

## CARTESIAN PALLETIZER WITH PERIMETRAL FRAME

In this document, we present the two sets of Cartesian palletizers applied to a frame of parallelepiped shape. These series of machines are characterized by high speed and high productivity.

# CARTESIAN PALLETIZERS PCS SERIES

We have 6 basic models that we can achieve with different features according to the requirements of the individual installation.

The standard cartesian palletizers are constituted by a perimeter frame carrier, above which is bound a cartesian robot portal. The vertical axis protrudes from the frame of the machine: this feature allows to have the perimeter of the machine completely free from mechanical parts. This feature allows you to have complete freedom in the design of plant layout.

PAL-CS palletizers are made in two versions:

- Servo models with high performance servo motors and servo planetary gearboxes.
- Economic models with asynchronous motors and gearboxes with worm screw.

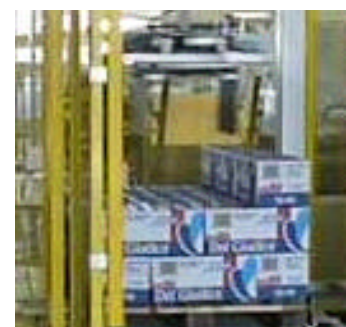
The machines are built for 1, 2 or 3 pallets. The pallets can be oriented transversely or longitudinally: in the second case the number of pallet places can be 1 or maximum 2.



## CARTESIAN PALLETIZERS WITH PROTRUDING VERTICAL AXIS

The transversal axis Y axis (which supports the vertical axis) can have ranges ranging from 800 to 1200mm max.

The pallet handling can be manual or with roller conveyors or chain. In the case of manual handling of the pallet, the frame is open in the lower zone.

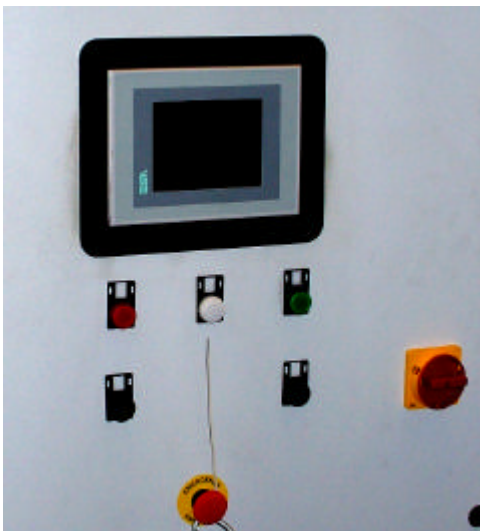


**Features of the palletizers with protruding vertical axis**

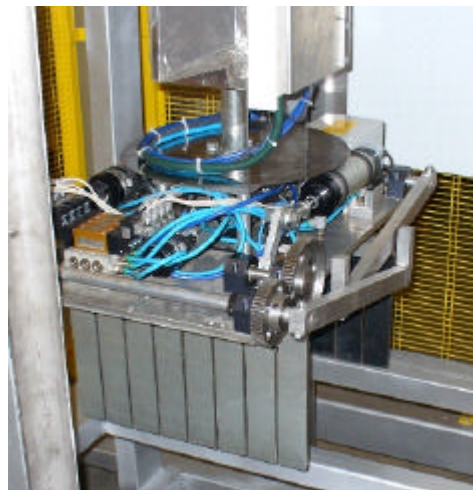
- ◆ Maximum flexibility of installation thanks to the lack of mechanical perimeter.
- ◆ Small dimensions.
- ◆ Productivity 14 sockets /1'.
- ◆ Payload 60 - 100Kg gripper included.
- ◆ Maximum palletizing height 1800mm.
- ◆ Axes made with linear guide with recirculating ball.
- ◆ Perimeter frame in tubular steel.
- ◆ Models with 1, 2 o 3 pallet places.
- ◆ Each model is made with servo motors with planetary 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.
- ◆ Electrical panel integrated in the frame of the machine.



**Back view PCS-2**



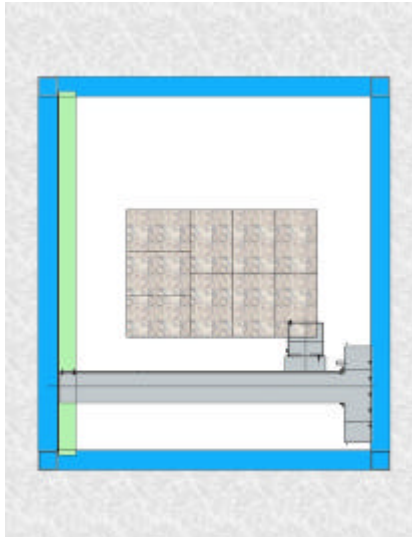
**Particular electrical panel**



**Particular gripper**

## PCS MODELS

The diagrams below depict some possible configurations of the machines.

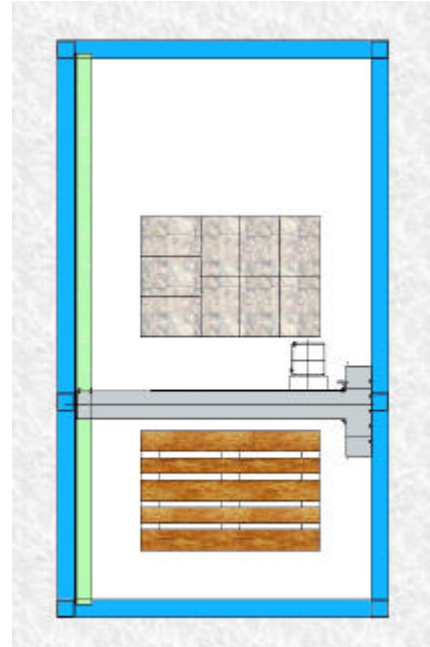


**Model 1 bay PCS-1**

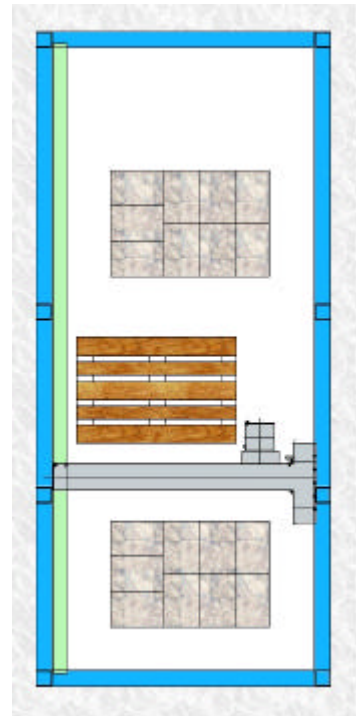
The transverse stroke (horizontal in the drawing) is variable from 800 to 1200mm depending on the size and orientation of the pallet.

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



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

## Technical specifications

Denomination	PCS	PCSE
Feature	Cartesian with perimetral frame	Cartesian with perimetral frame
Machine category	Palletizer	Palletizer
Number of pallet places	1,2,3	1,2,3
Type of vertical axis	protruding and telescopic for strokes > 1500	Protruding
Load capacity ,gripper included	60 Kg / 100 Kg	60 Kg
Pallet orientation	Trasversale / longitudinale	Trasversale / longitudinale
Gripper with hooking for pallet	Yes for 2 or 3 bays	Yes for 2 or 3 bays
Pallet interleaf feeder separated	Yes	Yes
Pallet interleaf feeder integrated	Yes	No
Motors	Brushless	Asincronous + inverter
Reducers	Planetary	With worm screw
Productivity on single bay	14 cycles / min.	8 cycles /min
Maximum palletizable height	1800	1800
Useful longitudinal stroke	Depending on the number of bays	Depending on the number of bays
Useful transversal stroke	From 800 to 1200	From 800 to 1200
Useful vertical stroke	Max 1850	Max 1850
Useful stroke for head rotation	0-90° o 0-360°	0-90°
Longitudinal speed	1.4 m/s	
Transversal speed	1.3 m/s	
Lifting speed	1.4 m/s	
Head rotation speed	350°/s	-
Floating gripper along the vertical axis	Yes	Yes
Dimensions plan without pallet interleaf feeder	3220 x 2430	
Dimensions plan with pallet interleaf feeder	4015 x 2425	
Vertical encumbrance from support plane pallet	2860	
PLC	Siemens S7-300	Omron CP1L
Motion control	-	
Axes	3/4	3
Perimeter protection integrated	Yes	Yes
Type perimeter protections	Aluminum profile + polycarbonate / steel mesh	Aluminum profile+ polycarbonate / steel mesh
Electrical Panel	Integrated	Integrated
Protections exit pallet	Photoelectric barriers or door ,optional	Photoelectric barriers or door ,optional
Gripper	Depending on the application	Depending on the application
Gripper rotation	0-90° with pneumatic control or with servomotor	0-90° with pneumatic control
Pallet warehouse	Excluded	Excluded
Transport of empty pallets	Excluded	Excluded
Transport of full pallets	Excluded	Excluded
Entrance transporters	Excluded	Excluded

## CARTESIAN PALLETIZER PCC



### CARTESIAN PALLETIZER WITH INTEGRATED VERTICAL AXIS

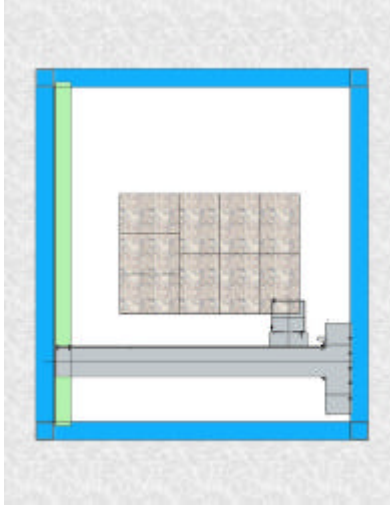


#### Features of cartesian palletizers with integrated vertical axis:

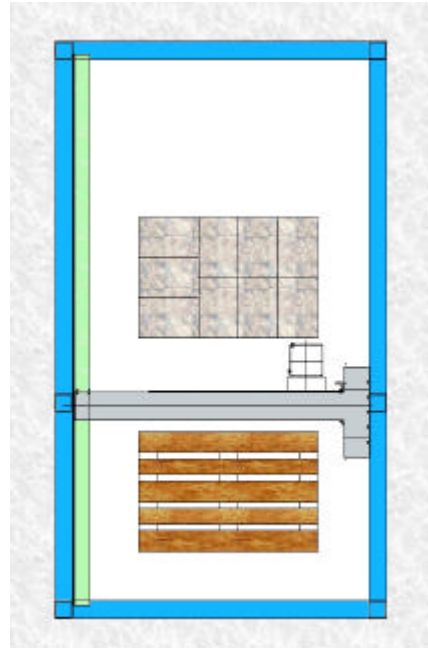
- ◆ Reduced overall size in vertical.
- ◆ Steel perimeter frame.
- ◆ Less freedom in the design of the lay-out compared to the version with vertical protruding axis.
- ◆ Higher cost than the model with a protruding axis.
- ◆ 5 models available.
- ◆ The other features are common to the PCS model described above.

## PCC MODELS

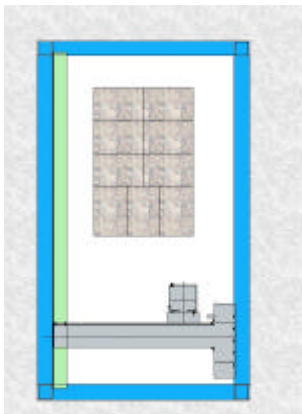
The diagrams below depict some possible configurations of the machines.



**Model 1 bay PCC1**



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

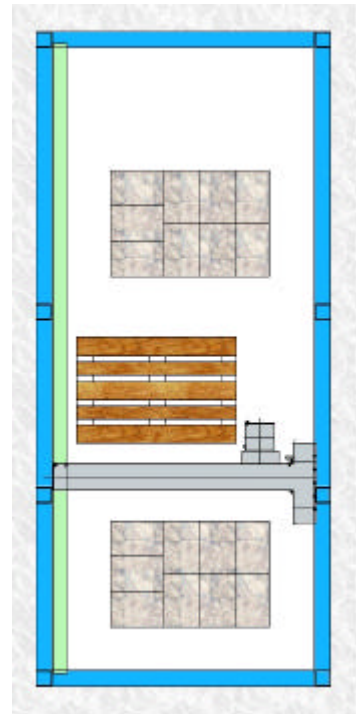


**Model 1 bay PCC1 longitudinal**

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**

## Technical specifications

Denomination	PCC	PCCE
Feature	Cartesian with perimetral frame	Cartesian with perimetral frame
Category machine	Palletizers	Palletizers
Number of pallet places	1,2,3	1,2,3
Type of vertical axis	Not protruding from frame	Not protruding from frame
Load capacity , gripper included	Max 100 Kg	Max 60 Kg
Pallet orientation	Transversal / longitudinal	Transversal / longitudinal
Gripper with pallet hooking	Yes for 2 or 3 bays	Yes for 2 or 3 bays
Pallet interleaf feeder separated	Yes	Yes
Pallet interleaf feeder integrated	Yes	No
Motors	Brushless	Asincronous+ inverter
Reducers	Planetary	With worm screw
Productivity on single bay	12 cycles / min.	8 cycles /min
Maximum palletizable height	1800	1800
Useful longitudinal stroke	Depending on the number of bays	Depending on the number of bays
Useful transversal stroke	Da 800 a 1200	Da 800 a 1200
Useful vertical stroke	Max 1850	Max 1850
Useful stroke head rotation	0-90° o 0-360°	0-90°
Longitudinal speed	1.4 m/s	
Transversal speed	1.3 m/s	
Lifting speed	1.4 m/s	
Head rotation speed	350°/s	-
Floating gripper along the vertical axis	Yes	Yes
Dimensions plan without pallet interleaf feeder	3220 x 2430	
Dimensions plan with pallet interleaf feeder	4015 x 2425	
Vertical encumbrance from support plane pallet	2860	
PLC	Siemens S7-300	Omron CP1L
Motion control	-	
Axes	3 / 4	3
Perimeter protection integrated	Yes	Yes
Type perimeter protections	Aluminum profile + polycarbonate / steel mesh	Aluminum profile+ polycarbonate / steel mesh
Electric panel	Integrated	Integrated
Protection of the exit of the pallet	Photoelectric barriers or door ,optional	Photoelectric barriers or door, opzional
Gripper	Depending on the application	Depending on the application
Gripper rotation	0-90° with pneumatic control or with servomotor	0-90° with pneumatic control
Pallet warehouse	Excluded	Excluded
Transport of empty pallet	Excluded	Excluded
Transport of full pallet	Excluded	Excluded
Entrance transporters	Excluded	Excluded