

MOTOMAN MHJF Ultra-light Robot

The ultra-light, compact MOTOMAN MHJF offers advanced robotic path control, speed and accuracy in an affordable, industrial grade robot. This highly portable and easy to install robot enables simplified system integration.

The MHJF uses small-capacity motors (max: 80 W) for all axes allowing the robot to be used without a safety fence in the same area as students.

The MHJF features a 545 mm (21.4") reach, weighs only 15kg (33lbs) and offers the widest work envelope in its class. Because of its small footprint, it can be floor-, wall-, or ceiling-mounted.

The MHJF controller has an Open Architecture that will enable students to program the robot in C, C++, C# or .NET environments.

The MHJF supports both stand-alone applications as well as sophisticated automated workcells. The robot offers superior performance in small part applications such as assembly, dispensing, packaging, material handling, and machine tending.

The compact design and built-in collision avoidance features with multiple robot control allow up to four robots to be used together to maximize productivity while reducing overall floor space requirements.



Standard Features

- Compact, powerful and economical
- 545 mm (21.4") reach; 0.03 mm (0.0012") repeatability
- 1-2 kg (2.2 - 4.4 lbs) payload
- Robot adjusts performance based on load. Effective for payloads less than 1 kg (2.2 lbs)
- Small footprint and minimal interference radius (92.5 mm/3.6") maximizes floor space utilization
- Floor-, wall- or ceiling-mounted options. Brakes on L- and U-axes.
- Internally routed cables and hoses maximize system reliability
- Compact design and built-in collision avoidance features with multiple robot control allow up to two robots to be used together to optimize productivity

Hands on Applications

- MHJF with Machine Tending (Milling/Turning/Laser Engraver)
- MHJF with Assembly and/or Quality Control

Specifications

Structure

Vertical articulated- arm type

Axis Movement	Range	Maximum Speed
S-Axis (Turning/Sweep)	±160°	160°/s
L-Axis (Lower Arm)	+110°/-90°	130°/s
U-Axis: (Upper Arm)	+105°/-290°	200°/s
R-Axis: (Wrist Roll)	±180°	300°/s
B-Axis: (Bend/Pitch/Yaw)	±130°	400°/s
T-Axis: (Wrist Twist)	±360°	500°/s

Vertical Reach

909 mm (35.8")

Horizontal Reach

545 mm (21.4")
(500mm with payload > 2.2lb)

Repeatability

±0.03 mm (±0.0012")

Controlled Axes

6

Approximate Weight

15 kg (33 lbs)

Brakes

Two axes

Power Consumption

0.5 kVA

Payload

1 - 2 kg (2.2 - 4.4 lbs)

Allowable Moment

R-Axis 3.33 N • m

B-Axis 3.33 N • m

T-Axis 0.98 N • m

Allowable Moment of Inertia

R-Axis 0.058 kg • m²

B-Axis 0.058 kg • m²

T-Axis 0.005 kg • m²



MOTOMAN MHJF Educational Robot

Programming Pendant

Dimensions

169 (W) x 314.5 (H) x 50 (D) mm
6.7 (W) x 12.4 (H) x 2.0 (D) inches

Mass

0.990 kg (2.18 lbs)

Mass

Reinforced plastics

Operation Device

Select keys, axis keys, numerical/application keys, Mode switch with key, emergency stop button, enable switch, compact flash card interface device [compact flash is optional.], USB port (1 port)

Display

640x480 pixels color LCD, touch panel

IEC Protection Class

IP65

Cable Length

Standard: 8 m (26ft), optional: 20 m max. (66ft)

Ordering Information

Hardware

MotoMan MHJF Robotic Arm Kit	ROB-MHJF-BAS
MotoMan MHJF, Fundamentals Package	ROB-MHJF-STND

Curriculum

MotoMan MHJF Robotic Fundamentals	77-5001-0000
MotoMan MHJF Advanced Robotics	77-5002-0000
MotoMan MHJF Materials Handling I	77-5003-0000
MotoMan MHJF Materials Handling II	77-5004-0000

Yaskawa Certification

Certified Yaskawa Equipment Operator Test	77-5010-0010
Certified Yaskawa Equipment Programmer Test	77-5010-0020

Robot Arm Accessories

Pneumatic Gripper with I/O Box for MHJF	00-0648-0000
1.0m linear slide base for MotoMan MHJF	00-1026-1000
1.8m linear slide base for MotoMan MHJF	00-1027-1000
Adapter Mounting Plate for MHJF	00-1241-0001
Floor mount pedestal stand (850mm/33.5")	00-1280-0000
Palletizing Rack	00-1110-0000
Gravity Parts Feeder (with microswitch sensor)	10-1007-4000
Workbench 59" x 31.5" (slotted aluminum top)	00-1249-0000
PC Extension Shelf 23.5"x31.5"	00-1260-0000
I/O Experiment Table	00-1201-0000

FS100 Controller

Dimensions

470 (W) x 420 (D) x 200 (H) mm
18.5 (W) x 16.5 (H) x 7.9 (D) inches

Weight

20 kg (44.1 lbs)

Ambient Operating Temperature

During operation: 0°C to +40°C (32°F to +104°F)

Type of Control

Software servo control

Communications

1 (10BASE-T/100BASE-TX)

Digital I/Os

Specialized signals: 10 inputs and 1 output
General signals: 28 inputs and 28 outputs
Max. I/O (optional) : 1,024 inputs/outputs

Expansion Slots

MP2000 bus x 5 slots

Configuration

Standard: IP20 (open structure)
Option: IP54 (dustproof housing)

Programming Capacity

JOB: 10,000 steps, 1,000 instructions
CIO ladder: 1,500 steps

Drive Units

Six axes for robots two more axes can be added as external axes.
(Can be installed in the controller.)

Power Requirements

Three-phase 200/220 VAC (+10% to -15%), 50/60 Hz

Yaskawa Certification

Students who complete the MotoMan MHJF Robotic Fundamentals and Advanced Robotics curriculum are eligible to become Certified as a MotoMan Operator and/or Programmer. At the completion of each course, the course concludes with a practical exam which the student must pass before taking the MHJF Certification exam.

Candidates that successfully complete the practical exam are then eligible to take the final certification exam which is a test composed of 40 multiple choice questions about the MotoMan system and robotic theory



Toll Free: 800-221-2763
Phone: 603-413-2600
Fax: 603-437-2137

Email:
info@intelitek.com
www.intelitek.com