BP-8187-B-III

THREE LAYER CO EXTRUSION LABORATORY SINGLE SCREW CAST FILM MACHINE/PLC CONTROL

The horizontal and vertical extrusion casting cold rollers equipped on this machine can simulate single-layer or double-layer casting film preparation, with up to seven co extrusion layers, making it the best laboratory extrusion film forming equipment.

I. Application scope

1. Research and development of new product formulas
2. Optimization of production process parameters
3. Small scale production of narrow film
4. Casting performance testing of polymer materials

II. Single Screw Extruder-3 Sets

1. Capacity: about 3-6kg/h per extruder, specific according to the raw material process formula
2. Temperature range: ～300℃
3. Temperature accuracy:±1 ℃
4. Screw diameter:Φ20mm, mixed and dispersed type
5. Length diameter ratio:1:28 other length diameter ratios optional
6. Screw rotation speed:0-95rpm frequency control
7. Screw material: It is made of 38CrMoAl chromium-molybdenum steel. With the surface-layer processing of quenching and tempering, nitriding, chroming, polishing and super-precision grinding, roughness Ra≤0.4μm, nitriding depth≥0.6mm, hardness HRC55~60.
8. Barrel material: It is made of 45# carbon structural steel. With the surface-layer processing of quenching and tempering, nitriding, chroming, polishing and super-precision grinding, roughness Ra≤0.4μm, nitriding depth≥0.6mm, hardness HRC55~60.
9. Heating zone: 3 zone heaters for barrel, 2 zone heaters for machine head, external covered with safety protective wind hood
10. Cooling device: 3 groups of multi wing fans with super static forced air cooling
11. Hopper: 304 stainless steel material, equipped with slide rail type rapid discharge device
12. Drive motor: 3-3.7kw precision gear reduction motor
13. Power:3 ϕ , AC380V, 50Hz Three-phase five-wire
14. Dimension:1900×1100×1350（W×D×H）mm
15. Weight: About 355 kg

III. Distributor

1. Number of layers: A/B/C three layers
2. Replication ratio: can be set according to needs
3. Axial distributor: special configuration
4. Radial distributor: special configuration

IV. Co extrusion casting die head

1. Die head form: In mold hanger type composite flow channel

2. Die head material: CrNiMoA alloy steel
3. Die head hardness: HRC65
4. Flow channel surface: The mold lip surface is chrome plated and polished mirror treatment without any dead angle or trace.
5. Mold lip adjustment: manual full push elastic fine adjustment of the upper lip, and overall structure of the lower lip
6. Mold lip width :260mm
7. Film thickness: 0.08~ 0.25mm adjustable
8. Heater: stainless steel heating rod, equipped with aviation sockets
9. Heating power: 15 zones heating, 1KW per zone power
10. Feeding method: Feeding at the center round mouth of the die
11. Installation method: Vertical installation with rollers
12. Support form: Equipped with a vertical support frame for the mold head

V. Casting unit

1. Temperature range: Room temperature~140 ℃
2. Mold temperature machine: Standard with tap water cooling, optional for he ating and chiller units
3. Connection method: Built-in independent valve and rotary joint
4. Roller diameter: Φ150mm×L320mm
5. Number of rollers: 3 in total, front, middle, and rear
6. Roller material: 38CrMoAl chrome molybdenum alloy material, HRC60 mirr or chrome plating
7. Roller speed: 0~15 rpm servo speed regulation
8. Roller motor: 3-0.75KW servo motor
9. Combination method: Vertical installation of mold head

VI. Winding unit

1. Conveying rollers: Multi row aluminum hard oxygen roller combination
2. Traction rollers: Pneumatic clamping combination of rubber roller and mirror roller
3. Traction speed: 0 ~ 10 m/min servo speed regulation
4. Traction motor: 0.4KW servo motor
5. Tension type: Automatic control by tension controller
6. Main winding: automatic winding without paper core tension
7. Edge cutting device: Install pneumatic slide rail tool holder for edge material cutting
8. Waste edge winding: automatic winding without paper core tension

VII. Electric control unit

1. Electric control system: High performance PLC programmable 15-inch color LCD touch screen, multi screen display of man-machine interface, control all process parameters, such as temperature, speed, drive, traction, winding, pneumatic etc, interlock and intercontrol function.
2. Safety protection: The melt pressure is interlocked with the host for overpressure alarm protection; the melt temperature is interlocked with the host for low temperature start-up protection

VIII. Others

1. Power supply: 3 ∮ , AC380V, 50Hz
2. Volume: 1700×1100×1670（W×D×H）mm
3. Weight: About 485Kg

Feature

Various auxiliary options are available:

1. Full computer LCD touch screen control, extrusion parameters can be saved and output.
2. Double-station manual screen changer makes it easy to replace the screen without stopping.
3. High-performance multi-layer co-extrusion feed module, up to 9 layers.
4. Sensitive material co-extrusion feeding module, suitable for PC, TPU, TPE, PEEK.
5. Film edge fixing device, optimize film roll cooling process.
6. Loss-in-weight feeding system, precise extrusion and formula control.
7. Gear pump precise melt delivery, precise extrusion quantity and formulation control.
8. The mold temperature machine can be selected up to 250℃, and multiple mold temperature machines can be selected.
9. Waste edge cutting and winding device, or waste edge collection device.
10. Automatic deviation correction device with ultrasonic/laser probe positioning.
11. Paperless core air expansion and rewinding, convenient for small-scale test.
12. Inflatable rewinding shaft, standard3 inch shaft, taking into account the winding quality and efficiency.
13. 1 station/2 station automatic surface/ center winding.
14. Fully automatic tension control to improve winding stability.
15. Optional multiple constant tension unwinding stations to achieve hot-press compounding.
16. Double-sided corona treatment, adjustable voltage and power.


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