



**INNOVATIVE SOLUTIONS  
FOR THE GLASS INDUSTRY**



## AUTOMATIC VIAL MAKING MACHINE FLA-20S



FLA-20S is able of producing all types of vials used on the market such as penicillin, insulin, screw neck and blow-back neck and also, with a set of special modification, syringe bodies, glass droppers and dental cartridges.

From a technological point of view the machine is equipped with 20 spindles processing glass tubes with diameters ranging from 8 mm up to 30 mm and a production capacity of max 3.000 vials per hour with heights from 35 mm to 100 mm. The machine is composed of:

### **Main basement**

The lower wall of the basement lodges the main motor and the chuck's motor, the oil pump. The upper part of the basement is designed as oil tank with filter system for a continuous oil circulation.

### **Main body**

The machine has a planetary gear movement actuated by two independent pinions, in carburized, hardened, ground alloy steel, against the ro-

tor wheel gear and the chuck wheel gear, in alloy steel. The main shafts are rotating on preloaded conical bearings. All the gears and the bearings are automatically lubricated through the oil pump.

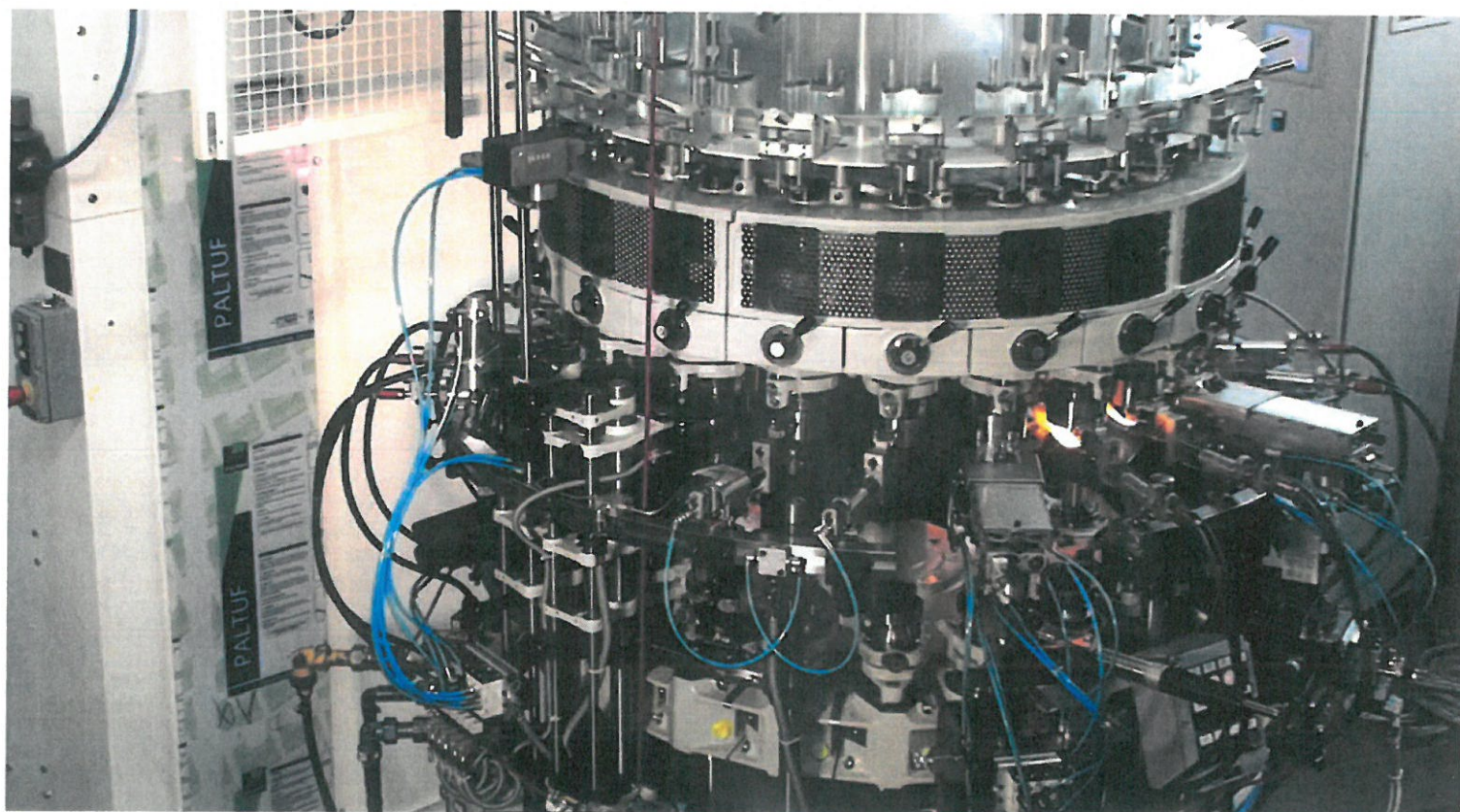
### **Chuck sections**

The machine is equipped with 20 + 20 upper chuck sections and 20 lower chuck sections in cast iron. The upper sections hold a double chuck to grant a perfect grip of the glass tube during the work. The chucks, with bore 35 mm, are running on ball bearings and the lower spindles, in carburized alloy steel, slide on preloaded ball bushes.

The chucks sections are independent each other and can be easily realigned or replaced in case of accident.

### **Burners sections**

The machine is equipped with special burners actuated by the chucks movement with easy height adjustment and radial distance. As per a standard machine's lay-out, are installed the following burners:





- Pre-Heating burners
- Final Forming burners
- Bottom Forming burners

The burners are equipped with different nozzle, depending on the functions with spring and shock-absorber for the back movement.

### Vial Forming Section

For the forming of the vial's mouth, the machine is equipped with three tooling equipments, working with a continuous and synchronized movement with the main machine.

The first is dedicated for a pre-tooling operation and to prepare the vial's shoulder and adjust the

quantity of glass for the final forming stations. That equipments is installed in the same burner's holder and are actuated by the chuck's passage and could be displaced or removed accordingly to the type of vial produced. The second and the third ones are the main tooling equipments.

The two tooling are composed by a single head, holding two forming rollers and one plug.

Both tooling stations work on all the 20 station of machine, for the final forming of the head of the vial, in order to allow a simpler and constant set-up. All the system is removable for a easier maintenance and substitution of rollers and plugs and are forced lubricated with the possibility to change the lubrication time and quantity.

### GROSS PRODUCTION CAPACITY - DIN/ISO 8362 VIALS

Vial Type	Glass Tube O.D.	Production Capacity
2R DIN	16 mm O.D.	2.500/2.800
10R DIN	24 mm O.D.	1.800/2.000
20R DIN	30 mm O.D.	1.400/1.600

### VIAL CHARACTERISTICS

Glass tube $\varnothing$	8 - 30 mm
Vial lenght	35 - 100 mm
Type of vial	penicillin neck, insuline neck, screw neck, tapered neck, blow-back neck (with optional device)

### AVERAGE CONSUMPTIONS

	Consumptions	Pressure
Gas	4 m <sup>3</sup> /h	0,6 bar
Oxygen	4 m <sup>3</sup> /h	0,6 bar
Combustion air	3 m <sup>3</sup> /h	1 bar
Compressed air	10 m <sup>3</sup> /h	6 bar
Electrical power	8 kW	



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