

M-16iB™ Series

Basic Description

The M-16iB series is a six-axis, modular construction, electric servo-driven robot designed for a variety of industrial applications. Based on its simple and reliable construction, the M-16iB series provides sophisticated motion control and consistent performance with high productivity. The SYSTEM R-J3iB Controller and easy-to-use HandlingTool application software provide accurate and consistent path performance.

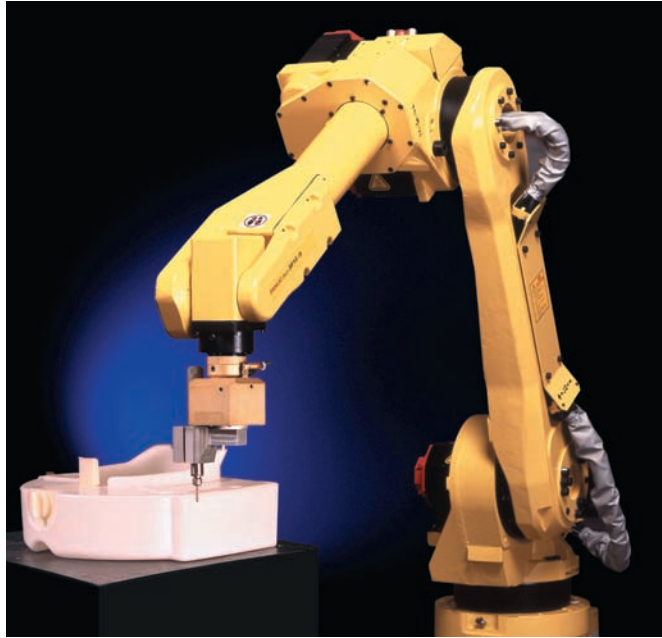
The M-16iB series, the latest generation material handling robot, has a compact design with improved motion range and speed. The compact yet flexible design simplifies installation, maximizes reach capability within confined areas and enables high-density installation of robots and peripherals.

M-16iB Series, the Solution for:

- Assembly
- Dispensing
- Material handling
- Machine load/unload
- Material removal
- Waterjet cutting
- Laser cutting
- Packing

Benefits

- Largest work envelope and load capacity in its class allows robot operation in a wide range of high-speed, medium-payload manufacturing processes.
- No robot modification required for upright, inverted, angle and wall mounting.
- Unique hollow RV speed reducers simplify cable routing.
- Small footprint facilitates placement in tight surroundings.
- Low arm mass and rigid design allow high-speed, precise positioning.



- Dedicated pneumatic and electrical (with eight digital inputs and eight digital outputs) connections on J3 axis to simplify user's end-of-arm tooling design, integration and communication.
- Material handling style teach pendant with large LCD screen and ergonomic design offers intuitive control over the process.
- Fail-safe brakes on all axes increase safety, functionality and control.

Features

- iPendant, a color, Internet-ready teach pendant for even easier programming and custom cell user interface design.
- Repeatability of +/- 0.08 mm at full speed and full payload within entire work envelope.
- 20 kg payload capacity.
- Axes speeds up to 520 degrees/sec. Best in its class.
- "Double-jointed" arm increases work envelope and positioning flexibility.
- Absolute serial encoders eliminate the need for calibration at power-up.

Reliability Features

- Sealed bearings and drives, and brushless AC motors minimize maintenance.

- Grease fittings on all lubrication points for quick and easy maintenance.
- Uses directly-coupled drives, which are more reliable than belts, pulleys or chains.
- All motors, cables and tooling services are engineered to prevent snagging and damage from chips, sprays and other hazards.
- Dust and water resistant design maximizes durability.
- Quick disconnect robot connecting cables.
- In-line wrist design minimizes complexity and eliminates bevel gear adjustments.

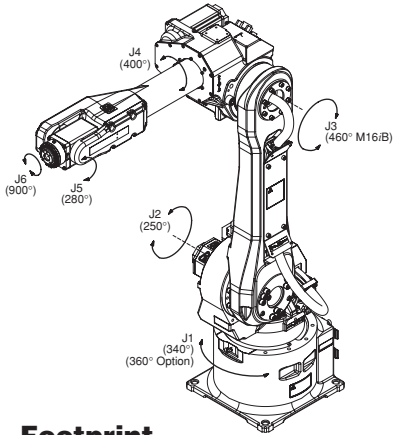
Options

- iPendant is also available with touch screen support.
- 360° Axis 1 base rotation.
- Severe dust and liquid protection package for harsh environment applications (standard M-16iB wrist is rated IP67 to withstand temporary immersion in liquids).
- Auxiliary axis packages for integration into part positioners.
- Various robot connection cable lengths for flexible cabinet placement and optional track rated cables.
- Monochrome pendant available.

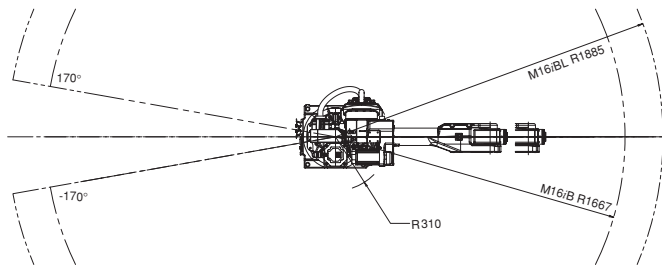
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M-16iB Series Dimensions

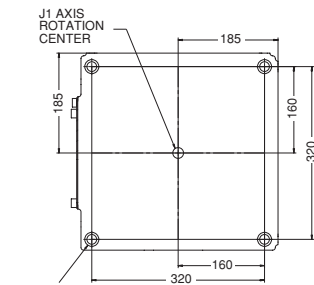
Isometric



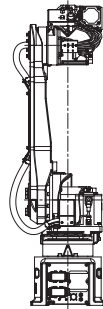
Top



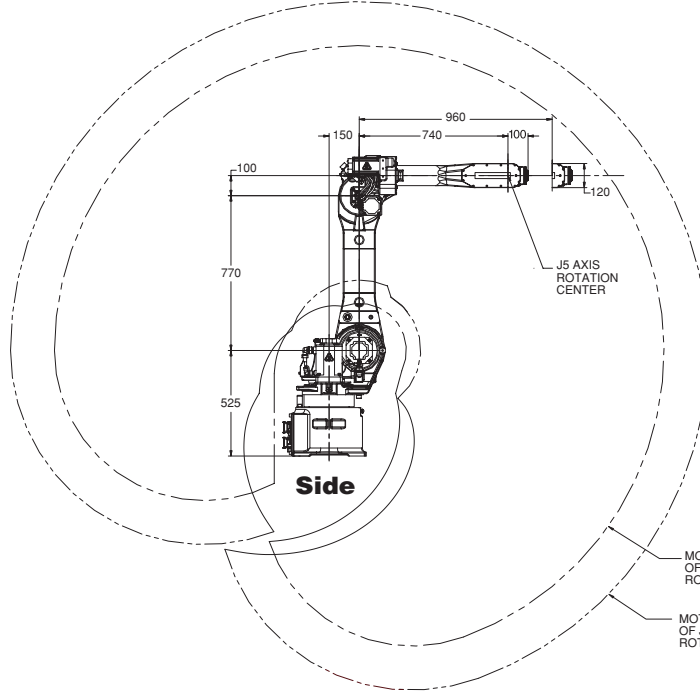
Footprint



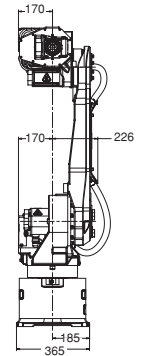
4x18 THROUGH
626 FACING DEPTH 5



Back



Side



Front

MOTION RANGE
OF J5 AXIS
ROTATION CENTER M16iB
MOTION RANGE
OF J5 AXIS
ROTATION CENTER M16iL

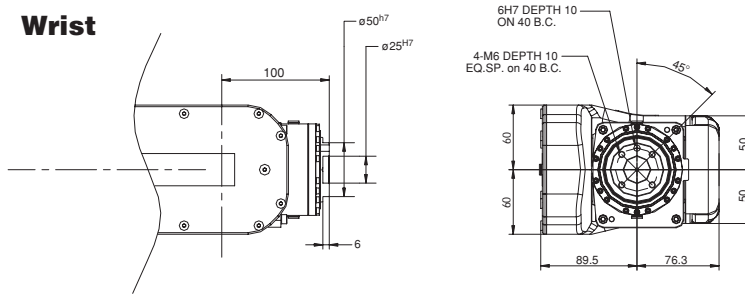
Mounting Hardware: M16X35 (4pcs);
Strength Class: 12.9; Tightening Torque: 314 Nm

M-16iB Series Specifications

Items	M-16iB/20	M-16iB/10L
Axes	6	6
Payload (kg)	20	10
Reach (mm)	1667	1885
Repeatability (mm)	±0.08	±0.10
Interference radius (mm)	310	310
Motion range (degrees)	J1	340/360
	J2	250
	J3	460
	J4	400
	J5	280
	J6	900
Motion speed (degrees/s)	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
	J6	1.0
Wrist inertia (kgf-cm-s ²)	J4	9.0
	J5	9.0
	J5	2.5
	J6	1.5
Mechanical brakes	All axes	All axes
Mechanical weight (kg)	220	230
Mounting method	Floor, ceiling (angle and wall - see Note 1)	
Installation environment	0 to 45	
Temperature °C	0 to 45	
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)	Body IP54 std. (IP55 optional) Wrist & J3 arm IP67	
Payload at axis 3 (kg)	12	12

Note 1 - J1 and J2 axis motion range will be derated.

Wrist



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



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