### ARC Mate® 120iC & 120iC/10L

### **Basic Description**

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

The ARC Mate 120iC robot series has a process specific design that protects the weld torch cable from the wire feeder to the torch goose neck, reducing cable wear and minimizing wire feeder issues. This simplified routing prevents cable interference with parts and tooling and allows offline programs to be generated and tested without compensating for the torch cable.

### **Benefits**

- Process specific arm protects and minimizes wear of the torch cable.
- Features highest motion speeds in class for maximum performance and productivity.
- Best in class reach versus stroke
- Compact base allows for close operation to tooling and other robots.
- The ARC Mate 120*i*C series offers an extremely large work envelope useful for large parts or complex tooling.
- Extremely fast wrist axes reduces aircut times, thus improving throughput.

### **Features**

- Slim wrist size enables the robot to enter into smaller openings in the work space.
- J3 flip-over capability provides large working envelope that is ideal for inverted applications.



- Designed with integral utilities including gas/air lines and a Lincoln Electric wire feed motor cable routed inside the robot arm. This offers improved reliability, reduced setup time and eliminates external cabling requirements.
- Wire feed motor (up to 12 kg) mounted behind the J4 hollow opening, shortens welding torch length which improves wire feed reliability and arc start capability.
- "Plug and play" simplicity with Lincoln Electric's Power Wave™ or STT™ (Surface Tension Transfer) power sources.
- Arc welding teach pendant with application-specific hard keys offers intuitive control over the process.
- Compatible with all major brands of welding equipment.
- 370 degree motion range on J1.
- ARC Mate 120iC has 1,811 mm reach and 1,407 mm stroke.
- ARC Mate 120iC/10L has 2,009 mm reach and 1,506 mm stroke.
- 20 kg payload on faceplate for ARC Mate 120iC.
- 10 kg payload on faceplate for ARC Mate 120iC/10L.
- Multiple mounting positions include upright, inverted, wall or angle mount with no changes to the mechanical unit.



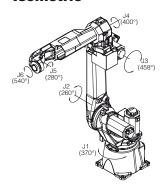
### **Options**

- ServoTorch™ provides precise wire feed control for aluminum and soft wire application.
- Integrated weld power cable
- EMI shielding kits for TIG (GTAW), plasma (PAW) and plasma cutting (PAC) allow operation in harsh EMI (electro-magnetic interference) environments.
- Multiple process I/O welding boards integrate multi-channel welding equipment such as 4 channel TIG and 3 channel MIG.
- Various robot connection cable lengths for flexible cabinet placement and optional track rated cables.
- J1 axis stroke modification kit.
- Auxiliary axis packages for integration into welding positioners.
- *i*RVision® (Integrated Robot Vision) system delivers highperformance 2-D and 3-D machine vision capabilities with FANUC reliability.

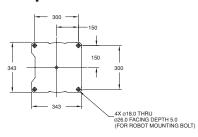
Note: ARC Mate® and iRVision® are registered trademarks of FANUC LTD.

### **ARC Mate 120iC Dimensions**

### **Isometric**



### **Footprint**



## Top Side **Front** MOTION RANGE OF J5 AXIS ROTATION CENTER (120IC) MOTION RANGE OF J5 AXIS ROTATION CENTER (120IC/10L)

### ARC Mate 120iC Specifications

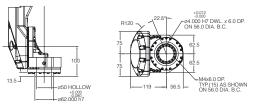
Items		AM120iC	AM120iC/10L
Axes		6	6
Payload (kg)		20	10
Payload (kg) on J3 casting		20	12
Reach (mm)		1811	2009
Repeatability (mm)		±0.08	±0.1
Interference radius (mm)		317	317
Motion range (degrees)	J1	370	370
	J2	260	260
	J3	458	460
	J4	400	400
	J5	380 / 280 <sup>(1)</sup>	380 / 280 <sup>(1)</sup>
	J6	900 / 540 <sup>(1)</sup>	900 / 540 <sup>(1)</sup>
Motion speed (degrees/s)	J1	195	195
	J2	175	175
	J3	180	180
	J4	360	400
	J5	360	400
	J6	550	600
Wrist moments N-m (kgf-m)	J4	44 (4.4)	22 (2.2)
	J5	44 (4.4)	22 (2.2)
	J6	22 (2.2)	9.8 (1.0)
Wrist inertia (kg-m²)	J4	1.04	0.63
	J5	1.04	0.63
	J6	0.28	0.15
Mechanical brakes		All axes	All axes
Mechanical weight (kg)		250	255
Mounting method <sup>(2)</sup>		Floor, ceiling, angle, and wall	
Installation environment			
Temperature (°C)		0 to 45	0 to 45
Humidity		Normally: 75% or less Short term (within a month): 95% or less No condensation	
Vibration (m/s²)		4.9 or less	

### Notes:

(1) J5 and J6 motion range when internal torch cable is installed.

(2) Motion range is de-rated for wall and angle mount.

### 120iC Wrist



# 120iC/10L Wrist

Note: Dimensions are shown in millimeters. Detailed CAD data are available upon request.

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