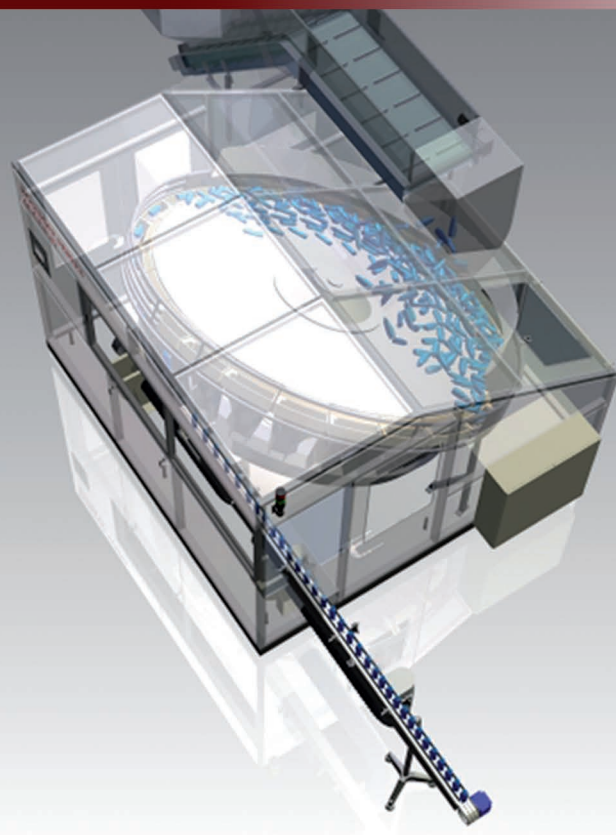




UNSCRAMBLERS

FOR EMPTY PLASTIC BOTTLES



POSIMAT is the world leader in design and manufacture of empty plastic bottles unscramblers for more than 40 years.

An unscrambler is a machine designed to feed empty plastic bottles to a filling line on an ongoing, regular and automatic basis.

Its efficiency is measured by:

- **Manpower Saving,**
- **Bottle handling hygiene,**
- **Continuity in the filling line,**

which allows to automatically convert its nominal speed in actual speed (**without the need of an operator**).



FEEDING SYSTEMS

The unscrambler is mainly used to avoid the high costs of having a blower moulder on the line, i.e., to be able to buy bottles from an external supplier.

Along with the unscrambler, POSIMAT can supply the following loading systems:

Box Dumpers



Depalletisers



Silos



Totes



As well as elevators and mass conveyors of different capacities and configurations as per customer's needs:

Elevators



Conveyors

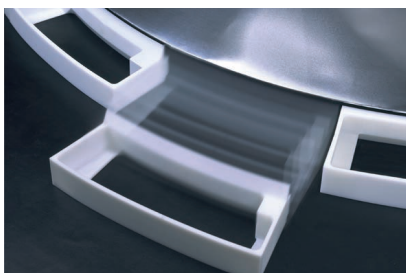


MAIN FEATURES OF A GOOD UNSCRAMBLER

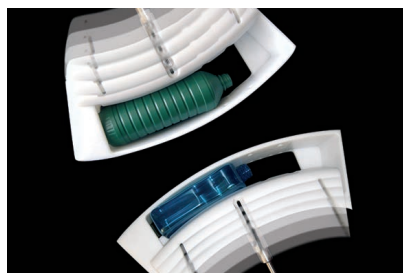
VERSATILITY: to be able to easily adapt to future bottles. POSIMAT can handle a wide range of container sizes, shapes and materials, including tapered, offset necks, asymmetrical or labelled, in one single machine.



QUICK BOTTLES CHANGEOVER: to minimize downtime; all changes are tool-free and easy to perform by non-qualified personnel. POSIMAT has three different types of changeover to better adapt to every particular need.



Change of POCKETS & FUNNELS: selecting pieces and funnels manual changeover. This is done by unplugging the existing set of selecting pieces and funnels for the set corresponding to the new bottle format, without tools or adjustments and in just a few minutes.



POSIFLEX-Manual: this system uses a quick and simple manual format changeover, by adjusting a single set of selecting pieces and funnels for the different bottle formats. It is not necessary to remove the set.



POSIFLEX-Automatic: this is the only format changeover system on the market which has completely automatic and instantaneous adjustment, simply by pressing a button.

SIMPLICITY OF DESIGN: To reduce maintenance and spare parts.

AUTOMATIC EJECTION OF MOST OF DEFECTIVE BOTTLES: to avoid unnecessary production stoppages, POSIMAT rotating system electronically detects a bottle whose dimensions are larger than those acceptable to the selector pieces. This detection activates a compressed air jet which, in the majority of cases, will eject the bottle out of the machine, thereby eliminating a high percentage of possible stoppages in the bottling line.

SOFTNESS IN BOTTLE HANDLING: to ensure the quality of bottles. Inside the POSIMAT, bottles move by their own weight or with the assistance of blow air jets. There are no mechanical parts applying pressure on the surface of bottles, so that even though they are serigraphy, labelled or made in P.E.T. they neither get deformed nor scratched.

NO DIRECT SUPERVISION: to reduce personnel costs. No direct supervision is necessary thanks to the reliability and handling simplicity offered by POSIMAT rotating system.

WORK PRINCIPLE OF A POSIMAT ROTARY UNSCRAMBLER

POSIMAT UNSCRABLERS FOR EMPTY PLASTIC BOTTLES CONSIST OF THE FOLLOWING SEQUENCE

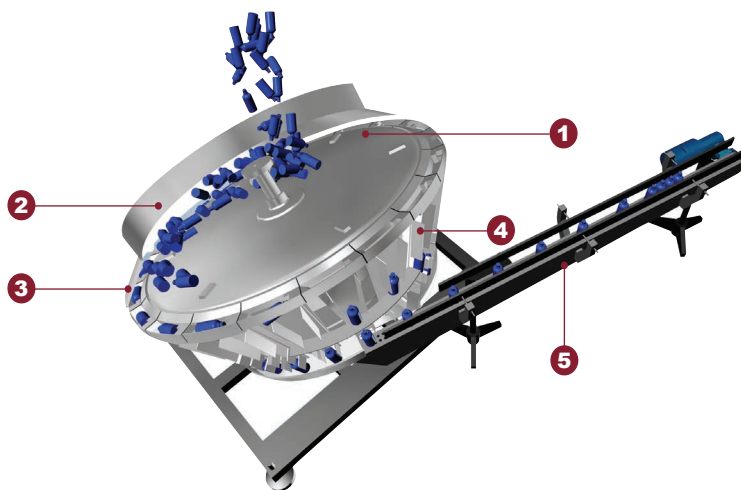
LOADING: bottles are fed in bulk from a storage hopper.

DISTRIBUTION: while the disc (1) is rotating, bottles which have entered the machine place themselves onto its periphery. The pre-orientation element (2), air-jets (to avoid physical contact with bottles) lead the bottles to lay into the selecting pieces or pockets (3).

SELECTION: once the bottles are inside the selecting pieces (3) air-jets of compressed air guarantee that they are all properly placed. Otherwise they are rejected again into the disk.

DESCENT: once bottles are placed in the selector pieces (3) they fall smoothly through funnels (4) which allow the unscrambled bottles to fall gently by their own weight prior to exit to the discharge conveyor (5). Due to the special shape of the selector pieces bottles will always appear in an upright position — regardless if they were laying with neck leading or not inside the selecting pieces.

OUTFEED: bottles, already in the upright position, are transferred onto discharge conveyor (5). The conveyor has vacuum so that, together with a synchronization of the speed of the machine bowl and the belt, a smooth transfer of bottles is guaranteed.



- 1 Distributor disc
- 2 Pre-orientation element
- 3 Selecting piece
- 4 Funnel
- 5 Exit conveyor

DISCHARGE: according to the bottle or line, the POSIMAT unscramblers can be manufactured with different types of discharge conveyor.



VACUUM CONVEYOR: for bottles with flat bottom.



POSITRANS: for bottles with petaloid bottom + **POSIJET** air conveyor.



STAR-WHEEL: for special shaped bottles.

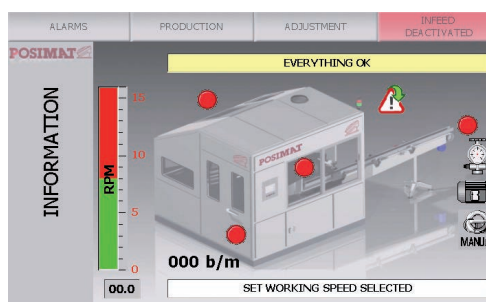
ELECTRONIC CONTROL

All POSIMAT unscramblers are controlled through a PLC. It governs all the logic of the machine, such as:

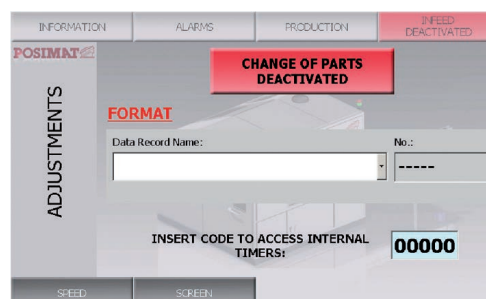
- Automatic change of speed
- Automatic changeover
- Automatic loading control
- Devices for automatic stops
- Parameters of the different formats

An HMI (Human Machine Interface) or display governs all the PLC information, for example:

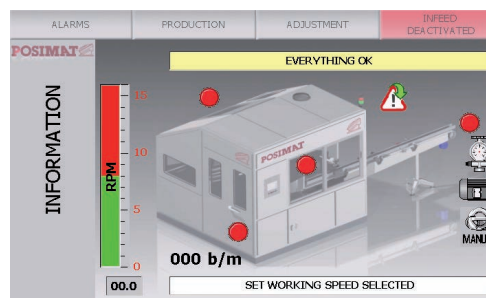
- Synoptic of the machine features (infeed of bottles, guards open, output, etc...)
- Counters of output
- Access to different parameters for machine adjustments (saved under different password codes)
- Alarms
- Etc...



Status, speed and production machine display in real time



Access to internal machine adjustments



Speed selection and control

POSIMAT UNSCRABLERS TYPES

Any POSIMAT unscrambler is tailor-made for each different Customer / Project. The below is a summary of different unscrambler types.

MASTER



These unscramblers are easily operated, efficient, and require hardly any maintenance. Suitable for a wide variety of bottle shapes and sizes.

Changeover options: change of POCKETS & FUNNELS / POSIFLEX-Manual.

Specially conceived for: customers looking for an economic unscrambling system with low maintenance.

ACCESS N-12



Reduced-size unscrambler manufactured entirely in stainless steel. Suitable for a wide variety of bottle shapes.

Changeover options: change of POCKETS & FUNNELS / POSIFLEX-Manual.

Specially conceived for: All types of containers with small dimensions.

MICRO



A solution for unscrambling bottles and flasks for production levels reaching 200 bpm. This is an ultra compact model that requires no tools or adjustments for the changeover operation.

Changeover options: change of POCKETS & FUNNELS.

Specially conceived for: laboratories & pharmaceuticals.

POSIPHARMA



It sorts wide-mouth bottles and large-diameter caps for production levels up to 300 bpm with no-tool rapid format changeover.

Changeover options: change of POCKETS & FUNNELS.

Specially conceived for: plastic pots and jars.

For large production levels, sometimes it is preferable to have several bowls for greater simplicity and cost efficiency. This is why the POSIMAT ACCESS BI has two bowls, but only one single bottle infeed and outfeed. The two bowls are mechanically coupled with the exit conveyor.

Changeover options: change of POCKETS & FUNNELS/ POSIFLEX-Manual / POSIFLEX-Automatic.

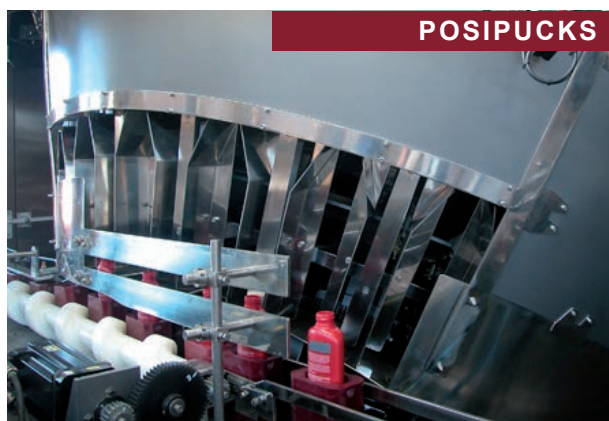
Specially conceived for: high speed lines.



POSIMAT has developed this system specially for customers who use puck lines, whether it is for unstable bottles or to increase flexibility and the speed of the line format changeovers, as tends to be the case in the cosmetic industry.

Changeover options: change of POCKETS & FUNNELS/ POSIFLEX-Manual / POSIFLEX-Automatic.

Specially conceived for: cosmetics lines working with pucks.



It is a high speed unscrambler suitable for all bottle types of any shape, specially cases where the design of the bottles demands at special control of the unscrambling process.

Bottles can be delivered onto the exit conveyor with or without pucks (POSIPUCK type).

Changeover options: change of POCKETS & FUNNELS/ POSIFLEX-Manual / POSIFLEX-Automatic.

Specially conceived for: cosmetic industry.



Incorporates a renewed system of multiple chute which turns this efficient high speeds unscrambler into an economic and reduced size machine.

Changeover options: change of POCKETS & FUNNELS/ POSIFLEX-Manual / POSIFLEX-Automatic.

Specially conceived for: high speed lines, delicate bottles and PET bottles.



For exact study of your needs **please contact us so that we can help you further** and inform you about machine type, exit conveyor type, dimension of machine, etc... (all will depend on your bottle range and outputs requested).

WHAT ELSE CAN POSIMAT DO FOR YOU?

BOTTLE ORIENTORS

Delivery of asymmetric bottles in the correct position. Different types of orientors (linear, rotary) and detection of bottles (using camera, photocells) according to the project needs. They can be installed in monoblock or a stand-alone machine.

AIR CONVEYORS

They convey bottles by the neck by air. They offer the greatest protection and care for delicate bottles and they are the only ones capable of going up 90° in accumulation. Effective even with short neck bottles.

BTU - BOTTLE TRANSFER UNIT

BTU Bottle Transfer Unit orients and inserts bottles in pucks.

RINSER

Ionised air or water rinsers that can be installed in monobloc or a stand-alone machine.



Linear Orientor



Rotary Orientor



BTU



Air Conveyor



Air Conveyor working vertically



Ionised air Rinser in monobloc with Unscrambler



Totes installation



Unscrambler, Silos and Air Conveyor installation



Unscrambler, Silo and Air Conveyor installation

TURN-KEY ENGINEERING SYSTEM AS AN ALLY

POSIMAT designs, manufactures and makes the start-up of full installations for the transport and storage of empty plastic bottles. It is responsible for developing turn-key projects from bottle blowing to delivery to the bottling line.