

EZ LOADER i

EZ LOADER SERIES



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YAMAZAKI MAZAK CORPORATION

1-131 Takeda, Oguchi-cho, Niwa-gun, Aichi-pref., Japan
TEL : +(81)587-95-1131

www.mazak.com

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EZ LOADER i

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Robot cell series that can be operated from the CNC system without teaching

Ez LOADER series / Ez LOADER 125i comes with basic operations preprogrammed, so no teaching is required and you can easily start automatic operation.

In addition, the Ez LOADER APP, a dedicated application, has been installed on the CNC machine to improve operability.

Ez LOADER APP allows easy robot operation from the CNC system

Setup can be completed simply by setting workpiece according to the workpiece template

Using a vision sensor significantly reduces time to start the operation



EZ LOADER 10 / EZ LOADER 20

Max. weight: 5 kg / 10 kg

EZ LOADER 30

Max. weight: Single gripper: 21 kg
Double gripper*(two-handed): 11 kg × 2
Double gripper*(one-handed): 18 kg

* Option



EZ LOADER 125i

Max. weight: Double gripper*(two-handed): 25 kg × 2
Double gripper*(one-handed): 45 kg

* Option

Dedicated application for enabling robotic operation on CNC system

Ez LOADER APP with interactive data input makes it easy to operate the robot.

Data Linkage

The necessary data can be automatically obtained from the MAZATROL program created on the CNC system at the touch of a button. The comprehensive program support functions enable teaching-less and teaching pendantless operation.

Scheduled operation

You can set up a schedule simply by entering the number of workpieces to be processed and their placement on the pallet. The automatic robot hand change* and automatic jaw change function* enable continuous operation of workpieces with different diameters, making it suitable for multi-product production.

* This function is only available for Ez LOADER 30 and EzLOADER 125i.

Easy robot recovery operation

Ez LOADER APP can also be used to handle outages due to problems. With Ez LOADER 10, Ez LOADER 20, and Ez LOADER 30, you can use the direct teaching function to manually move the robot body out of the interference area. In addition, Ez LOADER 125i can be easily returned to its home position with the push of a button.



CNC system supporting the Ez LOADER APP

MAZATROL
*SMOOTH*A*i*

MAZATROL
*SMOOTH*X**

MAZATROL
*SMOOTH*G**

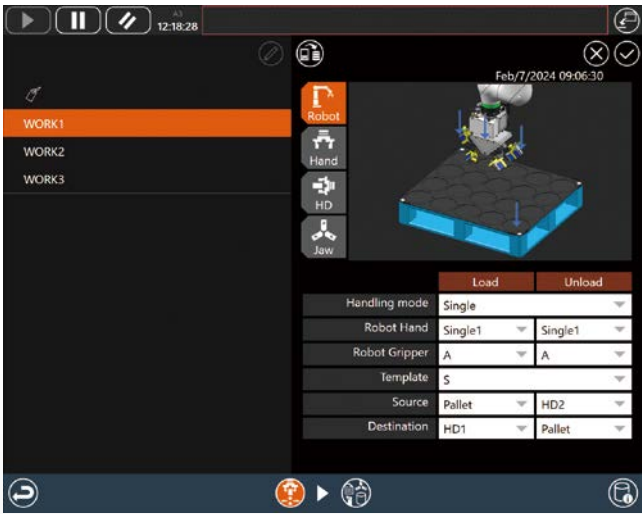
Easy for operators with conversational programming and program linkage

Robot programming

Scheduled operation

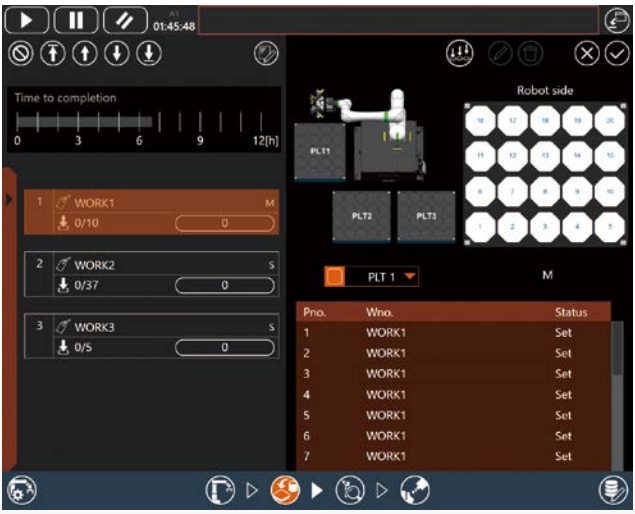
Setup assistance

Automatic system operation



Connectable with machining program

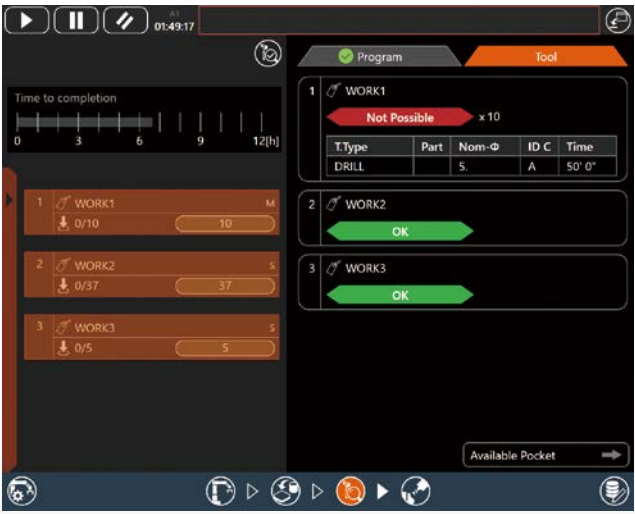
The conversational data entry screen makes it easy to create robot programs. No robot teaching task is required. Furthermore, since material and jaw information is automatically obtained from the CNC system, approximately 90% of items can be automatically set up compared to conventional methods.



Continuous machining of multiple workpieces*

Simply set the number of machining workpieces and their placement on the pallet to complete the scheduling. It is also possible to schedule multiple types of workpieces at once.

* The function is available on Ez LOADER 30 and Ez LOADER 125i.



Resource checking

To ensure machining is completed according to schedule, you can check in advance whether there are any missing tools or tools that have reached their lifespan before starting operation. This enables unmanned operation at night or on holidays.



Operation monitoring

Once the material is placed on the pallet, the automatic operation starts. It is possible to check the progress of machining, the state of each pallet, and the time of completion of operation.



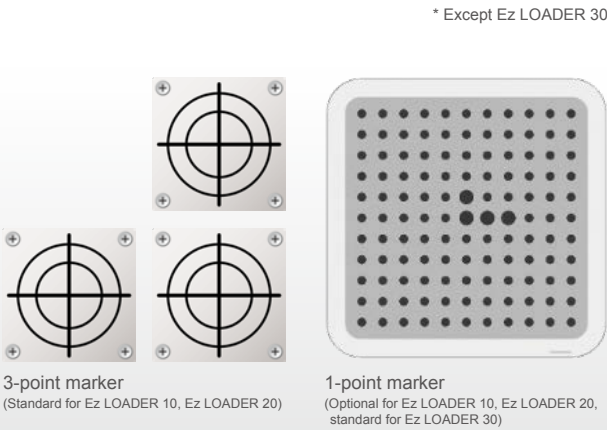
Ez LOADER APP allows simple robot operation with the CNC system

Ez LOADER APP is an application dedicated to the collaborative robot cell operated by MAZATROL CNC control. Ez LOADER APP enables collaborative robot operations with MAZATROL conversational data input. The data required for the robot program is automatically input in conjunction with the machining program created by MAZATROL.



Quick operation start-up using the vision sensor for reinstallation

The robot uses vision sensor to read positioning markers on machines and pallets and automatically adjusts its position. Thanks to its easy transferability for internal works or installation on different machines, operation can be quickly resumed in a short time.*

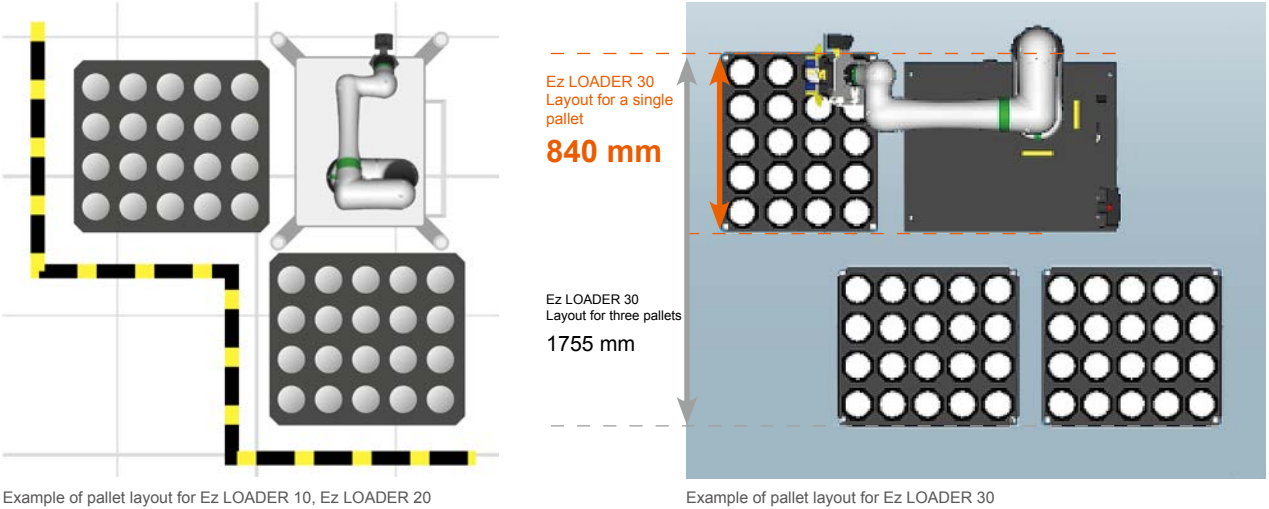


Compact design and pallet layout that can be used in limited work spaces

Up to three pallets can be placed for Ez LOADER 30 and up to two for Ez LOADER 10, Ez LOADER 20. You can flexibly change the pallet layout based on factory space and operational needs, such as using the same pallet for loading and unloading or separating pallets for loading and

unloading. As a collaborative robot compliant with ISO-10218, fencing is not required. Compared to a general robot system, approximately half the floor space required by a single pallet is needed for operation when using one pallet.

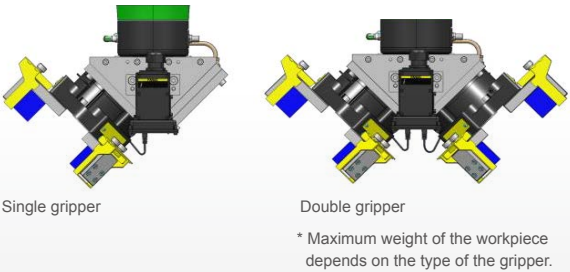
* Pallet layout is limited depending on the model.

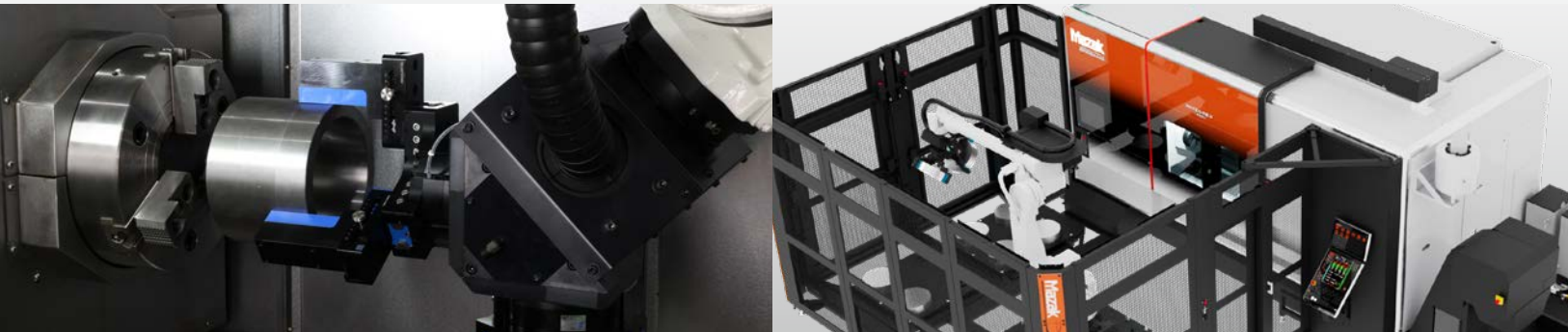


Automatic gripper changer allows scheduled operations for multi-variety production

* Only available with Ez LOADER 30

Ez LOADER 30 offers multiple grippers for high-mix, low-volume production of round materials. It performs quick material loading and finished workpiece unloading with the optional double gripper and pallet template. Automatic chuck jaw changer by a dedicated gripper is also available.



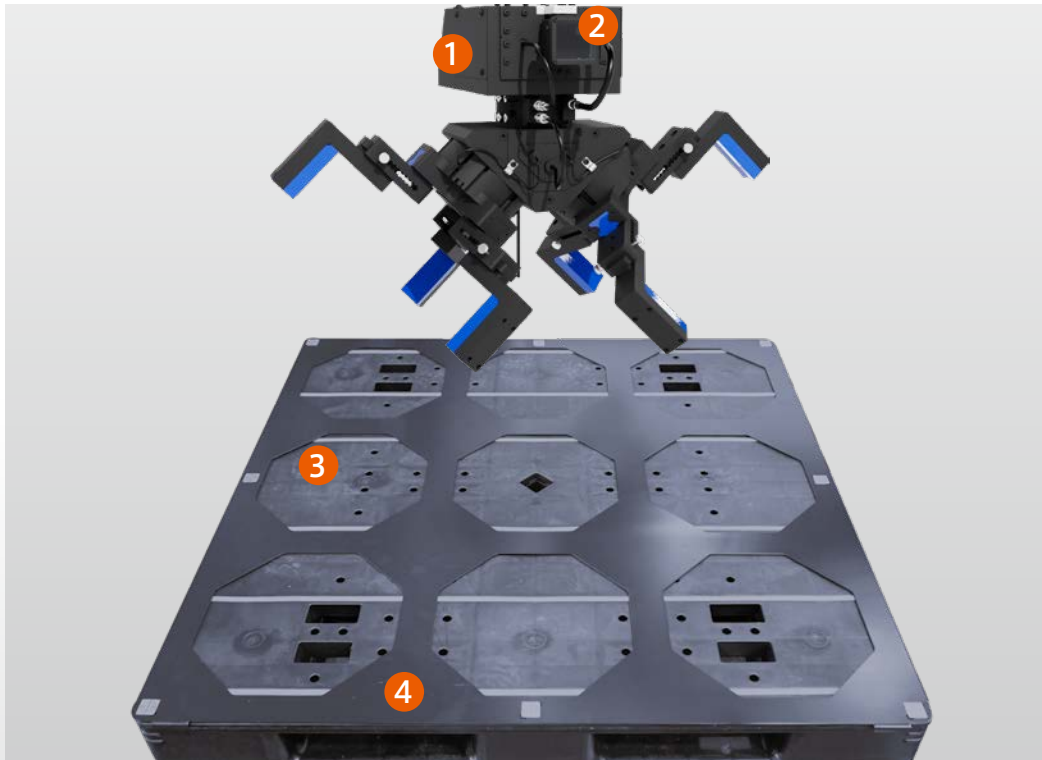


Industrial robot cell with improved loading capacity and operating speed

Ez LOADER 125i has improved workpiece transport weight and operating speed compared to Ez LOADER series and supports automation of chuck work and shaft work. Furthermore, Ez LOADER APP is installed as standard, and Ez LOADER 125i as well as Ez LOADER series allows robot operation on MAZATROI CNC control, teaching-less operation, and easy setup.

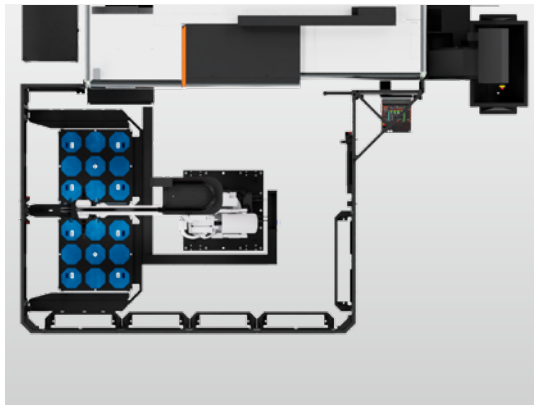
Four points for achieving simple teaching-less operation

- 1 Preset the operation of picking up the workpiece from the pallet and carrying it in and out of the machine tool
- 2 Vision sensor corrects positional deviations of pallets and workpieces
- 3 Workpiece setup is positioned using workpiece templates
- 4 The gripping position of the workpiece is automatically determined by referring to the machining program

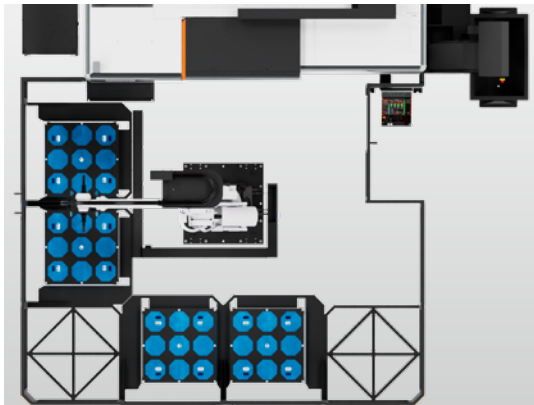


Highly expandability pallette layout

The pallet layout can be flexibly changed to suit your production volume and system configuration. In addition, a special template can be placed on the pallet to make positioning of the workpiece smoother.



For 2 pallets



For 4 pallets

Automatic path generation makes robot recovery easy

It has the function of creating a virtual robot cell within MAZATROL and automatically generating an evacuation route that does not interfere with machines or workpieces. you can easily restore it with just one button without any knowledge or skills. The generated path can be checked in advance on the CNC system screen.



Standard Specifications

EZ LOADER 10, EZ LOADER 20

Gripper type		Round material	Square material
Main unit	Weight	230 kg (Ez LOADER 10) / 240 kg (Ez LOADER 20)	
	Electrical power requirement	1.8 kVA (200V) Supplying electrical power from a machine	
	Width × Length × Height	700 mm × 530 mm × 665 mm* ¹	
	Air requirement	Not required (Ez LOADER10) / 10 L/min (ANR) (Ez LOADER 20)	
Gripper*		Single gripper with 3 jaws Electric Driven (10 mm stroke)(Ez LOADER 10) Air Driven (10 mm stroke)(Ez LOADER 20)	Single gripper with 2 jaws Electric Driven (10 mm stroke)(Ez LOADER 10) Air Driven (13 mm stroke)(Ez LOADER 20)
Handling available workpieces	Workpiece Dimensions	Diameter : Φ50 mm to Φ200 mm	Length : 20 mm to 100 mm, Width: 30 mm to 150 mm
	Workpiece Height	25 mm to 100 mm	15 mm to 100 mm
	Max. weight	5 kg (Ez LOADER 10) / 10 kg (Ez LOADER 20)	
Jaws*	Small	Φ50 mm to Φ90 mm 3 sets of base jaws and top jaws	Base and top jaws (2 pieces) for grasping length 20 mm to 50 mm
	Medium	Φ90 mm to Φ150 mm 3 sets of base jaws and top jaws	Base and top jaws (2 pieces) for grasping length 45 mm to 75 mm
	Large	Φ150 mm to Φ200 mm 3 sets of base jaws and top jaws	Base and top jaws (2 pieces) for grasping length 70 mm to 100 mm
Template*		Common to left and front placements	
	Small	Φ50 mm to Φ90 mm	Length : 20 mm to 50 mm Width : 30 mm to 70 mm
	Medium	Φ90 mm to Φ150 mm	Length : 45 mm to 75 mm Width : 65 mm to 110 mm
	Large	Φ150 mm to Φ200 mm	Length : 70 mm to 100 mm Width : 105 mm to 150 mm
Softwear		Ez LOADER APP (machine operation panel), Mazak-specific plugin software* ²	

* Option
 *¹ The robot arm and outriggers are not included.
 *² The Mazak-specific plugin software is standard, Ez LOADER APP (machine operation panel) is optional.
 For details regarding compatible models, please contact us.

EZ LOADER 30

Main unit	Weight	425 kg		
	Width × Length × Height	1000 mm × 800 mm × 505 mm* ³		
	Air requirement	0.5 Mpa (Supplied by the unit)		
Gripper		Single gripper	Double gripper*(two-handed)	Double gripper*(one-handed)
Handling available workpieces (round material)	Maximum wight	21 kg	11kg × 2	18 kg
	Workpiece Dimensions	Φ50 mm to Φ200 mm		
	Workpiece Height	25 mm to 200 mm		
	Number of workpiece on a pallet	Φ50 mm to Φ90 mm: 42, Φ90 mm to Φ150 mm: 20, Φ150 mm to Φ200 mm: 12		
Jaws*	Small	Φ50 mm to Φ90 mm 3 sets of base jaws and top jaws		
	Medium	Φ90 mm to Φ150 mm 3 sets of base jaws and top jaws		
	Large	Φ150 mm to Φ200 mm 3 sets of base jaws and top jaws		
Work pallet size	840 mm × 740 mm			
Number of work pallet		Max. 3 pallets		
Work pallet height	Max. 500 mm			
Softwear		Ez LOADER APP (machine operation panel), Mazak-specific plugin software		

* Option
 *³The robot arm and outriggers are not included.
 For details regarding compatible models, please contact us.

EZ LOADER 125i

Main unit	Weight	1535 kg		
	Electrical power requirement	7.9 kVA (200V to 230V) Dedicated battery		
	Width × Length × Height	1200 mm × 1960 mm × 1770 mm (Robot main unit only: transport posture)		
	Air requirement	0.5 MPa to 1.0 MPa (Max. flow rate 150 L/min(ANR)) : Dedicated air source		
Gripper		Max. workpiece wight	Workpiece Dimensions	Workpiece Height
Gripper type	Round material*	25 kg × 2 (two-handed) , 45 kg (one-handed)	Φ100 mm to Φ400 mm	50 mm to 300 mm
	Shaft work*	60 kg	Φ50 mm to Φ250 mm	300 mm to 1000 mm
Jaws*	Round material*	S:Φ100 mm to Φ240 mm 3 sets of base jaws and top jaws		
		L:Φ240 mm to Φ400 mm 3 sets of base jaws and top jaws		
	Shaft work*	S:Φ50 mm to Φ176 mm 3 sets of base jaws and top jaws (top jaw width: 44 mm for shaft, 140 mm for screw shaft)		
		L:Φ170 mm to Φ250 mm 3 sets of base jaws and top jaws (top jaw width: 44 mm for shaft, 140 mm for screw shaft)		
Template*	Round material* (Number of workpiece)	S : Φ100 mm to Φ130 mm (25)		
		M : Φ130 mm to Φ200 mm (16)		
		L : Φ200 mm to Φ290 mm (9)		
		XL : Φ290 mm to Φ400 mm (4)		
	Shaft work* (Workpiece diameter)	Common workstocker		
		7 workpiece support plate (Φ50 mm to Φ76 mm)		
		6 workpiece support plate (Φ76 mm to Φ116 mm)		
		5 workpiece support plate (Φ116 mm to Φ156 mm)		
		4 workpiece support plate (Φ156 mm to Φ210 mm)		
		3 workpiece support plate (Φ210 mm to Φ250 mm)		
Softwear	Ez LOADER APP (machine operation panel), Mazak-specific plugin software			

* Option
 For details regarding compatible models, please contact us.