



HANDLING YOUR NEEDS

SINCE 1986

**MACHINES FOR
BOTTLING AND
PACKAGING
INDUSTRIES**



AND & OR®

HANDLING YOUR NEEDS

SINCE 1986



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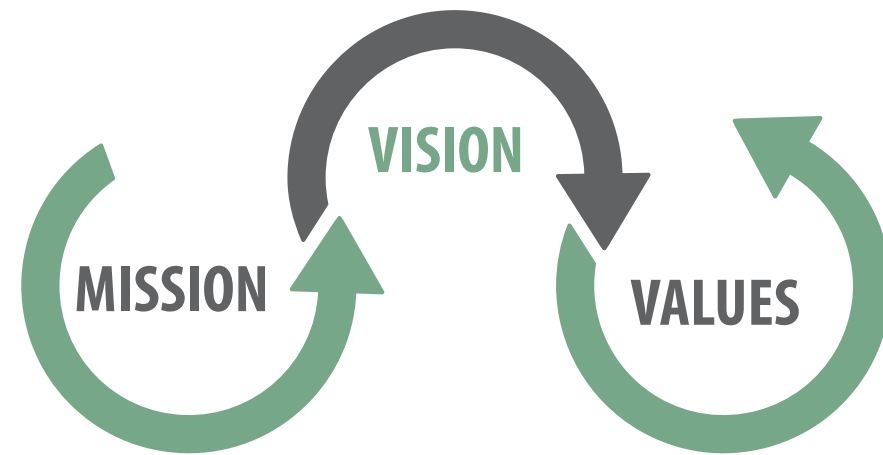
COMPANY

Since 1986, AND&OR has been designing, developing and manufacturing machines and custom-made complete solutions for the blow molding, bottling and packaging industries.

Continuous efforts, commitment to quality and creativity have been the driving force of our increasing competitiveness in the market, being today an international reference in the sector.

We assemble and test all our machines in an automated, modern 11,500 square meters facility headquartered in Seville, Spain.

We strongly believe in a close collaboration with our customers during all phases of a project: design/engineering, manufacturing, start-up installation and after-sales service.



MISSION

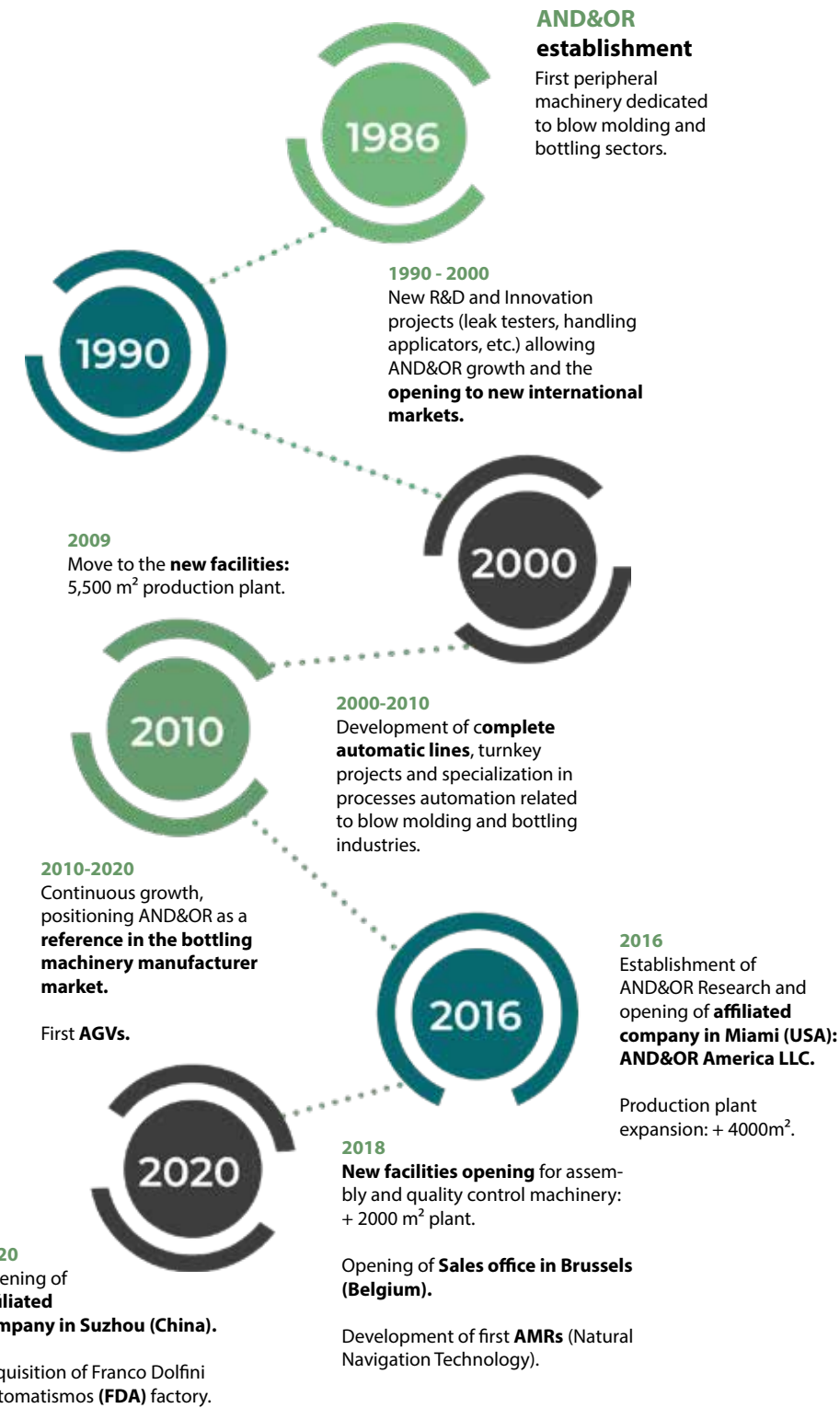
We provide our customers the most adapted technological solutions to their production needs, improving their profitability.

VISION

To be a worldwide machinery manufacturer reference in blow molding, packaging and bottling sectors.

VALUES

- Humility and respect
- Work as a team
- Commitment to quality
- Discipline
- Passion for what we do



AND&OR TODAY



Experience working for the blow molding and bottling industry since **1986**



More than **2,000** machines installed worldwide, of our design and manufacturing



Customers and after sales service in more than **90** countries



Exports represent more than **70%** of **AND&OR's** turnover.



4 branches worldwide



200 employees



More than **80** specialized technicians



13.500 m² of assembly plant

SERVICES



AND&OR's after-sales and customer service includes management personnel and qualified technicians to respond to any need a customer may have: installation of new equipment, inspection and upgrading of existing equipment, preventive maintenance, technical information and brochures, adjustments, repairs, remote monitoring of the equipment's performance, etc.

“It is our mission to become your technological partner, create dedicated customized solutions and work to improve your profitability”

Operate the AND&OR machines at their maximum efficiency over their lifetime. To that end, it offers several accompanying and participation levels:

| | | | | |
|--|--|--|---|---|
|  |  |  |  |  |
| RECOMMENDED SPARE PARTS | ANNUAL MAINTENANCE | ONSITE TECHNICAL ASSISTANCE | ONLINE TECHNICAL ASSISTANCE | TRAINING SERVICES |
| Original recommended spare parts necessary for 2,000, 4,000 and 8,000 h. | Dedicated and specific preventive maintenance plans. | To attend customers at their facilities when so required: starting up new equipment or upgrading existing one. | Through remote connection with the customer service team at AND&OR facilities. | Training programs for your technicians and line workers, at AND&OR or at your facilities. |
|  |  |  |  |  |
| MACHINERY UP-GRADE | MACHINE MONITORING | STUDY/IMPROVEMENT OF PROCESSES | PARTIAL PRODUCTION MANAGEMENT/CONTROL | PROJECTS MANAGEMENT |
| Up-Grades of your machinery with the newest versions. | Get a weekly report for your machines' operational efficiency. | Studies and advice on how to improve your processes. | Management and partial production control with AND&OR qualified personnel to operate your machines. | <ul style="list-style-type: none">- Project Manager assigned.- Follow-up, expansions, changes: risks reduction.- Costs control.- Deadline execution follow-up.- Tracking during setup and start-up. |



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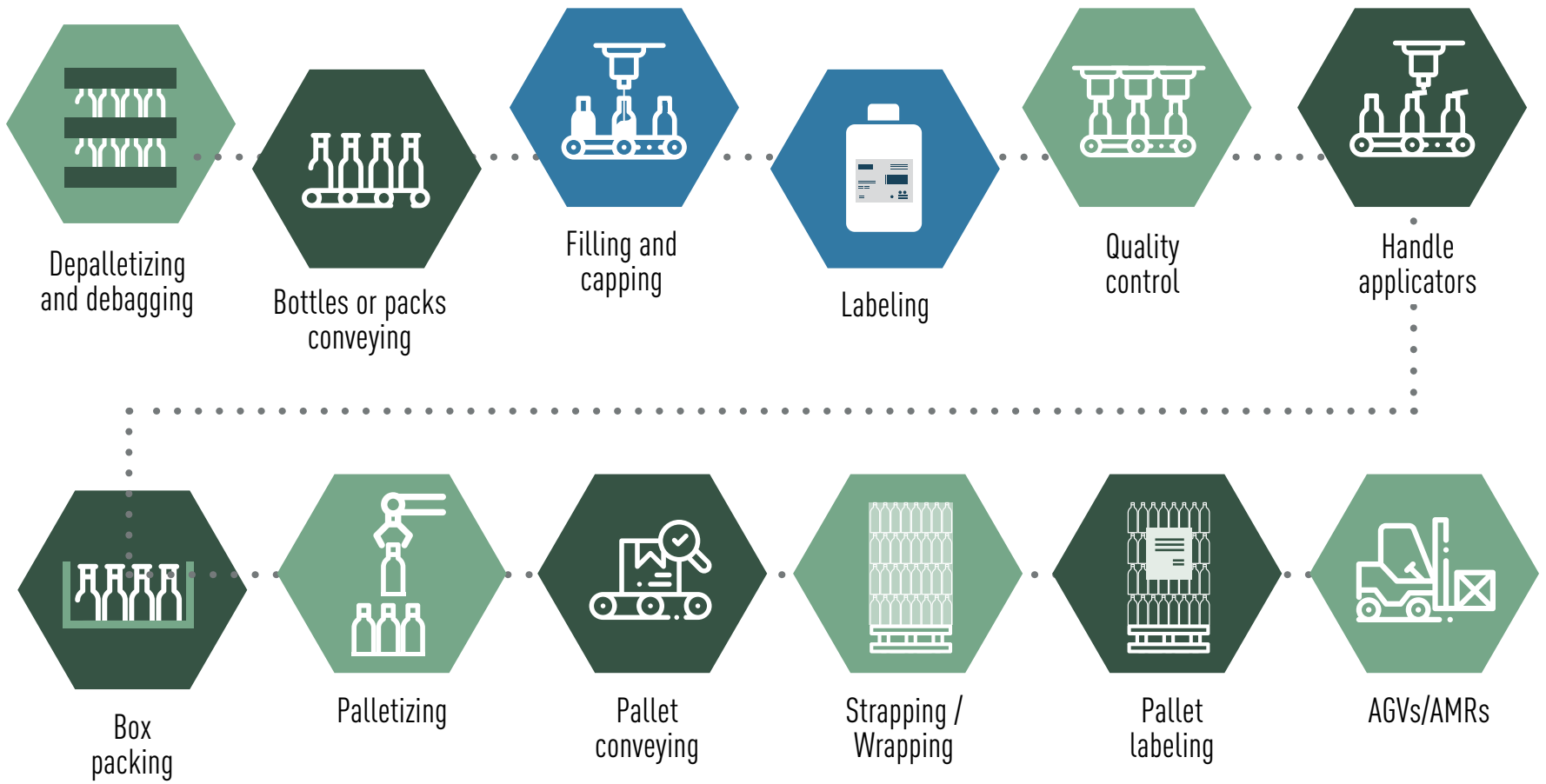
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SOLUTIONS FOR THE BOTTLING AND PACKAGING INDUSTRY

AND&OR has always been inspired by the industry real problems. Working with our customers, in a close collaboration, has been the start point of all machines designs and developments. To offer simple and effective solutions, adding value to our customers' production process, is the approach and goal of all our engineers.

AND&OR approaches different customers, from big groups and multinational corporations to local bottling companies.

We offer complete automation projects to bottling sector, before or after filling, to the warehouse, as well as individual machines, including: bottles or packs handling and conveying systems, quality control (leak and crack testers, box weight testers, camera vision), handle applicator machines (to bottles or packs), depalletizing and debagging systems, box or tray packing (display) or boxes, palletizers, wrapping, strapping and labeling machines, pallet conveyors and Automatic Guided Vehicles (AGV) and Autonomous Mobiles Robotics (AMR).



DEPALLETIZING

AND&OR offers machinery for the bottles depalletizing for plastic (PET and PE), metal (cans) and glass.

These systems are modular units that allow a degree of automation in accordance with customer specific needs: input conveyors for full pallets, empty pallet warehouse, automatic cardboard tray/interlayer/ film removal or horizontal strip.

The palletizer/depalletizer system avoids the use of silos or unscramblers, meaning an important saving in space and installation investment.

Low-Level Depalletizers

DEPAL
Depalletizers for glass, PET and metal with output at line's height and pallet stuck on the floor.

INVERTED TRAY

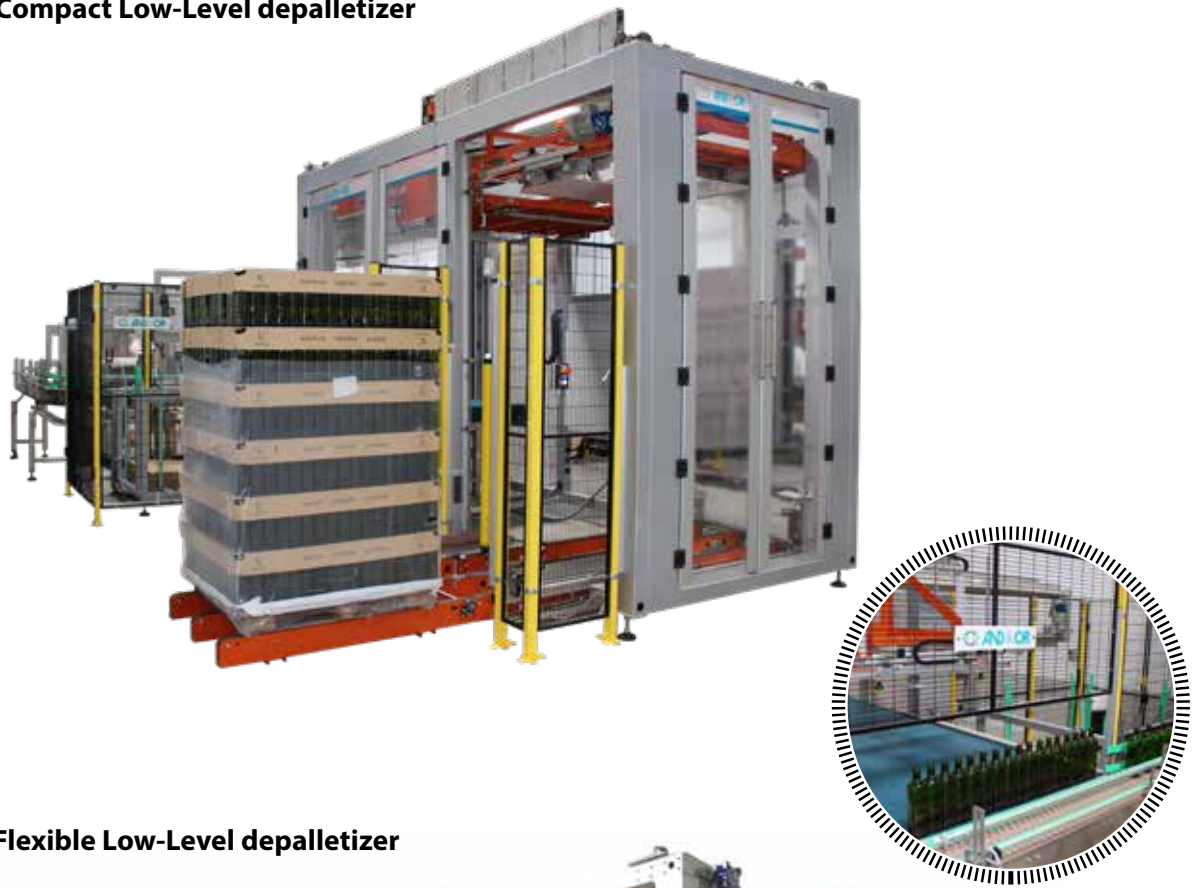
INTERLAYER

From certain production speeds, it is recommended to create a small buffer of pallets feeding, where the operator has an easy access to take off the pallet wrapping and strapping, so the pallet remains stripped before to go inside the depalletizer.

Once the pallet placed in depalletizing position, the depalletizing frame searches the layer position and slides it by a motorized centering frame to an intermediate platform. From there it searches the output desk high and slides the layer again from the platform to the table to launch product to the line. The interlayers and top covers are removed manually or automatically with a columnar arm or horizontal gantry robot placed on the desk.

The maximum production speed that can be achieved with a Low-level depalletizer is 150 layers per hour.

Compact Low-Level depalletizer



Flexible Low-Level depalletizer



High-Level Depalletizers

DMAM-E
Depalletizers for glass, PET and cans with output depending on pallet height and raise.

**Possible depending on bottle/tray dimensions*

INVERTED TRAY

INTERLAYER

UPSIDE TRAY *

For plastic



For glass/cans



The High-level depalletizer is recommended to reach higher production speeds. This kind of depalletizer is characterized by the pallet rise in each layer evacuation cycle by a motorized elevator, and by the product output at the height indicated by the higher pallet to consider.

In case of very high pallets, it is necessary to build an elevated platform for the equipment operation and integrate, if necessary, the following descent of the depalletized product at the filling line height. The interlayers and top covers are removed manually or automatically with a columnar arm or horizontal gantry robot.

The maximum production speed that can be achieved with a High-level depalletizer is 360 layers per hour.

Other depalletizing solutions

RDZ-VOLT – Plastic bottles

Depalletizing with robot of PET/HDPE bottles to hopper/positioner. With optional turning system to work with upside trays (RDZ-V).



RDZ-DMAM – Plastic bottles

Depalletizing with robot of PET bottles to arranging table, pallet height up to 2,8m.



RDZ-CPE

High-Level Depalletizer with rotary arm to transfer layer to launching table or hopper.



COMMON DATA FOR ALL THE SERIES

The output table and line-up conveyors are defined according to the product to line-up (PET, HDPE, glass, cans, etc.), bottle shape (oval, square o round) and filling line speed.



BOTTLES



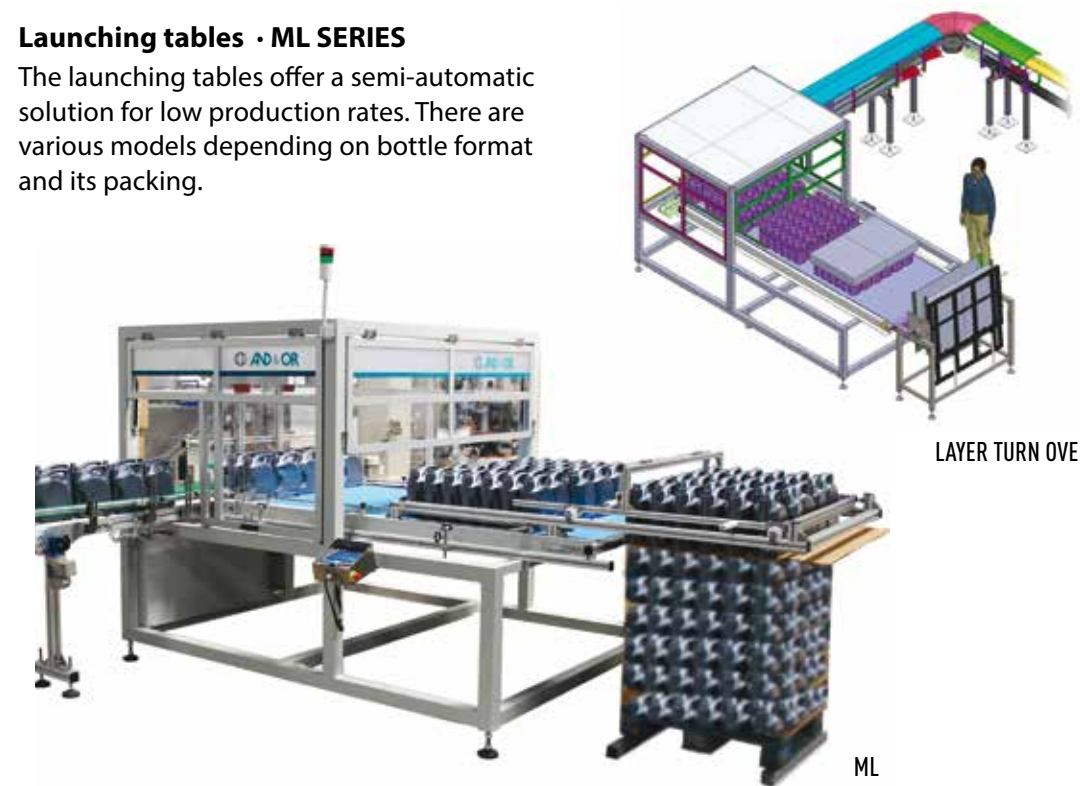
CANS



RDZ-DMAM

Launching tables · ML SERIES

The launching tables offer a semi-automatic solution for low production rates. There are various models depending on bottle format and its packing.



LAYER TURN OVER

ML

DEBAGGING

Towards the traditional tray packing, bagging is becoming today a more and more popular way of bottle packing. Bagging avoids bottle's contamination from contact with cardboard trays or any other.

To guarantee the hygiene in the products it is especially important in the food, pharmaceutical or cosmetic industries.

AND&OR manufactures automatic baggers especially designed to allow an easy and automatic debag by an AND&OR debagger. Closing the cycle, AND&OR tries to make things easy to both blow molding and bottling industries.

SERIES DBM-CL+RDZ

Automatic debagger for plastic bottles with robot placing bags automatically in the table for its debagging.



SERIES DBM-CL

AND&OR debagger does not disarrange plastic bottles when opening the bag. Thus, bottles can be positioned into de bottling line with no need of an unscrambler. There are several models depending on bottle size and shape, line speed, bags size, etc.

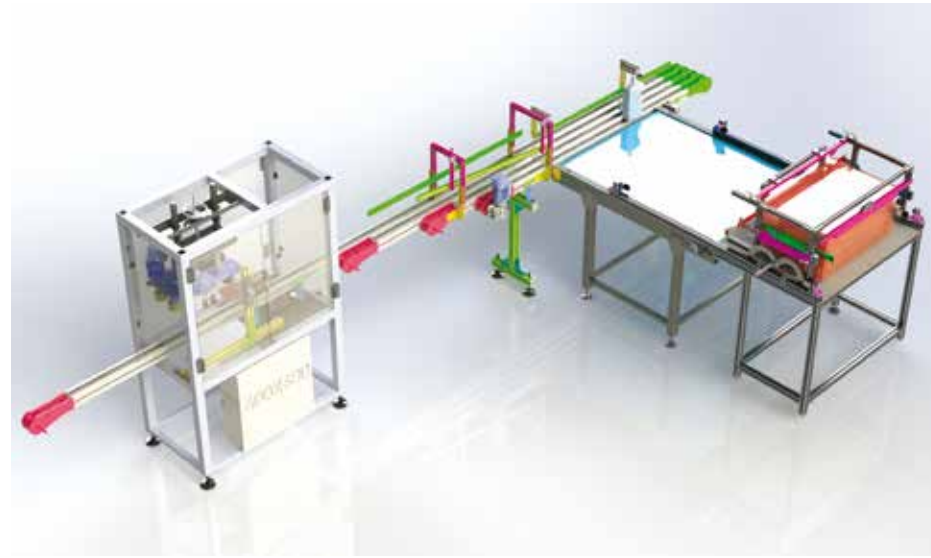
AND&OR offers automatic bagging and debagging systems for glass and PET/HDPE bottles, avoiding contamination of products and any possible human manipulation of the bottles from the blowing to the filling. Extra related systems can be added depending on automation level required: bags depalletizer robot, interlayer removal, pallet conveyors, interlayer warehouse, empty pallet warehouse, etc.

DBM SERIES

Automatic debagger for glass bottles. Designed to work in multi format lines, there is no need to do adjustments or setting changes in the control panel when changing over. It is appropriate to be installed in clean areas (pharmaceutical industry).

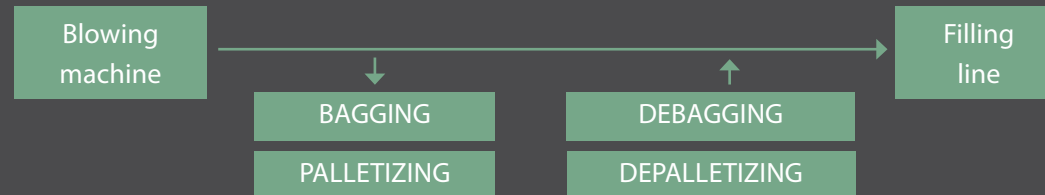


LAUNCHING TABLES WITH MANUAL DEBAGGING AND BOTTLE ORIENTATION

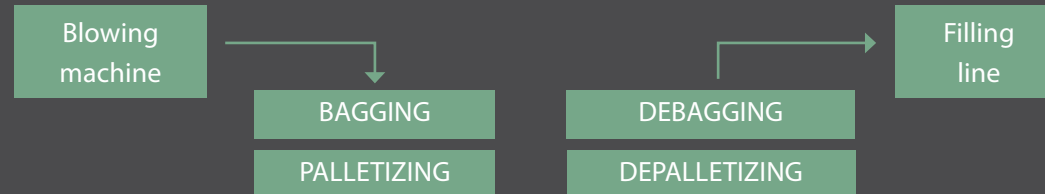


BAGGING / DEBAGGING PAL / DEPAL CONCEPT

BLOW MOLDING INTO THE FILLING LINE



BLOW MOLDING OUT OF THE LINE



ADVANTAGES

- Optimization of material costs.
- Lower investment facing silos and positioners.
- Lower compressed air consumption.
- The required warehouse space is much smaller than when using silos (half space required to stock a same number of bottles).
- If bagged, product hygiene is guaranteed, since it is hermetically sealed during the storage period.
- There are fewer line stops, as the deformed bottles percentage is almost nonexistent. This increases the efficiency.



BOTTLE, PACKS OR PALLETS HANDLING AND CONVEYING

AND/OR manufactures all sorts of conveyors systems. The models manufactured are mainly:

BELT CONVEYORS

Straight conveyors, with possibility to add vacuum element for a better empty plastic bottle stability.

CHAIN CONVEYORS WITH STAINLESS STEEL CHASSIS

Built in stainless steel, they include a flexing chain so that curves can be used in a single motorized section.

MODULAR CHAIN CONVEYORS WITH ALUMINIUM CHASSIS

Built with an aluminium conveyor beam and a nylon chain. Sharp curves can be made in small spaces. The greatest advantage of this type of conveyor is that it is maintenance-free. They are installed in dry area.

ELEVATOR CONVEYORS

Bottles elevation and descent conveyors, with flexible chain. Allows a better access in plant taking the transport at height. Elevation up to 7 m height.

AIR CONVEYORS

Pneumatic conveyors built in stainless steel. Guides regulation can be manual or automatic. They are recommended when working at medium/high production rates with light, for empty bottle transport, from the blower to the filler.



MODULAR CONVEYOR



ELEVATOR



AUTO. REGUL. GUIDES

AUTOMATIC REGULATION GUIDES

Allowing fast and accurate format changeover in a totally automatic way.

UNIFYING AND DIVIDING SYSTEMS

Allowing to go from multi-lane to single lane conveyor and vice versa.



DIVIDING SYSTEM

TURNING/POSITIONING DEVICES

For the turning and positioning of the bottles, AND/OR offers diverse systems depending on bottles' shape, line speed, turning degree (45°, 90°, 180°, etc.).Our models can be pneumatic, motorized and servo-motorized.



POSITIONNING DEVICES



Y TRANSFER
Makes easier the rail adjustment, greatest stability.



SUCTION BELT
Reception from the blower.



ELEVATOR



AIR CONVEYOR

ACCUMULATION TABLES

AND&OR's accumulation systems guarantee the uninterrupted running of the bottle line in reduced space in order to maximize production efficiency. We have different systems suitable to process both empty and filled PET/HDPE bottles.

ACCUMULATION TABLE ADVANTAGES

| |
|--|
| Compactness: saves space in comparison to traditional accumulation systems. |
| Better surface/accumulation time relationship |
| Simple maintenance and preservation |
| No risk of bottleneck formation |
| Possibility to empty pre-forms 'oven on accumulation table in case of line stoppage. |

ACCUMULATION TABLE FOR EMPTY BOTTLES



ACCUMULATION TABLE FOR FULL BOTTLES



BOX AND/OR PACK CONVEYORS

Secondary packaging conveyors, designed for conveying and handling of carton box, trays, shrink wrap packs or shrink wrap packs with tray combination.

They could be rollers made up with traction roller modules, gummed rollers or friction rollers depending on line configuration or flap top modular wire mesh, perforated modular wire mesh, gummed modular wire mesh or modular wire mesh with low friction with idler roller according to layout configuration.



BOX CONVEYOR



PACKS CONVEYOR

PALLET CONVEYORS

AND&OR pallet handling systems guarantee the production flow and manage efficiently the transport through all the facilities, following the real need of each client.



BLOWER/RINSER

Internal cleaning system for plastic, glass and can, for low, medium and high production lines.

It is usually installed between the blower and filler, both blowing with air and rinsing with osmosis water are used.



Alternative linear blower/rinser. Designed for low-medium speeds production.

Continuous linear blower with serpentine side conveyor.

Thanks to the use of lateral conveyors, it is possible to blow the continuous bottle at line speed.

- Cost savings, compared to a traditional rotary rinser for high productions.
- Easily integration into the line.
- Versatile equipment to work with different formats.
- Ideal for upgrading or refurbishing packaging lines without modify its current design (replacing an existing run of conveyor).



QUALITY CONTROL

Thanks to its long experience, AND&OR can offer a wide range of equipment that can be installed before the filling process, both for containers produced in line and for returnable ones. This way, we avoid defective bottles entering into the filling machine, which causes stops, obstruction, product spillage, etc. The quality of the final product improves avoiding returns and product brand damage.

LEAK AND CRACK TESTERS FOR 5 GALLONS (20L) CONTAINERS

In case of large returnable containers (PET, PC), the unit is usually installed at the beginning of the line, after uncapping and previous washing.

| Up to...bph | 1000 | 1600 | 2000 | 2500 | 2500 |
|---------------|---------|---------|---------|---------|---------|
| 5 GAL bottles | LS2E-GI | LS4E-GI | LS4P-GI | LS6P-GI | LS8E-GI |

“The system 100% reliable patented by AND&OR avoids the manual calibration, being the leak tester automatically adjusted to the external conditions, such as temperature, pressure, etc.”

CAP CLOSING CONTROL BY LATERAL PRESSURE

Systems for cap closing control by lateral pressure are easy to install in existing lines and format changes. AND&OR has several types of equipment from 1,000 to 15,000 bph. This system operating principle is based on the pressure



LT1

gradient calculation measured laterally to the passage of the bottle through the unit.

This is made by two load cells of 5kg-15kg with 6,000 divisions. The software patented by AND&OR registers the pressure decay gradient and creates a reference pattern that is updated with each new measurement, so that the equipment is automatically calibrated.



LS6P-GI

LEAK TESTER IN CLOSED BOTTLES (VACUUM DECAY)

AND&OR systems makes leak control on closed bottles through vacuum decay test.

This system operating principle is based on the product closure inside a hermetically sealed chamber on which the vacuum is created. If the product contains a pore, the air/gas will circulate from inside the container to the vacuum chamber that surrounds the container, producing a vacuum decay detected by a pressure sensor.

Its simple, robust and high electronics technology design makes it highly reliable, sensitive and accurate for productions from 6,000 to 24,000 bph.



VLS SERIE

LINEAR AND ROTARY LEAK TESTERS IN EMPTY BOTTLES (PRESSURE DECAY)

The linear leak testers can have one or several headstocks, fix or mobile (depending on production and bottle type).

The rotary leak testers are generally set up in high production lines.



LSR16

BOX WEIGHT TESTER

AND&OR box weight tester is appropriate to be installed at the end of the filling line, after the wrap-around machine or box packer.

It detects if there is any bottle missing inside the packed box, as well as if there is liquid missing in any bottle.



CPL1-I



SERIE LS

Due to the great versatility of these systems, their high sensitivity and automatic calibration, AND&OR machinery is today a market reference.

| Up to...bph | 1000 | 2000 | 3000 | 4000 | 6000 | |
|--|--------|----------|---|-------|-------|-------|
| Linear leak testers with fix headstocks | LS1E | LS2E | LS4E | LS6E | LS8E | |
| Up to...bph | 8000 | 12000 | 16000 | 24000 | 32000 | 50000 |
| Rotary leak testers | LSR8 | LSR12 | LSR16 | LSR24 | LSR32 | LSR48 |
| Up to...bph | 2000 | 4000 | *Production reference for 1L bottle. To check other volumes, please contact AND&OR. | | | |
| Linear leak testers with mobile headstocks | LS1-C1 | LS2-C1C2 | | | | |

These leak testers can be equipped with extra features:

- Artificial vision to detect particles, liquid, bottom, neck, flashes, ovalization, color, shape, spots, etc.
- Statistics download in USB memory.
- Patented simulation system of leak for an automatic machine' self-checking.

ARTIFICIAL VISION

QUALITY CONTROL

VA SERIES

360° artificial vision system guarantee plastic bottles, taps, plastic handles and other defects detection.

The strictly studied optical design guarantees an optimum image quality with high quality and strength components, in an industrial environment condition, high speeds, and variable lighting and temperature conditions.

- Flexible application
- Easy configuration
- Up to 6 inspection tools
- Different defects types.
- Inspection of various specific areas of bottles.

**“Friendly configuration for format changeover:
new dimensions and colors.”**



DETECTED DEFECTS

- CIRCULARITY
- BLACK DOTS
- BREAKS
- BURR INSIDE NECK
- BURR AROUND NECK
- LACK OF MATERIAL
- VERTICAL BURR
- HORIZONTAL BURR
- OVALIZATION
- COLOUR CHANGES IN BOTTLE
- BOTTLE NECK INCLINATION
- BASE BOTTLE
- CAP PLACEMENT
- LABEL PLACEMENT
- FILL LEVEL
- WRONG CODING

*Specifications subject to viability study made on real samples executed by AND&OR.



HANDLE APPLICATORS

AND&OR is nowadays the world leader in the manufacture and marketing of plastic handle application machines for PET or HDPE bottles.

Through its long experience and the widest range in the market, AND&OR provides solutions to insert neck handles, lateral handles and umbrella handles, for all its clients’ production needs.

NECK HANDLE (PET or HDPE bottles from 1.5L to 20L)

- 1. Alternative linear systems (pick & place): 1,200 – 2,400 bph
- 2. Continuous linear systems: 4,000 - 10,000 bph
- 3. Rotary systems: 10,000 – 24,000 bph

They are installed in the bottling line, over an existing conveyor and usually after the filling and capping processes, in order to finish with problems caused by containers with handles in silos, positioners, fillers, etc.

1- ALTERNATIVE LINEAR SYSTEMS – NECK HANDLE

| Up to...bph | 1200 | 2400 |
|---------------|---------|---------|
| Filled bottle | SIA1000 | SIA2000 |



SIA2000



2- CONTINUOUS LINEAR SYSTEMS – NECK HANDLE

| Up to...bph | 4000 | 6000 | 8000 | 10000 |
|-------------------------------|---------|---------|---------|---------|
| Filled bottle 1.5-3L Neck Ø28 | - | SIA3000 | SIA5000 | SIA8000 |
| Filled bottle ≥5L Neck Ø38/48 | SIA3000 | SIA5000 | SIA8000 | - |



SIA3000

3- ROTARY SYSTEMS – NECK HANDLE

| Up to...bph | 12000 | 16000 | 24000 |
|-------------------------------|---------------|---------------|---------------|
| Filled bottle 1.5-3L Neck Ø28 | SIA 12000 157 | SIA 16000 157 | SIA 24000 157 |
| Filled bottle ≥5L Neck Ø38/48 | SIA 12000 235 | SIA 16000 235 | - |



SIA24000

BIPACK

LATERAL HANDLE (PET bottles from 1.5L to 5L)

They allow the automatic insertion of a flexible plastic handle in the lateral gap of a PET bottle. It is appropriate to be installed in filling line, on existing conveyor, before filling process.

It allows using PET bottles for some beverages and liquid products which need an easy holding for pouring. It replaces the traditional HDPE systems with handle, reaching greater speeds and cost savings.

- Linear systems: 800 bph
- Rotary systems: 2,000 – 15,000 bph

Optionally, these systems can be integrated in the machine:

- Leak testing equipment
- Positioning device

| | | | | | | |
|------------------|------------|------------|-----------|-----------|------------|------------|
| Up to...bph | 800 | 3000 | 6000 | 8000 | 12000 | 15000 |
| Non-round bottle | SIAL1000 | SIAL3000 | SIAL6000 | SIAL8000 | SIAL12000 | SIAL15000 |
| Round bottle | SIALG 1000 | SIALG 1000 | SIALG6000 | SIALG8000 | SIALG12000 | SIALG15000 |

** Production speeds for a given handle design. Please contact AND&OR to check productions depending on the handle design to consider.*



SIAL12500

“ANY HANDLE,
ANY BOTTLE,
ANY SPEED,
WE HANDLE IT!”

UMBRELLA HANDLE (PET bottles from 1.5 to 5L)

| | | | |
|---------------|----------|-----------|-----------|
| Up to...bph | 1000 | 2000 | 4000 |
| Filled bottle | SIAP1000 | SIAP2000 | SIAP4000 |
| Up to...bph | 8000 | 12000 | 24000 |
| Filled bottle | SIAP8000 | SIAP12000 | SIAP24000 |



SIAP24000



BOX PACKING

AND&OR box packers place containers (PET, PE, glass and cans) into boxes or cardboard trays. They have been designed to cope with different bottle shapes and line requirements: boxes and trays type, available space and automation needed.

These machines bring a series of optional elements depending on each customer's needs: automatic box forming/sealing (B1), Pick&Place system, wrap-around machine, according to line speeds, etc.

AUTOMATIC BOX PACKING, PICK&PLACE SYSTEM

EPA - B1 boxes type

Pick&Place automatic box packing:

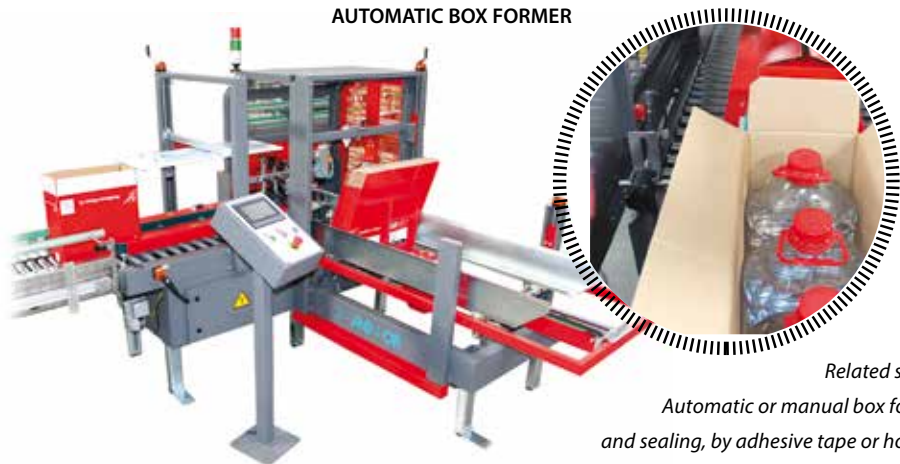
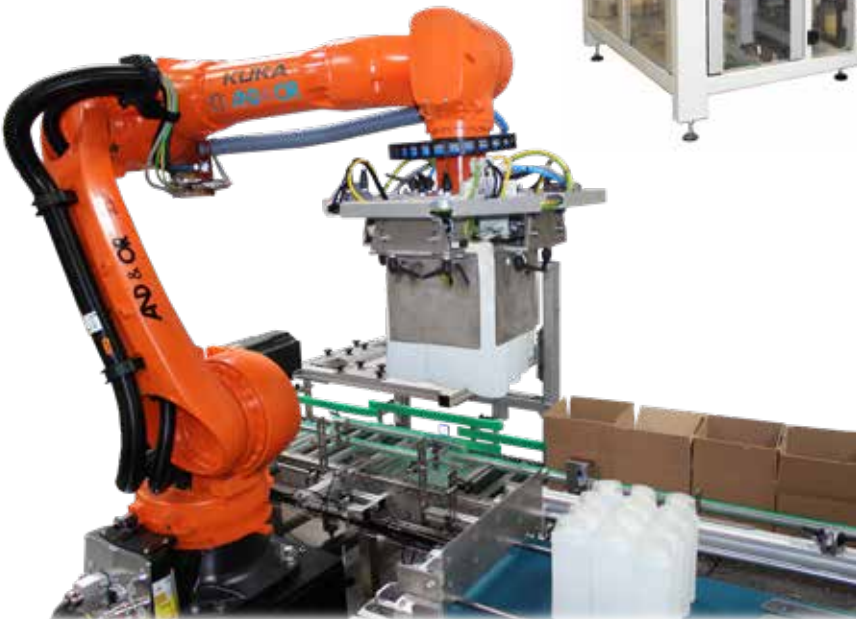
- Includes an arranging table to prepare the bottles layer, previous to the bottles insertion into the box
- The picking headstock is designed according to bottles formats or product type

Characteristics:

- The machine can pack levels of bottles in the same box
- Flexibility to work also with cardboard layers if necessary
- Easy change over to adapt to several formats and different layers configuration
- Layer indexation for round formats



EPA SERIE



Related system:
Automatic or manual box forming
and sealing, by adhesive tape or hot glue.

BOXES AND TRAYS WRAP-AROUND

The wrap around case packing solution is the most suitable solution from certain production speeds. In addition, it represents a saving in cardboard consumables comparatively with the embedded solution type B1. We offer a versatile solution, which can work both with boxes and with display type trays up to size 600x1000 mm.

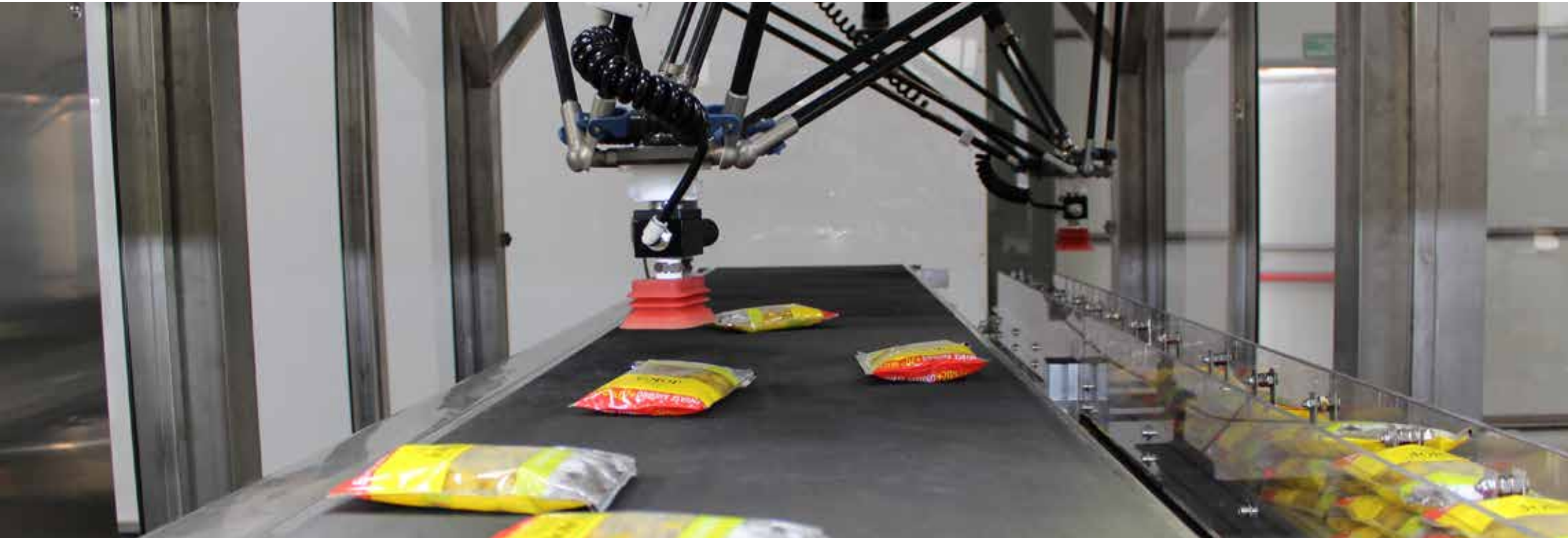


PICKING SOLUTIONS- DELTA ROBOT

These solutions stand out for their versatility and efficiency. This equipment consists of one or several robots with up to 6 axes. The body and the final effector are linked by connecting rods or kinematic chains based on the application of parallelograms. These robots can manage to carry out from 50 to 90 movements per minute, according to product and application.



RD SERIE



PALLETIZING END OF THE LINE

For the end of line palletizing, AND/OR offers a wide range of compacts and flexibles, automatic or semi-automatic solutions, with high or low autonomy and speeds, different containers and packaging, as line requests, adapting this way to each customer specific needs.

DISPLAY PALLETIZER

AND/OR display palletizers have a layer forming table, preceded by either a bottles dispenser or a pusher (depending on production speeds). Followed by a Pick&Place universal gripper which is adjusted according to format without parts changes and inserting filled bottles into carton trays.

PEM SERIES

- Bottles palletizer in trays, half trays or quarter trays.
- Economical and compact equipment.
- Low production speeds.

PEMH SERIES

- Bottles palletizer in trays, half trays or quarter trays.
- High production speeds. It usually includes an automatic tray former, as an empty pallet feeding device, and wrapping line at the end.

Related system:

PFC: Automatic tray former with hot glue application.

ADVANTAGES

- Display palletizing offers great benefits to both manufacturers and distributor, as well as final consumer:
- Material saving (reduction of cardboard, glue, film).
 - Lower energy consumption.
 - Better use of the pallet space, increasing the bottles number by pallet. Reducing storage and transport costs.
 - Best product handling in the points of sale.



TRADITIONAL PALLETIZER

PPM SERIES

- Packs and/or boxes palletizers.

The traditional palletizer can have the products input on the line or at 90°. Depending on model, it is possible to input at the line height or at a higher height, with the pallet stuck on the floor or in motion.

The process is to form a layer on a formation table and transfer it by a pusher to another desk adjusting to the corresponding layer height, placing the layer in the center with a centering system and moving away to put the layer on the pallet. It can come with a layer formation table or a turning device at the input, in order to create different layers assortments.



CARTONS



TRAYS



CASES



PACKS



LARGE
BOTTLES

The maximum production speed that can be achieved with a palletizer with high input is 500 layers per hour, while with a low input one is 300 layers per hour.

FLEXIBLE PALLETIZER / ROBOT SOLUTIONS

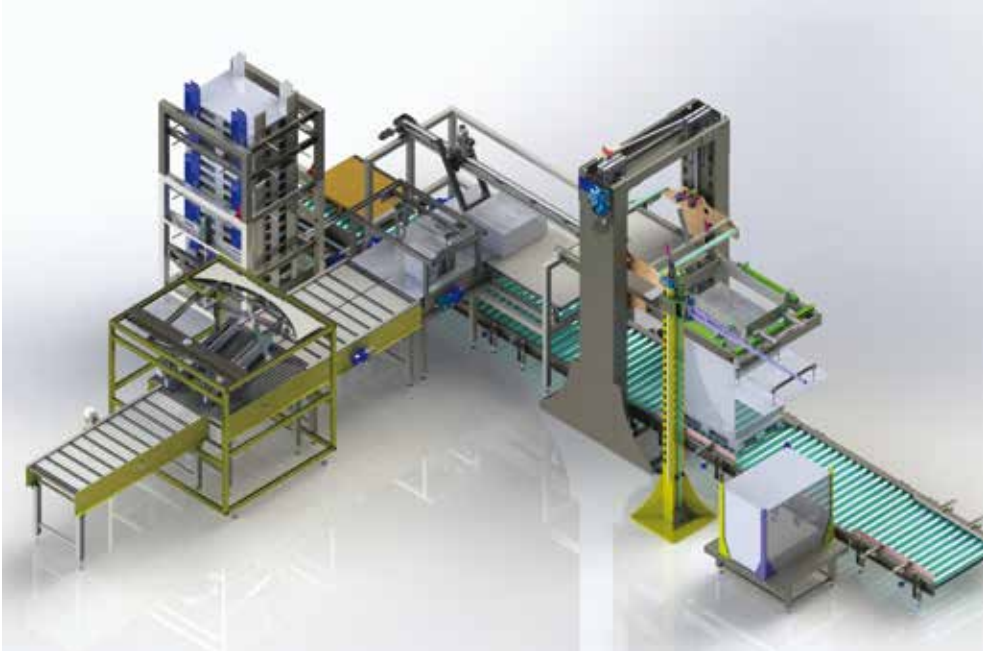
In the automation operations by robots, the robot isle configuration is tailor-made for each customer, depending on the product to be processed, the production speeds required and the spaces available in the plant.

At AND/OR we offer several robots families, depending on load weight and the gripper type.

RA-PL SERIES

The RA-PL series robots grab a product row or double row. There are several gripper models depending on product and processes to make. It is a gripper with double plaque, it works grabbing the product by pressing it laterally.

The same robot can also perform the pallet and interlayer cardboard positioning process, if the production speeds allow to do so.



RA-PL



RA



RA-U

RR SERIES

The RR series robots have a gripper designed for palletizing/depalletizing of 5 Gallons bottles in racks or on pallets.

RD SERIES

The RD series robots are designed for bags palletizing.



RA-C SERIES

The RA-C series robots move the complete product layer, being the fastest palletizer of the range.

They have a “curtain” type gripper.



RA-C



RR

FLEXIBLE PALLETIZER / ROBOT SOLUTIONS

- Gripper with customized AND&OR design depending on requirements
- Easy to handle and quick changeover
- High autonomy (to be defined according to needs)
- Fully automatic system
- Light and fast, allowing the maximum process efficiency.
- Lasting: very long maintenance intervals.
- Space saving: uses the available space in an efficient way, with the maximum accuracy.

RC SERIES

- Collaborative solutions.

The collaborative robots are used in low cadence lines and low weight product handling (from 10 to 35 kg). Being collaborative and without need of external protection, they take up a very tight space in the factory.

- Gripper with customized AND&OR design depending on line requirement.
- Uninterrupted production line.
- High accuracy and errors reduction.
- Increased productivity: operators are not doing repetitive works, avoiding tiredness and production accidents.
- Safety first: thanks to its high collaborative performance and also the possibility to stop immediately when meeting resistance, ensuring safety between the co-worker, the handled bottles and the production equipment.
- Implementation flexibility: RC robots can be assembled in any angle and be installed anywhere, with a minimum impact in production lines.

COMMON DATA FOR ALL THE SERIES

- These palletizers are complementary with automatic cardboard trays former systems, automatic pallets feeding systems, pallets conveyors, pallets wrapping, pallets labelling and other additional elements for the loading units’ preparation and storage.
- AND&OR’s CAD department is permanently in contact with our customers in order to define and design every end of bottling line.
- This way, depending on the space available in the factory and the automation needed, we optimize the logistics within the factory, the investment costs, the type of palletizing needed per container/product, requested space, etc.



RC

MOBILE VEHICLES

Thanks to their design and operational flexibility, mobiles vehicles systems can be easily integrated into existing production plants, with no need of machine movements or civil works. They can transport pallets, boxes, bottles layes, etc. The navigation system and the mechanical solution are designed according to the specific needs of the project.

GUIDED VEHICLES / SHUTTLE

AND/OR guided carts are ideal for end of line with straight/fixed lines, where flexibility in the future is not required, and with a high production rate. These equipments are less scalable and flexible than Autonomous Mobile Robotics, but in case of not requiring flexibility, they could be a good solution for your production plant.

- Rail guided carts
- Supply by catenary, or induction charge from the floor.



CMOV

AUTONOMOUS MOBILES ROBOTICS (AMR)



INDUSTRY



SCALABILITY



FLEXIBILITY



SAFETY



VERSATILITY

ADVANTAGES

- Automation: it connects production lines with warehouses/ shipping areas, without needing auxiliary elements, with a friendly natural navigation environment.
- Optimization of space and resources
- Integration with many systems (pallet labelling machine, WMS, ERP...)
- Scalability: integrated fleet manager to add as many vehicles as required
- Quick start-up
- Efficiency: Efficient design with optimal energy management
- Traceability: virtual tracking or integrated label reader



AMR-F



FLEETS

For facilities where several vehicles are performing tasks in a collaborative way, we have our fleet management software. This software carries out the distribution of the tasks to be executed by the vehicles in an optimal way among them.

P SERIES

Intelligent platform AMR

Our P series platform AMR combines omnidirectional or differential movement abilities with reduced height, providing high maneuverability in limited space areas. Equipped with the latest technologies, this model is easily configurable based on customer needs. It can integrate different loads handling systems. Model available in 1 or 2 positions.



| MODEL | MOVEMENT | MAX. LOAD CAPACITY | TURNING RADIUS |
|----------------------|-----------------|--------------------|----------------|
| D350 | Diferential | 350 kg | 360 ° |
| D1000-1P | | 1000 kg | |
| O2000-1P O2000-2P | Omnidirectional | 2000 kg | |

R SERIES

Retractable forklift AMR

Our R series AMR adjusts to most demanding logistics processes in terms of weights and heights. The equipment, with reduced height, allows to work between shelves and reaches up to 8.5 m. Equipped with numerous sensors and actuators, it allows to manage loads with total safety.



| MODEL | DRIVING BASE | MAX. LOAD CAPACITY | RISING HEIGHT |
|-----------|----------------------|--------------------|---------------|
| R-RRE120B | Retractable forklift | 1200 kg | 7000 mm |
| R-RRE140B | | 1400 kg | 8500 mm |
| R-RRE160B | | 1600 kg | 8500 mm |
| R-RRE200B | | 2000 kg | 8500 mm |
| R-RRE250B | | 2500 kg | 8500 mm |

F SERIES

Intelligent bidirectional forklift AMR

Our F series stacker AMR is designed for palletized load handled by forks. This pallet handling system allows itself to have a great versatility when picking and delivering pallets in different positions: on the floor, on conveyor, on shelves.



| MODEL | DRIVING BASE | MAX. LOAD CAPACITY | RISING HEIGHT |
|-------------|------------------------|--------------------|---------------|
| F-SPE120 | Standard stacker | 1200 kg | 4800 mm |
| F-SPE160 | | 1600 kg | 6000 mm |
| F-SPE200 | | 2000 kg | 4050 mm |
| F-OSE120-CB | Counterbalance stacker | 1200 kg | 4150 mm |
| F-SPE140-S | Stacker with straddle | 1400 kg | 5400 mm |

INDUSTRY 4.0

In the current context of industry digitization, AND&OR offers AND&OR INDUSTRY 4.0 solution, for our customers to increase their production lines efficiency, resulting in better economic results.

AND&OR, as an engineering machinery manufacturer with more than 36 years of experience, relies on demonstrated capacity for design and programming, start-up, installation, and support of INDUSTRY 4.0 solutions, obtaining a connected factory with higher safety

AND&OR INDUSTRY 4.0 is a technologic solution that integrated differents services through an IoT platform and digital tools.

The digital tools can be supported by different multi-device: PC, Tablet, Smartphone, Smartwatch or Smart Glasses (free hardware).



DATA



REPORTS



ANALYSIS



DECISIONS



VALUE

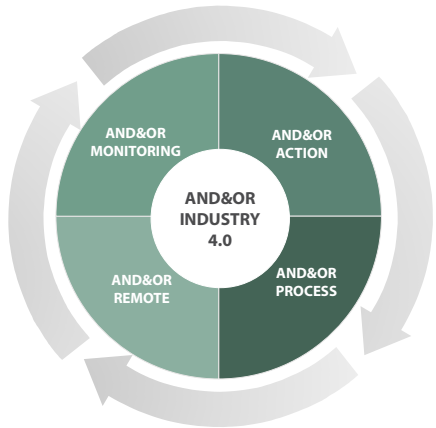
AND&OR INDUSTRY 4.0 offers the following solutions:

AND&OR MONITORING:

Control through centralized management systems of the actual consumption of raw material, traceability of products, productions by work shift, efficiency per machine, management of warehouse, direct cost calculation, etc.

AND&OR REMOTE:

Integral solution for the assistance remote service with the AND&OR expert technical service, sharing in real time video and audio with numerous tools.

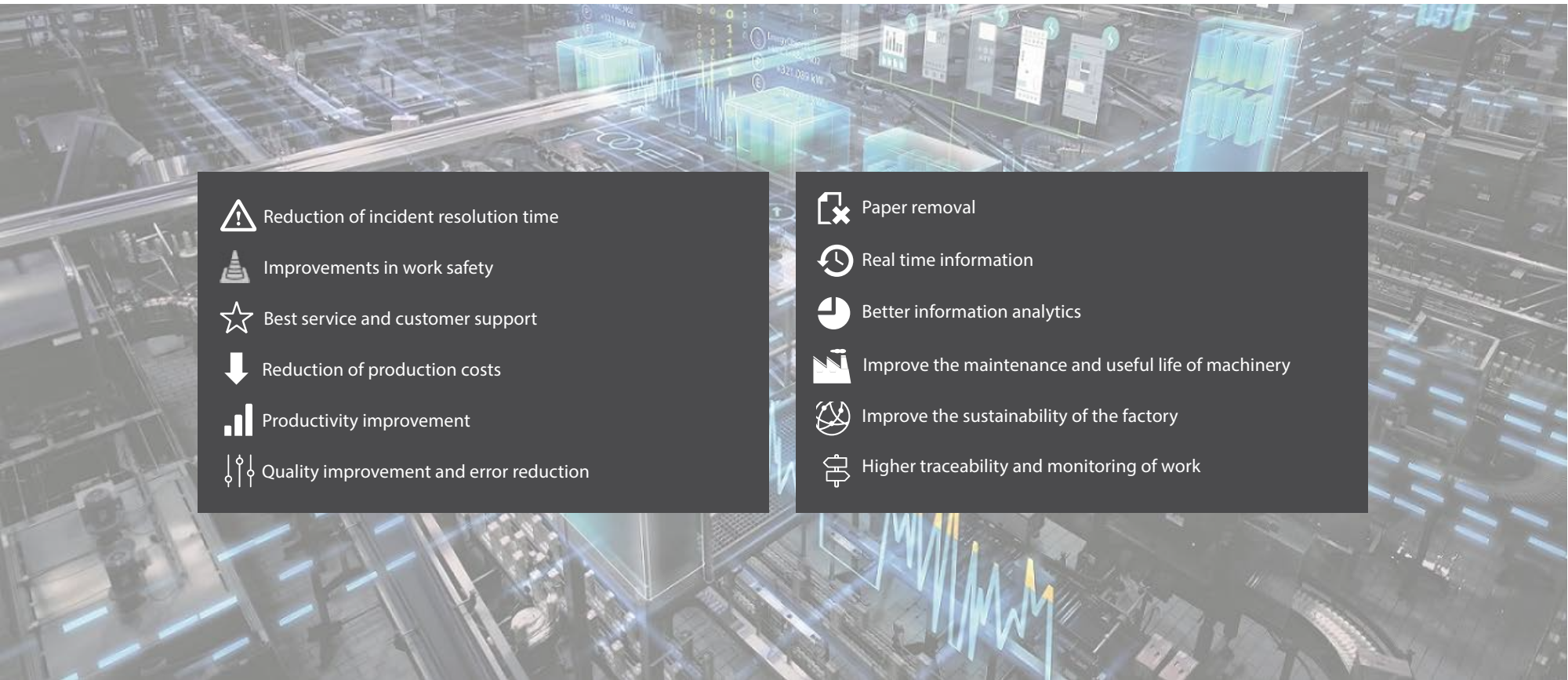


AND&OR ACTION:

Data generated to detect events and its actions in real time, involving employees, machinery and information systems.

AND&OR PROCESS:

Integral solution for design and execution of all interventions and AND&OR machine maintenance. All the information at your service in your connected factory when you need.



ENGINEERING AND TURN-KEY PROJECTS

Thanks to its experience since 1986 in manufacturing automation processes and controlling systems design, AND&OR undertakes complete tailor-made projects in automation, special machinery, centralized management and control (SCADA), software, etc.

Simultaneously, the engineering department is constantly in contact with our clients, providing counseling and support for the design and supply of complete filling lines and for the purchase of specific machinery, either of its own manufacture or from recommended machine's manufacturers.

- CAD service, lay-out definition.
- Positioning of machines in order to optimized spaces and daily logistics within the factory.
- Complete process automation for bottling lines.

FILLING + CAPPING AREA

- MONOBLOCK: FILLING + CAPPING

HANDLES INSERTION AND LABELLING AREA:

- HANDLE INSERTION EQUIPMENT
- LABELLING EQUIPMENT

MOBILE ROBOT AREA (AMR):

- DISTRIBUTOR OF PALLETS
- OUTPUT OF FINISHED PALLETS

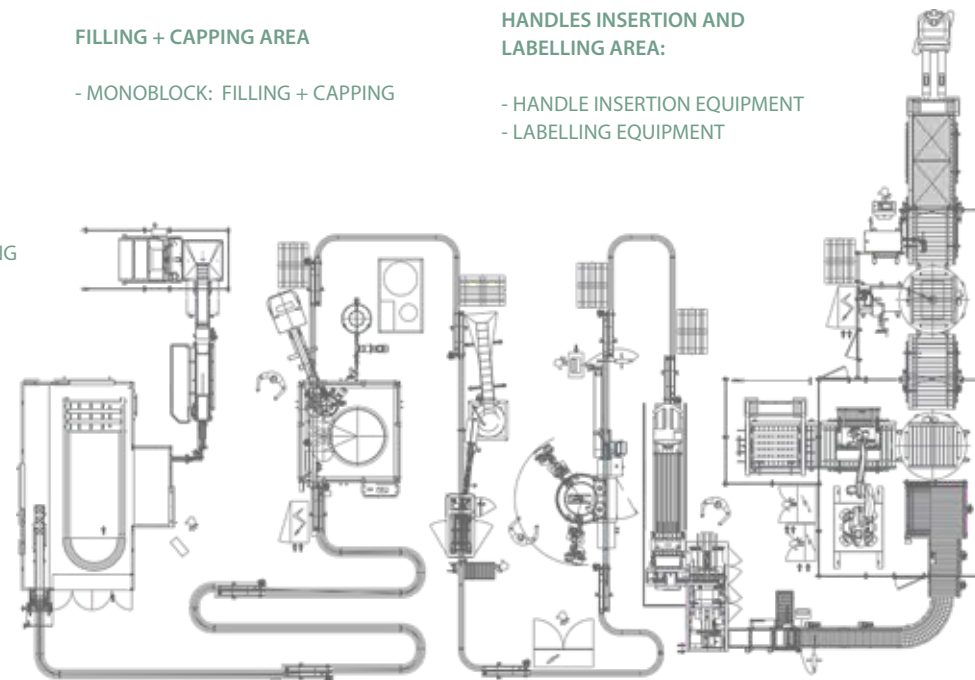
AMR: FEEDING PALLET STACKS AND PICKING UP PALLET OF FINISHED PRODUCT AND DELIVERY TO WAREHOUSE.

PACKING + PALLETIZING AREA:

- PACKING MACHINE WRAP AROUND
- BOX WEIGHT INSPECTION
- PALLETIZER/WRAPPING MACHINE

BLOWING AREA:

- PREFORM BLOWING MACHINE
- EMPTY BOTTLE CONVEYORS





HANDLING YOUR NEEDS

SINCE 1986



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