

## FANUC Robot ARC Mate



### FEATURES

FANUC Robot ARC Mate is the cables integrated arc welding robot with an enhanced dress-out ability.

- The robot is available to meet a variety of operating spaces.
- The unique gear drive mechanism realizes the slim arm of the torch cable integrated robot.
- Welding cable utilities backside the wire feeder can be integrated in the enlarged J1 hollow part. It makes system setup easy.
- Not only the torch cable but also the sensor cable can be integrated in the J3 arm due to the enlarged J4 and J6 hollow parts. The wire feeder can be compactly mounted backside of the J3 arm.
- Higher rigidity of the arm provides high speed and high accuracy of the robot motion. It can enhance the productivity of the system.
- Off-line teaching by ROBOGUIDE (Option) reduces touch-up cost.
- Various intelligent functions with *i*RVision (integrated robot vision) and coordinated motion with the positioner are available.
- A compact type (ARC Mate/7-9D), which allows installation in narrow places, is also available.

### Application Examples



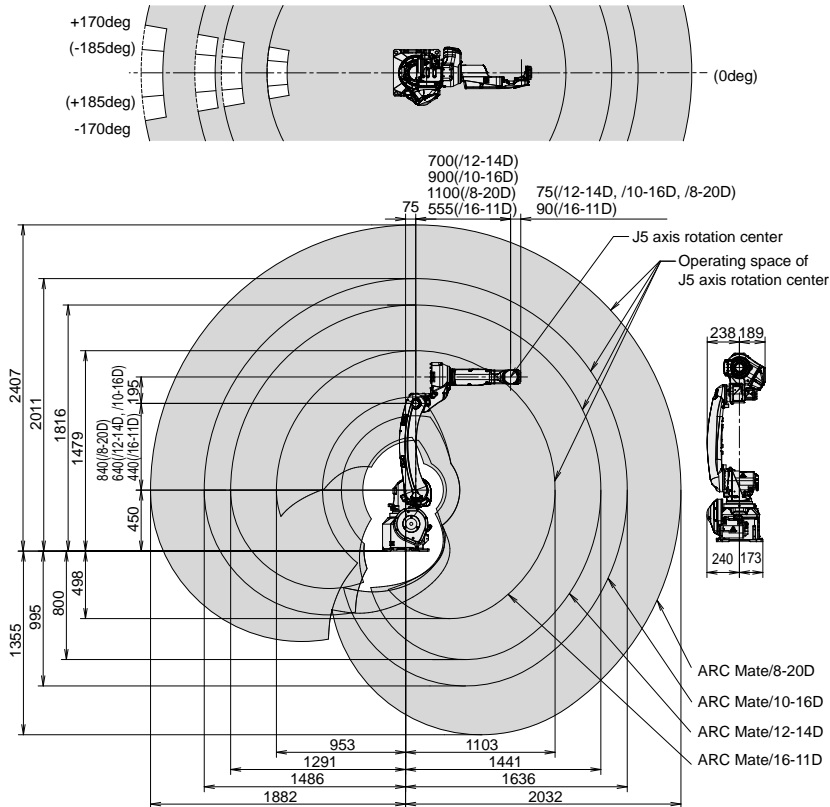
Automotive part welding



Stainless part welding

## Operating space

# ARC Mate/16-11D, /12-14D, /10-16D, 8-20D



## Specifications

Model	ARC Mate/16-11D	ARC Mate/12-14D	ARC Mate/10-16D	ARC Mate/8-20D
Type	6 axes (J1, J2, J3, J4, J5, J6)			
Reach	1103 mm	1441 mm	1636 mm	2032 mm
Installation Note 1)	Floor, Upside-down, Angle mount			
Motion range (Maximum speed) Note 2), 3), 4), 5)	J1 axis	370°(290°/s) 6.46 rad(5.06 rad/s)	370°(260°/s) 6.46 rad(4.54 rad/s)	370°(210°/s) 6.46 rad(3.67 rad/s)
	J2 axis	235°(270°/s) 4.10 rad(4.71 rad/s)	235°(240°/s) 4.10 rad(4.19 rad/s)	235°(210°/s) 4.10 rad(3.67 rad/s)
	J3 axis	455°(270°/s) 7.94 rad(4.71 rad/s)	455°(260°/s) 7.94 rad(4.54 rad/s)	455°(220°/s) 7.94 rad(3.84 rad/s)
	J4 axis		380°(430°/s) 6.63 rad(7.50 rad/s)	
	J5 axis		360°(450°/s) 6.28 rad(7.85 rad/s)	
	J6 axis	900°(730°/s) 15.71 rad(12.74 rad/s)		900°(720°/s) 15.71 rad(12.57 rad/s)
Max load capacity at wrist	16 kg	12 kg	10 kg	8 kg
Allowable load moment at wrist	J4 axis	26.0 N·m		22.0 N·m
	J5 axis	26.0 N·m		22.0 N·m
	J6 axis	11.0 N·m		9.8 N·m
Allowable load inertia at wrist	J4 axis	0.90 kg·m <sup>2</sup>		0.65 kg·m <sup>2</sup>
	J5 axis	0.90 kg·m <sup>2</sup>		0.63 kg·m <sup>2</sup>
	J6 axis	0.30 kg·m <sup>2</sup>		0.17 kg·m <sup>2</sup>
Repeatability Note 6)	± 0.02 mm		± 0.03 mm	
Mass Note 7)	145 kg		150 kg	180 kg
Installation environment	Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within 1 month) 95%RH or less (No condensation allowed.) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less			

Note 1) Angle mount is not supported for 4 brake type of ARC Mate/12-14D.

Note 2) In case of equipping mechanical stopper, motion range of J1 axis is restricted to 340° (5.93 rad).

Note 3) In case of angle mounting, J1 and J2 axis motion range are restricted.

Note 4) During short distance motions, the axis speed may not reach the maximum value stated.

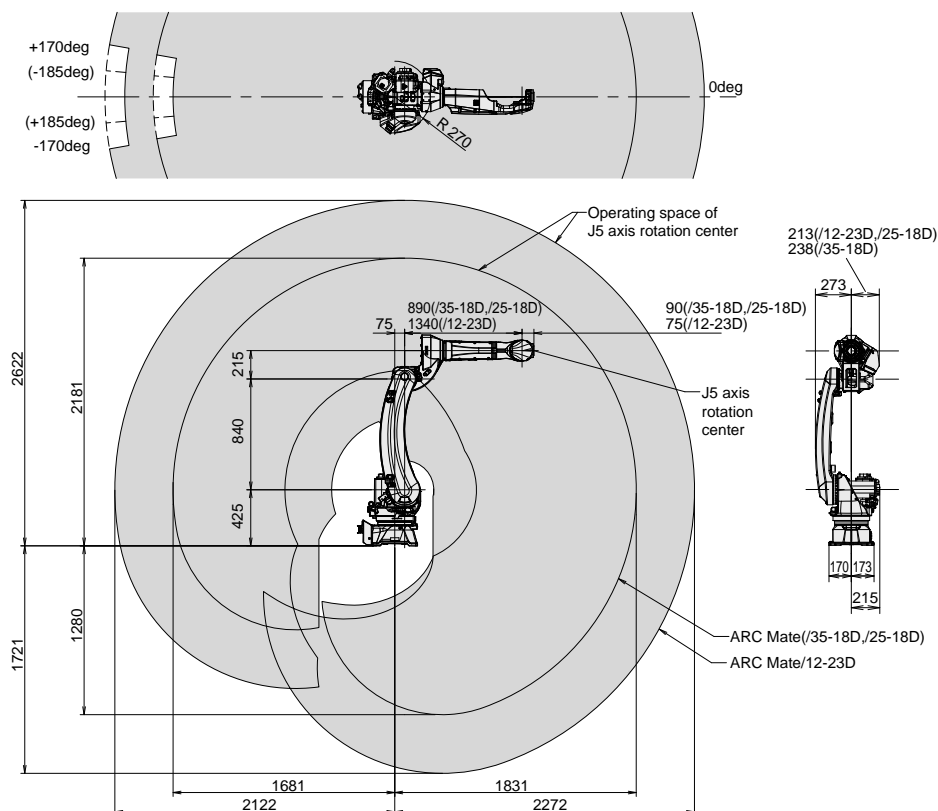
Note 5) To prevent the interference of the robot main body and the arm, the robot may not reach the upper limit/lower limit of the motion range depending on the posture.

Note 6) Compliant with ISO9283.

Note 7) Without controller.

## Operating space

### ARC Mate/25-18D, /12-23D, /35-18D



## Specifications

Model		ARC Mate/25-18D	ARC Mate/35-18D	ARC Mate/12-23D
Type		6 axes(J1, J2, J3, J4, J5, J6)		
Reach		1831 mm		
Installation		Floor, Upside-down, Angle mount		
Motion range (Maximum speed) Note 1), 2), 3), 4)	J1 axis	370°(210°/s) 6.46 rad(3.67 rad/s)	370°(180°/s) 6.46 rad(3.14 rad/s)	370°(210°/s) 6.46 rad(3.67 rad/s)
	J2 axis	260°(210°/s) 4.54 rad(3.67 rad/s)	260°(180°/s) 4.54 rad(3.14 rad/s)	260°(210°/s) 4.54 rad(3.67 rad/s)
	J3 axis	458°(265°/s) 8.00 rad(4.63 rad/s)	458°(200°/s) 8.00 rad(3.49 rad/s)	458°(265°/s) 8.00 rad(4.63 rad/s)
	J4 axis	400°(420°/s) 6.98 rad(7.33 rad/s)	400°(350°/s) 6.98 rad(6.11 rad/s)	400°(420°/s) 6.98 rad(7.33 rad/s)
	J5 axis	360°(420°/s) 6.28 rad(7.33 rad/s)	360°(350°/s) 6.28 rad(6.11 rad/s)	360°(450°/s) 6.28 rad(7.85 rad/s)
	J6 axis	900°(720°/s) 15.71 rad(12.57 rad/s)	900°(400°/s) 15.71 rad(6.98 rad/s)	900°(720°/s) 15.71 rad(12.57 rad/s)
Max load capacity at wrist		25 kg	35 kg	12 kg
Allowable load moment at wrist	J4 axis	52.0 N·m	110.0 N·m	22.0 N·m
	J5 axis	52.0 N·m	110.0 N·m	22.0 N·m
	J6 axis	32.0 N·m	60.0 N·m	9.8 N·m
Allowable load inertia at wrist	J4 axis	2.40 kg·m <sup>2</sup>	4.00 kg·m <sup>2</sup>	0.65 kg·m <sup>2</sup>
	J5 axis	2.40 kg·m <sup>2</sup>	4.00 kg·m <sup>2</sup>	0.65 kg·m <sup>2</sup>
	J6 axis	1.20 kg·m <sup>2</sup>	1.50 kg·m <sup>2</sup>	0.17 kg·m <sup>2</sup>
Repeatability Note 5)		± 0.02 mm	± 0.03 mm	
Mass Note 6)		250 kg		
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within 1 month) 95%RH or less (No condensation allowed.) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less		

Note 1) In case of equipping mechanical stopper, motion range of J1 axis is restricted to 340° (5.93 rad).

Note 2) In case of angle mounting, J1 and J2 axis motion range are restricted.

Note 3) During short distance motions, the axis speed may not reach the maximum value stated.

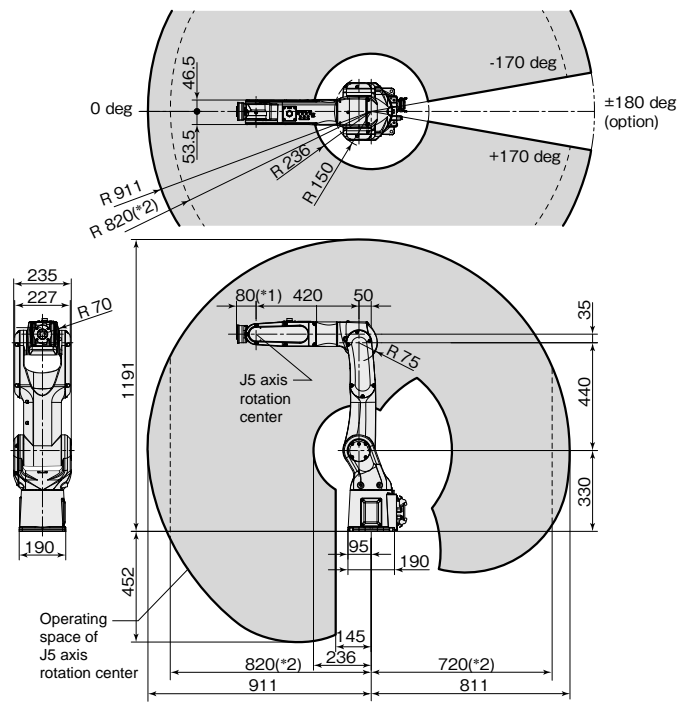
Note 4) To prevent the interference of the robot main body and the arm, the robot may not reach the upper limit/lower limit of the motion range depending on the posture.

Note 5) Compliant with ISO9283.

Note 6) Without controller.

# Operating space

## ARC Mate/7-9D



## Specifications

Model		ARC Mate/7-9D
Type		6 axes
Reach		911 mm
Installation		Floor, Upside-down, Angle mount
Motion range (Maximum speed) Note 1), 2), 3)	J1 axis	340°/360°(option) (370°/s) 5.93 rad/6.28 rad (option)(6.46 rad/s)
	J2 axis	245°(310°/s) 4.28 rad (5.41 rad/s)
	J3 axis	430°(410°/s) 7.50 rad (7.16 rad/s)
	J4 axis	380°(550°/s) 6.63 rad (9.60 rad/s)
	J5 axis	250°(545°/s) 4.36 rad (9.51 rad/s)
	J6 axis	720°(1000°/s) 12.57 rad (17.45 rad/s)
Max load capacity at wrist		7 kg
Allowable load moment at wrist	J4 axis	16.6 N·m
	J5 axis	16.6 N·m
	J6 axis	9.4 N·m
Allowable load inertia at wrist	J4 axis	0.47 kg·m <sup>2</sup>
	J5 axis	0.47 kg·m <sup>2</sup>
	J6 axis	0.15 kg·m <sup>2</sup>
Repeatability Note 3)		± 0.01 mm
Mass Note 4)		27 kg
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within 1 month) 95%RH or less (No condensation allowed.) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less

Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Angle mounting needs J1 and J2 axis motion range restriction according with the payload.

Note 3) Compliant with ISO9283.

Note 4) Without controller.

Note 5) The liquids that deteriorate the sealing members, such as organic solvents, acids, alkalis, and chloric coolants, must not be used.

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