

M-16i

Basic Description

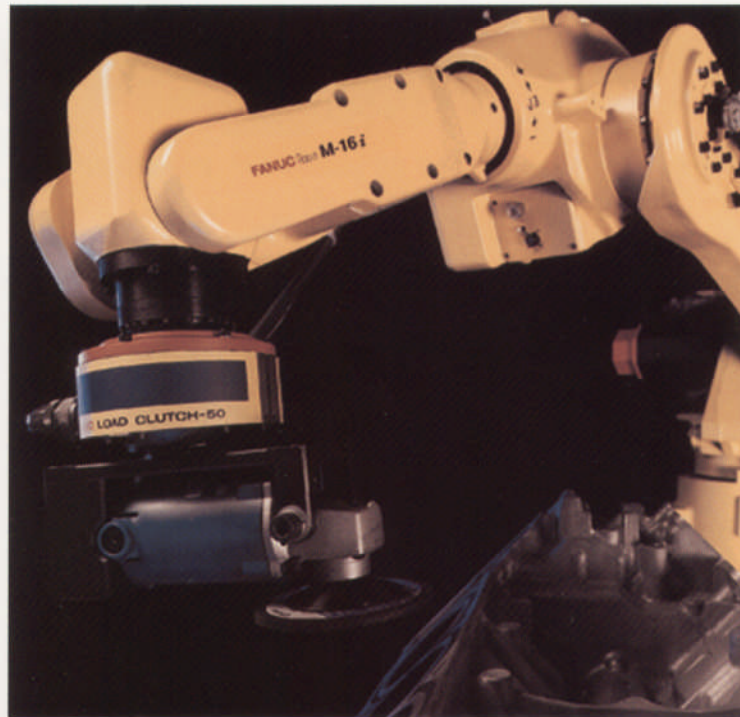
Six-axis, modular construction, electric servo-driven robots designed for a variety of manufacturing and system processes. The FANUC M-16i and long-arm M-16iL robots are engineered for precision, high-speed operation, user-friendly setup and maximum reliability supported by our extensive service and parts network.

M-16i, the Solution for:

- Machine load/unload
- Material handling
- Material removal
- Waterjet cutting
- Dispensing
- Electromechanical assembly

Benefits

- Large work envelope and load capacity allow robot operation in a wide range of high-speed, medium-payload manufacturing processes
- "Double-jointed" arm increases work envelope and positioning flexibility
- No robot modification required for upright, inverted, angle and wall mounting
- Absolute serial encoders eliminate the need for calibration at power-up
- 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
- Electrical and pneumatic services for tooling are internal to the arm to simplify integration
- Fail-safe brakes on all axes increase safety, functionality and control



Features

- 6 axes of motion
- 16kg (35.2 lbs) payload capacity
- 0.08mm (± 0.003) repeatability
- Axes speed up to 450° per second

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

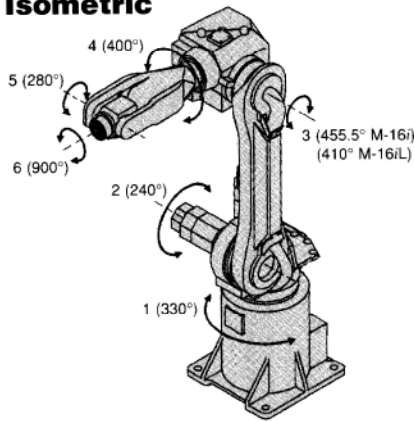
Options

- 360° Axis 1 base rotation
- Axis 2 motor cover
- Severe dust and liquid protection package for die cast spray, waterjet cutting and other harsh environment applications (standard M-16i wrist is rated IP67 to withstand temporary immersion in liquids)

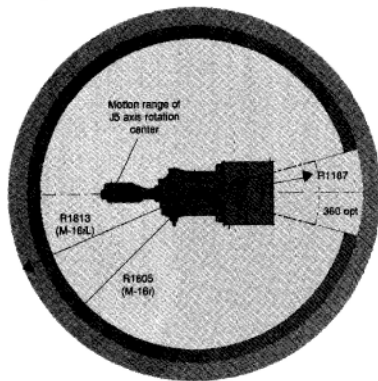
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M-16i/iL Dimensions

Isometric



Top



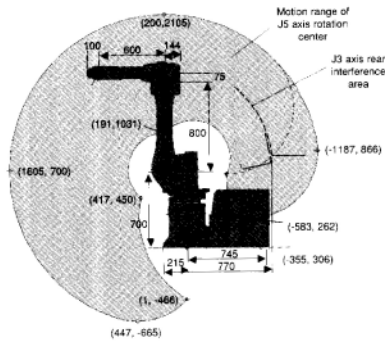
M-16i/iL Specifications

Items			
	Range	Speed	
	M-16i/M-16iL		
Motion range and speed	Axis 1	330° (360° optional)	140°/sec
	Axis 2	240°	140°/sec
	Axis 3	455.5°/410°	140°/sec
	Axis 4	400°	330°/sec
	Axis 5	280°	330°/sec
	Axis 6	900°	450°/sec
Moments kgf • m (N • m)	Axis 4	3.6 (35.1)	2.2 (22.0)
	Axis 5	3.2 (31.4)	2.0 (19.6)
	Axis 6	1.6 (15.7)	1.0 (9.8)
Load inertia kgf • cm • s ²	Axis 4	8.7	5.3
	Axis 5	7.1	4.3
	Axis 6	2.0	1.2
Repeatability, mm (in)		±0.08(±0.003)	±0.1(±0.004)
Maximum load capacity, kg (lbs)	Wrist	16 (35.2)	10 (22.0)
	Axis 3	20 (44)	12 (26.4)
Max reach, mm (in)	Axis 2	30 (66)	30 (66.0)
		1605 (63.2)	1813 (71.4)
Hor stroke, mm (in)		1073 (42.2)	1329 (52.3)
Mounting method ¹	Upright, inverted, angle and wall		
Mechanical brakes	All axes		
Mechanical weight	270kg (594 lbs)		
Levels of protection ²	Wrist and joint	IP67	
	3 arm		
	Body	IP54(IP65 optional)	
	Controller	IP54	

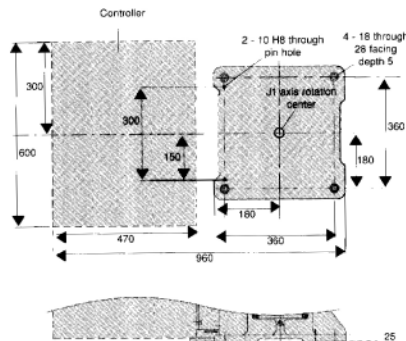
¹ Motion range is derated for angle and wall mount

² See Severe Dust/Liquid Protection data sheet for details

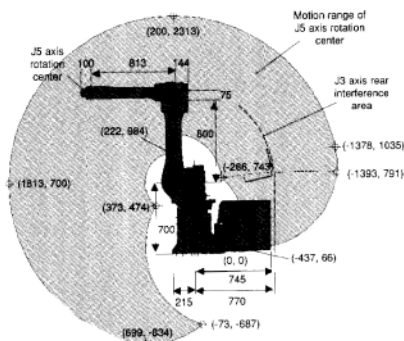
Side (M-16i)



Footprint (integrated)



Side (M-16iL)



R-J2 Controller and Teach Pendant Specifications

Items	
Input Power Source	5KVA: 440, 460, 480 (standard) 500, 550, 575 VAC
Installation Environment	Ambient Temperature 0-45°C (32-113°F)
Ambient Humidity	Normal 75% RH or less (no dew or frost allowed) Up to 95% RH short term (less than 30 days)

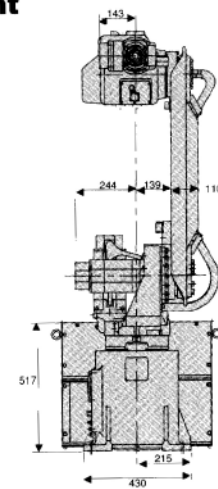
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Literature Request
1-800-47-ROBOT

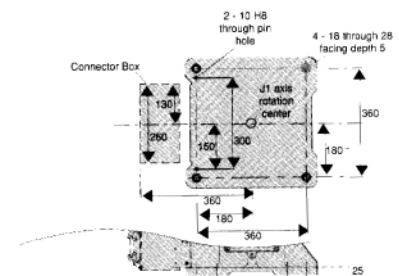
web page: <http://www.fanucrobotics.com>

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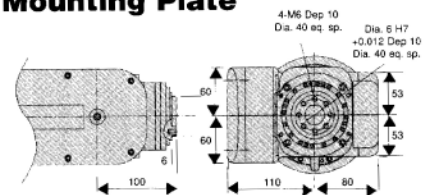
Front



Footprint (remote)



Mounting Plate



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