

## Description

The machine is designed as a single-purpose automatic piece of equipment to manufacture medical consumable material. The machine assembles and tests a special product named "Loss of resistance device - syringe", similar to a syringe.

The following processes take gradually place in the equipment: Plasma treatment, print, silicone treatment, check of the print by camera and drying the print on the barrel of the syringe. Check of the piston by camera from the top, from the bottom and during rotation from six angles from the side. Silicone treatment of the piston. Assembly of the piston on the plunger, assembly of the barrel on the piston with the plunger. The finished assembly is then tested for tightness and resistance to the movement of the piston inside the barrel. Finally, products are sorted out to compliant and non-compliant.

## Facts and interesting things:

- The basis of the equipment is formed by a frame made from steel profiles and fitted on adjustable feet, with a satin-anodized soleplate made from an AL alloy.
- The equipment is designed for work in clean rooms of medical production.
- Openable protective covers made from transparent plastic with safety sensors.
- The assembly of the product takes place on two synchronized carousels.
- The surface of the polyethylene barrel is treated with a plasma "burner" before the print.
- The print of the scale and the logo on the barrel is carried out by pad printing.
- Having the print been finished, the position and completeness of the print is checked by camera inspection.
- The print is gradually dried with hot air in all four positions of the carousel.
- A very small and precise quantity of a mixture of silicone oils is injected inside the barrel through a nozzle preheated to high temperature.
- Individual parts are passed and oriented by means of vibration bins, vibration bars and step feeders.
- The circumference of the piston is sprayed with a very small and precise quantity of silicone oil through a preheated nozzle and during rotation.
- Pressure bins are placed on scales in order to monitor the stock level.
- Any pressure drop - leakage is monitored after compression to the determined volume.
- The piston is evenly moved in the barrel with an actuator under the constant measurement of the drag force which has to be within determined limits.
- Exit conveyor with compartments always for one product.
- Camera inspection system with four cameras and with surveillance monitors.
- Simatic control system.

## Basic technical data:

Machine cycle:	4 s.
Length:	3000 mm.
Width:	2750 mm.
Height:	2500 mm.
Weight:	1200 kg.
Power supply:	3 NPE 400/230V AC 50 Hz TN-S.

