

LR Mate 200iB-200iB/3L™

FANUC
Robotics

P e r p e t u a l M o t i o n

Basic Description

The LR Mate 200iB is a six-axis, modular construction, electric servo-driven, tabletop robot designed for a variety of manufacturing and system processes. The FANUC LR Mate 200iB robot, is engineered to provide maximum flexibility, and accuracy, in a compact design.

LR Mate 200iB, the Solution for:

- Machine load/unload
- Material handling
- Testing and sampling
- Electronics/Cleanroom
- Parts cleaning
- Dispensing
- Assembly
- Material removal

Features

- Axes speeds of up to 480 degrees/sec.
- End effector connector built into the wrist
- Integral, internally mounted solenoid valve pack
- Fail-safe brakes on axes 2 and 3

Reliability Features

- Based on a proven, reliable design of the FANUC LR Mate 100i, which has an installed base exceeding 4,000 units worldwide.
- Brushless AC servo motors minimize motor maintenance.
- Harmonic drives on all axes result in higher reliability and reduced maintenance costs.
- Sealed bearings and drives.
- All motors, cables and tooling services are located internally for protection from environment.
- Standard IP65 dust and liquid intrusion package.

Benefits

- Tabletop size allows use in a wide range of applications from commercial to industrial installations.
- Upright, invert or angle mounting positions with no robot modifications.
- Small footprint allows placement in tight surroundings.



- Hollow joint construction encloses all cable routing to eliminate snagging.
- Absolute serial encoders eliminate the need for calibration at power-up.

Options

- Available with R-J3iB Mate Controller for basic material handling.
- R-J3iB Mate Controller features low voltage I/O: 20 inputs, 20 outputs and 6 inputs at end-of-arm connector.
- R-J3iB Mate Controller supports FANUC Robotics KAREL application software and standard FANUC Robotics I/O modules.
- FANUC Sensor Interface serial communications software allows robot to exchange data with third party devices such as bar code readers, vision systems and PCs.
- Data Transfer Function serial communications software allows robot two-way data exchange with a PC; users can control robot actions through VB graphical interface.

R-J3iB Mate Controller Features

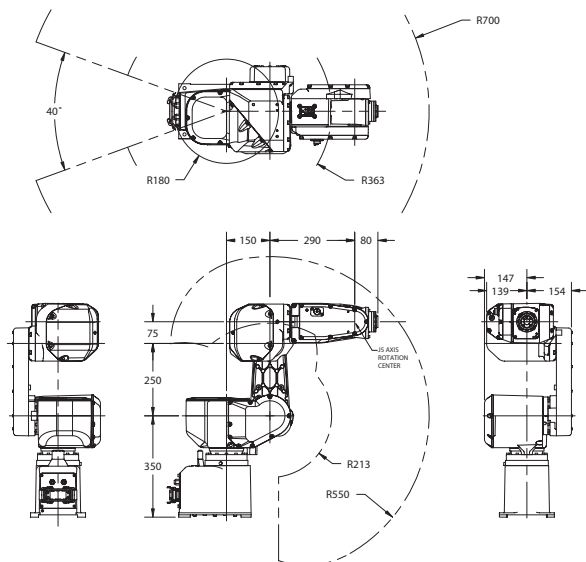
- Small size minimizes installation footprint
- Based on standard R-J3iB CPU
- Integrated 24VDC I/O: (20) inputs and (20) outputs
- α - i Series Amplifiers w/FSSB
- FANUC I/O Link (master or slave)
- Extended communications capabilities (Ethernet, FTP, Serial, Profibus, DeviceNet)
- Line tracking option
- CE Mark compliant
- High Sensitive Collision Detection
- PC Vision Interface
- Softfloat

Robot and Controller Options

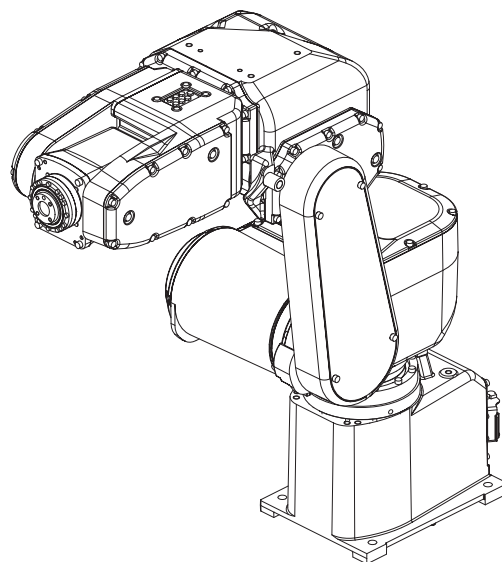
- Single (220VAC)- or three-phase power (380-500VAC)
- All axes mechanical brakes
- Longer robot cables (7 or 14 m)
- Compact Ethernet/FTP card
- Cable for integrated I/O (CRM79)
- FANUC Model A I/O rack
- FANUC I/O link cable to FANUC CNC
- Cleanroom/Class 100 (LR Mate 200iB)
- FANUC Process I/O Board

LR Mate 200iB

Top

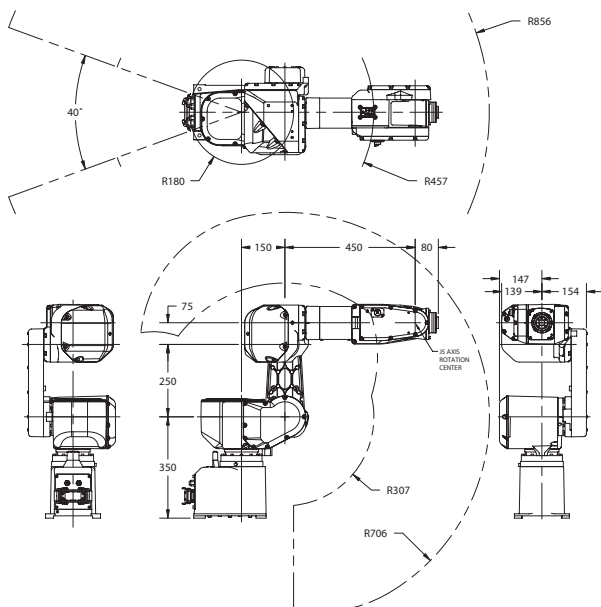


LR Mate 200iB

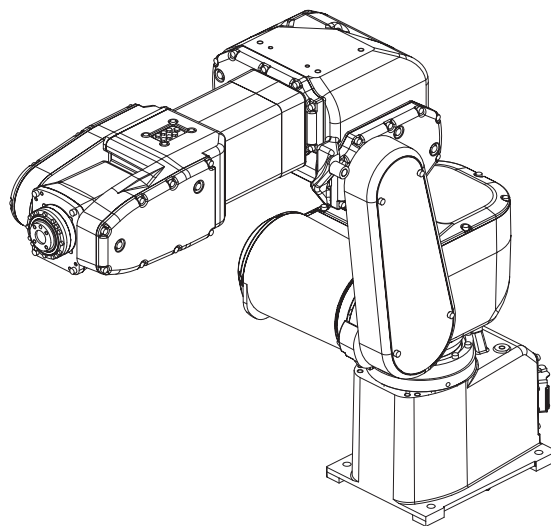


LR Mate 200iB/3L

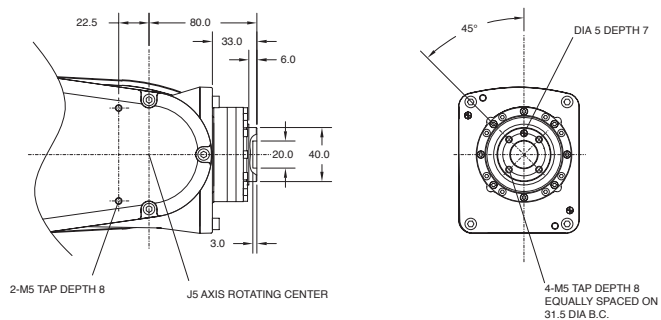
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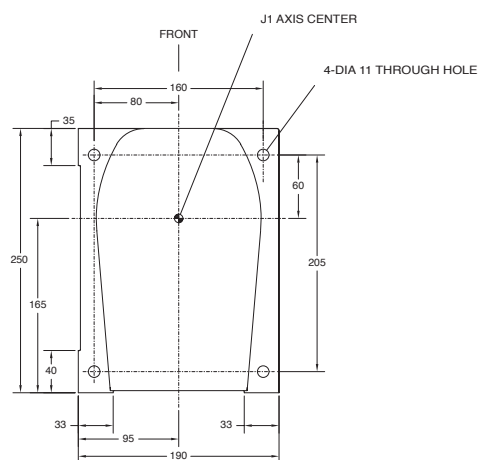
LR Mate 200iB/3L



LR Mate Robot Wrist



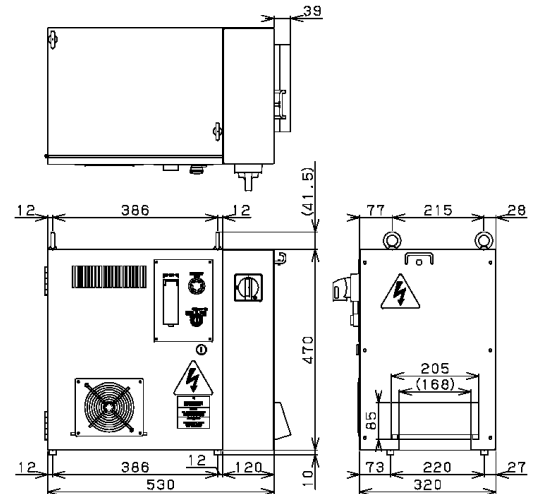
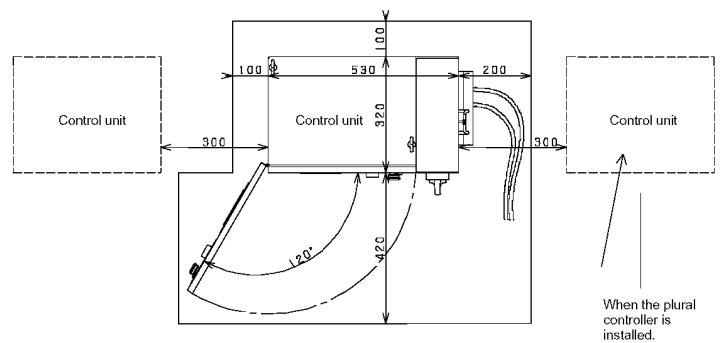
LR Mate Robot Footprint



R-J3iB Mate Controller Specifications

Items	
A-size cabinet	See drawing for dimensions
Operating environment	Ambient temperature: -0 to 45°C Humidity: 75% RH or less Non-condensing (95% max) Vibration: 4.9 m/s ² (0.5G) or less
Power Supply	Single-phase 200-220 VAC opt. +10%, -15%, 50/60Hz +/- 1 Hz Three-phase 380-500 VAC std.
Power Consumption	0.4-0.5 kW (average) 1 kVa-1.2 kVa (maximum)
CPU	Multi-processor architecture based on R-J3iB (separate motion and communication) with real time clock-calendar
Controlled axes	5 (LR Mate 100iB) 6 (LR Mate 200iB, iB/3L) 8 (including robot axes) using 8 axis control card Additional axes available using mini-slot on CPU
I/O sub-systems	Built-in digital I/O (20 input/20 output) Built-in FANUC I/O Link Built-in Serial RS-232 Model A opt. (modular rack mounted 5 or 10 slots – user must supply enclosure)
I/O types	DI/DO: 512 point maximum each Digital AC or DC input modules Digital AC or DC output modules 12-bit Analog input or output modules
Remote I/O sub-systems	Options: Ethernet, Profibus, Devicenet
Miscellaneous Options	Supports line-tracking, vision and Karel
Memory card slot	Built-in PCMCIA type 2 interface to ATA flash disc cards
Teach pendant	Back-lit LCD, multi-function
Controller weight	35 kg

R-J3iB Mate Controller Dimensions

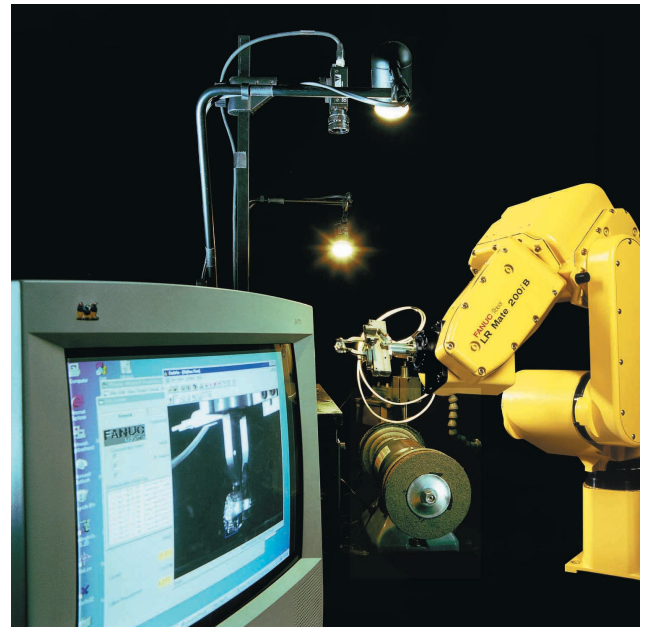


LR Mate 200iB-iB/3L Specifications

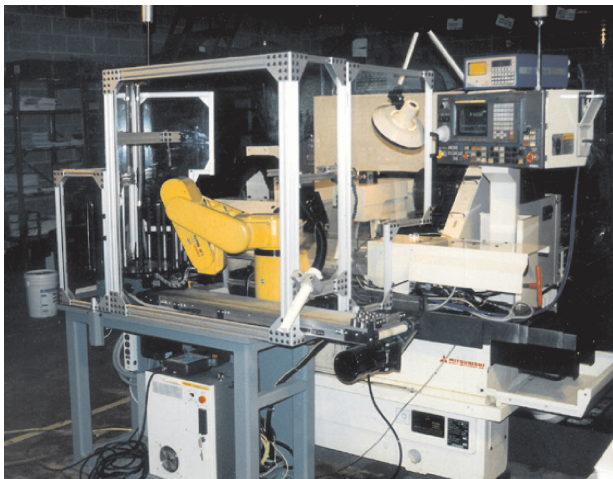
Items	200iB	200iB/3L
Axis	6	6
Payload (kg)	5	3
Reach (mm)	700	856
Repeatability (mm)	±0.04	±0.04
Interference radius (mm)	180	180
Motion range (degrees)	J1	320
	J2	185
	J3	316
	J4	380
	J5	240
	J6	720
Motion speed (degrees/sec.)	J1	180
	J2	180
	J3	225
	J4	400
	J5	330
	J6	480
Wrist moment (N.m)	J4	7.25
	J5	7.25
	J6	5.21
	J6	0.071
Wrist inertia (kg.m ²)	J4	0.138
	J5	0.138
	J6	0.071
Mechanical brakes	J2, J3 Std. All axes option	
Mechanical weight (kg)	45	47
Mounting method ^(A)	Floor, Upside-down, Angle mount	Floor, Upside-down, Angle mount
Installation environment		
Temperature °C	0 to 45	
Acoustic Level Noise	70dB	70dB or less
Humidity	Normally: 75% or less Short term (within a month): 95% or less No condensation	
Vibration (m/s ²)(G)	4.9 or less (0.5G or less)	
IP Rating(s)	IP65 Std. (Dust/Liquid Proof)	IP65 Std. (Dust/Liquid Proof)

Notes:

(A) In case of angle mount for LR Mate 200iB and 200iB/3L, motion range is limited.



Precision jewelry polishing system with part shape recognition uses FANUC Vision System V-500i.



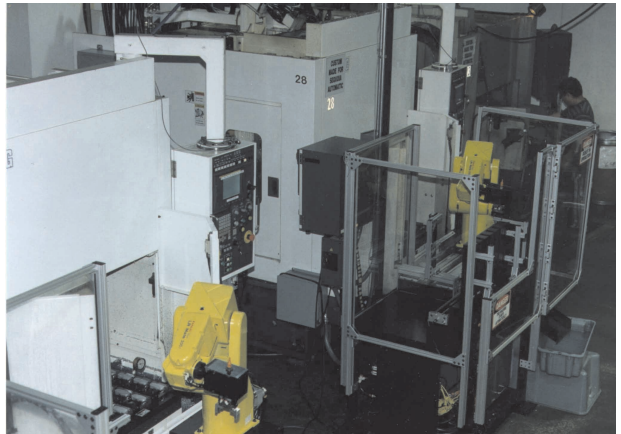
Over 4,500 LR Mate systems are installed in a variety of machine automation applications.



Flexible Loading Solution with Vision.



Cost effective metal/plastic deburring systems utilize the LR Mate 200iB series.



The LR Mate is the industry's leading mini robot for factory automation, machine tools and lab environments.

Note: Dimensions are shown in millimeters.

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