

# F8

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



## Ordering method

<b>F8</b>	<b>Model</b>	<b>Lead designation</b>	<b>Brake</b>	<b>Origin position change</b>	<b>Grease type</b>	<b>Stroke</b>	<b>Cable length</b>	<b>TSX</b>	<b>Positioner</b>	<b>Driver</b>	<b>LCD monitor</b>	<b>I/O selection</b>	<b>Battery</b>
		20: 20mm 12: 12mm 6: 6mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	150 to 800 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	<b>TSX</b>	<b>TSX: TS-X</b>	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)
								<b>SR1-X</b>	<b>05</b>	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)
								<b>RDV-X</b>	<b>2</b>	2: AC200V			<b>RBR1</b>
								<b>Driver</b>					<b>Regenerative unit</b>

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.732 for details on robot cable.  
 Note 3. See P.634 for DIN rail mounting bracket.  
 Note 4. Select this selection when using the gateway function. For details, see P.96.

## Specifications

<b>AC servo motor output (W)</b>	100
<b>Repeatability</b> (mm)	+/-0.02
<b>Deceleration mechanism</b>	Ball screw $\phi$ 12
<b>Ball screw lead (mm)</b>	20 12 6
<b>Maximum speed</b> (mm/sec)	1200 720 360
<b>Maximum payload (kg)</b>	Horizontal 12 20 40 Vertical - 4 8
<b>Rated thrust (N)</b>	84 141 283
<b>Stroke (mm)</b>	150 to 800 (50mm pitch)
<b>Overall length (mm)</b>	Horizontal Stroke+286 Vertical Stroke+316
<b>Maximum dimensions of cross section of main unit (mm)</b>	W80 x H65
<b>Cable length (m)</b>	Standard: 3.5 / Option: 5.10
<b>Linear guide type</b>	4 rows of circular arc grooves x 1 rail
<b>Position detector</b>	Resolvers
<b>Resolution (Pulse/rotation)</b>	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

Lead	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)				
	A	B	C	A	B	C	A	C			
Lead 20	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	5kg	364	89	188	5kg	171	81	340	4kg	98	99
	10kg	203	39	87	10kg	69	32	172	2kg	244	245
	15kg	139	22	51	15kg	33	15	100	4kg	113	113
Lead 6	20kg	103	14	33	20kg	15	6	55	6kg	69	69
	10kg	403	43	113	10kg	94	36	369	8kg	46	46
	20kg	214	16	43	20kg	25	9	157			
Lead 6	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.

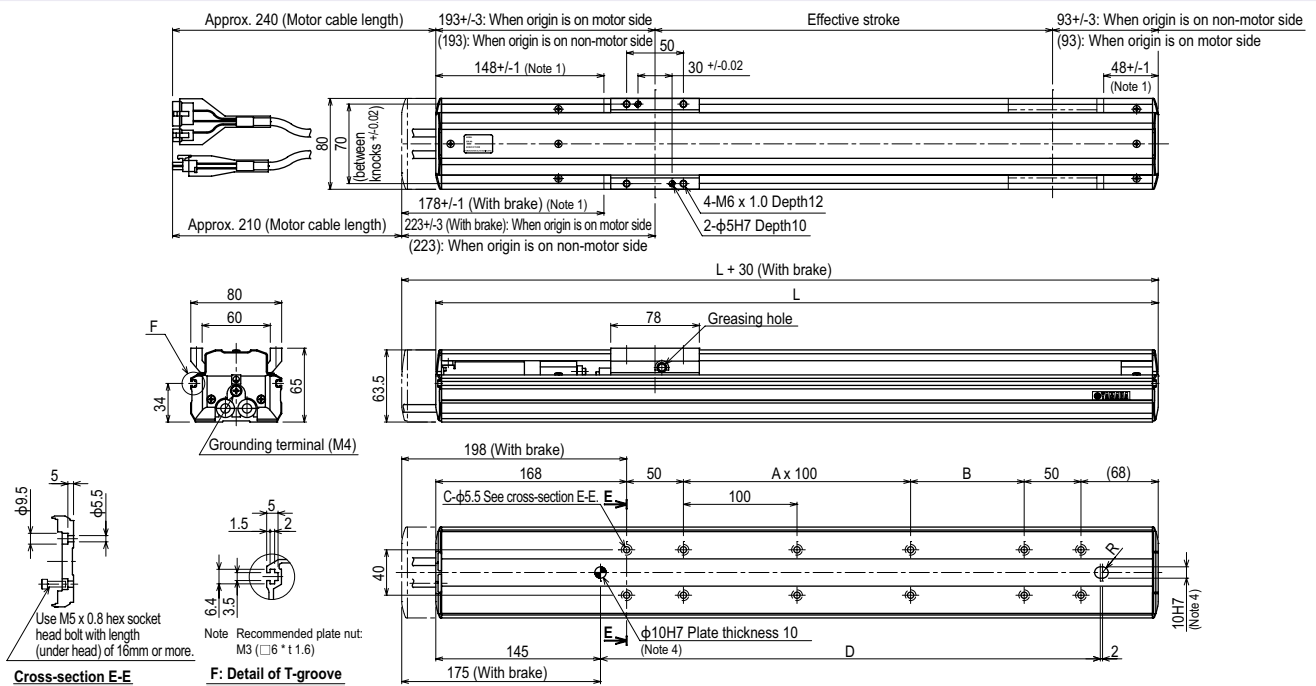
## Static loading moment

(Unit: N·m)		
MY	MP	MR
70	95	110

## Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command
RCX320	Remote command / Operation using RS-232C communication
RCX221/222	
RCX340	
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
<b>L</b>	436	486	536	586	636	686	736	786	836	886	936	986	1036	1086
<b>A</b>	0	0	1	1	2	2	3	3	4	4	5	5	6	6
<b>B</b>	100	150	100	150	100	150	100	150	100	150	100	150	100	150
<b>C</b>	8	8	10	10	12	12	14	14	16	16	18	18	20	20
<b>D</b>	240	290	340	390	440	490	540	590	640	690	740	790	840	890
<b>Weight (kg)</b> (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
<b>Maximum speed</b> (mm/sec)	<b>Lead 20</b>	1200												
	<b>Lead 12</b>	720												
	<b>Lead 6</b>	360												
	<b>Speed setting</b>	90% 75% 65% 60% 50%												

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

<b>F8L</b>						
<b>Model</b>	<b>Lead designation</b>	<b>Brake</b> <small>Note 1</small>	<b>Origin position change</b>	<b>Grease type</b>	<b>Stroke</b>	<b>Cable length</b> <small>Note 2</small>
	30: 30mm 20: 20mm 10: 10mm 5: 5mm	No entry: No brakes BK: Brakes provided	None: Standard Z: Non-motor side	None: Standard GC: Clean	150 to 1050 (50mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)

<b>TSX</b>				
<b>Positioner</b> <small>Note 2</small> TSX: TS-X	<b>Driver: Power supply voltage / Power capacity</b> 105: 100V/100W or less 205: 200V/100W or less	<b>LCD monitor</b> No entry: None L: With LCD	<b>I/O selection</b> NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board <small>Note 4</small>	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)
<b>SR1-X</b>	<b>05</b>			
<b>Controller</b>	<b>Driver: Power capacity</b> 05: 100W or less	<b>Usable for CE</b> No entry: Standard E: CE marking	<b>I/O selection</b> N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)
<b>RDV-X</b>	<b>2</b>	<b>05</b>	<b>RBR1</b>	
<b>Driver</b>	<b>Power supply voltage</b> 2: AC200V	<b>Driver: Power capacity</b> 05: 100W or less	<b>Regenerative unit</b>	

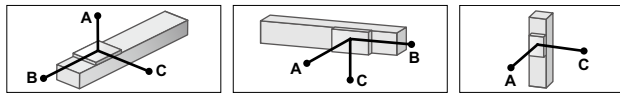
- Note 1. The model with a lead of 30mm cannot select specifications with brake (vertical specifications).  
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.732 for details on robot cable.  
 Note 3. See P.634 for DIN rail mounting bracket.  
 Note 4. Select this selection when using the gateway function. For details, see P.96.

## Specifications

<b>AC servo motor output (W)</b>	100		
<b>Repeatability</b> <small>Note 1</small> (mm)	+/-0.01		
<b>Deceleration mechanism</b>	Ball screw $\phi$ 15		
<b>Ball screw lead (mm)</b>	30	20	10
<b>Maximum speed</b> <small>Note 2</small> (mm/sec)	1800	1200	600
<b>Maximum payload (kg)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	7	20	40
		4	8
			16
<b>Rated thrust (N)</b>	56	84	169
<b>Stroke (mm)</b>	150 to 1050 (50mm pitch)		
<b>Overall length (mm)</b>	<b>Horizontal</b>	<b>Stroke +300</b>	<b>Stroke+292</b>
			Stroke+322
<b>Maximum dimensions of cross section of main unit (mm)</b>	W80 x H65		
<b>Cable length (m)</b>	Standard: 3.5 / Option: 5, 10		
<b>Linear guide type</b>	4 rows of circular arc grooves x 1 rail		
<b>Position detector</b>	Resolvers <small>Note 3</small>		
<b>Resolution (Pulse/rotation)</b>	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.

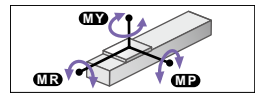
## Allowable overhang Note



Installation	Lead	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)						
		A	B	C	A	B	C	A	B	C				
Horizontal	Lead 30	5kg	112	80	80	5kg	55	57	77	2kg	236	240		
		7kg	78	43	49		7kg	21	19	34		4kg	106	110
		5kg	211	108	147		5kg	119	89	176		2kg	310	311
		10kg	116	45	69		10kg	38	26	69		4kg	141	143
		15kg	76	24	39		15kg	7	0	16		6kg	85	86
Wall	Lead 20	20kg	58	14	26	20kg	0	0	0	4kg	85	86		
		10kg	251	56	122		10kg	85	39	202		5kg	123	124
		20kg	121	20	46		20kg	7	0	30		10kg	47	48
		30kg	74	8	20		30kg	0	0	0		15kg	22	22
		40kg	35	0	6		40kg	0	0	0		16kg	19	19
Vertical	Lead 10	20kg	249	23	62	20kg	19	7	140					
		30kg	170	10	29		30kg	0	0	0				
		40kg	138	4	12		40kg	0	0	0				
		50kg	51	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

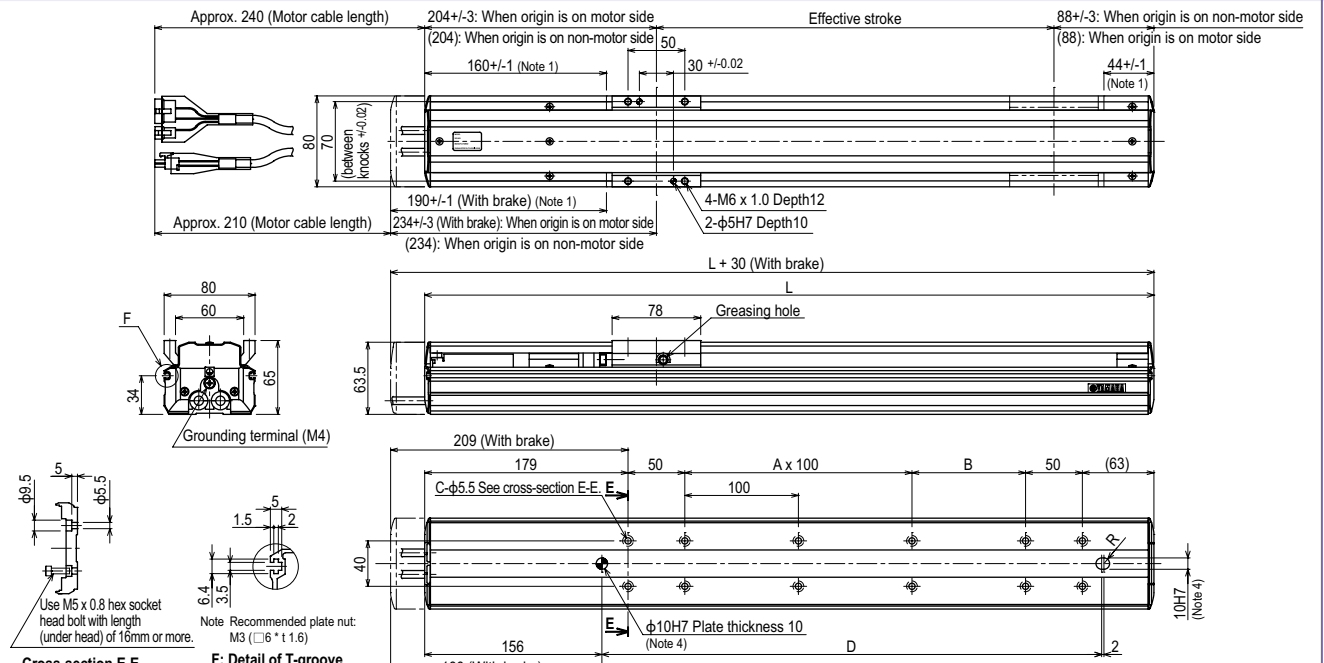


	MY	MP	MR
(Unit: N·m)	70	95	110

## Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX320	
RCX221/222	
RCX340	
TS-X105	I/O point trace / Remote command
TS-X205	
RDV-X205-RBR1	Pulse train control

## F8L

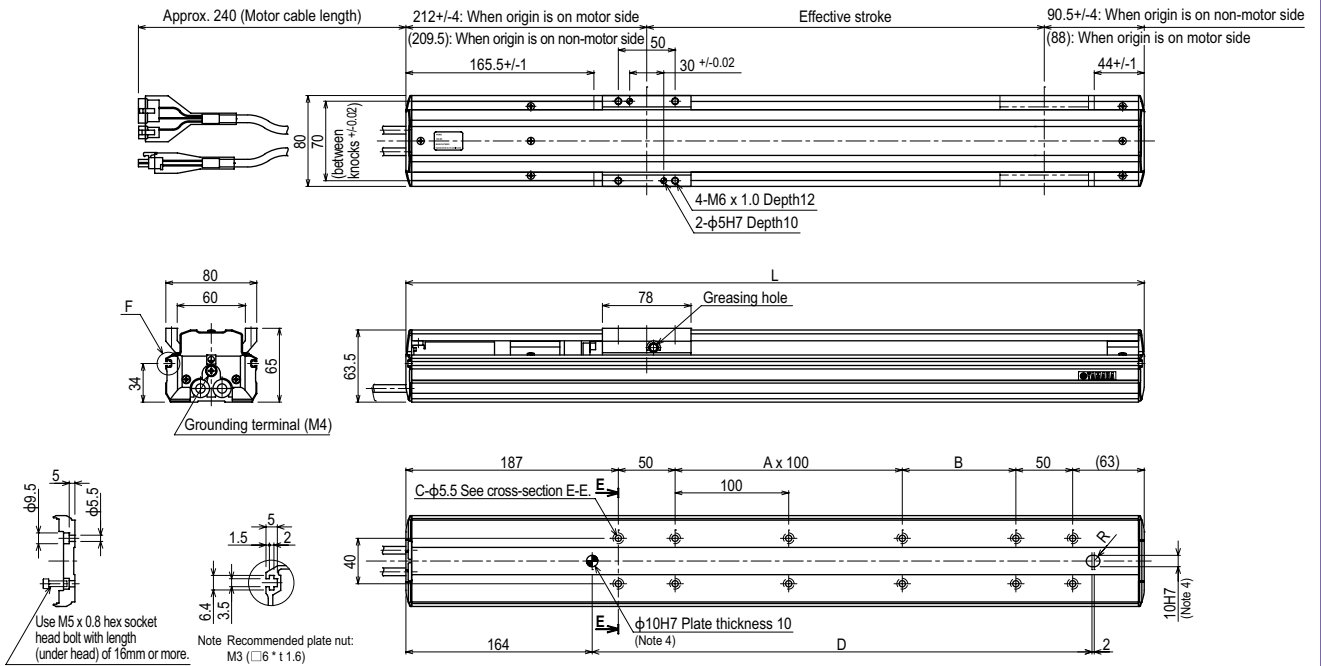


Effective stroke	Cross-section E-E										
	150	200	250	300	350	400	450	500	550	600	
<b>L</b>	442	492	542	592	642	692	742	792	842	892	
<b>A</b>	0	0	1	1	2	2	3	3	4	4	
<b>B</b>	100	150	100	150	100	150	100	150	100	150	
<b>C</b>	8	8	10	10	12	12	14	14	16	16	
<b>D</b>	240	290	340	390	440	490	540	590	640	690	
<b>Weight (kg)</b> <small>Note 5</small>	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	
<b>Maximum speed</b> <small>Note 6</small> (mm/sec)	<b>Lead 20</b>	1200									
	<b>Lead 10</b>	600									
	<b>Lead 5</b>	300									
	<b>Speed setting</b>	-									
<b>Weight (kg)</b> <small>Note 5</small>	<b>650</b>	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.2	9.5	
	<b>700</b>	10.20	9.00	7.80	7.20	6.60	6.00	5.40	4.80	4.20	
	<b>750</b>	5.10	4.50	3.90	3.60	3.30	3.00	2.70	2.40	2.10	
	<b>800</b>	2.55	2.25	1.95	1.80	1.65	1.50	1.35	1.20	1.05	
	<b>850</b>	85%	75%	65%	60%	55%	50%	45%	40%	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 knockpin must not protrude more than 10mm inside the robot body.  
 Note 5. Weight of models with no brake. The weight of brake-attached models is 0.3 kg heavier than the models with no brake shown in the table.  
 Note 6. When the stroke is longer than 650mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

- Articulated robots **YA**
- Linear conveyor modules **LCM**
- Single-axis robots **CX**
- Motor-less single axis actuator **Robonity**
- 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
- BR type

F8L High lead type: Lead 30



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

- Note 1. Stop positions are determined by the mechanical stoppers at both ends.
- Note 2. When installing the robot, do not use washers inside the robot body.
- Note 3. Minimum bend radius of motor cable is R50.
- Note 4. When using this  $\phi$ 10 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.

# F8LH

Origin on the non-motor side is selectable

## Ordering method

<b>F8LH</b>															
<b>Model</b>	<b>Lead designation</b> 20: 20mm 10: 10mm 5: 5mm	<b>Origin position change</b> None: Standard Z: Non-motor side	<b>Grease type</b> None: Standard GC: Clean	<b>Stroke</b> 150 to 1050 (50mm pitch)	<b>Cable length</b> <sup>Note 1</sup> 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	<b>Positioner</b> <sup>Note 2</sup> TSX: TS-X	<b>Driver: Power supply voltage / Power capacity</b> 105: 100V/100W or less 205: 200V/100W or less	<b>LCD monitor</b> No entry: None L: With LCD	<b>I/O selection</b> NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board <sup>Note 3</sup>	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)					
						<b>SR1-X</b>	<b>05</b>								
						<b>Controller</b>	<b>Driver: Power capacity</b> 05: 100W or less	<b>Usable for CE</b> No entry: Standard E: CE marking	<b>I/O selection</b> N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFINET	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)					
						<b>RDV-X</b>	<b>2</b>	<b>05</b>	<b>RBR1</b>						
						<b>Driver</b>	<b>Power supply voltage</b> 2: AC200V	<b>Driver: Power capacity</b> 05: 100W or less	<b>Regenerative unit</b>						

Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.732 for details on robot cable.  
Note 2. See P.634 for DIN rail mounting bracket.  
Note 3. Select this selection when using the gateway function. For details, see P.96.

## Specifications

<b>AC servo motor output (W)</b>	100		
<b>Repeatability</b> <sup>Note 1</sup> (mm)	±0.01		
<b>Deceleration mechanism</b>	Ball screw $\phi 15$		
<b>Ball screw lead (mm)</b>	20	10	5
<b>Maximum speed</b> <sup>Note 2</sup> (mm/sec)	1200	600	300
<b>Maximum payload (kg)</b>	<b>Horizontal</b>	30	60
<b>Rated thrust (N)</b>		84	169
<b>Stroke (mm)</b>		150 to 1050	50mm pitch
<b>Overall length (mm)</b>	<b>Horizontal</b>	Stroke+368	
<b>Maximum dimensions of cross section of main unit (mm)</b>	W80 × H65		
<b>Cable length (m)</b>	Standard: 3.5 / Option: 5.10		
<b>Linear guide type</b>	4 rows of circular arc grooves × 1 rail		
<b>Position detector</b>	Resolvers <sup>Note 3</sup>		
<b>Resolution (Pulse/rotation)</b>	16384		

Note 1. Positioning repeatability in one direction.  
Note 2. When the stroke is longer than 800mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table below.  
Note 3. 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)		
	A	B	C	A	B	C
<b>Lead 20</b>						
10kg	573	256	176	10kg	147	215
20kg	334	116	81	20kg	53	75
30kg	279	70	50	30kg	20	29
<b>Lead 10</b>						
20kg	629	137	111	20kg	80	99
20kg	479	57	47	40kg	15	19
<b>Lead 5</b>						
20kg	382	30	25	60kg	-	-
20kg	1094	148	127	20kg	96	112
40kg	851	63	54	40kg	22	26
60kg	714	34	29	60kg	-	-
80kg	601	20	17	80kg	-	-

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

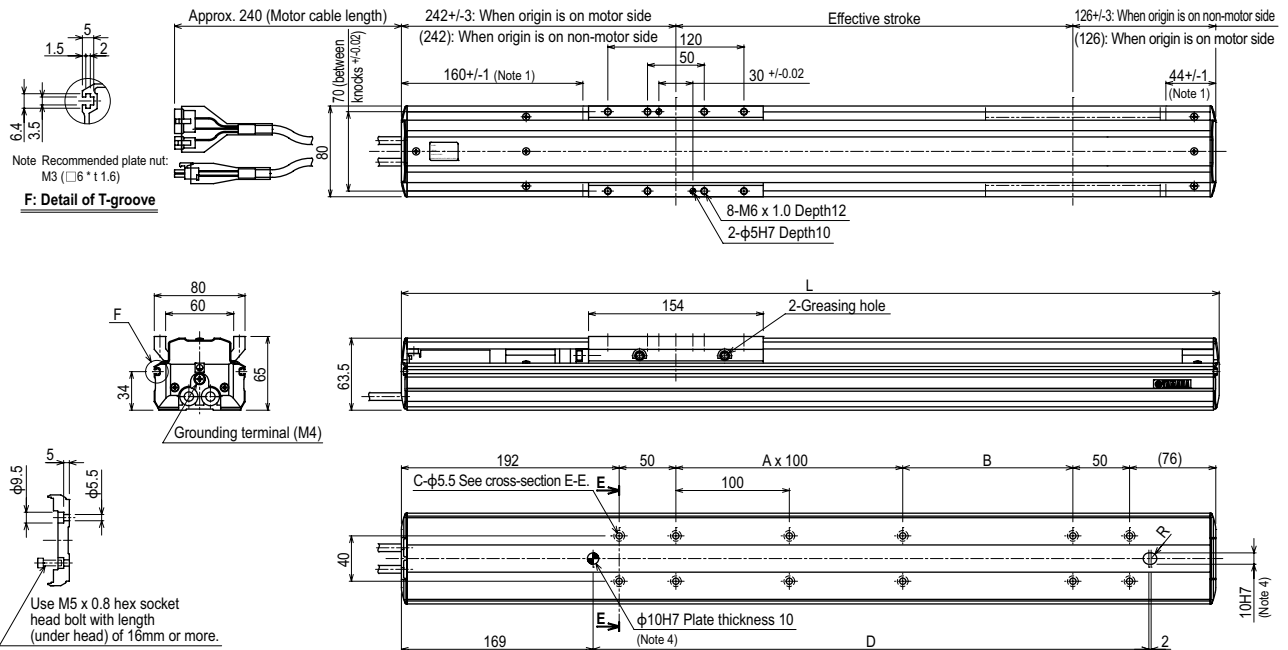
## Static loading moment

(Unit: N·m)		
MY	MP	MR
128	163	143

## Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX320	
RCX221/222	
RCX340	
TS-X105	I/O point trace / Remote command
TS-X205	
RDV-X205-RBR1	Pulse train control

## F8LH



### 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	
<b>L</b>	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	
<b>A</b>	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	
<b>B</b>	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150	
<b>C</b>	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	
<b>D</b>	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	1190	
<b>Weight (kg)</b>	4.7	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.7	10.0	10.3	
<b>Maximum speed</b> <sup>Note 5</sup> (mm/sec)																				
Lead 20	1200																			
Lead 10	600																			
Lead 5	300																			
<b>Speed setting</b>																				
	85% 75% 65% 60% 55% 50% 45% 40% 35%																			

Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
Note 2. When installing the robot, do not use washers inside the robot body.  
Note 3. Minimum bend radius of motor cable is R50.  
Note 4. When using this  $\phi 10$  knock-pin hole to position the robot body, the knock-pin must not protrude more than 10mm inside the robot body.  
Note 5. When the stroke is longer than 600mm, resonance of the ball screw may occur depending on the operation conditions (critical speed). In this case, reduce the speed setting on the program by referring to the maximum speeds shown in the table above.

# F10

● High lead: Lead 30

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

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

## Ordering method

### F10

Model	Lead designation	Brake	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.732 for details on robot cable.  
 Note 4. See P.634 for DIN rail mounting bracket.  
 Note 5. Select this selection when using the gateway function. For details, see P.96.

### TSX

Positioner	Driver: Power-supply voltage	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: 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 $\phi$ 15
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 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 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

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

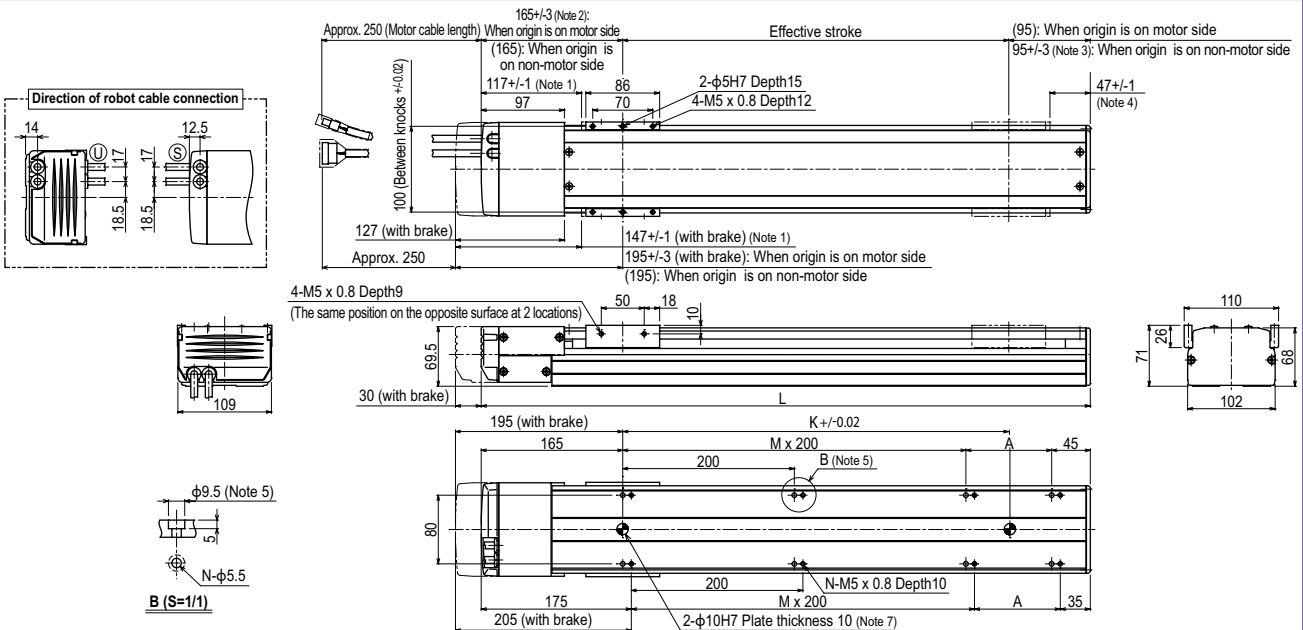
			(Unit: N·m)		
	MY	MP	MR		
	131	131	115		

## Controller

Controller	Operation method
SR1-X05 Note 5	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX320	
RCX221/222	
RCX340	
TS-X105 Note 5	I/O point trace / Remote command
TS-X205 Note 5	
RDV-X205-RBR1	Pulse train control

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

## F10



Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. 167.5+/-4 when the high lead specification (Lead 30) is used.  
 Note 3. 95+/-4 when the high lead specification (Lead 30) is used.  
 Note 4. 44.5+/-1 when the high lead specification (Lead 30) is used.  
 Note 5. When installing the unit, washers, etc., cannot be used in the  $\phi$ 9.5 counter bore hole.  
 Note 6. Minimum bend radius of motor cable is R50.  
 Note 7. When using this  $\phi$ 10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.  
 Note 8. Weight of models with no brake. The weight of brake-attached models is 0.6 kg heavier than the models with no brake shown in the table.

Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	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	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
K	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Weight (kg) Note 8	5.5	5.7	5.8	6.2	6.5	6.9	7.3	7.7	8.1	8.5	8.8	9.2	9.6	10.0	10.4	10.8	11.1	11.5	11.9	12.3	12.7	13.1	13.5
Maximum speed (mm/sec) Note 9	Lead 30	1800																					
	Lead 20	1200																					
	Lead 10	600																					
	Lead 5	300																					
Speed setting		80%																					
		65%																					
	50%																						
	45%																						

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

# F10H

● High lead: Lead 30

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

## Ordering method

<b>F10H</b>	<b>Model</b>	<b>Lead designation</b> 30: 30mm 20: 20mm 10: 10mm 5: 5mm	<b>Brake</b> No entry: No brakes BK: Brakes provided	<b>Cable entry location</b> No entry: Standard (S) U: From the top	<b>Origin position change</b> None: Standard Z: Non-motor side	<b>Grease type</b> None: Standard GC: Clean	<b>Stroke</b> Lead 20-10-5: 150 to 1000 (50mm pitch) Lead 30: 150 to 1000 (50mm pitch)	<b>Cable length</b> 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable)	<b>Positioner</b> TSX: TS-X	<b>Driver: Power-supply voltage / Power capacity</b> 110: 100V/200W 210: 200V/200W	<b>Regenerative unit</b> No entry: None R: With RGT	<b>LCD monitor</b> No entry: None L: With LCD	<b>I/O selection</b> NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)
	<b>SR1-X</b>	<b>10</b>							<b>Controller</b>	<b>Driver: Power capacity</b> 10: 200W	<b>Usable for CE</b> No entry: Standard E: CE marking	<b>Regenerative unit</b> No entry: None R: With RGT	<b>I/O selection</b> N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: Profibus	<b>Battery</b> B: With battery (Absolute) N: None (Incremental)
	<b>RDV-X</b>	<b>2</b>							<b>Driver</b>	<b>Power-supply voltage</b> 2: AC200V		<b>10</b>	<b>RBR1</b>	<b>Regenerative unit</b> 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.732 for details on robot cable.
- Note 4. See P.634 for DIN rail mounting bracket.
- Note 5. Select this selection when using the gateway function. For details, see P.96.

## Specifications

<b>AC servo motor output (W)</b>	200		
<b>Repeatability</b> (mm)	±0.01		
<b>Deceleration mechanism</b>	Ball screw φ15		
<b>Ball screw lead (mm)</b>	30	20	10
<b>Maximum speed</b> (mm/sec)	1800	1200	600
<b>Maximum payload (kg)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	25	40	80
	–	8	20
<b>Rated thrust (N)</b>	113	170	341
<b>Stroke (mm)</b>	150 to 1000		
<b>Overall length (mm)</b>	<b>Horizontal</b>	<b>Stroke+355</b>	
	<b>Vertical</b>	<b>Stroke+385</b>	
<b>Maximum dimensions of cross section of main unit (mm)</b>	W110 × H71		
<b>Cable length (m)</b>	Standard: 3.5 / Option: 5.10		
<b>Linear guide type</b>	4 rows of circular arc grooves × 1 rail		
<b>Position detector</b>	Resolvers		
<b>Resolution (Pulse/rotation)</b>	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

Lead	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	10kg	193	570	1062	Lead 20	4kg	1650	1650
	20kg	772	298	99	20kg	65	187	549	Lead 10	6kg	1104	1104
	10kg	1961	685	232	10kg	198	570	1786	Lead 5	8kg	832	832
Lead 20	20kg	949	301	103	20kg	65	187	732	Lead 20	10kg	927	927
	10kg	1961	685	232	10kg	0	0	0	Lead 10	15kg	614	614
	40kg	432	109	38	40kg	66	187	1546	Lead 5	20kg	458	458
Lead 10	30kg	1615	239	84	30kg	43	123	1223	Lead 20	15kg	752	752
	50kg	1131	112	39	50kg	66	187	1546	Lead 10	20kg	560	560
	80kg	812	40	14	80kg	93	264	5987	Lead 5	30kg	369	369
Lead 5	60kg	3091	112	39	60kg	134	379	7629	Lead 20	4kg	1650	1650
	80kg	2330	64	23	80kg	93	264	5987	Lead 10	6kg	1104	1104
	100kg	1733	36	12	100kg	66	187	4841	Lead 5	8kg	832	832

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

## Static loading moment

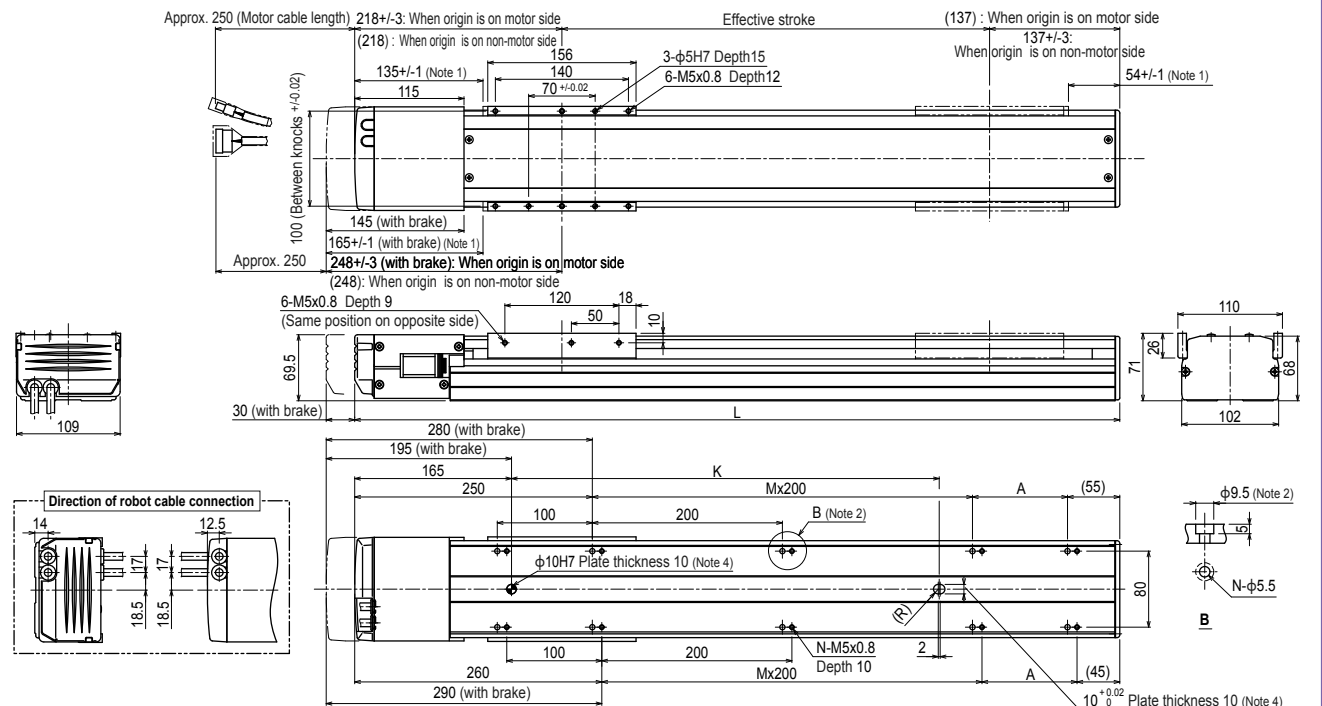
(Unit: N·m)		
MY	MP	MR
348	348	160

## Controller

Controller	Operation method
SR1-X10 <sup>Note</sup>	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RXC320	
RXC221/222	
RCX340	
TS-X110 <sup>Note</sup>	I/O point trace / Remote command
TS-X210 <sup>Note</sup>	
RDV-X210-RBR1	Pulse train control

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

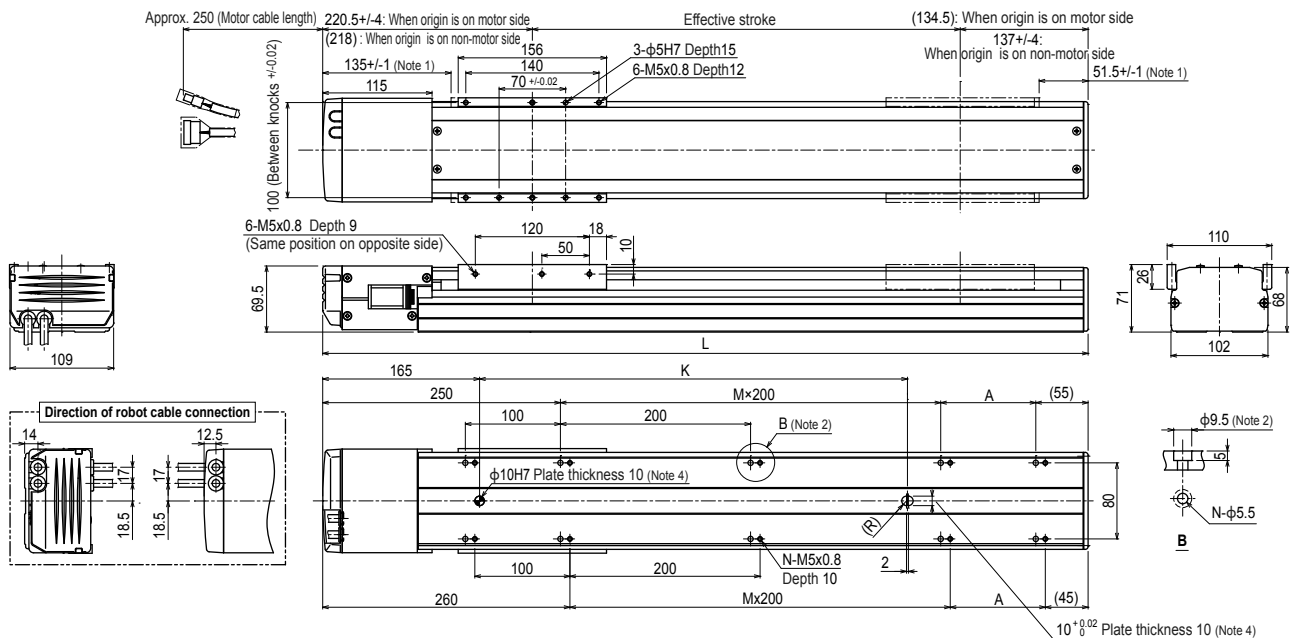
## F10H



Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	
<b>L</b>	505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355									
<b>A</b>	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50									
<b>M</b>	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5									
<b>N</b>	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16									
<b>K</b>	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100									
<b>Weight (kg)</b> (Note 5)	6.9	7.3	7.7	8.1	8.4	8.8	9.2	9.6	10.0	10.3	10.7	11.1	11.5	11.9	12.2	12.6	13.0	13.4									
<b>Maximum speed</b> (mm/sec)	1800	1200	600	300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<b>Speed setting</b>	80%	70%	60%	50%	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

- 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	3	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											1440	1260	1080	900	720	630		
	Lead 20											960	840	720	600	480	420		
	Lead 10											480	420	360	300	240	210		
	Lead 5											240	210	180	150	120	105		
	Speed setting											80%	70%	60%	50%	40%	35%		

Note 1. Stop positions are determined by the mechanical stoppers at both ends.

Note 2. When installing the unit, washers, etc., cannot be used in the φ9.5 counter bore hole.

Note 3. Minimum bend radius of motor cable is R50.

Note 4. When using this φ10 knock-pin hole to position the robot body, the knockpin must not protrude more than 10mm inside the robot body.

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

# 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	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 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	Driver: Power supply voltage Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery
TSX: TS-X	105: 100V/100W or less 205: 200V/100W or less	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board	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 RGT1	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 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.732 for details on robot cable.  
 Note 3. See P.634 for DIN rail mounting bracket.  
 Note 4. Select this selection when using the gateway function. For details, see P.96.

## Specifications

AC servo motor output (W)	100
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw φ15
Ball screw lead (mm)	30 20 10 5
Maximum speed (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 (50mm pitch)
Overall length (mm)	Horizontal Stroke+255 Vertical Stroke+285
Maximum dimensions of cross section of main unit (mm)	W136 × H83
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers
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

Lead	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	B	C
Lead 30	5kg 1756	1364	863	5kg 951	969	1286	1kg 600	600	600
Lead 20	15kg 1236	467	438	5kg 1066	974	1578	2kg 1200	1200	1200
Lead 10	5kg 2153	1366	980	15kg 402	276	775	4kg 1154	895	895
Lead 5	15kg 1193	465	430	30kg 219	105	678	8kg 634	492	492
Lead 30	20kg 1132	353	361	40kg 140	57	402	10kg 499	387	387
Lead 20	40kg 872	183	218	55kg 92	0	345	10kg 587	456	456
Lead 10	55kg 946	140	184	30kg 246	107	1095	15kg 383	297	297
Lead 5	50kg 1575	158	222	40kg 167	64	798	20kg 281	218	218
Lead 30	60kg 1493	135	194	60kg 88	20	508			
Lead 20	80kg 1466	107	159						

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

## Static loading moment

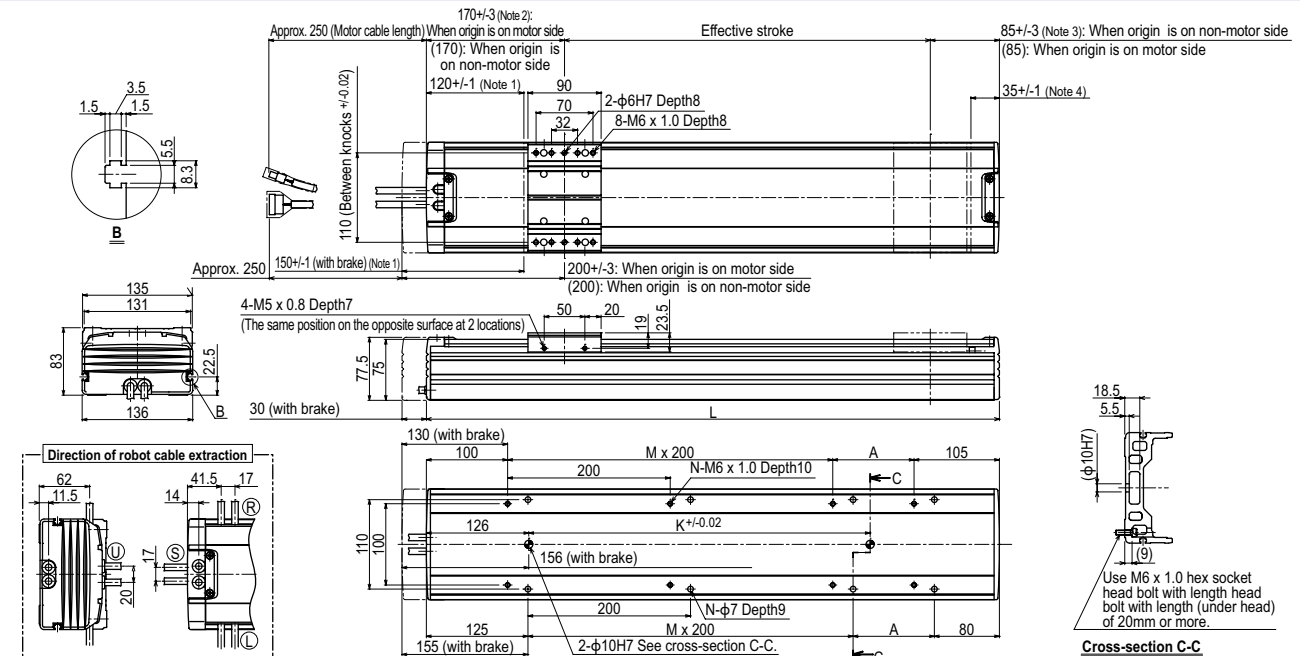
(Unit: N·m)		
MY	MP	MR
232	233	204

## Controller

Controller	Operation method
SR1-X05	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RXC320	
RCX221/222	
RCX340	
TS-X105	I/O point trace / Remote command
TS-X205	
RDV-X205-RBR1	Pulse train control

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

## F14



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

Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
	L	405	455	505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305	1355	1405	1455
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	3	4	4	4	4	5	5	5	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16
K	240	240	240	240	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140
Weight (kg)	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)	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.



# F14H

● High lead: Lead 30

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

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

## Ordering method

### F14H

Model	Lead designation	Brake	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: Location: 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)

- 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.732 for details on robot cable.  
 Note 4. See P.634 for DIN rail mounting bracket.  
 Note 5. Select this selection when using the gateway function. For details, see P.96.

### TSX

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

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

### RDV-X

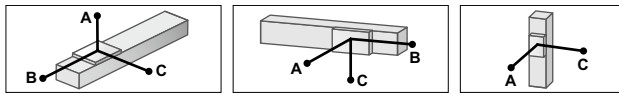
Driver	Power-supply voltage	Driver: Power capacity	Regenerative unit
2	2: AC200V	10: 200W or less	

## Specifications

AC servo motor output (W)	200
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw φ15
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 1250 (50mm pitch)
Overall length (mm)	Horizontal: Stroke+320 Vertical: Stroke+350
Maximum dimensions of cross section of main unit (mm)	W136 × H83
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers
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.

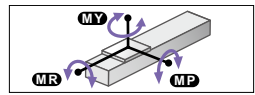
## Allowable overhang



Lead	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	B	C
Lead 30	10kg 2152	1673	934	10kg 975	1219	1625	4kg 2400	2016	
	25kg 1847	691	533	25kg 482	426	1257	6kg 1699	1364	
Lead 20	10kg 2265	1674	961	10kg 999	1220	1711	8kg 1301	1051	
	20kg 1402	855	537	20kg 515	558	987	10kg 1370	1106	
Lead 10	40kg 1047	445	324	40kg 263	227	635	15kg 906	732	
	30kg 1953	583	485	30kg 419	338	1282	20kg 678	548	
	50kg 1655	365	328	50kg 240	162	934	20kg 767	619	
	80kg 1720	242	238	80kg 134	62	756	25kg 612	494	
Lead 5	60kg 2443	311	317	60kg 209	117	1398	30kg 503	407	
	80kg 2193	242	253	80kg 135	62	1120			
	100kg 2000	202	214	100kg 90	29	900			

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

## Static loading moment



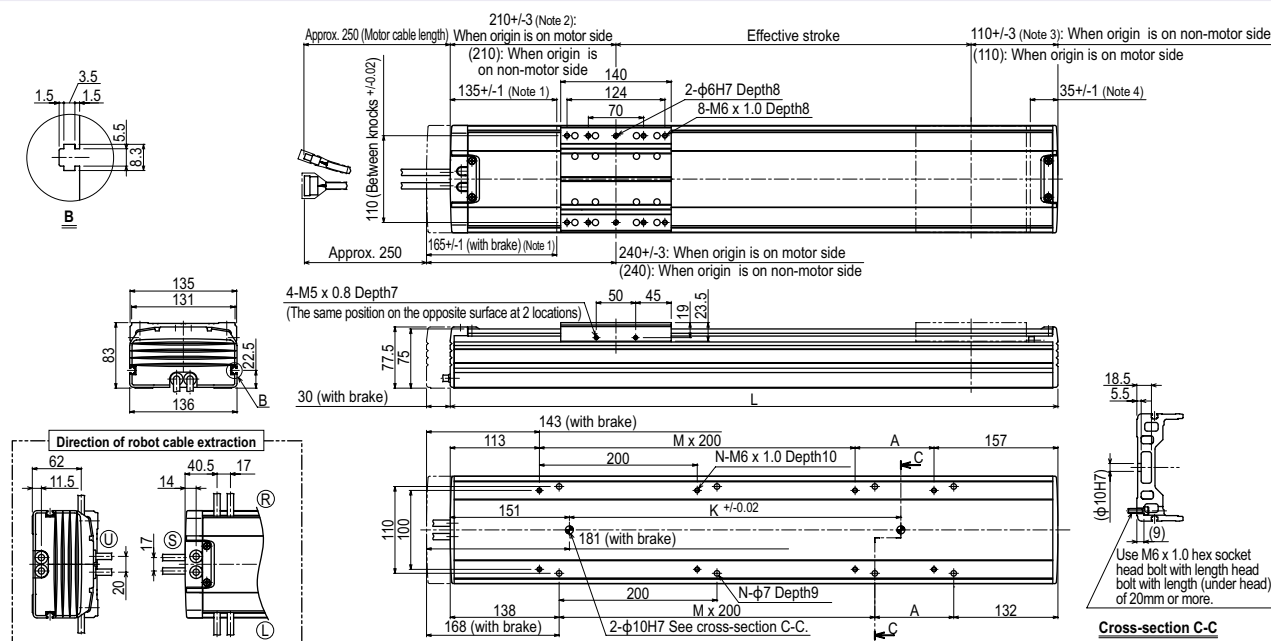
(Unit: N·m)		
MY	MP	MR
551	552	485

## Controller

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

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

## F14H



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

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

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.

# 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.732 for details on robot cable.  
Note 4. See P.634 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.96.

TSX	220				
Positioner TSX: 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 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			
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 φ20	
Ball screw lead (mm)	40	20 10
Maximum speed (mm/sec)	2400	1000 (1200)
Maximum payload (kg)	Horizontal	Vertical
	40	80 120
Rated thrust (N)	169	339 678
Stroke (mm)	200 to 1450 (50mm pitch)	
Overall length (mm)	Horizontal	Vertical
	Stroke+375	Stroke+365
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

Lead	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	C	
Lead 40	10kg 3540	2753	1999	10kg 2022	2670	3501	5kg 3000	3000	
	20kg 2541	1357	1181	20kg 1202	1283	2483	10kg 2447	2447	
	40kg 2639	661	736	40kg 752	587	2516	15kg 1650	1650	
	30kg 2647	894	989	30kg 987	820	2578	15kg 1782	1782	
	50kg 1770	521	588	50kg 574	447	1685	25kg 1054	1054	
	80kg 1391	312	362	80kg 342	237	1263	35kg 742	742	
	60kg 2443	430	572	60kg 535	355	2443			
	100kg 2000	243	326	100kg 283	169	2000			
	120kg 1841	197	264	120kg 220	123	1841			

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

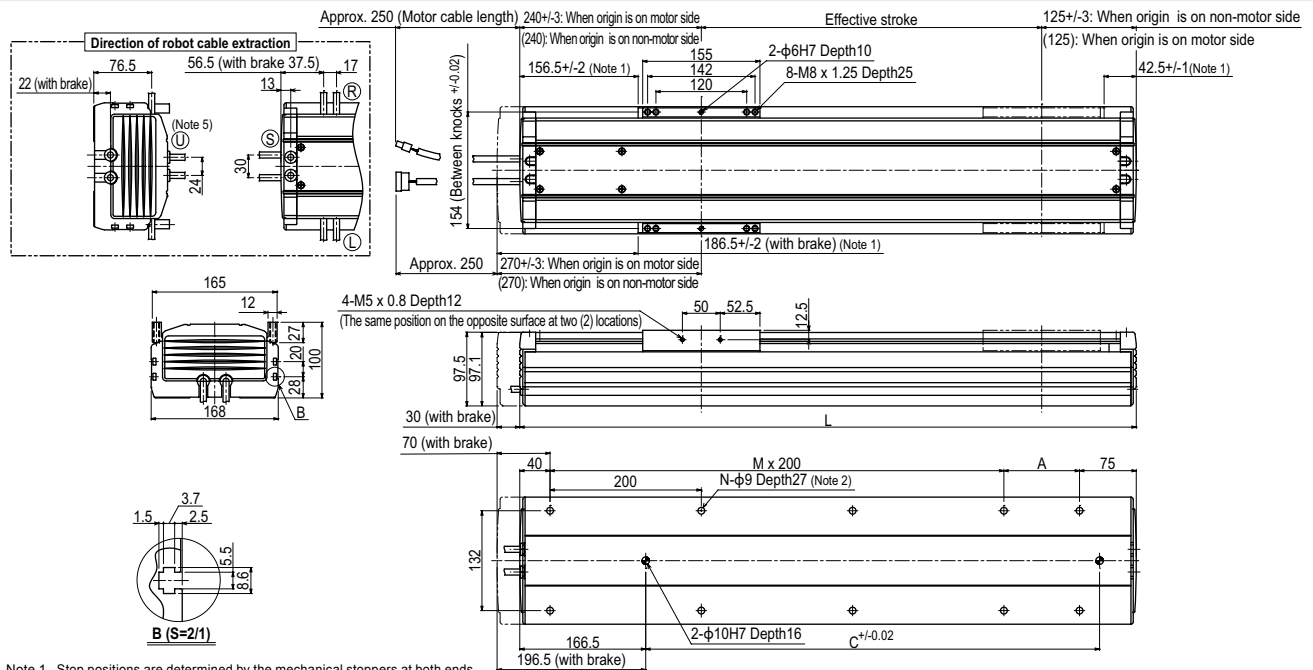
	MY	MP	MR
(Unit: N·m)	1032	1034	908

## Controller

Controller	Operation method
SR1-X20	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX320, RCX221/222, RCX340	Programming / I/O point trace / Remote command
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.

## F17

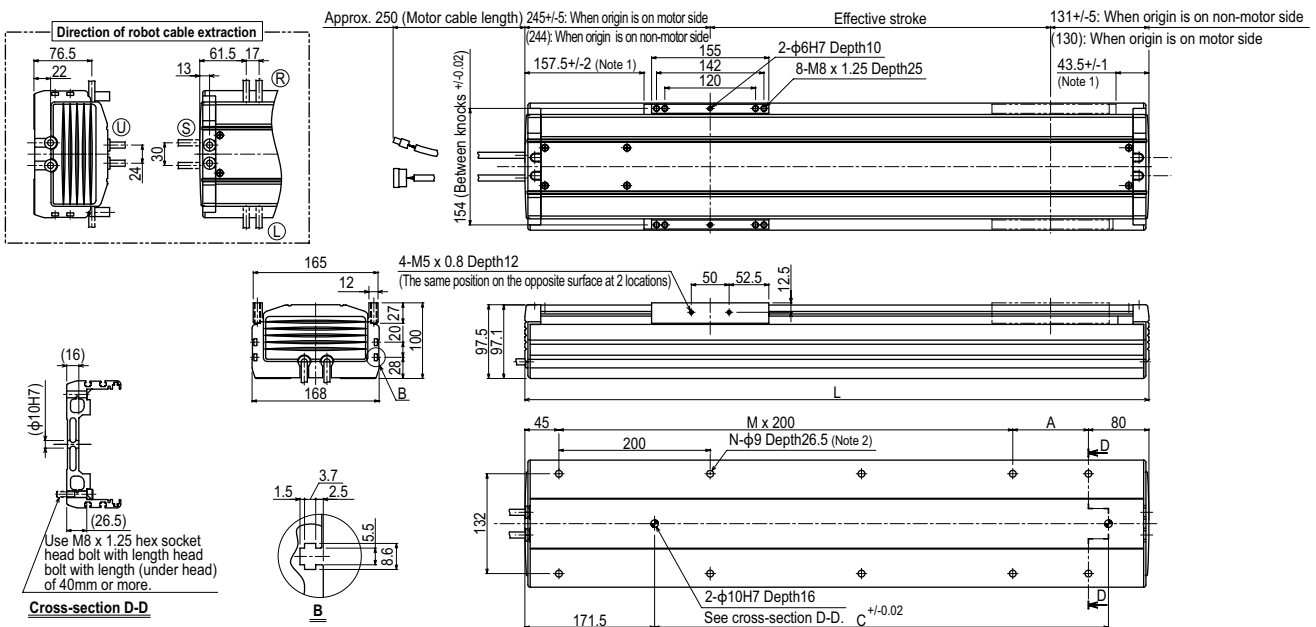


- Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. When installing the robot, do not use washers inside the robot body.  
 Note 3. Minimum bend radius of motor cable is R50.  
 Note 4. Weight of models with no brake. The weight of brake-attached models is 1.2 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 (mm/sec)	1000(1200)												960	840	720	600	480	420	360	300	240	200	180	
Speed setting	-												80%	70%	60%	50%	40%							

- Articulated robots YA
- Linear conveyor modules LCM
- Single-axis robots CX
- Motor-less single axis actuator Robonity
- Compact single-axis robots TRANSEVO
- 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

## F17 High lead type: Lead 40



Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. When installing the robot, do not use washers inside the robot body.

Note 3. Minimum bend radius of motor cable is R50.

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

# F17L

● Origin on the non-motor side is selectable

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

## Ordering method

### F17L-50

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

TSX	220	R	I/O selection		Battery
Positioner <sup>Note 3</sup> TSX: TS-X	Driver: Power-supply voltage <sup>Note 4</sup> Power capacity <sup>Note 4</sup> 220: 200V/400 to 600W	Regenerative unit R: With RGT	LCD monitor 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 <sup>Note 5</sup>	B: With battery (Absolute) N: None (Incremental)
SR1-X	20	R	I/O selection		Battery
Controller	Driver: Power capacity <sup>Note 4</sup> 20: 400 to 600W	Usable for CE No entry: Standard E: CE marking	Regenerative unit R: With RG1	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)
RDV-X	2	20	Regenerative unit		
Driver	Power-supply voltage 2: AC200V	Driver: Power capacity <sup>Note 4</sup> 20: 600W or less	RBR1 (Horizontal) RBR2 (Vertical)		

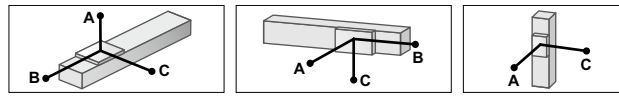
- Note 1. Upper robot cable (U) on models equipped with brake is a special-order item.  
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.732 for details on robot cable.  
 Note 3. See P.634 for DIN rail mounting bracket.  
 Note 4. Acceleration / deceleration is different depending the Positioner or Controller or Driver.  
 Note 5. Select this selection when using the gateway function. For details, see P.96.

## Specifications

AC servo motor output (W)	600
Repeatability <sup>Note 1</sup> (mm)	+/-0.02
Deceleration mechanism	Ball screw φ25
Ball screw lead (mm)	50
Maximum speed <sup>Note 2</sup> (mm/sec)	2200
Maximum payload (kg)	Horizontal: 50 Vertical: 10
Rated thrust (N)	204
Stroke (mm)	1100 to 2050 (50mm pitch)
Overall length (mm)	Horizontal: Stroke+475 Vertical: Stroke+505
Maximum dimensions of cross section of main unit (mm)	W168 × H100
Cable length (m)	Standard: 3.5 / Option: 5.10
Linear guide type	4 rows of circular arc grooves × 2 rail
Position detector	Resolvers <sup>Note 3</sup>
Resolution (Pulse/rotation)	16384

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

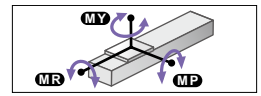
## Allowable overhang <sup>Note</sup>



Lead 50	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	B	C
10kg	4000	2755	2608	2720	2681	4000	2kg	1200	1200
30kg	3045	895	1175	1185	821	3045	5kg	3000	3000
50kg	2602	523	715	680	449	2602	10kg	2650	2650

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

## Static loading moment

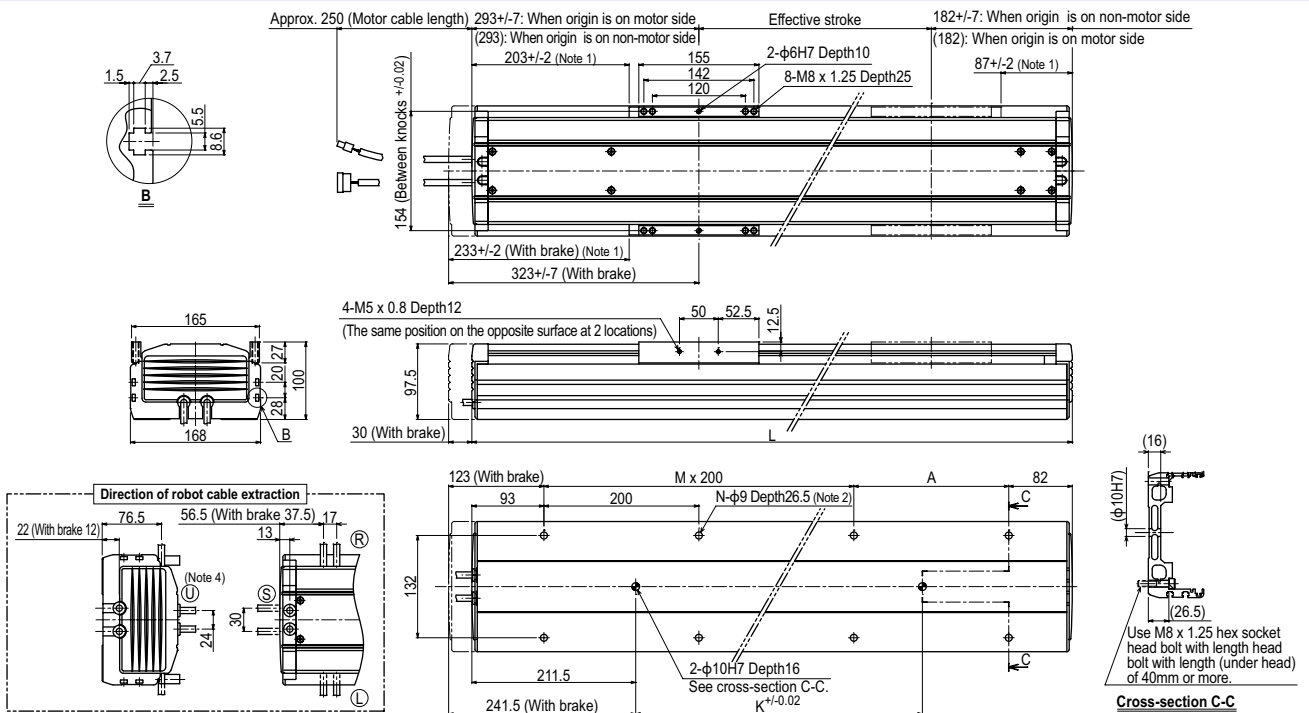


			(Unit: N·m)		
MY	MP	MR	MY	MP	MR
1032	1034	908			

## Controller

Controller	Operation method
SR1-X20-R RCX320 RCX221/222 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220-R RDV-X220-RBR1 (Horizontal) RDV-X220-RBR2 (Vertical)	I/O point trace / Remote command / Pulse train control

## F17L



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

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

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

# 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.732 for details on robot cable.  
Note 4. See P.634 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.96.

TSX	220	SR1-X	20	RDV-X	2	20
Positioner TSX: TS-X	Driver: Power-supply voltage Power capacity 220: 200V/400 to 600W	Controller 20: 400 to 600W	Usable for CE No entry: Standard E: CE marking	Driver 2: AC200V	Power-supply voltage 2: AC200V	Driver: Power capacity 20: 600W or less
	Regenerative unit No entry: None R: With RG1	Regenerative unit No entry: Standard E: CE marking	Regenerative unit No entry: None R: With RG1			Regenerative unit No entry: None R: With RG1
	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	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS			
	Battery None (Absolute) N: None (Incremental)	Battery B: With battery (Absolute) N: None (Incremental)	Battery B: With battery (Absolute) N: None (Incremental)			

## Specifications

AC servo motor output (W)	600		
Repeatability (mm)	+/-0.01		
Deceleration mechanism	Ball screw φ20		
Ball screw lead (mm)	40	20	10
Maximum speed (mm/sec)	2400	1000 (1200)	600
Maximum payload (kg)	Horizontal: 60	Vertical: 120	-
Rated thrust (N)	255	510	1020
Stroke (mm)	200 to 1450 (50mm pitch)		
Overall length (mm)	Horizontal: 200 to 1450	Vertical: 200 to 1450	-
Maximum dimensions of cross section of main unit (mm)	W202 × H115		
Cable length (m)	Standard: 3.5 / Option: 5.10		
Linear guide type	4 rows of circular arc grooves × 2 rail		
Position detector	Resolvers		
Resolution (Pulse/rotation)	16384		

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

## Allowable overhang

Horizontal installation (Unit: mm)				Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
Lead	A	B	C	Lead	A	B	Lead	A	C
Lead 40	10kg 4000	20kg 3397	60kg 2443	Lead 40	10kg 3571	20kg 2118	Lead 20	15kg 2635	20kg 2000
Lead 20	50kg 2602	80kg 2193	120kg 1841	Lead 20	60kg 1000	80kg 708	Lead 10	25kg 1621	30kg 1446
	4000	2235	718		4000	458		2635	2000
	4000	2073	977		4000	268		2000	2000
	3450	2073	505		4000	1841		1621	1621
	3450	2073	505		4000	1841		1621	1621

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

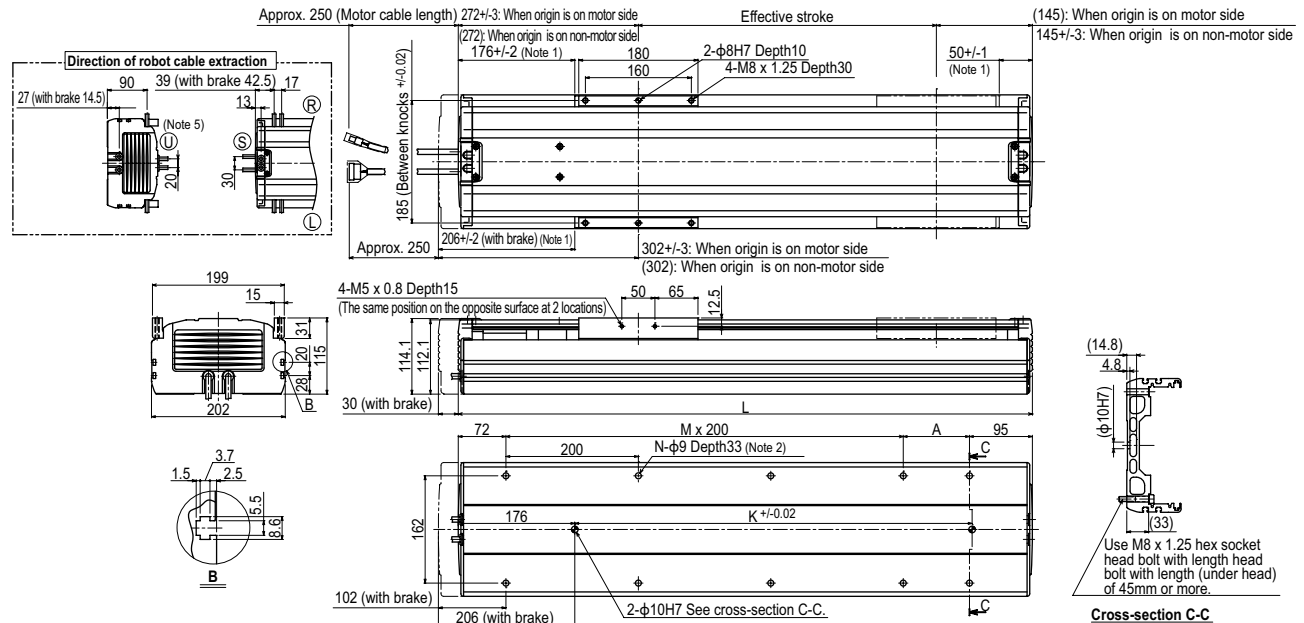
(Unit: N·m)		
MY	MP	MR
1196	1199	1052

## Controller

Controller	Operation method
SR1-X20	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)	Pulse train control

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

## F20



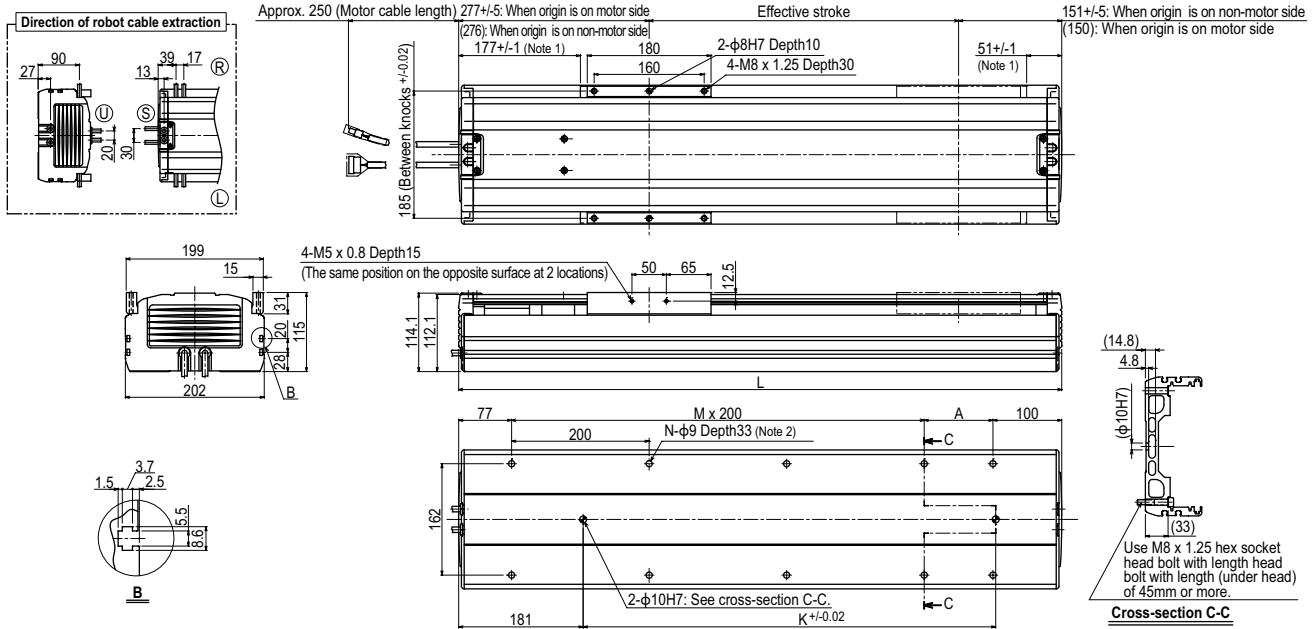
- Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. When installing the robot, do not use washers inside the robot body.  
 Note 3. Minimum bend radius of motor cable is R50.  
 Note 4. Weight of models with no brake. The weight of brake-attached models is 1.5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

Effective stroke	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
L	617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367	1417	1467	1517	1567	1617	1667	
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	
M	2	2	2	2	3	3	3	3	4	4	4	5	5	5	5	6	6	6	6	6	7	7	
N	8	8	8	8	10	10	10	10	12	12	12	14	14	14	14	16	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 (mm/sec)	1000 (1200)											960	840	720	600	480							
Speed setting	-											80%	70%	60%	50%	40%							

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

- Articulated robots YA
- Linear conveyor modules LCM
- Single-axis robots CX
- Motor-less single axis actuator Robomity
- Compact single-axis robots TRANSEVO
- 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

## F20 High lead type: Lead 40



Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
Note 2. When installing the robot, do not use washers inside the robot body.

Note 3. Minimum bend radius of motor cable is R50.

Effective stroke	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
L	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	6	6	6	6	7	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 <sup>Note 4</sup> (mm/sec)	Lead 40		2400																							
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

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

<b>TSX</b>	<b>220</b>				
<b>Positioner<sup>Note 2</sup></b>	<b>Driver: Power-supply voltage / Power capacity</b>	<b>Regenerative unit</b>	<b>LCD monitor</b>	<b>I/O selection</b>	<b>Battery</b>
TSX: TS-X	220: 200V/400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	N: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: No I/O board <sup>Note 3</sup>	B: With battery (Absolute) N: None (Incremental)
<b>SR1-X</b>	<b>20</b>				
<b>Controller</b>	<b>Driver: Power capacity</b>	<b>Usable for CE</b>	<b>Regenerative unit</b>	<b>I/O selection</b>	<b>Battery</b>
	20: 400 to 600W	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)
<b>RDV-X</b>	<b>2</b>	<b>20</b>		<b>RBR1</b>	
<b>Driver</b>	<b>Power-supply voltage</b>	<b>Driver: Power capacity</b>		<b>Regenerative unit</b>	
	2: AC200V	20: 600W or less			

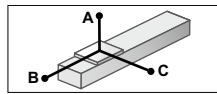
Note 1. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.732 for details on robot cable.  
 Note 2. See P.634 for DIN rail mounting bracket.  
 Note 3. Select this selection when using the gateway function. For details, see P.96.

## Specifications

<b>AC servo motor output (W)</b>	400
<b>Repeatability<sup>Note 1</sup> (mm)</b>	+/-0.04
<b>Deceleration mechanism</b>	Ball screw $\phi 20$
<b>Ball screw lead (mm)</b>	20
<b>Maximum speed (mm/sec)</b>	1000 (1200 <sup>Note 2</sup> )
<b>Maximum payload (kg)</b>	80
<b>Rated thrust (N)</b>	339
<b>Stroke (mm)</b>	1150 to 2050 (100mm pitch)
<b>Overall length (mm)</b>	Stroke+420
<b>Maximum dimensions of cross section of main unit (mm)</b>	W202 x H120
<b>Cable length (m)</b>	Standard: 3.5 / Option: 5.10
<b>Linear guide type</b>	4 rows of circular arc grooves x 2 rail
<b>Position detector</b>	Resolvers <sup>Note 3</sup>
<b>Resolution (Pulse/rotation)</b>	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.

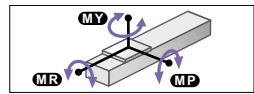
## Allowable overhang<sup>Note</sup>



		<b>Horizontal installation</b> (Unit: mm)		
		<b>A</b>	<b>B</b>	<b>C</b>
<b>Lead 20</b>	<b>20kg</b>	3397	2332	2683
	<b>40kg</b>	2795	1144	1361
	<b>60kg</b>	2443	749	914
	<b>80kg</b>	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)
<b>MY</b>	<b>MP</b>	<b>MR</b>	
1196	1199	1052	

## Controller

Controller	Operation method
SR1-X20 <sup>Note</sup> RCX320 RCX221/222 RCX340	Programming / I/O point trace / Remote command / Operation using RS-232C communication
TS-X220 <sup>Note</sup> RDV-X220-RBR1	I/O point trace / Remote command / Pulse train control

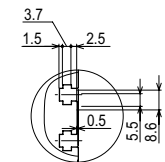
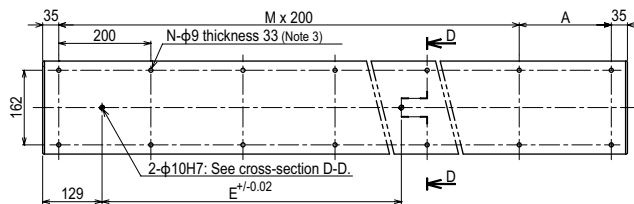
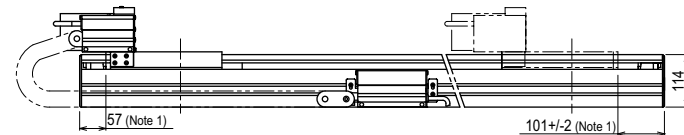
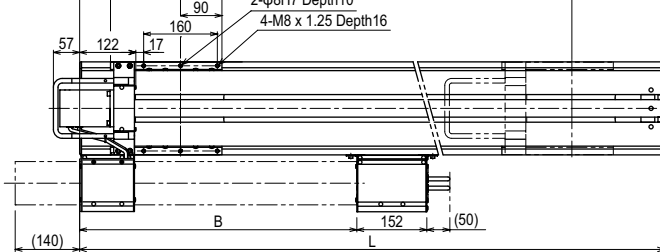
Note. When the unit is operated at a speed exceeding the maximum speed of 1,000mm/sec., a regeneration unit is required.

## F20N

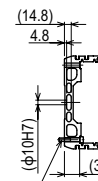
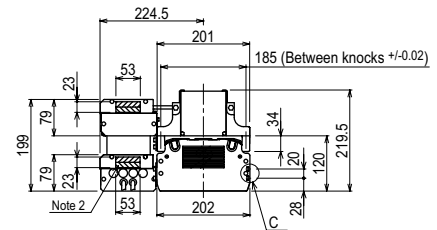
219+/-3: When origin is on L side  
(219): When origin is on R side

Effective stroke

201+/-3: When origin is on R side  
(201): When origin is on L 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
<b>L</b>	1570	1670	1770	1870	1970	2070	2170	2270	2370	2470
<b>A</b>	100	200	100	200	100	200	100	200	100	200
<b>B</b>	602	648	694	740	786	832	878	924	970	1016
<b>E</b>	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
<b>M</b>	7	7	8	8	9	9	10	10	11	11
<b>N</b>	18	18	20	20	22	22	24	24	26	26
<b>Weight (kg)</b>	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 of the sliding.