BP-8176-3D

LABORATORY 3D FILAMENT SINGLE SCREW EXTRUSION LINE/PLC CONTROL

This machine is suitable for PLA, ABS and other printed materials extrusion, is featured by the characteristics of dispersion, uniform plasticization, coloring, and filling modification and so on.

I. Single Screw Extruder/Moveable

1. Output: According to the raw material formulation process
2. Temperature range: ~300℃
3. Temperature accuracy: ±1℃
4. Screw diameter: Φ20 mm, mixing and dispersing screw
5. Length diameter ratio:1:28 optional
6. Screw rotation speed:0-125rpm frequency control
7. Screw material: It is made of 38CrMoAl chromium-molybdenum steel. With the surface-layer processing of tempering, nitriding, chroming, polishing and super-precision grinding, roughness Ra≤0.4μm, nitriding depth≥0.6mm, the hardness HRC55~60.
8. Barrel material: It is made of 45# carbon structural steel. With the surface-layer processing of tempering, nitriding, chroming, polishing and super-precision grinding, roughness Ra≤0.4μm, nitriding depth≥0.6mm, the hardness HRC55~60.
9. Hopper: Made of 304 stainless steel material, it is equipped with a slide type quick discharge device
10. Heating zone: Heater in 3 areas of charging barrel, heater in 2 areas of handpiece. external covered with safety protective wind hood
11. Cooling device: 3 groups of multi wing fans with super static forced air cooling
12. Melt pressure: 0-40MPa high precision melt pressure sensor detects changes in head pressure, interlock loop control of the host running
13. Melt temperature: High precision melt temperature sensor monitors melt temperature changes
14. Drive motor: Precision heavy duty gear reduction motor, constant torque power output control
15. 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
16. Control system: PLC programmable color touch screen, man-machine interface operation system, can dynamically display and monitor extrusion process, including temperature control, driving, speed, pressure, interlocking and intercontrol function
17. Power:3 ∮, AC380V, 50Hz Three-phase five-wire
18. Dimension: 1250×500×950（W×D×H）mm
19. Weight: About 155 KG

II. Mould

1. Material: S136 alloy
2. Filament diameter: Φ1.75 mm or Φ3mm single hole optional

III. Water tank/Moveable

1. Water tank material: 304 stainless steel material material
2. Water level control: Stainless steel water level valve
3. Water temperature control: Controllable water temperature heating system
4. Drying device: Blast drying unit
5. Dimension: 1200×260×800（W×D×H）mm

IV. Laser diameter gauge/Moveable

1. Measuring range: 0.100 ~ 10.000mm
2. Traction speed: ±0.001+0.5%Dmm
3. Resolution: 0.001 mm
4. Function: With feedback control, remote display, online communication, out of tolerance alarm function

V. Tractor

1. Pulling speed：1.5～30m/min adjustable
2. Traction belt：PU wear resistant belt
3. Belt width：100mm
4. Belt length：600mm(Traction effective length)
5. Accommodation mode：Precision screw adjusts the opening and closing height of upper and lower belt
6. Motor: 1KW frequency control motor
7. Power:3 ∮, AC380V, 6A
8. Dimension: 750×460×850（W×D×H）mm
9. Weight: About 120 KG

VI. Winding machine (Moveable)

1. Workstation: Single workstation winding
2. Traction wheel: PU wear resistant material
3. Line arrangement: Automatic sliding cycloid device
4. Winding wheel: ϕ300mm
5. Winding speed: Automatic tension winding
6. Power:3 ∮, AC380V, 5A
7. Dimension: 650×400×870（W×D×H）mm
8. Weight: About 105 KG

Feature

1. The screw diameter is optional: 16\20\25\30 and the length of ratio: 10-30 times can be optional, expanding the scope of processing.
2. The screw barrel is made of 38CrMoAl special tool steel. With the processing of nitriding, tempering, chroming and super-precision gringing, it becomes hard and wear-resistant, extremely corrosion-resistant.
3. The screw equipped with feeding section, transportation section, compression zone and mixing head can process all sorts of materials, achieving the best dispersion effect.
4. It is 0-80rpm stepless frequency control to meet extrusion process requirements of different materials.
5. Electric lap heater is used to heat charging barrel, easy to maintain and install. The independent heating of five areas can ensure the temperature meet the requirements. The barrel adopts 4 groups of multi-wing ultra-quiet fans to cool forcedly.
6. The die head adopts quick connecting loop, fast to remove head and easy to connect with downstream equipments, time-saving and energy-saving during test conversion.
7. Flow distribution plate and filter mask can be installed to prevent non-molten particles and impurities, in other to improve the melt pressure to ensure plasticizing quality.
8. PLC programmable color touch screen, man-machine interface operation system, extrusion process dynamically can be displayed dynamically and monitored. Equipped with USB data output interface, easy to input and print.