



45-3D Printer Filament Production Line

Working Condition

Raw material: **ABS/PLA**

Voltage:220V/380V/440V

Production line length:15mx1.5mx2m

Application:3D printing

Product size range:**1.75mm/3mm**

Capacity around 20kg/h, basing on material type

Delivery Time:45 working days after the receipt of deposit

Terms of Payment: 40% down payment, 60% before shipment

Steps after Order

1,Sign Production Contract by both seller and buyer

2, Seller arranges 40% down Payment

3, Seller start preparing the production line, around 45 working days

4, When the production line is ready, buyer can send technical worker inspecting machine or seller provide qualified pics and specifications for buyer's confirmation

5, After buyer's confirmation, buyer finished another 60% payment, seller shipped the product to the local port.



Production line main machinery:

No.	Device name	Unit/set
1	Φ45 Single Screw Extruder with Hopper Dryer and Auto Loader	1
2	Extruding Mould	1
3	Outer Diameter Measuring Caliper	1
4	1.5m+3m 1.5m+3m Water Tank with Blowing Device	1
5	Filament Storage Frame(80-120m) with Meter Counter	1
6	High Speed Two Wheels Haul-off Machine	1
7	Double Positions Auto Winder	1

Detailed information:

1. Single Screw Extruder 1 set





Auto loader: 1 set

Hopper dryer: 50KG*1

Screw:

- ✧ Applied raw material: ABS/PLA granules
- ✧ Diameter: 45mm
- ✧ L/D: 28: 1
- ✧ Screw max rotating speed: 90rpm
- ✧ Screw material: 38CrMoALA
- ✧ Screw surface treatment: Nitriding and chroming
- ✧ Nitrided thickness: 0.5 - 0.6mm
- ✧ Nitrided hardness: HRC63±2.

Barrel:

- ✧ Raw material: 38CrMoALA
- ✧ Barrel inner surface treatment: Nitriding
- ✧ Nitrided thickness: 0.55 - 0.65mm
- ✧ Nitrided hardness: HRC65±2
- ✧ Heater: Cast aluminum, outer surface with stainless steel covering layer
- ✧ Heating zone: 3 zones*0.18kw/zone
- ✧ Barrel cooling: High efficient super silent blower
- ✧ Cooling power: 3 zones*120w/zone
- ✧ Barrel feeding port: Circulating water cooling

Flange:

- ✧ Structure: Fixed flange and cylinder welding; moving flange and flange hinge joint, retractable, fixed four bolts quenching and tempering.
- ✧ Porous plate: 1pc

Gearbox:

- ✧ Speeder type: Two deceleration devices
- ✧ Transmission ratio: 16
- ✧ Safety factor: 1.64
- ✧ Rated power: 11kw



- ✧ Gears: Use high strength normalizing, quenching carbon steel, high hardness.
- ✧ Use HRC58~62 CNC grinding.
- ✧ Thrust bearing service life: 398,000 hours
- ✧ Cooling: Cooling oil recycling equipment, forced lubrication.
- ✧ Meet national professional standards drive motor IE1 standard
- ✧ High efficient AC motor: 11kw
- ✧ Thermal overload protection Totally enclosed blower cooling
- ✧ Work type: Direct Drive
- ✧ Security guard: metal mesh shield, arrows indicate the direction of rotation.
- ✧ Junction box is mounted on the extruder frame, comprising: a heater coupled to the terminals, fans, power circuit board box
- ✧ Main equipments voltage: 380V/50HZ/3P

Electricity box:

- ✧ Electric box type: horizontal, with lights and exhaust system, CE compliant control panel function keys
- ✧ Power indicator, power start / stop.
- ✧ Motor current and voltage display
- ✧ Ammeter, heating start/ stop on the side knobs, heating zone temperature controller from C1 to C5.
- ✧ Screw speed display, speed adjustment knob.
- ✧ Temperature Control System: 5 Total area (C1 side C5) temperature control area, the Japanese "OMRON" series E5EZ PID intelligent controller, the control accuracy ± 1 °C. "J" type thermocouple + high temperature resistant wire.
- ✧ Motor power: 11kw. Motor governor: Delta converter, 15kw
- ✧ Protection: Overload in / low temperature alarm and protection, disconnection alarm, alarm and overpressure protection.
- ✧ Center height: 1000mm

2. Filament Extruding Mould 1 set

- ✧ Mould material: 3Cr17
- ✧ Mouth mould: Fine grinding
- ✧ Mould heater: Stainless steel heater
- ✧ Voltage plug: Security leakage protection plug



- ✧ Water outlet: 3/4", stainless steel valve
- ✧ Humidity: 30% - 95%RH
- ✧ Dimension: 2200*270*540mm
- ✧ Total weight: 15KG



Water tank 2: 3000mm

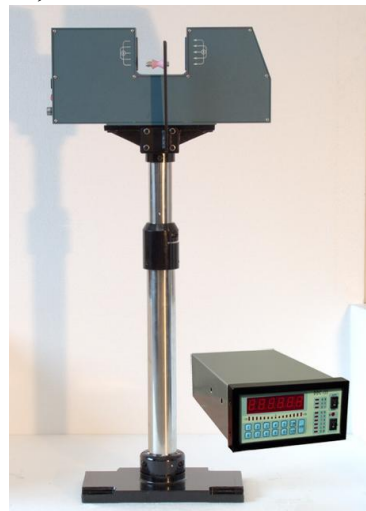
- ✧ Tank size: 3000*150*140mm
- ✧ Tank material: Stainless steel
- ✧ Forward&backward moving: ± 250 mm, manual
- ✧ Water tank cooling way: Bath type cooling
- ✧ Water pump: 0.335KW
- ✧ Circulating water tank, material SUS304, using the float valve, float level control switch.
- ✧ Equipped with water temperature gauge, a pointer type 1 set
- ✧ Adjustable nylon wheel: 5 sets
- ✧ Turn off the water valve behind the sink installation, compressed air ring.
- ✧ Frame: Square steel tube: 50*50mm
- ✧ Water inlet: 3/4", stainless steel valve
- ✧ Water outlet: 3/4", stainless steel valve
- ✧ Humidity: 30% - 95%RH
- ✧ Dimension: 3700*270*540mm

- ✧ Blowing device: 1set
- ✧ Medium-pressure blower: 0.37KW*1
- ✧ Optimization design blow water jacket: 1set



4, Two-way High-speed Laser Outer Diameter Measuring Caliper 1set

Laser scanning diameter measurement system uses a laser beam emitted by the rotating mirror polyhedron scanning and scanning optical system in parallel with the optical axis to form a continuous high-speed scanning beam to be placed in the measurement area high-speed scanning of the workpiece by on workpiece opposite the photo receiver receiving light projected onto the optical photoreceptor is blocked on the workpiece when the beam scanning, thus, by analyzing the signal output by the photoelectric receiver, the data obtained with the workpiece diameter relationship.



5. High Speed Synchronous Two Wheels Haul-off Machine 1set

- ✧ Haul off wheel: 2 sets, multilayered
- ✧ Material type: Anti-wear and anti-skid
- ✧ Effective width: 60mm
- ✧ Haul off wheel: High-precision machining
- ✧ Lift up and down to adjust the belt: hand wheel + screw
- ✧ Traction speed: 80 to 120m/min (can be set according to production needs).
- ✧ Drive motor: 0.75kw/AC motor 0.75 kw
- ✧ Control: Delta converter
- ✧ Counter: Japanese "OMRON" series incremental rotary encoder.



6. Filament Storage Frame 1set

- ✧ Frame can storage: 80-120m
- ✧ Storage frame wheel: 6 groups, use high strength, high wear-resistant material, suitable for high speed and stable production.
- ✧ Moving distance: 6m
- ✧ Additional function: Overload and buffering function
- ✧ Meter counter: 1set



7, Double Positions Auto Winder 1set

- ✧ Winding number: Unilateral duplex closing laps
- ✧ Winding motor: AC 0.75 kw x 2 sets (each location independent control)
- ✧ Automatic winding displacement: Straight rod cable device + guide wheel.
- ✧ Closed loop system: to maintain the same rate of displacement and rotation speed of the disk through the closing laps synchronous transmission mechanism.
- ✧ Tension Sensor regulator: According tension tube, automatically adjust winding speed and cable speeds.
- ✧ Core of winding plate: Stainless steel
- ✧ Control Pane: Power Start / Stop switch
- ✧ Winding speed manual / automatic rotary switch





Filament applied for: RepRap, Makerbot, Ultimaker, Mendel, Huxley UP, WeisTek, Thing-o-matic, Ult, Shanzhu, Merrytek and other FDM printers.

Filament diameter: 1.75/3.00mm. Standard tolerance: ± 0.05 mm

Raw material: PLA/ABS

Winding plate size: Outer diameter: 190mm, core diameter: 85mm

ABS: 1.75mm/410m/roll 3.0mm/170m/roll

PLA: 1.75mm/345m/roll 3.0mm/135m/roll

Leave factory testing: Before leaving factory, equipment should be tested by both parties. Test material offered by buyer;

Installation and debugging: RobotDigg will send 1-2 technicians for machine's installation and debugging according to customer's requirement; The technicians' board and lodging and the round-trip airplane ticket expense undertakes by the buyer, additional service charge USD100. for each technician / one day, estimate 3-5 working days.

Guarantee period: Guarantee period is 12 months after leaving factory, damaged parts caused by quality problem is changed for free during guarantee period. Maintenance technicians' board and lodging and the round-trip airplane ticket expense undertakes by the buyer, but without service charge.

Remark Service content:

1. pre-sale: we will in-depth communication according to the samples/instruction for your company and the actual production workshop, targeted can effectively guarantee the product.
2. production: we welcome your company related technical personnel to supervise, guide, we will also update you the status of production.
3. before shipment: we will make qualified products with the equipment, and by your confirmation of shipment.
4. After-sale service: Service is available lifelong. Maintenance technicians' board and lodging and the round-trip airplane ticket expense undertakes by the buyer. After 12 months guarantee period over, should pay additional service charge USD100.00 for each technician / one day; Or, the buyer can send technical worker to seller's factory for training etc.

RobotDigg will response any inquiry at soonest speed and make sure it will be solved as soon as possible;

RobotDigg can offer training customer's engineers for free;

Provided by Ashley Liu, asliu@robotdigg.com, Skype:RobotDogg, 2016-5-7