MACHINERY FOR THE BLOW MOLDING INDUSTRY
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AND & OR
HANDLING YOUR NEEDS
SINCE 1985
Since 1986, AND&OR has been designing, developing and making 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 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 to our customers technological solutions most adapted to their needs in bottles handling.

VISION
To be a worldwide machinery manufacturer reference in bottle handling.

VALUES
- Humility and respect
- Team work and spirit
- Commitment and involvement
- Discipline and seriousness
- Passion for what we do
AND&OR TODAY

Experience working for the blow molding 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 85% of AND&OR’s turnover
- 4 branches worldwide
- 150 employees
- More than 80 specialized technicians
- 11,500 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 (via internet), 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, the Plan 95% offers several accompanying and participation levels:

- **ONSITE TECHNICAL ASSISTANCE**: To attend customers at their facilities when so required: starting up new equipment or upgrading existing one.
- **ONLINE TECHNICAL ASSISTANCE**: Through remote connection with the customer service team at AND&OR facilities.
- **RECOMMENDED SPARE PARTS**: Original recommended spare parts necessary for 2,000, 4,000 and 8,000 h.
- **ANNUAL MAINTENANCE**: Dedicated and specific preventive maintenance plans.
- **TRAINING SERVICES**: Training programs for your technicians and line workers, at AND&OR or at your facilities.
- **MACHINERY UP-GRADE**: Up-Grades of your machinery with the newest versions.
MACHINE MONITORING
Get a weekly report for your machines’ operational efficiency.

STUDY/IMPROVEMENT OF PROCESSES
Studies and advice on how to improve your processes.

PARTIAL PRODUCTION MANAGEMENT/CONTROL
With AND&OR qualified personnel to operate your machines.

PROJECTS MANAGEMENT
- Contact from the beginning with the assigned Project Manager.
- Follow-up, expansions, changes: risks reduction.
- Costs control.
- Deadline execution follow-up.
- Tracking during setup and start-up.
AND&OR has always been inspired by the blow molding 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 companies to local container’s manufacturers.

We offer complete automation projects, from the blower to the warehouse, as well as individual machines, including: take out systems, conveying systems, bottle handling systems, quality control (leak testers, camera vision, weight testers), trimming machines, milling machines, handle applicator machines, packers, baggers, palletizers, wrapping machines, strapping machines, pallet conveyors and AGV (Automatic Guided Vehicles).

We offer flexible and compact solutions, from semi-automatic to fully automatic systems, always adapting to our customers’ specific needs.
FACTORY concept – optimize your plastic containers production

1. TAKE OUT ROBOT-AOKI
2. TAKE OUT ROBOT-NISSEI
3. TAC – TAKE OUT SYSTEM
4. REC – TAKE OUT SYSTEM
5. ROTARY LEAK TESTER - 8 HEADSTOCKS
6. ROTARY LEAK TESTER – 16 HEADSTOCKS
7. TURNING SYSTEM 180º
8. BOTTLE UNIFIER 2-1 VIAS
9. FIX HEAD LEAK TESTER
10. 2 MOBILE HEADS LEAK TESTER
11. 4 FIX HEADS LEAK TESTER
12. LINEAR TRIMMER
13. METAL DETECTOR
14. FACE MILLING & LEAK TESTER
15. HANDLE APPLICATOR
16. SEMI AUTOMATIC BAGGER
17. AUTOMATIC BAGGER MOD. BMS
18. PALLETTIZER MOD. ETP
19. PALLETTIZER MOD. ECA-E
20. COLLATION TABLE
21. TRAY PACKER MOD. ET
22. COOLING TABLE & TUMBLE BOX PACKER
23. FLEX. PALLETTIZER MOD. EMAM+RPZ
24. TRAY WAREHOUSE
25. FLEX PALLETTIZER MOD. BCM+RPZ – HIGH SPEED BAG/TRAY
26. AIR BOTTLES CONVEYOR
27. BELT BOTTLES CONVEYOR
28. ROLLER PALLETTIZER
29. AUTOMATIC MOBILE CART
30. PALLETTIZER
31. STRAPPING MACHINE
32. WRAPPING MACHINE
33. FORK LIFT VEHICLE AGV
34. MAIN CONTROL PANEL
**TAKE OUT SYSTEMS**

**AND&OR** has an endless range of possibilities for the extraction and/or reception of containers from the blower, regardless of the blowing machine used (PET or HDPE).

<table>
<thead>
<tr>
<th>BLOWER OUTPUT</th>
<th>SERIE</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>One step blow molding. Nissei ASB</td>
<td>REZ</td>
<td>Take out robot (external or integrated)</td>
</tr>
<tr>
<td>(12M, 12N, 50MB, 70DPH, 150DP, etc.)</td>
<td>REZ + LS</td>
<td>Take out robot with leak tester integrated – Compact and cost effective solution.</td>
</tr>
<tr>
<td>One step blow molding. Nissei ASB</td>
<td>REZ-G</td>
<td>Take out robot (external or integrated)</td>
</tr>
<tr>
<td>(250, 350 and 500)</td>
<td>REZ-G + LS</td>
<td>Take out robot with leak tester integrated – Compact and cost effective solution.</td>
</tr>
<tr>
<td>Linear or rotary blowers, bottle’s output by neck guides</td>
<td>TAC</td>
<td>Motorized neck conveyor, easy change over for multi format lines with limited space for bottle conveyors.</td>
</tr>
<tr>
<td>Linear blowers, bottle’s output by flipping grippers</td>
<td>REC</td>
<td>Vacuum conveyor with height regulation through wheel (in multi format lines, enough meters of conveyor are needed downstream to regulate line’s height).</td>
</tr>
<tr>
<td></td>
<td>REC+TAC</td>
<td>Vacuum conveyor + motorized neck conveyor (Multi-format lines with limited space for bottle conveyors.)</td>
</tr>
<tr>
<td></td>
<td>REC+MASK</td>
<td>Vacuum conveyor and reception mask.</td>
</tr>
<tr>
<td>Linear blowers, bottle’s output by linear grippers</td>
<td>REC</td>
<td>Vacuum conveyor with height regulation through wheel (in multi format lines, enough meters of conveyor are needed downstream to regulate line’s height).</td>
</tr>
<tr>
<td></td>
<td>REC+TAC</td>
<td>Vacuum conveyor + motorized neck conveyor (Multi-format lines with limited space for bottle conveyors.)</td>
</tr>
</tbody>
</table>
AND&OR manufactures all sorts of conveyors, including its belts or chains, conveyors beams, low friction guides and vacuum systems when required. The models manufactured are mainly:

**BELT CONVEYORS**

- Straight conveyors, with possibility to add a suction element for a better bottle stability and for high speed lines.

**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 CONVEYOR WITH ALUMINIUM CHASSIS**

- Plastic chain conveyor with an aluminium chassis. Sharp curves can be made in small spaces. The greatest advantage of this type of conveyor is that it is maintenance-free.

**AIR CONVEYORS**

- Pneumatic conveyors built in stainless steel. Guides regulation can be manual or automatic. They are recommended when working at high production rates with light, petaloids and/or unstable bottles.

**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.
**TURNING DEVICES**

For the turning and positioning of the containers, 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.

**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.

**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.

**ACCUMULATION TABLES**

AND&OR’s accumulation systems guarantee the uninterrupted running of the bottle line in reduced space in order to maximize production efficiency.

**ACCUMULATION TABLES ADVANTAGES**

- Compactness: saves space in comparison to traditional accumulation systems.
- Better surface/time accumulation
- Simple maintenance
- No risk of bottleneck formation
- For 2 steps PET blow molding, it accumulates bottles coming from pre-forms’ oven in case of line stoppage, avoiding the manual replacement of bottles into the conveyors during line start up.
QUALITY CONTROL

Leak tightness control is one of our specialties; we have models that process from **1,000 up to 48,000 bph controlling containers from 150 ml to 20 l.** The great versatility of the equipment and the automatic calibration has made **AND&OR** system a market reference.

**LS SERIE**

They are arranged in line over container’s conveyor. They can be fitted with one or more heads, fixed or mobile, depending on the production required and bottles’ size. Optionally weight control or camera vision systems are integrated in the leak tester machine.

<table>
<thead>
<tr>
<th>Up to… bph</th>
<th>1000</th>
<th>2000</th>
<th>3000</th>
<th>4000</th>
<th>6000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear leak tester without structure</td>
<td>LS1K</td>
<td></td>
<td></td>
<td>L55K</td>
<td>L8K</td>
</tr>
<tr>
<td>Linear leak tester with fix heads</td>
<td>LS1E</td>
<td>LS2E</td>
<td>LS4E</td>
<td>LS6E</td>
<td>LS8E</td>
</tr>
<tr>
<td>Linear leak tester with mobile heads</td>
<td>LS1-C1</td>
<td></td>
<td></td>
<td>L52-C1C2</td>
<td></td>
</tr>
</tbody>
</table>

*Production reference for 1l bottle – To check other volumes, please contact AND&OR.*

“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.”

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**Table:**

<table>
<thead>
<tr>
<th></th>
<th>LWS</th>
<th>LSE-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight control + Leak tester</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LSR SERIE

Due to its simple, strong and high electronic technology design, it is very trustworthy, sensitive and precise so that it allows productions rate up to 48,000 bph. The quality of the final product improves and the return and damage are reduced to a minimum.

These systems can be equipped with extra features:
- Camera vision systems
- Simulation of leak for an automatic machine’s self-checking.
- Statistics download in USB memory.

<table>
<thead>
<tr>
<th>Up to... bph</th>
<th>8000</th>
<th>12000</th>
<th>16000</th>
<th>24000</th>
<th>32000</th>
<th>48000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary leak tester</td>
<td>LS8R</td>
<td>LS12R</td>
<td>LS16R</td>
<td>LS24R</td>
<td>LS32R</td>
<td>LS48R</td>
</tr>
</tbody>
</table>

*Production reference for 1 L bottle – To check other volumes, please contact AND&OR.

“At high speeds only a rotary leak tester guarantees sensibilities of 0.1 mm pore diameter”
ARTIFICIAL VISION
QUALITY CONTROL

VA SERIE

360° artificial vision system guarantee plastic bottles, taps and handles 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
- NECK FLASH
- INSIDE FLASH
- LACK OF MATERIAL
- VERTICAL FLASH
- HORIZONTAL FLASH
- BLACK DOTS
- OVALIZATION

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

**CC SERIE**
Linear and rotary trimmers, AND&OR offers different models that adapt to line speed, bottles' shape and material. Optionally a leak tester can be integrated in the same equipment.

**FH SERIE**
It performs the milling (eliminating the polyamide) and leak testing on HDPE bottles neck surface. It achieves a perfect finishing thanks to its servo driven, smooth milling system, reaching a high precision.

**RIO SERIE**
It performs the automatic insertion of foil into caps. There are rotary and linear models. It includes a glue injection system that places glue into the cap, previously to the foil insertion.
HANDLE APPLICATOR MACHINES

AND&OR is nowadays the world leader in the manufacture and marketing of plastic handle application machines for PET and PE 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 APPLICATORS

<table>
<thead>
<tr>
<th>Up to...bph</th>
<th>1200</th>
<th>2400</th>
<th>4000</th>
<th>6000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty bottle</td>
<td>SIA 1000</td>
<td>SIA 2000</td>
<td>SIA 3000</td>
<td>SIA 5000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Up to...bph</th>
<th>10000</th>
<th>12000</th>
<th>16000</th>
<th>24000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty bottle</td>
<td>SIA 8000</td>
<td>SIA 12000</td>
<td>SIA 16000</td>
<td>SIA 24000</td>
</tr>
</tbody>
</table>

### LATERAL HANDLE APPLICATORS

<table>
<thead>
<tr>
<th>Up to...bph</th>
<th>1200</th>
<th>2400</th>
<th>4000</th>
<th>8000</th>
<th>12000</th>
<th>15000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty bottle</td>
<td>SIAL 1000</td>
<td>SIAL 3000</td>
<td>SIAL 6000</td>
<td>SIAL 8000</td>
<td>SIAL 12000</td>
<td>SIAL 15000</td>
</tr>
</tbody>
</table>

*Handle design affects directly to machine's capacity. Please contact AND&OR for more info.*
UMBRELLA HANDLE APPLICATORS

<table>
<thead>
<tr>
<th>Up to...bph</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
<th>12000</th>
<th>24000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty bottle</td>
<td>SIAP 1000</td>
<td>SIAP 2000</td>
<td>SIAP 4000</td>
<td>SIAP 8000</td>
<td>SIAP 12000</td>
<td>SIAP 24000</td>
</tr>
</tbody>
</table>

ASAFLAT SERIES

Our handle applicator system on buckets performs the insertion of handles on PET or PE buckets. It is a fully automatic system that allows tumble or pre oriented handles feeding.
BAGGING MACHINES

Bagging is becoming today the most popular bottle packing all around the world. There are several reasons for opting for this kind of packaging.

AND&OR counts with a wide range of bagging machine models, to adapt to all specific needs, bags sizes, line speeds and bottles’ shape.

ADVANTAGES

- An important cost saving towards the traditional tray packing.
- Often, more bottles can fit in one layer, increasing the number of bottles packaged in a pallet.
- The improved hygiene in products, being the bottles protected from human manipulation or cardboard contamination. Especially important in some sectors such as pharmaceutical, cosmetic or food.

AND&OR counts with a wide range of bagging machine models, to adapt to all specific needs, bags sizes, line speeds and bottles’ shape.

<table>
<thead>
<tr>
<th>Machine type</th>
<th>Model</th>
<th>Bags adjustable in width and length – Bag’s size in mm</th>
</tr>
</thead>
</table>

SEMI AUTOMATIC
Preformed bag

- ECA-BT
  - All bags sizes. Customized mask per bottle/bag format.

AUTOMATIC
Roll of film

COMPACT SERIE:
BMS
From 400 to 2,000 bph

- BMS 08–A600 – Mini bagger (pharmacy, food, cosmetic)
  - 500x600, 800x600, 400x600, 400x400

- BMS06 –A1000
  - 1000x600, 800x600, 800x400, 1000x400

- BMS12-A1000
  - 1200x1000, 1200x800, 600x1000, 600x800

FLEXIBLE SERIES:
BM
From 2,000 to 6,000 bph

- BM 10-A600
  - 600x500, 800x600, 400x600, 400x400, 600x1000

- BM06-A1000
  - 1000x600, 800x600, 800x400, 1000x400

- BM12-A1000
  - 1200x1000, 1200x800, 600x1000, 600x800
**Machine type** | **Model** | **Bags adjustable in width and length – Bag’s size in mm**
--- | --- | ---
HIGH SPEED PRODUCTION From 6,000 to 14,000 bph | BMH12 – A1000. Double lane infeed | 1200x1000, 1200x800, 600x1000, 600x800
 | BMA12-A1000. Air conveyor infeed | 1200x1000, 1200x800, 600x1000, 600x800
HIGH SPEED PRODUCTION From 15,000 to 55,000 bph | BMH12 – A1000. Double lane infeed | 1200x1000, 1200x800, 600x1000, 600x800
 | BM4H12 – A1000. Multi lane infeed | 1200x1000, 1200x800, 600x1000, 600x800
Auto adjustable bagging machine | BM12-A1000-AR | Automatically adjusts being able to work with several production lines simultaneously

*For others bag sizes, please contact AND&OR.*

**THE ADVANTAGES OF SHRINKING PISTOLS TOWARDS TRADITIONAL OVEN**
- Energy consumption is decreased.
- It is a more compact solution, as pistols are integrated inside the machine, not taking any extra space.
- It has an easier maintenance.
- It is a more economical solution.
- It provides better results!

**AUTOMATIC SYSTEM VS. SEMI AUTOMATIC SYSTEM**

**AUTOMATIC – ROLL OF FILM**
Same roll of film for any bag and bottle size used in the machine.
Changeover is fast and do not require changing parts.
High autonomy. Give more space for bags accumulation at the output of the machine to gain in autonomy.

**SEMI AUTOMATIC – BAG PRE-FORMED**
Every change-over requires a different size/model of preformed bag.
Changeover requires parts changing.
One bag autonomy, as the operator needs to replace the empty bag every time the previous one has been filled and closed.

**AND&OR DE-BAGGING MACHINE** (offered to the bottling industry), able to automatically de-pack and position bottles standing into the bottling line, is the perfect partner to complete the full process without risk of contamination.
AND&OR tray packers place plastic containers into cardboard trays. These machines have been designed to cope with different bottle shapes and line requirements: trays type, available space and automation needed. These are economic units that help our customers to minimize labor cost, keeping a high flexibility. Combined with AND&OR take out systems with leak tester integrated, it results into a cost effective solution for low speed lines with limited space areas.

### TRAY AND BOX PACKING

<table>
<thead>
<tr>
<th>SERIE</th>
<th>TRAY TYPE</th>
<th>OPERATION</th>
</tr>
</thead>
</table>
| ETS   | Preformed upside trays     | Three positions packer:  
1. Inlet area, empty tray
2. Bottle’s insertion into tray line by line
3. Output area, filled tray |
| ET    | Preformed upside trays     | Three positions packer:  
1. Tray warehouse (10 units)
2. Bottle’s insertion into tray line by line
3. Output area, filled tray |
| ECA   | Folded trays or with one side opened | Layer formation in buffer space  
Insertion of whole layer into the tray, holding the layer of bottles by its four sides. Optionally, bagging system can be integrated. |

### BOX PACKING, “PICK&PLACE” SYSTEM

**EPA SERIE**

**Automatic Pick&Place packer:**

- It includes an arranging table to prepare the bottle layer previous bottle insertion into box.
- The picking headstock is designed according to bottle formats, being able to pack bottles with no neck ring, either heavy bottles or empty light ones.

**Advantages:**

- The machine can pack several levels of bottles in the same box
- Machine is flexible to work also with cardboard trays in case of need
- Easy change over to adapt to several formats and different layers configuration. Servo-motorized movements.
- Layer indexation for round formats

### RELATED SYSTEMS

<table>
<thead>
<tr>
<th>EMA</th>
<th>Collation table for upside trays. (Economic).</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA40</td>
<td>Box packing of tumble bottles.</td>
</tr>
<tr>
<td>PFC</td>
<td>Automatic tray former, applying hot glue.</td>
</tr>
</tbody>
</table>
AND&OR has a wide range of solutions for the empty bottles palletization. Bottle shape, line speed, packaging type, automation needed and space available are always important features to take into account before suggesting one system or another.

**COMPACT PALLETIZING**

<table>
<thead>
<tr>
<th>SERIE</th>
<th>PACKAGING TYPE</th>
<th>PALLET HEIGHT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| ECAM-E | Upside trays, inverted trays, flat sheets. | Up to 1.5m height (to be confirmed after existing conveyor's height). | - Semi-automatic palletizer with arranging table, insertion of complete layer of bottles into tray, using a four side frame to hold bottles and avoid disarrangement.  
- Motorized platform for pallet lifting.  
- Trays feeding to be done manually.  
Optional:  
- Automatic tray feeding.  
- Automatic tray forming. |
| ETP-E | Upside trays | Up to 3m height | Automatic three positions palletizer:  
1. Empty trays warehouse, input area (10 units).  
2. Bottle's insertion into tray line by line  
3. Palletizing area.  
Optional:  
- Automatic system that supplies a cover of film over bottles layer from a roll of film. It protects bottles from cardboard contamination.  
- Automatic position of inverted tray over the highest level |
## Flexible Palletizing

Arranging table/packer/bagger + Palletizer robot up to 3m height.

<table>
<thead>
<tr>
<th>Packing Machine</th>
<th>Palletizer</th>
<th>Packaging Type</th>
<th>Packaging Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAM</td>
<td>RPZ (EMAM+RPZ)</td>
<td>Upside tray, inverted tray, cardboard sheet, top cover.</td>
<td>Trays, top cover and flat sheets warehouse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cylindrical and square bottles.</td>
<td>Automatic tray forming unit.</td>
</tr>
<tr>
<td>ECAM / ECA</td>
<td>RPZ (ECAM/ECA+RPZ)</td>
<td>Upside tray, inverted tray, cardboard sheet, top cover.</td>
<td>Automatic dispenser of layer of film between levels, over bottle’s neck (roll of film supply).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oval bottles.</td>
<td>Pallets warehouse, feeding unit.</td>
</tr>
</tbody>
</table>

**Flexible or compact, automatic or semi-automatic, for low or high speed lines, to be packed in bags and (or cardboard trays, PET or HDPE bottles, any shape and size... AND&OR handles it!”**
**PACKING MACHINE** | **PALLETTIZER** | **PACKAGING TYPE** | **PACKAGING TYPE**
---|---|---|---
**EMA**<br>Layer making machine over metallic table. | **RPZ (EMA+RPZ)**<br>Palletizing robot-rotary column. Customized gripper with frame that can collect bottles layer, flat sheets, trays, top covers or pallets. | Stackable bottles.<br>Volume > 5 L.<br>Upside trays, inverted trays, flat sheets, cover and plastic bags.<br>The complete system is able to palletize bottles either in bags, trays or interlayers. All possibilities in only one machine! | **Trays, top cover and flat sheets warehouse.**<br>**Automatic tray forming unit.**<br>**Automatic dispenser of layer of film between levels, over bottle’s neck (roll of film supply).**<br>**Pallets warehouse, feeding unit.**<br>**Motorized chain or roller pallet conveyor.**<br>**Automatic wrapping unit.**<br>**Automatic strapping unit.**<br>**Mobile cart attending different blow molding lines from palletizers up to wrapping/strapping line or warehouse**

**BCM / BCMS**<br>All in one: layer making and bagging machine. Compact and flexible, with motorized belt conveyor to position bags or single bottles onto robot picking up area. | **RPZ (BCM/BCMS+RPZ)**<br>Palletizing robot-rotary column. Customized gripper with frame that can collect container’s layer, flat sheets, trays, top covers or pallets. | **CPZ (EMA+CPZ)**<br>Compact palletizer, with in line displacement.<br>Customized gripper with frame to collect bottles layer. | **Trays, top cover and flat sheets warehouse.**<br>**Automatic tray forming unit.**<br>**Automatic dispenser of layer of film between levels, over bottle’s neck (roll of film supply).**<br>**Pallets warehouse, feeding unit.**<br>**Motorized chain or roller pallet conveyor.**<br>**Automatic wrapping unit.**<br>**Automatic strapping unit.**<br>**Mobile cart attending different blow molding lines from palletizers up to wrapping/strapping line or warehouse**

**RPZ (BCM/BCMS+CPZ)**<br>Compact palletizer, with in line displacement.<br>Customized gripper with frame to collect bottles layer. | **CPZ (BCM/BCMS+CPZ)**<br>Compact palletizer, with in line displacement.<br>Customized gripper with frame to collect bottles layer. |
ROBOT SOLUTIONS

Automation operations through robots, generally placed at the end of the line.

- Gripper with customized AND&OR design depending on line 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.

CHARACTERISTICS

- 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.
AUTOMATED GUIDED VEHICLES

Thanks to its design and operational flexibility, the AND&OR mobile carts systems can be easily integrated in existing production plants, with no need of machine movements or civil works. It allows the transport of pallets, boxes, bottle layers, etc. The navigation system and the mechanical solution are designed as per specific project needs.

AUTOMATIC VEHICLES

Automatic vehicles, called AGV: Automatic Guided Vehicle and ASV: Automatic Smart Vehicle, are mobile vehicles with electric supply by rechargeable batteries.

CHARACTERISTICS
- Flexibility and versatility
- Easily scalable
- Easy relocation
- Navigation and mapping incorporated
- Artificial intelligence
- Safety
- Silent
- Energy regeneration system

ADVANTAGES
- Traceability / intralogistics
- Minimization plant movements
- Reduce the costs of indoor transportation
- Does not require any human intervention
- Set up time is minimal (available from the first day)
- Several vehicles working together: they identify each other

The AND&OR AGV is specially designed for plastic industry. It is the ideal solution for flexible blow molding line automation, which require intensive work and complex production flows.

Several models are available according to your needs.

<table>
<thead>
<tr>
<th></th>
<th>AGV (Automatic Guided Vehicle)</th>
<th>ASV (Automatic Smart Vehicle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOBILITY</td>
<td>Bidirectional 360°</td>
<td></td>
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<tr>
<td>NAVIGATION</td>
<td>Guided by magnetic tape</td>
<td>Automatic mapping, intelligent system</td>
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</tbody>
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GUIDED CARTS

Rail guided carts with supply by catenary.
Thanks to its experience since 1986 in automation processes associated to the manufacturing of plastic bottles, AND&OR undertakes complete tailor-made projects for the blow molding industry. Simultaneously, the engineering department is constantly in contact with our clients, providing counseling and support for the design and supply of complete packaging 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 containers manufacturing.
- Central control systems. Controlling and monitoring factory raw material consumption, products traceability, production obtained per work shift, machines efficiency, warehouse management, direct costs, etc.