

TOTES

SMALL AND MOBILE SILO FOR STORAGE OF EMPTY PLASTIC CONTAINERS

STARTING POINT:

- Bottles are purchased in plastic bags.
- Several formats and different sizes.
- Bags are not stable and thus not easy to stack.
- Bags must be carried manually to the filling line.
- Several operators are required to unload bags from the truck, to move them to the storage room and then to move them to the filling line: operational costs, potential safety issues.
- Plastic bags and other packing materials imply additional costs, they must be removed and / or recycled to avoid sustainability issues with customers and stakeholders.



TARGET:

- Reduce manpower to lower operational costs and avoid safety issues.
- Reduce packing materials for the bottles.
- Create a safer workplace by storing empty bottles in a neat way, saving space and avoiding hazards.

SOLUTION:

Implementing a system of TOTES.

- Totes are shipped to the bottle manufacturer, filled, and returned to manufacturing filling plant.
- Create a safer workplace by storing empty bottles in a neat way, saving space and avoiding hazards.
- Totes are placed on top of the hopper elevator and emptied, without operator supervision, to feed the unscrambler of the bottling line.

DESCRIPTION:

1 WHAT IS A TOTE?

A tote is a small silo for empty plastic bottles. It is made of a painted steel structure and plastic fabric walls and cover.

Its base allows for easy handling with a forklift.

Totes can be stacked one on top of the other in a safe way, to save space.

Totes have a viewing window to monitor the type of bottle inside and its fill level.

To guarantee the best quality of the bottles and avoid any damage, the totes have an internal system that holds the weight of the bottles at the top so that the bottles at the bottom nor crushed.



2 HOW IS A TOTE USE TO FEED THE FILLING LINE

The totes are moved by a forklift and placed on top of the hopper elevator that feeds the unscrambler of the filling line.

The operator opens the lower side of the tote and bottles fall freely into the hopper.

The tote unloading station has a system to help the bottles fall out until it is complete empty.

Once a tote is emptied, the forklift driver/operation moves the empty tote to storage.

Then he picks up a new full tote and repeats the procedure.



3 WHAT TO DO WITH THE EMPTY TOTES

The empty totes are sent back to the bottle manufacturer for refilling.

Since the totes can be stacked one on top of the other, a lot of floor space is saved.

4 HOW ARE THE EMPTY TOTES REFILLED WITH NEW BOTTLES

The empty totes are sent back to the bottle manufacturer.



**FORKLIFT FORKS
INSERTION POINTS
FOR TOTE TRANSPORT**

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The bottle manufacturer has a hopper elevator which is used to automatically feed the empty totes.

The excess of bottle can be collected by a chute.

An alternative option, to avoid transporting the empty totes to the bottle manufacturer, is installing the tote filling station at the user's plant.

As soon as the bags of bottles are unloaded from the truck, they are emptied into the hopper elevator to feed the totes.



5 WHAT IS THE SIZE AND CAPACITY OF A TOTE

The size is 3.055 mm high and has a 2.200mm x 2.200mm base. With a volume of 10m³.

This equals a capacity of 5.000 bottles of 1L volume in each tote.

6 HOW ARE THE BOTTLES KEPT CLEAN

The totes have a cover made of the same material as the walls (plastic fabric) which prevents dust and foreign objects from entering the tote.



7 HOW MANY TOTES ARE NEEDED FOR A FLAWLESS PROCESS

POSIMAT studies the number of formats and its dimensions. The Customer should indicate how much storage shall be foreseen and the available space on the plant.

8 HOW LONG DOES IT TAKE TO INSTALL AND ASSEMBLY THE TOTES AT USER' SITE

This needs to be reviewed case by case depending on the number of totes, and the final configuration of additional hoppers and totes station. Local help can be used to reduce assembly time of the totes (which are shipped unassembled to reduce packaging and transport costs).



9 WHICH ARE THE SPARE PARTS AND MAINTENANCE NEEDED FOR THE TOTES SYSTEM

The totes do not need any significant maintenance or critical spare parts, only cleaning may be needed after certain time, depending on the environment.