

# ARC Mate® 120iB & 120iB/10L

FANUC  
Robotics

## Basic Description

The ARC Mate 120iB series is a six-axis, modular construction, electric servo-driven family of robots designed for precise, high-speed welding and cutting. Based on their simple and reliable construction, the ARC Mate 120iB and ARC Mate 120iB/10L provide accurate and consistent path performance necessary for welding and cutting. The R-J3iB Controller and easy-to-use ArcTool software, standard with the ARC Mate series robots, provide reliable performance with high productivity.

## Benefits

- Robots feature highest motion speeds in class for maximum performance and productivity.
- The ARC Mate 120iB series offers extremely large work envelopes useful for large parts or complex tooling.
- Best in class reach versus stroke ratio.
- Compact yet flexible design maximizes reach capability within confined areas.
- Extremely fast wrist axes reduce aircut times, improving throughput.

## Features

- The wrist size has been reduced by 14%, enabling the robot to enter into smaller openings in the workspace.
- Designed with integral utilities, including gas/air lines and a wire feed motor cable routed inside the robot arm, these robots improve reliability, reduce setup time and eliminate external cabling requirements.
- TurboMove™ advanced servo control features allow quick and smooth point-to-point motion, which increases arc on-time and throughput.

Note: ARC Mate is a registered trademark of FANUC LTD.



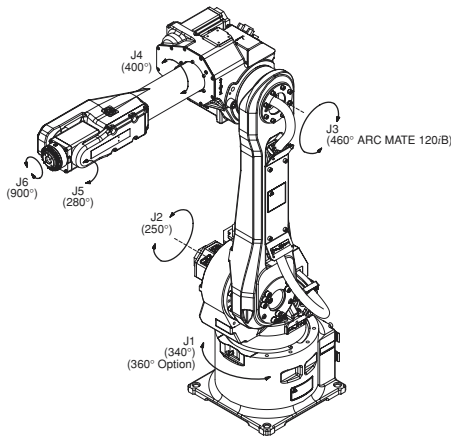
- Wire feed motor mounted directly to robot's upper arm shortens welding torch length, which improves wire feed reliability and arc start capability.
- "Plug and play" simplicity with Lincoln Electric's power sources.
- Compatible with all major brands of welding equipment.
- 20 kg load on faceplate for ARC Mate 120iB.
- 10 kg load on faceplate for ARC Mate 120iB/10L.
- Arc welding teach pendant with application-specific hard keys offers intuitive control over the process.
- Interfaces with most types of servo driven or indexing positioners.
- ARC Mate 120iB has 1667 mm reach and 1282 mm stroke.
- ARC Mate 120iB/10L has 1885 mm reach and 1426 mm stroke.
- Upright, inverted, wall or angle mounted with no changes to the mechanical unit.
- Serial link construction eliminates the "link arm" and provides greater flexibility and fewer moving parts.
- J3 flip-over capability provides large working envelope that is ideal for inverted applications.
- Sealed bearings and drives provide protection and improve reliability.
- RV reducer drivetrain with integral bearings provides rigidity and performance in a compact package.

## Options

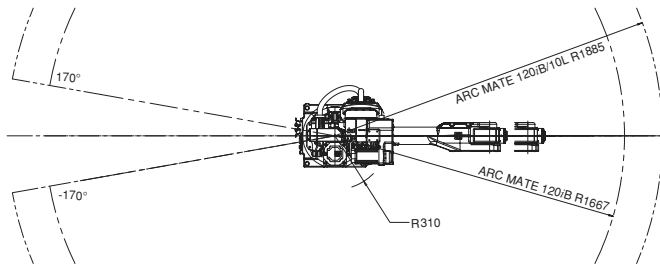
- EMI shielding kits for TIG (GTAW), plasma (PAW) and plasma cutting (PAC) allow operation in harsh EMI (electro-magnetic interference) environments.
- Additional process welding I/O integrates multi-channel welding equipment such as 4 channel TIG and 3 channel MIG (STT).
- Various robot connection cable lengths and optional track rated cables for flexible cabinet placement.
- J1 axis stroke modification kit.
- Auxiliary axis package for integration into welding positioners.
- Plug and play to standard welding positioners.

# ARC Mate 120iB & 120iB/10L Dimensions

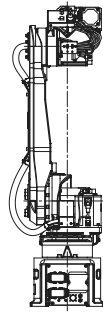
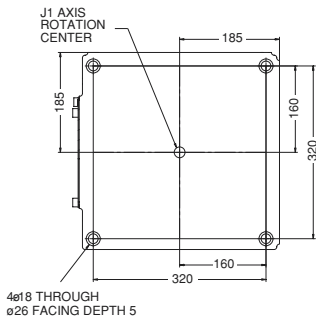
## Isometric



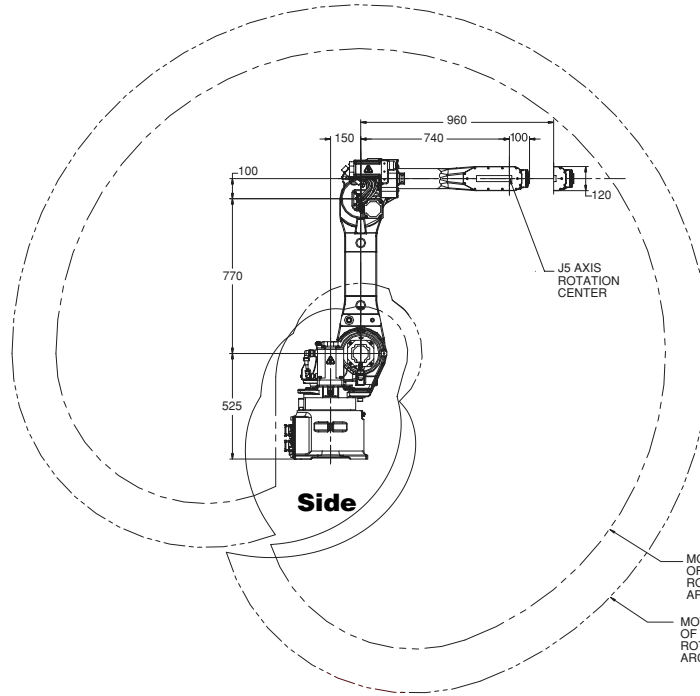
## Top



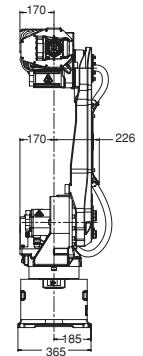
## Footprint



Back



Side



Front

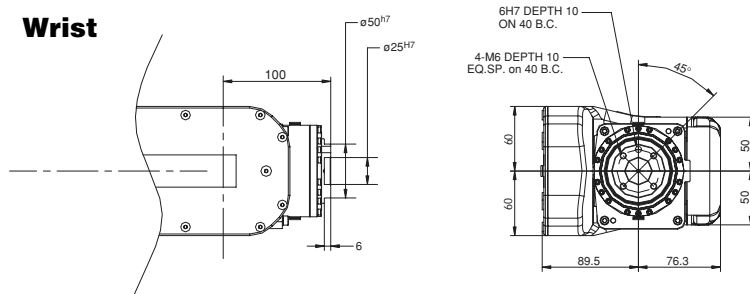
## ARC Mate 120iB & 120iB/10L Specifications



Items	AM120iB	AM120iB/10L
Axes	6	6
Payload (kg)	20	10
Reach (mm)	1667	1885
Repeatability (mm)	±0.08	±0.1
Interference radius (mm)	310	310
Motion range (degrees)	J1	340
	J2	250
	J3	460
	J4	400
	J5	280
	J6	900
Motion speed (degrees/sec.)	J1	165
	J2	165
	J3	175
	J4	350
	J5	340
	J6	520
Wrist moment (kgf-m)	J4	4.0
	J5	4.0
	J6	2.0
Wrist inertia (kgf-cm-s <sup>2</sup> )	J4	9.0
	J5	9.0
	J6	2.5
Mechanical brakes	All axes	All axes
Mechanical weight (kg)	220	225
Mounting method <sup>(1)</sup>	Floor, ceiling, angle and wall	
Installation environment	Temperature °C	
	0 to 45	
Humidity	Normally: 75% or less	
	Short term (within a month): 95% or less No condensation	
Vibration (m/s <sup>2</sup> )	4.9 or less	
Payload at axis 3 (kg)	20	12

Notes:  
(1) Motion range is de-rated for wall and angle mount.

## Wrist



Note: Dimensions shown in millimeters.



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