

Fully Automatic Capsule Filling Machine

JCF40

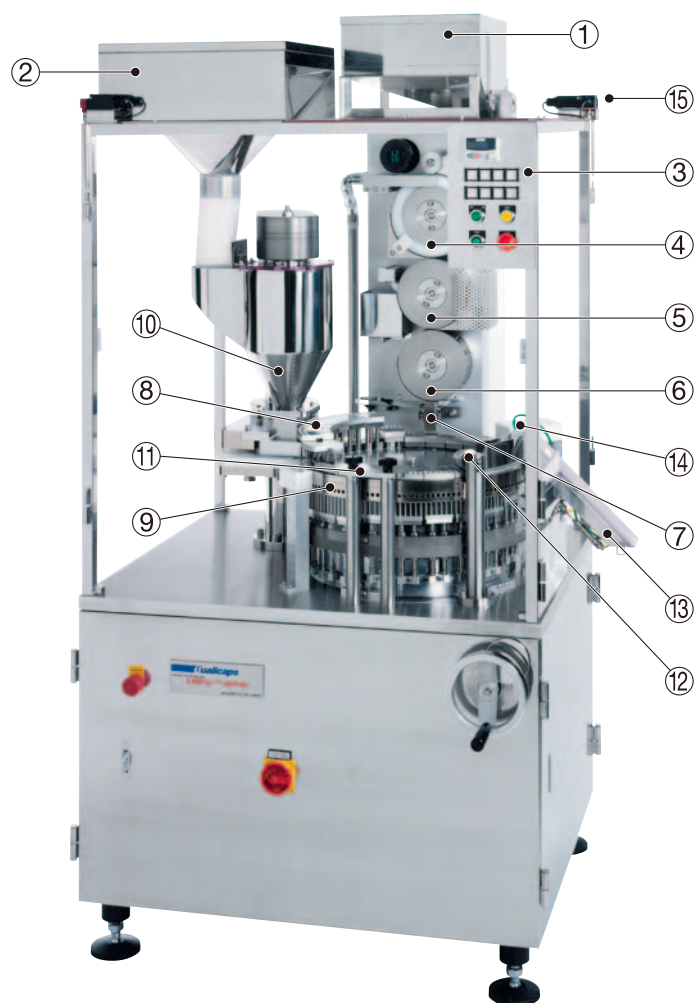
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JCF40

Fully Automatic Capsule Filling Machine

Qualicaps has been supplying for many years high quality hard capsules that satisfy our customers' needs. This new model, the JCF40, has been developed as result of our accumulated experiences and technical knowledge. It extends our range of high-speed fully automatic filling machines, which are highly valued all over the world. The JCF40 uses an auger filling system, which is able to handle powders with a wide range of physical properties.



Legend

- ① Capsule Hopper
- ② Filling Material Hopper
- ③ Operation Switch
- ④ Feed Roller
- ⑤ Rectification Roller
(Removal of 'Unjoined cap/body')
- ⑥ Transfer Roller
(Removal of 'Double Caps')
- ⑦ Capsule Magazine
- ⑧ Cap Segment
- ⑨ Body Disc
- ⑩ Powder Filling Unit
- ⑪ Preliminary Joining
- ⑫ Final Joining
- ⑬ Product Discharge Chute
- ⑭ Cleaner
- ⑮ Door Interlock Switch

● POWDER FORMULATIONS

The auger filling system enables powders to be filled that cannot be processed on plug forming or vibration filling machines.

● MACHINE FOOT PRINT

The machines have been designed compactly to fit into a small foot print maximising utilisation of space in a production area. The JCF40 operates at 40,000 capsules/hour.

● QUICK SIZE CHANGE

The size change parts consist of the cap segments and the body disc which can easily be removed from the machine for cleaning. Size and product changeover can be carried out with the minimum of time and effort.

● ROTARY OPERATION

The machine has a continuous rotary motion. The capsules are gently transferred to the cap segments and body disc. Powder is fed into the capsule bodies by the auger, which is able to fill uniformly powders with poor flow properties. Granules can be filled on the JCF40 by simply removing the auger and allowing them to pour into the capsule bodies.

Features



Rectification and feeding of capsules

The capsule rotary rectification system was developed by Qualicaps and has been patented in many countries. This system uses the minimum of mechanical force and capsules are not damaged during the process. Capsules are not dented and damage to the printing does not occur. The rollers and guide parts can easily be removed from the machine giving easy access for re-assembly.

Automatic elimination of unjoined capsules

Capsules with joining faults, which may have occurred during transport such as, “Double caps”, “Unjoined” or “Unrectified”, are automatically removed from the feed and rectification rollers.



Cap segments and body disc

These parts need to be accurately aligned for good machine performance. The design is based on our extensive knowledge acquired from hard gelatine capsule manufacture. The parts are machined to tight tolerance using advanced technology machines. Capsule closing faults, such as “telescope” or “dented ends”, are not produced.

Capsule separation

Rectified capsules are fed vertically into a magazine and fall continuously into the cap segments, where the bodies are simultaneously separated by vacuum into the body disc. If a capsule fails to separate, it is detected by a sensor and removed from the discharge chute.





Feeding and filling of formulations

● **Powders**

Powders is fed directly into capsule bodies by means of an auger and a stirrer. The auger filling system has been used successfully for many years on the Quali-Fill Model 8 machine. It is able to fill a wide variety of powders, ranging from pharmaceutical, through nutraceutical to herbal products.

● **Granules**

The auger used for powder filling is removed from the hopper. The granules are stirred as they are transferred to the capsule bodies.



Fill weight adjustment

The fill weight of powders can be adjusted by changing the speed of rotation of the auger. Powders with different physical characteristics may require an auger with a different screw pitch. The fill weight of granules can be altered by raising or lowering the support under the capsule body. This will control the degree of over-fill of the body.

Capsule re-joining

This is two-step process. At the first station the capsules are partially joined together and at the second station they are closed to the correct length. The first step allows time for air to escape from the capsule. This is particularly important for powder filled capsules, which contain a lot of entrapped air. This system reduces the force required to close capsules and thus prevents damage.



Capsule discharge

The closed capsules are pushed up through the capsule segments by plungers and fall down the discharge chute. At the same, the sensor that detects un-separated empty capsules operates a mechanism that removes them from the product discharge.

Cleaner

After the product discharge chute, the cap segments and body disc cavities are cleaned with a combination of compressed air and vacuum.

Mode of operation

- ① Capsules are rectified continuously by three rollers and transferred to the cap segments in the vertical position.
- ② Capsules are filled into the cap segments, separated simultaneously by the use of vacuum and the bodies transferred to the body disc.
- ③ Defective capsule, such as “Unjoined”, “Unrectified” and “Unseparated”, are automatically removed from the machine during running preventing them mixing with good product.
- ④ Powder is fed continuously to the capsule bodies by means of an auger.
- ⑤ There is a two step re-joining mechanism to allow for air to be released before the capsules are fully closed.
- ⑥ Filled capsules are pushed up through the cap segments into a discharge chute.

Specifications

- Dimensions: 965mm Width × 865mm Depth × 1,935mm Height
(excluding hopper)
- Total weight: 780kg
- Production capacity: 40,000capsules/hour (JCF40)
- Capsule sizes: 00, 0, 1, 2, 3, 4, 5
- Utility: Power source: 3phase: AC220, 380/400/440V, 50/60Hz, 1.5kVA
Vacuum: 20kPa (2,000mmH₂O), 4.5m³/min
Compressed air: 0.5MPa (5kgf/cm²G), 300L/min (normal)
- Options: Capsule weighing machine



GLOBAL NETWORK

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