

# FANUC Robot ARC Mate 100iD

# FANUC Robot ARC Mate 120iD

## FEATURES

FANUC Robot ARC Mate 100iD / 120iD 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 tube. 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 tubes. 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 vision) and coordinated motion with the positioner are available.



## Application Examples



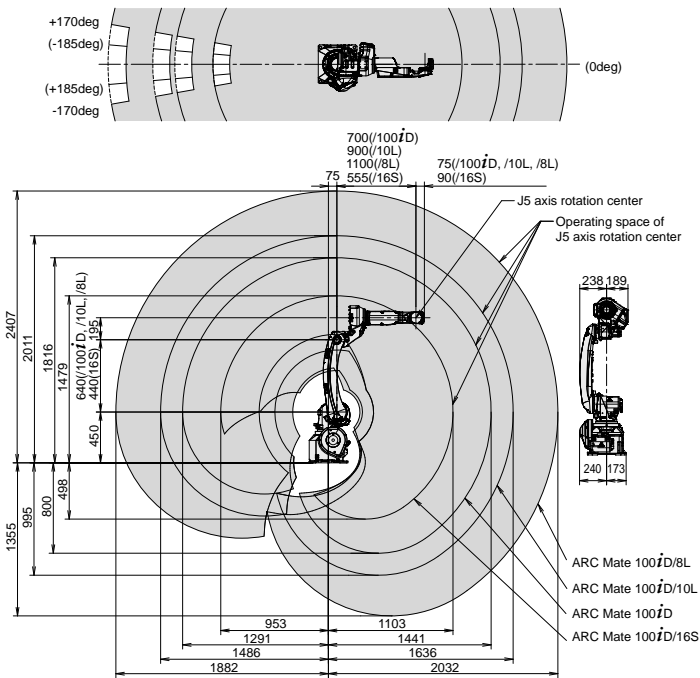
Automotive part welding



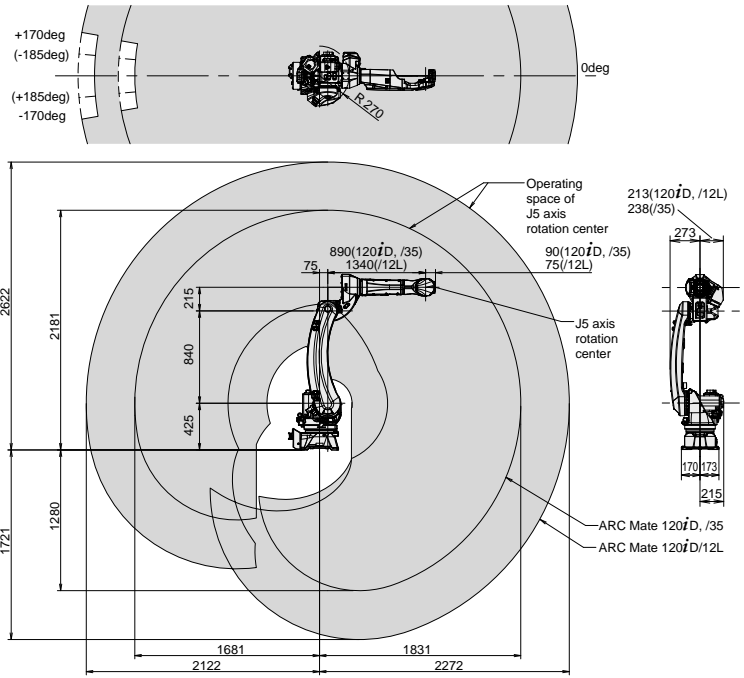
Stainless part welding

# Operating space

## ARC Mate 100iD/16S, 100iD, /10L, /8L



## ARC Mate 120iD, /35, /12L



# Specifications

| Model  | ARC Mate 100iD/16S  | ARC Mate 100iD                           | ARC Mate 100iD/10L                       | ARC Mate 100iD/8L                      | ARC Mate 120iD                         | ARC Mate 120iD/35                       | ARC Mate 120iD/12L                       |
|--|---|--|--|--|--|---|--|
| Type   | 6 axes (J1, J2, J3, J4, J5, J6)   |  |  |  |  |   |  |
| Reach  | 1103 mm   | 1441 mm                                  | 1636 mm                                  | 2032 mm                                | 1831 mm                                | 2272 mm                                 |  |
| Installation Note 1)                         | Floor, Upside-down, Angle mount   |  |  |  |  |   |  |
| Motion range (Maximum speed) Note 2), 3), 4) | J1 axis   | 370° (290°/s)<br>6.46 rad (5.06 rad/s)   | 370° (260°/s)<br>6.46 rad (4.54 rad/s)   | 370° (210°/s)<br>6.46 rad (3.67 rad/s) |  | 370° (180°/s)<br>6.46 rad (3.14 rad/s)  | 370° (210°/s)<br>6.46 rad (3.67 rad/s)   |
|  | J2 axis   | 235° (270°/s)<br>4.10 rad (4.71 rad/s)   | 235° (240°/s)<br>4.10 rad (4.19 rad/s)   | 235° (210°/s)<br>4.10 rad (3.67 rad/s) | 260° (210°/s)<br>4.54 rad (3.67 rad/s) | 260° (180°/s)<br>4.54 rad (3.14 rad/s)  | 260° (210°/s)<br>4.54 rad (3.67 rad/s)   |
|  | J3 axis   | 455° (270°/s)<br>7.94 rad (4.71 rad/s)   | 455° (260°/s)<br>7.94 rad (4.54 rad/s)   | 455° (220°/s)<br>7.94 rad (3.84 rad/s) | 458° (265°/s)<br>8.00 rad (4.63 rad/s) | 458° (200°/s)<br>8.00 rad (3.49 rad/s)  | 458° (265°/s)<br>8.00 rad (4.63 rad/s)   |
|  | J4 axis   | 380° (430°/s)<br>6.63 rad (7.50 rad/s)   |  |  | 400° (420°/s)<br>6.98 rad (7.33 rad/s) | 400° (350°/s)<br>6.98 rad (7.33 rad/s)  | 400° (420°/s)<br>6.98 rad (7.33 rad/s)   |
|  | J5 axis   | 360° (450°/s)<br>6.28 rad (7.85 rad/s)   |  |  | 360° (420°/s)<br>6.28 rad (7.33 rad/s) | 360° (350°/s)<br>6.28 rad (6.11 rad/s)  | 360° (450°/s)<br>6.28 rad (7.85 rad/s)   |
|  | J6 axis   | 900° (730°/s)<br>15.71 rad (12.74 rad/s) | 900° (720°/s)<br>15.71 rad (12.57 rad/s) |  |  | 900° (400°/s)<br>15.71 rad (6.98 rad/s) | 900° (720°/s)<br>15.71 rad (12.57 rad/s) |
| Max load capacity at wrist                   | 16 kg   | 12 kg                                    | 10 kg                                    | 8 kg                                   | 25 kg                                  | 35 kg                                   | 12 kg                                    |
| Allowable load moment at wrist               | J4 axis   | 26.0 N·m                                 | 22.0 N·m                                 | 16.1 N·m                               | 52.0 N·m                               | 110.0 N·m                               | 22.0 N·m                                 |
|  | J5 axis   | 26.0 N·m                                 | 22.0 N·m                                 | 16.1 N·m                               | 52.0 N·m                               | 110.0 N·m                               | 22.0 N·m                                 |
|  | J6 axis   | 11.0 N·m                                 | 9.8 N·m                                  | 5.9 N·m                                | 32.0 N·m                               | 60.0 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>                   | 0.63 kg·m <sup>2</sup>                 | 2.40 kg·m <sup>2</sup>                 | 4.00 kg·m <sup>2</sup>                  | 0.65 kg·m <sup>2</sup>                   |
|  | J5 axis   | 0.90 kg·m <sup>2</sup>                   | 0.65 kg·m <sup>2</sup>                   | 0.63 kg·m <sup>2</sup>                 | 2.40 kg·m <sup>2</sup>                 | 4.00 kg·m <sup>2</sup>                  | 0.65 kg·m <sup>2</sup>                   |
|  | J6 axis   | 0.30 kg·m <sup>2</sup>                   | 0.17 kg·m <sup>2</sup>                   | 0.061 kg·m <sup>2</sup>                | 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                                |  | ± 0.02 mm                              | ± 0.03 mm                               |  |
| Mass Note 6)                                 | 145 kg  |  | 150 kg                                   | 180 kg                                 | 250 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 <sup>2</sup> (0.5G) or less   |  |  |  |  |   |  |

Note 1) Angle mount is not supported for 4 brake type of ARC Mate 100iD.

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) Compliant with ISO9283.

Note 6) Without controller.

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