

FANUC Robot LR Mate



FEATURES

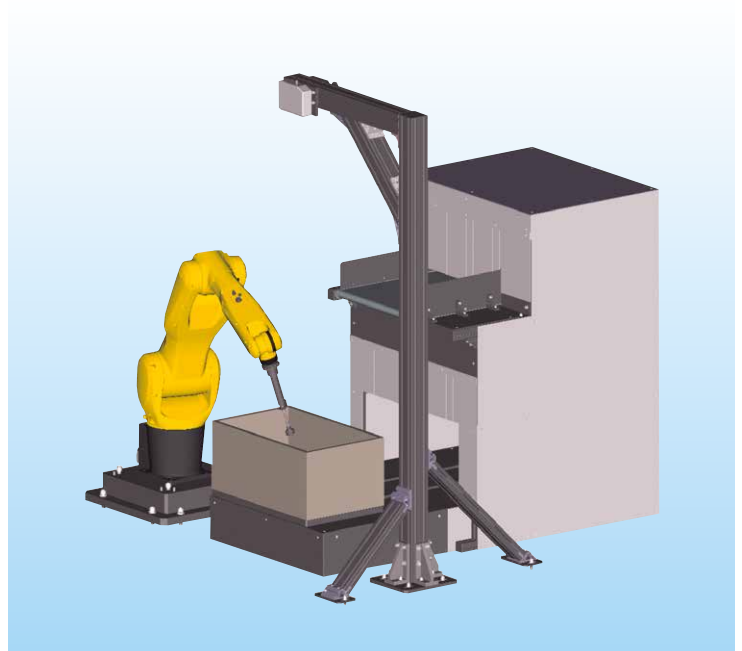
FANUC Robot LR Mate is a fully enclosed handling robot with the capacity of 4kg - 35kg.

- Its light weight body easily supports various installation types such as floor, ceiling, and wall mounting.
- Its compact foot print and slim arm save installation floor space and reduce a risk of the interference with the peripheral devices.
- Cabling, piping, and solenoid valves are integrated inside the body from the robot base to the upper arm, which realizes no protrusion of the cabling and the piping and ideal offline teaching.
- Dust and water proof ability of the mechanical unit conforms to IP67, which provides the flexibility to the various applications.
- Tablet TP, which has a large touch panel and an user-friendly intuitive interface, and the traditional *i*Pendant are available as a teaching device.
- *i*RVision (Integrated robot vision), force sensor, and various intelligent features are available.

Application Example



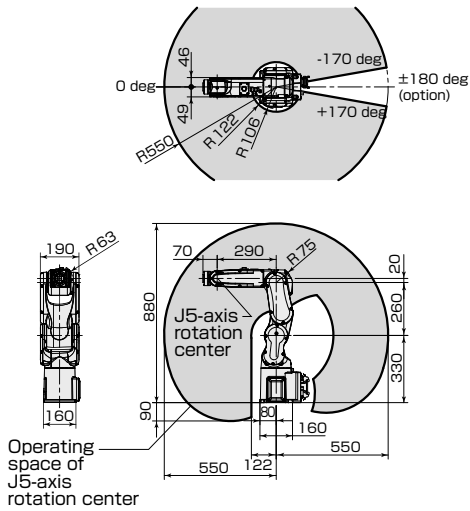
Parts Handling



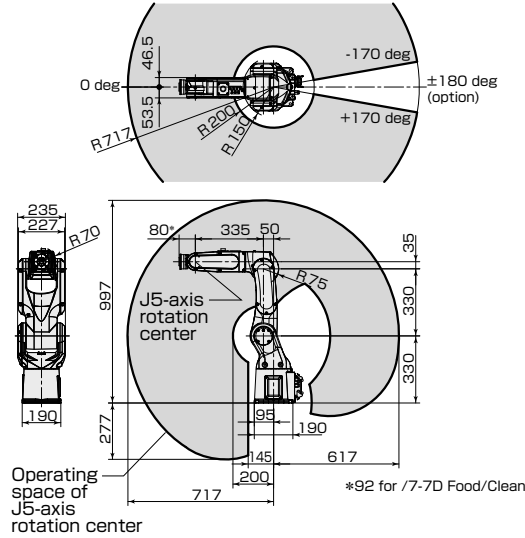
Picking

Operating space

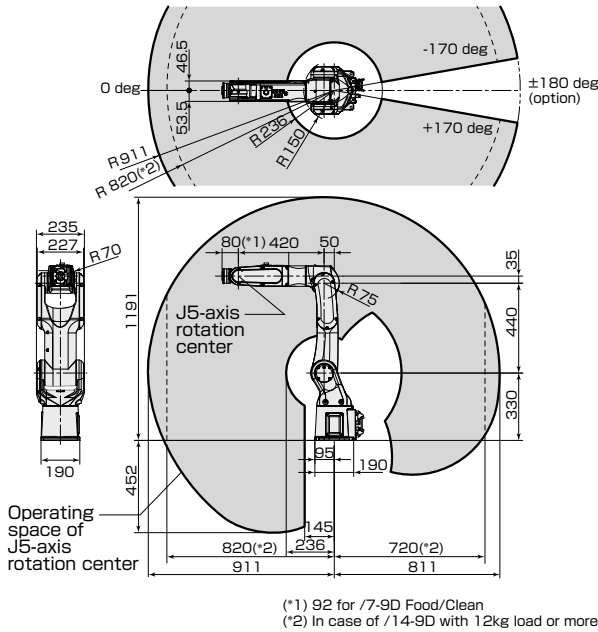
LR Mate/4-6D,
/4-6D Entry



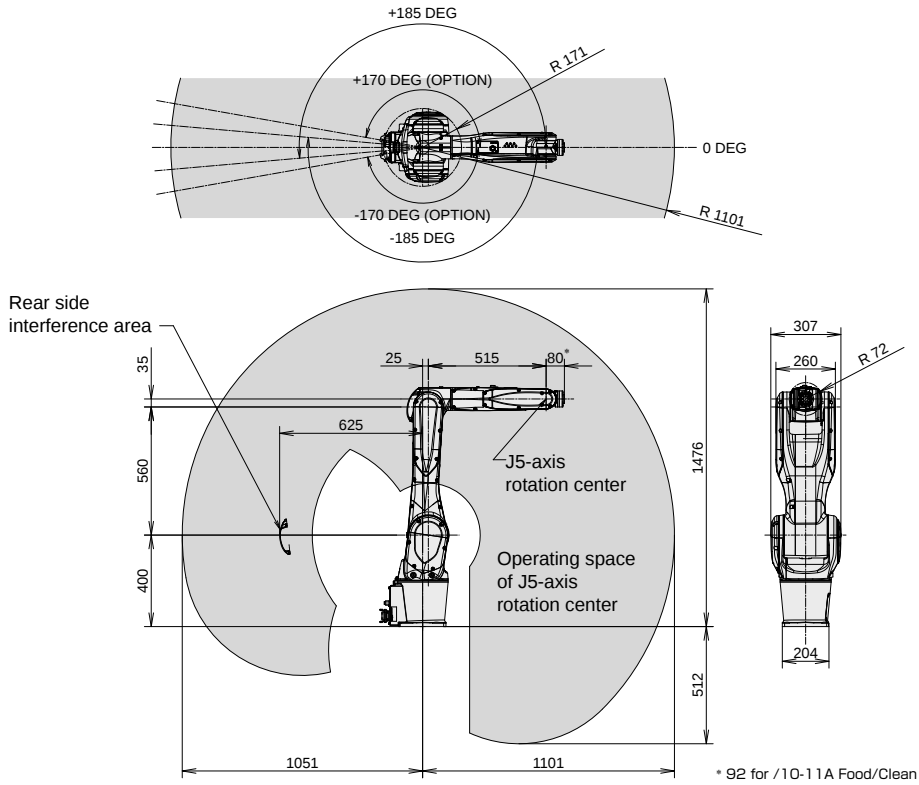
LR Mate/7-7D,
/7-7D Food/Clean,
/7-7D Wash, /14-7D,
/7-7D-5X



LR Mate/7-9D,
/7-9D Food/Clean,
/14-9D



LR Mate/10-11A,
/10-11A Food/Clean



Specifications

Model		LR Mate/4-6D	LR Mate/4-6D Entry	LR Mate/7-7D LR Mate/7-7D Food/Clean	LR Mate/7-7D Wash	LR Mate/14-7D	LR Mate/7-7D-5X	LR Mate/7-9D LR Mate/7-9D Food/Clean	LR Mate/14-9D
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)					5 axes (J1, J2, J3, J4, J5)	6 axes (J1, J2, J3, J4, J5, J6)	
Reach		550 mm		717 mm				911 mm	911 mm (load capacity <12 kg) 820 mm (load capacity ≥12 kg)
Installation Note 1)		Floor, Upside-down, Angle mount	Floor, Upside-down	Floor, Upside-down, Angle mount					
Motion range (Maximum speed) Note 2)	J1 axis	340°/360° (option) (460°/s) 5.93 rad/6.28 rad (option) (8.03 rad/s)	340° (460°/s) 5.93 rad (8.03 rad/s)	340°/360° (option) (450°/s) 5.93 rad/6.28 rad (option) (7.85 rad/s)		340°/360° (option) (290°/s) 5.93 rad/6.28 rad (option) (5.06 rad/s) Note 3)	340°/360° (option) (450°/s) 5.93 rad/6.28 rad (option) (7.85 rad/s)	340°/360° (option) (370°/s) 5.93 rad/6.28 rad (option) (6.46 rad/s)	340°/360° (option) (120°/s) 5.93 rad/6.28 rad (option) (2.09 rad/s) Note 4)
	J2 axis	230° (460°/s) 4.01 rad (8.03 rad/s)	230° (360°/s) 4.01 rad (6.28 rad/s)	245° (380°/s) 4.28 rad (6.63 rad/s)		245° (230°/s) 4.28 rad (4.01 rad/s) Note 3)	245° (380°/s) 4.28 rad (6.63 rad/s)	245° (310°/s) 4.28 rad (5.41 rad/s)	245° (61°/s) 4.28 rad (1.06 rad/s) Note 4)
	J3 axis	402° (520°/s) 7.02 rad (9.08 rad/s)		420° (520°/s) 7.33 rad (9.08 rad/s)	420° (410°/s) 7.33 rad (7.16 rad/s)	420° (211°/s) 7.33 rad (3.68 rad/s) Note 3)	420° (520°/s) 7.33 rad (9.08 rad/s)	430° (410°/s) 7.50 rad (7.16 rad/s)	430° (58°/s) 7.50 rad (1.01 rad/s) Note 4)
	J4 axis	380° (560°/s) 6.63 rad (9.77 rad/s)		380° (550°/s) 6.63 rad (9.60 rad/s)		380° (400°/s) 6.63 rad (6.98 rad/s) Note 3)	250° (545°/s) 4.36 rad (9.51 rad/s)	380° (550°/s) 6.63 rad (9.60 rad/s)	380° (400°/s) 6.63 rad (6.98 rad/s) Note 4)
	J5 axis	240° (560°/s) 4.19 rad (9.77 rad/s)		250° (545°/s) 4.36 rad (9.51 rad/s)		250° (240°/s) 4.36 rad (4.19 rad/s) Note 3)	720° (1500°/s) 12.57 rad (26.18 rad/s)	250° (545°/s) 4.36 rad (9.51 rad/s)	250° (240°/s) 4.36 rad (4.19 rad/s) Note 4)
	J6 axis	720° (900°/s) 12.57 rad (15.71 rad/s)		720° (1000°/s) 12.57 rad (17.45 rad/s)		720° (400°/s) 12.57 rad (6.98 rad/s) Note 3)		720° (1000°/s) 12.57 rad (17.45 rad/s)	720° (400°/s) 12.57 rad (6.98 rad/s) Note 4)
Max. load capacity at wrist		4 kg		7 kg		14 kg		7 kg	
Allowable load moment at wrist	J4 axis	8.86 N·m		16.6 N·m		31.0 N·m		16.6 N·m	
	J5 axis	8.86 N·m		16.6 N·m		31.0 N·m		16.6 N·m	
	J6 axis	4.90 N·m		9.4 N·m		13.4 N·m		9.4 N·m	
Allowable load inertia at wrist	J4 axis	0.20 kg·m ²		0.47 kg·m ²		0.66 kg·m ²		0.47 kg·m ²	
	J5 axis	0.20 kg·m ²		0.47 kg·m ²		0.66 kg·m ²		0.47 kg·m ²	
	J6 axis	0.067 kg·m ²		0.15 kg·m ²		0.30 kg·m ²		0.15 kg·m ²	
Repeatability Note 5)		± 0.01 mm							
Mass Note 6)		20 kg		25 kg	27 kg	25 kg	24 kg	27 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity Note 8) : Normally 75 %RH or less (No condensation allowed.) Short term (within one month) Max. 95 %RH or less (No condensation allowed.) Vibration acceleration : 4.9m/s ² (0.5G) or less							

Note 1) Motion range may be restricted depending on payload in case of angle mount.
Note 2) During short distance motions, the axis speed may not reach the maximum value stated.
Note 3) Maximum operating speed of LR Mate/14-7D is limited under 1000mm/s.
Note 4) Maximum operating speed of LR Mate/14-9D is limited under 500mm/s.
Note 5) Compliant with ISO 9283.
Note 6) Without controller.
Note 7) Cleanliness of the clean type (/7-7D Food/Clean, /7-9D Food/Clean) is class 10 (ISO class 4) with white paint, antirust surface and food grade grease.
Note 8) Except for LR Mate/7-7D Wash.
Note 9) Conform to IP50 for LR Mate/4-6D Entry.

Operating space

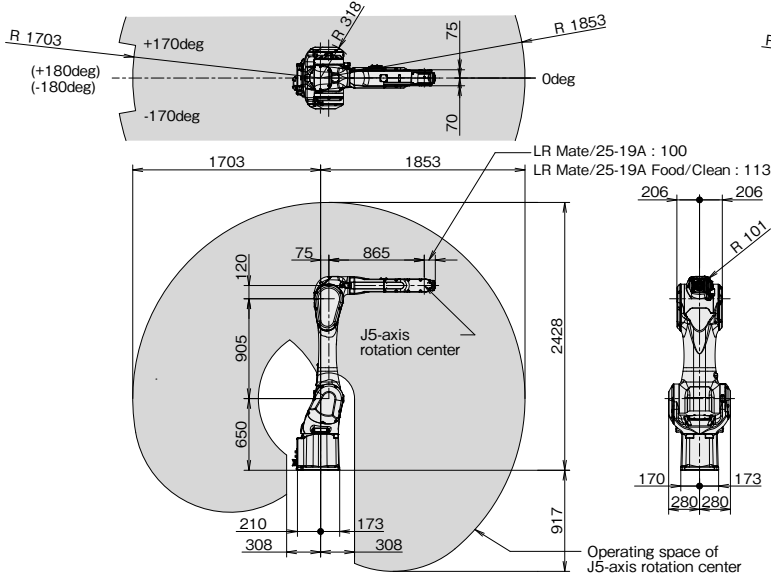
Specifications

Model		LR Mate/10-11A LR Mate/10-11A Food/Clean			
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)			
Reach		1101 mm			
Installation Note 1)		Floor, Upside-down, Angle mount			
Motion range (Maximum Speed) Note 2)	J1 axis rotation	370° (300°/s)	6.46 rad	(5.24 rad/s)	
	J2 axis rotation	235° (230°/s)	4.10 rad	(4.01 rad/s)	
	J3 axis rotation	421° (340°/s)	7.35 rad	(5.93 rad/s)	
	J4 axis wrist rotation	380° (500°/s)	6.63 rad	(8.73 rad/s)	
	J5 axis wrist swing	250° (400°/s)	4.36 rad	(6.98 rad/s)	
	J6 axis wrist rotation	720° (800°/s)	12.57 rad	(13.96 rad/s)	
Max. load capacity at wrist		10 kg			
Allowable load moment at wrist	J4 axis	21 N·m	2.14 kgf·m		
	J5 axis	21 N·m	2.14 kgf·m		
	J6 axis	10 N·m	1.02 kgf·m		
Allowable load inertia at wrist	J4 axis	0.77 kg·m ²	7.86 kgf·cm·s ²		
	J5 axis	0.77 kg·m ²	7.86 kgf·cm·s ²		
	J6 axis	0.28 kg·m ²	2.86 kgf·cm·s ²		
Repeatability Note 3)		± 0.01 mm			
Mass Note 4)		46 kg			
Installation environment		Ambient temperature : 0 to 45°C			
		Ambient humidity : Normally 75 %RH or less (No condensation allowed.) Short term (within one month) Max. 95 %RH or less (No condensation allowed.)			
		Vibration acceleration : 4.9 m/s ² (0.5G) or less			

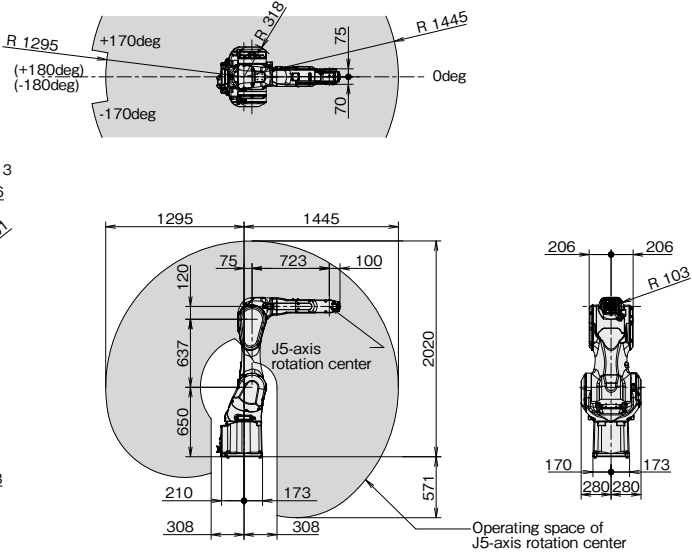
Note 1) Motion range may be restricted in case of angle mount.
Note 2) During short distance motions, the axis speed may not reach the maximum value stated.
Note 3) Compliant with ISO 9283.
Note 4) Without controller.
Note 5) Cleanliness of the clean type (/10-11A Food/Clean) is class 10 (ISO class 4) with white paint, antirust surface and food grade grease.

Operating space

LR Mate/25-19A,
/25-19A Food/Clean



LR Mate/35-14A



Specifications

Model		LR Mate/25-19A, /25-19A Food/Clean		LR Mate/35-14A	
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)			
Reach		1853 mm		1445 mm	
Installation Note 1)		Floor, Upside-down, Angle			
Motion range (Maximum speed) Note 2)	J1 axis rotation	340°/360° (option) (205°/s) 5.93 rad / 6.28 rad (option) (3.58 rad/s)			
	J2 axis rotation	240° (205°/s) 4.19 rad (3.58 rad/s)			
	J3 axis rotation	447.8° (260°/s) 7.82 rad (4.54 rad/s)	413.7° (260°/s) 7.22 rad (4.54 rad/s)		
	J4 axis wrist rotation	400° (415°/s) 6.98 rad (7.24 rad/s)			
	J5 axis wrist swing	290° (415°/s) 5.06 rad (7.24 rad/s)	260° (415°/s) 4.54 rad (7.24 rad/s)		
	J6 axis wrist rotation	540° (880°/s) 9.42 rad (15.36 rad/s)			
Max. load capacity at wrist		25 kg		35 kg	
Allowable load moment at wrist	J4 axis	51.0 N·m			
	J5 axis	51.0 N·m			
	J6 axis	31.0 N·m			
Allowable load inertia at wrist	J4 axis	2.20 kg·m ²			
	J5 axis	2.20 kg·m ²			
	J6 axis	1.20 kg·m ²			
Repeatability Note 3)		± 0.02 mm			
Mass Note 4)		210 kg		205 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75 %RH or less (No condensation allowed.) Short term (within one month) Max. 95 %RH or less (No condensation allowed.) Vibration acceleration : 4.9 m/s ² (0.5G) or less			

Note 1) Motion range may be restricted in case of angle mount.
Note 2) During short distance motions, the axis speed may not reach the maximum value stated.
Note 3) Compliant with ISO 9283.
Note 4) Without controller.
Note 5) Cleanliness of the clean type (/25-19A Food/Clean) is class 10 (ISO class 4) with white paint, antirust surface and food grade grease.

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