

NACHI

NEW
MZ25/35S



The spacious working area
and powerful hollow wrist structure
enable versatile applications

Adapts to a wide range of work
environments with various
standard equipment

NEW MZ25/35S

Hollow wrist
structure

Application cables
and tubes are located
inside the arm

Coolant resistant paint

IP 67 equivalent
(dust-proof, moisture-resistant)

Applied rust proof
bolts on each part
and rust proof
treatment for parts

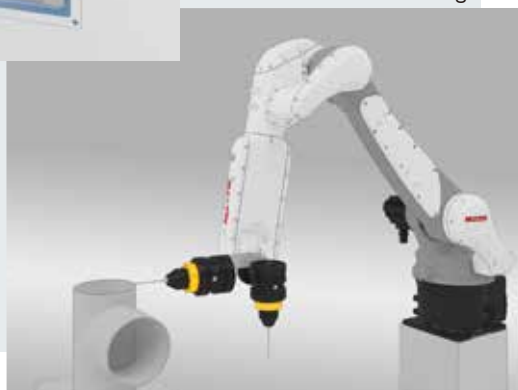
Application example



Machine loading
Mounting



Picking
Deburring



Abundant applications

Cables and tubes are equipped to support various applications

Types	Specification
Application cables	24 wires(Including wires for optional valves)
Air tubes	φ6×1,φ10×1
LAN CABLE	One cable
Additional Axis	1 motor axis(Motor cable,E/C cable)

FD20 controller

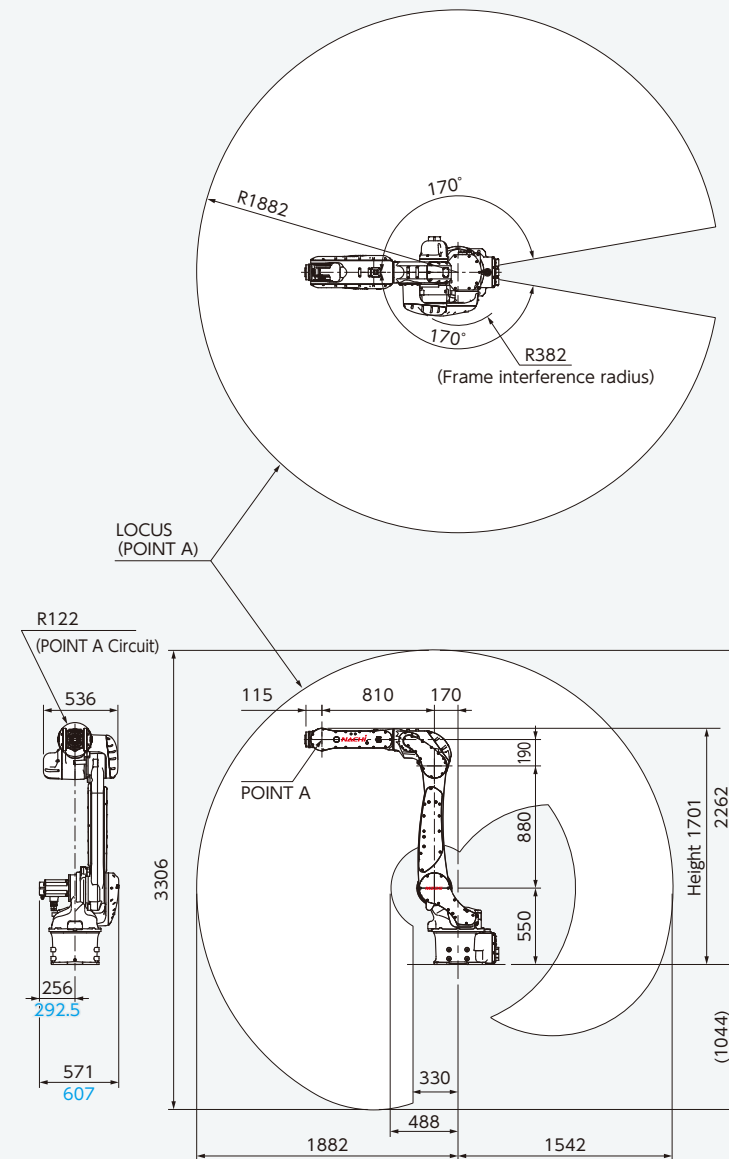
- Flexible setting layout with small-sized, space-saving
- Comes with an improved easy-read teach pendant
- A wide range of options are also available



580 (W) × 532 (D) × 490 (H)
Caster 50mm
Excludes switches and connectors

※The FD18 control unit is
also available for use

Dimensions and operating range



Blue text is MZ35S-02

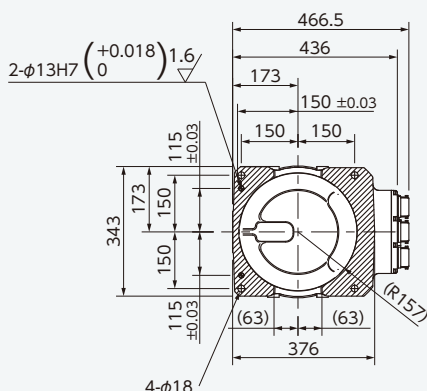
Specification

Items		Specification	
Robot type		MZ25-02	MZ35S-02
Structure		Articulated construction	
Degree of Freedom		6	
Drive system		AC servo system	
Maximum motion range	J1	$\pm 2.97 \text{ rad} (\pm 170^\circ)^{*1}$	
	J2	$+1.83 \sim -2.62 \text{ rad} (+105 \sim -150^\circ)$	
	J3	$+3.21 \sim -1.43 \text{ rad} (+184 \sim -82^\circ)$	
	J4	$\pm 3.32 \text{ rad} (\pm 190^\circ)$	
	J5	$\pm 2.53 \text{ rad} (\pm 145^\circ)$	
	J6	$\pm 6.28 \text{ rad} (\pm 360^\circ)$	
Maximum Velocity ^{*2}	J1	3.67rad/s (210°/s)	
	J2	3.23rad/s (185°/s)	2.44rad/s (140°/s)
	J3	4.71rad/s (270°/s)	3.92rad/s (225°/s)
	J4	7.33rad/s (420°/s)	6.11rad/s (350°/s)
	J5	7.33rad/s (420°/s)	4.53rad/s (260°/s)
	J6	11.73rad/s (672°/s)	6.98rad/s (400°/s)
Max. Payload	Wrist	25kg	35kg
Maximum static load torque	J4	52Nm	110Nm
	J5	52Nm	110Nm
	J6	32Nm	60Nm
Maximum moment of inertia ^{*3}	J4	2.4kgm ²	5.0kgm ²
	J5	2.4kgm ²	5.0kgm ²
	J6	1.3kgm ²	1.5kgm ²
Position repeatability ^{*4}		$\pm 0.05 \text{ mm}$	
Maximum Reach		1882mm	
Air tubes		$\phi 6 \times 1, \phi 10 \times 1$	
Application cables		24 wires (Including wires for optional valves)	
Installation method		Floor / Inverted / Angle	
Installation conditions		Ambient temperature: $0 \sim 45^\circ \text{C}^{\ast 5}$ Ambient humidity: $20 \sim 85\% \text{RH}$ (no dew or frost allowed) Vibration: Not more than 0.5G (4.9m/s^2)	
Protection class ^{*6}		Robot body·Wrist IP67 equivalent	
Cleanliness ^{*7}		ISO Class4 equivalent	
Noise level ^{*8}		75dB	
Robot mass		250kg	

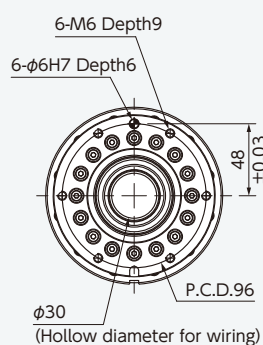
1[rad]= $180/\pi[^\circ]$, 1[N·m]=1/9.8[kgf·m]

- *: The specifications are subject to changes without notice for product improvement.
- *: Explosion-proof version is not available.

Robot Base Dimensions

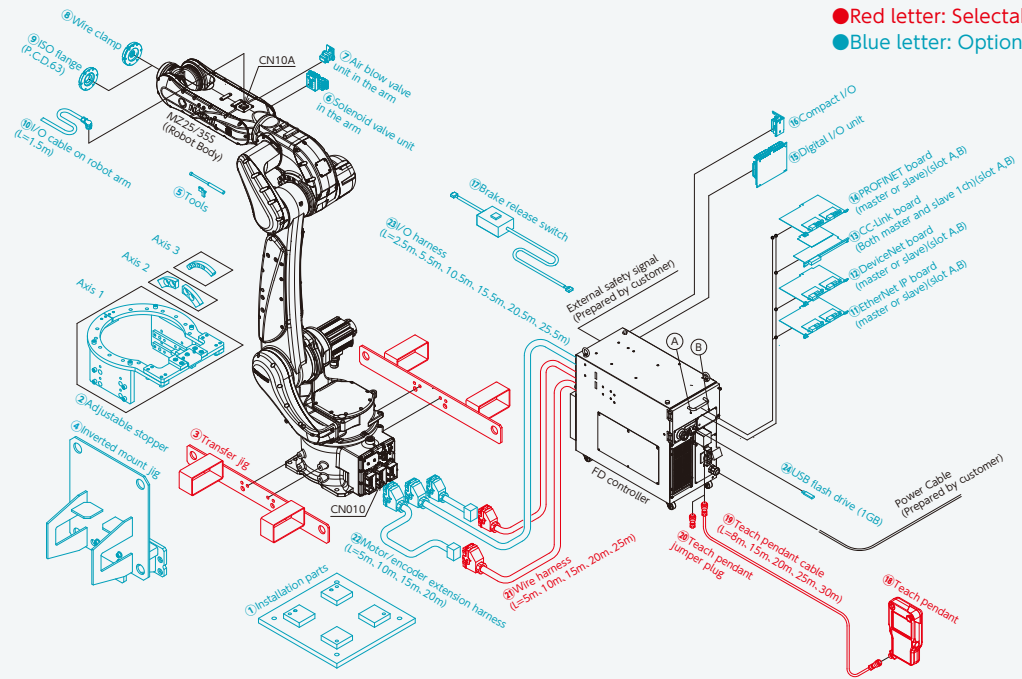


Wrist Dimensions



- *1: An optional feature allows for ± 180
- *2: The maximum speed in the table is the maximum value and will vary depending on the work program and wrist load conditions.
- *3: Please note that the wrist allowable movement varies depending on the wrist load conditions.
- *4: JIS B 8432 compliant.
- *5: Up to a maximum of 1000m from sea level. Ambient temperature is reduced when allowable altitude is exceeded. The control unit is rated for ambient temperatures between 0°C and 40°C .
- *6: Don't use liquids that degrade seal components, such as organic solvents, acids, alkalis, chlorinated compounds, or gasoline-based cutting fluids. The wire harness section is IP65-equivalent, while the control units (both FD20 and FD18) are IP54-equivalent. When selecting option OP-P6-016/-017 (J2-axis encoder connector protector), the rating decreases from IP67-equivalent to IP54-equivalent.
- *7: Based on internal evaluation compliant with ISO 14644-1. To ensure cleanliness, install within a cleanroom with downward air flow. The robot is not shipped in dust-proof packaging; therefore, removal of dust and particulates from the robot and wipe-down cleaning are required when bringing it into the cleanroom.
- *8: A-weighted equivalent noise level measured in accordance with JIS Z 8737-1 (ISO 11201). (Operating at rated load and maximum speed)

Option List



※The diagram applies to the FD18 controller. For the FD18 controller, refer to the “FD20” entries in the table below.

No.	Item	Specifications	Parts No.	
			FD18	FD20
①	Installation parts	Installation plate for chemical anchor	OP-F1-056	
		Installation plate for Hammer drive anchor	OP-F2-033	
		Leveling plate	OP-F1-057	
		Installation bolt & washer	OP-F1-042	
②	Adjustable stopper	Axis 1	OP-S5-045	
		Axis 2	OP-A5-040	
		Axis 3	OP-A6-036	
		Installation pin 2 pieces 1 set	OP-F1-043	
③	Transfer jig	Forklift and crane for transporting	OP-S2-055	
④	Inverted mount jig	Inverted mount jig	OP-S7-014 ¹⁾	
⑤	Tools	Zeroing pin & Zeroing block	OP-T2-108	
⑥	Solenoid valve unit in the arm	2 position double 1 valve	OP-H4-026	
		2 position double 2 valves	OP-H5-026	
		2 position double 3 valves	OP-H6-025	
		3 position double 1 valve	OP-H4-027	
		3 position double 2 valves	OP-H5-027	
		3 position double 3 valves	OP-H6-026	
⑦	Air blow valve unit in the arm	2 port valve 1 piece	OP-H7-007	
⑧	Wire clamp	Wrist wire clamp for axis 6	OP-W3-022	
⑨	ISO flange	ISO flange adapter (P.C.D.63 support)	OP-W2-018	
⑩	I/O cable on robot arm	I/O cable (connector + cable) 12 wires 1.5m	IOCABLE-110	
⑪	EtherNet IP board	Master 1CH	FD18-OP130-A	
		Slave 1CH	FD18-OP130-B	
⑫	DeviceNet board	Master 1CH	FD18-OP129-A	
		Slave 1CH	FD18-OP129-B	
⑬	CC-Link board	Both master and slave 1CH	FD18-OP98-A	FD20-OP98-A
⑭	PROFINET board	Master 1CH	FD18-OP162-A	
		Slave 1CH	FD18-OP162-B	
⑮	Digital I/O unit	I/O Photo coupler 32 inputs / NPN Transistor 32 outputs	FD18-OP125-A	FD20-OP125-A
		I/O Photo coupler 32 inputs / PNP Transistor 32 outputs	FD18-OP151-A	FD20-OP151-A
		I/O Photo coupler 32 inputs / Relay 32 outputs (PNP)	FD18-OP118-AP ²⁾	FD20-OP118-AP ³⁾
		I/O Photo coupler 32 inputs / Relay 32 outputs (NPN)	FD18-OP118-AN ²⁾	FD20-OP118-AN ³⁾

No.	Item	Specifications	Parts No.	
			FD18	FD20
⑯	Compact I/O	I/O photocoupler inputs: 14 points / Relay output: 8 points (NPN or PNP)	FD18-OP150-A ³⁾	FD20-OP150-A ³⁾
⑰	Brake release switch	I/O photocoupler inputs: 10 points / Relay output: 10 points (NPN or PNP)	FD18-OP150-B ³⁾	FD20-OP150-B ³⁾
⑱	Teach pendant	Used for teaching	FD11-OP90-E	
⑲	Teach pendant cable	8m	FD19TP-FSJNE	
		15m	FD19TP-D08M	
		20m	FD19TP-D15M	
		25m	FD19TP-D20M	
		30m	FD19TP-D25M	
⑳	Teach pendant jumper plug	User when teach pendant is separated from the controller	FD19TP-D30M	
㉑	Wire harness	5m	FD18-OP161-A ⁴⁾	
		10m	A100F-J1-05-B	
		15m	A100F-J1-10-B	
		20m	A100F-J1-15-B	
		25m	A100F-J1-20-B	
㉒	Motor/encoder extension harness	5m	A100F-J1-25-B	
		10m	HK201X-J1-05-B	
		15m	HK201X-J1-10-B	
		20m	HK201X-J1-15-B	
		25m	HK201X-J1-20-B	
㉓	I/O harness	2.5m	IOCABLE-90-02M	
		5.5m	IOCABLE-90-05M	
		10.5m	IOCABLE-90-10M	
		15.5m	IOCABLE-90-15M	
		20.5m	IOCABLE-90-20M	
㉔	USB flash drive (1GB)	1GByte	IOCABLE-90-25M	
			FD11-OP93-A	

*1 Inverted mount type requires this option

*2 FD18-OP125-A is also included.

*3 Inputs/outputs depend on combination with other options.

Please refer to the standard specification for details.

*4 This option is required when teach pendant is not selected.

*5 FD20-OP125-A also needs to be arranged.

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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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