

# F14

**Standard Intermediate stroke**  
**High lead : Lead 30**  
**Origin at opposite of motor**

## Robot ordering method

F14 - 20 - BK - 1050 - 3L - SR1-X - 05 - E<sup>Note 1</sup> - R<sup>Note 2</sup> - N - B<sup>Note 1</sup>

Model	Lead designation	Brake	Stroke	Cable length	Applicable controller	Driver	Usable for CE	Regenerative unit	Inputs/Outputs selection	Battery
	-30 : 30mm -20 : 20mm -10 : 10mm -5 : 5mm	-No entry : No brakes -BK : Brakes provided	-Lead 20, 10, 5 : 150 to 1050 (50mm pitch) -Lead 30 : 150 to 1050 (100mm pitch)	-3L : 3.5m (Standard) -5L : 5m -10L : 10m -150 to 1050 (100mm pitch)	-SR1-X -RDX (see page 52)	-05 : 100W or less -10 : 200W -20 : 400 to 600W	-No entry : Standard -E : CE specification	-No entry : Standard -R : RG1	-N : NPN -P : PNP -CC : CC-Link -DN : DeviceNet -PB : Profibus -YC : YC-Link None 3	-No entry : None (Incremental specification) -B : Battery (Absolute specification)

Note 1 : It will be a customer's choice.  
 Note 2 : Optional regenerative unit is required for YAMAHA-designated models and when operating a load with a large inertia.  
 Note 3 : Available only for the slave.

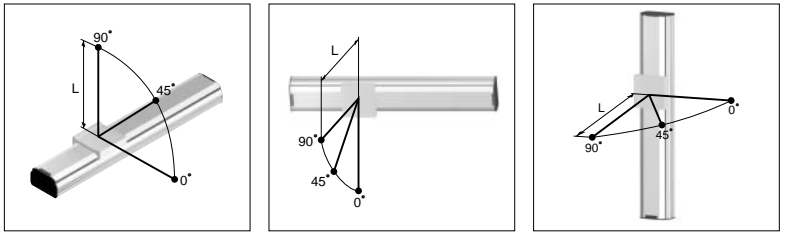
## Basic specifications

AC servo motor output(W)	100			
Repeatability(mm) <sup>Note 1</sup>	+/-0.01			
Deceleration mechanism	Ball screw(Class C7)			
Ball screw lead(mm)	30	20	10	5
Maximum speed(mm/sec) <sup>Note 2</sup>	1800	1200	600	300
Maximum payload(kg)	Horizontal	15	30	55
	Vertical	-	4	10
Rated thrust(N)	52	78	156	312
Stroke(mm)	150 to 1050(50 pitch) <sup>Note 3</sup>			
Cable length(m)	3.5(Standard), 5, 10			
Controller	Horizontal	SR1-X-05		
	Vertical	SR1-X-05 <sup>Note 4</sup>		
Robot driver	Horizontal	RDX-05-RBR1		
	Vertical	RDX-05-RBR1		

Note 1 : Repeatability for single oscillation.  
 Note 2 : When the stroke exceeds 700mm, although depending on the moving range, the ball screw may resonate (dangerous speed). If such resonance occurs, make an adjustment on the program to reduce the speed, using the maximum speed in the table on the right as a guide.  
 Note 3 : 100mm pitch when the high lead specification (Lead 30) is used.  
 Note 4 : RG1 is required when the models used vertically and with 700mm or larger stroke.

Stroke (mm)	Maximum speed (mm/sec)				Speed setting
	Lead 30	Lead 20	Lead 10	Lead 5	
750	1440	960	480	240	80%
850	1170	780	390	195	65%
950	900	600	300	150	50%
1050	810	540	270	135	45%

## Tolerable overhang amount<sup>Note</sup>



Load	During horizontal use (Unit : mm)			During wall installation use (Unit : mm)			During vertical use (Unit : mm)					
	0°	45°	90°	0°	45°	90°	0°	45°	90°			
Lead 30	5kg	509	541	986	5kg	728	505	618	1kg	1029	1233	2118
	15kg	250	292	648	15kg	424	224	240	2kg	530	626	1066
Lead 20	5kg	776	786	1537	5kg	934	585	871	4kg	280	320	538
	15kg	319	339	726	15kg	436	233	245	8kg	179	246	479
Lead 10	20kg	217	280	747	20kg	368	128	111	10kg	143	195	377
	40kg	273	337	579	40kg	540	231	206	10kg	105	150	312
Lead 5	55kg	159	200	370	55kg	258	64	42	15kg	66	94	194
	60kg	128	166	378	60kg	0	0	0	20kg	47	66	135
Lead 5	50kg	167	230	587	30kg	953	148	103				
	60kg	145	200	517	40kg	576	52	37				
Lead 5	80kg	103	144	420	60kg	0	0	0				

Note : Distance from center of slider top to center of gravity of object being transported.

**Direction of robot cable connection**

**Table 1: Dimensions**

Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	405	455	505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305
A	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
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
K	240	240	240	240	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960
Weight(kg) <sup>Note 7</sup>	6.2		7.5		8.8		10.1		11.4		12.6		13.9		15.2		16.5		17.8

**Table 2: Weight Specifications**

Effective stroke	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	405	455	505	555	605	655	705	755	805	855	905	955	1005	1055	1105	1155	1205	1255	1305
A	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
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
K	240	240	240	240	420	420	420	420	600	600	600	600	780	780	780	780	960	960	960
Weight(kg) <sup>Note 7</sup>	6.2		7.5		8.8		10.1		11.4		12.6		13.9		15.2		16.5		17.8

Note 1 : Length from both ends to mechanical stopper position.  
 Note 2 : 172.5+/-4 when the high lead specification (Lead 30) is used.  
 Note 3 : 82.5 when the high lead specification (Lead 30) is used.  
 Note 4 : 85+/-4 when the high lead specification (Lead 30) is used.  
 Note 5 : 32.5+/-1 when the high lead specification (Lead 30) is used.  
 Note 6 : The minimum bend radius of the motor cable is R50.  
 Note 7 : This is the weight of the model without a brake. The weight of the model equipped with a brake is 0.7kg heavier than this value.