

Scientific

PELLETIZING SYSTEMS



LZ-200



LZ-120



LZ-80

SIDECUT
PELLETIZERS



STRAND
PELLETIZERS

AIR-COOLED
DIE-FACE CUTTER



Labtech Engineering

TECHLABSYSTEMS

BENCH TOP PELLETIZER TYPE LZ-80



Pelletizer Features :

The benchtop pelletizer type LZ-80 HP features a variable-speed drive of up to 1400 RPM with 6-bladed rotary cutting knife made of high grade carbon steel. The drive speed is regulated by a programmable frequency inverter for precise and rapid response speed adjustments. The interlock safety switches on the polycarbonate swing cover offers double safety for the operator by instantly stopping the rotary knife when opened.

Its in-feed rollers consist of a grooved hardened steel lower roller and the polyurethane upper roller which is spring-loaded over the lower roll. The LZ-80 HP pelletizer features a user-friendly manual control interface for simple and easy operation. Two digital (LCD) speed controllers shows and controls the knife speed, as well as the pellet length (in mm units) with the optional variable in-feed speed described below.



Optional Variable-speed Strand Feeding Device

The optional strand feeding device is driven by a separate AC gear motor also regulated with a programmable frequency inverter. The in-feed speed is controlled with via a display controller, 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.

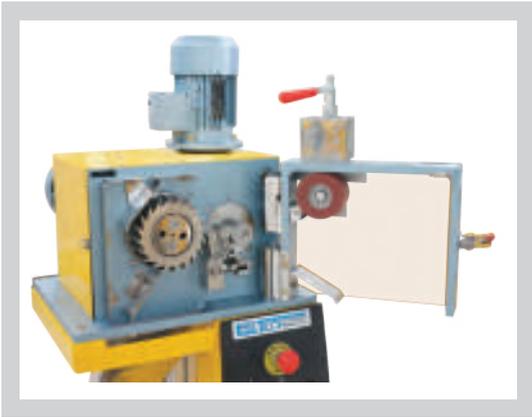
STRAND PELLETIZER TYPE LZ-120 HP

Pelletizer Features :

- Precise and quick-response speed regulation via a high performance programmable frequency inverter with knife speed range of up to 1200 RPM and the strand-feeding speed range from 10 to 72 meter per minute.
- Full steel frame and modern-design body with stainless steel base platform, as well as a small moveable stainless-steel holding platform for supporting smaller discharge bags or containers. The holding platform can be unlocked from position, then lowered all the way down to the base level to accommodate space required by larger discharge drums.
- Now equipped with the new 1.1 kW high-power motor drive for easy cutting of significantly tough engineering resins even at a low speed.
- Rotor knife made with the new super hard, high-grade carbon steel with 20 cutting edges and shaped for precise cutting of uniform pellets from both soft and hard strands. There's also a fixed knife in the same super hard tool steel with two cutting edges. The knife gap can be easily and quickly adjusted.
- The user control panel is integrated in the lower body with cutting speed (RPM) monitored and controlled by the digital speed controller.
- Thick, transparent polycarbonate swing door for full view of the cutting operation. Interlocked safety switches stop rotor instantly when the door is opened. The integrated internal protection shield along door front makes it impossible to get in contact with the rotary knife even with minute door opening.
- Spring-loaded upper in-feed roller with polyurethane rubber surface for smooth and even pulling of strands
- NEW knife set option available: rotating and fixed knives made of stainless steel and with tungsten carbide cutting edges for optimum life time and high wear resistance.



Optional Variable-speed Strand Feeding Device:



The optional feeding device enables user-setting and automatic control of the pellet's cut length for various practical applications. The device is driven separately by an AC motor drive with a high performance programmable frequency inverter. A second controller is installed for setting and displaying the user-set pellet cut length in mm (up to one decimal digits) for various practical applications. Cut length setting is done via the controller's scroll pads for a range of 1.0 to

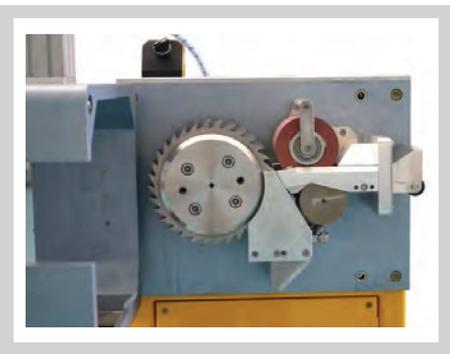


6.0 mm. The separate standard digital speed controller for regulating the RPM of the knife is also equipped with the ▲▼ scroll pads for speed setting. The close-loop feedback system tracks the RPM of the rotary knife and compensates the feeding speed so that that the pellet will always have the same preset cut length regardless of the speed of cutting or feeding of the strands. This system enables production of a large variety of pellet sizes, for instance mini pellets with a length of only 1 mm or less to normal pellet sizes of 3 mm lengths or more.

STRAND PELLETIZER TYPE LZ-200 (For high output up to 400 kg/hr)

Featuring :

- Driven by 4kW high power motor. Speed regulated by programmable inverter for a speed range of up to 1000 RPM. Power.
- Control panel with digital RPM controller and display.
- Interlocked safety switches stop rotor instantly when the door is opened.
- Easily adjustable fixed knife and a rotor with a total of 32 cutting knives.
- Optionally available with stainless steel rotary and fixed knives which are equipped with inserted cutting edges made from tungsten carbide for optimum wear resistance.



Strand Pelletizer
type LZ-200

Optional Variable-speed Strand Feeding Device :

- Optionally, the pelletizer can also be equipped with a separate variable-speed in-feed drive for the feed roll. Strand feeder speed range from 20 to 80 m/min.
- Pellets can be cut at desired length from mini pellets of 1mm length up to 6 mm.
- The separate standard digital speed controller for regulating the RPM of the knife is also equipped with the ▲▼ scroll pads for speed setting. The close-loop feedback system tracks the RPM of the rotary knife and compensates the feeding speed so that that the pellet will always have the same preset cut length regardless of the speed of cutting or feeding of the strands.

Technical Data for Stand Pelletizer System

	LZ-80	LZ-120	LZ-200
Motor power	0.37 kW	1.1 kW	4 kW
Optional variable speed strand feeding Motor Power	0.18 kW	0.37 kW	0.75 kW
Rotary knife speed	50 to 1400 RPM	50 to 1200 RPM	50 to 1000 RPM
Number of Rotary knives	6	20	32
Strand feeding speed	Standard 2-36 m /min Variable in feed 2-38 m /min	Standard 10-59 m /min Variable in feed 10-72 m /min	Standard 20-80 m /min Variable in feed 20-95 m /min
Pellet length	Standard length 3.0 min Variable in feed speed 1.0 yo 5.0 mm	Standard length 3.0 min Variable in feed speed 1.0 yo 6.0 mm	Standard length 3.0 min Variable in feed speed 1.0 yo 6.0 mm
Max number of strands (3 mm)	3	8	24
In feed width	25 mm	50 mm	100 mm
Approx max output with plastic of density 1.0	15 kg / hr	150 kg / hr	400 kg / hr

SIDE-CUT PELLETTIZERS

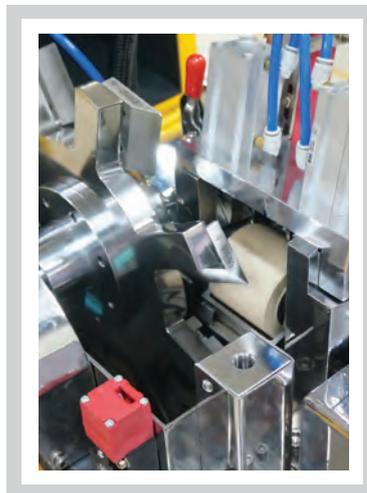


Labtech's new range of the type LSC side-cut pelletizers, represents an entirely new and unique concept of stand pelletizing of thermoplastics, and is built and assembled in Labtech with worldwide license rights from Hoshipla, Japan. The pelletizer's special fan-shaped cutting wheel design allows for scissor-action sideway-pelletizing of almost any type of thermoplastic strands.

The machine is designed and engineered to pelletize practically any type of thermoplastic resin, even materials that cannot be pelletized using conventional machines, i.e. 'rubbery' materials such as soft PVC and thermoplastic elastomers.

Due to its gentle shear-cut action, even highly filled and brittle strands can be pelletized without causing dust and shattering of the pellets. Trial tests on very soft thermoplastic rubbers with Shore A hardness rating as low as

5 have been pelletized successfully, thus it may not be an exaggeration to say that anything that can be cut with scissors can be cut with the LSC pelletizer.



Conventional plastics, as well as tough and reinforced engineering types, are equally easy to pelletize. The LSC side-cut pelletizer can also produce very long pellets of up to 50 mm lengths which are suitable for pelletizing fiber-reinforced engineering plastics where it is extremely vital to avoid cutting up the pellets too short which spoils the strength of the resin. The special versions of the LSC side-cut pelletizer also has a unique feature to produce extremely small and perfectly cut micro pellets with diameters as low as 0.3mm between the cutting knives.

The standard pelletizers are supplied with two individual variable-speed drives, one for the knife rotor, and the other for the in-feed rollers. All mechanical parts are made in stainless steel or nickel-plated tool steel. The knives are made with hard tool steel inserts with lifetime of up to 10 times as long as those of conventional pelletizers.

Micro-Pellet Version

The Micro-Pellet version of the side-cut pelletizer enables the production of micro-pellets with size as small as 0.5 x 0.5 mm. This version uses special in-feed rollers as well as a special 'strand follower', and is also equipped with a larger number of cutting blades to enable a higher output capacity. The pellets produced are cleanly cut straight through the whole strand, as with our standard side-cut pelletizers.

Fully Safe Operation Safety Features

All removable parts of the in-feed, cutting, and rotor cover sections are double interlocked with safety switches for optimum operator safety and are in full compliance with CE and other world safety standards. The main electric supply is cut off when any of these parts are removed. The restart button on the control panel has to be pressed before the start button can be activated once again as an added safety feature.

Standard Machine Color Selections

The smaller side-cut pelletizers are painted in Labtech's signature yellow color to match with our laboratory extruders. However, the larger production versions starting from the LSC 1512, are painted in silver grey and blue colors to better match the customer's production lines.



Technical Specification for the LSC Strand Pelletizer Series

Description	SIDE CUT PELLETER STANDARD VERSION							
	Model LSC 108				Model LSC 1512			
1. Pellet diameter range (mm)	1 to 5				1 to 5			
2. Pellet length rang (mm)	0.25 to 30				0.25 to 47			
3. Max output (kg/h)	110 (Pellet Ø3x3)				370 (Pellet Ø3x3)			
4. Knife rotor max (RPM)	1800				2200			
5. Number of rotary knives	8				12			
6. Max feed speed (M/min)	50				90			
7. Knife rotor drive (kW)	0.75				1.5			
8. Feed rollers drive (kW)	0.37				0.75			
9. Pellet size Diameter x Length, mm	3.0	1.5	1.0	0.75	3.0	1.5	1.0	0.75
	x	x	x	x	x	x	x	x
	3.0	1.5	1.0	0.75	3.0	1.5	1.0	0.75
10. Max amount of strands	6	12	18	24	12	36	54	72
11. Maximum output kg/hr	110	22	12	7	370	140	60	34

Technical Specification for the LSC Strand Pelletizer Series

Description	SIDE CUT PELLETIZER MICRO PELLET VERSION							
	Model LSC 112				Model LSC 1520			
1. Pellet diameter range (mm)	0.4 to 1.5				0.4 to 1.5			
2. Pellet length rang (mm)	0.15 to 20				0.15 to 20			
3. Max output (kg/h)	50 (Pellet Ø1.5x1.5)				220 (Pellet Ø1.5x1.5)			
4. Knife rotor max (RPM)	2200				2000			
5. Number of rotary knives	12				20			
6. Max feed speed (M/min)	40				60			
7. Knife rotor drive (kW)	0.75				2.2			
8. Feed rollers drive (kW)	0.37				0.75			
9. Pellet size Diameter x Length, mm	0.4 x 0.4	0.5 x 0.5	0.75 x 0.75	1.0 x 1.0	0.4 x 0.4	0.5 x 0.5	0.75 x 0.75	1.0 x 1.0
10. Max amount of strands	45	36	24	18	135	108	72	54
11. Maximum output kg/hr	3.6	5.6	12.6	22.4	16.3	25.5	57.2	34

AIR-COOLED DIE-FACE CUTTER TYPE LFC-15 WITH PARALLEL-AXES DIE AND ROTOR DESIGN



Air-Cooled Die-Face Cutter Type LFC-15 with Parallel-Axes Die and Rotor Design

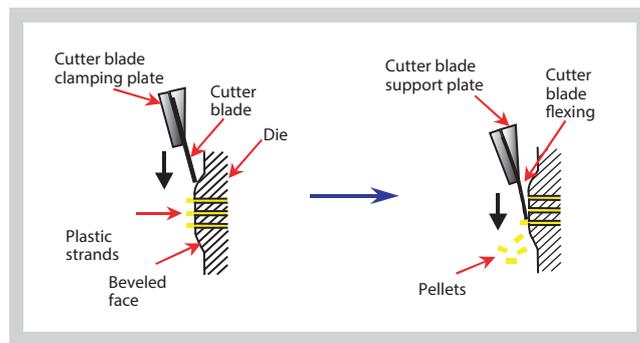
The LFC Die-face Cutter is built-up on a heavy-duty rectangular steel tube frame covered with steel sheets. All internal and external parts have been rigorously painted using three coatings of epoxy primer, with each layer carefully sanded, followed by a triple coating of durable epoxy lacquer. The two steel cutting blades are purposely designed thin (0.5mm thick)

for flexibility and long life. The position of the cutting edges of the blades is adjustable, relative to the die face, in order to take into account the wear of the blades over time. The die-face cutter's housing and drive motor unit are supported on a robust steel hinge which allows fast and easy removal of the unit from the extruder. The base is mounted on four casters of which two are equipped with brakes for secure positioning.

The LFC die-face cutter is only suitable for PVC and other “dry” resin types like certain grades of thermoplastic rubber which does not stick to the die.

- Fast opening cutting chamber on robust swing-away hinge interlocked with safety switches.
- The lightweight, portable cutting unit and dried pellet collector are both mounted on castors.
- Ease of access and cleaning of the cutting chamber due to its air-cooling system design for the pellets, in contrary to water cooling systems.

Labtech’s air-cooled die-face cutter is especially suitable for pelletizing of resins that cannot easily be cut on conventional strand pelletizers such as, soft PVC and other types of thermoplastic rubbers. The pellets are cut directly on the die as shown below with the cooling of the cut pellets done by high-speed air. A cyclone separator is connected to the outlet pipe of the pelletizer to efficiently separate the pellets from the air flow.

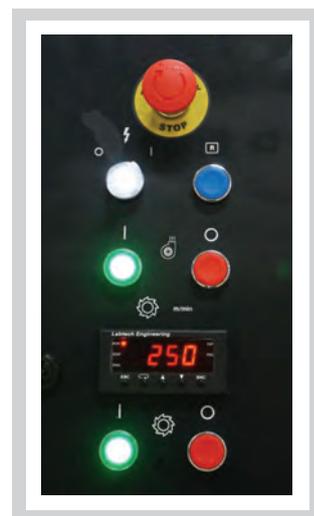


The 1 mm thick cutter blade is made from high-strength spring steel to provide flexibility. This ensures minimum blade adjustment, long life, and a clean cut of the plastic resin.



The cutter blade is mounted on a rigid holder and is easy to adjust or replace as necessary. The blade distance to the die can be easily adjusted from the rear of the face cutter’s housing (as shown on the left picture) even when the cutter is still running. A sight glass on the side of the housing allows for visual inspection of the cutting area.

The control panel, shown to the right, is installed on the sub-cabinet of the cutter housing, and incorporates a digital RPM controller with scroll pads for setting the cutting speed. The panel also incorporates start and stop buttons for the main cutter motor and for the air cooling blower.



Easy access is gained to the mixing chamber’s interior by uncoupling two quick-release clips and swinging open the chamber, which activates the two safety switches to cut off all electric supply. The motor is also equipped with electronic braking system for optimum safety.

The stand-alone stainless steel cyclone is also built on casters and is very easy to clean.

The machine is built in full conformity to the CE and other world safety standards.



The air-cooled die-face cutter is designed to be used with our 25 or 20 mm single screw extruder units, but can also be used with our 16 mm twin screw extruder. The maximum output is around 5 kg/hr, but there is an available die with two holes to nearly double the output. For this version, larger blower and cyclone sizes are needed as well.