# Pallet Management System

The Pallet Management system enhances the automated operation of a CNC machine working with a pallet rack. The system allows individual pallets to be associated with a specific CNC program. Pallets can also be omitted from a run, and the order of pallet executions can be easily configured. The system consists of the *Palate Manager* software application running on a micro-computer in conjunction with RFID technology for pallet identification. The Palate Manager application can be accessed from any web browser on the same network as the system. (Note that the system does not require any external network connections, including internet access).

The following image shows an example of the Pallet Manager application.
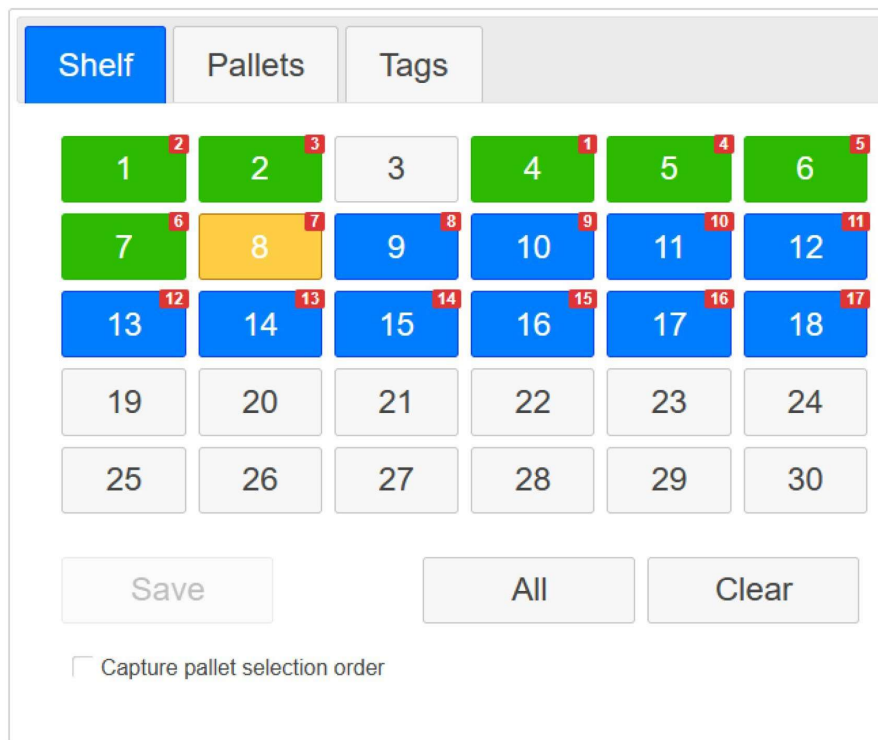
The **Shelf** tab provides a view of the current system status. Each button in the grid represents a pallet, and the numbers on buttons, and their layout, relate to the pallet rack a given robot is working with.

- **Blue** buttons indicate a pallet that is scheduled to run.
  - The **red** number in the corner indicates the order of the run.
- **Grey** buttons indicate the pallet at that location will not be run.
- **Green** buttons indicate finished pallets.
- An **orange** button identifies the pallet that is currently being run.

Touching a blue button switches it from runnable to not runnable and vice versa. After the pallets that need to be run are selected, clicking **Save** will commit that information and the robot will execute the sequence.

Shelf	**Pallets**	Tags

ID	Description	Weight	CNC W	COG
1	12-MC4 Base, Bottom	7.624	5.88	0.125
2	12-MC4 Base, Top	4.319	4	0.1
3	52-Flat Body, Top	3.96	3.96	0.075
4	52-Flat Body, Bottom	2.8	2.8	0.075
5	54-Flat Top Plate, Bottom	2.73	2.73	0.075
6	54-Flat Top Plate, Top	1.95	1.8	0.075
7	22-MC4 Spring Burr Carrier, Bot	7.1	5.72	0.125
8	22-MC4 Spring Burr Carrier, Top	11.2	11.2	0.125
9	50B-Flat Base Bottom Part	8.935	6.5	0.125
10	50A-Flat Base Top Part, Bottom	6.67	4.7	0.125
11	50B-Flat Base Bottom, Bottom	5.495	5	0.125
12	50A-Flat Base Top Part, Top	4.965	4.9	0.125
13	11-MC4 Body, Top	3.96	3.96	0.075
14	11-MC4 Body, Bottom	2.8	2.8	0.075
15	12-MC4 Top Plate, Bottom	2.802	2.5	0.075

The **Pallets** tab of Pallet Manager lists all pallets defined in the system. Each pallet has an ID associated with it which in turn determines the program which is run on the machine (usually ID+2000). The weight, post machining weight, and center of gravity of the part can be entered for each pallet along with a description of it.

Shelf	Pallets	**Tags**

Tag ID	Pallet ID
E2009A0120007AF000000179	1
E2009A0120007AF000000203	1
E2009A1010031AF000000826	1
E2009A1010031AF000000712	2
E2009A1010031AF000000984	2
E2009A1010031AF000001285	2
E2009A0120007AF000000027	3
E2009A0120007AF000000070	3
E2009A1010031AF000001917	3
E2009A0120007AF000000067	4
E2009A0120007AF000000153	4
E2009A0120007AF000000445	4
E2009A1010031AF000001347	5
E2009A1010031AF000001801	5

The **Tags** tab displays each known RFID tag and the pallet it is associated with. The association is created when a pallet with a new tag is first accessed. When the robot reads the pallet's RFID tag the system recognizes the Tag ID as being new and the user is prompted to associate it with the pallet.