

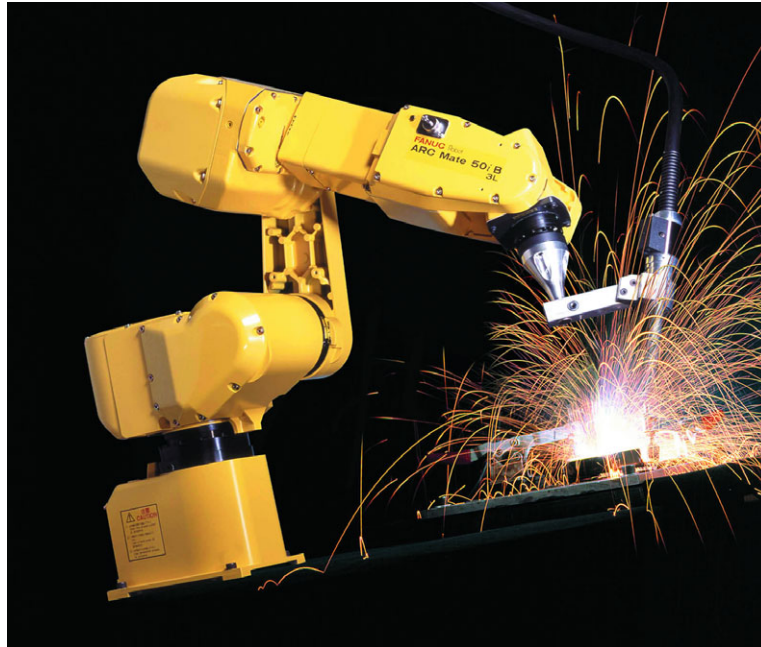
# ARC Mate® 50iB/3L

## Basic Description

The ARC Mate 50iB/3L is a compact, six-axis, serial link, electric servo-driven robot which is specifically suited for arc welding applications. The ARC Mate 50iB/3L is designed to maximize throughput and use of floor space by providing a compact, flexible, high-speed design in a proven and reliable mechanical unit. The ARC Mate 50iB/3L is controlled by the powerful R-J3iB Controller with ArcTool application software.

## Benefits

- Floor, angle or invert mounting and tabletop size increases installation flexibility.
- Small footprint enables placement in tight installations.
- Slim wrist design allows operation in tight work space.
- Compact design simplifies installation and transportation of system.
- High axis speeds maximize product throughput.
- Compact yet flexible design maximizes reach capability within confined areas.
- Design allows for extremely small weld cells or a high density of arc welding torches in given area.
- Fastest wrist axes in class provide increased throughput by quickly reorienting the weld torch.
- Payload of 3 kg and optimum axes 2 and 3 geometry provides power, flexibility and reach to suit a variety of welding applications.
- Axis 3 flipover capability and compact design optimize usable work envelope.
- Fully functional R-J3iB Controller provides ample computing power and delivers proven ArcTool software.



## Features

- Six axes of motion
- 3 kg payload capacity
- +/- 0.04 mm repeatability
- 4 meter robot connection cables
- 856 mm reach
- 399 mm stroke
- All axes mechanical brakes
- J3 flipover capability; double jointed design
- Absolute encoder positioning
- All motors and cables are internally located to protect them from the harsh welding environment.
- "Plug and play" simplicity with Lincoln Electric's PowerWave or STT™ (Surface Tension Transfer) power sources.
- Compatible with all major brands of welding equipment.
- 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.

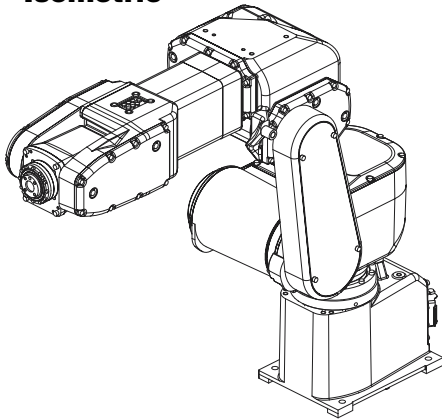
- Serial link construction eliminates the "link arm" and provides greater flexibility and fewer moving parts.
- Sealed bearings and drives provide protection and improve reliability.
- Enhanced motion control reduces mechanical wear and tear.
- Cable routing through center of axis rotation improves reliability.

## Options

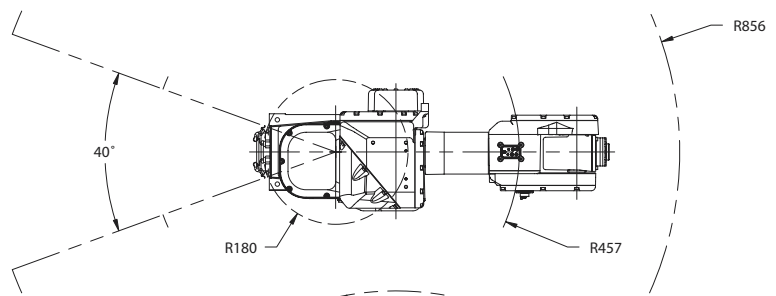
- 7, 14 and 20 meter robot connection cables
- Auxiliary axis packages for integration into welding positioners
- Plug and play to standard welding positioners
- Additional process welding I/O integrates multi channel welding equipment such as 4-channel TIG and 3-channel MIG (STT)

# ARC Mate 50iB/3L

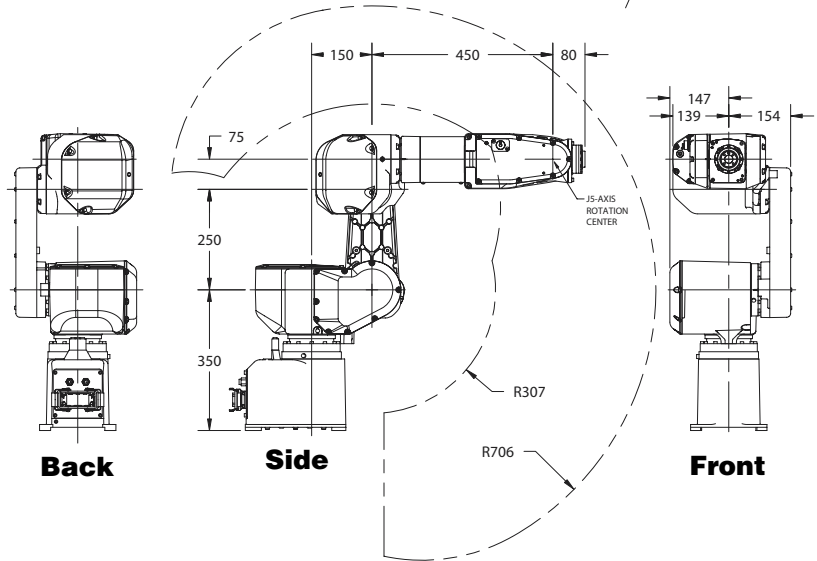
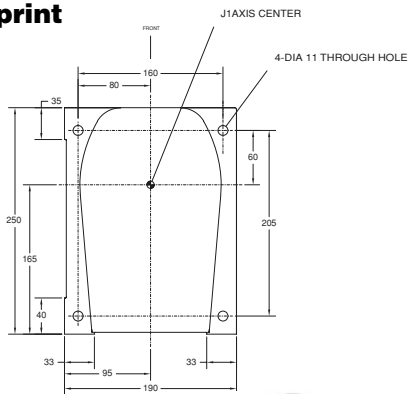
## Isometric



## Top



## Footprint

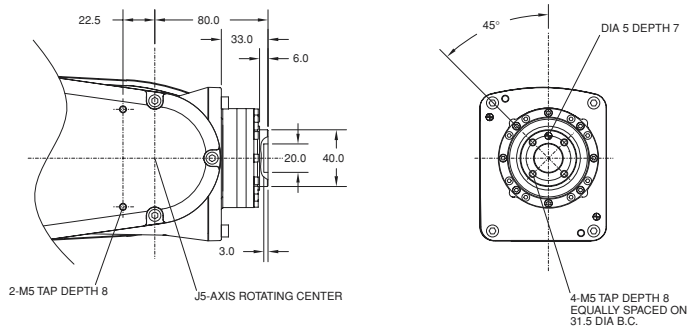


## ARC Mate 50iB/3L Specifications



Items		
Axes	6	
Payload (kg)	3	
Reach (mm)	856	
Repeatability (mm)	± 0.04	
Interference radius (mm)	180	
Motion range (degrees)	J1	320
	J2	185
	J3	290
	J4	380
	J5	240
	J6	720
Motion speed (degrees/sec.)	J1	140
	J2	150
	J3	160
	J4	400
	J5	330
	J6	480
Wrist moment (kgf-cm)	J4	74
	J5	74
	J6	53.2
Wrist inertia (kgf-cm-s <sup>2</sup> )	J4	1.4
	J5	1.4
	J6	0.772
Mechanical brakes	All axes	
Mechanical weight (kg)	47	
Mounting method <sup>(1)</sup>	Floor, ceiling, angle and wall	
Installation environment		
Ambient 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	

## Wrist



Note: Dimensions shown in millimeters.



**FANUC Robotics America, Inc.**  
**3900 W. Hamlin Road**  
**Rochester Hills, MI 48309-3253**  
**(248) 377-7000**  
**Fax (248) 276-4133**

Charlotte, NC  
 (704) 596-5121

Chicago, IL  
 (847) 898-6000

Toronto, Canada  
 (905) 812-2300

Montréal, Canada  
 (450) 492-9001

**For sales or technical information, call:**  
**1-800-47-ROBOT**

Cincinnati, OH  
 (513) 754-2400

Aguascalientes, Mexico  
 52 (449) 910-8000

Los Angeles, CA  
 (949) 595-2700

Sao Paulo, Brazil  
 (55) (11) 3619-0599

[marketing@fanucrobotics.com](mailto:marketing@fanucrobotics.com)  
[www.fanucrobotics.com](http://www.fanucrobotics.com)

Toledo, OH  
 (419) 866-0788

Notes:

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