



**NACHI**



# **MZ Collaborative Robot**

**Model: CMZ12-01**

**A collaborative robot with trusted MZ series technology,  
now with a longer reach  
Capable of 12 kg payloads at high speed and high precision**

## **Superb safety features**

- *Conforms to various certification standards for ensuring safety as a collaborative robot  
(Third-party certifications received: ISO 13849-1, ISO 10218-1, ISO/TS 15066)*
- *Product shape and safety software features designed to minimize clamping risk*

## **High speed and high precision**

- *Best-in-class levels of speed and precision due to the application of the latest MZ series mechanisms*
  - *1000 mm/s during collaborative operation and 3000 mm/s during non-collaborative operation*
  - *Precise positioning repeatability of  $\pm 0.025$  mm*
- *Designed with a double-arm construction for greater rigidity*

## **Useful for a wide range of applications**

- *Hollow-wrist construction reduces risk of contact with internal arm cables and tubes during work*
- *Conforms to standards for high levels of resistance to dust and water (equivalent to IP67)*



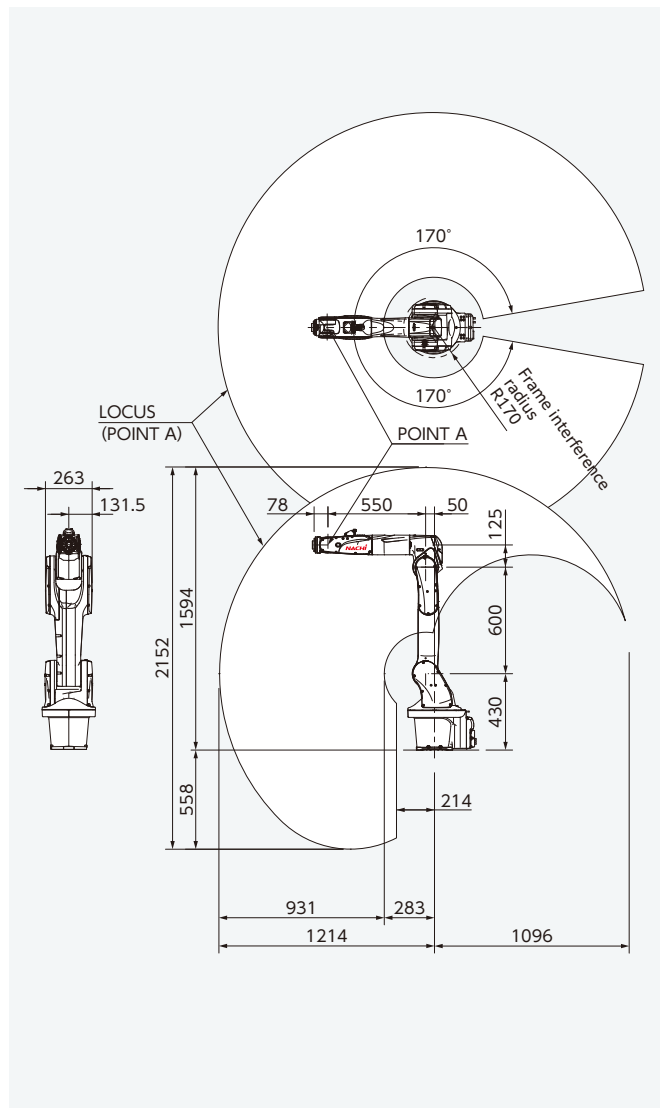
## Basic Specification of Robot

Item	Specification	
Model	<b>CMZ12-01</b>	
Structure	Articulated robot	
Axes	6	
Drive system	AC servo motor	
Maximum motion range	J1	$\pm 2.97\text{rad}(\pm 170^\circ)$
	J2	Initialization: $-1.75 \sim +0.70\text{rad}(-100 \sim +40^\circ)$ MAX: $-2.36 \sim 1.40\text{rad}(-135 \sim +80^\circ)$
	J3	$-2.68 \sim 2.74\text{rad}(-153 \sim +157^\circ)$
	J4	$\pm 3.32\text{rad}(\pm 190^\circ)$
	J5	Initialization: $\pm 1.57\text{rad}(\pm 90^\circ)$ MAX: $\pm 2.09\text{rad}(\pm 120^\circ)$
	J6	$\pm 6.28\text{rad}(\pm 360^\circ)$
Maximum Velocity	J1	2.09rad/s(120°/s) [with 8kg payload: 4.71rad/s(270°/s)] <sup>Note 1)</sup>
	J2	2.09rad/s(120°/s) [with 8kg payload: 3.14rad/s(180°/s)] <sup>Note 1)</sup>
	J3	3.14rad/s(180°/s) [with 8kg payload: 5.41rad/s(310°/s)] <sup>Note 1)</sup>
	J4	7.68rad/s(440°/s)
	J5	7.68rad/s(440°/s)
	J6	12.22rad/s(700°/s)
TCP speed	Non-collaborative	2000mm/s[with 8kg payload: 3000mm/s] <sup>Note 1)</sup>
	Collaborative	1000mm/s
Payload weight	Wrist	12kg
Maximum static load torque	J4	20N·m
	J5	20N·m
	J6	10.4N·m
Maximum moment of inertia	J4	0.60kg·m <sup>2</sup>
	J5	0.60kg·m <sup>2</sup>
	J6	0.20kg·m <sup>2</sup>
Position repeatability		$\pm 0.025\text{mm}$
Maximum Reach		1214mm
Air tubes		$\phi 6 \times 2$ (3 solenoid valves installed as standard) Available pressure range: 0.1~0.5MPa
Application cables		20 core or 12 core(Depends on option selection)
LAN		None, 8 core 1 line, 8 core 2 line (Depends on option selection)
Installation		Floor/Inverted
Mounting Condition		Ambient Temperature: 0~40°C Ambient Humidity: 20~85%RH(No dew or frost allowed) Vibration: Not more than 0.5G(4.9m/s <sup>2</sup> )
Protection class		IP67 equivalent(dust-proof, liquid-resistant)
Clean rating		Equivalent ISO CLASS 5
Noise level		75dB
Robot weight		66kg

1[rad]=180/π[°], 1[N·m]=1/9.8[kgf·m]

- Note that the information represented in this document, such as rated values, specifications, and dimensions, is subject to change without notice to improve the product.
- An explosion-proof version is not available.
- Note 1) The speed is extended by the payload.

## Dimensions and operating range



- When using the robot for collaborative operation, ensure that its stand is rigid and firmly secured.
- If parts such as the stand or installation vibrate due to robot operation or the surrounding circumstances, the collision-detection system of the CMZ12-01 might erroneously detect a collision.



I/O 20 core, LAN 8 core 1 Line



Collaborative mode indicator lamp



Stopper cover that reduces the risk of getting caught



Offset shape that reduces the risk of getting caught

# NACHI

NACHI-FUJIKOSHI CORP.

www.nachi-fujikoshi.co.jp

Head Office Shiodome Sumitomo Bldg. 17F, 1-9-2 Higashi-Shinbashi, Minato-ku, Tokyo 105-0021  
Robot Division 1-1-1 Fujikoshi-Honmachi, Toyama 930-8511, JAPAN

Tel: +81-(0)3-5568-5111  
Tel: +81-(0)76-456-2223

Fax: +81-(0)3-5568-5206  
Fax: +81-(0)76-493-5253

NACHI AMERICA INC. DETROIT BRANCH  
NACHI EUROPE GmbH  
NACHI TECHNOLOGY (THAILAND) CO., LTD.  
NACHI TECHNOLOGY INDIA PRIVATE LIMITED  
GURGAON HEAD OFFICE  
BANGALORE OFFICE  
PT.NACHI INDONESIA  
NACHI-FUJIKOSHI(CHINA) CO., LTD.

Michigan, U.S.A.  
GERMANY  
THAILAND  
INDIA  
INDONESIA  
CHINA

Tel: +1-248-305-6545  
Tel: +49-(0)2151-65046-0  
Tel: +66-2-258-4101  
Tel: +91-92160-33031  
Tel: +91-90018-48490  
Tel: +62-021-527-2841  
Tel: +86-(0)21-6915-2200

Fax: +1-248-305-6542  
Fax: +49-(0)2151-65046-90  
Fax: +66-2-258-4103  
Fax: +62-021-527-3029  
Fax: +86-(0)21-6915-5427

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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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