



TETRIS palletizer robots

» Our company



The core asset of TMA are people, who live by values such as teamwork, commitment, initiative and respect for others' work. Every day we empower and encourage our staff to develop their skills and hone their key talents.



[CLICK AND SEE THE MATERIAL ABOUT US](#)

› Dynamic Growth Through Innovation

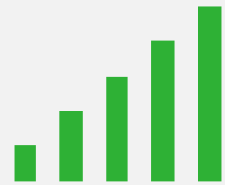


25%

Is the percentage of our annual revenue spent on product research and development. The industry average is 7–8%.

34%

Is our average year-to-year revenue growth since incorporation.



TMA Automation was founded in Gdynia in 2010. We develop, manufacture and install technologically advanced Cartesian robots, in-mold labeling systems (IML) and automated assembly stations.



Designed and produced **in Poland**

Turnkey solutions

We offer comprehensive services covering conceptual and detailed design, production, assembly, commissioning and integration with client production lines.

Independence

With 80% of all mechanical components for our products manufactured in-house, we can guarantee high quality and timely deliveries.

R&D department

Our research engineers work continuously to develop and improve TMA's control engineering products and solutions by increasing their performance and robustness.

Our partners

Control systems



Injection molding machines



INNOVATIONS

Optimized placement algorithm
Parts of varying sizes can be efficiently placed and palletized by a compact palletizer robot.

Magnetic drive for high acceleration and precise work.
Failure-free work for many years

› TETRIS palletizer robots



Universal palletizing

Support for multiple part sizes on pallets, including cans, buckets, boxes etc.

TETRIS advanced placement logic

Part placement on pallets is controlled by optimized algorithms to ensure maximum packing for a given size.

Additional equipment

Palletizers can easily be fitted with automatic feeders for empty and loaded pallets.

Easy programming

No special skills are required to program a palletizer work cycle.

Non-stop operation

Multi-pallet configurations are available for heavy-duty applications.

Surface saving

The robot arm is installed above the work area to reduce the installation space.

Video



[CLICK AND SEE AN EXAMPLE
REALIZATION NO 1](#)



[CLICK AND SEE AN EXAMPLE
REALIZATION NO 2](#)

› TETRIS palletizer robots

Single pallet palletiser

- The robot is prepared for palletization on one pallet place
- Compact design - the robot takes up a minimum amount of space in the production hall
- Expandable for automatic pallet feeder with magazine
- Expandable with automatic pallet departure

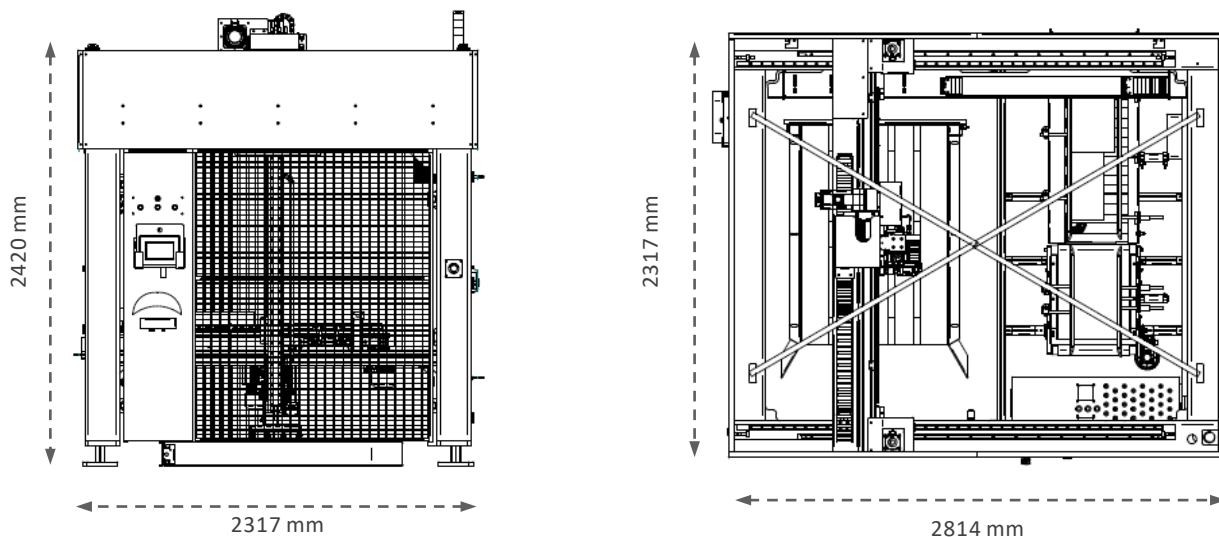


TECHNICAL SPECIFICATION OF THE ROBOT ARM

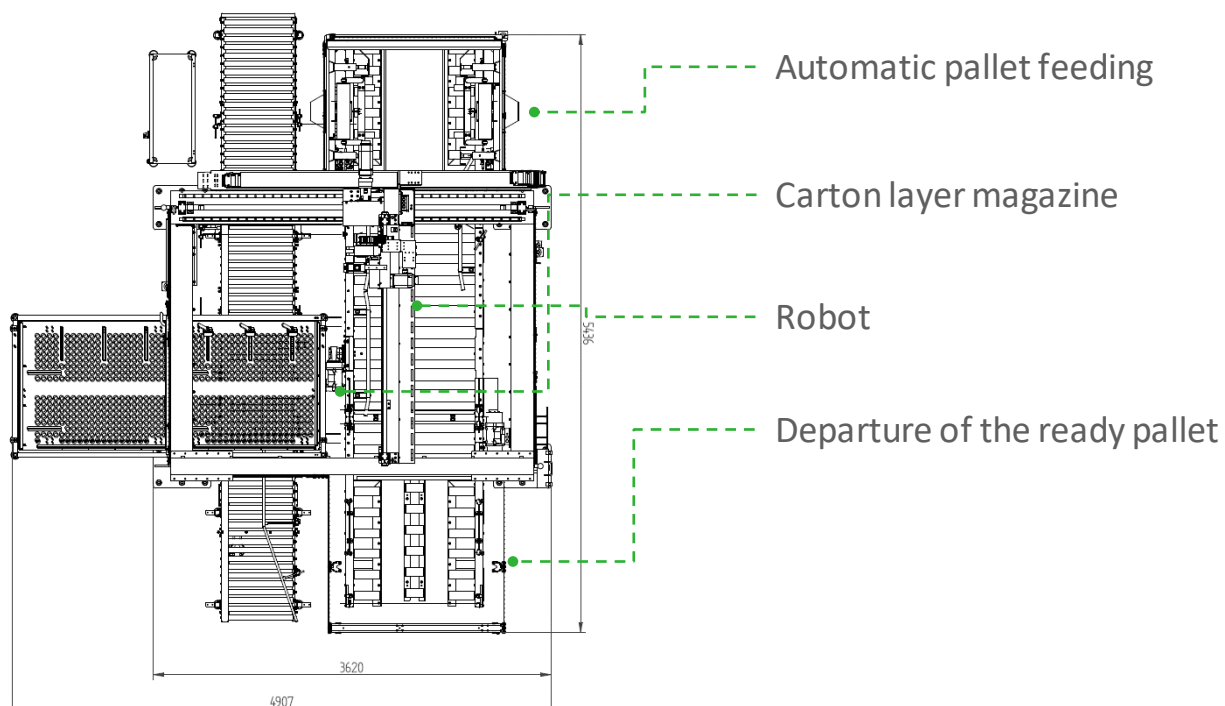
Supply voltage	230V AC		
Working pressure	6 bar		
Energy consumption	22 kWh		
Air consumption (with a suction gripper)	300NI/min		
Load capacity (part+gripper)	OPTION 1.1	OPTION 1.2	OPTION 1.3
	20 kg	30 kg	50 kg
Z axis - range	2000 mm		
Z axis – drive	Servomotor, gear rack		
X axis - range	1000 mm		
X axis – drive	Servomotor, gear rack		
Y axis - range	1800 mm		
Y axis – drive	Servomotor, belt drive		
C axis – horizontal/vertical movement	0-90°		
C axis – drive	Pneumatic		
R axis – rotating wass	0-360°		
R axis – drive	OPTION 2.1	OPTION 2.2	
	Pneumatic	Servomotor	
Vacuum pump system:	OPTION 3.1	OPTION 3.2	OPTION 3.3
	2 vacuum circuits	4 vacuum circuits	6 vacuum circuits
Gripper	2 pneumatic gripper circuits (if required)		
Conveyor belt connection	YES		
External safety circuit	YES		

TECHNICAL SPECIFICATION OF THE ROBOT ARM	
Lubrication system	YES in the form of a cartridge (Simalube)
Robot control	Teach Pendant robot control with a user-friendly interface in the form of a graphic / touch LCD display and buttons with basic robot functions.
Interface language	Polish and English
Remote service	Possibility of remote access to the robot via Internet
Number of additional inputs:	outputs: 8 inputs / 8 outputs
Maintenance information	Reminder in the form of a message on the control panel display with information about the need for inspection, lubrication, service.

Dimensions



Configuration with automatic pallet feed and exit



› TETRIS palletizer robots

Two-pallet palletizer

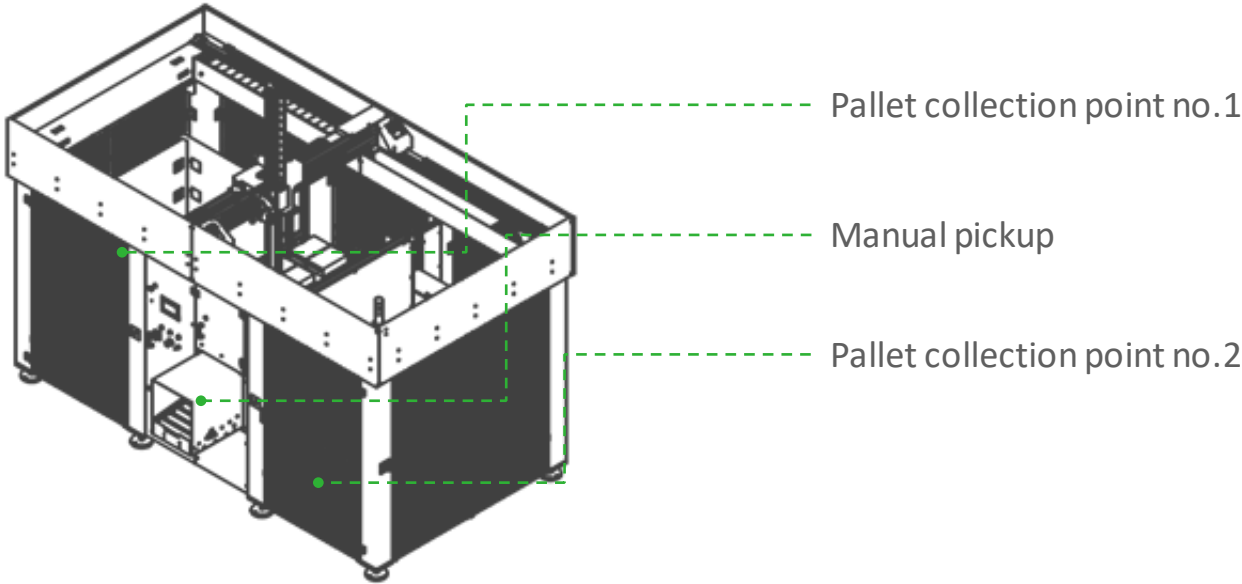
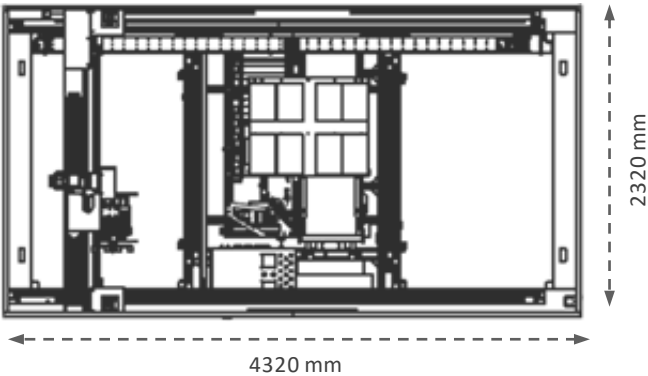
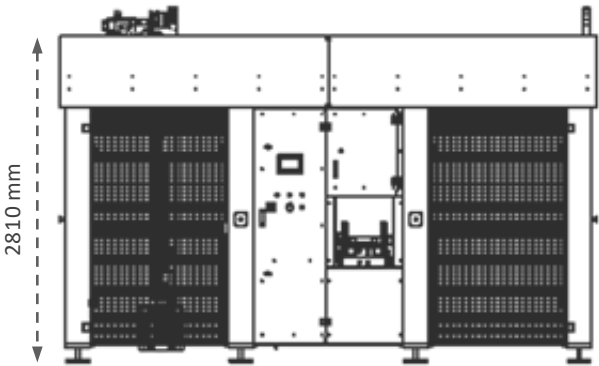
- Robot prepared for palletization on two or more pallets
- Compact design - the robot takes up a minimum amount of space in the production hall
- Expandable for automatic pallet feeder with magazine
- Expandable with automatic pallet departure
- The two-pallet solution allows you to pick up finished pallets without stopping the system



TECHNICAL SPECIFICATION OF THE ROBOT ARM

Supply voltage	230V AC		
Working pressure	6 bar		
Energy consumption	24 kWh		
Air consumption (with a suction gripper)	320NI/min		
Load capacity (part+gripper)	OPTION 1.1	OPTION 1.2	OPTION 1.3
	20 kg	30 kg	50 kg
Z axis - range	4000 mm		
Z axis – drive	Servomotor, gear rack		
X axis - range	1000 mm		
X axis – drive	Servomotor, gear rack		
Y axis - range	1800 mm		
Y axis – drive	Servomotor, belt drive		
C axis – horizontal/vertical movement	0-90°		
C axis – drive	Pneumatic		
R axis – rotating wass	0-360°		
R axis – drive	OPTION 2.1	OPTION 2.2	
	Pneumatic	Servomotor	
Vacuum pump system:	OPTION 3.1	OPTION 3.2	OPTION 3.3
	2 vacuum circuits	4 vacuum circuits	6 vacuum circuits
Gripper	2 pneumatic gripper circuits (if required)		
Conveyor belt connection	YES		



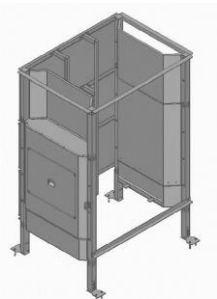
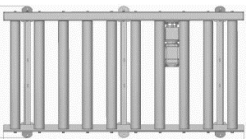


TECHNICAL SPECIFICATION OF THE ROBOT ARM	
External safety circuit	YES
Lubrication system	YES in the form of a cartridge (simalube)
Robot control	Teach Pendant robot control with a user-friendly interface in the form of a graphic / touch LCD display and buttons with basic robot functions.
Interface language	Polish
Remote service	Possibility of remote access to the robot via Internet
Number of additional inputs:	outputs: 8 inputs / 8 outputs
Maintenance information	Reminder in the form of a message on the control panel display with information about the need for inspection, lubrication, service.



› Additional options and configurations

Drawing	Option	Description
	Jaw gripper	<ul style="list-style-type: none"> Gripper for picking up workpieces which cannot be picked up from the top only Two types of jaw closing mechanisms <ul style="list-style-type: none"> Pneumatic drive Servo drive with smooth adjustment of the opening width Checking the presence of the downloaded detail Jaw compression force control (only with servo option)
	Vacuum gripper	<ul style="list-style-type: none"> Gripper for picking up details using a vacuum Gripper with workpiece picking control Possibility to take various dimensions - great versatility of operation
	Telescopic arm	<ul style="list-style-type: none"> In the case of low production halls, it is possible to reduce the height of the palletizer by using a telescope arm.
	Additional pallet space	<ul style="list-style-type: none"> Due to the modular structure, it is possible to increase the number of pallet places (up to 4)
	Additional palletizing arm	<ul style="list-style-type: none"> Increasing the efficiency of the palletizer by using an additional palletizing arm in the same structure.
	Belt conveyor	<ul style="list-style-type: none"> Additional transporter at the entrance of the system Possibility to separate details Conveyor controlled by a palletizing robot
	Roller conveyor	<ul style="list-style-type: none"> Additional roller conveyor at the input of the system Possibility to separate details Conveyor controlled by a palletizing robot

› Additional options and configurations

Drawing	Option	Description
	Pallet measurement	<ul style="list-style-type: none"> ▪ Scanner installed on the robot arm that allows to correct the position of the robot arm (height) in relation to the pallet. ▪ Protection against uneven pallets
	Light curtains	<ul style="list-style-type: none"> ▪ Safety light curtains on the palletiser exit ▪ Free access when pulling out a full pallet and inserting an empty one
	Pallet magazine	<ul style="list-style-type: none"> ▪ Pallet magazine with a automatic pallet feeding ▪ The magazine can hold up to 10 pallets
	Output roller conveyor	<ul style="list-style-type: none"> ▪ Roller conveyor for the departure of finished pallets ▪ Automatic pallet departure ensures continuous operation of the device
	Database	<ul style="list-style-type: none"> ▪ Configuration software with database (FTP server) including barcode scanner
	TMA TETRIS® software	<ul style="list-style-type: none"> ▪ Algorithms to optimise palletising for maximum utilisation of given dimensions

› TETRIS palletizer robots



Servomotors

All drive units use servomotors to provide high speeds and acceleration up to 4 m/s².



Telescopic arm

Selected robot models are fitted with a telescopic arm with a reach of 2.8 meters and high working dynamics.



Robust construction

Linear bearings ensure precise and dynamic robot operation.



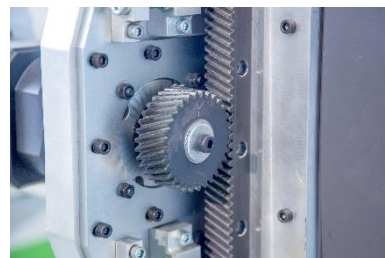
High quality controllers

Our control systems are based on acclaimed solutions from Omron, our partner since 2010.



Custom grippers

Each robot can be fitted with a custom gripper designed to fit the shape of the product.



Helical gears

Helical rack-and-pinion gearing guarantees high operating precision.



Intuitive programming

Robot work cycles are easy to program with a clear and intuitive interface.



Integrated control box

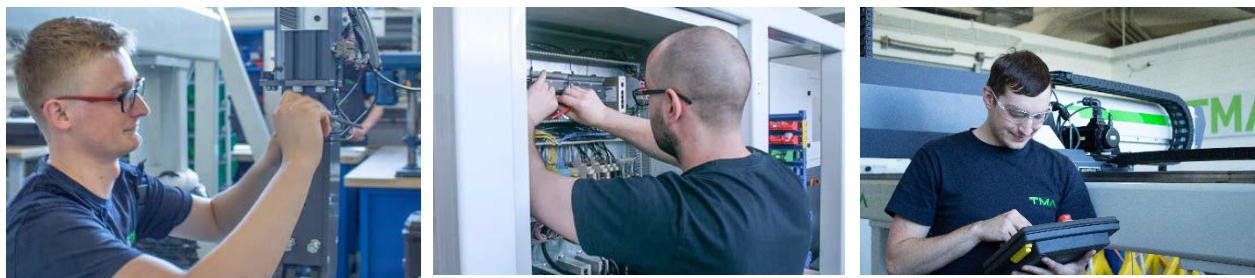
The control box is mounted directly on the robot arm to save precious real estate in the production shop.



Operating status indicator

The color of the LED lamp indicates the operating status to the operator: working, maintenance, or fault..

» TMA service



Our robots are a key component of automated production lines, where the highest levels of service and support are required. We have procedures and solutions in place to ensure timely resolution of all requests.



+48 728 545 595

serwis@tma-automation.com

Single point of contact

We have a single helpline number and a central service coordinator to ensure that the right expert is dispatched to deal with the client's machine.

24 hour response time

We understand that your production lines must stay in motion. That's why the standard response time for TMA service is 24 hours.

90% of spare parts in stock

We keep most of our spare parts in stock to ensure timely service response.

Remote service

Using an Internet connection to the service interface, we can perform remote error diagnostics.

Request identification

Each service request is assigned a unique ticket, allowing clients to easily track resolution status.

