

F20

- High lead: Lead 40
- Origin at non-motor side



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.

Ordering method

F20		TSX		220		SR1-X		20		RDV-X		2		20	
Model	Lead designation	Brake	Cable entry location	Origin position change	Grease type	Stroke	Cable length	Positioner	Driver	Power capacity	Regenerative unit	LCD monitor	I/O selection	Battery	
	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)	TS-X	Driver: Power supply voltage Power capacity 220: 200V/400 to 600W	20: 400 to 600W	No entry: None R: With RGT	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ GW: No I/O board	B: With battery (Absolute) N: None (Incremental)	
								Controller	Driver	Power capacity	Usable for CE	Regenerative unit	I/O selection	Battery	
								SR1-X	20: 400 to 600W	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)	
								Driver	Power supply voltage	Driver	Power capacity	Regenerative unit	I/O selection	Battery	
								RDV-X	2: AC200V	20	20: 600W or less	RBR1 (Horizontal) RBR2 (Vertical)	N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS	B: With battery (Absolute) N: None (Incremental)	

- Note 1. The model with a lead of 40mm 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.510 for details on robot cable.
 Note 3. See P.446 for DIN rail mounting bracket.
 Note 4. Acceleration / deceleration is different depending the Positioner or Controller or Driver.
 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.439.

Specifications

AC servo motor output (W)	600
Repeatability (mm)	+/-0.01
Deceleration mechanism	Ball screw (Class C7)
Ball screw lead (mm)	20
Maximum speed (mm/sec)	2400 1000 (1200) 600
Maximum payload (kg)	Horizontal 60 Vertical 25 45
Rated thrust (N)	255 510 1020
Stroke (mm)	200 to 1450 (50mm pitch)
Overall length (mm)	Horizontal Stroke+427 Vertical Stroke+417
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.
 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)	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	B	C	
Lead 40										
10kg	4000	4000	3450	10kg	3571	4000	4000	15kg	2635	2635
20kg	3397	2235	2073	20kg	2118	2164	3397	20kg	2000	2000
60kg	2443	718	977	60kg	1000	648	2443	25kg	1621	1621
50kg	2602	869	1083	50kg	1097	799	2602	20kg	2188	2188
80kg	2193	528	703	80kg	708	458	2193	30kg	1446	1446
120kg	1841	339	505	120kg	468	268	1841	45kg	951	951

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

Static loading moment

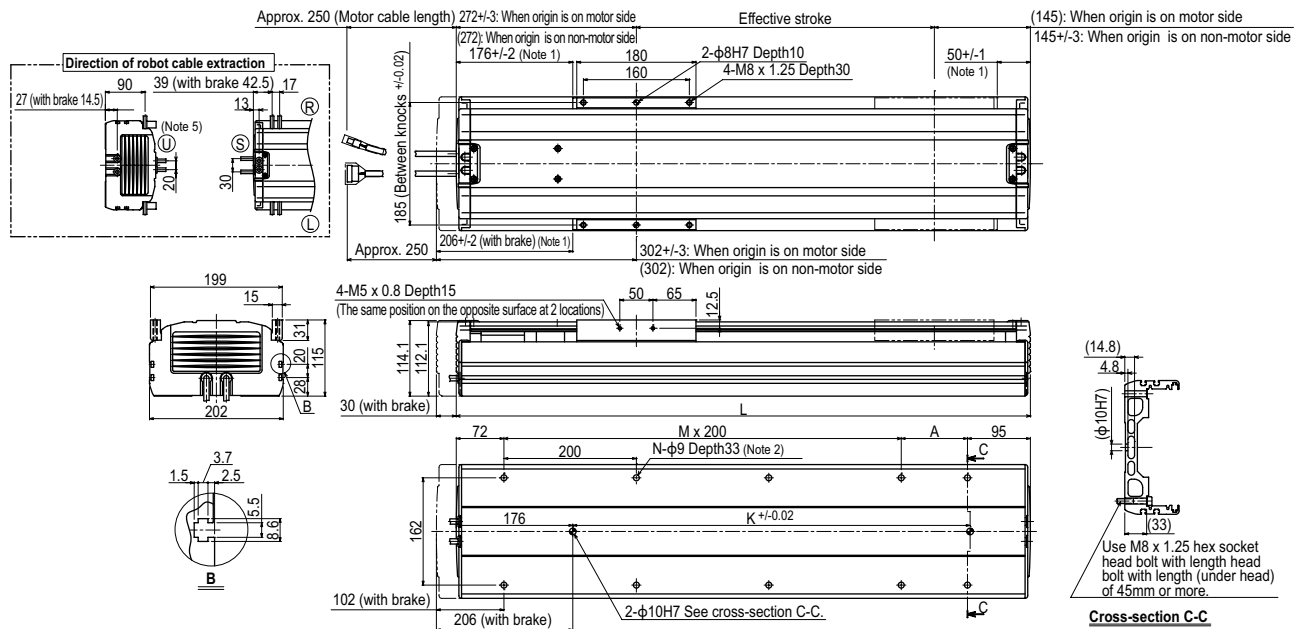
Static loading moment (Unit: N·m)		
MY	MP	MR
1196	1199	1052

Controller

Controller	Operation method
SR1-X20	Programming / I/O point trace
RCX221/222	Remote command / Operation using RS-232C communication
RCX240/340	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. When using the vertical model, if the unit is operated at such speed exceeding the maximum speed of 1,000mm/sec., and if it has a high lead (40), a regeneration unit is required.

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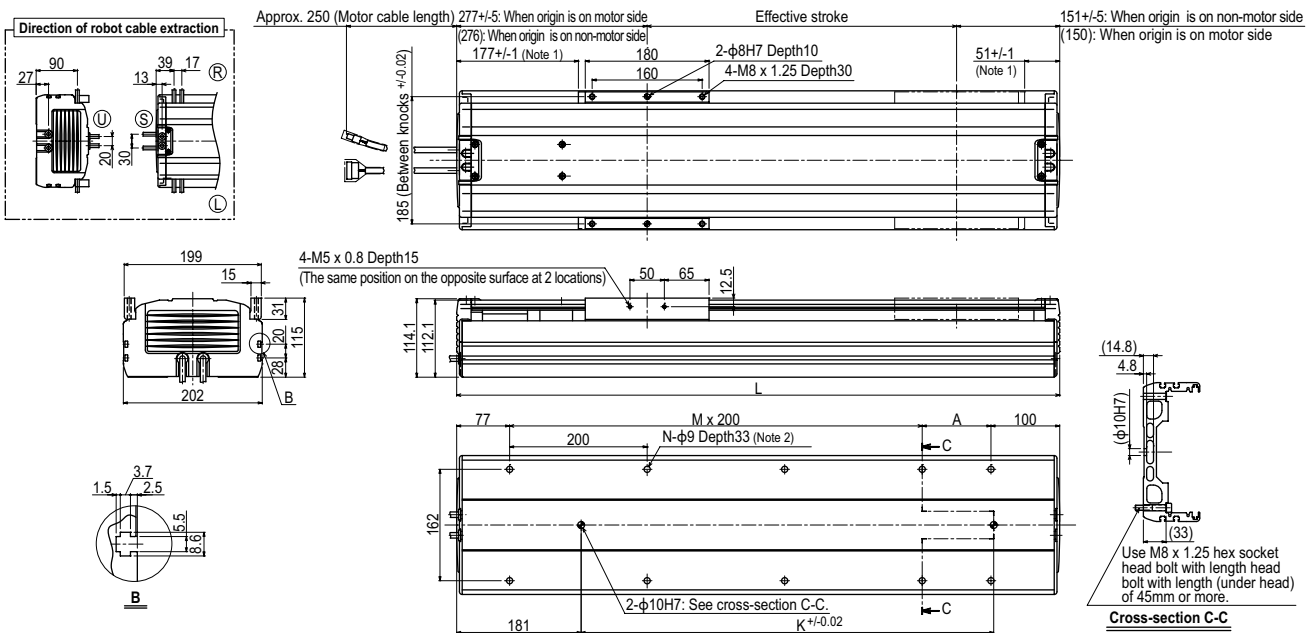


- Note 1. Distance from both ends to the mechanical stopper.
 Note 2. When installing the robot, do not use washers inside the robot body.
 Note 3. Minimum bend radius of motor cable is R50.
 Note 4. Weight of models with no brake. The weight of brake-attached models is 1.5 kg heavier than the models with no brake shown in the table.
 Note 5. Make a separate consultation with us regarding robot cable (brake specifications) U extraction.

Effective stroke	Effective stroke																					
	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367	1417	1467	1517	1567	1617	1667
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7
N	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18
K	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960	960	1140	1140	1140	1320	1320	1320
Weight (kg)	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	1000 (1200)															960	840	720	600	480		
(mm/sec)	Speed setting															480	420	360	300	240		
																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.

F20 High lead type: Lead 40



Note 1. Distance from both ends to the mechanical stopper.

Note 2. When installing the robot, do not use washers inside the robot body.

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

Effective stroke	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450			
L	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877			
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100			
M	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8			
N	8	8	8	8	10	10	10	10	10	12	12	12	14	14	14	14	16	16	16	16	18	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 ^{Note 4} (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.