Acid Bench Etching

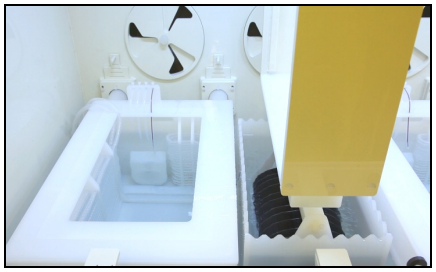
50700

Description

The equipment is an automatic chemical line designed for manufacture of semiconductors and is used for the technological process which consists in etching Si-wafers with a mixture of acids. The operator will place a basket with silicon substrates sized 8" into a sliding mechanism and will insert it into the line wherefrom the basket is ready for collection by an automatic manipulator,

Having the automatic process been triggered, the basket with Si-wafers is gradually carried forward by the manipulator and dipped in etching tubs and in rinse tubs. Baskets have a RFID code built-in and this code is read by the control system of the line in order to preselect a formula.

Facts and interesting things:



- The skeleton of the cabinet is made by welding from flat cuts of chemically resistant PVC and meets the Standard FM 4910 for the use in the manufacture of semiconductors.
- Etching tubs number 1 and number 3 are manufactured from PVDF, their filling volume is 42 litres and they are designed for filling with a mixture of ACID MIX 4:1 in a mixture with demineralised water.
- The tubs are equipped with a superstructure to exhaust the air from the level, to monitor the level by bubble sensors in three grades and they are fitted with a thermocouple-controlled cooler of the etching mixture.
- An ultrasonic sensor is in the front part of the tub and this sensor identifies presence of a basket with material in its position in the tub.
- The drive by means of a contactless magnetic clutch is from the rear part of the tub and this drive makes it possible to spin the wafers in the basket by means of a gear in the basket.
- There are three rinse tubes in total in the line, filling volume of each is 32 litres and they are manufactured from polypropylene. They have bottom filling with demineralised water and they have a top overflow. A Quick Dump valve for quick draining is built in the bottom of the tub.
- The line also includes an etching tub number 5 of volume equal to 30 litres for etching in hydrochloric acid. The tub is filled via an inlet from a storage tank with HCl in the rear chemical section of the line and makes it possible to add H2O2 via a built-in funnel through an inlet of demineralised water.
- The line makes it possible to process 2 doses of material at the same time.
- The line is managed by an industrial PLC with a touch screen of HMI and with a of a customer software application.

Basic technical data:

Length:	2,900	mm
Width:	1,300	mm
Height:	2,860	mm
Weight:	960	kg
Power supply:	3 NPE 400/230V AC 50 Hz TN-S.	

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