

# M-6iAT / M-16iAT - iALT

## Basic Description

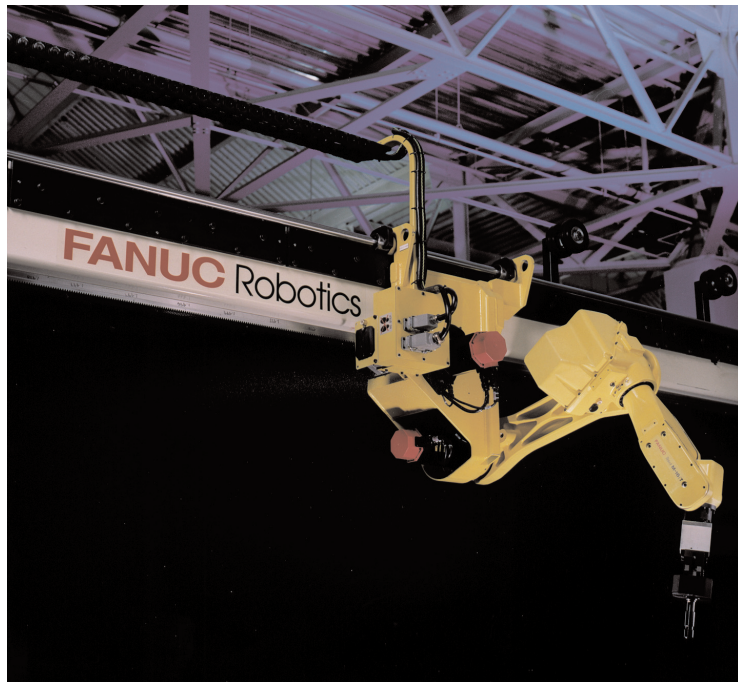
FANUC Robotics' overhead rail-mounted robots are a family of six-axis, modular construction, electric servo-driven robots designed for material handling and machine tending. The overhead rail-mounted robots also have the ability to perform value-added post-processing operations. The robots are engineered for precision, high-speed operation, user-friendly set-up, and maximum reliability.

## M-6iAT/M-16iAT-iALT, the Solution for:

- Material handling
- Machine tool load/unload
- Injection mold machine load/unload
- Process applications (die spray, dispensing)
- Assembly

## Features

- +/- 0.25 mm rail repeatability.
- Standard rail travel lengths from 2.4 m to 21.5 m. Non-standard lengths also available.
- Fail-safe brakes on all six axes.
- Four user-specified J2 heights each with +/- 200 mm range (2.0 m, 2.3 m, 2.6 m, 2.9 m).
- Based on proven, reliable, standard products (M-6iA, M-16iA, M-16iAL).
- Modular rails can be attached to free-standing support legs with variable height attachment or to the fixed platen of an injection moulding, or die casting machine.
- Short-duration payload excess



- capability, during part swap.
- Brushless AC servo motors minimize motor maintenance.
- Rack and pinion J1 axis drive on all models.

## Benefits

- Adapts easily to existing plant layouts.
- Balances asynchronous processes by maintaining in-process part buffers.
- Six axes of motion (one linear, five rotary) result in a "mobile" robot capable of servicing multiple machines/stations/operations.
- Easy installation alignment minimizes integration costs.
- Reduces system content by replacing complex part handling equipment with simple pallets and feeders.
- Reduces floor space and ceiling height requirements (compared to gantry robots).
- Increased fault tolerance with quick recovery.

- Top/front/side entry into a machine with six-axis dexterity allows for post-processing (e.g. palletizing, gauging, de-burring, de-flashing, labelling and packing).
- Six-axis dexterity offers the ability to reorient parts between operations and/or service vertical and horizontal machines.
- Improves machine uptime productivity as much as 30 percent by reducing or eliminating "door open" time.

## Options

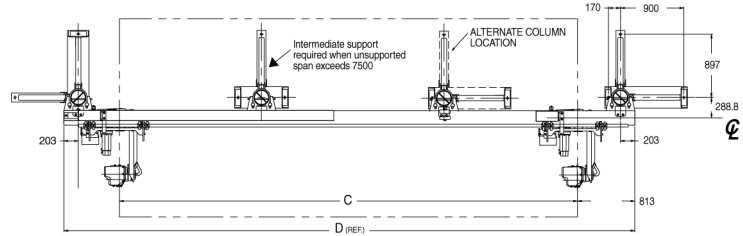
- Dual arm configuration on a single rail.
- Bellows protection for the rail.
- Severe dust and liquid protection package for die cast spray and other harsh environments.

TABULATED DIMS. (mm)	
A	B
1800 - 2200	3207 - 3607
2100 - 2500	3507 - 3907
2400 - 2800	3807 - 4207
2700 - 3100	4107 - 4507

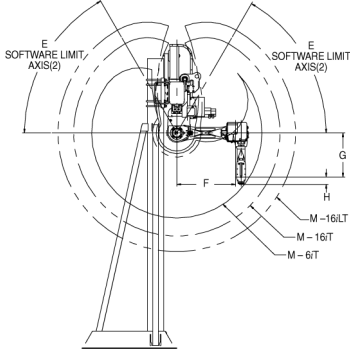
TABULATED DIMS. (mm)	
C	D
2400	3600
3000	4600
5000	6600
6500	8100
8500	10100
10500	12100
15500	17100
21500	23100

TABULATED DIMS. (mm)				
Model	E	F	G	H
M-6iT	40°	600	550	100
M-16iT	60°	800	600	100
M-16iLT	60°	800	813	100

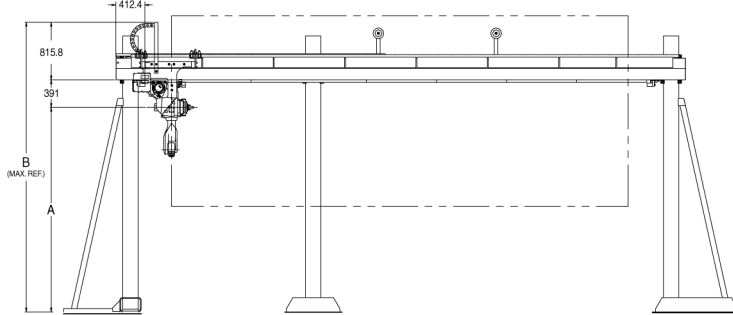
### Top



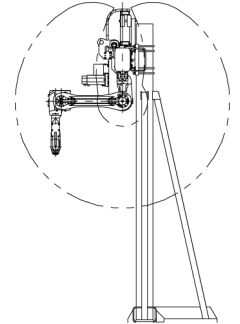
### Left Side



### Front



### Right side



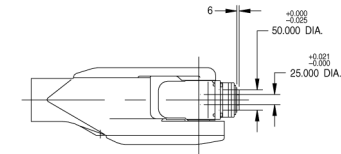
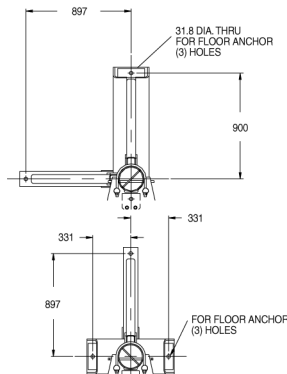
## Specifications

Items	M-6iAT	M-16iAT	M-16iALT	
Axis	6	6	6	
Maximum Payload (kg)	6	16	10	
Maximum Reach (mm)	1159	1405	1616	
Repeatability (mm)	± 0.1	± 0.08	± 0.1	
Interference radius (mm)	Not applicable			
Motion range (degrees)	J1	2.4 - 21.5 m <sup>A</sup>	2.4 - 21.5 m <sup>A</sup>	2.4 - 21.5 m <sup>A</sup>
	J2	260	300	300
	J3	341.2	481.2	434.1
	J4	380	400	400
	J5	280	280	280
	J6	640	900	900
Motion speed (degrees/sec.)	J1	2 m/sec	2 m/sec	2 m/sec
	J2	120	140	140
	J3	120	140	140
	J4	360	330	330
	J5	360	330	330
	J6	450	450	450
Wrist moment (kgf-m)	J4	1.2	3.6	2.2
	J5	1.0	3.2	2.0
	J6	0.6	1.6	1.0
Wrist inertia (kgf-cm-s <sup>2</sup> )	J4	6.4	8.7	5.3
	J5	2.0 4.5 <sup>B</sup>	7.1 10.2 <sup>B</sup>	4.3 10.2 <sup>B</sup>
	J6	0.62	2.0	1.2
Mechanical brakes	All axes			
Mechanical weight (kg)	820 <sup>C</sup>	864 <sup>C</sup>	902 <sup>C</sup>	
Mounting method	Column mount (as shown) or 30° machine/platen mount			
Installation environment				
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			
IP Rating(s)	Wrist & J3 arm IP67			
	J2 arm IP54 (IP55 optional)	J2 arm IP54 (IP65 optional)		
	Rail bellows packages available			
Payload (kg)	6 <sup>B</sup>	16 <sup>B</sup>	16 <sup>B</sup>	
Rail Repeatability (mm)	± 0.25	± 0.25	± 0.25	

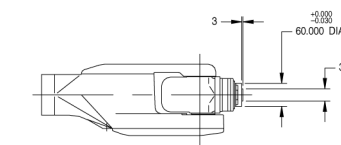
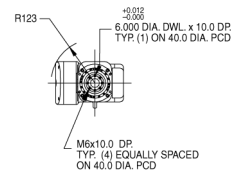
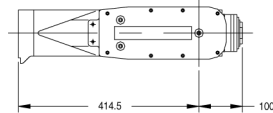
### Notes:

- (A) Refer to Tabulated Dimension C for the latest rail travel lengths
- (B) Short duration (<1 min.) end-of-arm capacity
- (C) Weight of robot and 3.0 m linear axis travel rail (columns not included)

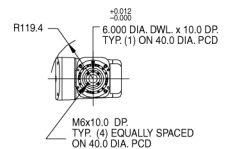
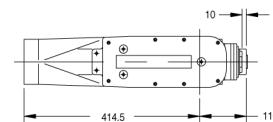
### Footprint



### M-16iAT/M-16iALT Wrist w/ISO Flange



### M-6iAT Wrist w/ISO Flange



Note: Dimensions are shown in millimeters.

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