Twin Screw Extruder PLA PBAT Biodegradable Compound Machine 300-400 kg h Low Energy for Compostable Resin Modification

Our Product Introduction

Basic Information

- Place of Origin: Nanjing, China
- Brand Name: HLD
- Certification: CE, ISO 9001:2015
- Model Number: Customized
- Minimum Order Quantity: 1 Set
- Price: USD 62000-82000 / Set
- Packaging Details: Bubble wrap, stretch film and fumigation-free plywood case for sea shipment
- Delivery Time: 35-45 working days after deposit received
- Payment Terms: T/T, L/C, Western Union
- Supply Ability: 20 Sets per Month



Product Specification

- Screw Design: Co-rotating Intermeshing Twin Screw
- Screw Diameter: 62.4 Mm
- L/D Ratio: 48:1
- Main Motor Power: 132 KW
- Screw Speed: 500-600 Rpm
- Output Capacity: 300-400 Kg/h
- Melt Temperature Range: 150-180 Degrees Celsius
- Screw Geometry: Low Shear, High Free Volume Design
- Venting: Two Stage Vacuum Venting With Water Removal
- Pelletizing System: Water Ring Pelletizing With Air Knife Dryer
- Suitable Materials: PLA, PBAT, PBS, PHA, Starch Blends
- Control System: Siemens PLC With Recipe Storage
- Highlight: **PLA PBAT biodegradable compound extruder**, **twin screw extruder biodegradable pellets**, **water ring pelletizing 300 kg h**



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Product Description

Heat and water are the two enemies

Biodegradable polyesters behave differently from commodity polyolefins. PLA and PBAT have a narrow processing window, they lose molecular weight when overheated, and they hydrolyse when moisture is present at melt temperature. A line that ignores either point produces pellets that look fine and fail in the converter's extruder. This frame is configured around those two constraints.

Keeping the melt cool

Screw geometry uses high free volume conveying elements with gentle mixing rather than aggressive kneading. Barrel zones are water cooled, not just air cooled, because the target melt window sits between 150 and 180 degrees Celsius and overshoot has to be corrected within seconds. Screw speed is kept moderate: the compound does not need high shear, it needs uniform temperature.

Keeping the melt dry

Feedstock is dried before it reaches the hopper, and the barrel carries two vacuum vents to remove whatever moisture remains and any volatiles from starch or chain extender. Conveying after the die is kept short and dry, since re-absorption on the way to the bag is a real risk in humid climates.

Series data

Model	Screw Diameter	L/D	Motor Power	Screen Changer	Capacity
TSE-20B	21.7mm	40:1 44:1 48:1 52:1	4/5.5/7.5KW	Hydraulic	5-20KG
TSE-35B	35.6mm	40:1 44:1 48:1 52:1	18.5/22KW	Hydraulic	60-100KG
TSE-50B	51mm	40:1 44:1 48:1 52:1	45/55KW	Hydraulic	150KG
TSE-65B	**62.4mm**	**40:1 44:1 48:1 52:1**	**75/90KW**	**Hydraulic**	**250-350KG**
TSE-75B	71.5mm	40:1 44:1 48:1 52:1	132KW	Hydraulic	500-650KG

Shaded frame runs 300-400 kg/h on PLA and PBAT blends; low temperature build uses the same barrel with water cooling.

Downstream choice

Water ring pelletizing with soft cutting under water suits these low melt strength compounds, and an air knife dryer removes surface water without adding thermal load. For PLA grades that crystallise slowly, a crystalliser can be added between the dryer and the bagging station.

Formulation notes that affect the machine

Starch blends need a side feeder and a longer dispersion section than pure PLA and PBAT.
Chain extenders are dosed at low percentages, so use a dedicated small feeder rather than sharing the additive line.
Calcium carbonate is often added for cost; keep the loading below the point where melt strength collapses.
Recipe storage in the PLC matters, because biodegradable programs change more often than commodity ones.

What to send us

Tell us the PLA to PBAT ratio, the starch or filler percentage, and the film or injection application. We will confirm screw geometry, melt temperature set points and the pelletizing head in one proposal.

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