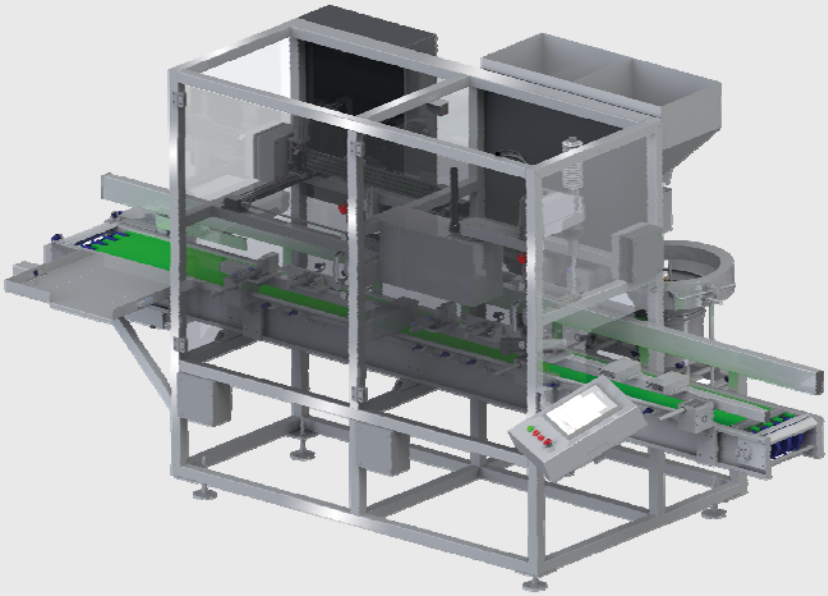
CMWTEC technologie GmbH

AUTOMATIC ROBOT PLUG INSERTION MACHINE

Technology
[made in Germany]

Automatic push-in plug insertion of automotive car and truck batteries with best and high technology



The Advantage:

- Fully automated setting process
- Handling of different plug types possible
- Very precise height control unit +/- 0,1 mm tolerance
- Precise push-plug insertion by robot controlled unit
- High productivity
- Short change-over time
- 100% acid resistance

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Basic machine
The basic machine consists of a welded base frame carrying the individual assemblies. It consists the vibration sorter to bring plugs to the correct position. Adjustments can be made through servomotors and through spindles. Also, electrical and pneumatically cabinet is installed.

Setting unit and plug tools
The sealing station is positioned in a way that batteries can be positioned exactly under this. Push-type plugs are insert into the batteries by means of a robot system. All adjustment is set in the HMI Panel. All functions are electronic controlled.

Plug storage unit
Plug storage is realized by means of a storage funnel. The funnel is equipped with an output unit releasing a specified quantity of plugs into the vibration sorter.

Plug height control unit
The plug height control unit is checking each single screwed plug to achieve a 100% setting. Detection of non- insert plugs and the height control of too high and to low insert plugs.

Reject unit
The Plug height control unit device consists the detection for exact height of the plugs. If there is a failure, the battery will be rejected at the end of the machine on a table.

Battery positioning unit
The batteries are positioned exactly underneath the setting unit, by a fixed stopper system.

Lateral guide unit
The lateral guide including the battery separation and the exit monitoring device is designed for laterally adjusting the battery below the working station. A clamping mechanism ensures the adjustment to be executed exactly and fast.

Battery conveyor unit
A PP chain transports the batteries through the machine and, at the same time, ensures them to be adjusted smoothly and exactly at the setting position.

Description of function
The machine has been designed for a finishing line following the battery container formation. The batteries filled with sulphuric acid are sealed simultaneously by means of single plugs with a robot system. Plugs will be pushed in and finally checked if plugs missing in a separate plug height control test station, before approaching the washing machine.

Technical specifications

Battery type	:	automotive car and truck batteries
Capacity	:	up to 7 batteries/min (depending on battery size)
Weight of batteries	:	20 – 70 kg
Dimension of machine	:	L = 3000 mm W = 1700 mm H = 2300 mm
Construction	:	Full acid proof Material, Stainless steel 316Ti Plastic PP and PVC Pieces not acid resistant with special protection
Electric	:	230/400V, 3-Phase, 50/60 Hz, 4 Wire
Control voltage	:	24 DC
Power consumption	:	5,0 kW
Operating pressure	:	6 bar (90 psi)