

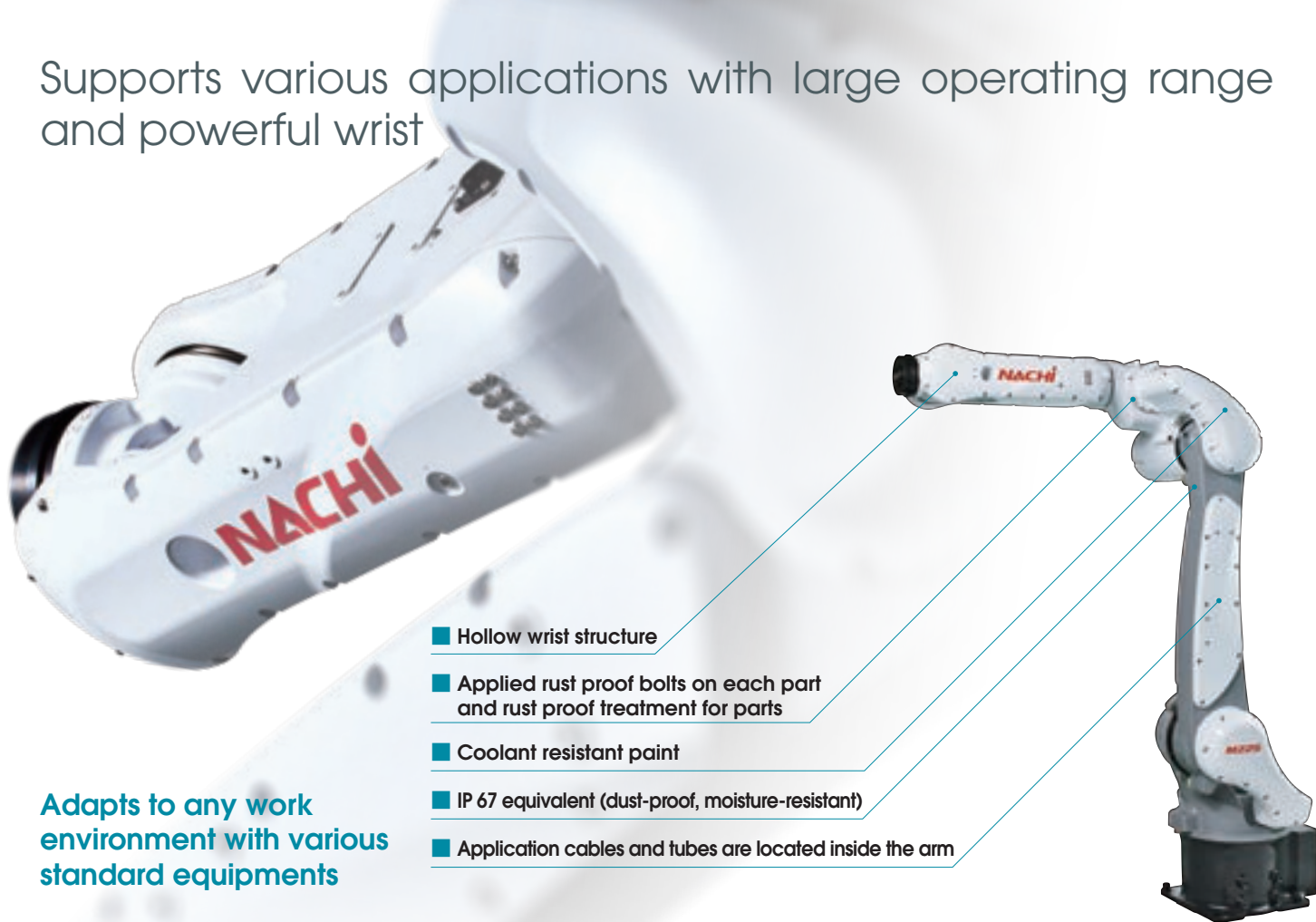
**NACHI**

**NEW**

**MZ25**



Supports various applications with large operating range and powerful wrist



- Hollow wrist structure
- Applied rust proof bolts on each part and rust proof treatment for parts
- Coolant resistant paint
- IP 67 equivalent (dust-proof, moisture-resistant)
- Application cables and tubes are located inside the arm

Adapts to any work environment with various standard equipments

### Application example



Machine loading



Picking



Deburring



Mounting

### Abundant applications

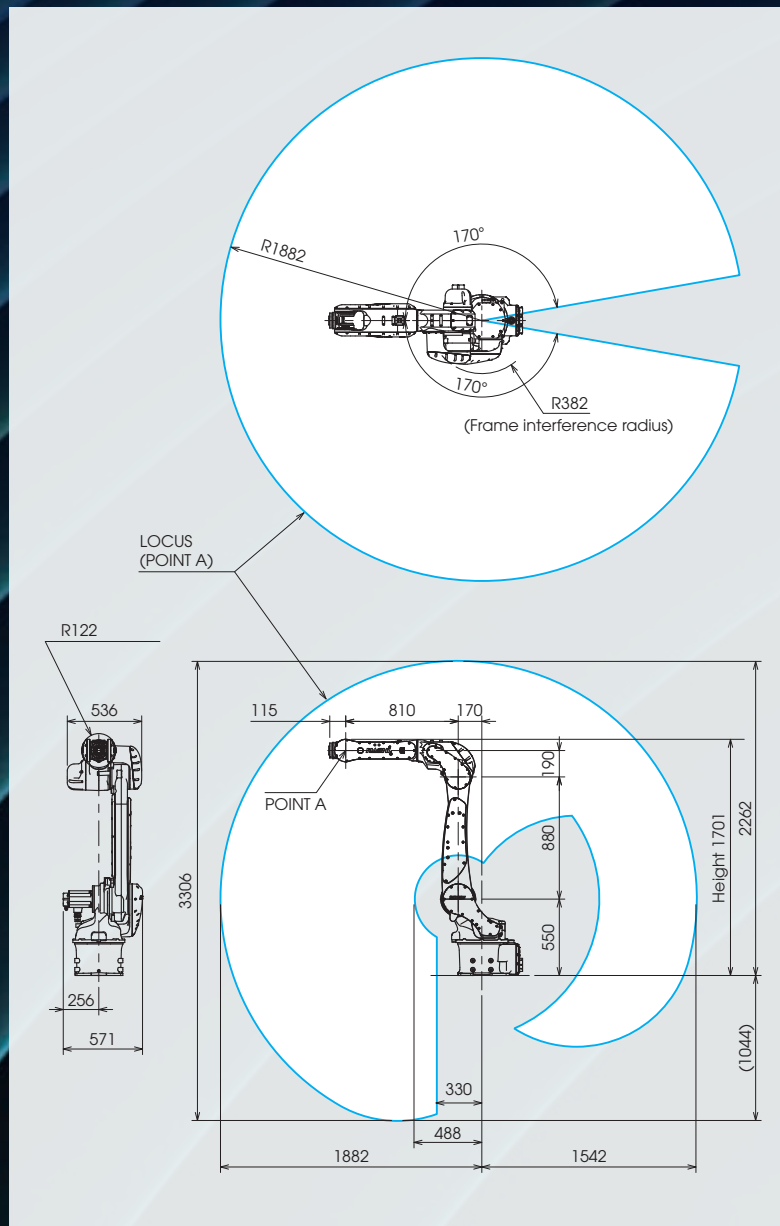
Cables and tubes are equipped to support various applications

Types	Specification
Application cables	24 wires(Including wires for optional valves)
Air tubes	φ6x1, φ10x1
LAN CABLE	One cable
Additional Axis	1 motor axis(Motor cable,E/C cable)

# Top-level reach and stroke

Flexible tasks are possible with top-level operating range

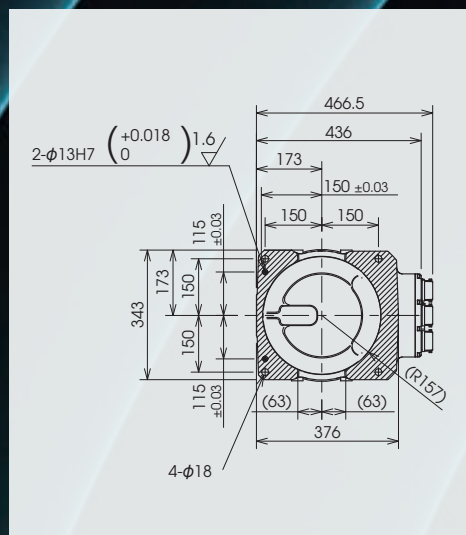
## Dimensions and operating range



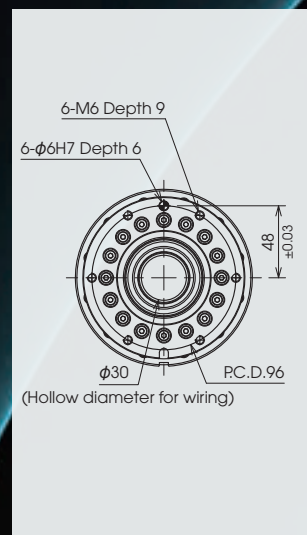
## MZ25 Specification

Items		Specification	
Robot type		MZ25-01	
Structure		Articulated robot	
Degree of Freedom		6	
Maximum motion range	Arm	J1 Swivel	$\pm 2.97 \text{ rad } (\pm 170^\circ)$
		J2 Forward/Backward	$+1.83 \sim -2.62 \text{ rad } (+105 \sim -150^\circ)$
		J3 Upward/Downward	$+5.04 \sim -2.81 \text{ rad } (+289 \sim -161^\circ)$
	Wrist	J4 Rotation2	$\pm 3.32 \text{ rad } (\pm 190^\circ)$
		J5 Bend	$\pm 2.53 \text{ rad } (\pm 145^\circ)$
		J6 Rotation1	$\pm 6.28 \text{ rad } (\pm 360^\circ)$
Maximum Velocity*1	Arm	J1 Swivel	$3.67 \text{ rad/s } (210^\circ/\text{s})$
		J2 Forward/Backward	$3.23 \text{ rad/s } (185^\circ/\text{s})$
		J3 Upward/Downward	$4.71 \text{ rad/s } (270^\circ/\text{s})$
	Wrist	J4 Rotation2	$7.33 \text{ rad/s } (420^\circ/\text{s})$
		J5 Bend	$7.33 \text{ rad/s } (420^\circ/\text{s})$
		J6 Rotation1	$11.73 \text{ rad/s } (672^\circ/\text{s})$
Maximum Payload	Wrist	25kg	
Maximum static load torque	J4 Rotation2	52N·m	
	J5 Bend	52N·m	
	J6 Rotation1	32N·m	
Maximum moment of inertia*2	J4 Rotation2	2.4kg·m <sup>2</sup>	
	J5 Bend	2.4kg·m <sup>2</sup>	
	J6 Rotation1	1.3kg·m <sup>2</sup>	
Maximum Reach	1882mm		
Position repeatability*3	$\pm 0.05 \text{ mm}$		
Air tubes	$\phi 6 \times 1, \phi 10 \times 1$		
Application cables	24 wires (Including wires for optional valves)		
Mounting Condition	Floor / Inverted / Angle		
Ambient Temperature	$0 \sim 45^\circ \text{C}^{*4}$		
Ambient Humidity	20~85%RH (No dew or frost allowed)		
Protection class	IP 67 equivalent (dust-proof, moisture-resistant)		
Robot weight	250kg		

## Robot Base Dimensions



## Wrist Dimensions



1 (rad) =  $180/\pi$  (°), 1 (N·m) = 1/9.8 (kgf·m)

\*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. Depends on wrist load condition

\*3. JIS B 8432 conformance

\*4. Using at 1000 m or lower sea level. Ambient temperature has limitations when allowable altitude is exceeded

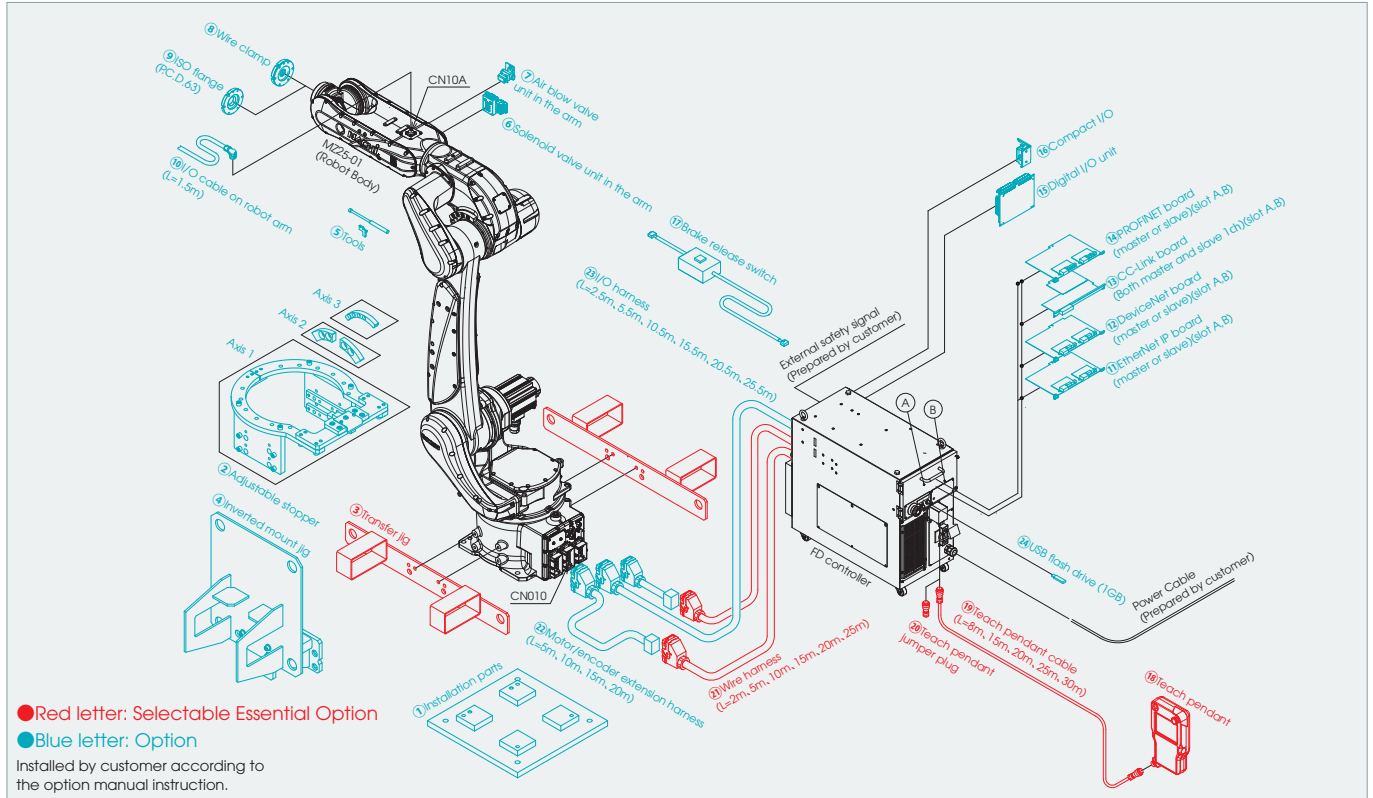
## FD18 controller

- Flexible setting layout with small-sized, space-saving
- Comes with an improved easy-read teach pendant
- Various options for FD11 are also available



300mm(W)×600mm(D)×530mm(H)

Option List



No.	Item	Specifications	Parts No.
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
		Installation pin 2 pieces 1 set	OP-F1-043
②	Adjustable stopper	Axis 1	OP-S5-045
		Axis 2	OP-A5-040
		Axis 3	OP-A6-036
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
⑦	Air blow valve unit in the arm	2 port valve 1 piece	OP-H7-007
		Wrist wire clamp for axis 6	OP-W3-022
		ISO flange adapter (P.C.D.63 support)	OP-W2-018
⑧	Wire clamp		
⑨	ISO flange		
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
		Master 1CH	FD18-OP130-B
⑫	DeviceNet board	Master 1CH	FD18-OP131-A
		Master 1CH	FD18-OP131-B
⑬	CC-Link board	Both master and slave 1CH	FD18-OP98-A
⑭	PROFINET board	Master 1CH	FD18-OP162-A
		Master 1CH	FD18-OP162-B

No.	Item	Specifications	Parts No.
⑮	Digital I/O unit	I/O Photo coupler 32 inputs / NPN Transistor 32 outputs I/O Photo coupler 32 inputs / Relay 32 outputs (PNP) I/O Photo coupler 32 inputs / Relay 32 outputs (NPN)	FD18-OP125-A FD18-OP118-AP*2 FD18-OP118-AN*2
⑯	Compact I/O	Maximum 14 inputs/10 outputs photo MOS outputs (NPN or PNP)	FD18-OP150-A*3
⑰	Brake release switch	Brake release switch (portable type, cable length 5m)	FD11-OP90-E
⑱	Teach pendant	Used for teaching	FD19TP-FSJNE
⑲	Teach pendant cable	8m	FD19TP-D08M
		15m	FD19TP-D15M
		20m	FD19TP-D20M
		25m	FD19TP-D25M
		30m	FD19TP-D30M
⑳	Teach pendant jumper plug	User when teach pendant is separated from the controller	FD18-OP161-A*4
㉑	Wire harness	2m	A100F-J1-02-B
		5m	A100F-J1-05-B
		10m	A100F-J1-10-B
		15m	A100F-J1-15-B
		20m	A100F-J1-20-B
㉒	Motor/encoder extension harness	25m	A100F-J1-25-B
		5m	HK201X-J1-05-B
		10m	HK201X-J1-10-B
		15m	HK201X-J1-15-B
		20m	HK201X-J1-20-B
㉓	I/O harness	2.5m 0.3mm <sup>2</sup> X12P with a shield	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)	25.5m	IOCABLE-90-25M
		1GByte	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.



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