

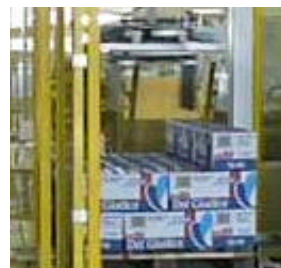
# PALLETIZERS AND END OF LINE

Solaut produces cartesian palletizer to satisfy various needs of customers. We have 13 basic models that we can achieve with different characteristics according to the requirements of the individual installation. We can make special palletizers for applications outside the standard.

## CARTESIAN PALLETIZER PCS WITH PERIMETRAL FRAME



### CARTESIAN PALLETIZER WITH PROTRUDING VERTICAL AXIS

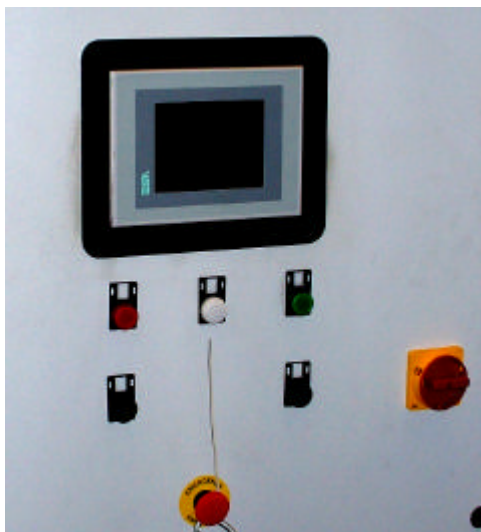


**Features of the palletizers with protruding vertical axis**

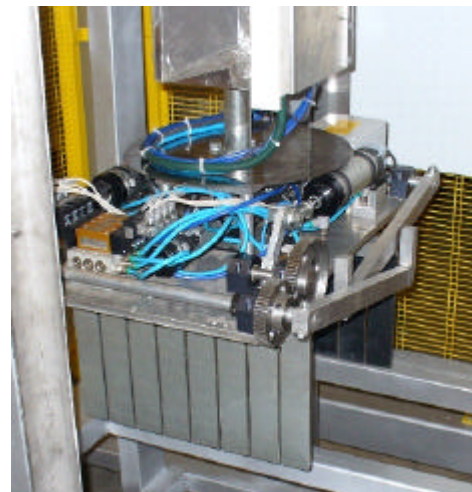
- ◆ Maximum flexibility of installation thanks to the lack of mechanical perimeter.
- ◆ Small dimensions.
- ◆ Axis realized with linear guides with recirculation of spheres.
- ◆ Perimeter frame made ?? of tubular steel
- ◆ Productivity 14 sockets/1'.
- ◆ Payload 60 / 100 Kg gripper included.
- ◆ Models with 1, 2 o 3 pallet places.
- ◆ Maximum palletizable height: 1800 mm
- ◆ The model with 3 pallet places can be used for 2 pallet places with longitudinal orientation.
- ◆ Each model is made with servo motors with palentary gearheads or asynchronous motors with inverters and gearboxes worm.
- ◆ Servo version with PLC Siemens S7300 and drives controlled by Profibus Dp.
- ◆ Versions with asincronous motors controlled by PLC Omron CP1L.
- ◆ Versions with asincronous motors.
- ◆ Elecrtical panel integrated in the frame of the machine.
- ◆ Pallet feeding with roller conveyors, with pallet warehouse integrated in the machine or manual.
- ◆ Full pallet exit with manual or chain roller conveyors .



**Back view PAL-CST2**



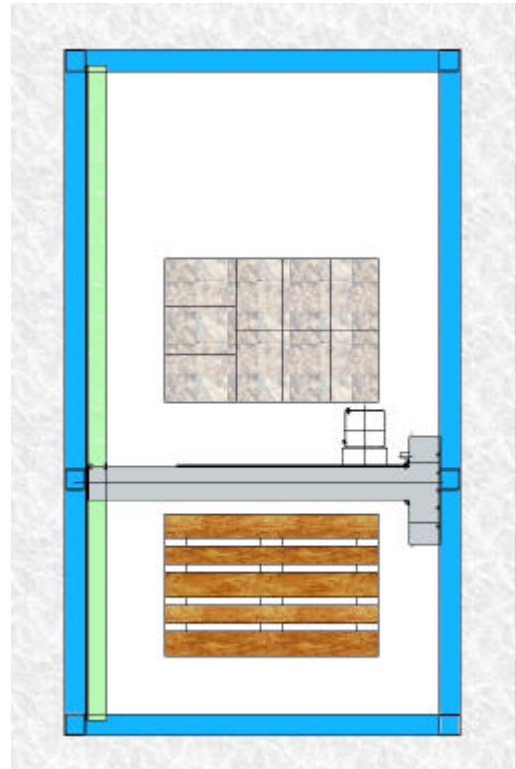
**Particular electric panel**



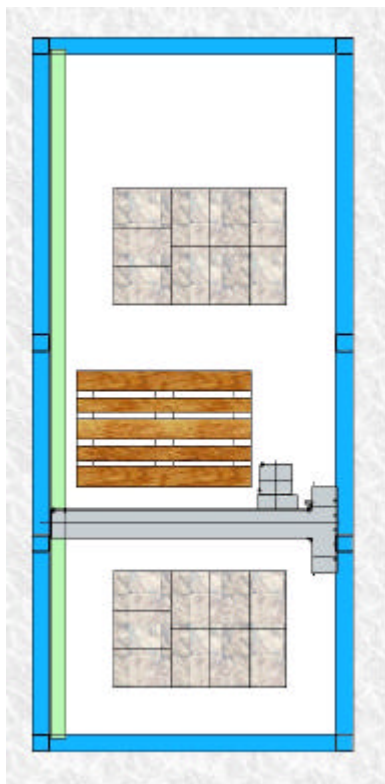
**Particular gripper**

## MODELLI PAL CS

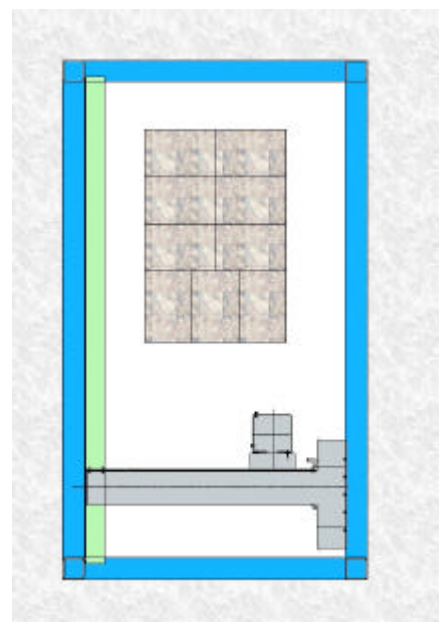
- ◆ Models are divided in ECO models with asincronous motors and inverter and SERVO models which mount servomotors.
- ◆ The stroke of the transversal axis can be about 1200, 1000 od 800mm, depending on pallet orientation and dimension.
- ◆ Models are 6: 3 ECO e 3 SERVO
- ◆ Each model can have the transversal axis of 800, 1000 o 1200mm for a total of 18 possible versions.



**PCS-2 model with 2 bays,  
one for palletizing and one for pallet  
warehouse**



**PCS-3 model with 3 bays: two for palletizing  
and one for pallet warehouse**



**Model with 1 bay PCS-1**

## CARTESIAN PALLETIZERS PCC WITH PERIMETRAL FRAME



## CARTESIAN PALLETIZERS WITH VERTICAL AXIS INTEGRATED

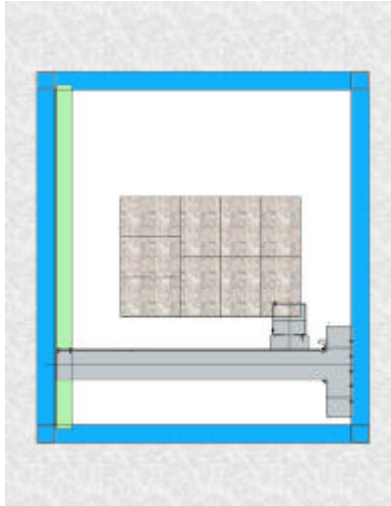


### Features of palletizers with vertical axis integrated

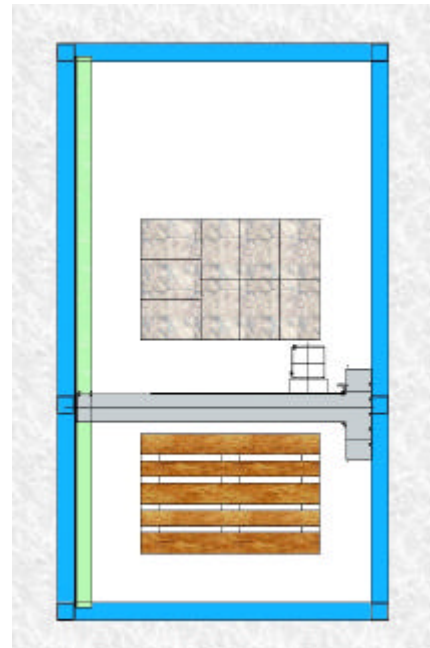
- ◆ Reduced overall size in vertical.
- ◆ Steel perimeter frame.
- ◆ Less freedom in the design of the lay-out compared to the versione with vertical protruding axis.
- ◆ Higher cost than the model with a protruding axis.
- ◆ 5 models available.
- ◆ Heavy model with payloads (gripper included) up to 100Kg.

## PCC MODELS

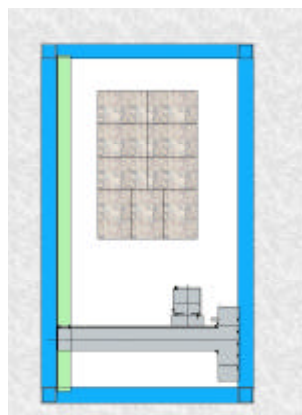
The diagrams below depict some possible configurations of the machine.



**Model 1 bay PCC1**



**Model PAL-CS2 with 2 bays: one for palletizing and one for pallet warehouse**

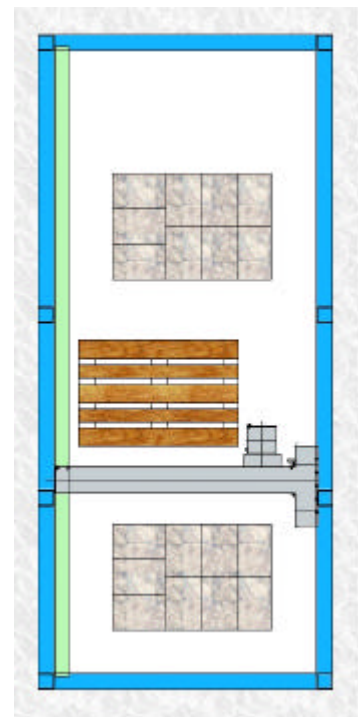


**Model 1 bay PCC1 longitudinal**

The transverse stroke (horizontal in the drawing) is variable from 800 to 1200mm depending on the size and orientation of the pallet.

The rotation of the gripper can be realized with a 90 ° or 360 ° pneumatic actuator by means of a 4th axis servo (models only servo).

The gripper is floating vertically to stop the machine in case of impact with the product.

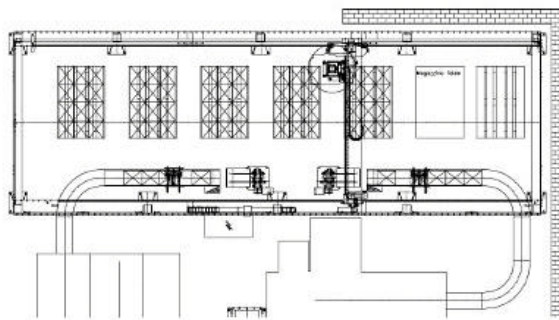


**Model PAL-CST3 with 3 bays: two for palletizing and one for pallet warehouse**

## PORTAL PALLETIZERS RP SERIES



### MULTIBAY PORTAL CARTESIAN PALLETIZER



#### Features of portal palletizers

- ◆ Ability of palletizing up to 2400 mm
- ◆ Suitable for medium/low productivity lines
- ◆ Up to 7 bays of palletizing

# FRAME-LESS CARTESIAN PALLETIZERS RCC SERIES



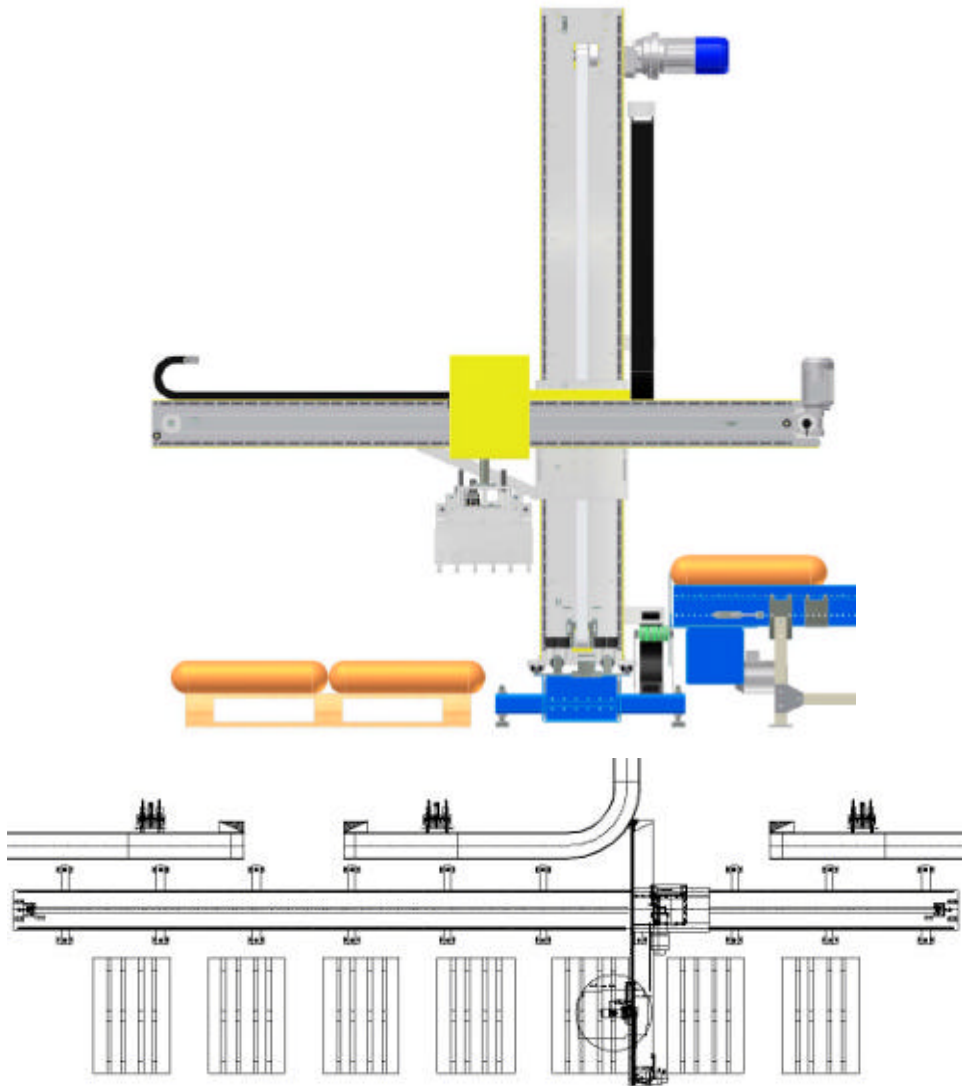
The frame-less cartesian palletizer is a cartesian robot with 3/4 axes and an axis on the ground that can reach 7 meters of the race, to palletize up to 7 pallets.

The machine is available in two models:

- ◆ **RCC** using 3 or 4 servo motors for the movement of the axes (the three cartesian axes + possible rotation of the gripper). Palletizing height up to 3 metres, payload up to 100 Kg, gripper included.
- ◆ **RCCE** economic model that uses 3-phase asynchronous motors with inverter to control the 3 cartesian axes. Palletizing height up to 2 metres, payload 60 Kg, gripper included.

### Features of frame-less cartesian palletizer

- ◆ Suitable for low productivity lines
- ◆ Up to 7 bays of palletizing
- ◆ Longitudinal axis on the ground





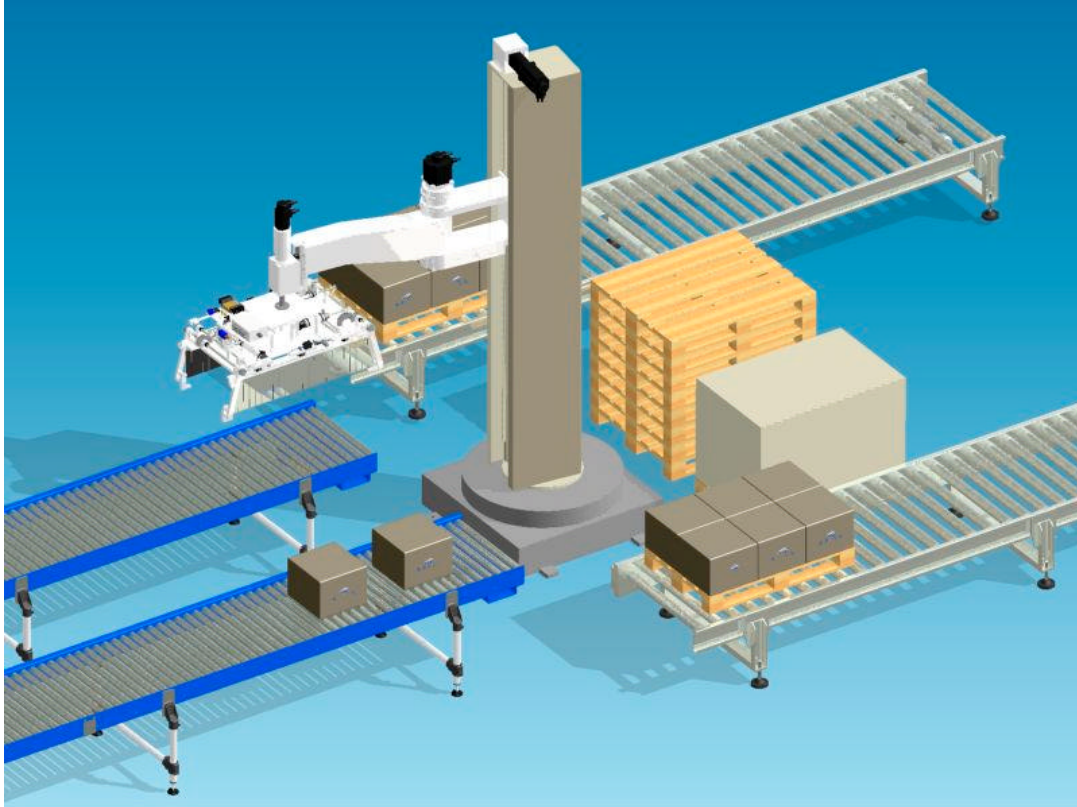
Both models can be supplied with the Y-axis (transverse) protruding. The drawing at the top of the page shows a palletizer with the Y axis protruding: this configuration allows to arrange the tapes that carry the products to be palletized on a side of the machine, while on the opposite side have the pallet places. This configuration allows a greater freedom in the arrangement of the machine and conveyor belts. The Y-axis version with no protruding is shown in the figures on the previous page.

### **Features of cartesian palletizers**

- ◆ Use of brush less servomotors and PLC Siemens S7-300 conncted to the network by Profibus.
- ◆ Use of asincronous motors with inverter amd PLC Omron CP1 for the economic version RCCE.
- ◆ Touch screen operator panel.
- ◆ Entering palletizing formats in an easy and intuitive.
- ◆ Autodiagnosis to report the fault or the malfunction of a component.
- ◆ Possibility to connect the machine to the network using a web server.

## SCARA ROBOT

Apiel manufactures two models of SCARA robots that find their main application for the construction of islands palletizing. The two models differ in the scope of the wrist and the space covered. The model with the higher flow rate can move directly to the bench, while the lightest model can lead grippers reading and not suitable to handle extremely heavy loads.

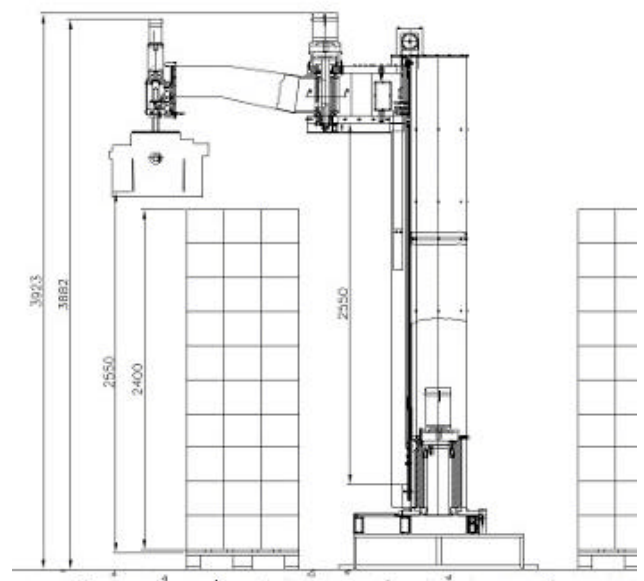


## HEAVY SCARA ROBOTS

The scara palletizer is a machine with high productivity that can palletize on one or two bays. How performance is similar to robots for palletizing. The height of palletization is 2400 and can handle directly on both the pallet that a possible interlayer.

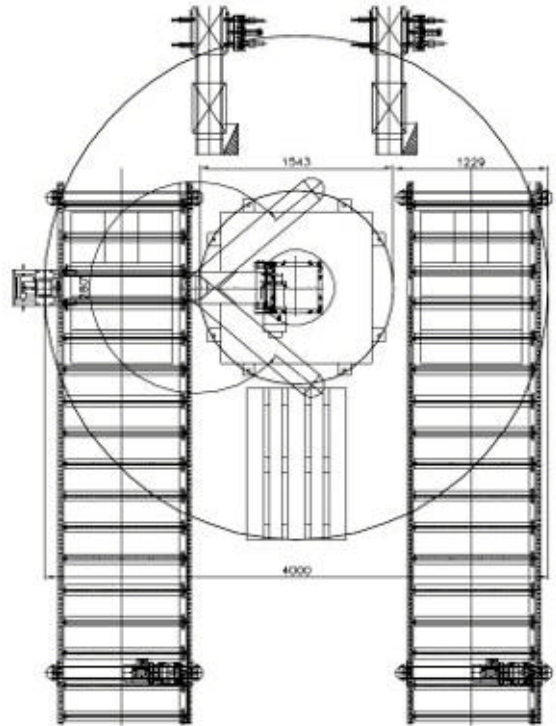
The reduced vertical dimension makes it ideal for applications where vertical space is minimum.

The vertical column can rotate 350 ° allowing you to take full advantage of the outreach of the gripper.



Essential features:

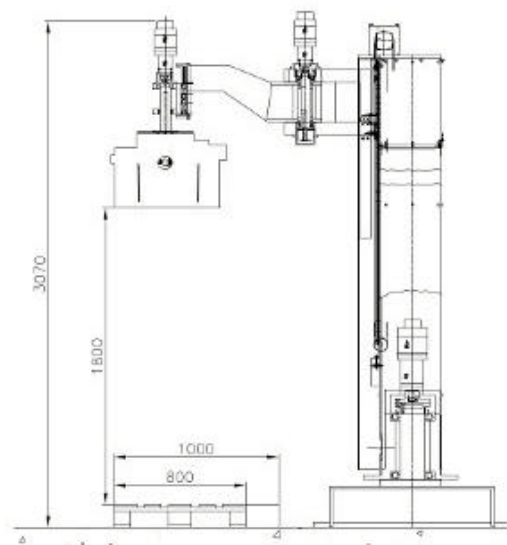
- Maximum operating ray of the axis of the gripper :2000mm.
- Minimum operating ray of the axis of the gripper :755mm.
- Rotation of the gripping element: 360° .
- Productivity up to 14 sockets/ 1'.
- Servomotors controlled by PLC OMRON NJ.
- Brushless servomotors Panasonic.
- Gearboxes zero backlash (<1 ') for the column and elbow, and low-backlash planetary (<5') to the wrist.
- Operator Panel with colors and touch screen 7".



- Vertical travel guides hardened and ground with ball screw carts.
- Maximum lifting weight 120 o 180 Kg (gripper included).
- Maximum palletizable height :2400mm.
- Perimeter protection in steel mesh, powder coated
- Protecting the pallet output side with light curtain and muting device.

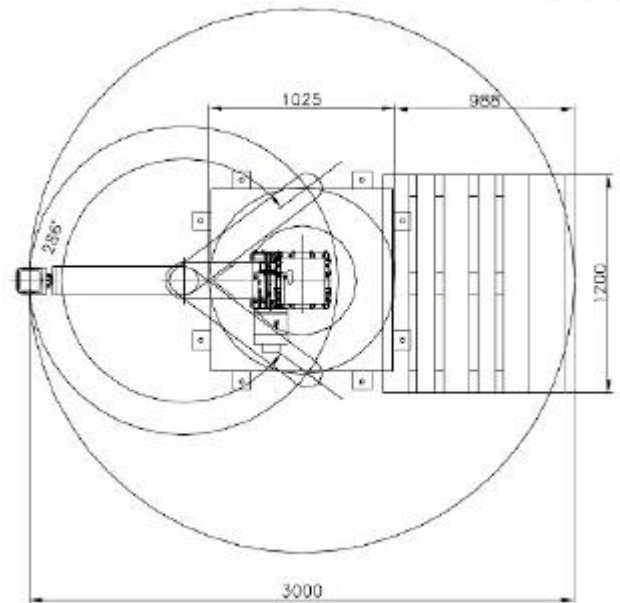
## MEDIUM SCARA ROBOT

The medium SCARA palletizer is a machine with high productivity that can palletize on one or two bays. Compared to the heavy model, it has smaller dimensions and operating volumes. The maximum palletizing height is 1800mm. The vertical dimension is contained and is therefore ideal for applications where vertical space is reduced. The vertical column can rotate 350 ° allowing you to take full advantage of the outreach of the gripper.

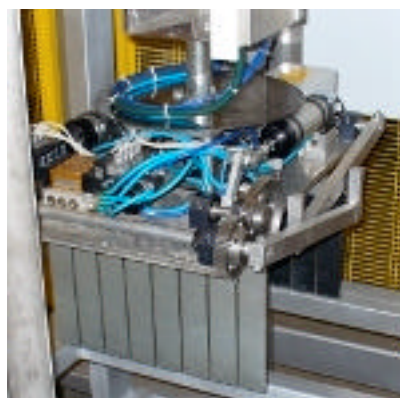


Essential features:

- Maximum operating ray of the gripper axis :1500mm.
  - Minimum operating ray of the gripper axis:513mm.
  - Rotation of the gripping element:360°.
  - Productivity up to 14 sockets/1'.
  - Servomotors controlled by PLC OMRON NJ.
  - Servomotors and motors with the same features of the heavy model.
  - Operator panel with colours and touch screen 5.7"
  - Vertical travel guides hardened and ground with carts with recirculation of spheres.
- Maximum lifting weight 50Kg (gripper included).
  - Maximum palletizable height: 1800mm.
  - Perimeter protection in steel mesh, powder coated
  - Protecting the pallet output side with light curtain and muting device



## ACCESSORIES



**Self-centering gripper with pallet hooking**



**Automatic positioner of interleaf**

### **Accessories for palletizers**

- ◆ **Grippers with a fixed flap.**
- ◆ **Grippers with two self-centering flaps.**
- ◆ **Grippers with a pallet hooking system integrated.**
- ◆ **Grippers with an interleaf hooking system integrated.**
- ◆ **Grippers for bags with hooks for pallet and suction cups for interleaf hooking.**
- ◆ **Autonomous pallet interleaf feeder.**

## COMPLETED END OF LINE

- ◆ Provision of small end of line equipped with transport of pallet and product.
- ◆ Realization of case packers for special applications.
- ◆ Implementation of the electrical system and software development.



**Feeding line**



**Feeding line**



**Layer formation**