Solid Dosage Counting and Bottling Machine
with Inspection System

BM-250/500
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Qualicaps has developed the new BM-500 solid dosage counting and bottling machine; based on the image processing technology and multi-row transfer mechanism in our tablet imprinting and appearance inspection machines. This system uses CCD color line sensor cameras to prevent mixing of dissimilar types of solid pharmaceutical products during counting and bottling.

Name of system components

1. Supply hopper
2. Fixed-quantity supply unit
3. Alignment and transfer unit
4. Color camera unit
5. Tablet thickness sensor (Optional)
6. Inspection roller
7. Counter
8. Rotary switch valve
9. Bottling sheet
10. Plastic bottle

FEATURES

• Validation Capability
  The system ensures practically zero counting errors in addition to the prevention of dissimilar product type mix-up.
  The system can be quickly and easily cleaned, since all product contact components can be disassembled.

• High-Speed Automated Processing
  Despite its processing capability of 500,000 tablets or capsules per hour, an easy transfer is realized by unattended control of 10-row product alignment and transfer.

• High Identification Accuracy
  Tablet thickness sensors capable of identifying tablets similar in both color and diameter can also be mounted as optional components.
1. **Fixed-Quantity Supply Unit**
   This unit uses a fixed-quantity supply roller and bowl feeder with a particle removal function to supply tablets in properly oriented and aligned form.

2. **Alignment and Transfer Unit**
   Employs a multi-row linear feeder and rubber rolls to transfer tablets to inspection rollers accurately.

3. **Inspection**
   The tablets, after being vacuum-attracted using the inspection rollers, are directly imaged by CCD color line sensor cameras to prevent mixing of dissimilar products, based on highly accurate image processing.

4. **Counting**
   When they are transferred from the inspection rollers to the rotary valve, the tablets are counted and checked against the camera-acquired image counts to ensure a zero deviation from the user-set quantity.
6 Bottling
Continuously inspected and counted products are shifted by intermittent movement by the rotary valve and then charged into belt-transports bottles. If any dissimilar products are detected, the system will come to an emergency stop and issue an alarm. If the user-set number of products is exceeded during counting, the corresponding excess products will be discharged from the system.

6 Graphic Touchpanel
A multi-level, password protected touch panel manages the machine's operation.

7 Image Processing
Image processing data is displayed on a color monitor, and parameter entry and inspection conditions verification are possible by operating the keyboard and the mouse.
SPECIFICATIONS

- Dimensions: 2,900 mm wide × 920 mm deep × 2,000 mm high (hopper excluded)
- Installation area requirement: approx. 8 m² (3.5 m × 2.0 m)
- Weight: 1,500 kg
- Processing capabilities: Twin type: 500,000 capsules or tablets per hour
  Single type: 250,000 capsules or tablets per hour
- Applicable pharmaceuticals: Sugar-coated, film, or uncoated tablets: 5-11 mm in diameter, 2-5 mm thick
  Oblong tablets: 16 mm (max.) in major-axial length, 1 mm or more in the difference between minor-axial length and thickness
  Hard capsules: size 0 - 5, soft capsules
- Inspection method: Shape and color inspection with 2048-element CCD color line sensor camera
- Counting: Hybrid fiber sensor
- Tablet thickness measurement: Optical displacement sensor (optional)
- Utilities: Power requirements: Three-phase 200 VAC ±10%, 50/60 Hz, 3.0 kVA
  Vacuum pressure: 10 kPa, 8 m³/min
  Compressed air: 0.5 MPa, 0.5 Nm/min
Qualicaps provides

**Equipment:**
- Capsule filling equipment
- Capsule sealing equipment
- Capsule imprinting equipment
- Tablet inspection equipment
- Integrated capsule filling/sealing equipment
- Capsule check-weighing equipment
- Capsule inspection equipment
- Tablet imprinting equipment

**Hard capsules:**
- Standard two-piece Gelatin Capsules
- Quali-V® two-piece capsules
- Quali-V®-N two-piece capsules
- PEG/Gelatin two-piece capsules
- Two-piece minicapsules

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