

NEW

NACHI

Wall-Mounted Robot for Use in Compact Spaces **MZ12W**

MZ12W-01



Compact Design

- Operates over a wide area, eliminating the need for a drive unit.
- Pendulum-like motion of the first axis allows operation in narrow layouts, such as hallways.

High Speed and High Precision

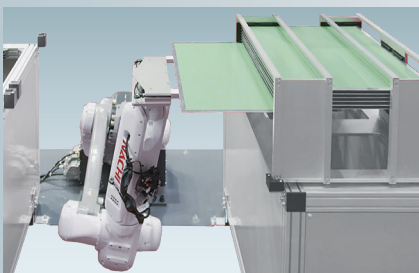
- Vertical Orientation of the first axis and fine-motion functionality improve trajectory accuracy.

Powerful Wrist

- Wrist torque at least twice that of the MZ12H.
- Suitable for large workpieces and tooling.

Optimized for rack storage in board transport applications

Reduced risk of dust adhering to boards, as the tooling is positioned above the robot arm.



Does not block access to front of equipment

Can be installed without obstructing fixture openings, enhancing machine maintenance access.

Retrieval position



Standby position

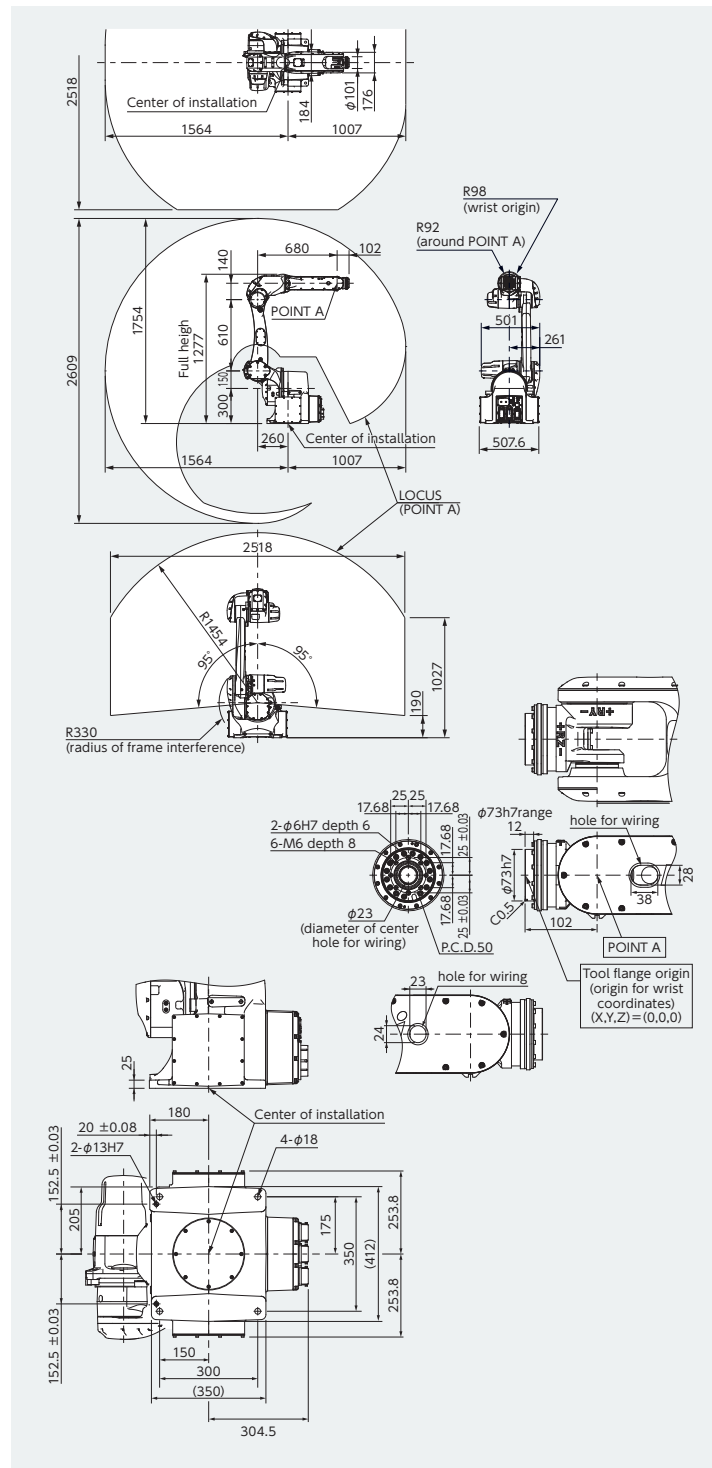


Basic robot specifications

| Item | | Specifications |
|---|-------|---|
| Robot type | | MZ12W-01 |
| Structure | | Vertical articulated |
| Degree of Freedom | | 6 |
| Drive system | | AC servo motor |
| Maximum motion range | J1 | $\pm 1.66\text{rad} (\pm 95^\circ)$ |
| | J2 | $+3.14 \sim -1.22\text{rad} (+180 \sim -70^\circ)$ |
| | J3 | $+3.67 \sim -2.57\text{rad} (+210 \sim -147^\circ)$ |
| | J4 | $\pm 3.32\text{rad} (\pm 190^\circ)$ |
| | J5 | $\pm 2.36\text{rad} (\pm 135^\circ)$ |
| | J6 | $\pm 6.28\text{rad} (\pm 360^\circ)$ |
| Maximum velocity ^{*1} | J1 | 4.54rad/s (260°/s) |
| | J2 | 4.01rad/s (230°/s) |
| | J3 | 4.54rad/s (260°/s) |
| | J4 | 8.2rad/s (470°/s) |
| | J5 | 4.89rad/s (280°/s) |
| | J6 | 10.82rad/s (620°/s) |
| Maximum payload | Wrist | 12kg |
| Maximum static load torque | J4 | 55.0N·m |
| | J5 | 55.0N·m |
| | J6 | 50.0N·m |
| Maximum moment of inertia ^{*2} | J4 | 3.0kg·m ² |
| | J5 | 3.0kg·m ² |
| | J6 | 2.6kg·m ² |
| Position repeatability ^{*3} | | $\pm 0.04\text{mm}$ |
| Maximum reach | | 1564mm |
| Air tubes | | $\phi 6 \times 2$ $\phi 8 \times 1$ ^{*4} |
| Application signal wires | | 24wires |
| Mounting Condition | | Floor/Tilted/Inverted |
| Ambient conditions | | Temperature: 0 to 45°C ⁵ Humidity: 20 to 85%RH (No dew, nor frost allowed) Vibration to the installation face: Not more than 0.5G (4.9m/s ²) |
| Protection class ^{*6} | | IP67 equivalent (dust proof and moisture resistant) |
| Clean class ^{*7} | | CLASS4 |
| Noise level ^{*8} | | 73dB |
| Robot weight | | 195kg |

- *1: The maximum velocity in the chart is the maximum value. It will change depending on the operation program and the wrist load condition.
 *2: Maximum moment of inertia of a wrist changes depending on the load condition.
 *3: JIS B 8432 conformance.
 *4: When selecting the built-in solenoid valve of clean specification, air tube is $\phi 6 \times 1$.
 *5: Using at 1000m or lower sea level. Ambient temperature has limitations when allowable altitude is exceeded.
 *6: Liquid such as organic compound, acidity, alkalinity, chlorine or gasoline cutting fluid which deteriorates the seal material is not available to use. The wire-harness portion is IP65 equivalent, and the robot controller CFDs-3000 is IP20 equivalent. See the figure of "Protection class" below.
 *7: Based on internal assessment in accordance with ISO14644-1. To ensure cleanliness, install the robot in a clean room with downflow. The robot is not packed in a dustproof package, so dust removal and wiping and cleaning of the robot are required when bringing it into the clean room.
 *8: Robot noise is A-weighted equivalent sound level measured under "JIS Z 8737-1" (ISO 11201) with maximum payload and maximum velocity.

Dimensions and operating range



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* The specifications are subject to changes without notice.

* In case that an end user uses this product for military purpose or production of weapon, this product may be liable for the subject of export restriction stipulated in the Foreign Exchange and Foreign Trade Act. Please go through careful investigation and necessary formalities for export.



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