



## World Class Crate Handling Equipment RPC Automation

Returnable Plastic Crates (RPCs) are the future of fresh food packaging. We've developed the world's most reliable, cost effective range of equipment designed to handle all of your crate automation requirements.

Call us on 1300 831 330 to see how we can help.

**ORyx**<sup>®</sup>  
AUTOMATION



A trusted brand of  
**FIBRE KING**  
Engineering Excellence. Since 1926.

# Crate Range Features

Oryx Automation works with growers, agribusiness and wash plant operators to implement automated crate handling equipment. Oryx designs and manufactures single RPC erectors, palletisers, depalletisers, sorting equipment and can integrate stretch wrapping equipment. Whether you just need to erect Returnable Plastic Crates or have an entire wash plant system designed, you'll enjoy lower overall cost of use with Oryx equipment.

Automation can help you to increase productivity and efficiency, reduce labour costs and the risk of injury to your staff. Less human intervention, improved food safety, reduced product damage and better produce presentation can give your business an edge.

From erecting crates to loading them onto pallets, to complete wash lines that depalletise dirty crates, erect, wash, sort, collapse and palletise clean crates, stretch wrap the full pallets ready for dispatch, you'll find exactly the right machine for your needs here. Our designers work with you to tailor a system that will fit into your space and give you the results you're looking for.

## Don't know where to start?

The Crate Erector and all its ancillary equipment are for handling empty crates, and the Crate Palletisers (both mechanical and robotic) are for handling filled crates.

You might like to think of our range as modules that can be used individually or added together to provide as much automation as your business needs.

“... the RPC20 Crate Erector... has been a highly efficient and seamless addition to our production facility. We are extremely happy with the result. It has been a beneficial relationship and we look forward to dealing with Oryx on future projects.”

**Brent Carolan, Chief Financial Officer,  
Mondello Farms**

# Crate Erectors

## HS Erector (High Spec)

The HS RPC20 Erector erects Returnable Plastic Crates for distribution to packstations or autofill equipment, at speeds of up to 20 RPCs per minute respectively.



## Features

- Capable of erecting RPCs from USA, Europe and Australasia.
- **Small footprint** for speed capability – up to 20 RPCs per minute.
- Electro/Pneumatic controlled movements guarantee **fast, accurate and gentle** RPC handling.
- **Relocatable** by forklift.
- **Flexible layout options** that allow for the addition of RPC infeed and outfeed or automatic stacking and palletising (see Ancillary Equipment).
- **Heavy duty** stainless steel frame ensures durability.
- **Quiet operation** – less than 80dB.
- **Capacity** – Magazine holds up to 35 RPCs.
- **Advanced PLC control** system for monitoring and option for remote monitoring via internet.
- **Touch screen** display for easy diagnostics.
- **Automatic size changes** – for most RPCs within a common range.
- **Fast changeovers** – typically 10 minutes for range changes.
- **Easy access and visibility** – guarding is fully interlocked to International Standards.

## Wash Plant Options:

- Crate Inverter
- Tag remover – for cardboard tags

### GS Erector (Grower Spec)

The GS Erector is a lower spec machine than that of the HS Erector and does batch runs of a single crate size.



### Crate Erector Ancillary Equipment

The following options are available:

#### Automatic Depalletiser - Sweep Style

Used when RPCs are delivered on flat top plastic pallets.

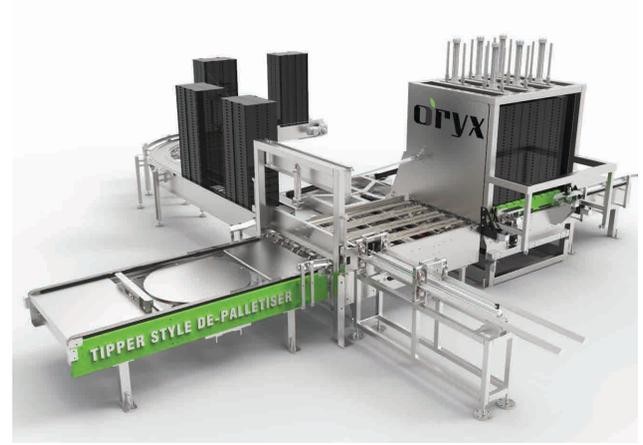


Automatically removes stacks of unerect RPCs from pallets or vertical case elevator (if space is tight).

1. A pallet of collapsed RPCs is manually positioned with a forklift onto a Conveyor.
2. Stacks of unerect RPCs move from the pallet to the Infeed Conveyor via the stack clamp/transfer assembly.
3. Stacks of unerect RPCs then index into the Crate Erector.
4. Empty pallets travel through to a pallet stacker.
5. Easy changeover.

#### Automatic Depalletiser - Tipper Style

Used when RPCs are delivered on wooden pallets.



Automatically removes stacks of unerect RPCs from pallets or vertical case elevator.

1. A forklift operator places the pallet of collapsed RPCs onto the De-Palletiser full pallet load point. The Pallet Infeed Conveyor can hold multiple full pallets of RPCs
2. The first pallet automatically indexes to the pallet tip point.
3. The full pallet is secured from the top and sides and the tilt conveyor pivots backward approximately 135°.
4. The tilt conveyor, on which the wooden pallet is clamped, is then lowered back down and the wooden pallet drives out of the system to the Empty Pallet Stacker. At this stage, the crates are suspended at 135°.
5. The tilt conveyor raises to meet the base of the RPCs and the stacks are then lowered.
6. Stacks of RPCs then travel off the tilt conveyor and on to a separate conveyor section to the Crate Handling Automation.
7. The empty pallets are stacked in the Empty Pallet Stacker (10 Pallet Capacity). The pallet stacks are then driven to a conveyor where they can be retrieved by a forklift operator.

“We have enjoyed a great reduction in the labour used for erecting crates. From ten people down to two people, the return on investment and improved safety has been excellent for Frontera.”

Chris Eddy  
Sales and Operations Director  
Frontera Produce - Texas

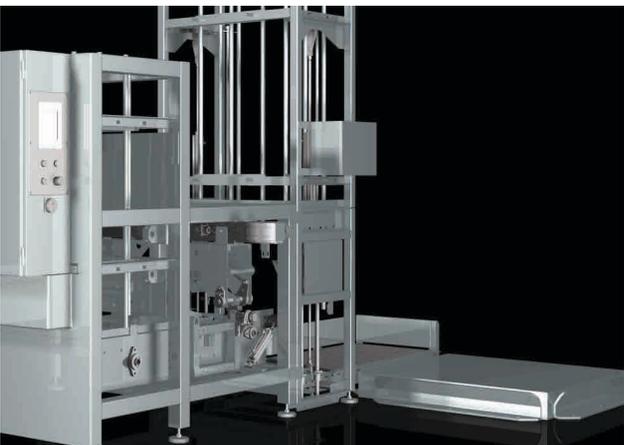
### Automatic Infeed



#### Conveys stacks of unerect RPCs into the Crate Erector.

1. Stacks of unerect RPCs are loaded onto the Infeed Conveyor manually or via the Automatic Depalletiser.
2. RPCs are automatically fed on demand into the magazine of the Crate Erector.
3. Holds stacks of RPCs – approximately 30 – 35 per stack dependent on the RPC size.

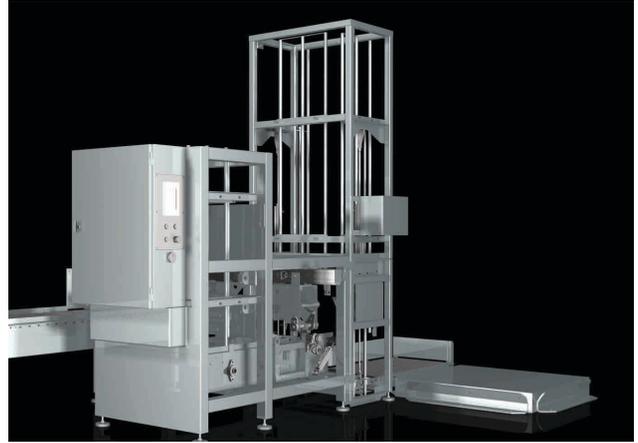
### Automatic Outfeed Stacker



#### Stacks erected RPCs to a preset height.

1. Erected RPCs are automatically stacked and ejected onto an outfeed holding conveyor.
2. Stacks of erected RPCs are ready for manual removal or automated palletising.

### Automatic Palletiser



#### Palletises stacks of erected RPCs.

1. Once 3 stacks of erect RPCs are in position on the outfeed holding conveyor, they are indexed onto a pallet.
2. The process then repeats forming a 2 x 3 configuration on the pallet.
3. The full pallet of erected RPCs is removed by a forklift operator or hand trolley and the empty pallet is replaced.
4. Full pallet is delivered to pack stations for loading.

### Crate De-Erector



#### Folds down RPCs after washing

1. Erected RPCs are received on an infeed conveyor and indexed into the machine.
2. The ends then the sides are laid down.
3. The de-erected RPC is then upstacked to the required height.
4. Stacks then exit the machine for either automatic or manual palletising.

# Crate Palletisers

Fibre King/Oryx has built its name on palletisers – extremely reliable, efficient and economical machines that run 24/7.

Our specialised range of palletisers take filled crates from the production line and palletise them for distribution.

## General features of all palletising systems

- Fully automatic & programmable to suit a variety of pallet configurations.
- Flexible layout options - runs both crates and cases.
- Heavy duty design and build. 24/7 workhorses.
- Quick changeovers.
- Color touch screen for easy diagnostics.
- Guarding is electronically interlocked
- **Standard Capacities (others available on request)**  
Empty pallet dispenser: 10 pallet.  
Full pallet conveyor: 2 pallet.
- **Pattern versatility**  
Ensured through a high level system which utilises row and overhead layer gating with a pneumatic lift and turn station.
- **Rapid size changing**  
Pre-programmed pattern selections and minimal mechanical adjustment mean multiple product lines are easily accommodated.

## How it works

1. An empty pallet ejects from the pallet dispenser, ready for packing.
2. Crates are collated in a single lane ready for side indexing onto a layer deck assembly.

\* Speeds for crates are typically lower due to their larger footprint.

3. Crates are side indexed until an entire single layer is formed on the layer deck assembly which sits directly above the empty pallet.
4. Once a full layer is positioned, the layer deck withdraws and crates are lowered onto a pallet.
5. This process repeats itself with the next layer being lowered onto the previous layer of crates.
6. Once the desired number of layers is formed, the pallet is ejected and automatically replaced with an empty pallet.
7. No mechanical change is required between crates and cases.



## Stripper Plate Style Palletiser



1. Used more commonly for stacks of collapsed RPC's or for full crates (i.e. full milk crates).
2. Once there are sufficient full stacks of crates, they are driven one crate stack at a time towards the Palletiser Infeed Conveyor.
3. The first row of stacks will drive straight through and be pushed onto the Palletiser Stripper Plate before the Stripper Plate indexes forward to its next position.
4. This process repeats until there is a full pallet of crate stacks.
5. The Stripper Plate can then "strip" back to its home position, dropping the Crate Stacks onto the empty pallet below. During stripping, the Crate Stacks are retained by 2 x Pivoting Gates.
6. The Pivoting Gate assemblies then open allowing the full pallet to be driven out onto the Driven Outfeed Conveyor to be removed by a Forklift Operator
7. While the Crate Stacks are being accumulated, an Empty Pallet Dispenser will dispense 1 x Empty Pallet at a time to the Palletiser.
8. These processes repeat to achieve the throughput required.

 "The Oryx team is very professional, understand and values customer service, very responsive and most importantly, proactive to our needs."

Ted Lechner  
H-E-B, Texas

## Compact Modular Palletiser (CMP)



The Compact Modular Palletiser (CMP) is an automatic palletiser developed for low to mid speed palletising applications. It features a pick and place vacuum gripper which is entrusted to a cantilevered, gantrystyle mechanical structure. This mechanical structure in conjunction with an axis-control system, allows the vacuum gripper to palletise the product.

The vacuum gripper head supports a fourth rotation axis to allow complete freedom of movement for a variety of palletising requirements. The standard CMP supports the direct placement of pallets inside the palletiser.

- Speeds up to 15 cases per minute.
- Options - Over Under Pallet Conveyor for automatic pallet Changeover, Empty Pallet Dispenser, End or Side Loading facility.
- Size - 2m x 3m footprint.
- Controls - The machine is PLC controlled with full interlocking, and automatic control of operating sequences. In manual mode, the controls allow the operator to override all elements.

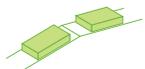
## CP20-60 Range



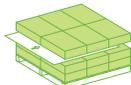
Palletisers within the 20-30 range utilise a single row forming conveyor. Whereas in the 40-60 cases per minute range a dual row forming conveyor is utilised. This (typically) halves the number of row pushes to form a layer. Normally Fibre King supplies an incline conveyor and a 1:2 lane channeliser to split the cases.

- The 20/30/40/60 designation reflects the maximum speed the palletiser could achieve on an optimal pattern. On patterns with many turned cases or a low number of cases per layer (such as large meat cases) the maximum speed achievable is lower.
- Painted mild steel or 304 stainless steel.
- Standalone Machines - For single line applications the palletisers are supplied as standalone machines, including empty pallet dispenser (10 pallet capacity) and 2 or 3 full pallet gravity outfeed conveyor. Pattern changes are made via the touchscreen with handwheels to adjust the datum fences. Typical changeover time is 2 minutes.

## Variations & Options



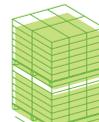
Incline conveyor



Pallet/Layer Sheet Insertion



Remote Empty Pallet Dispenser



Two Tier Stacking



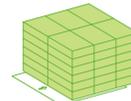
Automatic Size Change



Multiple Pallet Sizes



Half Pallet



Unitising

# Washplant Automation

## Robotic Palletisers



The main benefit of a robotic solution is its ability to operate in poor work environments. One or more robotic articulated arms are integrated with Oryx's remote pallet dispenser and pallet handling equipment.

### How it works

1. RPCs or cases are accumulated in single file on a conveyor.
2. The articulated arm of the palletiser grips one or more RPCs or cases and places them onto the pallet in the programmed configuration.
3. A mechanical gripper change is generally required between the running of RPCs and cases.

### General features

- Built in Robotic Controller.
- Choice of Manual or Automatic Pallet Dispensing.
- Palletises directly onto pallet on ground or onto pallet on conveyor.
- Can palletise multiple lines concurrently with a single articulated arm.

Oryx Automation can integrate a number of popular and reliable industrial robots including: ABB, Kuka, Fanuc and more.

### The ABB IRB 660

Thanks to its state-of-the-art 4-axes design, customers can look forward to a speedy machine that combines a 3.15 meter reach with a 250 kg payload, making it ideal for palletising bags, boxes, RPCs, bottles and more.

This robot's impressive reach means it can service up to four in-feed conveyors, two pallet stacks, one slip-sheet stack and four palletising out-feeding lines. In fact, the IRB 660 has the versatility, reach and handling capacity to meet the demands of just about any palletising application.

## Crate Automation Integration



Oryx Automation can provide complete washplan solutions that include:

- Washers
- Drying technology
- Existing Infeed/Outfeed automation
- Asset management systems
- Vision systems
- Processing equipment - bag inserter, layer pad inserter, packers

## Conveying Systems

Fibre King uses the latest in conveyor technology. Our conveyor systems seamlessly integrate within production facilities and are custom made to ensure that production lines run fast with gentle product handling and reduced waste. Types used for pallets are:

**Roller Conveyors** Crates sit on rollers and drive along.

**Crate Chain Conveyors** 2 strand plastic chain that the crates sit and drive along. When crates are inverted rubbish can fall out helping in the cleaning process.

**Modular Belt Conveyors** Plastic belts (material varies) made for many different applications, a few are curve conveyors, grippy top, low back pressure, flat top and open mesh.



# Why Oryx?

Anyone can build automation equipment, and there's plenty of cheap equipment around. What you need to worry about is: **Can they make it work? 24 hours a day, 7 days a week?**

Oryx equipment combines practical design, robust manufacturing and simple operation providing our customers with a thoroughly reliable machine. With fifteen years experience in RPC Automation, Fibre King's crate handling brand, Oryx Automation, is trusted globally to work at grower operations and Washplant facilities. Backed by **Fibre King's extensive Engineering experience spanning over ninety years** gives our customers peace of mind that they are being serviced by an experienced global player.

When implemented effectively, Crate Automation achieves the following benefits for end users:



### Reduced Direct Labour Costs

Staff currently used for the manual handling of crates can be utilised more effectively on production and quality inspection lines.

### Improved Productivity

The subsequent benefit of redeploying staff to other lines is increased productivity.



### Increased Product Quality

Automated Crate packing ensures consistent product handling which can improve product quality and increase retail sales. Automation also ensure RPCs are handled gently and consistently.

### Reduced Risk of Injury

Occupational Health and Safety Risks associated with repetitive actions over time are reduced.



### Increased Capacity

During peak times the Crate Automation can handle increased capacity without the need for additional staff members being employed.



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