

Small Payload Handling Intelligent Robot

FANUC Robot *M-10iA*

FANUC Robot *M-20iA*

FEATURES

FANUC Robot *M-10iA* / *M-20iA* is a small payload handling robot whose payload is 7 to 35kg.

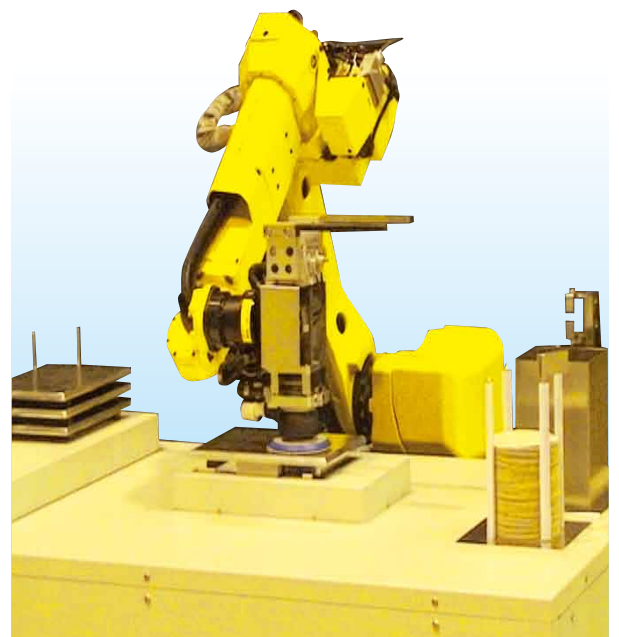
- Two wrist types are available. Hollow wrist realizes the user cable easy wiring. High inertia wrist is appropriate for large work piece handling.
- Standard arm, short arm and long arm are available for variable working area.
- High rigidity arm and advanced servo technology enable to increase acceleration performance. This decreases cycle time and realizes high productivity.
- Various intelligent functions with *i*RVision (integrated vision) and force sensor are available.



Application Examples

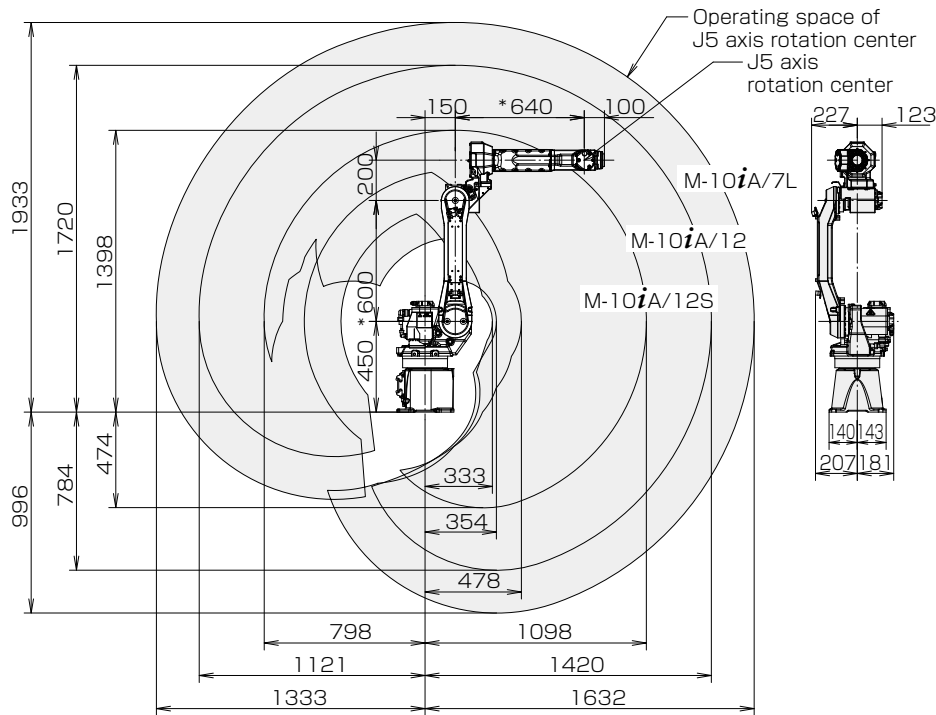
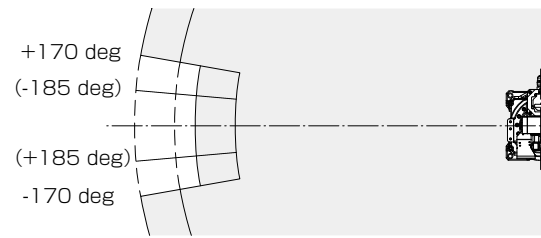
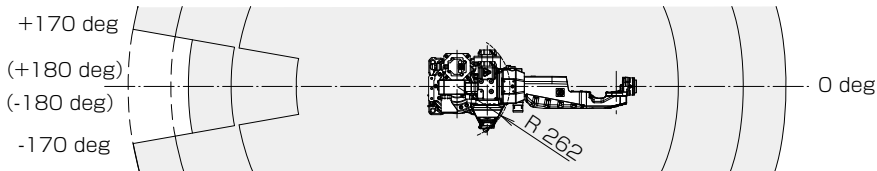


Small parts bin picking

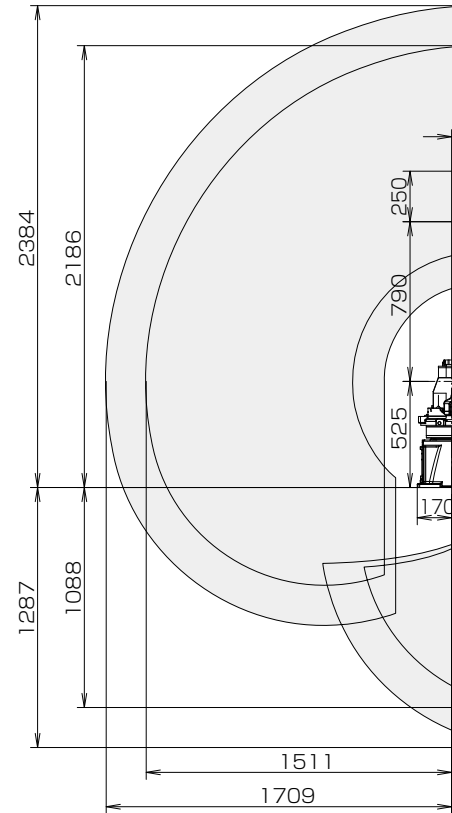


Case parts polishing

Operating space M-10iA/12S, /12, /7L



	*J2 arm length	*J3 arm length
M-10iA/12S	: 400mm	: 510mm
M-10iA/12	: 600mm	: 640mm
M-10iA/7L	: 600mm	: 860mm



	*J3 arm length
M-20iA	: 835mm
M-20iA/12L	: 1040mm

Specifications

Model		M-10iA/12S	M-10iA/12	M-10iA/7L
Controlled axes				
Reach		1098mm	1420mm	1632mm
Installation				
Motion range (Maximum speed) (Note 1, 2)	J1 axis rotation	340°/360°(Option) (260°/s) 5.93 rad/6.28 rad (Option) (4.54 rad/s)	340°/360°(Option) (230°/s) 5.93 rad/6.28 rad (Option) (4.01 rad/s)	
	J2 axis rotation	250° (280°/s) 4.36 rad (4.89 rad/s)	250° (225°/s) 4.36 rad (3.93 rad/s)	
	J3 axis rotation	340° (315°/s) 5.93 rad (5.50 rad/s)	445° (230°/s) 7.76 rad (4.01 rad/s)	447° (230°/s) 7.80 rad (4.01 rad/s)
	J4 axis wrist rotation	380° (430°/s) 6.63 rad (7.50 rad/s)		
	J5 axis wrist swing	380° (430°/s) 6.63 rad (7.50 rad/s)		
	J6 axis wrist rotation	720° (630°/s) 12.57 rad (11.0 rad/s)		
Max load capacity at wrist		12 kg		7 kg
Allowable load moment at wrist	J4 axis	22.0 N·m		15.7 N·m
	J5 axis	22.0 N·m		10.1 N·m
	J6 axis	9.8 N·m		5.9 N·m
Allowable load inertia at wrist	J4 axis	0.65 kg·m ²		0.63 kg·m ²
	J5 axis	0.65 kg·m ²		0.38 kg·m ²
	J6 axis	0.17 kg·m ²		0.061 kg·m ²
Repeatability Note 3)				
Mass Note 4)		130 kg		
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed), Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s ² (0.5G) or less		

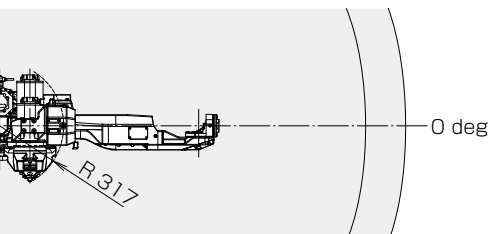
Note 1) In case of angle mounting, J1 and J2 axis motion range are restricted.

Note 2) In case of short distance motion, the axis speed may not reach the maximum value stated.

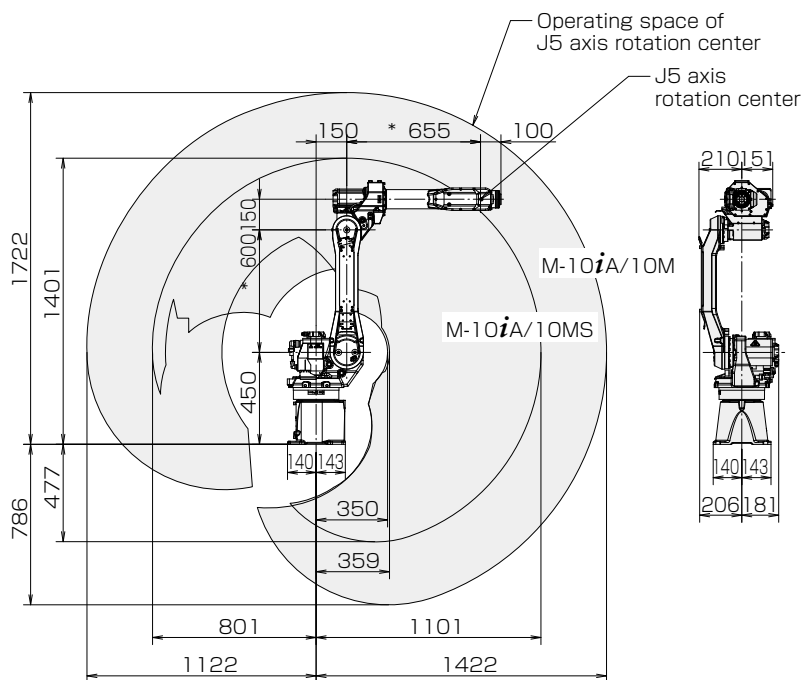
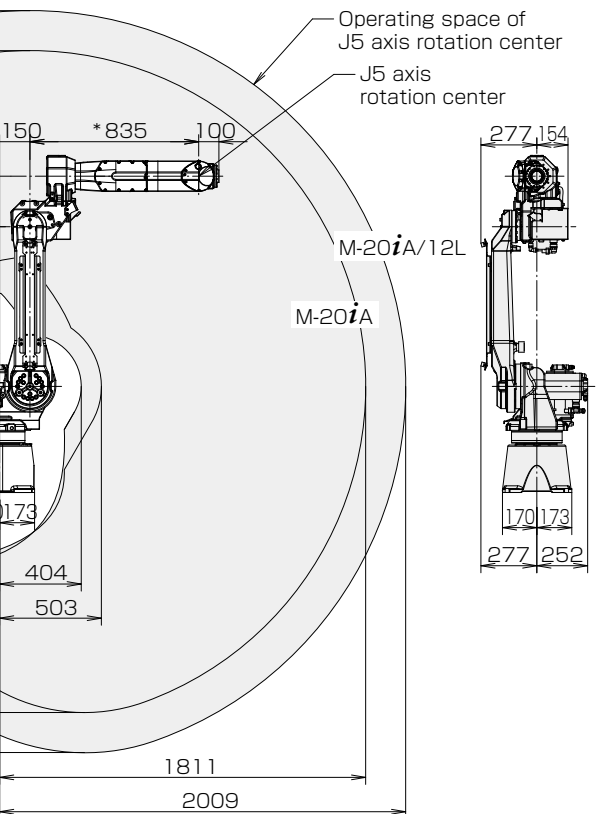
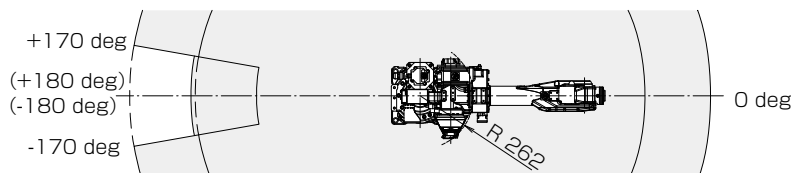
Note 3) Compliant with ISO 9283.

Note 4) Without controller

A, /12L



M-10iA/10M, /10MS

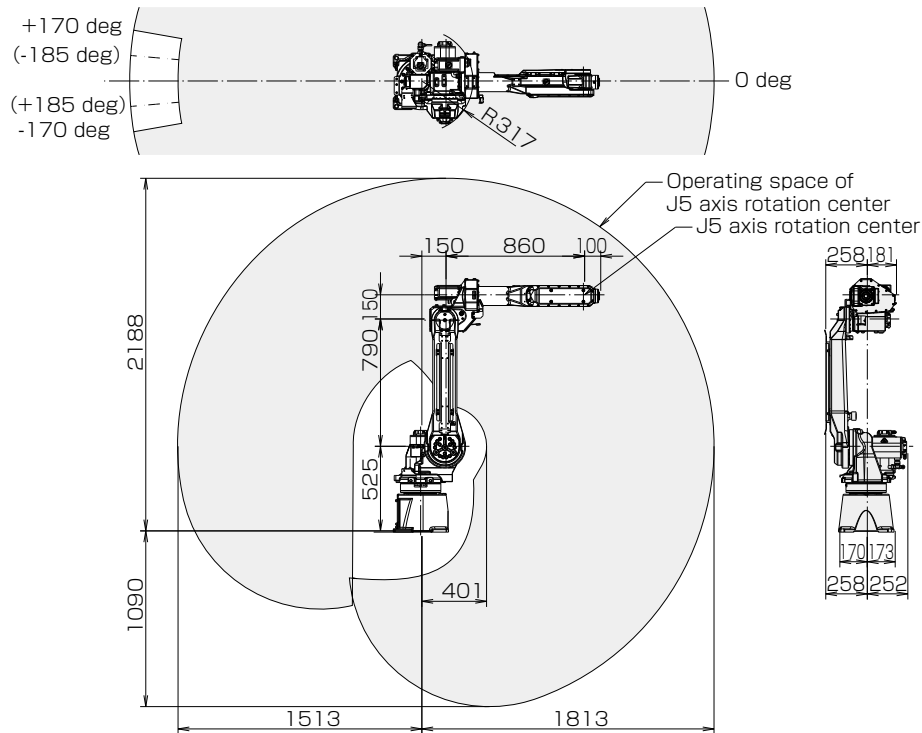


*J2 arm length *J3 arm length
M-10iA/10MS : 400mm M-10iA/10MS : 530mm
M-10iA/10M : 600mm M-10iA/10M : 655mm

M-20iA	M-20iA/12L	M-10iA/10M	M-10iA/10MS
6 axes (J1, J2, J3, J4, J5, J6)			
1811mm	2009mm	1422mm	1101mm
Floor, Upside-down, Angle mount			
340°/370°(Option) (195°/s)	340°/370°(Option) (200°/s)	340°/360°(Option) (225°/s)	340°/360°(Option) (290°/s)
5.93 rad/6.45 rad (Option) (3.40 rad/s)	5.93 rad/6.45 rad (Option) (3.49 rad/s)	5.93 rad/6.28 rad (Option) (3.93 rad/s)	5.93 rad/6.28 rad (Option) (5.06 rad/s)
260°(175°/s) 4.54 rad (3.05 rad/s)		250°(205°/s) 4.36 rad (3.58 rad/s)	250°(280°/s) 4.36 rad (4.89 rad/s)
458°(180°/s) 8.00 rad (3.14 rad/s)	460°(190°/s) 8.04 rad (3.32 rad/s)	445°(225°/s) 7.76 rad (3.93 rad/s)	341°(315°/s) 5.95 rad (5.50 rad/s)
400°(360°/s) 6.98 rad (6.28 rad/s)	400°(430°/s) 6.98 rad (7.50 rad/s)	380°(420°/s) 6.63 rad (7.33 rad/s)	
360°(360°/s) 6.28 rad (6.28 rad/s)	360°(430°/s) 6.28 rad (7.50 rad/s)	280°(420°/s) 6.63 rad (7.50 rad/s)	
900°(550°/s) 15.71 rad (9.60 rad/s)	900°(630°/s) 15.71 rad (11.0 rad/s)	720°(700°/s) 12.57 rad (12.22 rad/s)	720°(720°/s) 12.57 rad (12.57 rad/s)
20 kg	12 kg	10 kg	
44.0 N·m	22.0 N·m	26.0 N·m	
44.0 N·m	22.0 N·m	26.0 N·m	
22.0 N·m	9.8 N·m	11.0 N·m	
1.04 kg·m ²	0.65 kg·m ²	0.90 kg·m ²	
1.04 kg·m ²	0.65 kg·m ²	0.90 kg·m ²	
0.28 kg·m ²	0.17 kg·m ²	0.30 kg·m ²	
3 mm		3 mm	
250 kg		130 kg	

Operating space

M-20iA/20M, /35M



Specifications

Model		M-20iA/20M	M-20iA/35M
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)	
Reach		1813mm	
Installation		Floor, Upside-down, Angle mount	
Motion range (Maximum speed) (Note 1, 2)	J1 axis rotation	340°/370°(Option) (195°/s) 5.93 rad/6.45 rad (Option) (3.40 rad/s)	340°/370°(Option) (180°/s) 5.93 rad/6.45 rad (Option) (3.14 rad/s)
	J2 axis rotation	260°(175°/s) 4.54 rad (3.05 rad/s)	260°(180°/s) 4.54 rad (3.14 rad/s)
	J3 axis rotation	458°(180°/s) 8.00 rad (3.14 rad/s)	458°(200°/s) 8.00 rad (3.49 rad/s)
	J4 axis wrist rotation	400°(405°/s) 6.98 rad (7.07 rad/s)	400°(350°/s) 6.98 rad (6.11 rad/s)
	J5 axis wrist swing	280°(405°/s) 4.89 rad (7.07 rad/s)	280°(350°/s) 4.89 rad (6.11 rad/s)
	J6 axis wrist rotation	900°(615°/s) 15.71 rad (10.73 rad/s)	900°(400°/s) 15.71 rad (6.98 rad/s)
	Max load capacity at wrist	20 kg	35 kg
Allowable load moment at wrist	J4 axis	45.1 N·m	110 N·m
	J5 axis	45.1 N·m	110 N·m
	J6 axis	30.0 N·m	60 N·m
Allowable load inertia at wrist	J4 axis	2.01 kg·m ²	4.00 kg·m ²
	J5 axis	2.01 kg·m ²	4.00 kg·m ²
	J6 axis	1.01 kg·m ²	1.50 kg·m ²
Repeatability Note 3)	± 0.03 mm		
Mass Note 4)	250 kg	252 kg	
Installation environment	Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed). Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s ² (0.5G) or less		

Note 1) In case of angle mounting, J1 and J2 axis motion range are restricted.

Note 2) In case of short distance motion, the axis speed may not reach the maximum value stated.

Note 3) Compliant with ISO 9283.

Note 4) Without controller

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