

# ARC Mate 120*i*/120*i*L

## Basic Description

Six-axis, modular construction, electric servo-driven robots designed for precise, high-speed welding and cutting. Based on their simple and reliable construction, the ARC Mate 120*i* and ARC Mate 120*i*L provide accurate and consistent path performance necessary for welding and cutting. The integrated R-J3 *i*-Controller and easy-to-use software, standard with the ARC Mate *i*-series robots, provide reliable performance with high productivity.

## Features

- 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.
- 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
- 16 kg load on faceplate for ARC Mate 120*i*, 10 kg load on faceplate for ARC Mate 120*i*L
- 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 120*i* has 1605mm (63 in) reach and 1073mm (42 in) stroke



- ARC Mate 120*i*L has 1813mm (71 in) reach and 1327mm (52 in) stroke
- Both models can be 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.
- Sealed bearings and drives provide protection and improve reliability.
- RV reducer drive train with integral bearings provide rigidity and performance in a compact package.
- Integrated controller reduces footprint and eliminates exposed connection cables.
- Cable routing through center of axis rotation improves reliability.

## Benefits

- Robots feature highest motion speeds in class for maximum performance and productivity.
- The ARC Mate 120*i*/*i*L offers extremely large work envelopes useful for large parts or complex tooling.

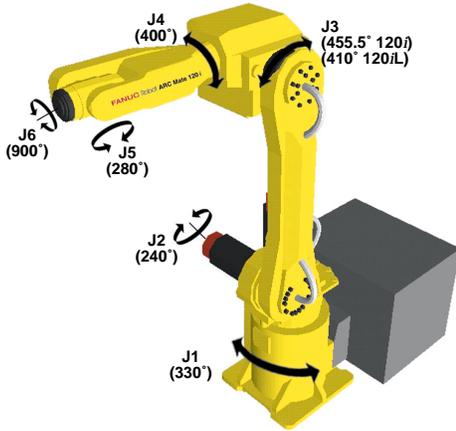
- Best in class reach versus stroke ratio
- Compact yet flexible design maximizes reach capability within confined areas.
- Extremely fast wrist axes reduce aircut times, improving throughput.

## Options

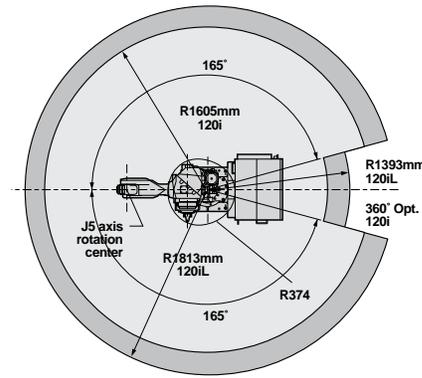
- EMI shielding kits for TIG (GTAW), plasma (PAW) and plasma cutting (PAC) allow operation in harsh EMI (electro-magnetic interference) environments.
- Additional process welding I/O integrates multi-channel welding equipment such as 4 channel TIG and 3 channel MIG (STT).
- Remote robot connection cable packages for *i*-cabinets and optional track rated cables
- J1 axis stroke modification kit
- Auxilliary axis package for integration into welding positioners
- Plug and play to AM-HS500 and AM-FW500 standard welding positioners

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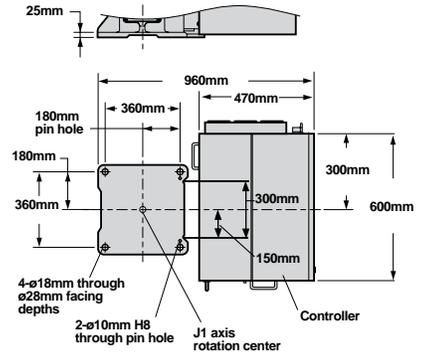
# ARC Mate 120i Isometric



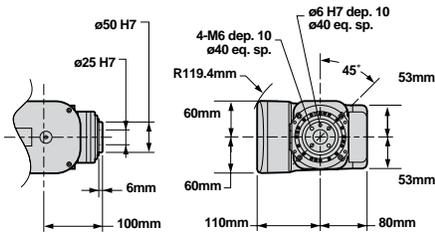
## Top



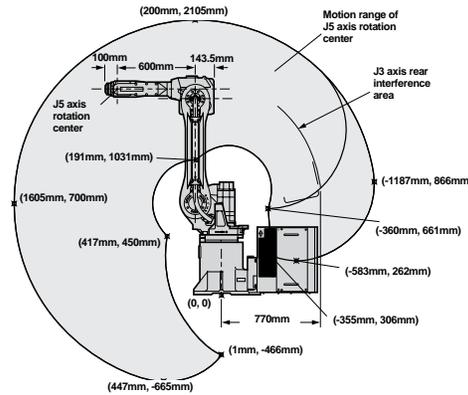
## Footprint (integrated)



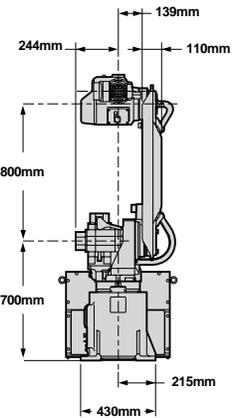
## Mounting Plate



## Side (120i)



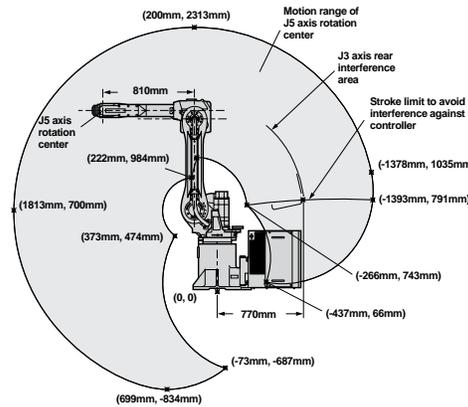
## Front



# ARC Mate 120i/iL Specifications

Items		Range	Speed
		AM120i/am120iL	
Motion range and speed	Axis 1	330°	140°/sec
	Axis 2	240°	140°/sec
	Axis 3	455.5°/410	140°/sec
	Axis 4	400°	330°/sec
	Axis 5	280°	330°/sec
	Axis 6	900°	450°/sec
Wrist load moments (kgf • m)		AM120i	AM120iL
	Axis 4	3.6 (35.1)	2.2 (22.0)
	Axis 5	3.2 (31.4)	2.0 (19.6)
Wrist load inertia (kgf • cm • s <sup>2</sup> )	Axis 4	8.7 (0.85)	5.3 (0.52)
	Axis 5	7.1 (0.70)	4.3 (0.42)
	Axis 6	2.0 (0.20)	1.2 (0.12)
Maximum load capacity, kg (lbs)	Wrist	16 (35.2)	10 (22.0)
	Axis 3	20 (44)	12 (26.4)
	Axis 2	30 (66)	30 (66.0)
Repeatability, mm (in)		±0.08 (±0.003)	±0.1 (±0.004)
Weight	370kg (814 lbs) including integrated i-controller		
Notes:			
(1) Under the installation condition with ( ), the J1 and J2 axis motion range will be limited			
(2) J1 axis 360° 6.28 rad rotation is option			
(3) J2 axis and J3 axis motion range will be limited by the angle of J1 axis			
(4) J6 axis motion range unit is option			

## Side (120iL)



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