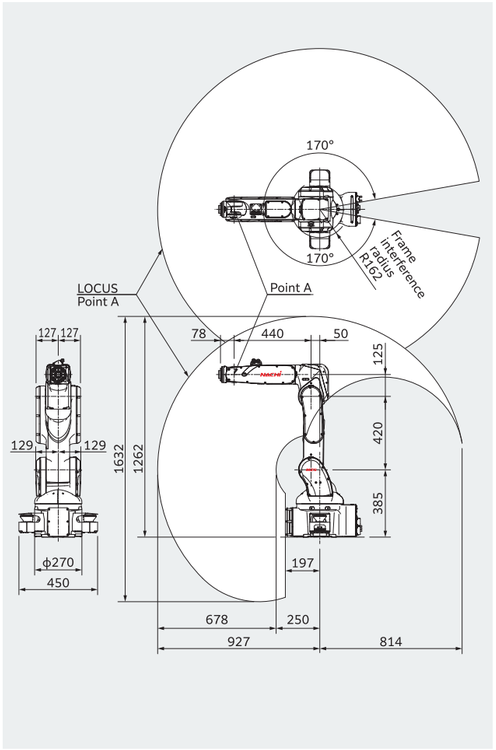
Basic robot specifications

Item			Specifications
Model			**MZS05-01**
Structure			Articulated robot
Axes			6
Drive system			AC servo drive
Maximum motion range	J1		±2.97rad(±170°)
	J2	Factory default	-2.00~+0.69rad(-115~+40°)
		Maximum*1	-2.36~1.40rad(-135~+80°)
	J3		-2.48~2.69rad(-142~+154°)
	J4		±3.32rad(±190°)
	J5	Factory default	±1.57rad(±90°)
		Maximum*1	±2.09rad(±120°)
	J6		±6.28rad(±360°)
Maximum velocity*2	J1		4.71rad/s(270°/s)
	J2		4.28rad/s(245°/s)
	J3		5.42rad/s(310°/s)
	J4		9.60rad/s(550°/s)
	J5		9.60rad/s(550°/s)
	J6		16.58rad/s(950°/s)
Tool Center Point(TCP) Speed	During non-collaborative operation		2500mm/s
	During collaborative operation		1000mm/s*3
Payload weight	Wrist		5kg
Maximum static load torque	J4		16.9N·m
	J5		16.9N·m
	J6		9.4N·m
Maximum moment of inertia*4	J4		0.49kg·m²
	J5		0.49kg·m²
	J6		0.15kg·m²
Position repeatability*5			±0.020mm
Maximum reach			927mm
Air tubes			ϕ6×2(conforms to 3-way solenoid valve standard) Operable pressure range:0.1 to 0.5MPa
Application signal cables			20 or 12 wires(depending on option selection)
LAN			None, 8-wire single system, or 8-wire dual system (depending on option selection)
Installation*6			Floor
Installation conditions			Ambient temperature:0°C to 40°C*7 Ambient humidity:20% to 85% RH(no dew or frost allowed) Vibrations:≤0.5G(4.9m/s²) or lower*8
Protection class*9			IP54 equivalent*10
Clean rating			ISO Class4 equivalent*11
Noise level*12			75dB
Robot mass			60kg

Dimensions and operating range



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, are subject to change without notice to improve the product.
- An explosion-proof version of this product is not available.

*1 If the J2 and J5 axes are operated at their maximum limits, there is a risk of clamping even without tools or work. To eliminate this risk when shipped from the factory, a robot monitoring unit (RMU50-11, complies with ISO 13849-1) is used to restrict operable range. Modify the operable range only if you have performed a risk assessment in the actual environment in which the robot is to be used and have determined that the risk is reduced. Depending on the loaded tools or work, there is a risk of clamping even when the operable range is restricted.
*2 The maximum speed indicated in the table is the maximum value. Speeds are subject to change depending on factors such as the work program and wrist payload conditions. These specifications indicate the maximum value for each item in normal recovery mode.
*3 A risk assessment that is performed according to the basic safety standard ISO 12100 is required, and the speed at which the colliding part operates needs to be determined.
*4 Note that the moment of inertia varies depending on the wrist payload conditions.
*5 Conforms to JIS B 8432.
*6 The robot cannot be installed on surfaces that are at an incline of 30° or more. Ensure that the robot is installed on an incline that is less than 30°.
*7 In a case of usage at no higher than 1,000 m above sea level. Ambient temperature is subject to restrict at elevations that are higher than the allowable range.
*8 When using the robot for collaborative operation, the robot might stop due to vibrations on the floor or hand. The source of such vibrations must be eliminated before actual use.
*9 Liquid substances that will degrade the sticker parts on the robot cannot be used. These include organic solvents, acids, alkaline substances, chlorinated substances, and gasoline-based cutting fluids.
*10 Environments subject to splashing liquids or mist might trigger the proximity sensors and cause the robot to stop.
*11 Based on an internal assessment in accordance with ISO 14644-1. In order to maintain the clean rating, install the robot in a clean room with downflow. Since the robot is not packaged in a dust-proof package, it is necessary to remove dust and dust from the robot and wipe it clean when it is brought into the clean room.
*12 This is an equivalent sound pressure level of an A weight as measured according to JIS Z 8737-1 (ISO 11201). (Operation at rated load and maximum speed)

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NEW

MZS SERIES

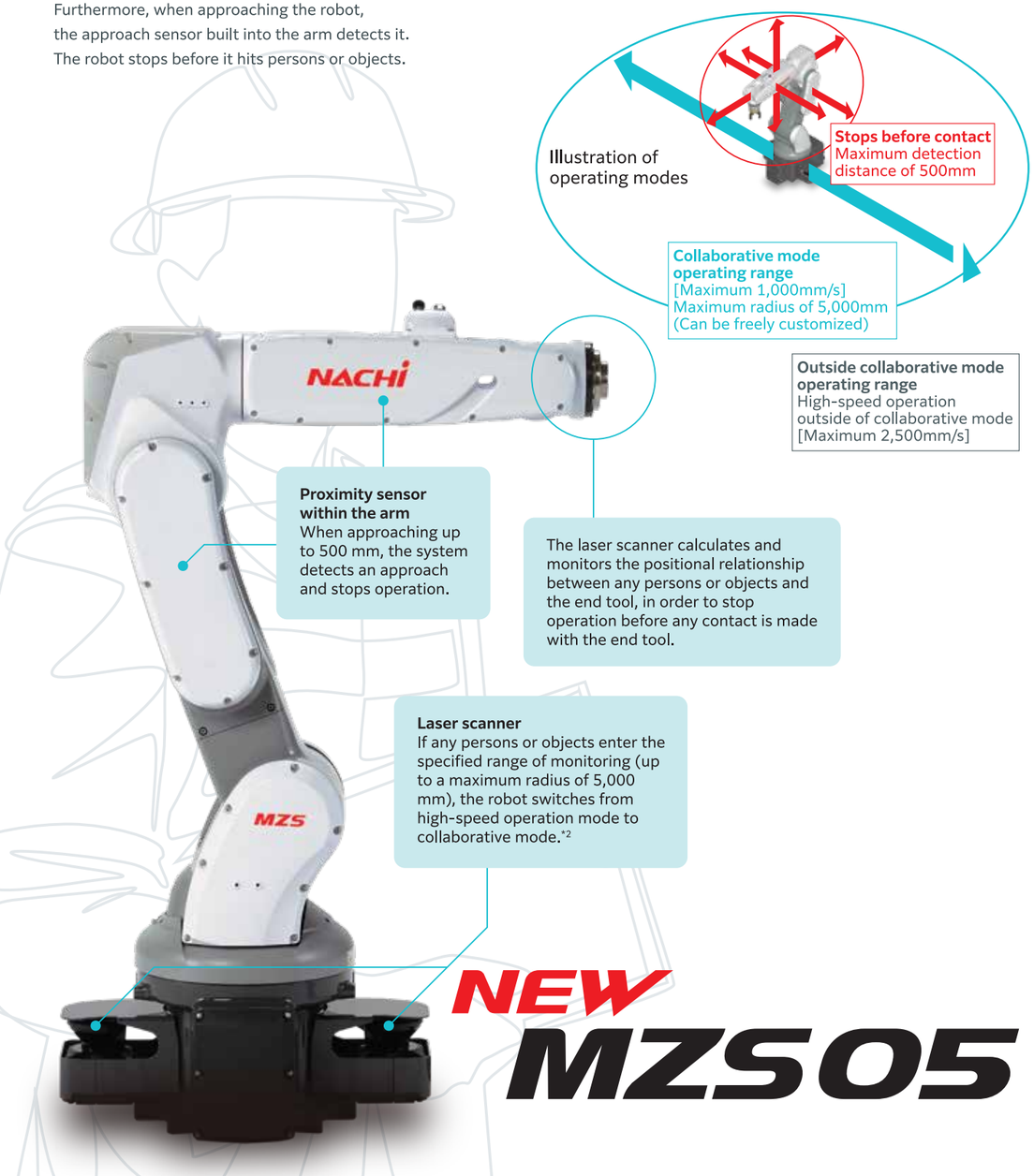
MZS05

5kg Payload Collaborative Robot

Stops before colliding, and resumes operation automatically
Best in class of high speed and precision operation
Collaborative robot that achieves both safety and productivity

Continuous monitoring of area around the robot via multiple sensors Stops before contact*1

A laser scanner built into the base constantly monitors the area around the robot.
When it senses the approach of a person or object,
it switches from high-speed operation mode to cooperative mode and automatically slows down.
Furthermore, when approaching the robot,
the approach sensor built into the arm detects it.
The robot stops before it hits persons or objects.



NEW
MZS05

*1 There is a limit to the functions that do not collide. When introducing the robot, please conduct a risk assessment and use it correctly and safely.
*2 A PC prepared by the user is required to configure the laser scanner.

No need to restart after stopping the robot Automatically resumes operation

Even if the MZS05 stops operation due to the proximity of persons or objects, it automatically resumes work when it leaves.*3
If the persons or objects go outside the range of the cooperative mode,
it automatically returns to high-speed operation in the non-collaborative mode, so work efficiency is not reduced.

Best-in-class levels of high speed and precision

The MZS05 uses the same mechanism as the MZ series to achieve class-leading high-speed operation and high accuracy.

During non-collaborative operation	Maximum 2,500mm/s
During collaborative operation	Maximum 1,000mm/s*4
Precise positioning repeatability	±0.02mm

Useful for a wide range of applications

The slim and compact body and without safety fence allows the robot to be installed in narrow spaces. It can be applied in various fields of logistics, such as mounting on AGVs. In addition, with excellent clean performance (ISO Class 4) and a wide range of applications, it can be used in a wide variety of industries, from the electrical and electronic fields as well as food, pharmaceuticals, and cosmetics.

Hollow-wrist construction reduces risk of contact

Storing the cables within the arm reduces the risk of contact and ensures that parts will not interfere with each other, increasing reliability. The robot also features a sleek appearance.

Hollow-wrist construction

Super safety features

- Contains collision-detection functionality and conforms to various certification standards to ensure safety as a collaborate robot (ISO 13849-1, ISO 10218-1, ISO/TS 15066)
- Product shape and safety software features designed to minimize clamping risk

Offset arm shape
for reducing clamping risk

Stopper cover
for reducing clamping risk

I/O 20 wires,
LAN 8-wire single system

Plugs for air tubes

Newly designed cabling slit

Collaborative mode
display lamp

*3 After the robot stops due to a collision, the robot must be restored manually.
*4 It is necessary to conduct a risk assessment in accordance with the ISO12100 of the Basic Safety Standards and determine the operating speed according to the collision site.