

Full-Automatic Capsule Filling Machine

F-80



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Qualicaps has been supplying customers with high quality hard capsules that always satisfy customers' needs. Utilizing such accumulated technologies and experiences, we have recently developed the newly designed-and-fabricated- F - 80, Full-Automatic Capsule Filling Machine.



Name of Components

- ① Capsule Hopper
- ② Rectifier
- ③ Separation
- ④ Cap Disc
- ⑤ Body Segment
- ⑥ Elimination of Unseparated Capsules
- ⑦ First Granule Hopper
- ⑧ Second Granule Hopper
- ⑨ Granule Filling Unit
- ⑩ Joining
- ⑪ Discharging Chute
- ⑫ Control Panel
- ⑬ Automatic Weight Control System with Capsule Joined Length Measuring Device

The machine can be separated into two units which are a capsule transfer unit and a filling unit. This separation of the unit provides easy access and less time consumed for product changeover by simply switching a powder filling unit or a liquid/granule filling unit and connecting to the capsule transfer unit.

Filling unit
(Granule or liquid)

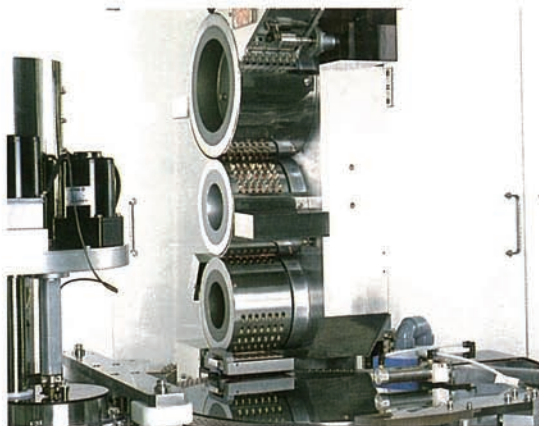


Filling unit
(Powder) Capsule transfer unit



Features

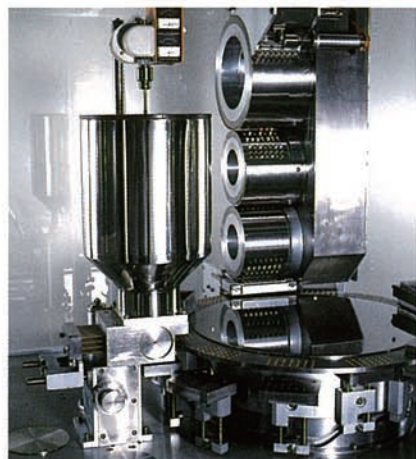
① Rectification of capsule direction (Newly adopted device)



Capsule rotary rectification system developed Qualicaps has been patented in 10 countries. This rectification system provides smooth capsule transportation at a high-speed operation and visual check of operation as well, preventing capsule rectification error, scratch, peel of imprinted characters etc...

② Filling

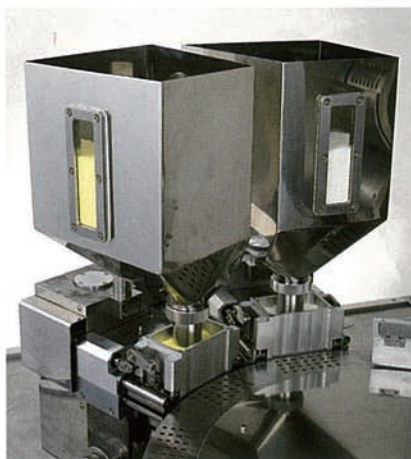
Liquid filling



Circulate warm water in a hopper jacket and maintain the temperature of liquid materials. Tentative temperature of liquid can be set and controlled up to 80 °C.

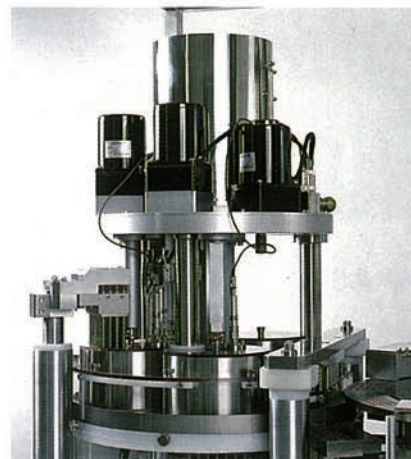
This liquid filling unit applies to a wide variety of oil liquid materials such as a high viscosity paste and a wax-type product which becomes solids at normal temperature. "HICAPSEAL" makes it possible to produce a new type of pharmaceutical product which is capsules filled with liquid by banding capsule joining portion.

Granule filling



Duplex layer filling System with a measure for adjusting filling weight, makes any combinations of sustained release, enteric, incompatible or segregative materials possible to fill into capsules. To prevent granules getting stuck between cap and body in joining capsules, a body segment is vibrated to tighten the contents firmly after respective filling for the first and the second layer.

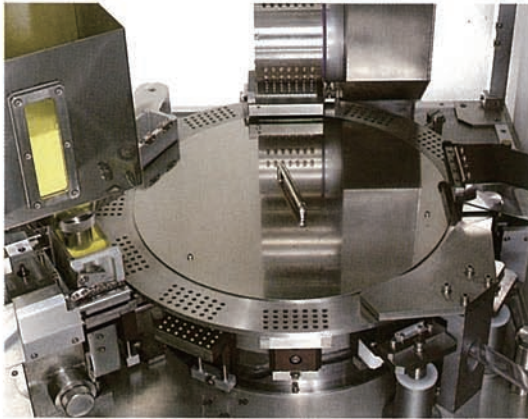
Powder filling



Our newly-adopted mechanism can even fill poor flowability powder with high accuracy. At the first section which is one of five divided dosing plates, suck powder stirred uniformly to the cavity and then press and mold at the second and the third section. At the fourth section, push excess powder up to upper part of the dosing plate by a pusher to keep pre-set filling weight. At the fifth section, shift the molded powder into a capsule body.

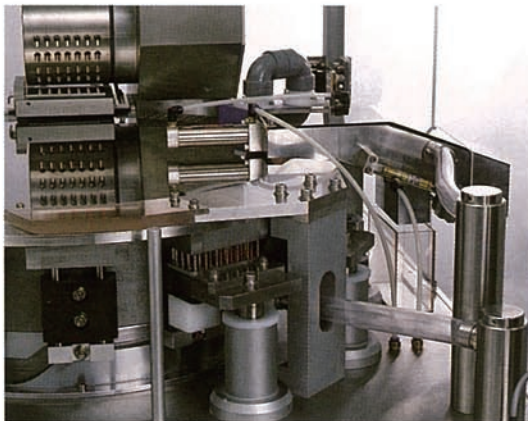
Liquid filling unit and granule filling unit are built-in one same frame. Liquid/granule filling can be made by connecting the filling unit which is proper for filling material to the transfer unit. It is possible to fill liquid for the first layer and fill granule for the second layer.

③ Transportation of capsule



Cavity for cap and body is designed based on our know-how of hard capsule manufacturer so that "Telescoped" and "Dent" will not be generated during operation. The cap disc which needs high accurate design is mono-frame type and can be separated and divided for easy size changeover.

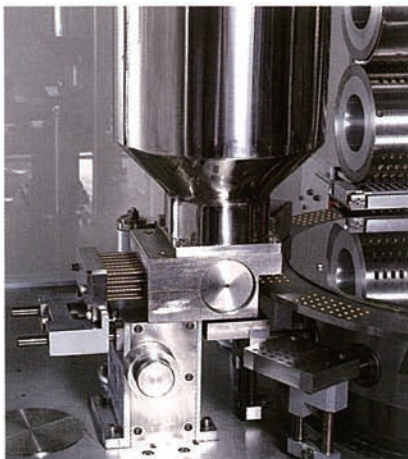
④ Joining



Capsule joining pusher is designed not to occur long joined capsules which may be caused by compressed air inside capsules at joining by joining with two stage motion at two points.

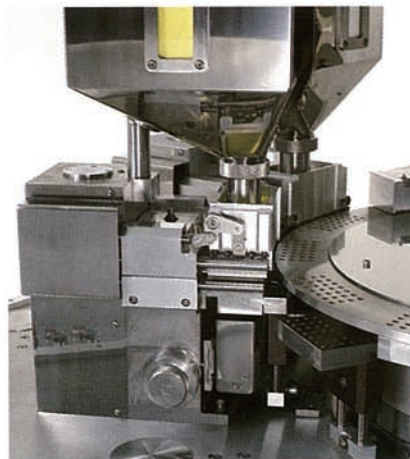
⑤ Adjustment of filling weight

Liquid filling



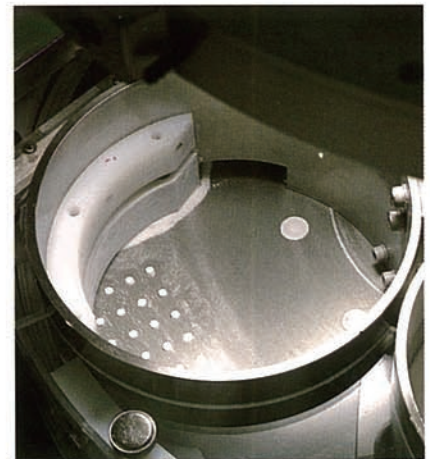
Adjust volume to cylinder by changing stroke of piston with an adjusting handle. Slight adjustment is easily possible even in the machine operation. Especially for liquid filling, high accurate filling operation is possible since density of liquid material is homogeneous.

Granule filling



Filling weight can be pre-set and adjusted by changing volume of measuring value with the adjusting handle. Automatic control of filling weight is also possible by replacing the adjusting handle with a stepping motor and connecting it with the automatic weight control device.

Powder filling



Automatic adjustment and set-up of filling weight can be accomplished by only pushing a switch even in the machine operation. Accurate amount of filling weight is displayed digitally by 1/100 mm for controlling precisely filling weight.

- ❶ Capsules in a hopper are continuously rectified with passing through the feed drum and rectifier roller — and then intermittently fed into the cap disc by transfer plate. By adopting specific mechanism, capsules in the hopper are dropped in all the cavities in feed drum and capsule supply shortage will not happen.
- ❷ Capsules positioned in a cap disc are separated into cap and body by vacuum. After separation, capsule body is set in a body segment.
- ❸ Defective capsules such as unseparated capsules and double caps are automatically eliminated during operation to avoid mixing empty capsules with filled capsules.
- ❹ Connect a filling unit fitting your products to a capsule transfer unit and fill them into capsules.
- ❺ Completely joined capsules are pushed up over the cap disc by a pusher and fed out by a discharge plate.
- ❻ The machine consists of two units: the capsule transfer unit including rectification, separation, joining, discharge, cleaner etc... and the capsule filling unit each for powder and liquid/granule. This separative filling machine enhances production capacity dramatically since time required for product changeover can be shortened. For instance, you can assemble, clean, and re-assemble the powder filling part during filling operation of granule.

• Overall dimensions: : Width 1,560 mm × Depth 1,730 mm × Height 2,360 mm

• Floor Space : 15 m² (Width 3 m × Depth 5 m)
 Rectifier and conveyor units: 940 mm × 1,730 mm
 Filling segment: 620 mm × 1,730 mm

• Weight : Powder Filling 3,000kg
 Liquid /Granule Filling 2,700kg

• Production capacity : 80,000 capsules /hour

• Capsules : Hard capsule, Sizes 00, 0, 1, 2, 3, 4, 5

• Attachment : Electricity 3 phase, 200 V ~ 220 V
 50 /60 Hz, 5.3 kVA

Vacuum

For capsule supply	15 kPa (1500 mmH ₂ O)1.0 m ³ /min
For capsule separation	20 kPa (2000 mmH ₂ O)1.0 m ³ /min
For powder recovery	15 kPa (1500 mmH ₂ O)1.5 m ³ /min
(Powder filling units)	

For cleaner	20 kPa (2000 mmH ₂ O)1.5 m ³ /min
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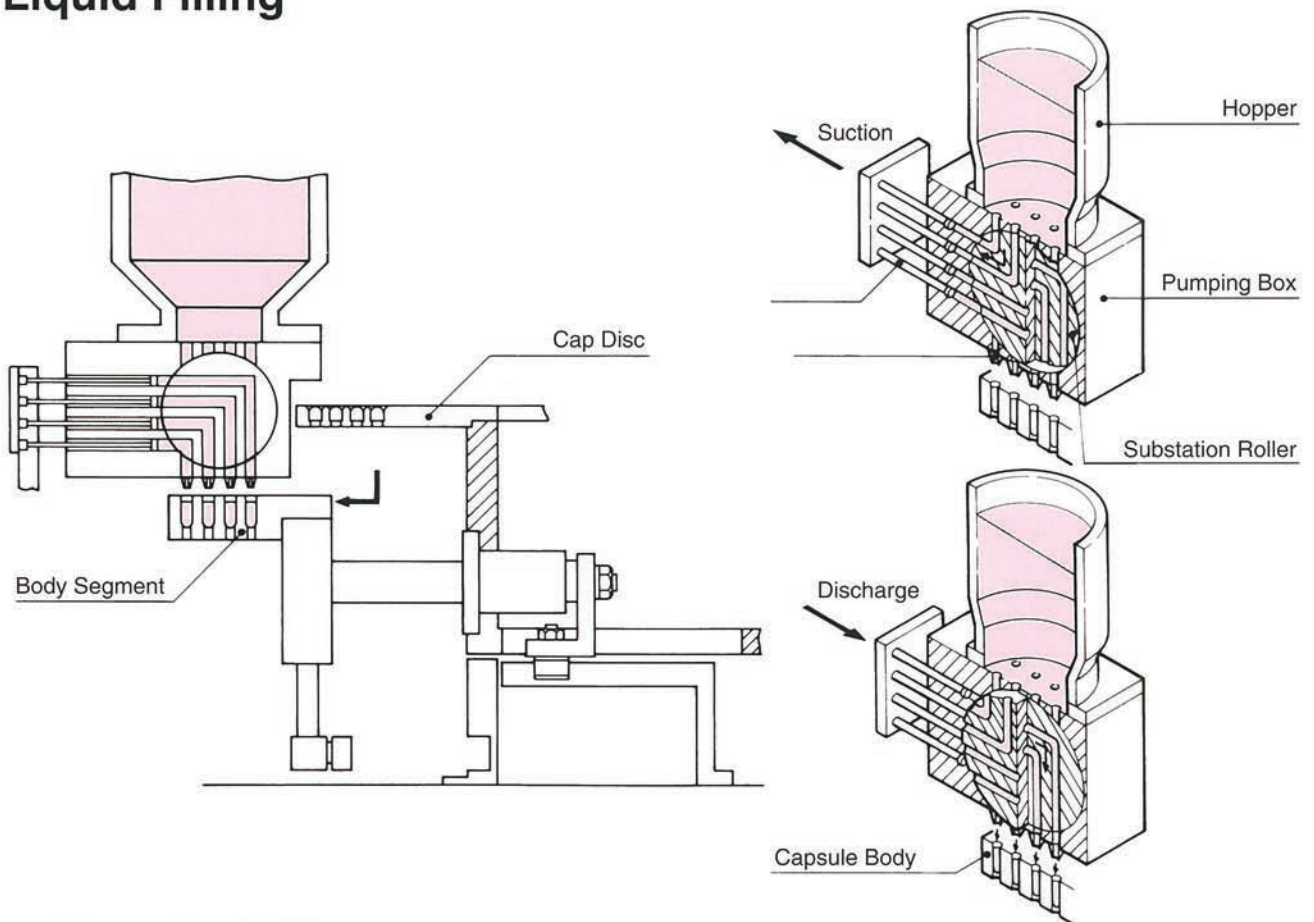
Compressed air	0.5 MPa 400 l/min (normal)
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• Capacity of hopper : For capsule: 150 ltr
 For liquid products: 20 ltr
 For granule products: 15 ltr
 For powder products: 10 ltr

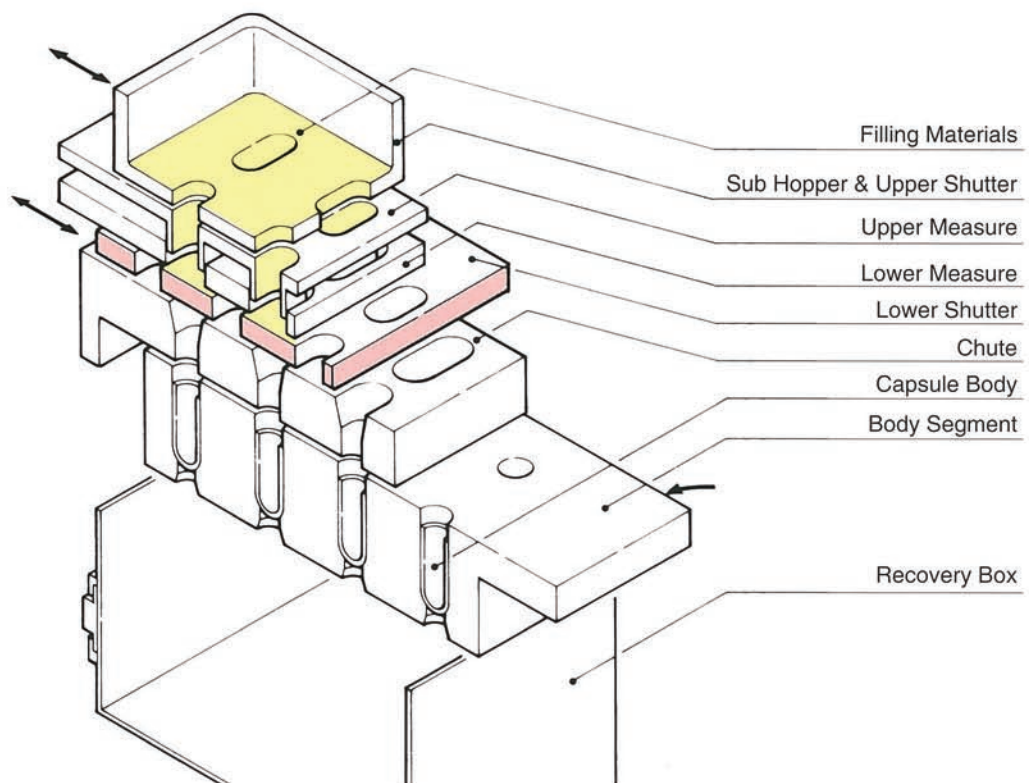
• Option: 1. Automatic weight control system with capsule joined length Measuring device
 2. Capsule weight inspection machine

Filling Mechanism

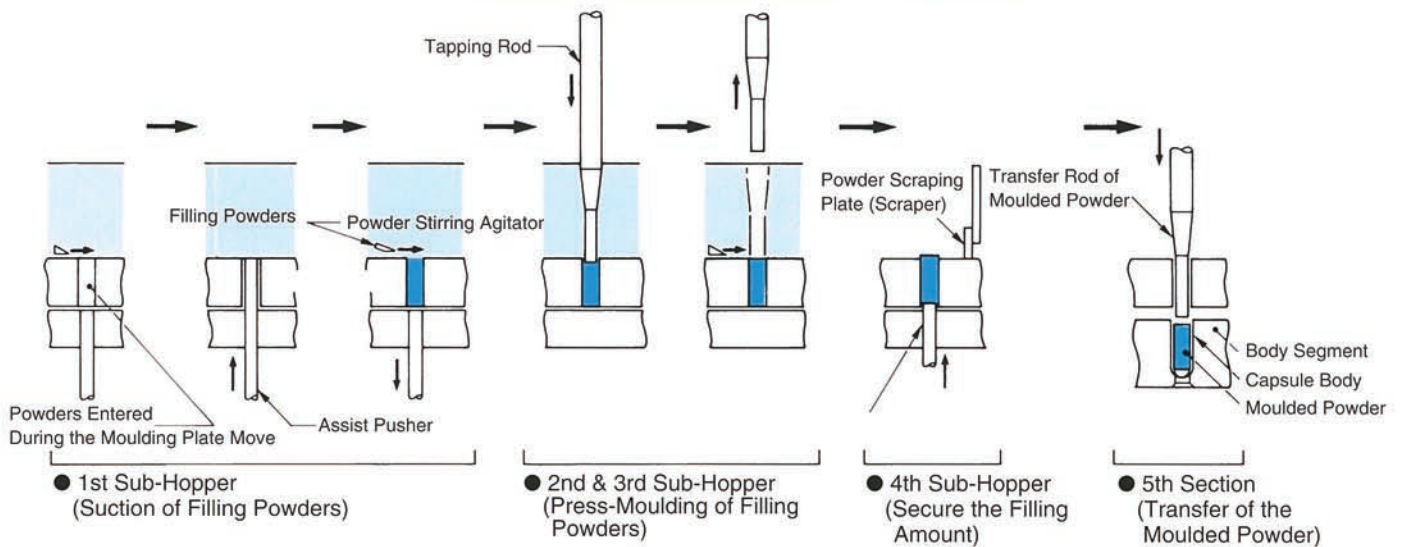
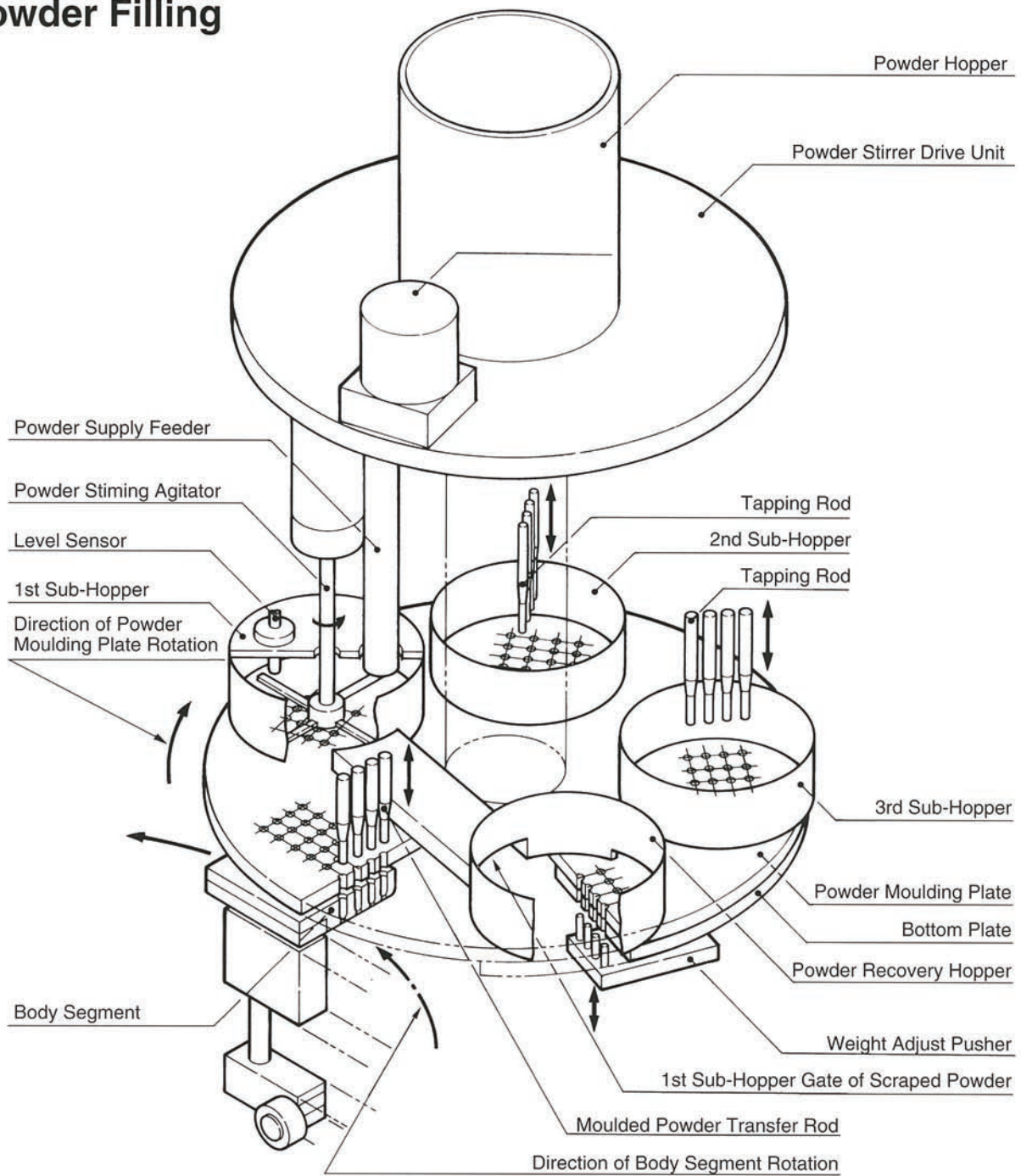
Liquid Filling



Granule Filling



Powder Filling





GLOBAL NETWORK

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