

# MOBA

# AUTOPACK

OPTIMIZE YOUR BUSINESS



CHOOSE A PARTNER TO RELY ON 24/7

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MOBA

# OUR FIRM BELIEF

In the egg grading and packing industry automation in front and behind the egg grading equipment is an important focus area. Every egg producer or packing station has its portfolio of products, egg packing and the logistics surrounding these products.

To design a total solution for your specific situation, Moba has developed a well-balanced group of Autopack modules that can handle all various packing activities found in egg packing stations. Autopack provides total automation for the egg industry; where eggs are automatically handled in trays, consumer packs, cases or pallets. Basically, all peripheral equipment around an egg grading machine.

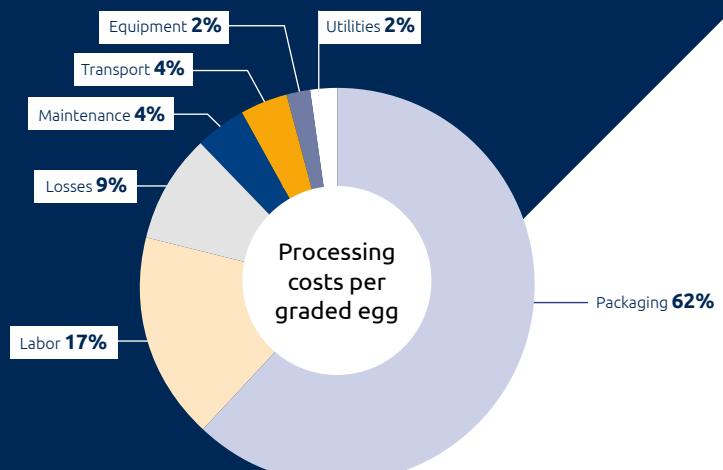
With these modules, we can design tailor-made solutions for your particular needs.

In modern egg grading and packing stations, the top three cost factors are:

- 1) Packaging costs
- 2) Labor costs
- 3) Losses throughout the process

These three points account for 80 to 90% of the costs, while well-designed and maintained equipment should represent only a fraction of the total cost.

It is our firm belief that our customers benefit the most from their investment in equipment if the top three cost factors are significantly reduced. While installing an egg grading and packing machine is a huge investment, we are convinced that making the right decisions results in lower total cost of ownership. This decision-making process needs to evaluate equipment specifications, but aspects such as efficiency, yield of the total operation, uptime, supplier service capabilities, running costs and residual value should also be taken into account. Our aim is to be the partner that helps you make the right decision.





### Customer feedback:

"The design and layout of my new robots are brilliant: the efficiency is improving week by week. I believe this robot will potentially save me 5/6 members of staff which is better than my expectations. It has improved my throughput by 25%."

# YOUR TOTAL SOLUTION PROVIDER

Moba has an excellent reputation when it comes to egg grading and packing solutions, and is continuously innovating its products and services.

Our Autopack modules consists of different Moba robotics modules for your egg packing operation; from tray handling and consumer pack handling to case packing.

We offer custom-made solutions, specifically designed for your operation, because your situation is unique, like your building, mix of products, requirements and budget.

Our equipment can handle over 2,000 egg packs, 1,500 of which are actively used today by our customers. Every pack is documented in our pack database, and we also keep all (physical) packs in our pack center.

With hundreds of Autopack installations worldwide, Moba has an excellent track record in automation. Next to reducing labor costs and the availability of staff, the gentle handling of the eggs ensures output in the best possible quality.

The fact that all Autopack functions are part of one technical family ensures identical and easy-to-use software. High standards for integration and sharing of connections result in total traceability throughout the production chain.





**Working together  
with customers is the  
ultimate way to create  
the best solutions**

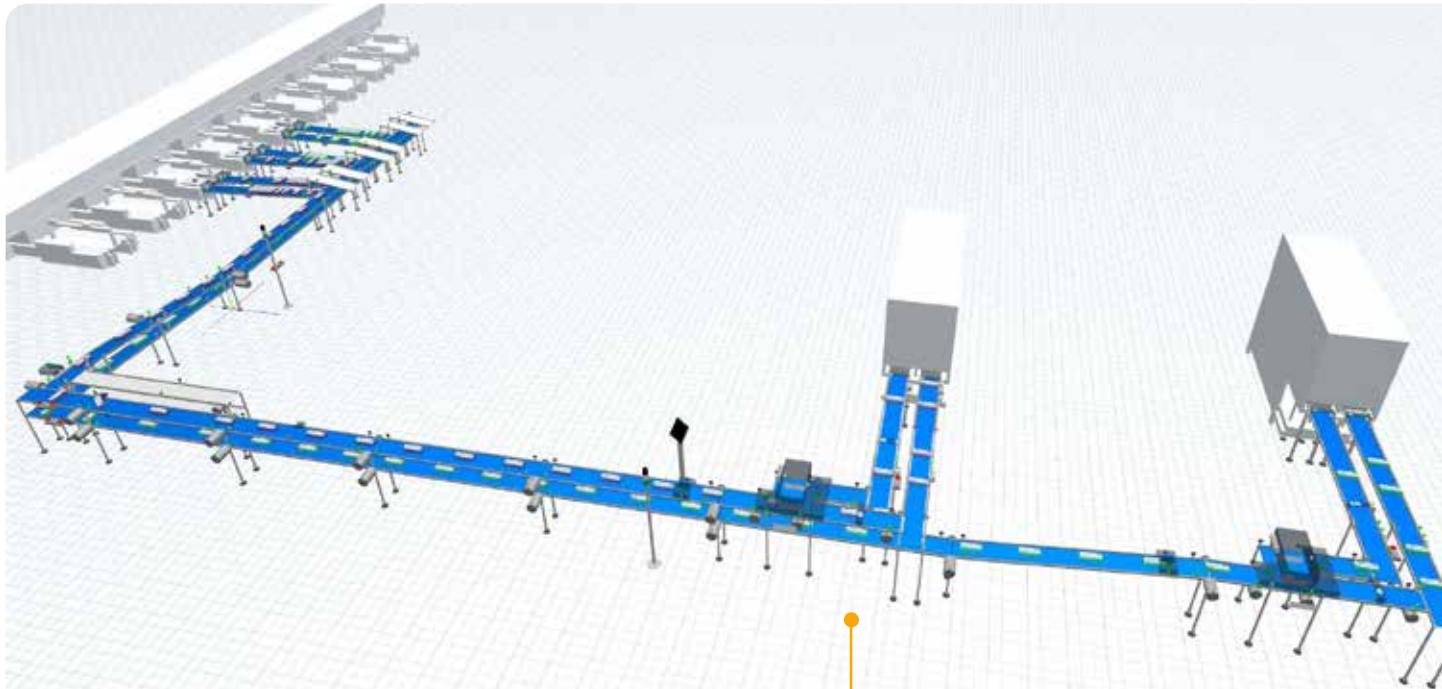
## Moba Robotics

With Moba's Autopack solutions you will achieve **TOP EFFICIENCY**, deliver products with the highest standard in **FOOD SAFETY** and you will have a **STRONG SERVICE NETWORK** to fall back on.

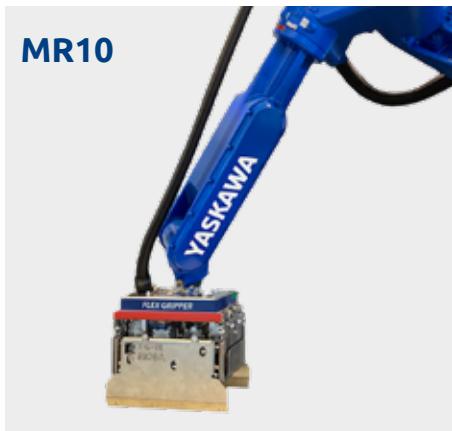
 100%	<b>TOP EFFICIENCY</b>		<b>FOOD SAFETY</b>		<b>STRONG SERVICE NETWORK</b>
<ul style="list-style-type: none"><li>• Many years of experience with reliable high-performance industrial robots</li><li>• Largest robot integrator in the egg industry</li><li>• Future-proof (adding new pattern, functions, etc.)</li><li>• Quick product changes</li></ul>	<ul style="list-style-type: none"><li>• Automation reduces human handling: less contamination risk, less egg breakage</li><li>• Seamlessly links to Moba track-and-trace solutions</li><li>• Fits in with Moba total control philosophy, reduces operator errors</li></ul>	<ul style="list-style-type: none"><li>• Yaskawa industrial robots and local service hubs</li><li>• Flexible cells with standardized program</li><li>• Long-term support</li><li>• Long-term software support</li></ul>			

**Autopack solutions are always custom-made projects**





Our MR-series product line offers the following types:



**MR10**

Packs consumer packs into cases, crates and trays



**MR12**

Packs consumer packs into cases, crates and trays to the highest capacity possible



**MR30**

Combines the capabilities of MR10 with the ability to pack displays and pallet shippers



**MR40**

Packs trays, pulp and/or plastic onto pallets



**MR50**

De-palletizes stacks of trays from different cargo systems



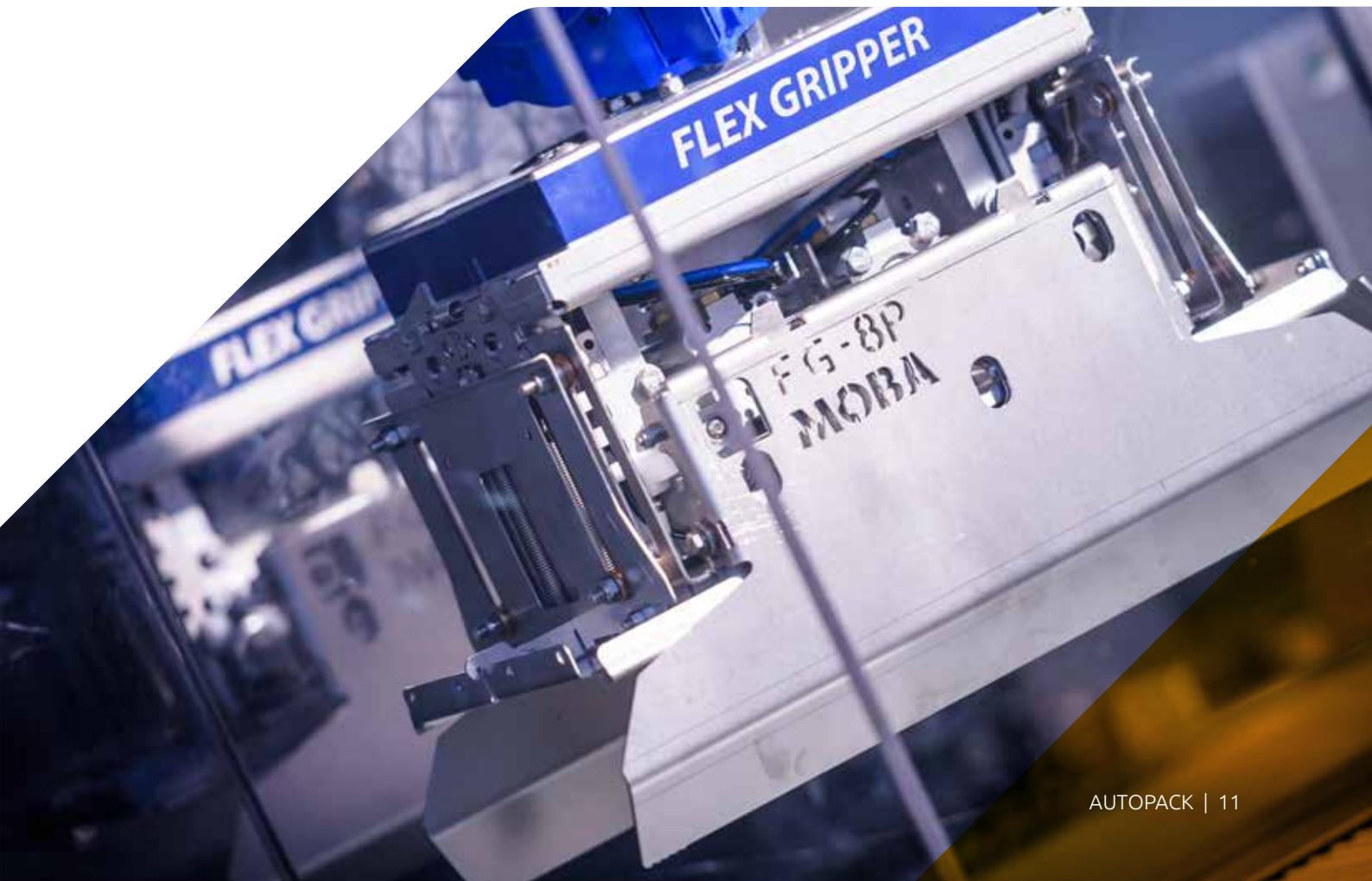
**MR60**

Palletizes cases and crates filled with consumer packs and/or trays

When we talk about an offline grading process we mean the process of grading where the equipment is not attached to the barn. That means that eggs are brought in from different farms to the packing station to be graded. At the start of the (offline) grading process, tray stacks from cargo pallets must be de-palletized and placed on the infeed conveyor of the loader. Moba developed the fully automated MR50 de-palletizer, and can also offer the semi-automatic "Easy lift" solution.

For the palletizing of trays, Moba offers the MR40 tray palletizer, which places tray stacks on a pallet. The MR40 can be applied behind the grader or behind a farmpacker. Additional peripheral equipment to build out the complete system can also be provided, including tray stackers, tray transport and top lidders.

At the end of the grading process, full cases and/or crates must be stacked on a pallet for further transportation to the warehouse, retailer or distribution center. For this purpose Moba can offer the MR60 case palletizer, a robotic implementation able to automatically pick and place cases or crates with a predefined pattern onto a pallet. Additional required functions like case closing, case labelling, pallet wrapping and all required conveying can also be provided. With these functions, Moba can build a fully integrated system, tailor-made for each customer.



# TRAY HANDLING

When supplying eggs to a loader, large weights must be transferred from a pallet onto the grader's transport belt. Most of the time, stacks of eggs also need to be offloaded from different levels. When supplying to an egg grading machine with, for instance, a daily production of 500,000 eggs, more than 7,500 stacks of eggs need to be moved. This can represent a weight of more than 30,000 kilograms.

 100%	TOP EFFICIENCY	 FOOD SAFETY	 STRONG SERVICE NETWORK
<ul style="list-style-type: none"><li>• Labor-saving</li><li>• Quick egg loading</li><li>• Minimizing physical strain</li></ul>		<ul style="list-style-type: none"><li>• Less risk of contamination</li><li>• Unique, self-aligning fork design</li><li>• Less risk of egg breakage</li></ul>	<ul style="list-style-type: none"><li>• Low maintenance</li></ul>

## Easy lift

The easy lift is a perfect solution for your operator and your business. With the unique self-aligning fork grip, also seen on the MR50, four stacks seem almost weightless and can be moved with ease. Using the easy lift to load eggs requires minimal effort.



STANDARD FEATURES	OPTIONS	GENERAL SPECIFICATIONS
<ul style="list-style-type: none"><li>• Floor-mounted configuration</li><li>• Painted floor mount</li><li>• Reliable fork grip</li><li>• Grips 4 stacks</li><li>• Fully pneumatic</li><li>• Fully integrated with any Moba loader</li></ul>	<ul style="list-style-type: none"><li>• Mounting on ceiling instead of floor</li><li>• Custom-made heights on request</li><li>• Stainless steel floor mount</li><li>• Movable base plate</li></ul>	<ul style="list-style-type: none"><li>• Capacity: depending on operator; example: Omnia 170, 42 seconds cycle time</li><li>• Radius of working area R=2.6 meters</li><li>• Height of working area H= 2.10 meters</li><li>• Max load 75 kg (including gripper)</li><li>• Min. ceiling height H=3.40 meters (5 Layers) H=3.75 meters (6 layers)</li></ul>



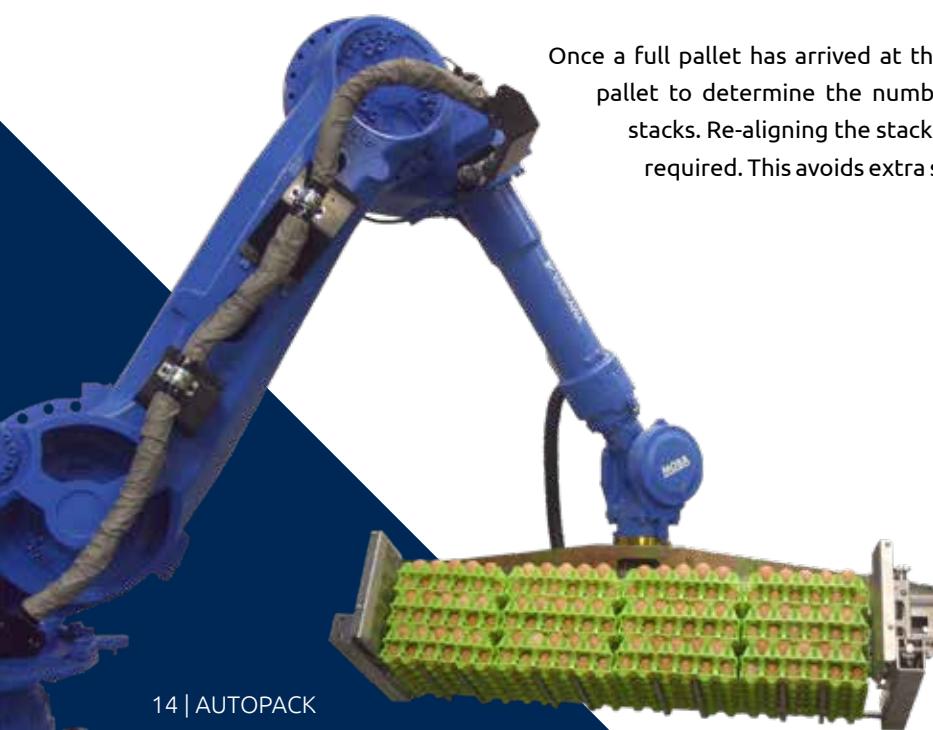
## Tray de-palletizer (MR50)

The MR50 tray de-palletizer is capable of de-palletizing a number of egg-pallet systems. It can be connected to loaders with a continuously running flat belt.

 100%	TOP EFFICIENCY	 FOOD SAFETY	 STRONG SERVICE NETWORK
<ul style="list-style-type: none"><li>• Labor-saving</li><li>• Minimizing physical strain</li><li>• Unique, self-aligning fork design</li><li>• Capacity in line with grader demands</li><li>• Seamless integration with the pre-loader for optimal infeed towards the grader</li><li>• Height detection: detects number of layers to automatically start de-palletizing</li><li>• Fit for use: available in many configurations</li></ul>	<ul style="list-style-type: none"><li>• Conveyors are designed to be pressure washed</li><li>• Autoscaning of stack position and alignment, avoiding collisions that result in broken eggs</li><li>• No human handling of eggs</li><li>• Seamlessly links to Moba track-and-trace solutions</li><li>• Integrated supply change supporting full traceability</li></ul>	<ul style="list-style-type: none"><li>• First- and second-line support by Moba Service organization</li><li>• Third-line support by Yaskawa local service hubs</li><li>• Long-term support</li><li>• Long-term software support</li></ul>	

Full pallets are placed on the automatic pallet transport system. Due to the specific way the pallet transport system is designed in such a way, that a standard pallet jack can be used to load the pallets. In addition, the MR50 pallet transport conveyors are designed to be pressure washed. Every new pallet is registered into the grader's supply management with the simple press of a button.

Once a full pallet has arrived at the de-palletizing position, the robot scans the pallet to determine the number of layers present and the position of the stacks. Re-aligning the stacks on the pallet by side pushers is therefore not required. This avoids extra strain on the eggs, reducing the risk of damage.

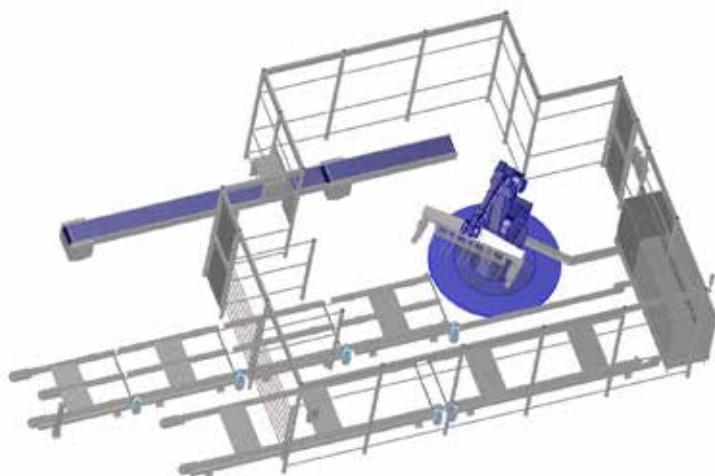


Layer pads and empty pallets are automatically picked up by the gripper and stacked onto a separate empty pallet and layer pad storage. Completed stacks are automatically transported outside of the safety fence of the cell while the MR50 is in operation. The rugged safety fence is designed to ensure a safe working environment for your operators.

The MR50 is designed for worry-free automatic de-palletizing of egg-pallet systems. Flexibility and ease of use are the key features of this sophisticated robot. In addition, the motion of the robot arm is programmed in such a way that every movement is absolutely spot on. As a result, the MR50's overall performance is so well balanced that it can easily keep up with capacities up to 190,000 eggs per hour (530 cases per hour [cph]), even when pallets are only 4 layers high.

The MR50 is a logical addition for any egg grading system with capacities ranging from 60,000 (170 cph) to 190,000 (530 cph) eggs per hour. Of course, this includes the Omnia PX700. Depending on the specific configuration, one or two MR50s can be integrated with Moba's flagship machine.

#### Example MR50 layout



Footprint: depending on specific layout

STANDARD FEATURES	OPTIONS	GENERAL SPECIFICATIONS
<ul style="list-style-type: none"> <li>• De-palletizing of pallets from different cargo systems</li> <li>• Full pallet conveyor with room for 4 full pallets</li> <li>• Stock conveyor with room for 2 pallet stacks and 2 layer pad stacks</li> <li>• Safety fence, including safety screen with muting function on infeed</li> <li>• Access and exit doors for operators</li> </ul>	<ul style="list-style-type: none"> <li>• Pallet transport extensions for a larger full pallet and/or stacked pallets or layer pads (2 pallets per extension)</li> <li>• Enlarged base plate, in case of weak floors</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity up to 190,000 eggs / 530 cases per hour</li> <li>• Maximum pallet height: 6 layers</li> </ul>

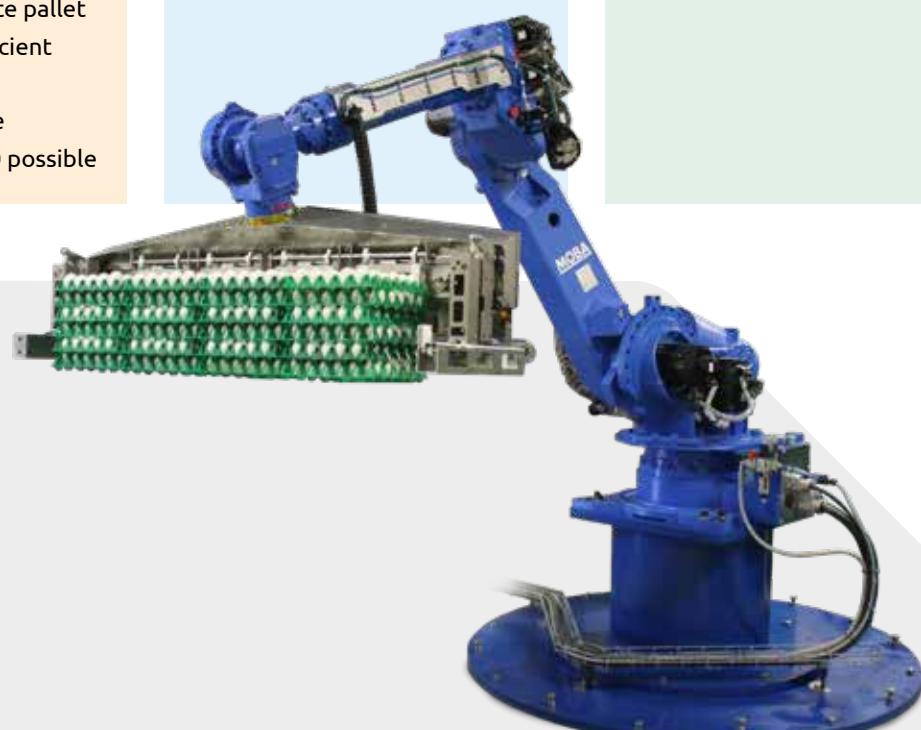
## Tray palletizer (MR40)

The MR40 is a flexible and rugged robotic tray palletizer, capable of handling stacks of pulp or plastic egg trays and placing them on a pallet. The MR40 not only handles pallet systems but can also handle wooden pallets, such as Euro and American pallets.

### Benefits

The MR40 comes in a number of configurations with a single or a double infeed. Between one and four pallet loading positions can be configured. The flexible gripper is capable of handling two different trays and/or pallets at the same time. Optionally, the MR40 can be equipped with automatic pallet transport. This open constructed transport system is designed in such a way that full pallets can be picked up with a standard pallet jack. Cleaning the floor in the pallet transport area is a lot easier compared to traditional roller conveyors. The pallet transport can be economically configured within the space of the MR40 robot cell, as well as an extension to the outside of the cell, where full pallets automatically pass a safety screen.

 100%	<b>TOP EFFICIENCY</b>	 <b>FOOD SAFETY</b>	 <b>STRONG SERVICE NETWORK</b>
<ul style="list-style-type: none"><li>• Labor-saving</li><li>• Minimizing physical strain</li><li>• Ability to run 2 different products at the same time (e.g. pulp and plastic)</li><li>• Available in many configurations</li><li>• Optional automatic pallet conveyors for continuous non-stop production</li><li>• Re-entering incomplete pallet</li><li>• Compact design = efficient use of floor space</li><li>• User-friendly software</li><li>• Connection with DF10 possible</li></ul>		<ul style="list-style-type: none"><li>• No human handling of eggs</li><li>• Can keep 2 egg types separated, avoiding human error</li></ul>	<ul style="list-style-type: none"><li>• First- and second-line support by Moba Service organization</li><li>• Third-line support by Yaskawa local service hubs</li><li>• Long-term support</li><li>• Long-term software support</li></ul>

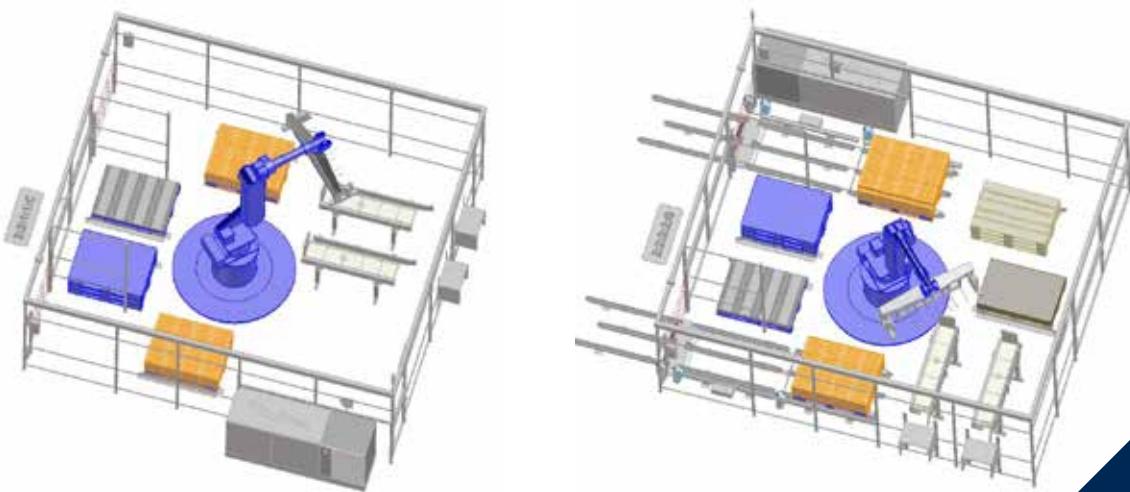


## Flexibility

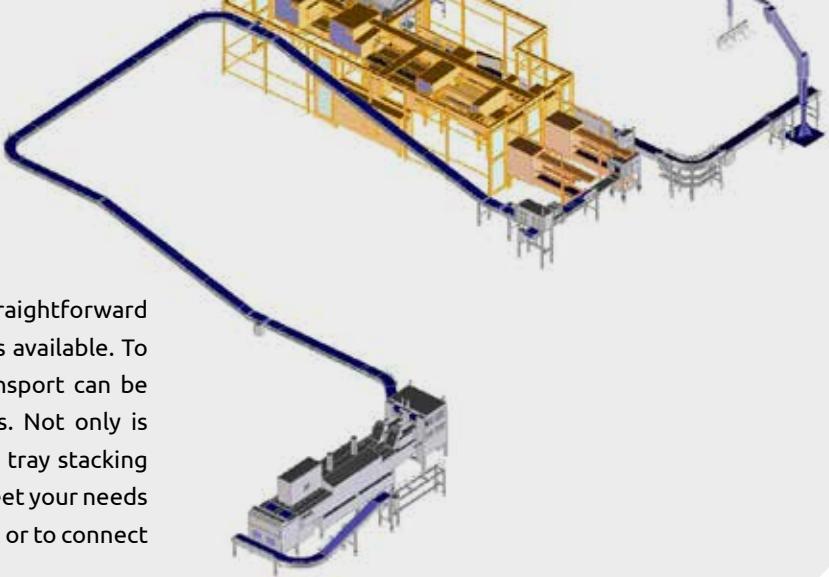
For farmpackers, de-palletizing of empty tray stacks can be added, in combination with the Moba DF10 denester filler. This extra feature enables you to run up to 300 cases per hour for a longer time while allowing staff to focus completely on the eggs coming from the sheds.

STANDARD FEATURES	OPTIONS	GENERAL SPECIFICATIONS
<ul style="list-style-type: none"> <li>Single pickup and pallet loading position</li> <li>Empty pallet stack; max. 12 pallets high</li> <li>Layer pad storage; the pallet underneath the layer pads is also processed by the robot</li> <li>Solid safety fence with sliding doors</li> <li>Access door for the operator</li> <li>Open construction; obstacles in the cell are avoided as much as possible</li> </ul>	<ul style="list-style-type: none"> <li>Handling of pulp trays and cardboard layer pads in combination with wooden pallets (max. 5 stacks high)</li> <li>Automatic pitch adjustment in the gripper head to process different packtypes</li> <li>Second pickup position</li> <li>Simultaneous production with 2 different pack types (e.g., plastic and pulp)<sup>1)</sup></li> <li>Full pallet transport conveyors; inside the robot cell, or auto-outfeed in combination with a safety fence</li> <li>Product weighing</li> <li>Enlarged base plate, in case of weak floors</li> <li>Extra pallet loading positions; max. 4 positions</li> <li>De-palletizing stacks of empty trays to the DF10 denester filler<sup>2)</sup></li> </ul> <p>1) <i>Specific configurations only</i> 2) <i>Discuss options with your sales representative</i></p>	<ul style="list-style-type: none"> <li>Capacity up to 108,000 eggs per hour / 300 cases per hour</li> <li>Maximum (up to) full pallet height: 6 layers</li> <li>Suitable for the Eggs Cargo System™ (ECS), Ovologic, as well as Eco Plastic System (EPS)</li> </ul>

## Standard MR40 layouts (auto-pallet transport is optional)



Footprint: depending on specific layout



### Tray transport

Especially in egg grading operations, a straightforward standard tray transport solution is not always available. To meet your demands, tray and tray-stack transport can be configured according to your specific wishes. Not only is custom-made tray transport available for the tray stacking and palletizing, we also have solutions that meet your needs in terms of stack transport to loading systems, or to connect the loader outfeed to a tray washer.



### Top lidders

There are various reasons for placing a separate lid or top tray onto filled egg trays or egg tray stacks. These lids are placed manually or using a so-called top lidder. Moba offers a special top lidder series with the following functions:

**TL10:** For placing top trays on top of trays stacked for palletizing purposes or on top of a single tray for shrink-wrapping trays, including a top tray.

**TL20:** For placing plastic lids on special consumer packs (so-called "tray packs") with a separate lid.

**TL30:** For placing top trays on top of trays stacked in a case.



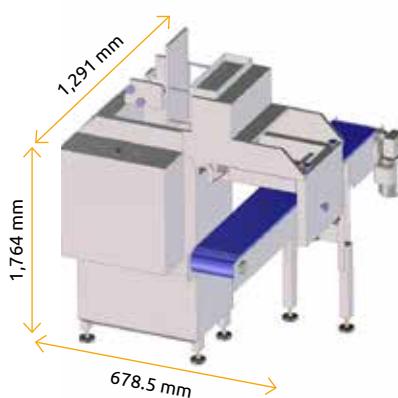


## TL10

When the TL10 is utilized in combination with tray palletizing, the top lidder is typically positioned between a tray stacker and a tray palletizer, like the MR40. The capacity of the TL10 is approximately 27 top trays per minute.

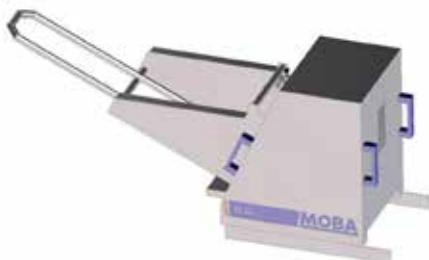
In many countries, a tray filled with eggs is sold as a "consumer pack". Often a top tray is added and the combination of eggs, sandwiched between two trays, is sent through a shrink-wrapping machine.

## Standard layout



## TL20

The TL20 top lidder is used for the automatic application of lids onto filled trays. A stack of lids is placed in a hopper. TL20 can handle three types of tray packs from various suppliers.



## TL30

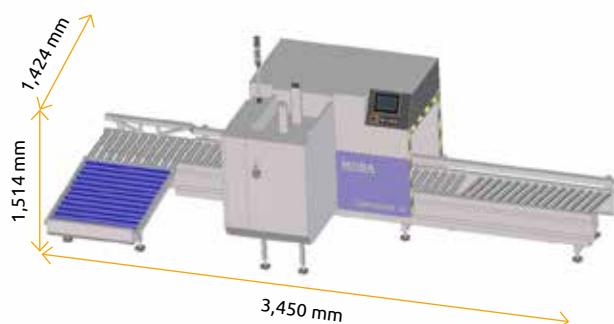
Cases filled with trays require an empty tray on top for protection before the box is closed. The TL30 is equipped with a vision system to distinguish cases with trays from cases with consumer packs in the case transport system.

The TL30 can handle one type of top tray, while simultaneously handling different case sizes.

In general, the capacity of the TL30 exceeds the capacity of a single case packer, so multiple case packers can be integrated with a single TL30.

The TL30 has a single Moba tray denester to singulate top trays from a stack of trays and contains a standard bundle of approximately 120 trays. As an option, a reject conveyor can be added to the system. This enables cases to be diverted from the main case conveyor system in case of an error and is therefore a very useful addition to the TL30. The capacity of the TL30 is 18 half cases or 9 full cases per minute.

### Standard layout



#### TL30 GENERAL SPECIFICATIONS

Max. capacity up to:	Full cases 12 (24 top trays) Half cases 20 (20 top trays)
Max. capacity up to (bypass mode):	25 cases per minute
Average capacity up to:	18 cases per minute, depending on product mix
Packaging:	Capable of handling a wide range of pulp trays (20 or 30 eggs) into standard egg tray cases or catering packs. Product samples may be required.
Transparent packs or covers:	A label or leaflet must be present; min. dimensions 50 x 100 mm



## Tray stackers

### TS10

The TS10 is a machine that stacks plastic or pulp trays. It can automatically create a stack of 6 trays (180 eggs) or stack heights of 2/4/6 with a capacity of 36,000 eggs per hour. It is a compact machine that, besides being connected to a farmpacker, can be integrated in the packing lane of an egg grading machine. The TS10 can also be installed away from the grader in a stand-alone configuration, through a conveyor system.

The turning mechanism of the TS10 operates in a highly precise manner, which is very important especially when stacking plastic trays. Once a stack is formed, the machine automatically transports the stack onto the takeaway conveyor.

### TS20

The TS20 is a tray stacker with a higher capacity, up to 54,000 eggs per hour (150 cph). The TS20 is designed to be integrated with the Moba farmpacker Mopack 150.

STANDARD FEATURES	GENERAL SPECIFICATIONS
<ul style="list-style-type: none"><li>• Stack height 6 trays</li><li>• Controls integrated in Mopack 150</li></ul>	<ul style="list-style-type: none"><li>• Capacity up to 54,000 eggs / 150 cases per hour</li></ul>



# CONSUMER PACK HANDLING

## Pack transport/Contiflow

Moba provides a fully flexible pack and tray transport system to connect the egg grading machine to additional automation equipment, such as Moba case packers, tray stackers, shrink wrappers, and more. Four levels of conveyors can be stacked, and the manual pickup position remains available. Without the manual pickup, a maximum of five conveyor levels can be reached. The packing lanes from the grader are connected to one of the conveyor levels, or to the manual pickup position, for maximum flexibility. The capacity is up to 65,000 eggs/hour per level, depending on pack sizes.

 100%	<b>TOP EFFICIENCY</b>		<b>FOOD SAFETY</b>		<b>STRONG SERVICE NETWORK</b>
<ul style="list-style-type: none"><li>• Flexibility to connect to any packing lane and automation equipment in the required layout</li><li>• Flexibility to integrate additional functionality, such as printers and top tray dispensers</li><li>• Offers open pack reject function</li><li>• Double product mode feature: run 2 different packs on 1 transport level at the same time</li><li>• Buffer function avoids grader stops</li><li>• Fits Moba control</li></ul>	<ul style="list-style-type: none"><li>• Possibility to integrate T&amp;T on consumer pack level</li><li>• Allows for different hygiene levels in the same room</li><li>• 3D visualization of the entire process</li><li>• No human handling of eggs</li></ul>	<ul style="list-style-type: none"><li>• Practical maintenance features to increase overall efficiency and availability</li><li>• Eco mode (smart control; stops conveyors when there are no packages available), results in a reduction of energy consumption and noise</li></ul>			



Contiflow is Moba's fully flexible pack and tray transport system, which connects egg grading solutions to case packers and also to tray stackers, shrink wrappers, and more. Contiflow can be configured to optimize the system layout to suit your building. Four levels of conveyors can be stacked, while still allowing for manual packing.

Contiflow can merge, transport, sort and buffer various consumer packs, as well as pulp trays.



# CASE PACKING

When it comes to case packing at a packing station, each situation is unique. Moba supplies a set of modules to adapt to your mix of products, volume and building to suit your requirements and budget. Case packers can be connected with the packing lanes immediately after the grader, or connected via Contiflow.

 100%	TOP EFFICIENCY	 FOOD SAFETY	 STRONG SERVICE NETWORK
<ul style="list-style-type: none"><li>• Labor-saving</li><li>• High capacities in the industry</li><li>• Minimizing physical strain</li><li>• Quick product changes</li><li>• Smart software</li><li>• Fully integrated with Moba Autopack range</li><li>• Quick changeable tooling</li><li>• Flexgripper technology</li><li>• Flexibility via universal software supporting many pack-case combinations</li><li>• Very small footprint</li><li>• MR12: 2 totally independent robots so independent changeover</li><li>• Easy accessible</li><li>• Good overview of the system</li></ul>	<ul style="list-style-type: none"><li>• Excellent pack handling</li><li>• Motion control versus human handling</li><li>• Seamlessly links to Moba track-and-trace solutions</li></ul>	<ul style="list-style-type: none"><li>• Yaskawa industrial robots and local service hubs</li><li>• Generic models (versus local one-offs) to ensure the availability of spare parts and service backup</li><li>• Full, long term support</li><li>• Full, long term software support</li></ul>	



## Case packers

Each model in the case packer family has specific features that match your needs. Below, you'll find a brief list of the benefits of each case packer. You can read more about customizing our case packers to suit your specific needs in the dedicated sections.

As case packing is one of the most labor-intensive activities in the packing station, case packers can be utilized as the first step in automation, where manual handling is still possible, on your journey to a complete automated packing station. At each level of automation, Moba can be your integration partner, including peripherals.

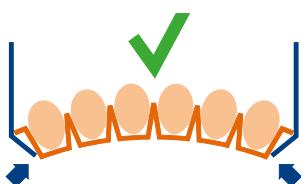
Moba offers a range of case packers. Your priorities regarding capacity, product flexibility and/or footprint are analyzed in order to select the right case packer for your packing station. All case packers can be equipped with our patented Flexgripper.

### Flexgripper technology

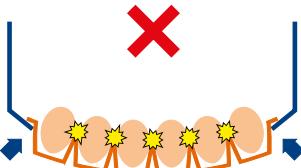
In every Moba case packer you will find the patented Flexgripper.

This key element in case packing can be easily adapted to form the largest variety in packs and patterns for cases and crates. Flexgripper technology enables Moba case packers to place consumer packs and trays into very tight cases and crates efficiently and to the highest capacity. The unique blade design prevents "hang down" in the center, and egg contact, giving the highest possible yield. The strip-off holds packs down during retraction of the blades.

The Flexgripper enables a quick changeover. In less than a minute, gripper blades can be changed and the case packing of a new product can continue. The HMI guides the operator through all the steps.



Flexgripper creates a safe arch by gripping the cups of the pack or tray.



Grippers using the side of the pack will create pressure on the eggs, resulting in cracks.

## MR10

The MR10 case packer is also designed to connect either "inline" or "offline" using Contiflow. The capacity can reach up to 40,000 eggs (110 cases) per hour, depending on patterns and pack types. When required, the MR10 is capable of turning individual consumer packs with the robot head or by making use of a PRU (pack rotation unit) to create more complex patterns.



FEATURES MR10	OPTIONS MR10	GENERAL SPECIFICATIONS MR10
<ul style="list-style-type: none"> <li>Robot cell with Flexgripper head</li> <li>Single or double pickup position</li> <li>1 case packing line with: <ul style="list-style-type: none"> <li>- 3 empty positions</li> <li>- 1 full case buffering position</li> <li>- 1 loading position</li> </ul> </li> <li>Sliding access doors on both sides</li> </ul>	<ul style="list-style-type: none"> <li>Gravity conveyor for manual input of empty cases</li> <li>Case alignment unit</li> <li>Open pack reject conveyor for inline configuration</li> <li>Pack rotation unit, to create ready-to-pick-up patterns</li> <li>Pack splitter</li> <li>Extra full case buffering position</li> <li>Connection to a case erector</li> </ul>	<ul style="list-style-type: none"> <li>Capacity up to 40,000 eggs/hour</li> <li>Maximum pattern flexibility</li> <li>Small footprint</li> <li>Perfect for inline configuration</li> </ul>

## MR30

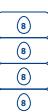
The MR30 case packer is a smart combination of all the capabilities of the MR10, with additional options to pack into displays and shippers. This makes the MR30 the most versatile solution in your packing station.



FEATURES MR30	OPTIONS MR30	GENERAL SPECIFICATIONS MR30
<ul style="list-style-type: none"> <li>All the features of the MR10</li> <li>Stack height 13 layers (in display or shipper)</li> <li>Stack height 18 layers (open-stacked)</li> <li>Straight display loading and transport line with: <ul style="list-style-type: none"> <li>- 2 empty positions</li> <li>- 1 loading position</li> <li>- 3 full positions</li> </ul> </li> <li>Layer pad storage and handling</li> <li>Safety screens for pallet outfeed</li> </ul>	<ul style="list-style-type: none"> <li>See MR10 options</li> <li>Sliding access doors on both sides</li> <li>Multiple pallet buffer extensions possible</li> <li>Pallet de-stacker with 7 pallets to buffer</li> <li>Left or right lay out version</li> </ul>	<ul style="list-style-type: none"> <li>Capacity up to 40,000 eggs/hour</li> <li>Maximum product flexibility, including display and shippers</li> <li>Larger footprint</li> <li>Often used in combination with Contiflow</li> </ul>

## Pattern overview MR10 and MR30

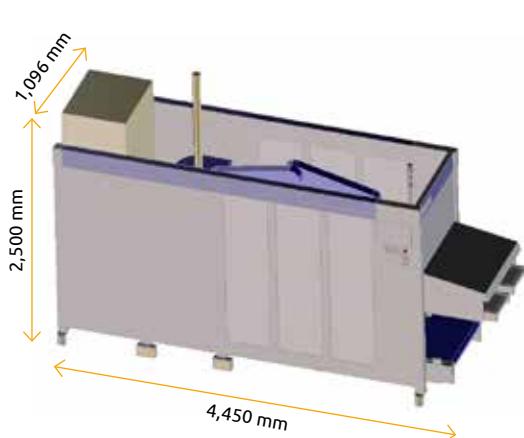
### Cases

<b>P-8-4-A</b> 												<b>P-10-3-A</b> <b>P-10-4-A</b> <b>P-10-5-A</b> <b>P-10-6-A</b> <b>P-10-6-A1</b> <b>P-10-6-D</b> <b>P-10-6-D1</b> <b>P-15-2-A</b> <b>P-15-3-A</b> <b>P-15-4-A</b> <b>P-15-4-A2</b> <b>P-15-4-D</b> <b>P-15-4-D1</b>             																		
<b>P-20-1-A</b> <b>P-20-1-D</b> <b>P-20-2-A</b> <b>P-20-2-D</b> <b>P-20-2-A1</b> <b>P-20-2-D1</b>      																														
<b>P-12-3-A</b> <b>P-12-3-D</b> <b>P-12-4-A</b> <b>P-12-5-A</b> <b>P-12-6-A</b> <b>P-12-6-A1</b> <b>P-12-6-D</b> <b>P-12-6-D1</b> <b>P-18-2-A</b> <b>P-18-2-D</b>          																														
<b>P-18-3-A</b> <b>P-18-4-A</b> <b>P-18-4-A1</b> <b>P-18-4-D</b> <b>P-18-4-D1</b> <b>P-24-2-A</b> <b>P-24-3-A</b>       																														
<b>P-30-1-A</b> <b>P-30-1-D</b> <b>P-30-2-A</b> <b>P-30-2-D</b> <b>P-30-2-A1</b> <b>P-30-2-D1</b>      																														
<b>P-(D)6-6-A</b> <b>P-(D)6-6-D</b> <b>P-(D)6-8-A</b> <b>P-(D)6-10-A</b> <b>P-(D)6-12-A</b> <b>P-(D)6-12-A1</b> <b>P-(D)6-12-D</b> <b>P-(D)6-12-D1</b> <b>P-(D)9-4-A</b>         																														
<b>P-(D)9-6-A</b> <b>P-(D)9-8-A</b> <b>P-(D)9-8-A1</b> <b>P-10-7-B</b> <b>P-10-7-C</b> <b>P-10-7-E</b> <b>P-D6-5-B</b> <b>P-6-8-B</b> <b>P-12-4-B</b>         																														

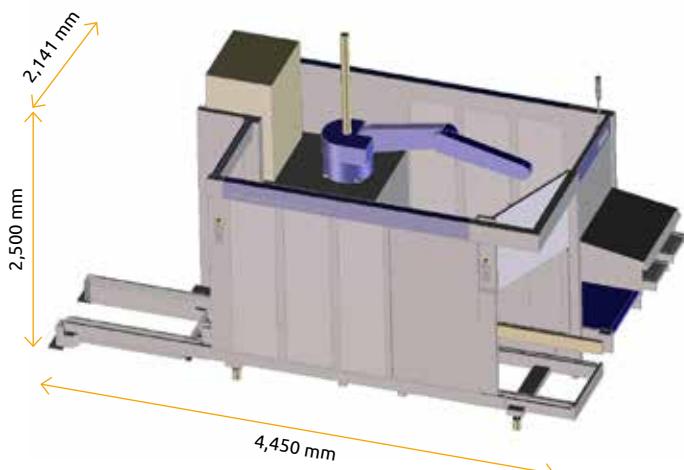
## Displays (only for MR30)

P-(D)6-14-A**	P-10-9-B*	P-10-9-B1*	P-10-12-A*	P-15-6-A	P-15-8-A*
P-20-6-A*	P-(D)6-22-B*	P-10-15-A	P-10-16-A*	P-10-13-A*	P-10-14-A
P-10-16-B	P-12-11-B	P-15-10-A	P-15-11-A*	P-15-9-A*	P-15-11-A
P-(D)6-28-A*	P-12-14-A	P-12-14-B	P-12-14-C		
P-(D)6-30-A	P-10-18-A	P-15-12-A1	P-18-10-A	P-18-10-B	P-18-10-C
P-20-9-A	P-30-6-A				

## Standard layouts



MR10



MR30

**Shippers and displays:** Due to the precise pack placement, the MR30 has the capability to build up a pattern on a display pallet. The operator places a sleeve after the MR30 has completed the last pack placement. This method of display loading makes stacking possible at higher capacity, and up to 18 layers high. When handling displays with a pre-fitted sleeve or shipper, the MR30 is capable of packing up to 13 layers high. The standard pallet/shipper conveyor system of the MR30 has, next to the loading position, space for two empty pallets and three full pallets. When loading directly on a pallet, without making use of a display or shipper, a de-stacker can be added optionally to increase the buffer capacity with seven extra empty pallets. Optionally, the pallet conveyor system (incoming and outgoing) can be enlarged in order to create extra buffer possibilities.

## MR12

The MR12 case packer is a twin case packer comprising two robots and two packing lanes. It is specifically designed to pack consumer packs and trays into half and full cases. Both robots are able to operate independently, and can produce different products, based on patterns of five or six eggs wide patterns.

The MR12 was designed using the latest research on operator efficiency. It has a unique see-through design to allow a clear overview of the grading floor, as well as both channels.



FEATURES MR12	OPTIONS MR12	GENERAL SPECIFICATIONS MR12
<ul style="list-style-type: none"> <li>Twin configuration with 2 independent channels, but still no wider than 1,100 mm for inline configuration.</li> <li>Packs 2 different products simultaneously</li> <li>Extremely open design to maintain the best view possible of the grader's packing lanes, also with multiple MR12s</li> <li>Patented Flexgripper</li> <li>Combined capacity of up to 65,000 eggs per hour (180 cph or 90 cph per channel)</li> <li>Integrates seamlessly with existing MR peripherals</li> </ul>	<ul style="list-style-type: none"> <li>Open pack reject conveyor for inline configuration</li> <li>Straightforward case alignment unit</li> <li>Pack splitter</li> <li>Case diverter to feed empty cases to both channels</li> <li>Connects to Moba's MCE20 case erector and other 3rd party case erector</li> </ul>	<ul style="list-style-type: none"> <li>Maximum capacity up to 65,000 eggs/hour</li> <li>Medium product flexibility</li> <li>Small footprint</li> <li>Perfect for inline configuration</li> </ul>

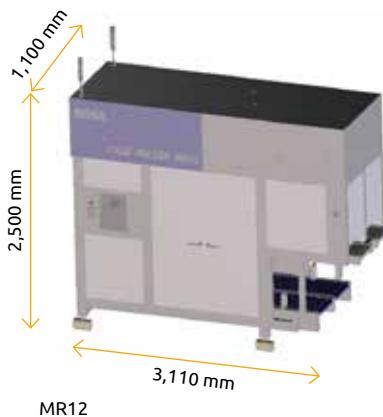
## Customer feedback:

"The MR12 is a perfect example: integrating the two robot systems into one compact machine is a brilliant idea. The smallest possible footprint is created for the cell to process up to 180 cph (64,800 eggs per hour) and the fact that the two robots operate completely independently offers us optimal flexibility. We are sure that this innovation will change the market."

## Pattern overview MR12

P-10-3-A	P-10-4-A	P-10-5-A	P-10-6-A1	P-10-6-D1	P-15-2-A	P-15-3-A	P-15-4-A	P-15-4-D1	P-20-1-A	P-20-2-A1	P-12-3-A	P-12-3-D	P-12-4-A	P-12-5-A
(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(20)	(20)	(12)	(12)	(12)	(12)
(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(20)	(20)	(12)	(12)	(12)	(12)
(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(20)	(20)	(12)	(12)	(12)	(12)
(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(20)	(20)	(12)	(12)	(12)	(12)
P-12-6-A1	P-12-6-D1	P-18-2-A	P-18-2-D	P-18-3-A	P-18-4-A1	P-18-4-D1	P-30-1-A	P-30-1-D	P-30-2-A1	P-30-2-D1				
(12)	(12)	(18)	(18)	(18)	(18)	(18)	(20)	(30)	(30) turned	(30) turned				
(12)	(12)	(18)	(18)	(18)	(18)	(18)	(20)	(30)	(30) turned	(30) turned				
(12)	(12)	(18)	(18)	(18)	(18)	(18)	(20)	(30)	(30) turned	(30) turned				
(12)	(12)	(18)	(18)	(18)	(18)	(18)	(20)	(30)	(30) turned	(30) turned				
(12)	(12)	(18)	(18)	(18)	(18)	(18)	(20)	(30)	(30) turned	(30) turned				
P-6-6-A	P-6-8-A	P-6-10-A	P-6-12-A1	P-6-12-D1	P-9-4-A	P-9-6-A	P-9-8-A1							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							
(6)	(6)	(6)	(6)	(6)	(9)	(9)	(9)							

## Standard layout



## Case erectors

Case erectors can be a suitable solution when looking to further minimize operator handling when using automation. Moba's partners comply to the highest standard in case erecting solutions and guarantee service and the availability of spare parts. Moba pre-selected two case erectors for you that perfectly integrate with our case packers.



MCE20

### MCE20

The MCE20 is designed to utilize the MR12 to the best of its capabilities. This fully automatic case erector can handle two different case sizes simultaneously, making it unique in the industry. The MCE20 can handle both left- and right-handed lids. Fitted with a single unit for bottom sealing with self-adhesive tape or hotmelt glue, the MCE20 can handle almost any case without the need to exchange erector plates. Two magazines can hold approx. 200 flat cases for approx. 30 minutes of work.

### CER12

The CER12 is a fully automatic case folding machine for one case size with a unit for bottom sealing with self-adhesive tape or hotmelt glue. This case erector can be connected with MR10, MR12 and MR30. When using in combination with the MR12, a case divider is required.



FEATURES CER12	OPTIONS CER12	GENERAL SPECIFICATIONS CER12
<ul style="list-style-type: none"> <li>Standard tape size: 50 mm tape width</li> <li>Erector plates to process different case sizes</li> <li>Handle twin wall cases</li> </ul>	<ul style="list-style-type: none"> <li>Unfolded</li> <li>Hotmelt glue</li> <li>Different tape sizes</li> </ul>	<ul style="list-style-type: none"> <li>Capacity up to 9 cases/minute</li> <li>Small, compact footprint</li> <li>Small footprint for inline application</li> </ul>
FEATURES MCE20	OPTIONS MCE20	GENERAL SPECIFICATIONS MCE20
<ul style="list-style-type: none"> <li>2 independent products to utilize MR12 to the maximum</li> <li>Maximum product flexibility (incl. left- &amp; right-handed unfolded cases)</li> <li>Suitable to handle shelf-ready cases</li> <li>Standard tape</li> </ul>	Hotmelt glue	<ul style="list-style-type: none"> <li>Capacity (up to 9 cases/minute, 4.5 per channel)</li> <li>Narrow footprint for inline application</li> </ul>

# CASE HANDLING

## Case transport

A case transport system is an important link between the grader and the case packing and palletizing function. Usually, cases filled by operators or case packers are connected to a case conveyor before being transported to the palletizing area. Just before entering the palletizer, the cases are sorted to the right pickup point. Moba can offer a complete integrated transport system, including controls, that fits in perfectly with the customer's situation. The case transport system can contain all common logistic functions, like merging and sorting, but also specific functions such as case tapers, top lidders and label units.

Moba is your go-to partner for establishing a seamless integration in the entire system.

TOP EFFICIENCY	FOOD SAFETY	STRONG SERVICE NETWORK
<p>Part of total solution:</p> <ul style="list-style-type: none"><li>• Offers all required functions (case closing, merging, sorting, labeling)</li><li>• Perfect fit for your situation</li></ul>	<p>Seamlessly links to Moba track-and-trace solutions</p>	<p>Designed, developed and serviced by Moba</p>



### Case taper 702/704

Moba offers two case tapers: the 702 and 704. Both case tapers can perfectly integrate into the case transport system. For more information, contact your local Moba sales representative.



Case taper 702



Case taper 704

## Case palletizers

### MR60

Another important step in the automation of a packing station is the automatic palletizing of cases. This is often still done by hand, which is labor-intensive and physically demanding work. Moba can offer the MR60 case palletizer, which is available in many configurations with many options, from semi-automatic to fully automated, to meet the needs of any customer. For more information, contact your local Moba sales representative.

	TOP EFFICIENCY		FOOD SAFETY		STRONG SERVICE NETWORK
<ul style="list-style-type: none"><li>• Labor-saving</li><li>• Minimizing physical strain</li><li>• Many configurations available to offer a viable investment based on customer needs</li><li>• Optional automatic pallet conveyors for continuous production</li><li>• User-friendly HMI</li><li>• Seamless product changeover without any mechanical adjustments</li></ul>		<ul style="list-style-type: none"><li>• Universal case gripper</li><li>• Incorporating very gentle product handling</li><li>• Integrated T&amp;T at case and pallet level</li></ul>		<ul style="list-style-type: none"><li>• Yaskawa industrial robots and local service hubs</li><li>• Generic models (versus local one-offs)</li></ul>	

### Principle

The Moba MR60 is a robot solution to pick and place cases or crates with a predefined pattern on a pallet. As standard, it is equipped with four pickpoints and four pallet positions. Cases, filled with eggs, are transported from the case packer to the palletizer. Just before entering the cell, the cases are identified and sorted to the right robot pickup point. The MR60 picks the cases from one of the pickup points and places them onto the corresponding pallet.



### **Gentle product handling**

The gripper head is the heart of the MR60. With this gripper, the MR60 is capable of picking and placing four cases at the same time. Placing cases together on the pallet, however, is not always possible. To get around this issue, the gripper is capable of placing the picked-up cases individually on the pallet. A special feature of the gripper is that it supports the case, rather than compressing it during transport. Especially for open-top cases that contain a rather fragile product, such as eggs, this feature is vital. In addition, the gripper can pick up empty pallets and layer pads.

### **Flexibility**

The MR60 has different configurations and options to make it suitable for any situation. It can be equipped with a layer pad storage for placing layer sheets; a case stacking unit, used to gain capacity for low cases; extra door positions depending on the layout; handling of crates (must always be tested); can be provided with one central HMI for multiple palletizer cells; double de-stacker configurations if two different pallet types must be handled simultaneously; and a twin cell configuration with one or two shared de-stackers.

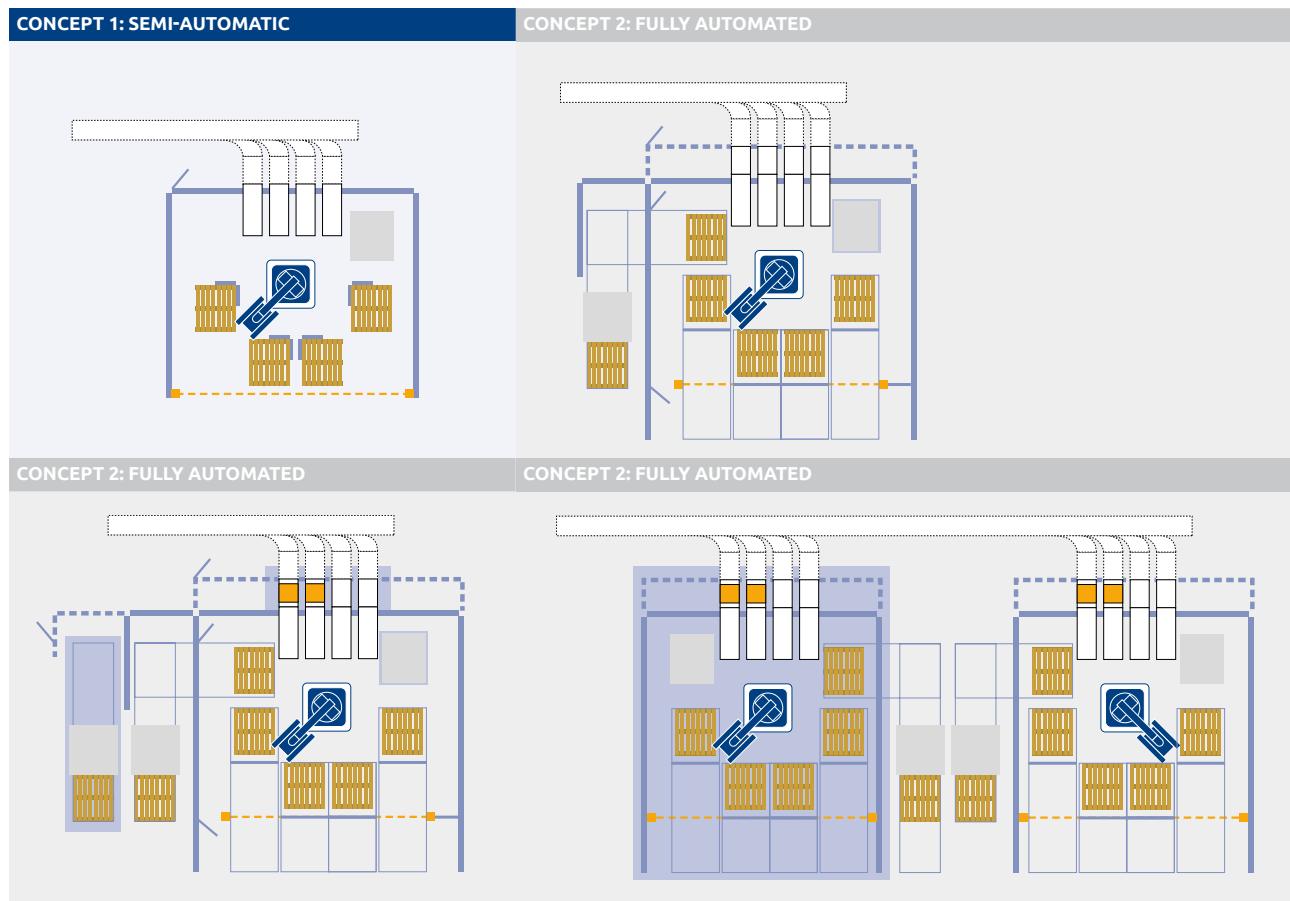
### **User friendly**

The MR60 is equipped with an easy-to-use user interface. You can quickly start product runs by assigning a product to the right pickpoint and pallet position. It is also very easy to create product runs based on existing patterns, simply by changing the dimensions.



## Configurations

Moba has developed a modular palletizers concept from which three main concepts can be configured and several options can be chosen. Depending on the needs of the client, a tailor-made solution can be offered.



	FEATURES	OPTIONS
All concepts	<ul style="list-style-type: none"> <li>• 4 individual pickup points and 4 pallet loading positions</li> <li>• Product identification by barcode and automatic sorting</li> <li>• Capacity up to 1,100 cph (depending on pattern)</li> <li>• Max. stacking height 2,100 mm on top of pallet</li> <li>• Safety fence, including safety screens and a sliding door to enter cell</li> <li>• Pallet types that can be handled: EURO, CHEP, USA_CHEP, GMA</li> </ul>	<ul style="list-style-type: none"> <li>• Layer pad storage</li> <li>• Case stacking unit; used for low cases to increase capacity</li> <li>• Extra door positions</li> <li>• Handling of crates</li> <li>• 1 HMI for multiple palletizer cells</li> </ul>
Concept 1	<ul style="list-style-type: none"> <li>• Maximum capacity up to 65,000 eggs/hour</li> <li>• Medium product flexibility</li> <li>• Small footprint</li> </ul>	<ul style="list-style-type: none"> <li>• Pallet de-stacker with empty pallet infeed</li> </ul>
Concept 2	<ul style="list-style-type: none"> <li>• Pallet de-stacker with empty pallet infeed</li> <li>• Empty pallet de-stacking infeed and placement by robot</li> <li>• Automatic pallet outfeed</li> </ul>	<ul style="list-style-type: none"> <li>• Double de-stacker for 2 different pallet types</li> <li>• Twin cell configuration with 1 or 2 shared pallet de-stackers</li> </ul>

# PALLET HANDLING

At the end of the production process, full pallets with cases or trays must be transported from the palletizer to the warehouse. These pallets must often be stretch-wrapped and labeled. Moba can offer a complete integrated pallet handling system, which can be built up from many different units, including a transfer car, fixed pallet transport, a pallet stretch wrapper, a pallet label unit and warehouse integration.

## Transfer car

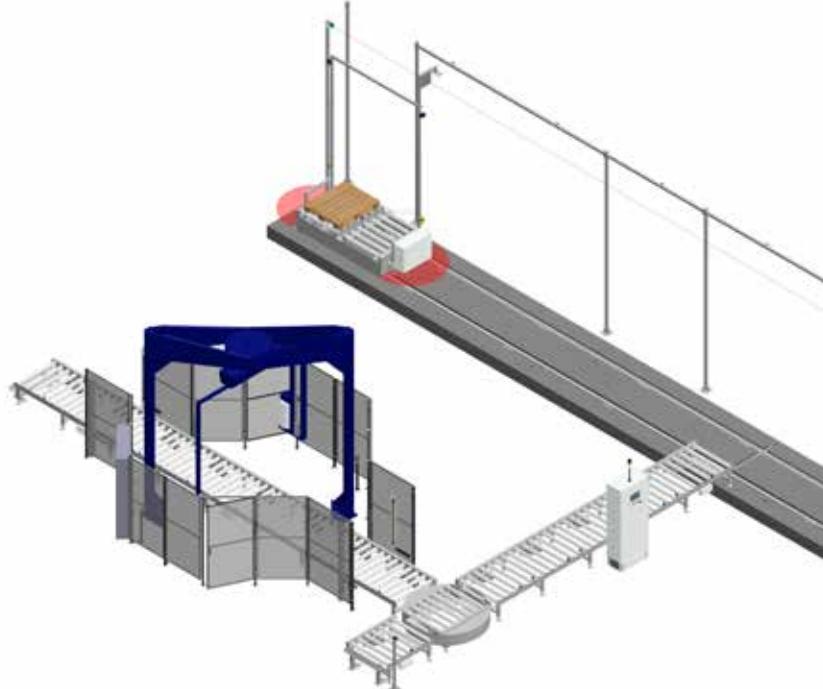
The transfer car will pickup the full pallets behind one or more palletizers and transport them to the wrapper or warehouse.

## Pallet transport

Conveyors, transfers, turntables.

## Pallet stretch wrapper

A stretch wrapper can automatically apply wrap around a pallet. It can handle pallets of different heights, a required amount of foil layers and foil pitch. This can all be set in the machine. The stretch wrapper can work as a stand-alone unit or as a semi- or fully integrated system. Moba can offer a variety of wrappers depending on customer requirements.



## Pallet label unit

A unit to print and apply a pallet label. It is common for pallets with different products to pass along a conveyor, so the pallet label unit must retrieve the right product data and apply it to the corresponding pallet.

## Warehouse interfacing

If the customer uses a warehouse system for finished products, in the final step the finished pallets must be forwarded to this system. A handshake with data transfer takes place. Moba can arrange a smooth integration where all the product data is seamlessly handed over.

# ONE TEAM TO SUPPORT YOU

Established in 1947, Moba is the world's leading producer of high-quality integrated systems for grading, packaging and processing eggs. Headquartered in Barneveld, the Netherlands, Moba has a product development department that employs approximately 100 staff and a factory in which the production of the machines takes place. The company employs 800+ staff in total. Moba is always close to its customers thanks to its global sales and service network, which includes offices in Japan, Italy, China, Malaysia, Dubai, the UK, Germany, France and the US, as well as support from agents and distributors.

Moba's vision is to enable food producers globally to feed consumers around the world with healthy and affordable egg-based food. Moba is evolving from a producer of egg grading machines into a technology company that develops high-quality integrated systems for the egg industry. Moba listens to its customers and understands their needs. Every egg producer or packing station has its own portfolio of products, packages and the logistics surrounding these products. Moba has designed a total solution for every specific situation by developing a well-balanced group of Autopack modules that can handle all the various packing activities found in egg packing stations.

Moba supports its customers with intelligent solutions that ensure the highest yield, reduced costs and the efficient utilization of resources such as energy, water and animal nutrition. Every day, Moba's systems process around one billion eggs worldwide.



# WE LISTEN. WE LEARN. WE INNOVATE.

800 employees worldwide

160 service colleagues

100 countries represented

36 agents around the world

27 languages spoken

14 offices worldwide

9 spare parts warehouses worldwide

**1 team to support you!**



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