



INNOVATIVE SOLUTIONS  
FOR THE GLASS INDUSTRY



## AUTOMATIC VIAL MAKING MACHINE FLA-20E



**FLA-20E** can produce 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 8mm up to 30mm and a production capacity of max 3000 vials per hour with heights from 35mm to 100mm.

The machine is composed of:

### Main basement

The lower wall of the basement lodges the main motor, the chuck's motor and 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 rotor

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.

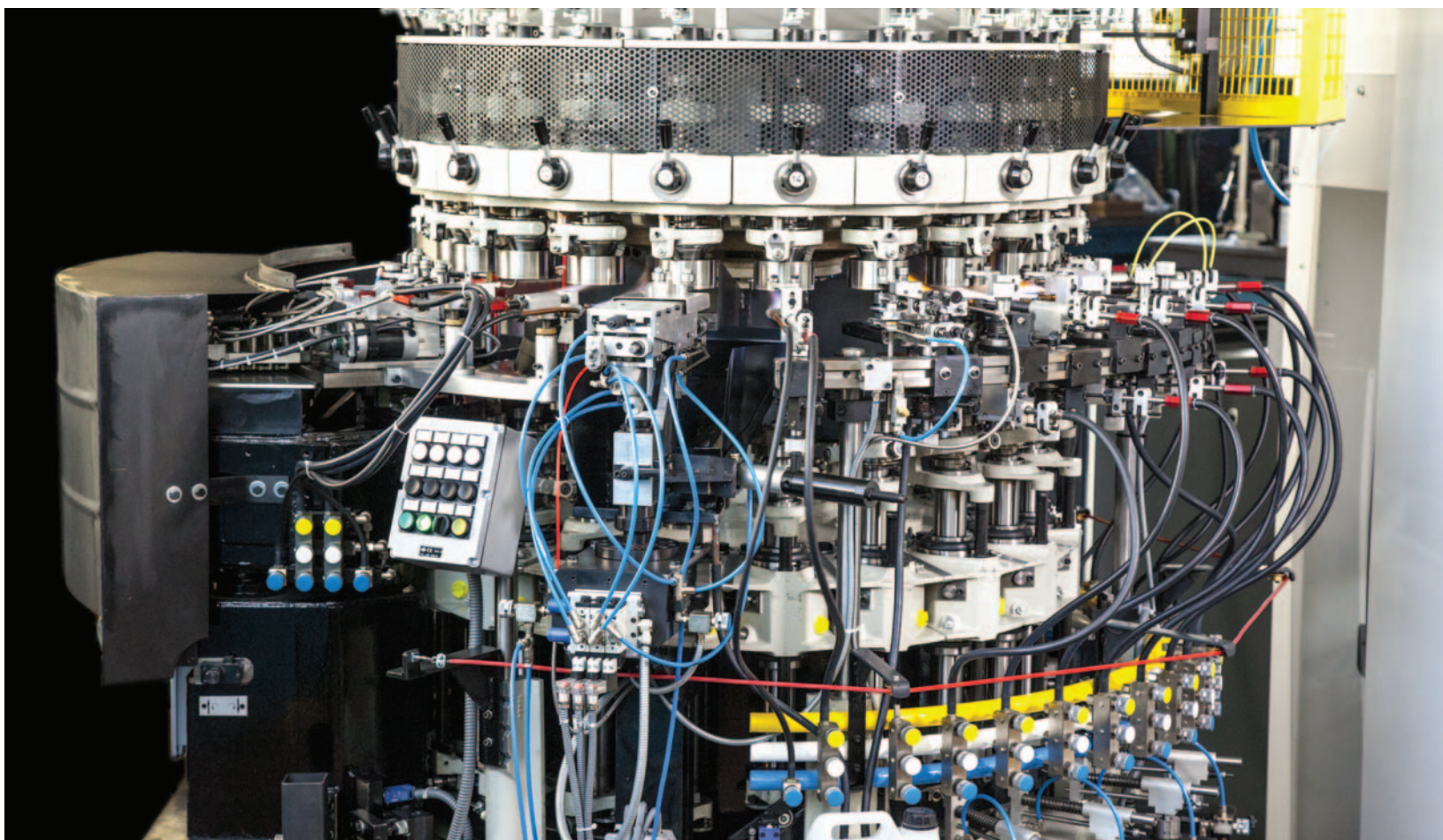
### Chucks Sections

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  
Bottom forming burners  
Final forming burners

The burners are equipped with different nozzle, depending on the functions with spring and shock-absorber for the back movement.  
There are 4 blowing burners placed on the base-ment, with the function to blow air inside the lower chuck sleeve till inside the vial in order to keep the hot glass of the bottom as flat as possible. The re-maining flatting job is made through a dedicated buffer.

Vial Forming Section

For the forming of the vial mouth, the machine is equipped with four tooling equipments, two for

pre-forming and two for finishing. The first is dedi-cated to the preparation of vial's shoulder and ad-just the quantity of glass for the next forming station. It's equipped with only one roller. The second pre-forming station is equipped with two rollers and one plunger and is dedicated to improve the finishing operation and make it easier and more precise.  
The third and fourth tooling stations are the main ones, mounted on a carriage moving in perfect syn-chronization with the main machine for the finish-ing of two vial mouths in the same time. The move-ment of the heads and of the tools are controlled by PLC and brushless motors to allow an easier ad-justment and the most efficient working period. All tooling stations are removable for maintenance operations and replacement of tools for job change.

GROSS PRODUCTION CAPACITY - DIN/ISO 8362 VIALS

Vial Type	Glass Tube O.D.	Production Capacity
2R DIN	16 mm O.D.	2.700/3.000
10R DIN	24 mm O.D.	2.200/2.400
20R DIN	30 mm O.D.	1.600/1.800

VIAL CHARACTERISTICS

Glass tube ø	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 m³/h	0,6 bar
Oxygen	4 m³/h	0,6 bar
Combustion air	3 m³/h	1 bar
Compressed air	10 m³/h	6 bar
Electrical power	8 kW	



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