

M-420*i*A/M-421*i*A

Basic Description

The M-420*i*A series is FANUC Robotics' latest-generation, high-performance, high-speed family of industrial robots. Based on a simple and reliable design, the M-420*i*A and M-421*i*A provide sophisticated motion control and consistent performance with high productivity. The series is supported by the SYSTEM R-J3*i*B intelligent robot control system.

The M-420*i*A is a four-axis, modular construction, electric servo-driven robot designed for high-speed case packing and material handling applications. The M-421*i*A is a two-axis variant designed for the high-speed top-loading packing market.

M-420*i*A/M-421*i*A, the Solution for:

- High-speed packaging
- High-speed palletizing
- Machine loading
- Mechanical assembly

Benefits

- Features highest motion speeds in its class for maximum performance and productivity.
- Highest payload in its class helps achieve maximum throughput by handling multiple parts.
- Four-axis dexterity enables access to multiple packaging lines with one unit.
- Additional auxiliary amplifiers available in R-J3*i*B controller offer ability to control complete high-speed packaging line with robot controller.



- FANUC VisLOC & VisTRAC provide the ability to pack randomly-oriented products.

Features

- M-420*i*A - 4 axes of motion, 40 kg capacity.
- M-421*i*A - 2 axes of motion, 50 kg capacity. Waist and wrist rotation removed from four-axis unit.
- Large work envelope with 1855 mm horizontal reach developed around packaging applications.
- Repeatability of +/- 0.5 mm at full speed and full payload within entire work envelope.
- Linear motion speeds up to 4200 mm/sec.
- Dedicated pneumatic and electrical (8 digital inputs/8 digital outputs) connections at wrist to simplify user's end-of-arm tooling design and integration.

- Material handling style teach pendant with large LCD screen and ergonomic design offers intuitive control over automated process.
- Sealed bearings and brushless AC motor drives provide protection and improve reliability.

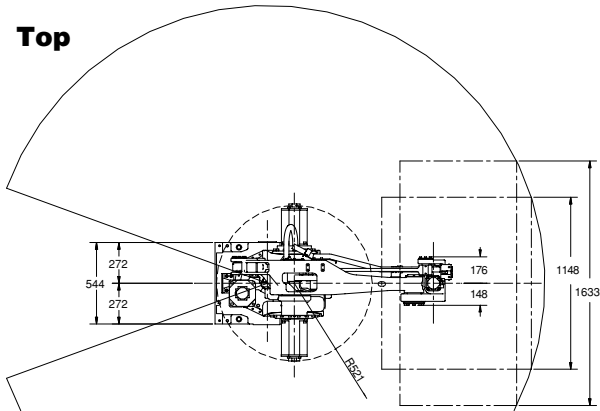
Options

- The *i*Pendant is a color, Internet-ready teach pendant for easy programming and custom user interface design.
- Various robot connection cable lengths for flexible cabinet placement and optional track rated cables.
- A cleanable unit coated with white polyurethane to meet requirements in typical secondary food packaging applications.

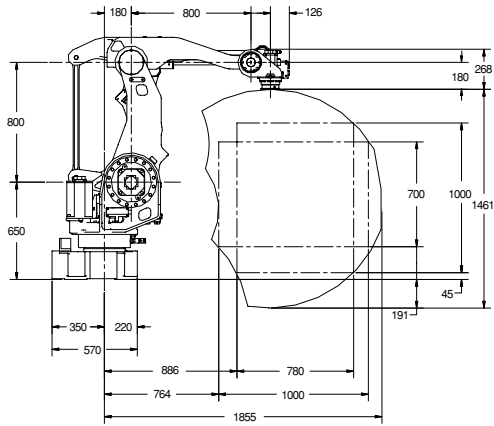
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M-420iA Dimensions

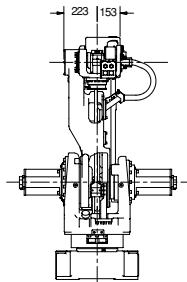
Top



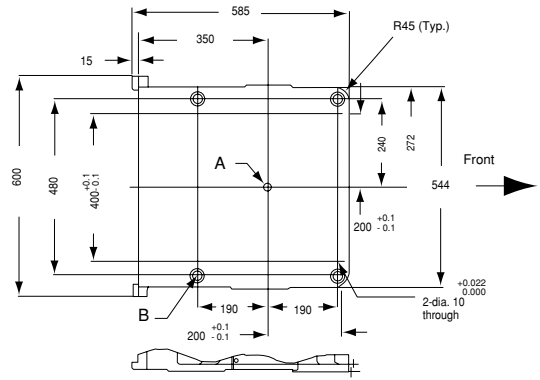
Side



Front

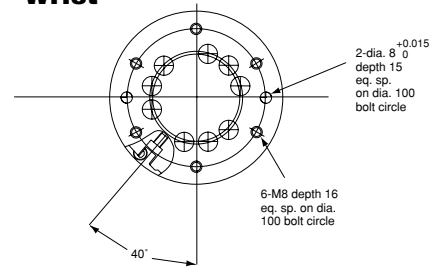


Footprint

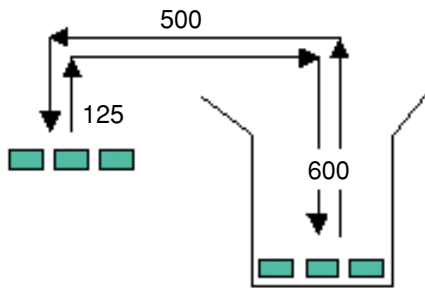


A: Joint 1 axis rotation center
 B: 4-dia. 24 through dia. 38 facing depth 4 (for robot mounting bolt)

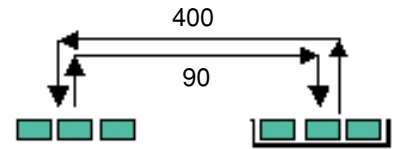
Wrist



Fastest cycle times in its class:



50 Cycles/Minute
30 kg Payload



80 Cycles/Minute
10 kg Payload

M-420iA/M-421iA Specifications

Items	M-420iA	M-421iA
Axes	4	2
Payload - Wrist (kg)	40	50
- J3 Arm (kg)	10	10
Reach (mm)	1855	1855
Repeatability (mm)	± 0.5	± 0.5
Interference radius (mm)	543	-
Motion range (degrees)	J1	320
	J2	115
	J3	110
	J4	540
Motion speed (degrees/sec.)	J1	180
	J2	200
	J3	200
	J4	350
Wrist moment (kgf-m)	J4	10
Wrist inertia (kgf-cm-s ²)	J4	26
Mechanical brakes	All axes	All axes
Mechanical weight (kg)	620	520
Mounting method	Floor	
Installation environment	0 to 45	
Ambient temperature °C	0 to 45	
Humidity	Normally: 75% or less Short term (within a month): 95% or less No condensation	
Vibration (m/s ²)	4.9 or less	

Note: Dimensions shown in millimeters.
 Actual speeds dependent upon application and product.



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