NACHI

CZ10

Slim arm collaborative robot

Collaborative people-friendly design

Nachi's slim arm collaborative, CZ10 has several people-friendly functions and structures.
Safety fences are not required and makes it easier to install a robot with various applications.

CZ10

Functional safety, Intrinsic safety

Double safety 1.Functional safety: Stops when detecting contact with person. 2.Intrinsic safety: Designed not to pinch person.

Easy Programming

Intuitive teaching by moving the robot arm by a hand.

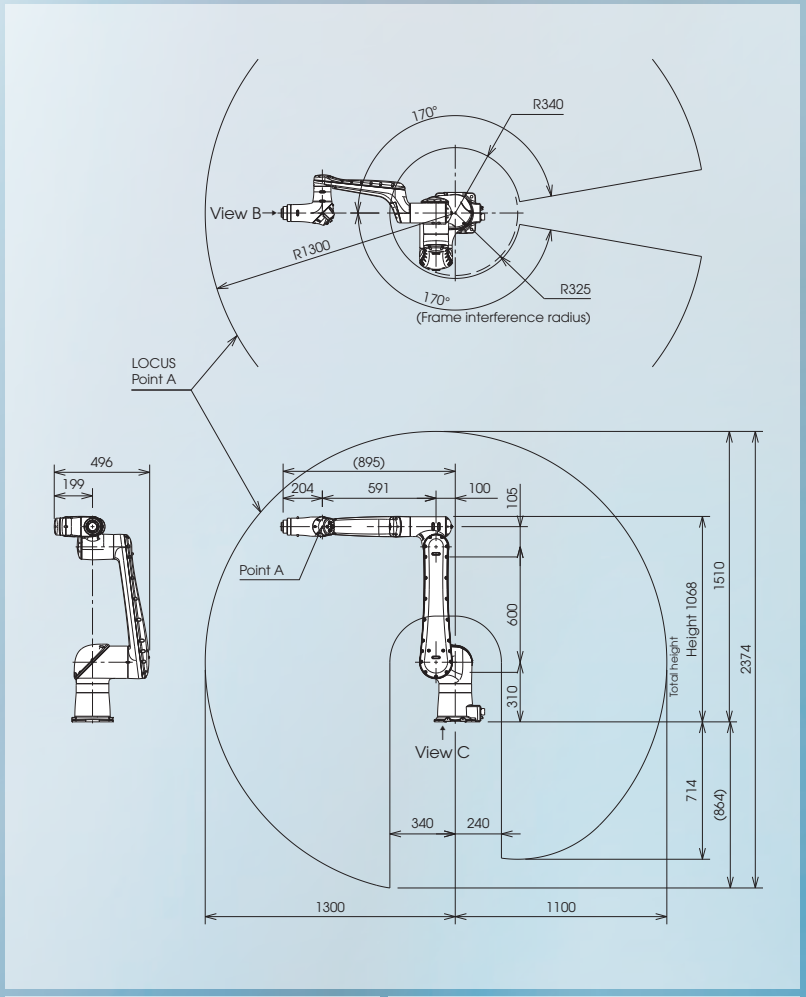
User-friendly Design

Pinch points and sharp edges eliminated for safer human interaction.

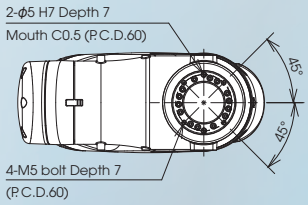
Basic Specification of Robot

Item		Specification
Robot type		CZ10-01
Number of axis		6
Drive system		AC servo motor
Max. working envelope	Axis 1	±2.96rad (±170°)
	Axis 2	-1.30～+3.92rad (-75～+225°)
	Axis 3	-1.34～+3.96rad (-77～+227°)
	Axis 4	±3.14rad (±180°)
	Axis 5	±2.96rad (±170°)
	Axis 6	±6.28rad (±360°)
Max. speed *1	Axis 1	2.09rad/s (120°/s)
	Axis 2	2.09rad/s (120°/s)
	Axis 3	3.14rad/s (180°/s)
	Axis 4	3.14rad/s (180°/s)
	Axis 5	3.14rad/s (180°/s)
	Axis 6	3.14rad/s (180°/s)
Max. payload	Wrist	10kg
Allowable static load torque	Axis 4	25.9N・m
	Axis 5	25.9N・m
	Axis 6	5.9N・m
Allowable moment of inertia *2	Axis 4	0.75kg・m^2
	Axis 5	0.75kg・m^2
	Axis 6	0.08kg・m^2
Position repeatability *3		±0.1mm
Max. reach		1300mm
Air piping		ϕ4×1
I/O on the wrist part		DI×4,DO×3
Installation		Floor/Inverted
Ambient conditions		Temperature: 0～45°C *4 Humidity: 20～85%RH (No dew condensation) Vibration to the installation face:0.5G (4.9m/s^2) or less
Dust-proof Drip-proof performance *5		IP54 equivalent (dust and drain proof-type)
Robot mass		61kg
Safety certification		Conforming to ISO 10218-1 *6 Conforming to TS 15066

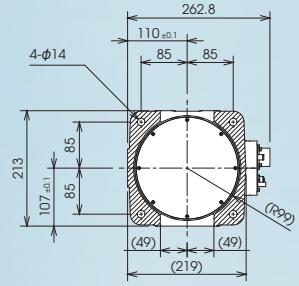
Robot Dimensions and Working Envelope



Wrist Dimensions (View B)



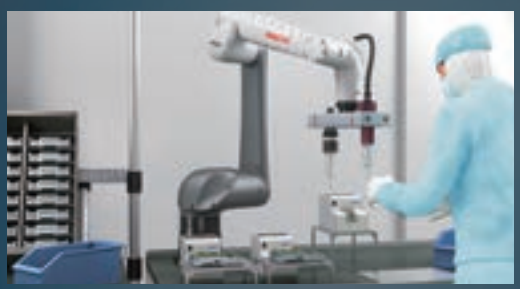
Installing Dimensions (View C)



Application examples

Machine loading

Safety fences are not required so that space-saving installation is possible without changing the layout of equipment.*7

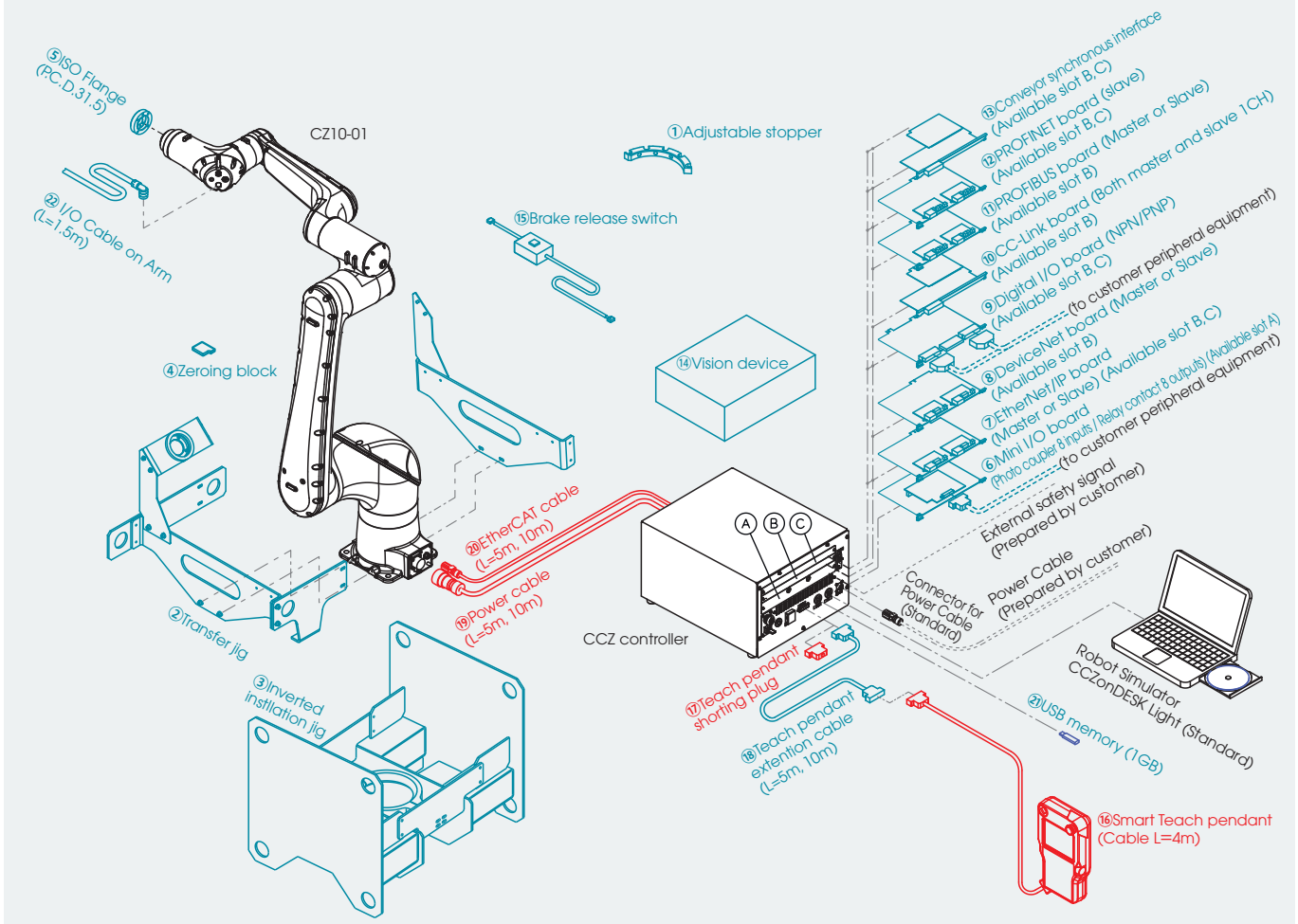


Assembly

Humans and robots can share work space because the robots stops when contacting with them.*7

1(rad) = 180/π(°), 1(N・m) = 1/9.8(kgf・m)
*1: The "Max. speed" in this table is the available maximum value and will change depending on the work-program and the wrist load condition.
*2: The allowable moment of inertia of wrist changes with load conditions.
*3: Based on JIS B8432
*4: Permitted installation is less than 1,000m above sea level. Allowable operating temperature dependent on installation height.
*5: Limit use in applications where liquids, such as, organic compound, acidity, alkalinity, chlorine, gasoline and/or cutting fluids. These could deteriorate seal material. Wire harness is IP54 equivalent, controller is IP20 equivalent.
*6: TÜV SÜD No.Z1 18 06 63642 017
*7: These examples are images and peripheral equipment needs to be built according to ISO 10218-2 at installation.

Option List



●Red Mark: Selectable Essential Option ●Blue Mark: Option

Please install options according to option installation instructions. TP=Teach Pendant

No.	Item	Specification	Parts NO.
①	Adjustable stopper	For axis 1	OP-S5-040
②	Transfer jig	Crane transport jig	OP-S2-053
③	Inverted instllation jig	Jig for inverted installation	OP-S7-013
④	Zeroing block	Zero point positioning block	OP-T2-104
⑤	ISO Flange	P.C.D.31.5	OP-W2-016
⑥	Mini I/O board	I / O optocoupler input 8 / NPN transistor output 8	CFD-OP150-A
		I / O optocoupler input 8 / Relay output 8 points	CFD-OP150-B
⑦	EtherNet/IP board *1	Master 1 CH	CFD-OP130-A
		Slave 1 CH	CFD-OP130-B
		Master 1CH + Slave 1 CH	CFD-OP130-C
		Slave 2 CH	CFD-OP130-D
		Master 2 CH	CFD-OP130-E
⑧	DeviceNet board *1	Master 1 CH	CFD-OP131-A
		Slave 1 CH	CFD-OP131-B
		Master 1CH + Slave 1 CH	CFD-OP131-C
		Slave 2 CH	CFD-OP131-D
		Master 2 CH	CFD-OP131-E
⑨	Digital I/O board	I/O optocoupler input 32/NPN transistor output 32	CFD-OP125-A
		I/O optocoupler input 64/NPN transistor output 64	CFD-OP125-B
		I/O optocoupler input 32/PNP transistor output 32	CFD-OP151-A
		I/O optocoupler input 64/PNP transistor output 64	CFD-OP151-B
⑩	CC-Link board *2	Both master and slave 1CH	CFD-OP98-B

No.	Item	Specification	Parts NO.
⑪	PROFIBUS board *3	Master 1 CH	CFD-OP132-A
		Slave 1 CH	CFD-OP132-B
		Master 1CH + Slave 1 CH	CFD-OP132-C
		Slave 2 CH	CFD-OP132-D
		Master 2 CH	CFD-OP132-E
⑫	PROFINET board *3	Slave 1 CH	CFD-OP136-B
		Slave 2 CH	CFD-OP136-D
⑬	Conveyor synchronous interface	RS 422 differential input encoder counter	CFD-OP47-A
⑭	Vision device	Visual Sensor Unit for Controller (Separate Type)	CFD-OP139-A
⑮	Brake release switch	Manual brake release option (External unit)	CCZ-OP90-A-L
⑯	Smart Teach pendant	Cable length 4m	CFDTP-10-04M
⑰	Teach pendant shorting plug	Use when TP is not connected	CFD-OP153-A
⑱	Teach pendant extention cable	5m	CFDTP-RC05M
		10m	CFDTP-RC10M
⑲	Power cable	5m	CZ101Z-J1P-05-A
		10m	CZ101Z-J1P-10-A
⑳	EtherCAT cable	5m	CZ101Z-J1C-05-A
		10m	CZ101Z-J1C-10-A
㉑	USB memory (1GB)	1GByte	FD11-OP93-A
㉒	I/O Cable on Arm *4	Connector: L-shaped type, Cable Length: 1.5m	CZ10-OP02L-1P5M
		Connector: Straight type, Cable Length: 1.5m	CZ10-OP02S-1P5M

*1. DeviceNet and EtherNet/IP is a trademark of ODVA (Open DeviceNet Vender Association, Inc.).
*2. CC-Link is a trademark of CC-Link Partner Association : CLPA.
*3. PROFIBUS and PROFINET is a trademark of PROFIBUS & PROFINET International.
*4. The robot connection side is a cable with a connector.

NACHI-FUJIKOSHI CORP.

www.nachi.com

Head Office Shiodome Sumitomo Bldg. 17F, 1-9-2 Higashi-Shinbashi, Minato-ku, Tokyo 105-0021
Tel: +81-(0)3-5568-5247 Fax: +81-(0)3-5568-5237

Robot Division 1-1-1 Fujikoshi-Honmachi, Toyama 930-8511, JAPAN
Tel: +81-(0)76-456-2223 Fax: +81-(0)76-493-5251

Conforming to ISO 10218-1 and awarded the certification by the German certification organization TÜV SÜD.

CATALOG NO. R7770E-3

2019.11.V-ABE-ABE