



**Automatic Vertical Form Fill Seal (VFFS)  
Powder Packaging Machine Line integrated  
with an Auger Screw Feeder Conveyor.**

Unlike the horizontal or tray-based systems, this machine operates vertically, relying on gravity and a motorized screw to pack fine powders into bags formed directly from a single roll of plastic film.



**How This Machine Line Functions**

The system operates as a continuous, fully automated three-part line:

- 1. Bulk Material Feeding (Left):** Raw powder is dumped into the large, ground-level stainless steel storage hopper. A vibration motor at the base keeps the powder moving smoothly into an **incline screw conveyor (auger elevator)**. The internal spiraled screw is driven by an electric motor, pushing the powder upward through the long metal tube.
- 2. Precision Dosing (Top Right):** The auger elevator drops the powder directly into the transparent, cone-shaped **auger filler hopper** at the very top of the packaging unit. Inside this cone, a high-precision vertical dosing screw spins a specific number of times per cycle to drop an exact weight of powder into the packaging line below.
- 3. Vertical Form, Fill, and Seal (Center Right):**
  - **Forming:** A flat roll of packaging film (mounted at the back) is pulled upward and over a metal forming collar, shaping the flat plastic sheet into a vertical tube.
  - **Sealing & Filling:** A vertical heating bar welds the back edge of the film to create a continuous vertical seam. Simultaneously, horizontal sealing jaws clamp down to seal the bottom of the bag, the top auger instantly drops a dose of powder down

through the middle of the forming tube, and the jaws seal the top of the bag while a blade cuts it free.

4. **Finished Product Discharge (Bottom):** The completed, filled pouches fall onto the small angled blue conveyor belt at the bottom, which carries them up and out of the machine frame to a collection table or boxing line.

## Key Features Visible in the Image

- **Integrated Incline Auger Elevator:** The long, diagonal stainless steel pipe allows operators to safely load heavy batches of powder at floor level rather than climbing ladders to refill a top-mounted hopper manually.
- **See-Through Auger Hopper:** The cone-shaped dosing chamber at the top is transparent, allowing line workers to visually check powder levels and ensure the raw material flow remains consistent.
- **Safety Enclosure Doors:** The main vertical forming and sealing zone is protected by transparent blue acrylic safety doors, keeping operators isolated from high-heat sealing bars and fast-moving mechanical cutting jaws while maintaining full visibility.
- **Compact Control Cabinet:** The right side of the main machine houses a localised control tower featuring a digital PLC touchscreen, independent digital temperature controllers for the vertical and horizontal sealing jaws, a large red emergency stop button, and master power switches.

## Common Industry Uses

This vertical configuration is the industry standard for packing loose, non-free-flowing powders. It is widely used to pack coffee powder, milk powder, protein supplements, flour, spices, chemical powders, starch, and pharmaceutical or cosmetic powders into airtight bags.

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