JAPAN
ELANCO
OP-8

Japan Elanco Company Limited

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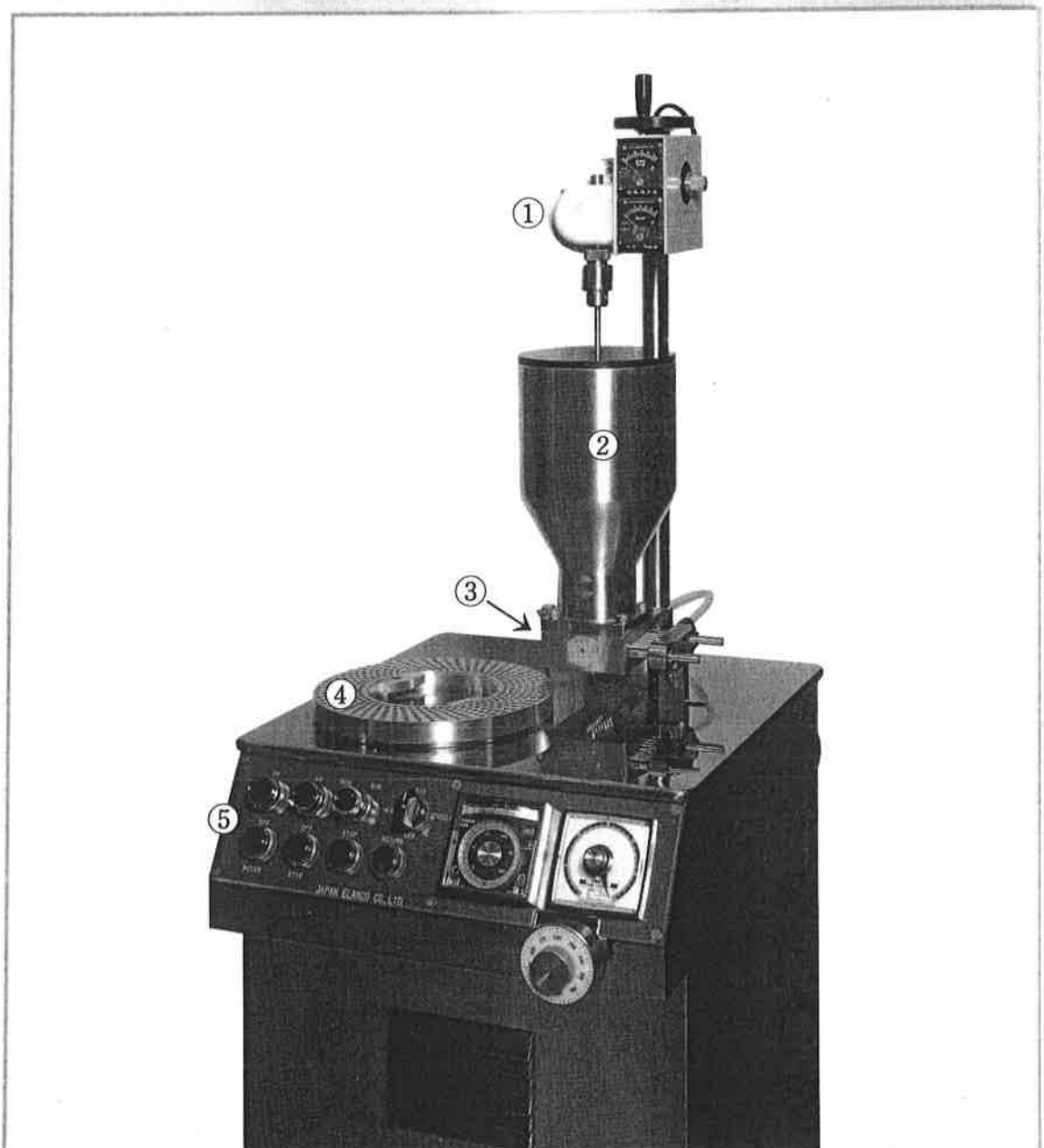
OIL PASTE PRODUCTS FILLING MACHINE

This is a new machine developed by Japan Elanco Company Limited for filling oil paste products in hard gelatin capsules.

Oil paste products formulated to be gelled at room temperature are melted by agitation and heating and stored in the hopper: a desired amount of such melted products can be injected and filled in capsules by adjusting the piston stroke of dosing pump.



• Features

① Capsules are rectified, separated and joined, using Elanco No. 8 Filling Machine. Thus, oil paste products can be filled in capsules at low cost, easily and precisely.

② Easy to assemble and wash.

③ Can change the filling amounts by turning the handle for adjustment to a desired value.

④ All parts which contact the products are made of stainless steel (AISI #304).

⑤ This machine can be utilized for filling capsules of Sizes 1, 2, 3, 4 and 5 without additional change parts. Size 0 capsules can also be filled with optional change parts designed for size 0.

• Specifications

Floor space:	Approximately
	510 mm × 530 mm (height 1,540 mm)
Weight:	About 210 Kgs.
Production capacity:	Quantity filled per hour
	Size 1 ~ 5 35,000 ~ 40,000 capsules
	Size 0 30,000 ~ 35,000 capsules
Filled weight:	Size 1 ~ 5 100 ~ 480 mg/capsule
	Size 0 400 ~ 680 mg/capsule
Filling accuracy:	Desired amount
(Allowance)	± 1.5 %
Electrical:	200 ~ 220 volts, 3 phase,
	50 ~ 60 cycle, 1.2 KVA

Parts identification

① Agitator
② Products hopper
③ Dosing pump
④ Filling ring (body section)
⑤ Operation panel

• Construction

This machine is composed of ① an agitator, ② a product hopper, ③ a dosing pump, ④ a filling ring and ⑤ an operation panel (as shown in the photograph), and motor section, hot-water circulating pump, etc. are installed inside stainless steel cover.

The hopper is designed to keep the jacket warm with hot water. Hot water is circulated by a pump and can be adjusted to any desired temperature up to 80°C. Furthermore, the temperature of products is measured at the bottom of the hopper by a thermo sensor and indicated on the temperature control gauge.

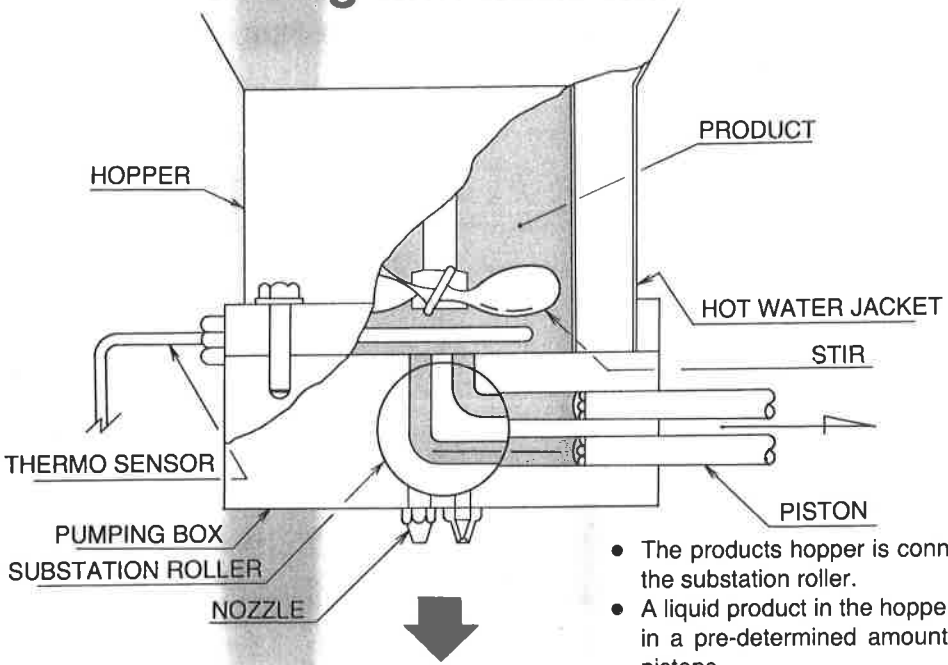
The revolution speed of agitator can be adjusted from 0 to 550 r.p.m. A desired speed can be obtained depending upon the property of the product and indicated as a torque within the range of 0 to 5 kg. cm.

The dosing section is an important part to control strictly the filling amount and is designed for high precision. The filling mechanism with this machine is illustrated in the following figure.

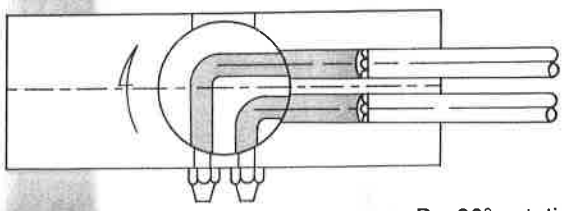
When a filling ring is placed on an index table and a button for starting is pushed, every capsule automatically comes exactly under the corresponding injection nozzle by ring transfer mechanism. Furthermore, a precise index unit is incorporated in this machine so that the ring intermittently rotates at a pitch in accordance with each injection of the products; simultaneously when the filling is completed, the injection of the products stops by a counter; and the table returns to the position of the operation started.

The amount to be filled is decided by the stroke of pistons inside cylinders and a desired amount from 100 to 480 mg can be fixed by a handle for adjustment. It is not necessary to change parts to fill capsules of Size 1, 2, 3, 4 and 5. The thermostat, the counter, the handle for adjustment of filled amount and switches for operating this machine are attached on the operation panel.

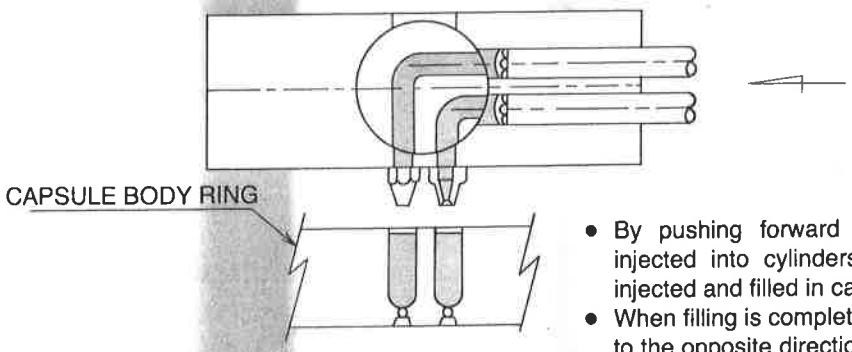
Filling Mechanism



- The products hopper is connected with cylinders through the substation roller.
- A liquid product in the hopper is inhaled into the cylinders in a pre-determined amount by backward movement of pistons.



- By 90° rotation of the substation roller, the hopper is disconnected from the pistons and the cylinders are connected with the nozzle.



- By pushing forward the pistons, the liquid products injected into cylinders in a pre-determined amount is injected and filled in capsule body through the nozzle.
- When filling is completed, the substation roller rotates 90° to the opposite direction again and returns to the position where it was, and simultaneously the capsule body ring is rotated by 1 pitch.