

RANDCASTLE'S

1 TO 4 INCH STRAND PELLETIZERS



MODEL RCP-4.0

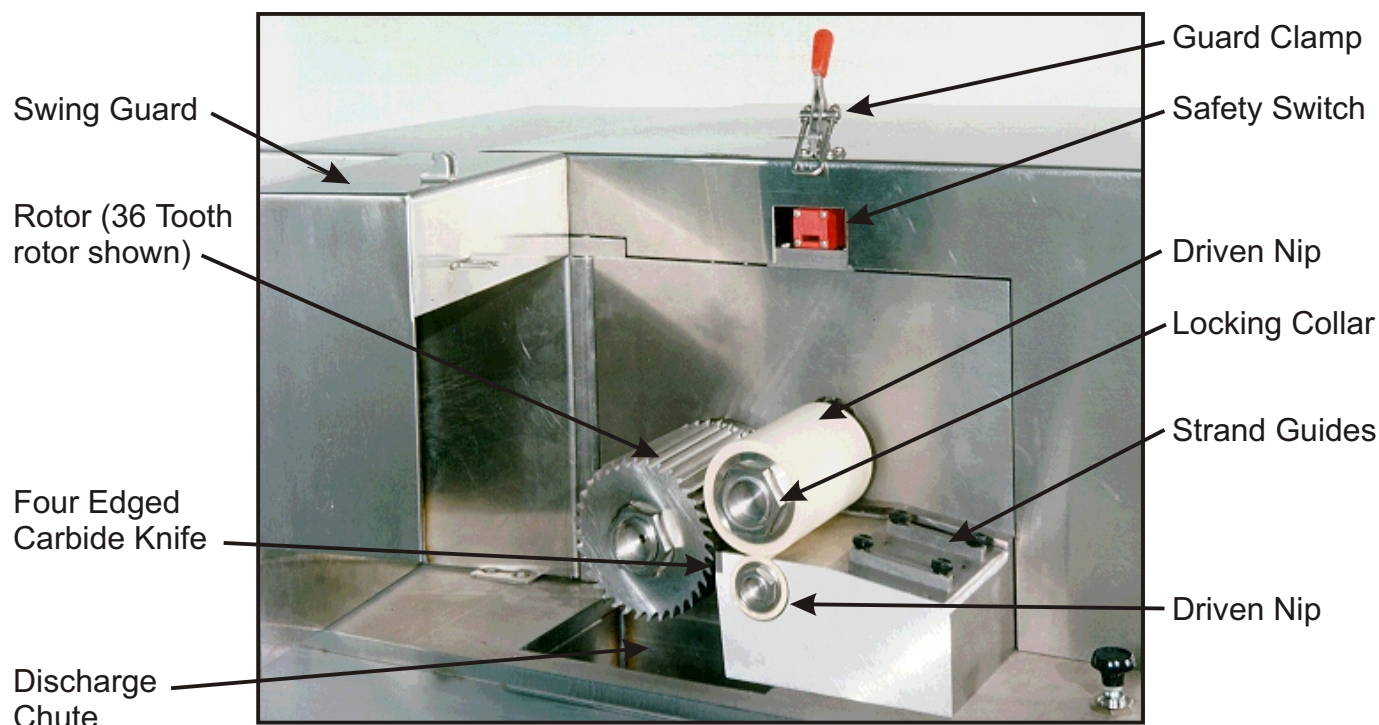
INTRODUCTION: Strand pelletizers pull one or more strands from an extruder, through a cooling system (such as a water trough or air cooling conveyor) and slice the strands into pellets. Strand pelletizers are versatile processors of a wide range of materials.

Randcastle builds two kinds of strand pelletizers. The first is the traditional rotating knife that shears against a fixed knife. It is made in cutter widths of 1, 2, and 4 inches. Model RCP-1.0 is bench mounted and has a 1 inch wide cutter (see the last page of this brochure). It makes pellets between 0.02 and 0.06 inches long. It is designed for light duty lab applications to work with our 1/4 to 5/8 inch extruders. Model RCP-2.0 has a 2 inch wide cutter and model RCP-4.0 has a four inch wide cutter. These pelletizers were designed to solve the problems most often associated with small pelletizers: strand drop out, ineffective pulling, and maintenance headaches. Select from many options to customize these pelletizers to your needs.

Randcastle also manufactures a fragile strand pelletizer for strands that are too delicate to pass through the nip roll of a traditional pelletizer. So, this pelletizer is particularly useful for strands that lack strength such as drug filled low molecular weight strands. It can be integrated with an air cooling conveyor rather than a cooling trough.

CANTILEVERED CUTTING CHAMBER: The cantilevered design allows easy access to all the parts that may need cleaning and maintenance. A quick release locking collar holds the rotating cutter and the nip rolls. These locking collars are self-aligning to simplify installation. The fixed knife is carbide for wear resistance and it is four sided for extended life. The swing guard is made from stainless steel and activates a safety switch when opened to stop the rotating knives.

CANTILEVERED CUTTING CHAMBER



MODEL RCP-4.0 CUTTING CHAMBER

Options shown: Stainless parts, 36 blade rotor, and nip rolls with medical grade urethane.

FLEXIBILITY: Models RCP-2.0 and 4.0 make the traditional 1/8 inch (0.12 inch) long pellet. Change two gears and make lengths from 0.06 to 0.49 inches long. Most common lengths and rates are listed below. Note: Use the 36 tooth cutter to make the pellets one half the length in the table below at the same speed.

Match your speed and torque requirements. Unless otherwise specified in the order, the pelletizer will make 0.12 inch long pellets using even pulleys.

Pellet Length In Inches:	0.06	0.08	0.12	0.16	
At a Maximum* Line Speed of:	20	25	37	51	Using High Torque Pulleys
(Feet Per Minute)	41	61	86	143	Using Even Pulleys
	55	69	102	143	Using High Speed Pulleys

TWO ROLL PULLER: Why buy two machines when one will do? Just remove the rotating cutter, exchange one shaft and one guard, and the pelletizer converts to a two roll puller.

PULLING POWER: How should pelletizer pull rolls be driven? Many pelletizers have a pull roll (pressure roll) that is not driven. The roll just idles along driven by the strand(s). We thought it best to drive both the pull rolls so that they would pull the strands and not the other way around.

Pulling power is also a function of how much pressure the pull rolls exert on your strand(s). The less effective your pull rolls are at pulling, the more pressure you must apply to pull the strands and the faster the pull rolls wear out. Randcastle pelletizers have air cylinders to minimize the pressure you put on your strand(s) and allow you to run more fragile strands without breakage. Invest in a properly designed pulling system rather than dedicating a technician to do what the pelletizer should do.

CLEANING AND MAINTENANCE: The cutting chamber houses the nip rolls, the fixed and rotating knife and knife holder. All the parts inside the cutting chamber are cantilevered to make access fast and easy. To prevent contamination from one run to the next, you have to be able to clean all the parts in the cutting chamber. Usually, all you have to do is use a little compressed air to blow out the chamber. But, if (for example) you ran carbon black loaded strands, some of the carbon may wipe off on the cutting parts. So, all the parts that can contact the strands or pellets are quickly removable so that you can even immerse them for cleaning.

The pull rolls and the rotating cutter are fastened with quick release locking collars. One turn of the hex collar and the nip roll or cutter is off. These collars are self centering and lock the parts firmly in place.

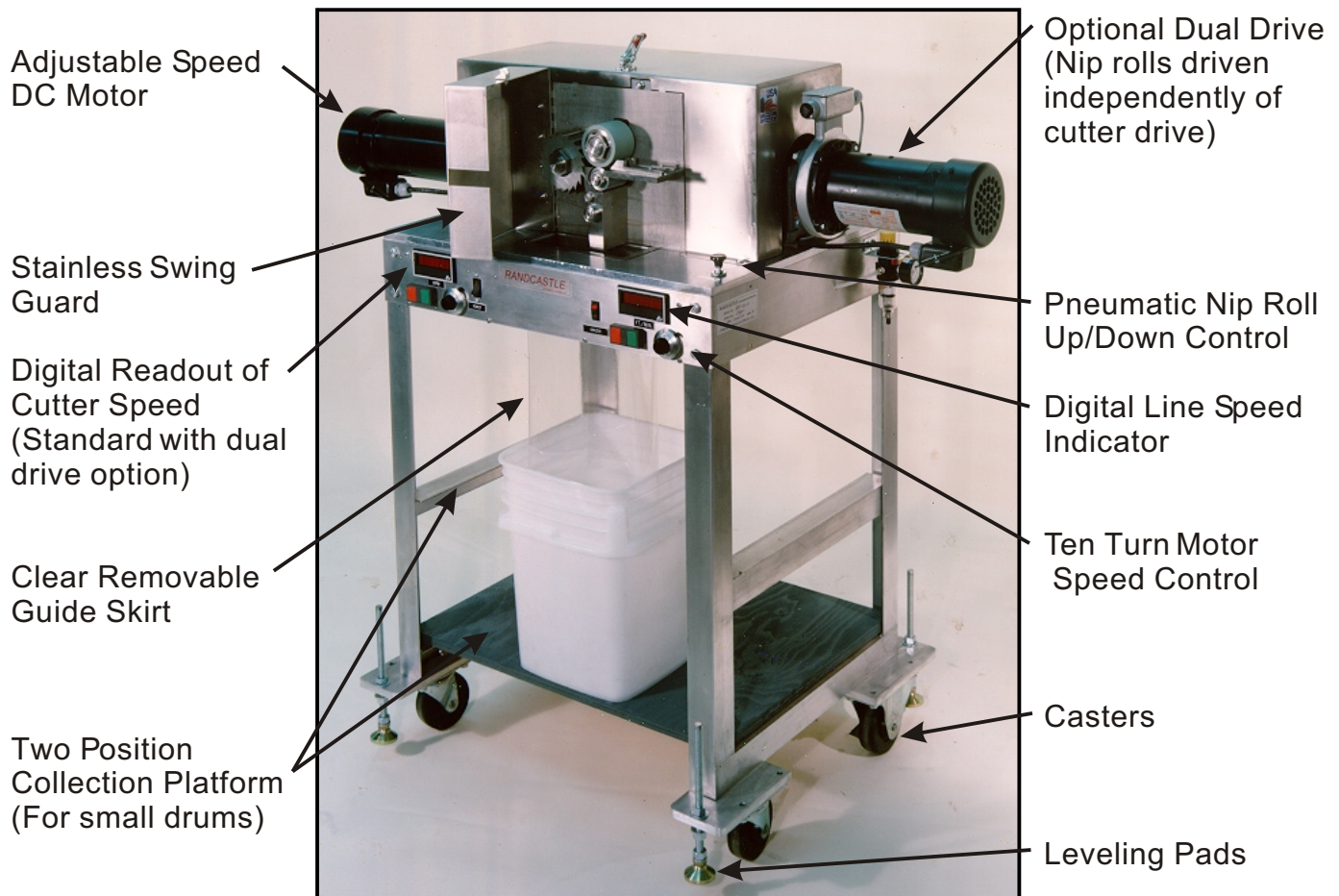
The materials of construction make cleaning easy too. The swing guard and discharge chute are stainless steel. The side plate and base are aluminum.

Maintenance is low because the stainless steel nip roll, the fixed knife, and even the knife holder are hardened. The fixed knife has four cutting edges for the longest life possible. The upper pull roll is 'Hypalon' coated for long life. The helical design is quieter than a straight knife and the scissor action of the helix makes the last longer.

SAFETY: When the swing guard is opened, a safety switch is tripped. The motor start button will not start the motor until the guard is closed. The swing guard has a small clearance so that the strands will fit under the guard but fingers will not. The discharge chute has welded barriers that prevent fingers from reaching the knives.

*NOTES: The maximum line speed for your application is a function of many variables such as your strand diameter, what the strands are made from, how many strands you cut, what temperature the strands are and so on. Other lengths available by gear change: 0.22, 0.31, 0.36, 0.43, and 0.49. For a detailed technical discussion on this subject, please request our RCP-2.0 Technical Bulletin.

MODEL RCP-2.0 & 4.0



Model RCP-2.0

CONTROLS: The pelletizer is driven by a DC motor and controlled with a ten turn pot. Line speed is shown on a digital foot per minute indicator. Air pressure controls are supplied to raise and lower the nip roll (or pressure roll), regulate the air pressure to the nip roll, and control how fast the roll goes up and down.

BASE: The caster mounted aluminum base supports the pelletizer. The standard base is designed for a strand input height of 42 inches from the floor. The base is open in front so that different size collection drums can slide into the base and out of the way of the aisle.

The base is supplied with a platform to support various size drums or containers as high as 32 inches. A 10 inch removable flexible transparent skirt conveys the pellets deep into the container to prevent pellets from falling onto the floor. The base is equipped with leveling pads.

TRANSMISSION: A DC motor drives a 5:1 gearbox. A timing belt and pulley drive enables the overall speed range to be changed (see the chart on Page 3 for details) by simply changing the pulleys. This also allows you to match the cutting torque to your application. The pull rolls are driven by continuously engaged spur gears and include fiber gears for quiet operation. The gears are changed to make the different length pellets (see the chart on Page 3 for details).

UTILITIES: Single phase, 230 volt, 60 Hertz power and 80 psi compressed air.

OPTIONS FOR RCP-2.0 AND RCP-4.0

Dual Drive: This incorporates a second independent DC drive for the pull rolls so that an infinite variety of pellet lengths is possible. This option also allows pellet lengths as small as 0.040 inches long. We suggest you read our RCP-2.0 Technical Bulletin that describes the relationship between the strand dimensions, output, and line speed when considering this option.

HP: Higher HP DC motors and controls are available for tougher cutting applications.

Cutter: The standard cutter has 18 blades. The 36 tooth cutter doubles the number of cuts per revolution at the same line speed.

Special Materials of Construction: The cutting chamber parts can be made from stainless steel and other medical grade materials.

Alternate Line Speeds: Select additional pulleys to extend the speed range or cutting torque to suit your process. Use the chart on page 3 to select the line speed appropriate for your application.

Two Roll Puller Conversion Kit: This kit contains everything you need to convert the pelletizer into a two roll puller. We suggest that you read our RCP-2.0 Technical Bulletin to make sure that your line speed requirements are met.

Bench Model: Some of Randcastle's extruders are bench mounted to conserve valuable lab space. Not only does this model conserve floor space, but the overall length of the pelletizer is smaller. This option allows for a complete bench mounted extrusion line when using Randcastle's Microtruder line of extruders.

BENCH MOUNTED VERSION MODEL RCPB-2.0



This bench mounted version has the same features as model RCP-2.0 but in a smaller space and lower price. Options are the same. The unit above has a custom water trough attached.

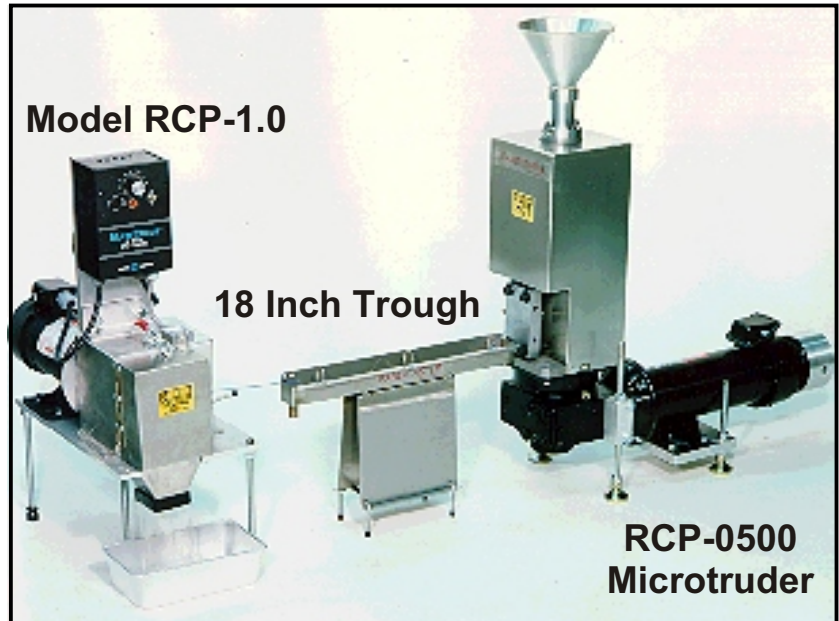
LIGHT DUTY LAB PELLETIZER

Model RCP-1.0

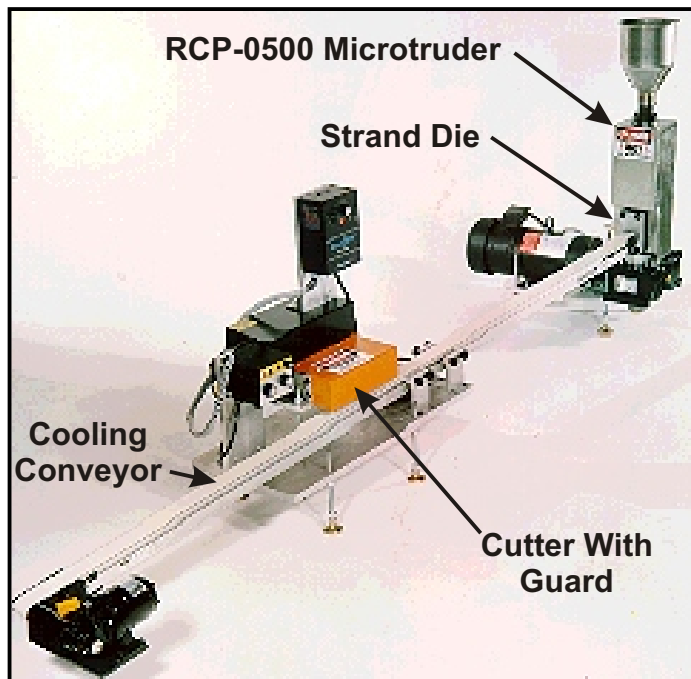
This economical bench strand pelletizer is designed to work with Randcastle Microtruders from 1/4 to 5/8 inch diameter.

It's features include a cantilevered cutting chamber, straight knife cutter, one spring loaded urethane and one knurled stainless steel nip roll, pellet lengths of 0.01 to 0.06 inches (depending on which gears are ordered with the unit).

Power is 115 volt single phase.



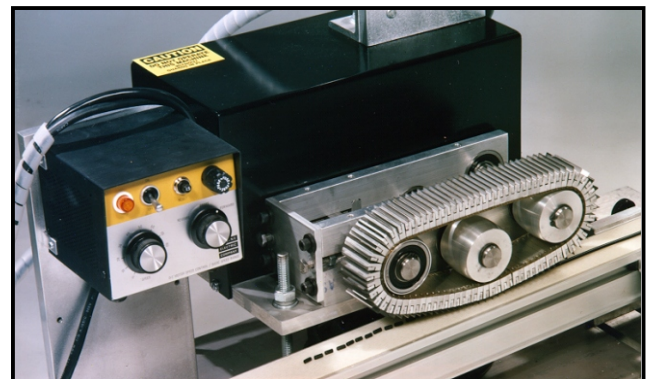
FRAGILE STRAND PELLETIZER



Model RCP-2.0-RZB

This unique 2 inch pelletizer was designed for extremely fragile water soluble strands. The strands were so delicate that they could not pass through a nip roll.

The knives push into the cooled strands cutting them to 0.31 inch lengths. The cutter can be positioned along the conveyor to adjust processing conditions.



CUTTER VIEWED WITH GUARD REMOVED

FOR MORE INFORMATION ON CAST FILM, BLOWN FILM, SHEET, COEXTRUSION, TUBING, EXTRUSION MOLDING, MONOFILAMENT, PELLETIZING LINES, OR THE RANDCASTLE LAB, PLEASE CONTACT:

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