

Intelligent Arc Welding Robot

FANUC Robot ARC Mate 100iC FANUC Robot ARC Mate 120iC



Features

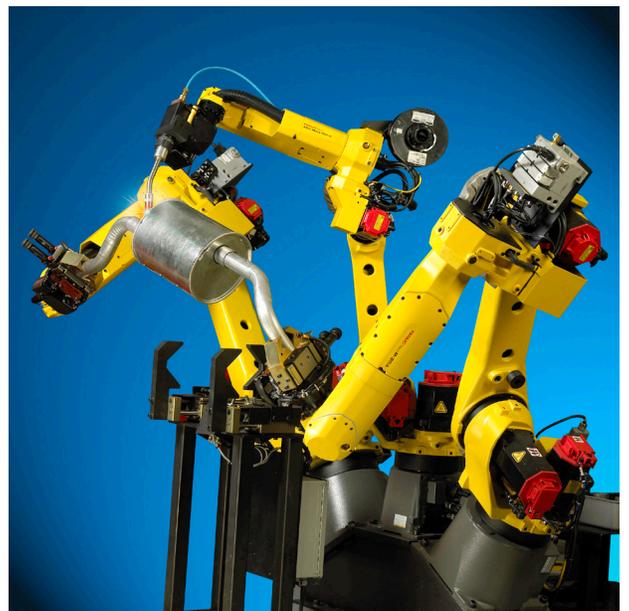
The FANUC ARC Mate 100iC / 120iC series robot is specifically designed for arc welding applications. It features a hollow wrist for torch cable integration and highest motion performance for its class.

- A rigid arm combined with advanced servo technology enable maximum speed and acceleration performance. This reduces cycle time by up to 15%.
- A unique wrist axis drive mechanism encased within the slimmest wrist available in an ARC robot allows for operation in narrow spaces and high density installation.
- Smooth torch cable routing and easy maintenance through a hollow forearm provides excellent cable management with stable wire feeding for high performance welding.
- The robot can integrate weld power cables in addition to wire feeder control cables and assist gas hoses.
- Enhanced wrist load capacity allows support of various torch tools such as sensor units, Servo Torch and tandem torch.
- Various optional intelligent functions are available, such as iRVision, collision detection and coordinated motion.

Application system



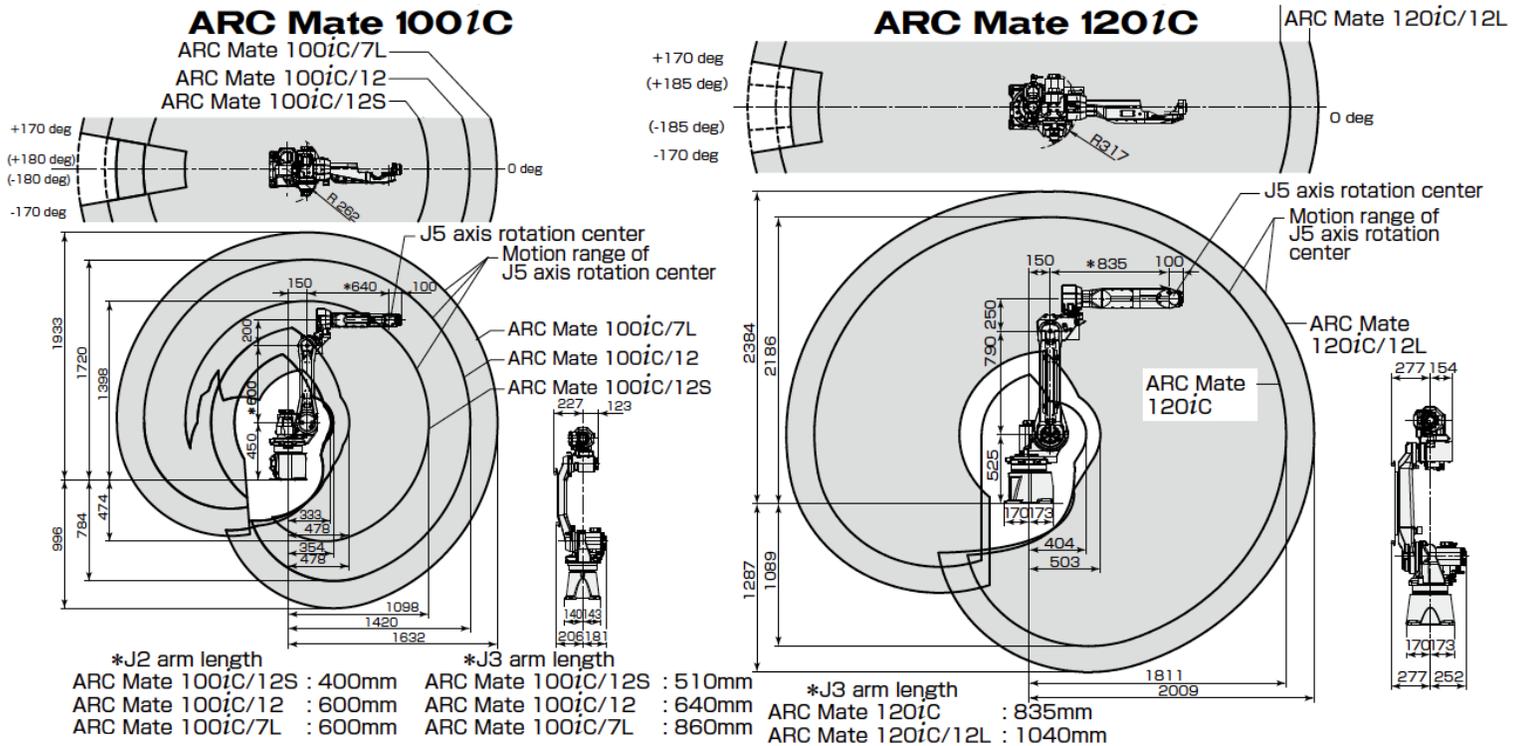
ARC Mate 120iC with coordinated motion on kart frame.



Triple ARM coordinated motion welding exhaust system.

FANUC Robot ARC Mate 100iC/120iC

Operating Space



Specifications

| Item | Specifications | | | | | |
|--|--|--|--|--|--|---------------------------------------|
| | ARC Mate 100iC/12S | ARC Mate 100iC/12 | ARC Mate 100iC/7L | ARC Mate 120iC | ARC Mate 120iC/12L | |
| Type | 6 axes (J1, J2, J3, J4, J5, J6) | | | | | |
| Reach | 1098mm | 1420mm | 1632mm | 1811mm | 2009mm | |
| Installation | Floor, Upside-down, Angle mount | | | | | |
| 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) | 340°/370° (option) (195°/s) 5.93 rad/6.45 rad (option) (3.40 rad/s) | 340°/370° (option) (200°/s) 5.93 rad/6.45 rad (option) (3.49 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) | 260°(175°/s) 4.54 rad(3.05 rad/s) | 260°(175°/s) 4.54 rad(3.05 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) | 458°(180°/s) 8.00 rad(3.14 rad/s) | 460°(190°/s) 8.04 rad(3.32 rad/s) |
| | J4 axis wrist rotation | 380°(430°/s) 6.63 rad(7.50 rad/s) | 380°(430°/s) 6.63 rad(7.50 rad/s) | 400°(360°/s) 6.98 rad(6.28 rad/s) | 400°(360°/s) 6.98 rad(6.28 rad/s) | 400°(430°/s) 6.98 rad(7.50 rad/s) |
| | J5 axis wrist swing | 380°(430°/s) 6.63 rad(7.50 rad/s) | 380°(430°/s) 6.63 rad(7.50 rad/s) | 360°(360°/s) 6.28 rad(6.28 rad/s) | 360°(360°/s) 6.28 rad(6.28 rad/s) | 360°(430°/s) 6.28 rad(7.50 rad/s) |
| | J6 axis wrist rotation | 720°(630°/s) 12.57 rad(11.0 rad/s) | 720°(630°/s) 12.57 rad(11.0 rad/s) | 900°(550°/s) 15.71 rad(9.60 rad/s) | 900°(550°/s) 15.71 rad(9.60 rad/s) | 900°(630°/s) 15.71 rad(11.0 rad/s) |
| Maximum load capacity at wrist | 12 kg | | 7 kg | 20 kg | 12 kg | |
| Allowable load moment at wrist | J4 axis | 22.0 N·m | 15.7 N·m | 44.0 N·m | 22.0 N·m | |
| | J5 axis | 22.0 N·m | 10.1 N·m | 44.0 N·m | 22.0 N·m | |
| | J6 axis | 9.8 N·m | 5.9 N·m | 22.0 N·m | 9.8 N·m | |
| Allowable load inertia at wrist | J4 axis | 0.65 kg·m ² | 0.63 kg·m ² | 1.04 kg·m ² | 0.65 kg·m ² | |
| | J5 axis | 0.65 kg·m ² | 0.38 kg·m ² | 1.04 kg·m ² | 0.65 kg·m ² | |
| | J6 axis | 0.17 kg·m ² | 0.061 kg·m ² | 0.28 kg·m ² | 0.17 kg·m ² | |
| Repeatability | ± 0.05 mm | | ± 0.08 mm | | | |
| Mass (Note 3) | 130 kg | | 135 kg | 250 kg | | |
| Installation environment | Ambient temperature : 0 ~ 45°C Ambient humidity : Normal 75%RH or less (No dew not 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) Without controller

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