

Title: FROM THE EXPERIENCE OF THE BOGDANOVICHI PLANT: PRESS FOR  
COMPLETE PRESSING OF BOTTOMED AND OPEN SIPHONS, by M. A. Samarin

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**CONFIDENTIAL****FROM THE EXPERIENCE OF THE BOGDANOVICHI PLANT:**  
**PRESS FOR COMPLETE PRESSING OF BOTTOMED AND OPEN****SIPHONS**

M. A. Samarin

On the basis of his construction for the complete pressing of an open siphon without puncturing side holes, the author designed a new universal press for complete pressing of bottomed siphons from a solid blank with puncturing of side holes, and also for the open siphon with or without rabbeted openings.

Feeding of the blank into the press mold, removal of products and lubrication of the core are mechanized in the new press. Productivity of the press is calculated at 7200 units per working shift. The rated pressure is 50 kilograms per square centimeter.

All mechanisms are mounted on the welded rigid frame (1). A 6.5 kilowatt motor (2), with 950 rpm, by means of the reducer (3) with small gear (4) on its shaft, rotates the large gear (5) on the main shaft (6).

The main shaft, being rotated at the rate of 15 rpm, has a disk (7) with a pin for moving the link (8) and the screw gear (9) which drives, at a 90° angle, the second screw gear (10), fixed on the distribution shaft (11). The link (8) shifts the core (12) in a horizontal plane for longitudinal puncture.

Sprockets (14) are fixed on the distribution shaft (11) and the tail part of the core (13). These sprockets are connected by the link chain for rotating the core. The hub of the driven sprocket has a guiding prismatic key for shifting the core tail. Gears (15) transfer motion from the distribution shaft to the feeding mechanism (16) of the pusher (17).

- 1 -

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The siphon blank is moved by the pusher on the line of the core when the latter is moving from the press mold (18). The blank meets the pressed article, just extracted from the mold by the plunger (19), pushes it aside and occupies the proper position in front of the mold. The feeding mechanism returns to its initial position.

The core in its forward motion pushes the blank into the mold and, being rotated, penetrates inside of the blank after the latter has reached the plunger which is located at this moment in the opposite end of the mold.

The side puncture is executed in the vertical direction. The disc (7), set on the main shaft, has a cam (20) which, during rotation of the shaft, pushes against the roller (21) of the horizontal rod (22). The roller is pressed to the disc by action of the counterweight (23), connected by the lever (24) with the rod and frame (25) of the puncturing device (26). The counterweight brings about the reverse motion of the side-puncturing mechanism. Each revolution of the main shaft, the cam of the disc runs against the roller, forcing the forward motion of the rod, and the counterweight returns the rod to its initial position.

Lubrication of the core is automatic and takes place during the initial 20 mm of the working stroke and the last 20 mm of the reverse motion of the puncturing mechanism. The lubricating valves are closed at all other times. Operation of side puncture takes approximately 0.5 second.

Projecting part 27 of the core has the purpose of forming the end groove. On completion of pressing, the working members return to the initial position and the plunger pushes the pressed product out of the mold along the line of the core's motion into the action zone of the feeding mechanism.

Construction of the lubricating device is simple and convenient in operation. There are two pistons covering lubricating holes in the cylinder (28) located over the core. Both pistons and the rod (29) are rigidly connected.

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The fork (30) on the end of the rod serves for pulling the pistons and opening the lubricating holes. The counterfork (31) is fixed on the front end of the core box.

After the 20 mm shift of the core on its move toward the press mold, the counterfork releases the fork and springs pull the rod and pistons to their initial position. There is a 0.5-liter oil tank (32) installed over the cylinder with pistons.

Passage of the core through the blank for  $\frac{1}{3}$  of total movement proceeds without lubrication. Additional lubrication takes place at the moment when side puncture is completed. There is a valve device in the center of the core for eliminating the vacuum created by reverse movement of the core, otherwise this vacuum may cause collapse of the siphon bottom.

Basic advantages of the press are possibility of complete pressing of the bottomed siphon with uniform structure of the bottom (without laps or cavities), and its high productivity.

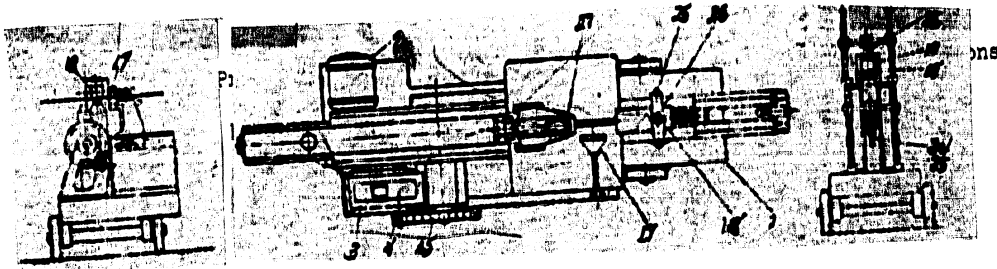


Figure 2. Press for the bottomed and open siphons. Longitudinal section.

