

NEW LABORATORY SCIENTIFIC SINGLE-SCREW RECYCLING EXTRUDER MARK II

LABORATORY SINGLE-SCREW RECYCLING EXTRUDERS MARK II TYPE LREX16-25/MARKII AND LRE16-30/MARKII

GENERAL DESIGN

- Efficient processing of plastic waste into reusable material.
- Full stainless-steel cover over the extruder barrel with air venting grid for safety and ventilation.
- C-Clamp type flange on the extruder head for easy connection allowing quick and secure connection of the die.

BARREL AND SCREW

- Screw and barrel made of high-grade nitride-hardened steel.
- Screw diameter is 16 mm.
- The 25 L/D ratio version is equipped with a plain screw while the 30 L/D ratio version is equipped with a plain screw with mixing screw for blending multi-colored recycled plastics.

HOPPER

- Large rectangular in-feed opening in the barrel for efficient feeding of both pellets and powders.
- Polished stainless-steel hopper with the lid mounted on a slide gate assembly that directly closes the in-feed port or opens it to release the resin from the hopper into the screw feed section.
- Feeding hopper can be optionally equipped with specially designed motor-driven agitator to ensure consistent material flow by pushing down shredded flakes and preventing material bridging or clogging, especially for low density recycled plastics.

BARREL HEATING AND COOLING SYSTEM

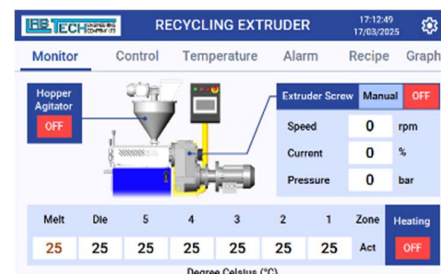
- Water cooling of the feed section and lower part of the hopper funnel for temperature control.
- Each barrel zone features multiple rows of copper fins for high cooling efficiency, coupled with efficient forced-air cooling fans mounted at the rear of the extruder barrel assembly.
- The barrel also includes six high-wattage heating zones to enable fast heating to process temperatures.

DRIVE AND SPEED CONTROL

- Screw speed infinite variable from 0 to 150 RPM.
- Equipped with 2.2 kW AC servo motor drive coupled directly to a worm gearbox.
- The gearbox is flange-mounted directly to a thrust bearing housing containing the screw-connecting shaft, which is resting in a heavy-duty thrust bearing arrangement.
- Programmable frequency inverter for infinite-variable precise screw speed control and high torque even at low screw speeds.

CONTROL SYSTEM

- Convenient control panel mounted into the extruder body, providing easy access and visibility from the operator's position.
- User-friendly computerized interface containing temperature control for three-barrel zones and screw speed control, and motor power monitoring.
- The controllers are coupled with solid-state relays for accurate heat control, equipped with auto-tuning and linear compensation for very precise temperature regulation over the entire working range.



**VOLUMETRIC HOPPER FEEDER
WITH LOW-SPEED AGITATOR AND SINGLE FEEDING SCREW**

- 15-liter stainless steel hopper body suitable for feeding both powdered compounds or flakes for soft and rigid PVC extrusions, as well as standard pellet sizes.
- Vertically mounted, low-speed motor-driven agitator for highly precise rotation.
- Wide-span agitator design provides continuous material flow by loosening cohesive materials and eliminating rat holes, arching, and bridging of materials as it rotates inside the hopper.
- Easily removable lid with safety interlock, which safely stops the agitator motor, provides safe and quick access for cleaning.
- Tapered refill chute on top of lid allows for fast loading of materials.



DOWNSTREAM PELLETIZING EQUIPMENT

1. WATER BATH TYPE LWB-40



Benchtop type made of stainless steel with two-strand rolls equipped with quick locks mounted on one side of the water bath so that the rolls can be placed in numerous positions for optimum cooling efficiency. The water bath is equipped with vacuum suction for efficient removal of all water on the strands. The vacuum device is built into the lower sub cabinet.

1.1. SUBCABINET FOR WATER BATH



Subcabinet for the water bath and the pelletizer also containing the vacuum device for the strand suction. The cabinet is made in the same level as the twin-screw extruder sub-cabinet to form a convenient base for the whole pelletizing line. It is built on caster so that it can conveniently be separated from the extruder.

2. BENCHTOP PELLETIZER TYPE LZ-80

FOR EFFICIENT PELLETIZING OF ALL COMPOUNDS FROM THE HARDEST ENGINEERING TYPE TO SOFT VERSIONS LIKE EVA

With variable speed up to 1400 RPM and with a six-bladed rotary cutting knife made of high-grade carbon steel. Speed regulation with a programmable inverter. With polycarbonate swing open door with double security safety locks which instantly stops the rotary knife when opened.



The lower driven infeed roller is made of grooved hardened steel, and the following upper roll is made of Polyurethane and spring-loaded to lower roll. The picture to the left shows the pelletizer with manual controls. The two digital instruments control the knife speed as well as the pellet length in mm with the optional variable infeed speed described below.



If the pelletizer is supplied with the computerized 16 mm twin screw extruder, then the pelletizer controls will be on the extruder touch screen instead of the panel shown here.

2.1. VARIABLE-SPEED STRAND FEEDING DEVICE

Optional variable speed strand feeding device is driven by a separate AC gear motor with programmable frequency inverter. The infeed speed is controlled with a digital instrument, showing the pellet length in mm. With this option, it is possible to vary the pellet length from 5 mm down to micro pellet size of only 1 mm length.