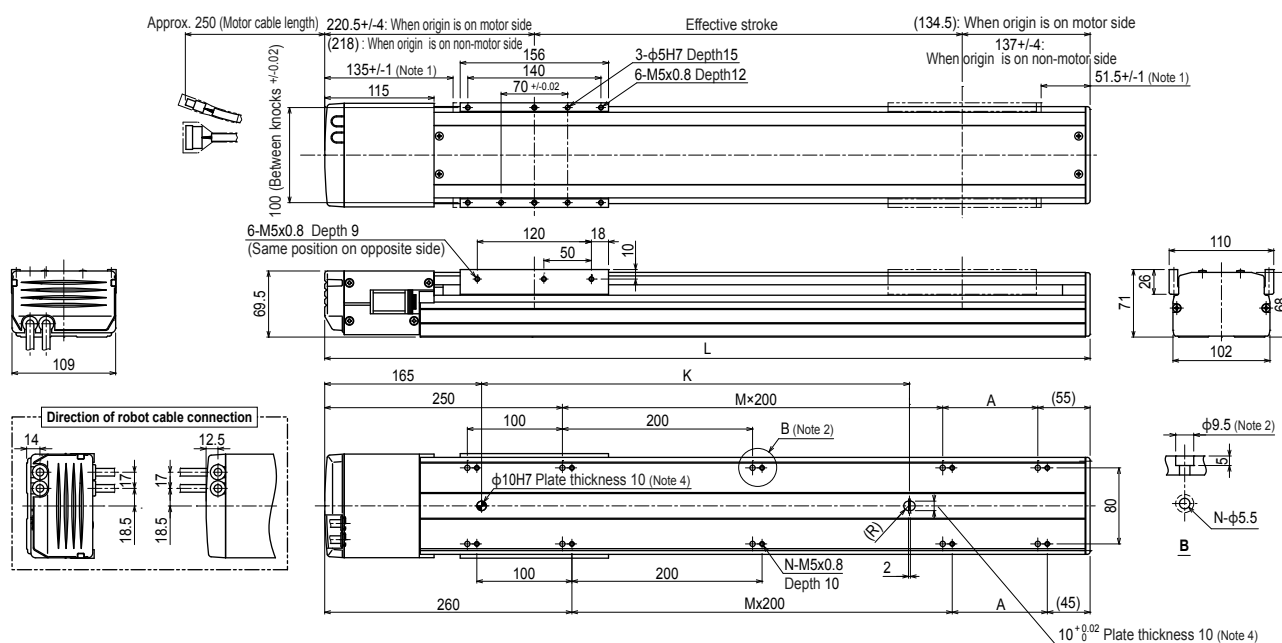
Note 2. Minimum bend radius of motor cable is R50.

Note 3. 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 4. 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 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.

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 (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 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.

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	Regenerative unit	LCD monitor	I/O selection	Battery
TS-X	Power capacity 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

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

RDV-X

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

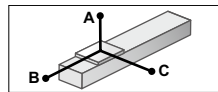
- Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.596 for details on robot cable.
 Note 3. See P.500 for DIN rail mounting bracket.
 Note 4. Select this selection when using the gateway function. For details, see P.62.

Specifications

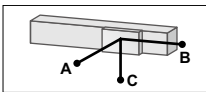
AC servo motor output (W)	100
Repeatability ^{Note 1} (mm)	+/-0.01
Deceleration mechanism	Ball screw
Ball screw lead (mm)	30 20 10 5
Maximum speed ^{Note 2} (mm/sec)	1800 1200 600 300
Maximum payload (kg)	Horizontal 15 30 55 80 Vertical 4 10 20
Rated thrust (N)	56 84 169 339
Stroke (mm)	150 to 1250 ^{Note 3} (50mm pitch)
Overall length (mm)	Horizontal Stroke+255 Vertical Stroke+285
Maximum dimensions of cross section of main unit (mm)	W136 x H83
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 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.

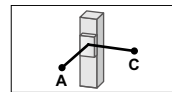
Allowable overhang^{Note}



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



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



Vertical installation (Unit: mm)	A	C
Lead 30	1kg 600	600
Lead 20	2kg 1200	1200
Lead 10	4kg 1154	895
Lead 5	4kg 1232	956
Lead 30	8kg 634	492
Lead 20	10kg 499	387
Lead 10	10kg 587	456
Lead 5	15kg 383	297
Lead 30	20kg 281	218

Static loading moment

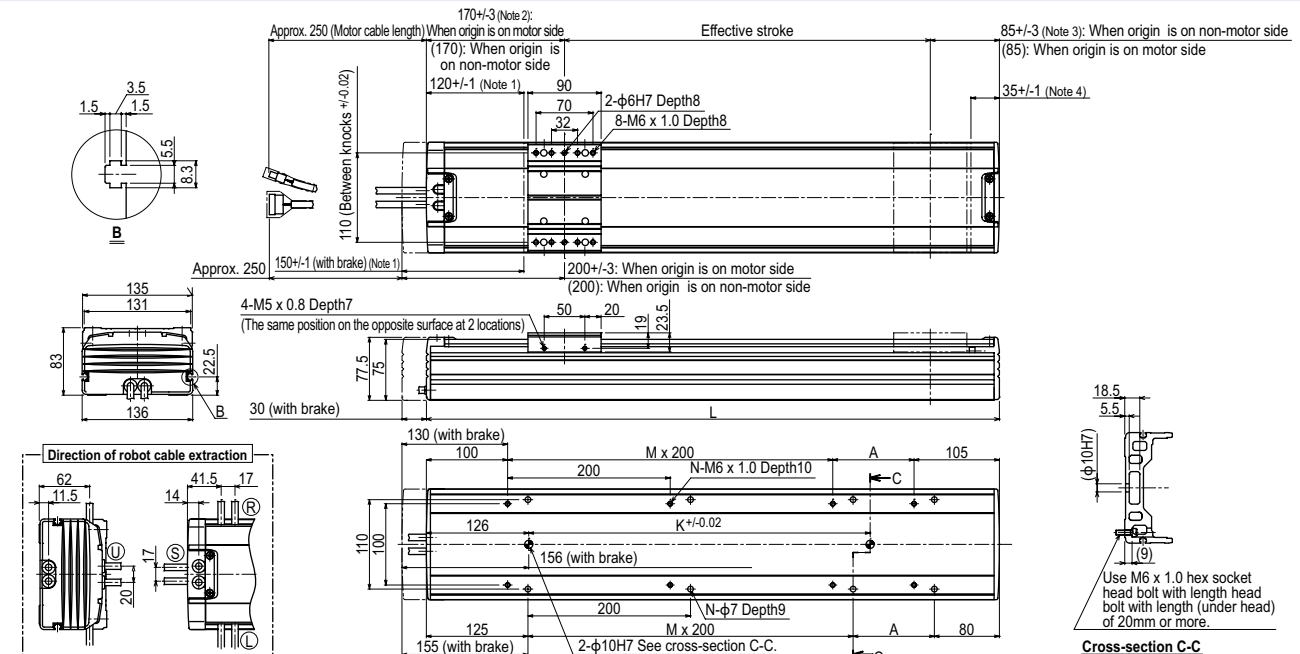
(Unit: N·m)	MY	MP	MR
	232	233	204

Controller

Controller	Operation method
SR1-X05 ^{Note} RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 ^{Note} TS-X205 ^{Note} RDV-X205-RBR1	I/O point trace / Remote command / 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 5	1150	Note 5	1200	Note 5	1250	Note 5
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		960	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 (mm/sec) ^{Note 7}	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.

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
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)

Positioner	Driver: Power-supply voltage	LCD monitor	I/O selection	Battery
TS-X	110: 100V/200W 210: 200V/200W	No entry: L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board	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.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

Note 3. Select this selection when using the gateway function. For details, see P.62.

[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.

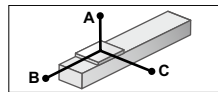
Specifications

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}

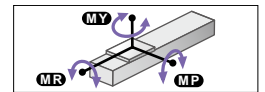


Horizontal installation (Unit: mm)			
	A	B	C
Lead 20			
10kg	3550	1340	1210
20kg	2075	685	633
45kg	1280	326	308

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

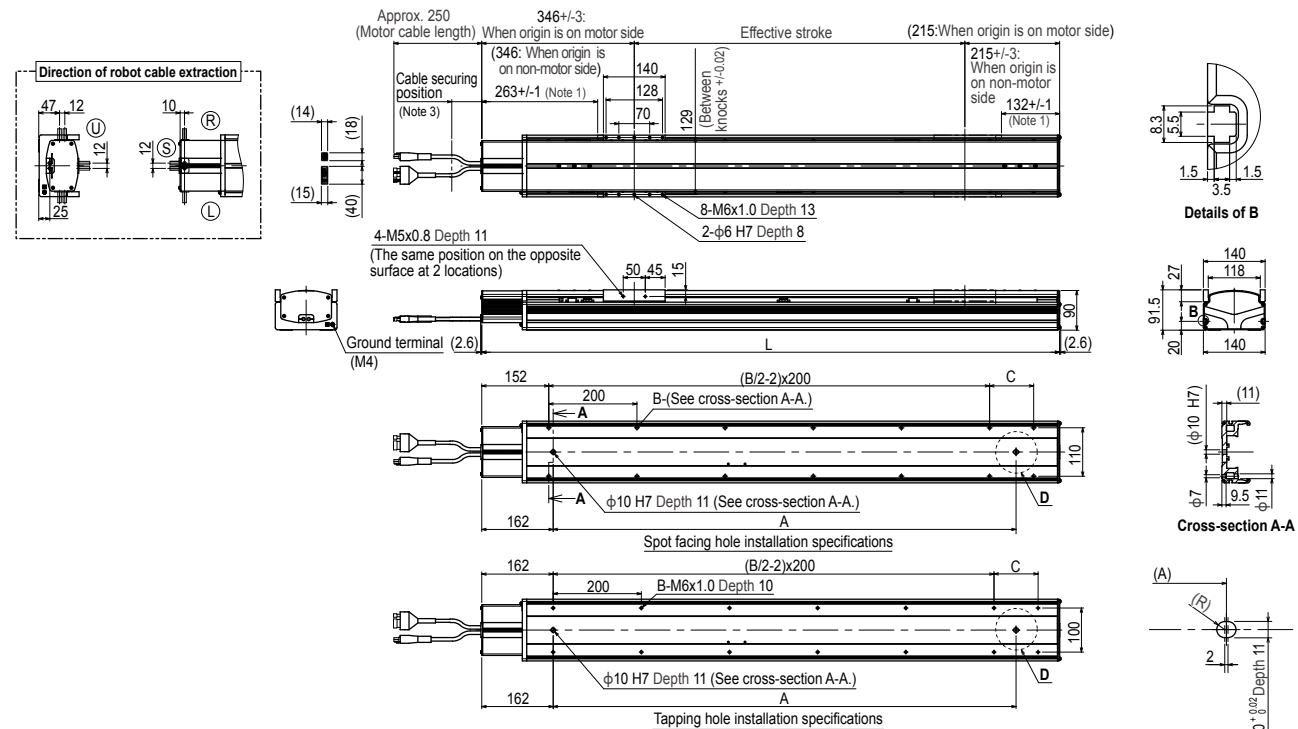


(Unit: N·m)		
MY	MP	MR
551	552	485

Controller

Controller	Operation method
SR1-X10	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221/222	
RCX240/340	
TS-X110	I/O point trace / Remote command
TS-X210	
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	20	20	20	20	22	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

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	Cable entry location	Origin position change	Grease type	Stroke	Cable length
	40: 40mm 20: 20mm 10: 10mm	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: 200 to 1250 (50mm pitch) Lead 40: 200 to 1450 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

- 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.596 for details on robot cable.
Note 4. See P.500 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. For details, see P.62.

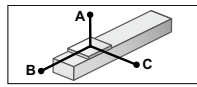
TSX	220				
Positioner TS-X	Driver: Power supply voltage 220: 200V/400 to 600W	Regenerative unit No entry: None R: With RGT	LCD monitor No entry: None L: With LCD	I/O selection NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board	Battery N: None (Incremental)
SR1-X	20				
Controller	Driver: Power capacity 20: 400 to 600W	Usable for CE No entry: Standard E: CE marking	Regenerative unit No entry: None 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	20			
Driver	Power supply voltage 2: AC200V	Driver: Power capacity 20: 600W or less	Regenerative unit RBR1 (Horizontal) RBR2 (Vertical)		

Specifications

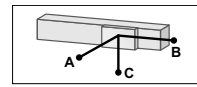
AC servo motor output (W)	400
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw
Ball screw lead (mm)	40 20 10
Maximum speed (mm/sec)	2400 1000 (1200)
Maximum payload (kg)	Horizontal 40 80 120 Vertical 15 35
Rated thrust (N)	169 339 678
Stroke (mm)	200 to 1450 (50mm pitch)
Overall length (mm)	Horizontal Stroke+375 Stroke+365 Vertical Stroke+395
Maximum dimensions of cross section of main unit (mm)	W168 x H100
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 2 rail
Position detector	Resolvers
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.

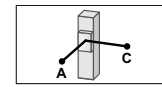
Allowable overhang



Horizontal installation		(Unit: mm)	
		A	B
Lead 40	10kg	3540	2753
	20kg	2541	1357
Lead 20	40kg	2639	661
	30kg	2647	894
Lead 10	50kg	1770	521
	80kg	1391	312
Lead 5	60kg	2443	430
	100kg	2000	243
	120kg	1841	197



Wall installation		(Unit: mm)		
		A	B	C
Lead 10' lead 20'	10kg	2022	2670	3501
	20kg	1202	1283	2483
	40kg	752	587	2516
	30kg	987	820	2578
	50kg	574	447	1685
	80kg	342	237	1263
	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
	15kg	1782	1782
	25kg	1054	1054
	35kg	742	742

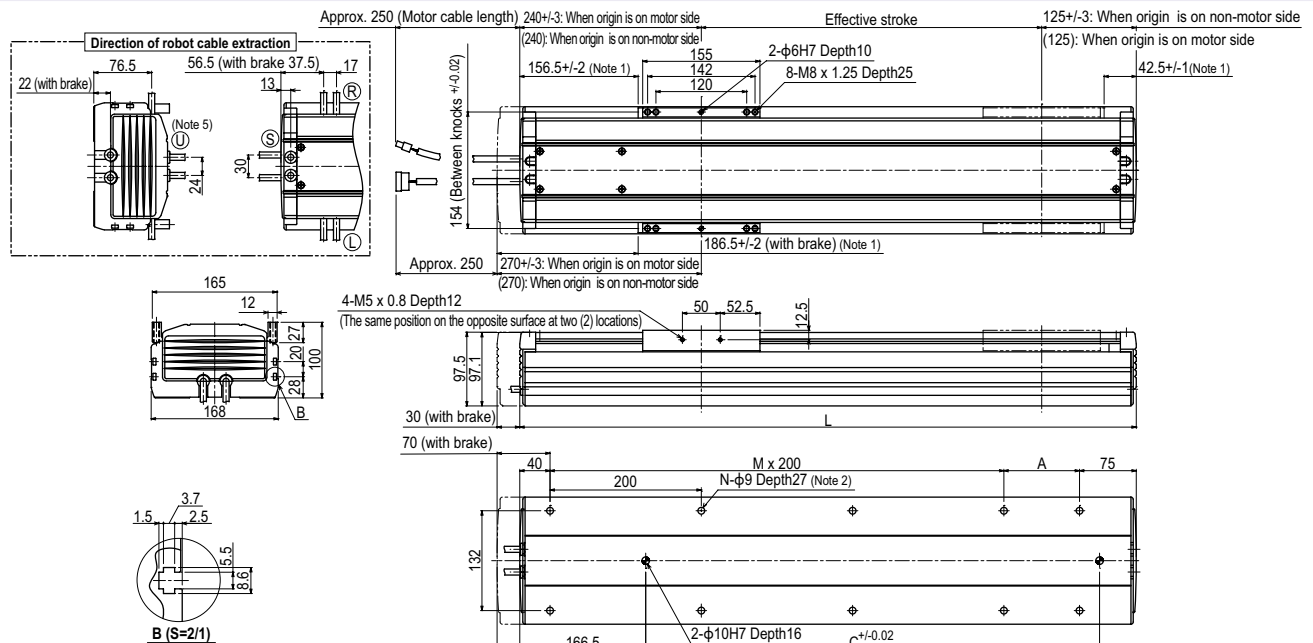
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Controller

Controller	Operation method
SR1-X20	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221/222, RCX240/340	I/O point trace / Remote command
TS-X220	Pulse train control
RDV-X220-RBR1 (Horizontal)	
RDV-X220-RBR2 (Vertical)	

- 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)	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	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20	Lead 20
Speed setting	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600

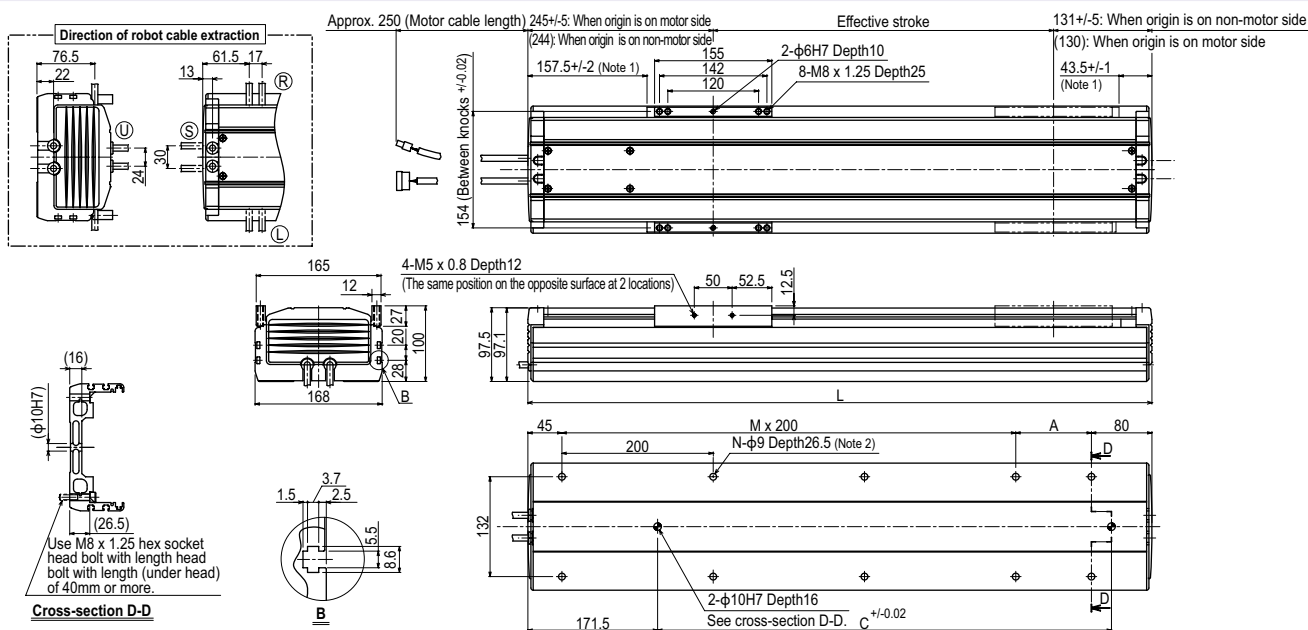
Controller

SR1-X ▶ 518

TS-X ▶ 492

RDV-X ▶ 506

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.

Note 2: When installing the robot, do not use washers inside the robot body.																												
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 (mm/sec)	Lead 40	2400													1920		1680		1440		1200		960		840		720	
	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.

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

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

Note 3. Select this selection when using the gateway function. For details, see P.62.

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

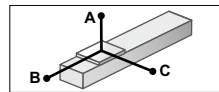
AC servo motor output (W)	400
Repeatability ^{Note 1} (mm)	+/-0.01
Deceleration mechanism	Ball screw $\phi 20$
Ball screw lead (mm)	20
Maximum speed (mm/sec)	1200 ^{Note 2}
Maximum payload (kg)	90
Rated thrust (N)	339
Stroke (mm)	850 to 2500 (50mm pitch)
Overall length (mm)	Stroke+686
Maximum dimensions 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}

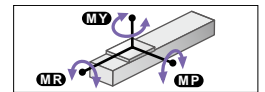


Horizontal installation (Unit: mm)	A	B	C
Lead 20			
30kg	4050	1090	1405
50kg	2755	650	835
90kg	1610	345	450

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



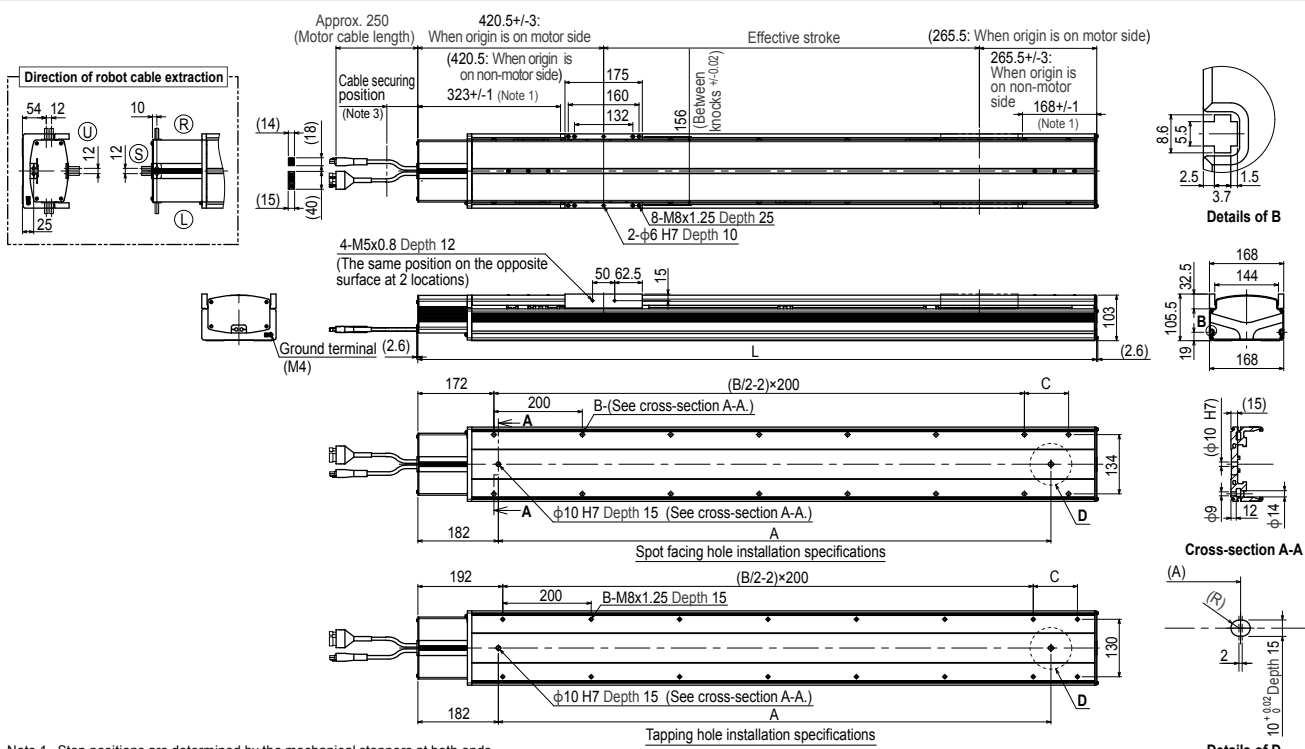
(Unit: N·m)	MY	MP	MR
	1032	1034	908

Controller

Controller	Operation method
SR1-X20 ^{Note} RCX221/222 RCX240/340	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 × 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 × 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

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	Cable entry location	Origin position change	Grease type	Stroke	Cable length
	40: 40mm 20: 20mm 10: 10mm	No entry: 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: 200 to 1250 (50mm pitch) Lead 40: 200 to 1450 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

- 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.596 for details on robot cable.
Note 4. See P.500 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. For details, see P.62.

TSX

Positioner

TS-X

220

Driver: Power supply voltage
220: 200V/400 to 600W

Regenerative unit

No entry: None
R: With RG1

LCD monitor

No entry: None
L: With LCD

I/O selection

N: NPN
P: PNP
CC: CC-Link
DN: DeviceNet™
EP: EtherNet/IP™
PT: PROFINET
GW: No I/O board

Battery

B: With battery (Absolute)
N: None (Incremental)

SR1-X

Controller

Driver: Power capacity
20: 400 to 600W

Usable for CE

No entry: Standard
E: CE marking

Regenerative unit

No entry: None
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

Driver

Power supply voltage
2: AC200V

Driver: Power capacity

20: 600W or less

Regenerative unit

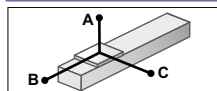
RBR1 (Horizontal)
RBR2 (Vertical)

Specifications

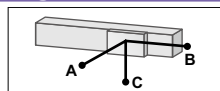
AC servo motor output (W)	600
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw
Ball screw lead (mm)	40 20 10
Maximum speed (mm/sec)	2400 1000 (1200) 600
Maximum payload (kg)	Horizontal 60 120 Vertical 25 45
Rated thrust (N)	255 510 1020
Stroke (mm)	200 to 1450 (50mm pitch) Stroke+427 Stroke+417
Overall length (mm)	Horizontal Stroke+427 Stroke+417 Vertical - Stroke+447
Maximum dimensions of cross section of main unit (mm)	W202 x H115
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 2 rail
Position detector	Resolvers
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. To operate the unit at a speed exceeding 1,000mm/sec. (Max. speed), a regeneration unit RG1 is required.
Note 3. Longer than 1250mm stroke can be handled by the high lead specification (Lead 40) only.
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.

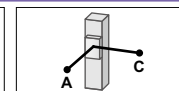
Allowable overhang



Horizontal installation (Unit: mm)	A	B	C
Lead 40	10kg 4000	4000 3450	20kg 3397
Lead 20	60kg 2443	718 977	50kg 2602
Lead 10	80kg 2193	528 703	120kg 1841



Wall installation (Unit: mm)	A	B	C
Lead 40	10kg 3571	4000 4000	20kg 2118
Lead 20	60kg 1000	648 2443	50kg 1097
Lead 10	80kg 708	458 2193	120kg 468



Vertical installation (Unit: mm)	A	C
Lead 20	15kg 2635	2635
Lead 10	20kg 2000	2000
Lead 5	25kg 1621	1621
Lead 2	30kg 1446	1446
Lead 1	45kg 951	951

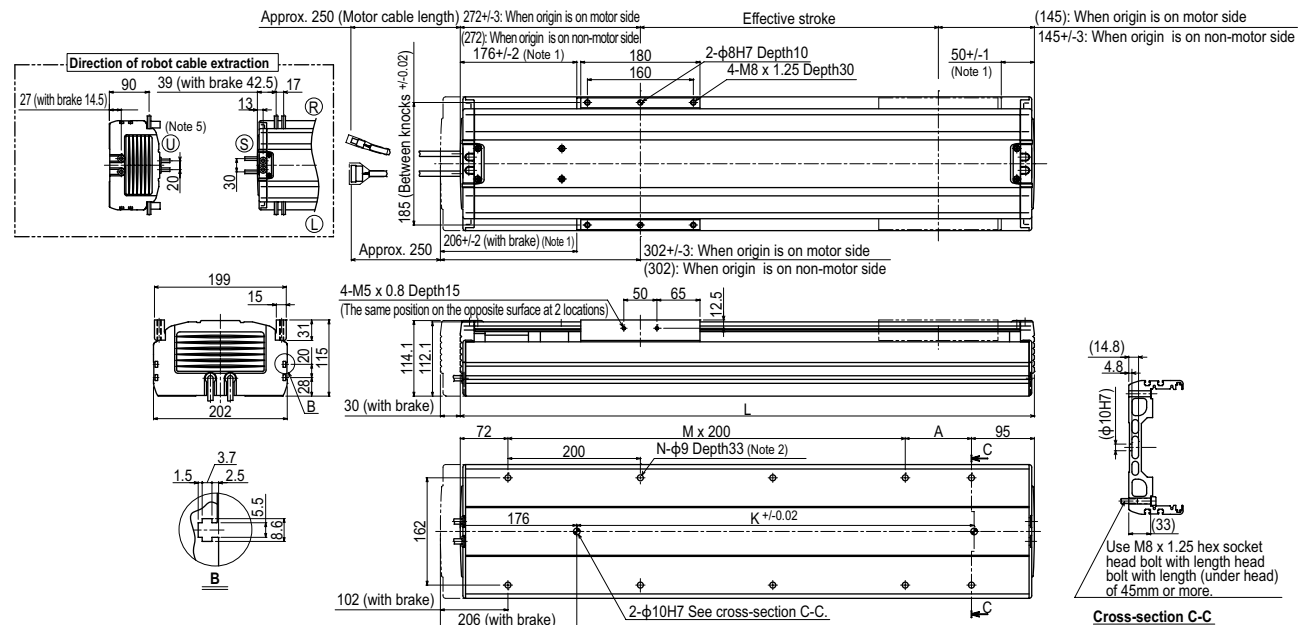
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Controller

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

- 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	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
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)	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	Lead 20																					
Lead 10																						
Speed setting																						

- 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.

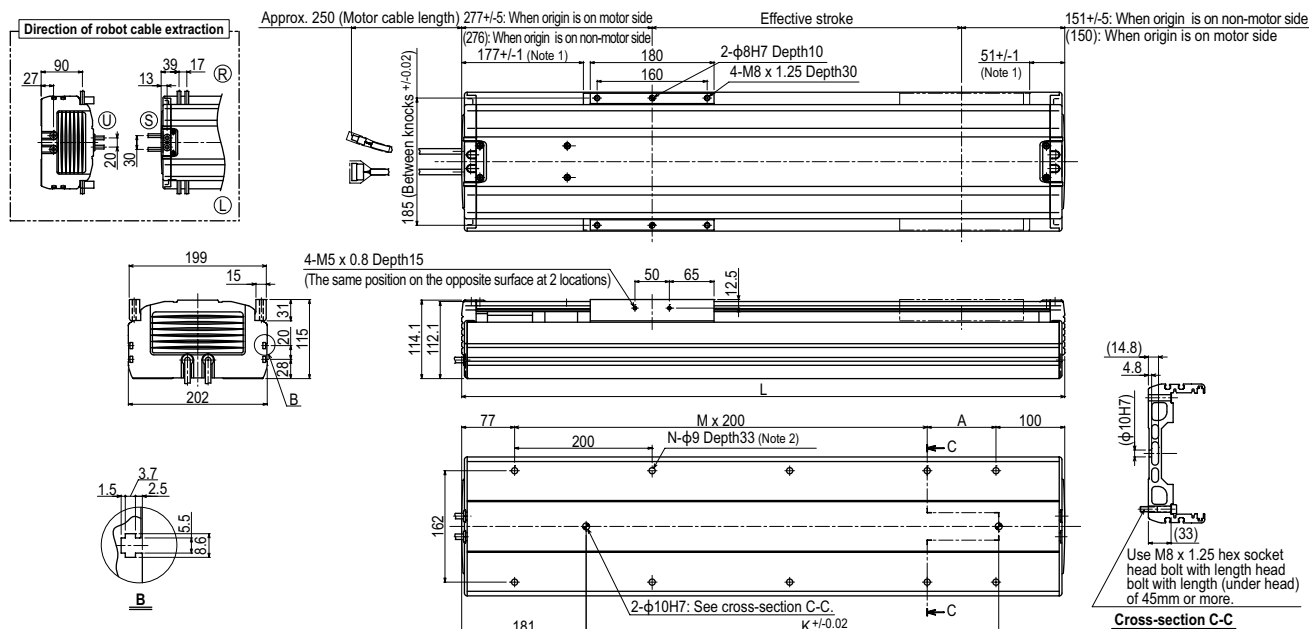
Controller

SR1-X ▶ 518

TS-X ▶ 492

RDV-X ▶ 506

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.

Note 2: When installing the robot, do not use washers inside the robot body.																														
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)	Lead 40						2400										1920		1680		1440		1200		960		840		720	
	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.

F20N



Ordering method

Model	Lead designation	Origin position change	Grease type	Stroke	Cable length
F20N - 20		None: Standard 2: Non-motor side	None: Standard GC: Clean	1150 to 2050 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.
Note 2. See P.500 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function. For details, see P.62.

TSX	220				
Positioner TS-X	Driver: Power-supply voltage / Power capacity 220: 200V/400 to 600W	Regenerative unit No entry: None 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	Battery B: With battery (Absolute) N: None (Incremental)
SR1-X	20				
Controller	Driver: Power capacity 20: 400 to 600W	Usable for CE No entry: Standard E: CE marking	Regenerative unit No entry: None R: With RGT	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	20		RBR1	
Driver	Power-supply voltage 2: AC200V	Driver: Power capacity 20: 600W or less		Regenerative unit	

Specifications

AC servo motor output (W)	400
Repeatability ^{Note 1} (mm)	+/-0.04
Deceleration mechanism	Ball screw
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
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

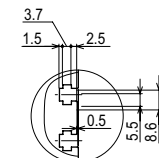
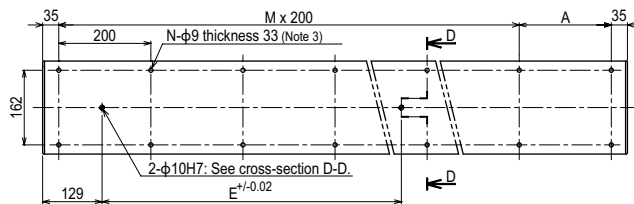
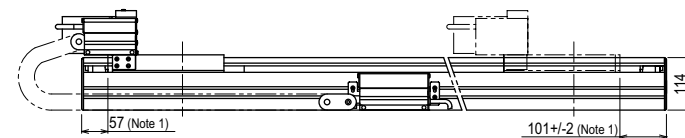
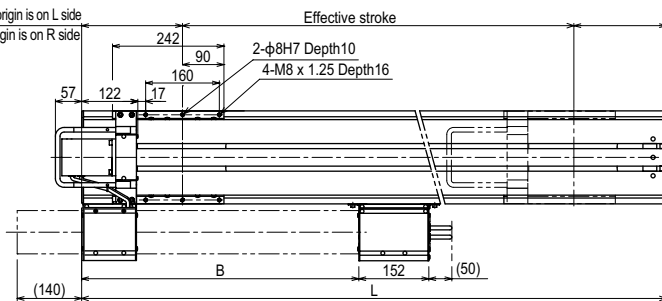
Controller

Controller	Operation method
SR1-X20 ^{Note} RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220 ^{Note} RDV-X220-RBR1	I/O point trace / Remote command / Pulse train control

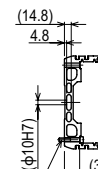
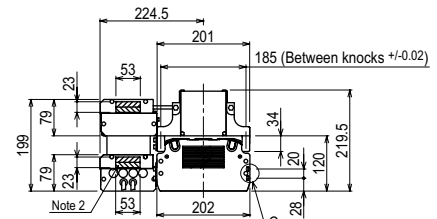
Note. When the unit is operated at a speed exceeding the maximum speed of 1,000mm/sec., a regeneration unit is required.

F20N

219+/-3: When origin is on L side
(219: When origin is on R side)



C section detailed chart



Cross section of cable guide

Use M8 x 1.25 hex socket head bolt with length head bolt with length (under head) of 45mm or more.

Cross-section D-D

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.



Ordering method

N15- 20

Model	Lead designation	Cable carrier entry location	Cable carrier specification	Origin position change	Grease type	Stroke	Cable length
		RH: Horizontal, right LH: Horizontal, left RW: Wall, right LW: Wall, left	S: Standard C: 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 Positioner ^{Note 1} TS-X	220 Driver: Power-supply voltage / Power capacity 220: 200V/400 to 600W	R 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 4}	Battery B: With battery (Absolute) N: None (Incremental)
SR1-X Controller	20 Driver: Power capacity 20: 400 to 600W	Usable for CE No entry: Standard E: CE marking	R Regenerative unit R: With RGT1	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	Battery B: With battery (Absolute) N: None (Incremental)
RDV-X Driver	2 Power-supply voltage 2: AC200V	20 Driver: Power capacity 20: 600W or less	RBR1		

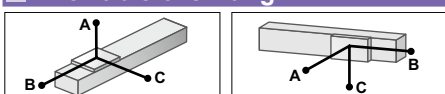
Note 1. To find information on cable carrier extraction directions see P.175.
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
 See P.596 for details on robot cable.
 Note 3. See P.500 for DIN rail mounting bracket.
 Note 4. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	400
Repeatability ^{Note 1} (mm)	+/-0.01
Deceleration mechanism	Ball screw $\phi 15$
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 x H120
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 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)

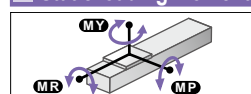
		A	B	C
Load 20	10kg	3048	2322	1259
	30kg	1489	841	500
	50kg	1278	544	344

Wall installation (Unit: mm)

		A	B	C
Load 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**

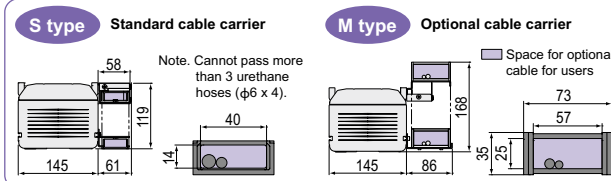


(Unit: N·m)		
MY	MP	MR
691	692	608

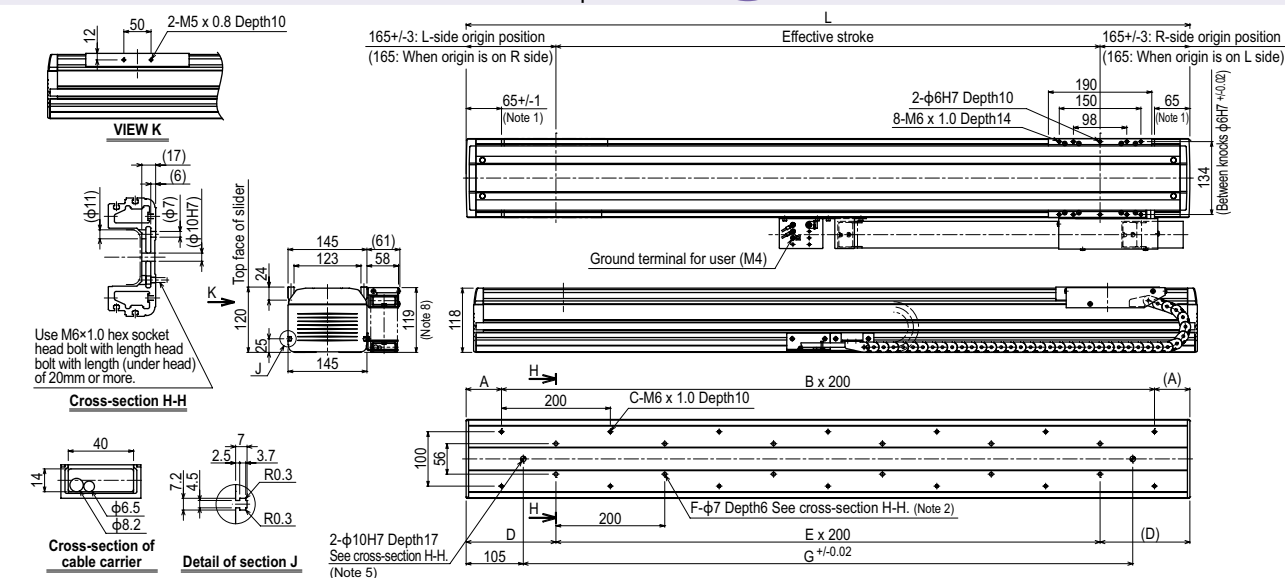
Controller

Controller	Operation method
SR1-X20-R RCX221/222 RCX240/340	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

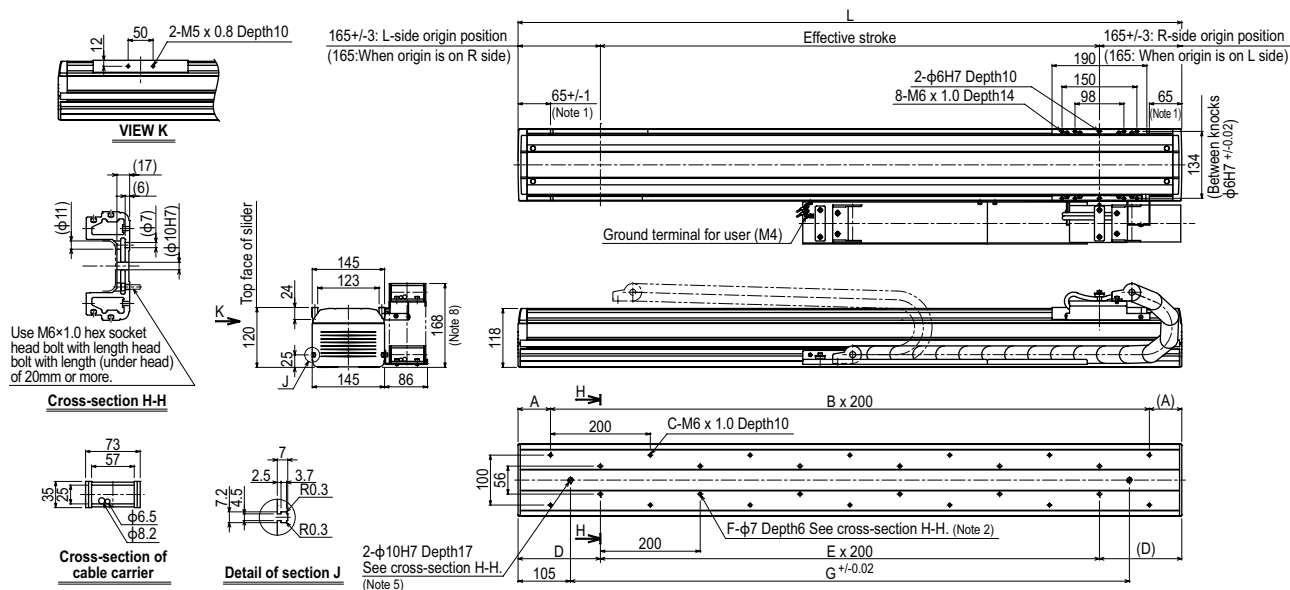
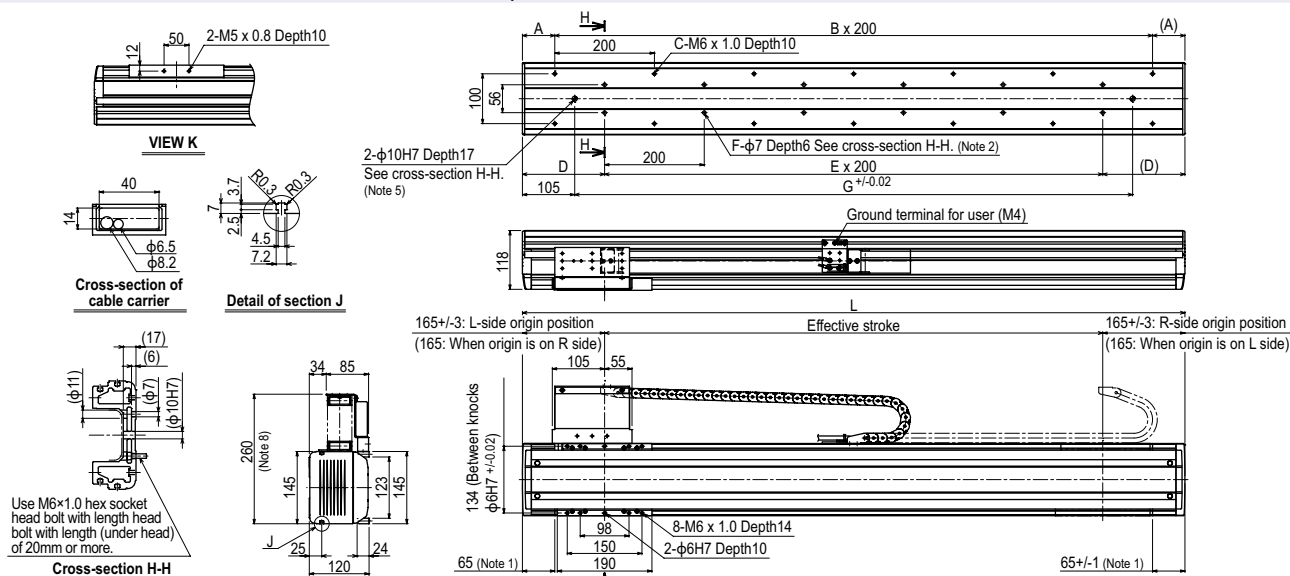
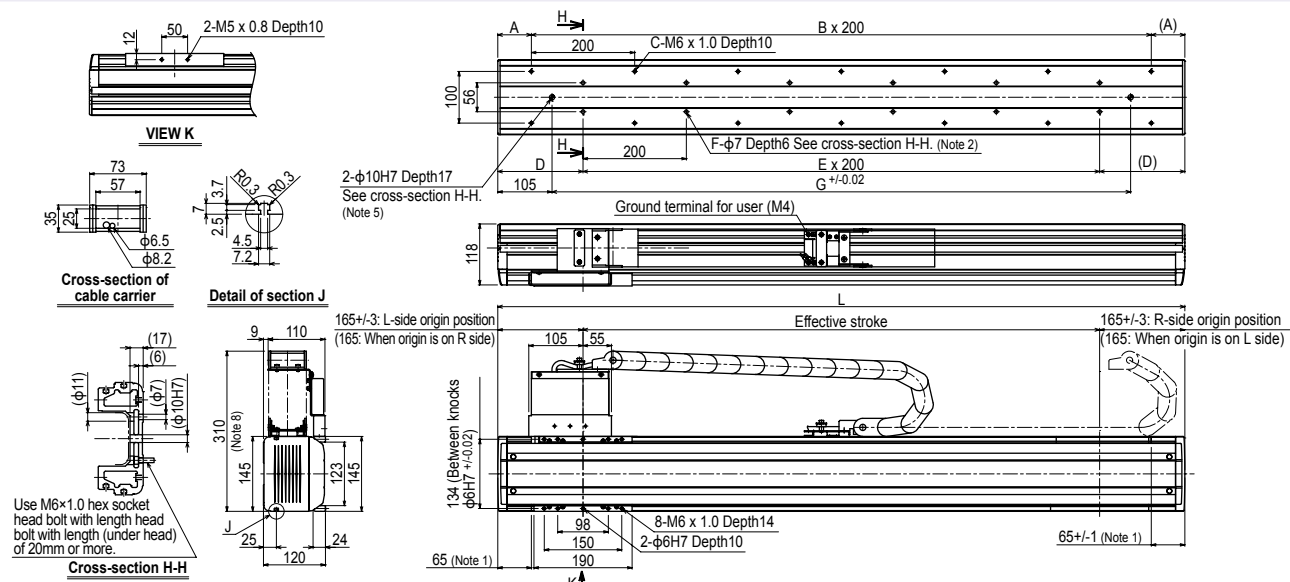


N15: Horizontal installation / Standard Cable carrier specification RH



Note 1. Stop positions are determined by the mechanical stoppers at both ends. Note 2. When using #7 hoses for installation, do not use a washer, spring washer, etc. in the main unit. Note 3. When stacked models are used, 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 $\phi 6 \times 4$ urethane air hoses.	Note 5. When using a $\phi 10H7$ 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**

Ordering method

Model	Lead designation	Installation direction	Cable carrier specification	Option	Stroke	Cable length	Controller	Usable for CE	Regenerative unit	I/O selection 1	I/O selection 2
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)	RCX222HP SR1-X (2 units) TS-X (2 units) RDV-X (2 units)	No entry : Standard E: CE marking	R: RG2	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS EN: Ethernet	No entry: None NT: OPDIO24/16 (NPN) PT: OPDIO24/17 (PNP) EN: Ethernet

Note 1. To find controller selection options for other than the RCX222HP, 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. NPN and Ethernet cannot be selected when using CE marking.

Note 4. Only when you have selected CC, DN or PB for Input/Output selection 1, you can select EN for Input/Output selection 2.

Note 5. If a flexible cable is needed for the SR1-X, TS-X, or RDV-X, then select 3K/5K/10K. On the RCX222HP, the standard cable is a flexible cable, so enter 3L/5L/10L when ordering.

Specifications

AC servo motor output (W)	400
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw $\phi 15$
Ball screw lead (mm)	20
Maximum speed (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 x H120
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves x 2 rail
Position detector	Resolvers
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

Horizontal installation (Unit: mm)				Wall installation (Unit: mm)			
Lead	10kg	A	B	Lead	10kg	A	B
20	3048	2322	1259	20	1258	1823	2449
30kg	1489	841	500	30kg	428	545	1039
50kg	1278	544	344	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

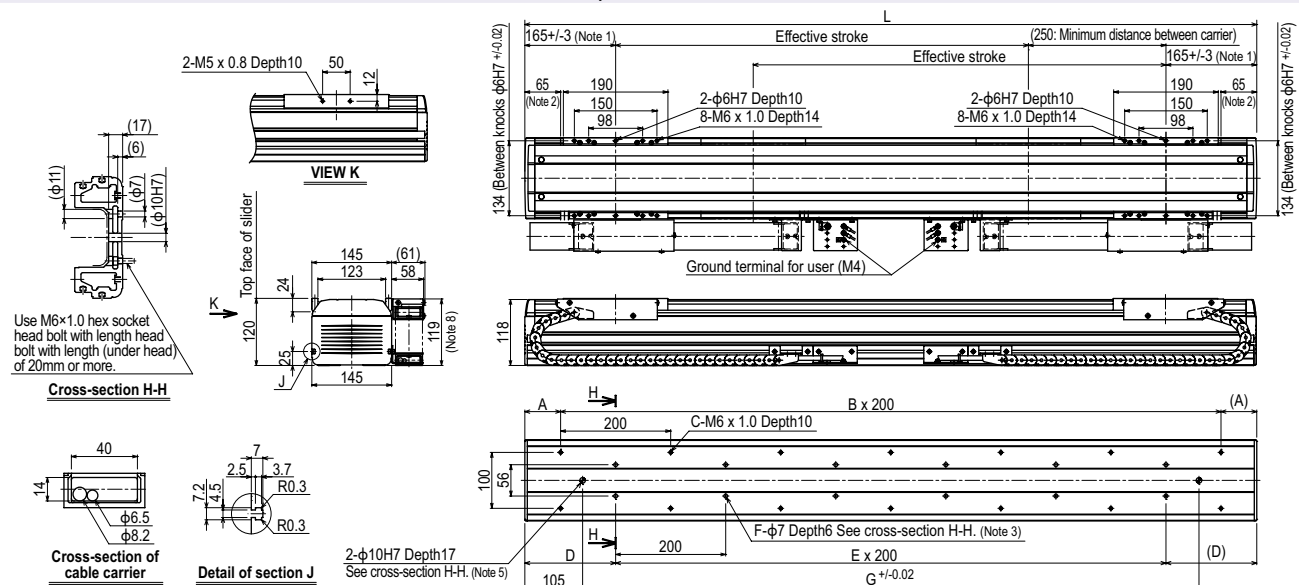
Controller	Operation method
RCX222HP-R	Programming / I/O point trace / Remote command / Operation using RS-232C communication
SR1-X20-R	I/O point trace / Remote command
TS-X220-R	Pulse train control
RDV-X20-RBR1	

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

Cable carrier for users

S type	Standard cable carrier	M type	Optional cable carrier
	Note. Cannot pass more than 3 urethane hoses ($\phi 6 \times 4$).		Space for optional cable for users

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 $\phi 7$ 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 $\phi 6 \times 4$ urethane air hoses.

Note 5. When using a $\phi 10H7$ hole, make sure that the pin does not go into deeper than as shown in the drawing.

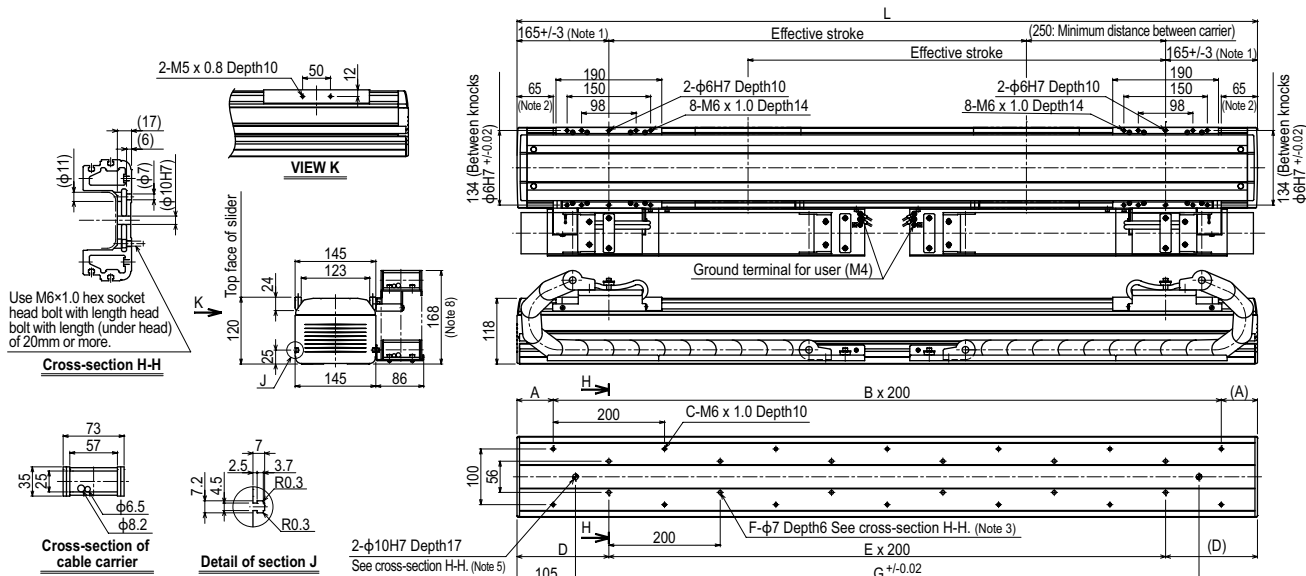
Note 6. Contact us for vertical installation.

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.

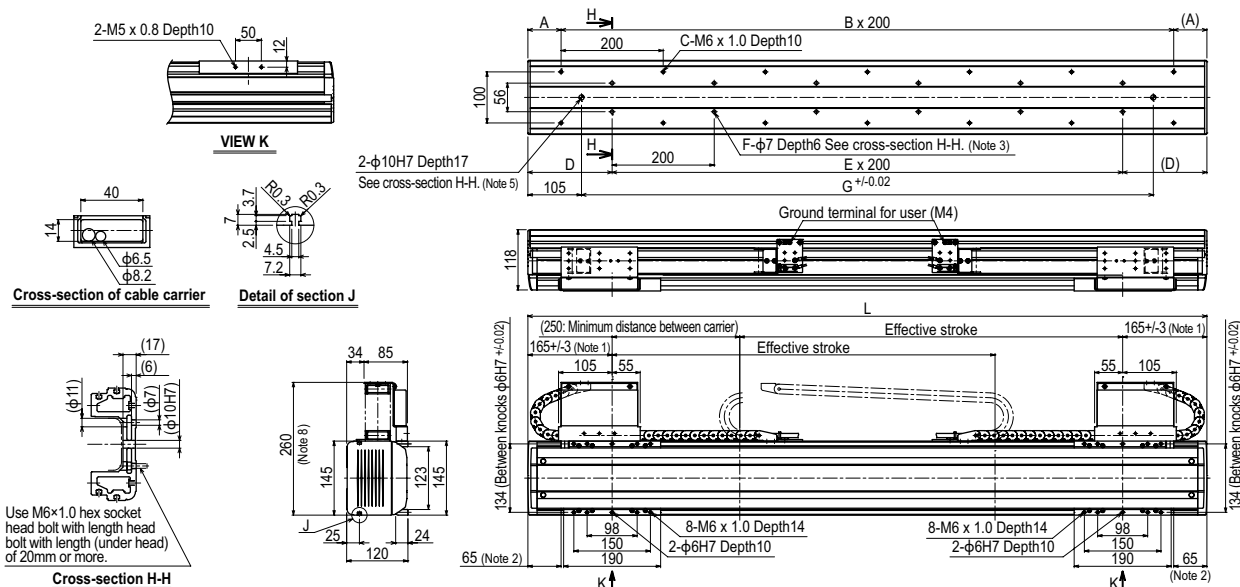
Note 8. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

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)	24	26	27	29	30	32	33	35	36	38	39	40	42	43	45	46

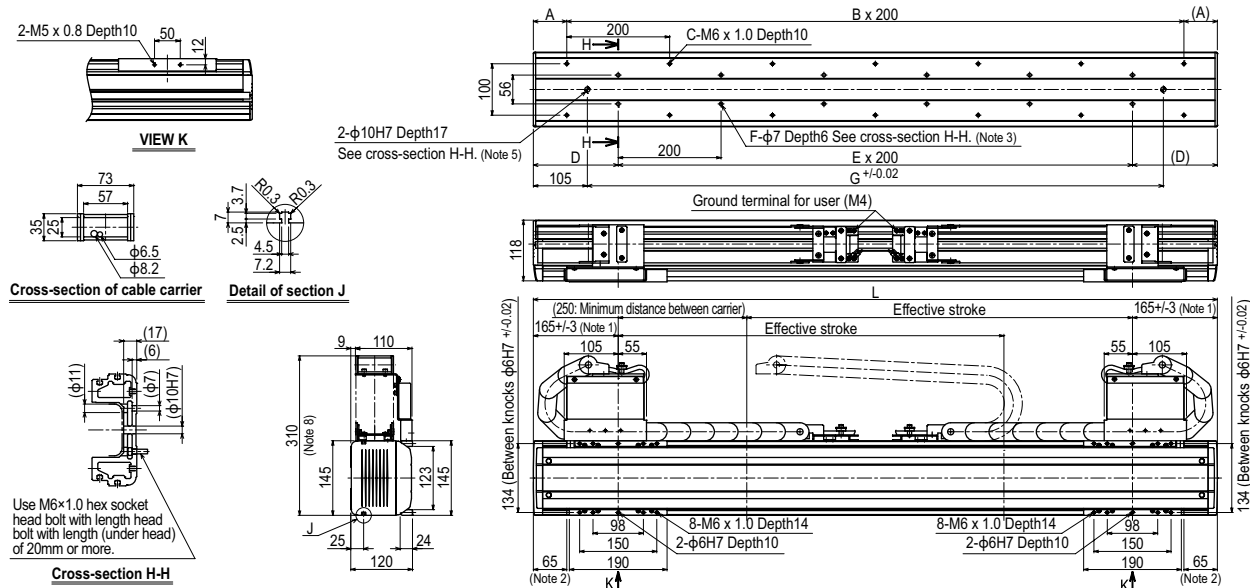
N15D: Horizontal installation / Optional Cable carrier specification



N15D: Wall installation / Standard Cable carrier specification



N15D: Wall installation / Optional Cable carrier specification





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 M: Optional Cable carrier	Horizontal 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)

TSX	220	R			
Positioner ^{Note 3} TS-X	Driver: Power-supply voltage / Power capacity 220: 200V/400 to 600W	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 TM EP: EtherNet/IP TM PT: PROFINET GW: No I/O board ^{Note 4}	Battery B: With battery (Absolute) N: None (Incremental)
SR1-X	20		R		
Controller	Driver: Power capacity 20: 400 to 600W	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 TM PB: PROFIBUS	Battery B: With battery (Absolute) N: None (Incremental)
RDV-X	2		20	RBR1	
Driver	Power-supply voltage 2: AC200V		Driver: Power capacity 20: 600W or less	Regenerative unit	

Note 1. To find information on cable carrier extraction directions see P.175.
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
 See P.596 for details on robot cable.
 Note 3. See P.500 for DIN rail mounting bracket.
 Note 4. Select this selection when using the gateway function. For details, see P.62.

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

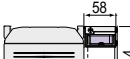
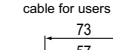
Note 1. Repeatability for single oscillation.
 Note 2. The maximum speed may not be reached when the moving distance is short.
 Note 3. Position detectors (resolvers) are common to incremental and absolute specifications. If the controller has a backup function then it will be absolute specifications.

Allowable overhang^{Note}

	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)		
	A	B	C	A	B	C
Lead 20						
30kg	3045	1629	1902	30kg	1928	1553 3045
50kg	2602	961	1150	50kg	1157	885 2602
80kg	2193	586	716	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.

Cable carrier for users

S type	Standard cable carrier	M type	Optional cable carrier
 Diagram of the S type standard cable carrier. The main unit has a width of 180 and a height of 114. The cable carrier housing has a width of 61 and a height of 58. A note indicates that it cannot pass more than 3 urethane hoses (φ6 x 4).	Note. Cannot pass more than 3 urethane hoses (φ6 x 4).  Diagram showing the S type cable carrier with two hoses (φ6 x 4) passing through it. The carrier has a width of 40 and a height of 14.	 Diagram of the M type optional cable carrier. The main unit has a width of 180 and a height of 165. The cable carrier housing has a width of 86 and a height of 35. A legend indicates that the shaded area is space for optional cable for users.	 Diagram showing the M type cable carrier with optional cable for users. The carrier has a width of 73 and a height of 57. The cable carrier housing has a width of 25 and a height of 35.

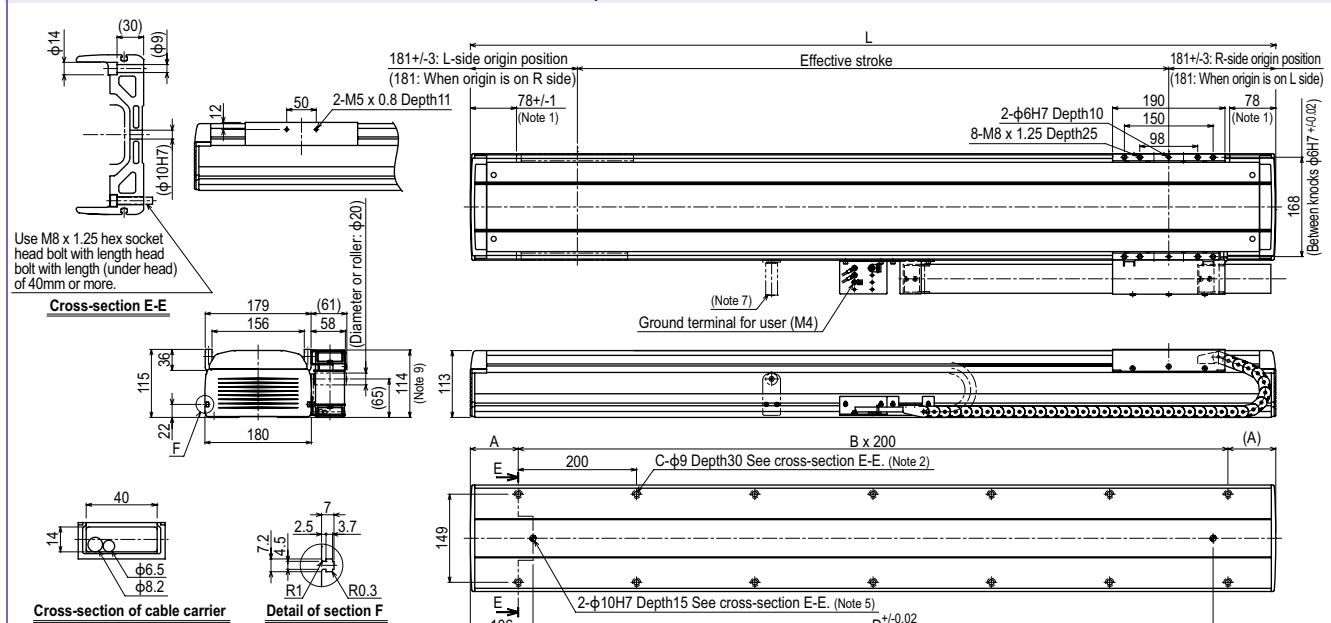
Static loading moment

	MY	MP	MR
(Unit: N·m)	1161	1163	1021

Controller

Controller	Operation method
SR1-X20-R RCX221/222 RCX240/340	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

N18: Horizontal installation / Standard Cable carrier specification RH



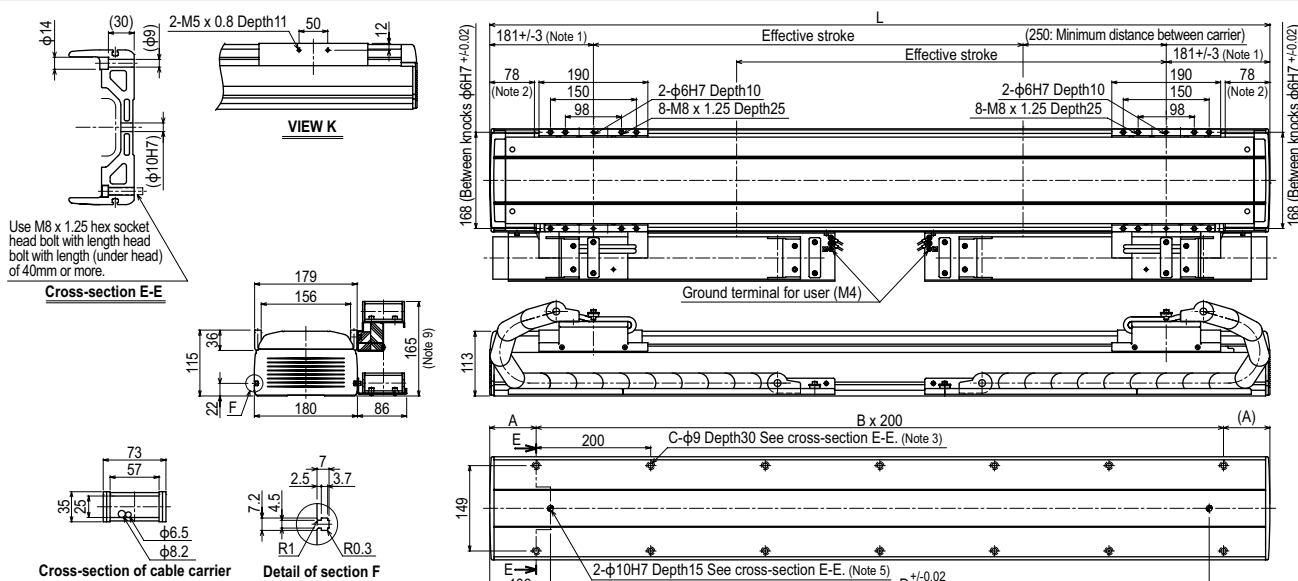
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. When using φ9 holes for installation, do not use a washer, spring washer, etc. in the main unit.
 Note 3. When shipped from the factory, the horizontal model has the origin on the right side and the wall model has 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

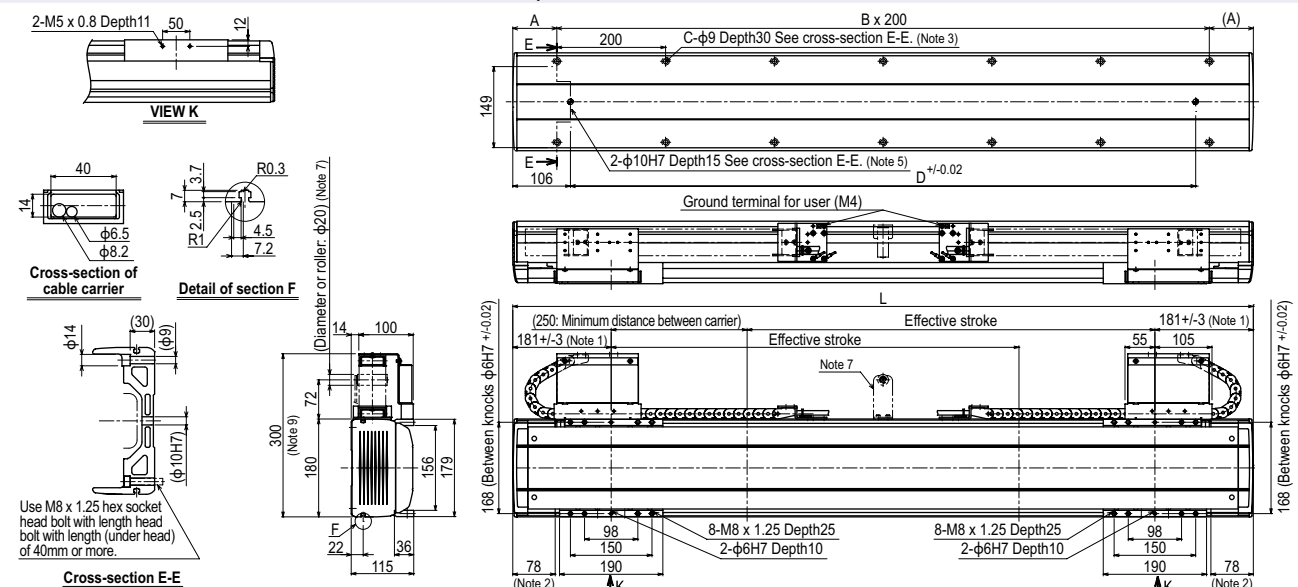
RH



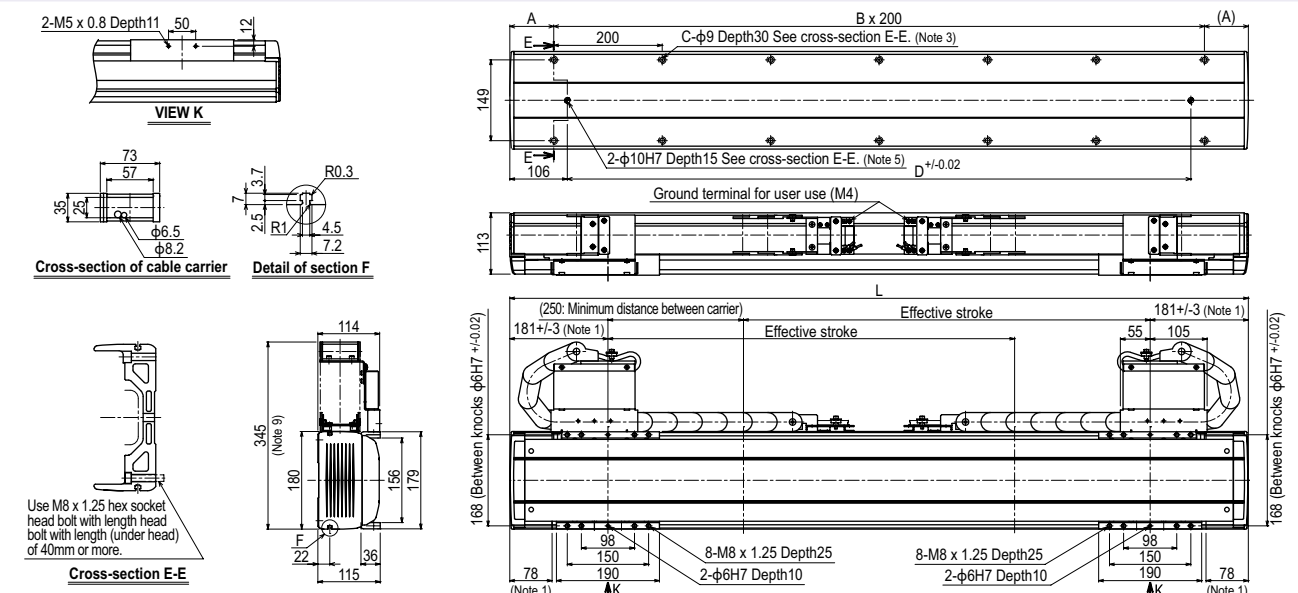
N18D: Horizontal installation / Optional Cable carrier specification



N18D: Wall installation / Standard Cable carrier specification



N18D: Wall installation / Optional Cable carrier specification



B14



Ordering method

B14					TSX				
Model	Motor installation direction	Option	Stroke	Cable length ^{Note 1}	Positioner ^{Note 2}	Driver: Power supply voltage / Power capacity	LCD monitor	I/O selection	Battery
	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)	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				
Controller	Driver: Power capacity	Usable for CE	I/O selection	Battery					
05	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				
Driver	Power supply voltage	05	RBR1	Regenerative unit					
2	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.596 for details on robot cable.
Note 2. See P.500 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function. For details, see P.62.

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)	Stroke+425.5
Motor installation	Another
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)				Wall installation (Unit: mm)			
	A	B	C		A	B	C
5kg	2159	1228	943	5kg	1064	816	1468
10kg	1389	623	548	10kg	564	377	888
20kg	1102	320	348	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

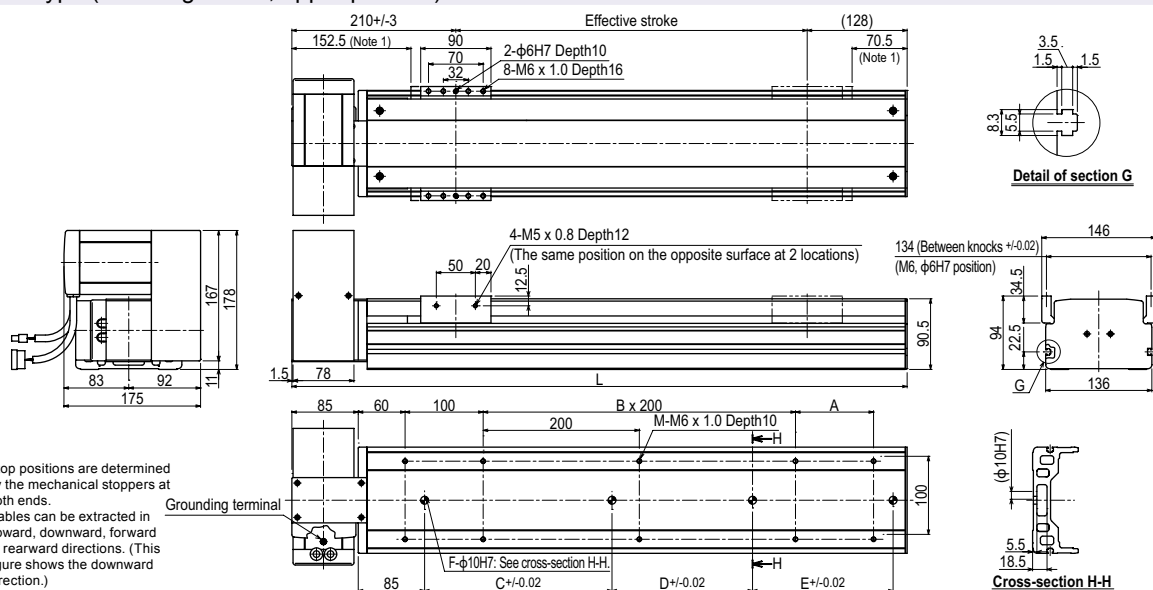
Controller	Operation method
SR1-X05 RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X105 TS-X205	I/O point trace / Remote command
RDV-X205-RBR1	Pulse train control

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

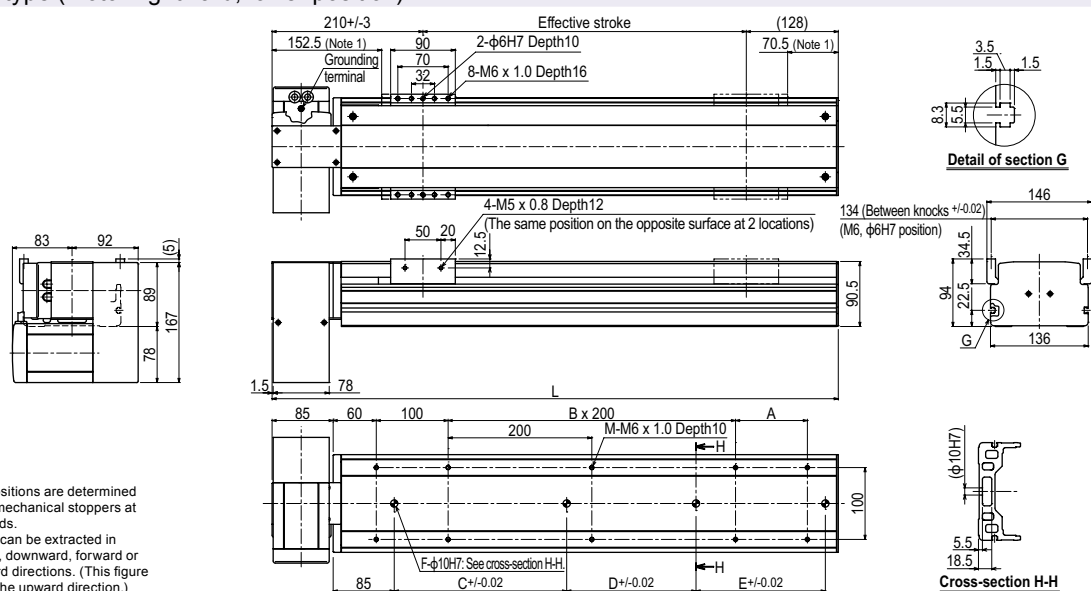
L type	R type	LU type	RU type	LD type	RD type
Leftward at horizontal position	Rightward at horizontal position	Leftward at upper position	Rightward at upper position	Leftward at lower position	Rightward at lower position

B14 R type (Motor rightward, horizontal position)

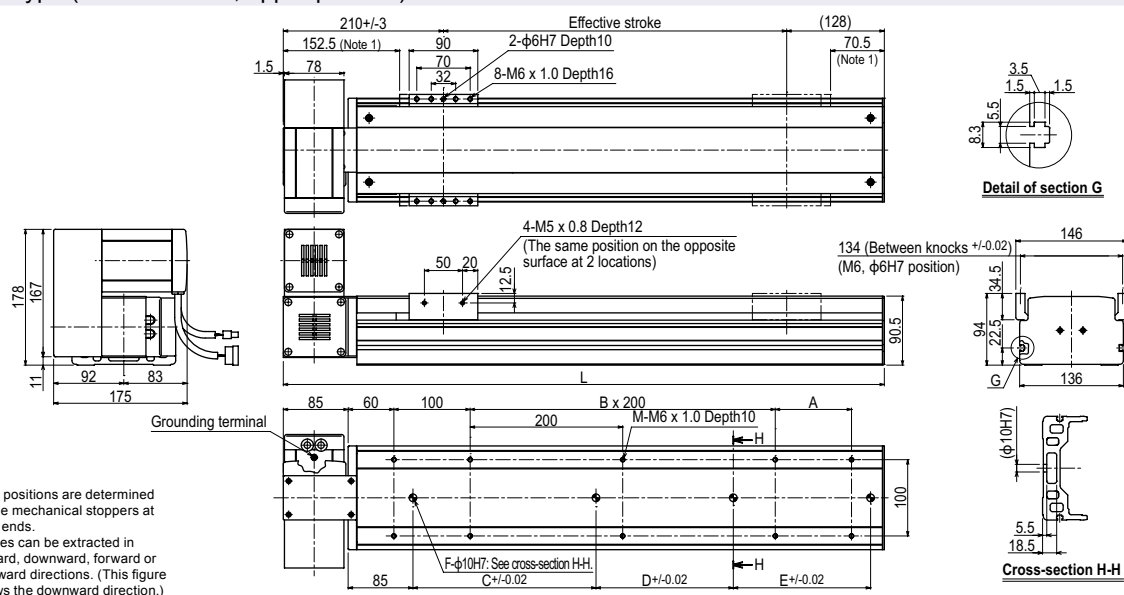
B14 RU type (Motor rightward, upper position)



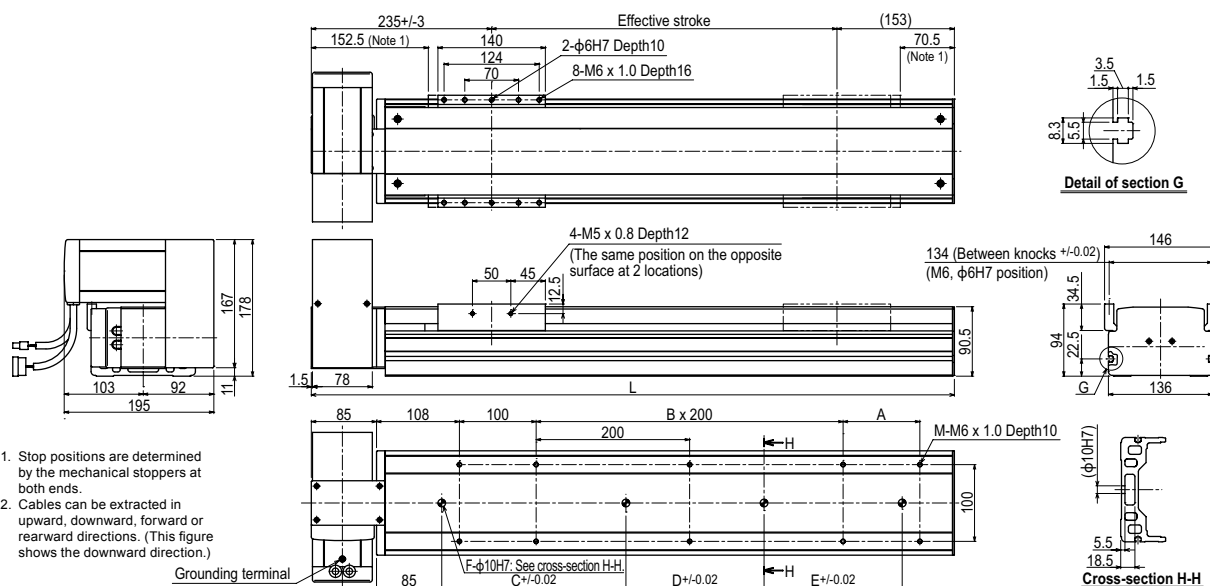
B14 RD type (Motor rightward, lower position)



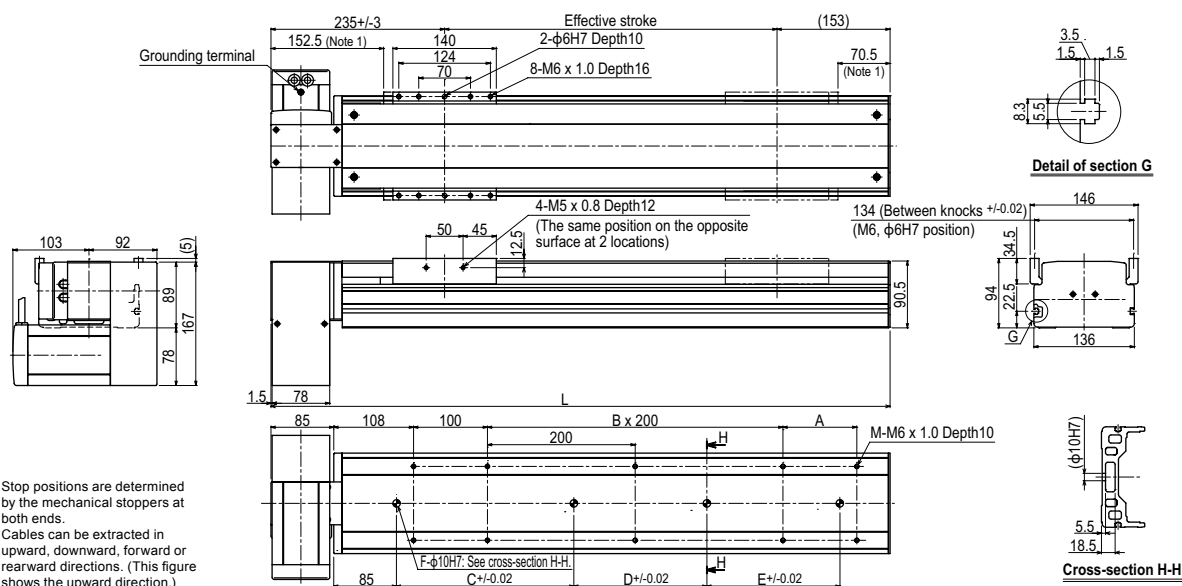
B14 LU type (Motor leftward, upper position)



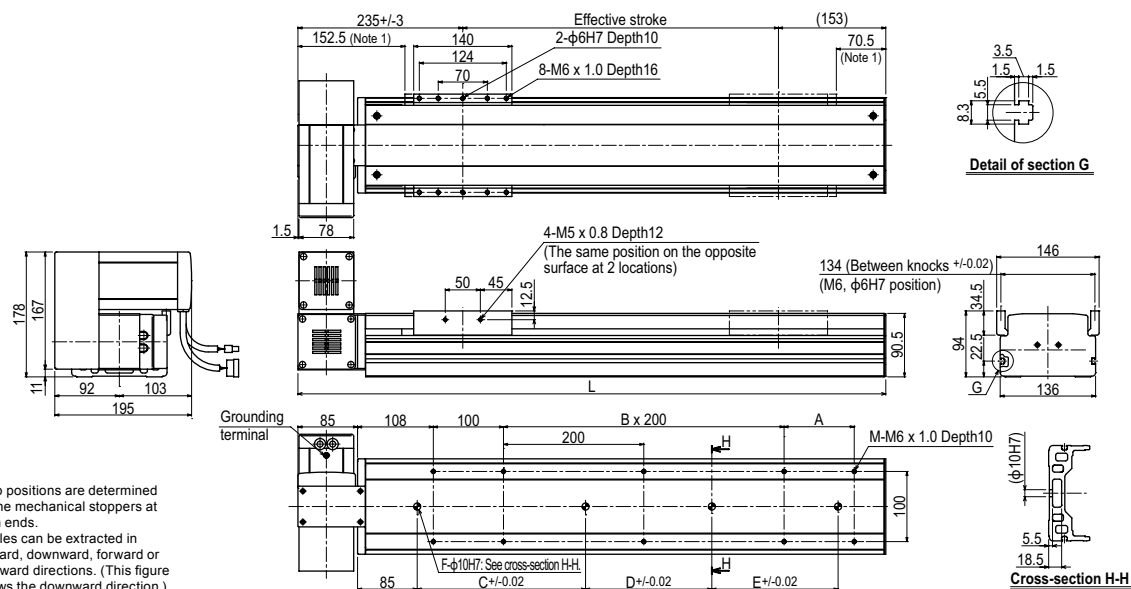
B14H RU type (Motor rightward, upper position)



B14H RD type (Motor rightward, lower position)



B14H LU type (Motor leftward, upper position)



R5



Ordering method

R5		TSX				
Model	Cable entry location No entry: Standard (S) B: From the side	Positioner ^{Note 2} TS-X	Driver: Power-supply voltage / Power capacity 105: 100V/100W or less 205: 200V/100W or less	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)
	Cable length ^{Note 1} 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)					
		SR1-X	05			
		Controller	Driver: Power capacity 05: 100W or less	Usable for CE No entry: Standard E: CE marking	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	05	RBR1	
		Driver	Power-supply voltage 2: AC200V	Driver: Power capacity 05: 100W or less	Regenerative unit	

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

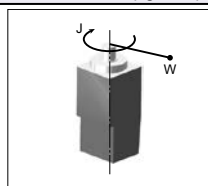
Note 3. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	50
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm²[kgfcm²])	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 (kgfcm²)	0.12	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.20



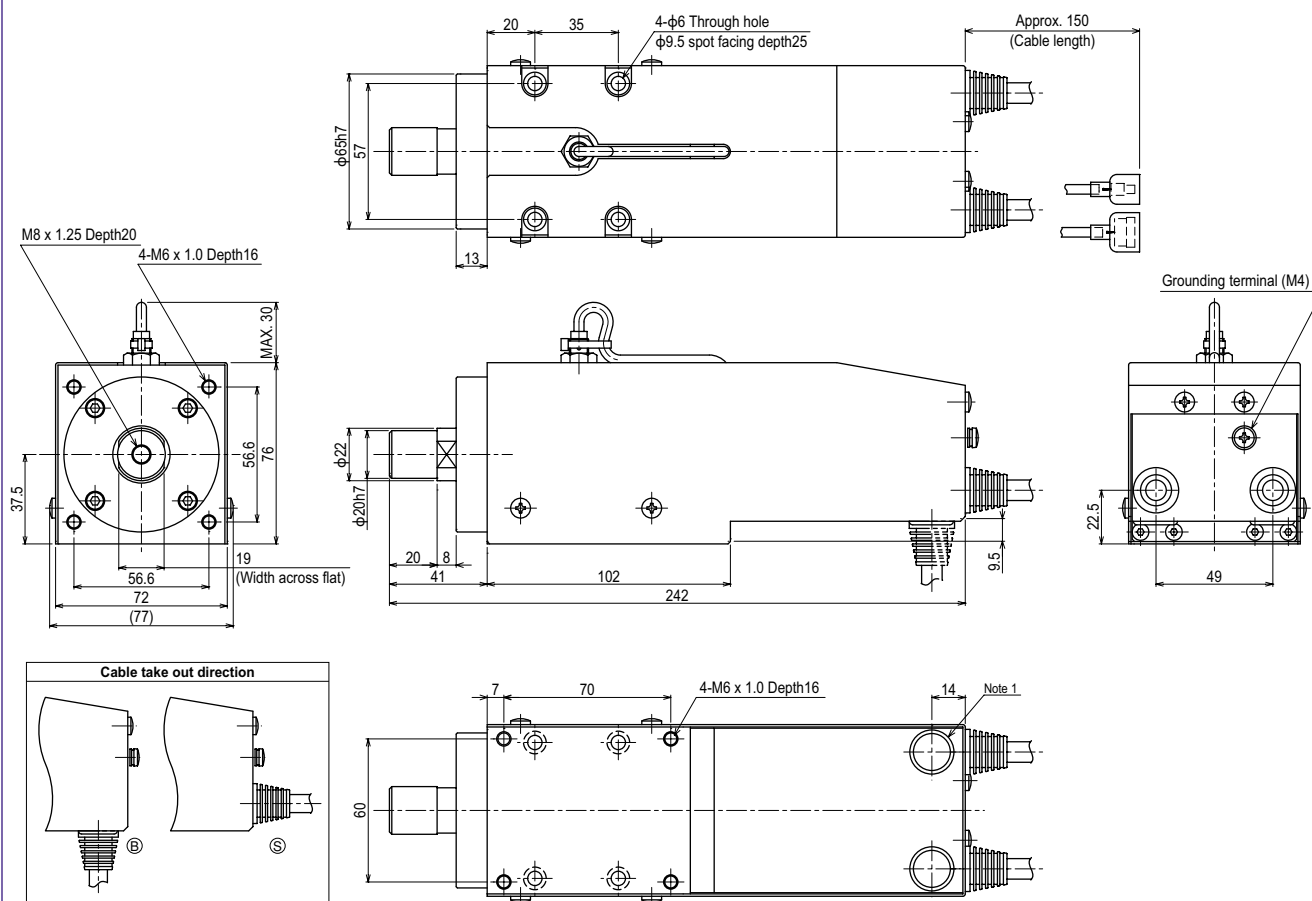
Note. When the weight of a tool or workpiece attached to the shaft R5 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 0.48kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration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

Note. For calculation (equation) of the inertia moment, please refer to P.613.

Controller

Controller	Operation method
SR1-X05 RCX221/222 RCX240/340	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		TSX				
Model	Cable entry location No entry: Standard (S) B: From the side	Positioner Note 2 TS-X	Driver: Power-supply voltage / Power capacity 105: 100V/100W or less 205: 200V/100W or less	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)
	Cable length Note 1 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)					
		SR1-X	05			
		Controller	Driver: Power capacity 05: 100W or less	Usable for CE No entry: Standard E: CE marking	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	05	RBR1	
		Driver	Power-supply voltage 2: AC200V	Driver: Power capacity 05: 100W or less	Regenerative unit	

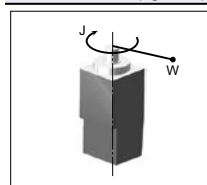
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.
Note 2. See P.500 for DIN rail mounting bracket.
Note 3. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	100
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm²[kgfcm²])	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 (kgfcm²)	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 (kgfcm²)	2.72	2.97	3.22	3.46	3.71					



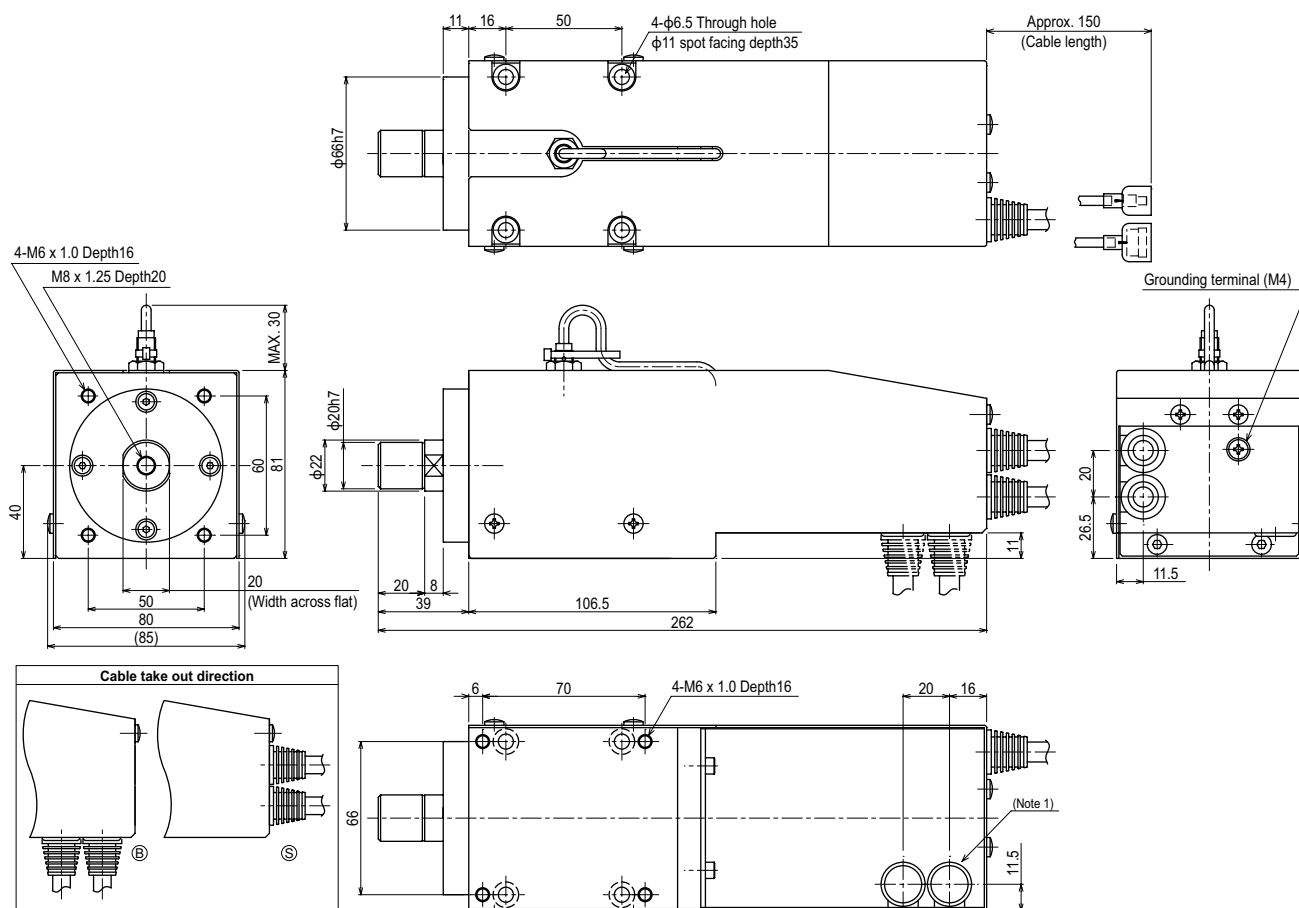
Note. When the weight of a tool or workpiece attached to the shaft R10 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 0.99kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration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

Note. For calculation (equation) of the inertia moment, please refer to P.613.

Controller

Controller	Operation method
SR1-X05 RCX221/222 RCX240/340	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

R10



Weight (kg) 3.5

Note 1. The cable extraction port can be changed.

Controller

SR1-X ▶ 518

TS-X ▶ 492

RDV-X ▶ 506

R20



Ordering method

R20			TSX				
Model	Cable entry location No entry: Standard (S) B: From the side	Cable length Note 1 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	Positioner Note 2 TS-X	Driver: Power-supply voltage / Power capacity 110: 100V/200W or less 210: 200V/200W or less	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	10			
			Controller	Driver: Power capacity 10: 200W or less	Usable for CE No entry: Standard E: CE marking	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	Power-supply voltage 2: AC200V	Driver: Power capacity 10: 200W or less	Regenerative unit	

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

Note 3. Select this selection when using the gateway function. For details, see P.62.

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable.
See P.596 for details on robot cable.

Note 2. See P.500 for DIN rail mounting bracket.

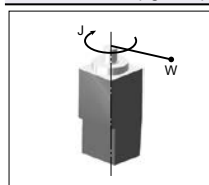
Note 3. Select this selection when using the gateway function. For details, see P.62.

Specifications

AC servo motor output (W)	200
Repeatability (°)	+/-0.0083
Maximum speed (°/sec)	360
Maximum allowable moment inertia (kgm ² [kgfcm ²])	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 (kgfcm ²)	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 (kgfcm ²)	10.2	11.2	12.1	13.1	14	14.9	15.9	16.8	17.7	18.7



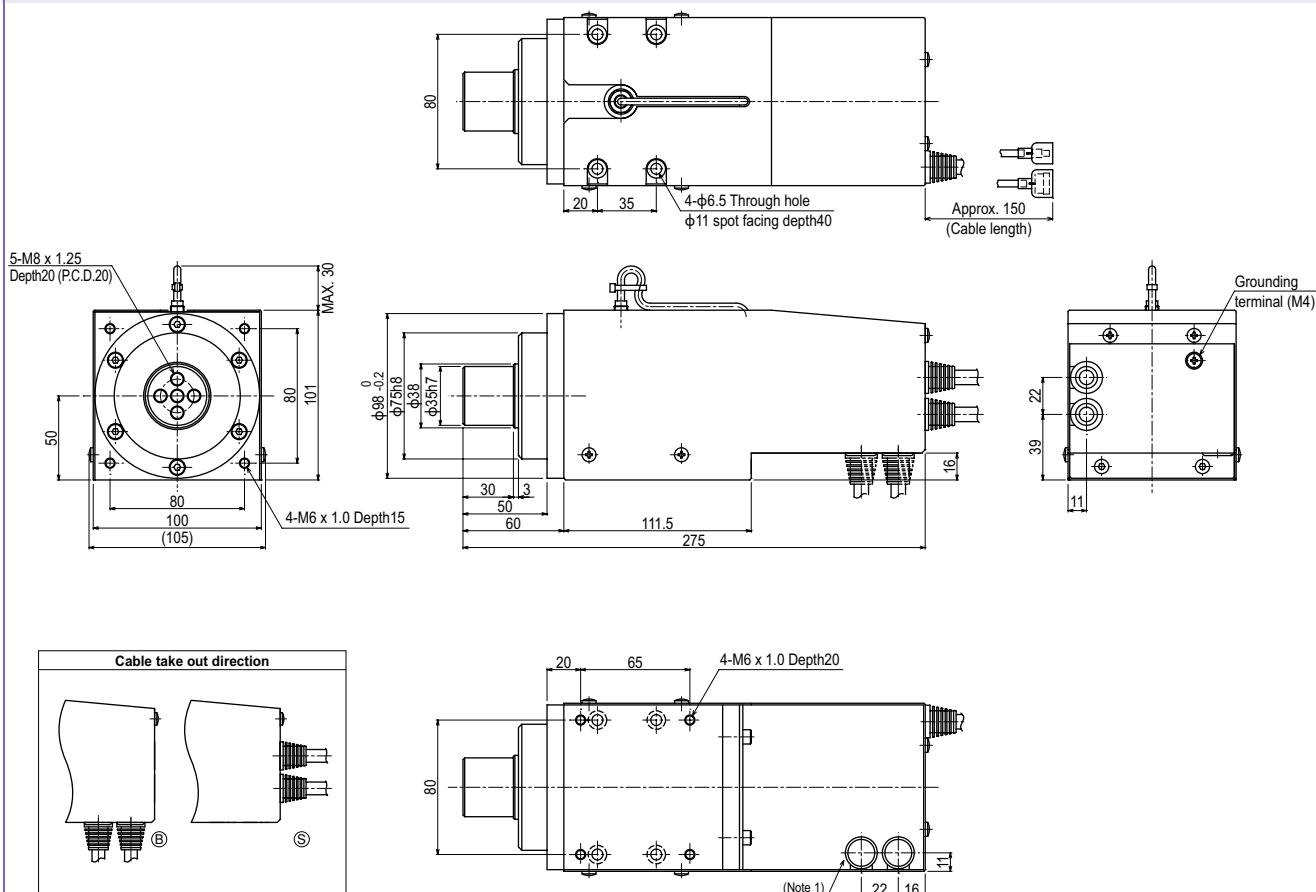
Note. When the weight of a tool or workpiece attached to the shaft R20 is W (kg), its moment of inertia (J) must be smaller than the values shown in the table above. (For example, enter 4kg if W is 3kg and J is 3.7kgf cm sec².) Enter the above mass parameter value for the controller, and optimum acceleration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

Note. For calculation (equation) of the inertia moment, please refer to P.613.

Controller

Controller	Operation method
SR1-X10 RCX221/222 RCX240/340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X110 TS-X210	I/O point trace / Remote command
RDV-X210-RBR1	Pulse train control

R20



Weight (kg)	5.5
-------------	-----

Note 1. The cable extraction port can be changed.