



# MINI SHREDDER EXTRUDER PELLETIZING LINE

Mini Shredder Extruder Pelletizing Line is utilized to recycle cleaned in-house film, woven material, main material, purges, hollow parts, containers, and foamed materials. This process aims to cut costs and lower energy usage.

The material can be fed through a conveyor belt, rolled off, or directly supplied by a crusher after being crushed. The Mini Shredder Extruder Pelletizing Line combines shredding, crushing, enforced feeding, plasticizing, and pelletizing functions into a single program.

Designed for use in plastic recycling and pelletizing, the Mini Shredder Extruder Pelletizing Line offers an integrated and cost-effective solution for various types of plastic scraps found in plant recycling, including film, woven material, trimmings, purges, hollow parts, containers, and foamed materials.

## APPLICATIONS

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- **Film Recycling:** Reprocesses HDPE, LDPE, and PP films from packaging and agricultural applications.
- **Woven & Non-Woven Material:** Recycles PP woven bags, non-woven fabrics, and similar materials.
- **Production Waste:** Handles trims, purges, and other in-house plastic scrap from manufacturing lines.
- **Hollow Parts & Containers:** Processes bottles, containers, and blow-molded plastic components.
- **Foamed Plastics:** Converts EPS, XPS, and other foamed materials into reusable pellets.
- **Rigid Plastics:** Suitable for ABS, PC, PS, PU, and other engineering plastics in regrind form.
- **Plant Recycling Operations:** Provides cost-efficient recycling of cleaned in-house waste to reduce raw material usage.
- **Small to Medium Output Needs:** Ideal for operations requiring compact, energy-efficient recycling systems with outputs around 150 kg/h.

## FEATURES

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## Feeding System

### FEEDING

Standard feeding uses a heavy-duty belt conveyor to transport films, strands, and woven scraps into the compactor. For roll-based materials, an optional roll hauling device is available. Both drives run with ABB inverters, and belt speed is fully automated to match compactor capacity. A metal detector can be integrated, linked to the control system to stop feeding if contamination is detected.

## Shredding Unit

### SHREDDERING

The Mini Shredder Extruder Pelletizing Line integrates shredding, crushing, enforced feeding, plasticization, and pelletizing in a single compact system for efficient recycling.

## Intelligent Control System

### INTELLIGENT CONTROL

**Smart Start:** Activate all modules with a single button, following preset sequences.

**Smart Stop:** One button shuts down all interconnected modules.

**Emergency Stop:** Built-in safety stop halts operations immediately if unexpected risks arise.

Remote Monitoring

## **REMOTE MONITORING**

The ACS-Pro system uses Bluetooth technology for remote program monitoring and data transmission, ensuring visibility and control from anywhere.

Single Screw Extruder

## **SINGLE SCREW EXTRUDER**

Certified nitride steel screws (38CrMoAlA) are CNC-machined and nitrided for excellent corrosion and wear resistance. The design allows efficient melting of polyolefins at lower temperatures and pressures, ensuring consistent compaction, melting, and homogenization.

Rotatory Blades of Compactor

## **ROTATORY BLADES OF COMPACTOR**

High-speed blades cut incoming scraps, generating frictional heat that shrinks material close to agglomeration. Optional guiding structures compress and direct material toward the screw, combining crushing, drying, and compacting for steady extruder feed.

Extruder Barrel

## **BARREL**

A long L/D ratio allows the extruder to function like a double-stage system. Dual filters—including a mid-line piston type and an optional end-stage filter—improve melt purity and final pellet quality.

2 in 1 Option

## **2-IN-1 OPTION**

The proprietary SCF self-cleaning filter enables uninterrupted extrusion, removing up to 5% contaminants—including paper, wood, rubber, aluminum, and unmelted plastics—for continuous re-pelletizing of highly contaminated feedstocks.

Melt Filtration

## **MELT FILTRATION**

Select from single-plate/piston double-station or non-stop four-station screen changers at the extruder head. The right filtration choice depends on feedstock quality and final product requirements.

Liquid Outlet

## **LIQUID OUTLET**

Designed for advanced melt filtration and high output demands. Multiple single-screw extruders feed into a second-stage extruder for enhanced capacity and stability.

Pelletizing

## **PELLETIZING**

The die-face water ring pelletizer is standard for this line. A self-adjusting cutter ensures consistent blade pressure and pellet quality, while automatic RPM control adapts to melt pressure for stable output.

Vibration Dry

## **VIBRATION DRY**

A vibration sieve combined with horizontal centrifugal dewatering dries pellets efficiently while lowering energy use, ensuring optimal moisture control.

Plastic Particles

## **PLASTIC PARTICLES**

End result: clean, uniform plastic pellets ready for reuse in high-quality production applications.

Packing System

PACKING SYSTEM

Final drying and storage with a shaker and centrifuge reduce energy use. Integrated crushing, compacting, and pelletizing lower labor costs, while efficient feeding handles films, raffia, foams, and filaments. Low initial investment, reliable build quality, and worldwide service make this system a cost-effective choice.

TECHNICAL SPECIFICATIONS

|                          |                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Machine Model            | TT-ASP                                                                                                                                                                  |
| Target recycled material | HDPE LDPE PP BOPP CPP OPP PA PC PS PU ABS                                                                                                                               |
| Final Product Shape      | Particles                                                                                                                                                               |
| System composition       | Belt conveyor, crusher, single screw extruder, filtration, vacuum degassing, pelletizing system, water-cooling device, Dehydration Section, Conveyor Fan, Product Silo. |
| Output Range             | 150kg/h                                                                                                                                                                 |
| Feeding Device           | Belt Conveyor (Standard), Roll Hualing off device (Optional)                                                                                                            |
| Diameter of screw        | 80mm (Standard)                                                                                                                                                         |
| Material of screw        | Alloy                                                                                                                                                                   |
| L/D of screw             | 31 / 1,32 / 1,34 / 1,36 / 1 (According to the characteristics of recycling)                                                                                             |

|                         |                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------|
| Heater of barrel        | Ceramic heater or Far-infrared heater                                                 |
| Cooling of Barrel       | Air cooling of fans through blowers                                                   |
| Vacuum deashing exhaust | Two Double-zone vacuum degassing system (Standard)                                    |
| Pelletizing type        | Water-ring pelletizing/ water-strands pelletizing/ Under-water pelletizing            |
| Voltage Standard        | According to the Voltage of the Customer's Location                                   |
| Optional device         | Metal detector, Roll hualing off device, Masterbatch and additives feeder             |
| Warranty                | 13 months from the date of bill of lading                                             |
| Technical services      | Project design, factory construction, installation and recommendations, commissioning |



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