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NEW MOLDING MACHINES FOR FOUNDRIES

P. S. Kosenkov and N. N. Morosov

The Moscow Krasnaya Presnya Plant has designed and put into series production three new molding machines, all pneumatic-powered.

The 265 Molding Machine

The 265 jolt-squeeze, straight-draw molding machine has the following new features: a pneumatic arm for swinging the squeeze head into place, automatic mechanisms for starting and stopping the squeezing and vibrating operations, a jolt-frequency indicator, and a jolt-height regulator.

The base of the machine is cast iron. In the center of the base is a cylinder into which the squeeze piston fits. The squeeze piston, in turn, houses the jolt piston, which is cast in one piece with the jolt table.

The jolt operation is started by turning on a switch, admitting air to the space beneath the jolt piston. A fiber ring on top of the base, just below the jolt table, absorbs the shock of the jolt strokes.

Squeezing is begun automatically when the squeeze head is swung over the jolt table and pressure is exerted on the locking bolt, which secures the free end of the head to the base. When the desired pressure has been exerted on the flask, the air is automatically turned off. The squeeze head can be raised or lowered by adjusting two collars located on the vertical column from which the head swings.

The draw frame, which has open ends to facilitate molding with longer flasks, rests on the jolt table, steadied by two guides. It is raised or lowered by the action of oil under pressure flowing from one compartment into another and acting on pistons. Vibration starts when the squeeze piston is raised to a certain height.

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Compressed air acts on a small oil reservoir to lubricate the machine.

With supply of loam and removal of tamped flasks fully mechanized, the machine can reach a productivity of 30 flasks per hour.

Specifications of the 265 Molding Machine

Over-all dimensions: (millimeters)	
Length	1,850
Width	1,780
Height	2,425
Maximum dimensions of flasks handled: (millimeters)	
Length	800
Length, if height does not exceed 150 millimeters	1,250
Width	700
Height	300
Draw distance: (millimeters)	
Flasks up to 800 millimeters long	300
Flasks up to 1,250 millimeters long	150
Working air pressure	5-6 atmospheres
Consumption of free air for one mold	0.6 cubic meters
Load capacity, jolting at 6 atmospheres	600 kilograms
Height of lift frame above floor	750 millimeters
Weight of machine	4,500 kilograms

The 233 Molding Machine

The 233 turn-over molding machine is far superior to foreign machines of this type. It consists of two separate units: one, the jolt table and base; the other, the turn-over and draw unit.

The cast-iron base of the first unit houses the jolt piston, which is screwed to the jolt table. Rubber shock absorbers are mounted on the base directly below the table.

The base of the second unit is also cast iron. The turn-over drive piston is situated on a horizontal axis, and is linked by a connecting rod to a camshaft, from which two arms reach to the turn-over plate, resting on the jolt table. The arms, which are secured to the plate below its working plane so that it can handle long flasks, lift the plate, rotate it through 180 degrees and set it on the draw table. The draw table is fitted with adjustable pneumatic clamps, and is raised and lowered by a vertical piston. A pair of roller conveyers are located one on each side of the draw table. Vibrators are attached to the turn-over plate.

A central control valve and a jolt-frequency indicator are mounted on a separate column. Also situated on the column are an air filter, an oil reservoir for lubrication under air pressure, and an air hose with nozzle.

Productivity under full mechanization of auxiliary services is 15 flasks per hour.

Specifications of the 233 Molding Machine

Over-all dimensions, excluding pipes: (millimeters)	
Length	3,680
Width	2,093
Height (plate in turned-over position)	3,110
Height (above floor level)	1,415
Weight of machine	5,600 kilograms

Internal dimensions of flasks handled: (millimeters)	
Length	1,400
(length may be increased for narrow flasks)	
Width	1,000
Height	400
Maximum load capacity	1,350 kilograms
Working air pressure	5.5-6 atmospheres
Consumption of free air for one mold	2 cubic meters

The 242 High-Duty Molding Machine

The 242 high-duty molding machine is of simple construction, small, easily operated, and can handle long, narrow flasks. A cast-iron base, set in a concrete bed, houses the jolt piston, which is cast in one piece with the jolt table.

A rod is screwed into an arm projecting from the jolt table, and its lower end connected to the slide valve which admits air to the jolt cylinder. The jolt height may be set at from 5 to 15 millimeters by screwing the rod in or out. Another rod secured to the base passes through the jolt table, preventing it from turning on a vertical axis. To keep the jolt piston from rising too far, a hole has been drilled through the side of the cylinder about one fourth the way from the bottom. A vibrator is attached to the under side of the jolt table, and a fiber ring below the table serves as a shock absorber.

On each side of the base is a piston, which raises and lowers a draw rod. At the top of each draw rod is a bridge, at right angles to the rod. At each end of the bridges there is an arm with a longitudinal slot running down the center. These arms hold the lift pins. They can be turned 180 degrees, allowing adjustment of the pins to fit the flasks. The two draw rods are connected by cams to a common shaft, whose axis is at right angles to the direction of draw. This insures simultaneous motion for both pairs of pins, guarding against breaking of the mold.

On one side of the base is an arm on which are mounted the following: the jolt switch, an air distributor which controls the raising and lowering of the draw rods and the action of the vibrator, and an oil reservoir for lubrication under air pressure.

If the supplying of loam for the flasks and their removal after tamping are fully mechanized, the 242 machine can reach a productivity of 30 flasks per hour.

Specifications of the 242 Molding Machine

Over-all dimensions of machine: (millimeters)	
Length	1,600
Width	900
Height	1,050
Height of jolt table above floor level	500
Weight of machine	1,850 kilograms
Internal dimensions of flasks handled: (millimeters)	
Length	660-800
(length may be increased for low and narrow flasks)	
Width	390-710
Height	300
Draw distance	250 millimeters
Diameter of jolt piston	250 millimeters
Working air pressure	5-6 atmospheres
Consumption of free air for one mold	0.6 cubic meters

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