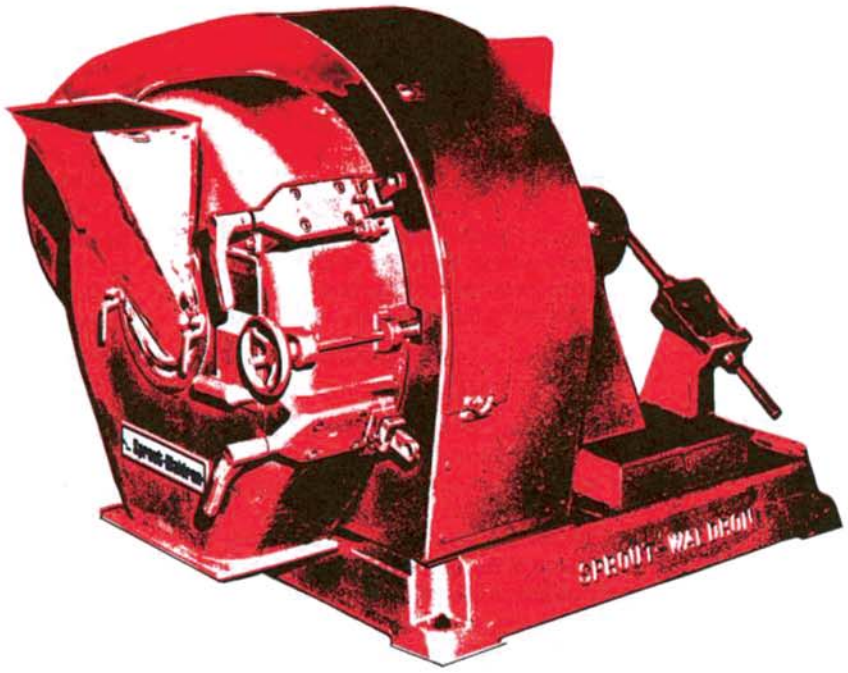
Bulletin 5032

(Replaces Bulletins 5030 & 5062)

Pellet Ace™ Industrial/Laboratory



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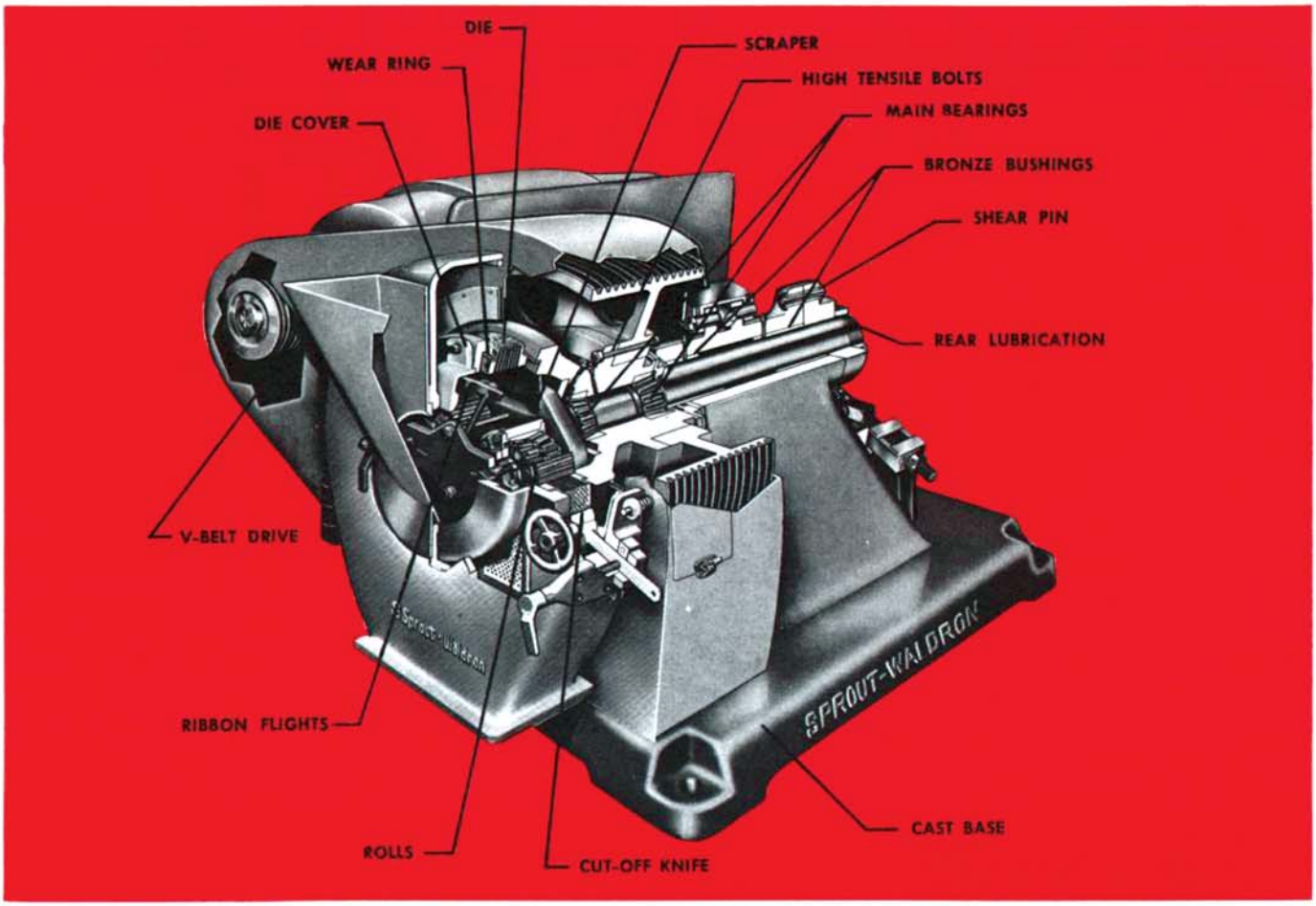


Mechanical Features

1. Only two anti-friction roller bearings (the main shaft and roll shells) are used on the Ace to reduce parts inventory and keep service costs down. There are several bearing seal options and bearings can be lubricated either manually or from an automatic system without interrupting production.
2. Pellet mill is available in stainless or carbon steel where in contact with product.
3. Highest quality control of dies and rolls. Critically important to maximize pelleting efficiency, dies are made on Sprout-Waldron's custom-designed equipment that provides smooth holes $^1/_8$" to 1" diameter. Heat treating facilities monitored by a modern metallurgical laboratory provide carefully controlled hardening. Stainless or standard steel alloys are available to fit application. A variety of roll shell surfaces are available to provide necessary traction with your product, a most important factor in high efficiency, low cost/per ton processing.
4. Uniform feeding. Feed stock can be brought from storage direct to a Sprout-Waldron feeder conditioner mounted on the mill that delivers material to the die cavity. This delivery is also possible with a 9" screw, a double agitator mixer, a weigh belt feeder, etc. Once inside the die, adjustable feed distribution plows assure a uniform mat of material across full width of die face, a most significant factor in maintaining uniformity of pellets and even wear across die width.
5. A tight die fit is maintained between die cover and die housing by use of replaceable wear rings.
6. Overload protection is provided by a shear pin on the main shaft. Coupled with a limit switch, mill motor is shut down when shock loading of foreign material is encountered. As the drive coasts to a stop, bronze bushings permit the main shaft to rotate.

Models 500L/501G ...Outstanding Performers in the Lab and in Industry

These two pellet mills are part of a family of V-belt driven units ranging from a bench-type lab model to the high capacity Model 32V-400 with 400 hp. They feature a straight-forward, uncomplicated design that means fewer moving parts, easier lubrication and maintenance than competitive units. This further means that you get the lowest operating cost of any pellet mill available; thus, lower cost per ton of pellets.

The V-belt drive is 98% efficient and provides high pelleting capacity per hp. The massive drive sheave gives a flywheel effect to smooth out shocks of wet, dense or irregular material.

The basic design has been proven in nearly 40 years of operation.

Model 500L

Die Size: 12" I.D.
Rolls: Two
Max. Hp: 40 hp
Unit Weight: 2300 pounds
(less drive and feeder)

The Laboratory Model 500L is scaled down from our standard production model. It is designed to operate in the laboratory environment at reduced through-put, less power and it requires less space.

The 500L is a useful tool for developing formulas, process design, semi-production runs and to provide samples for market studies. This approach assures the greatest possible accuracy in determining the pelletability of any product and scale-up data prior to full scale production.

Often the 500L is used for production when the application requirements are not severe duty.

Model 501G

Die Size: 16½" I.D.
Rolls: Two
Max. Hp: 10-150 hp
Weight: 4600 pounds
(less drive and feeder)

This full size production unit is designed to withstand the high pressure and rugged service that is demanded by most industrial applications.

The Industrial Pellet Mill features a large diameter main shaft and large bearings to handle high stresses. The die mounting is unique. Both front and rear of the die are supported to reduce die stresses as much as 75%. The massive base and main bearing support are cast iron integrally molded to withstand the high forces of pelleting.

HOW A PELLET MILL WORKS

Powdered or granular material is fed into the rotating cylindrical die (1).

The material is distributed to rollers (2) by centrifugal force plus the spreading action of the feed distributor plows (3).

The rotating die carries the material into the nip between roller and die. The roller rotates on its own axis, driven by friction.

Roller pressure forces material through die holes, forming pellets.

The extruded pellets are cut off by knives (4) and (5).

Pellets are then discharged from the mill for cooling and drying or other processing.

Evaluation

The Industrial Ace has been applied for agglomerating products ranging from plastic re-grind to powered clay.

First consideration in evaluating a pellet mill is: "Will the material knit or bind together under compression of pelleting?" If not, is a binder practical cost-wise and is it immune to detrimental thermal or chemical reaction?

How abrasive is the product? Will it cause high wear on dies beyond economical justification? What will be the power demand?

While the small Sprout-Waldron lab mill can make a basic evaluation of pelletability, industrial products are frequently unique, thus it is advisable to perform a test in our Experimental Laboratory on full size equipment to establish the required die characteristic, speed of operation and horsepower required. Many of the operating conditions can be established to guide your operators and assure trouble-free, high capacity performance.

NOTICE

Photographs, illustrations, drawings and descriptions contained in this publication are not intended to depict actual operating conditions or to suggest operating procedures. They are included only as a means of highlighting the features of the machinery. Manufacturer's operating instructions and recommended safety procedures must be expressly followed during equipment installation and operation.

Here are some products successfully pelleted:

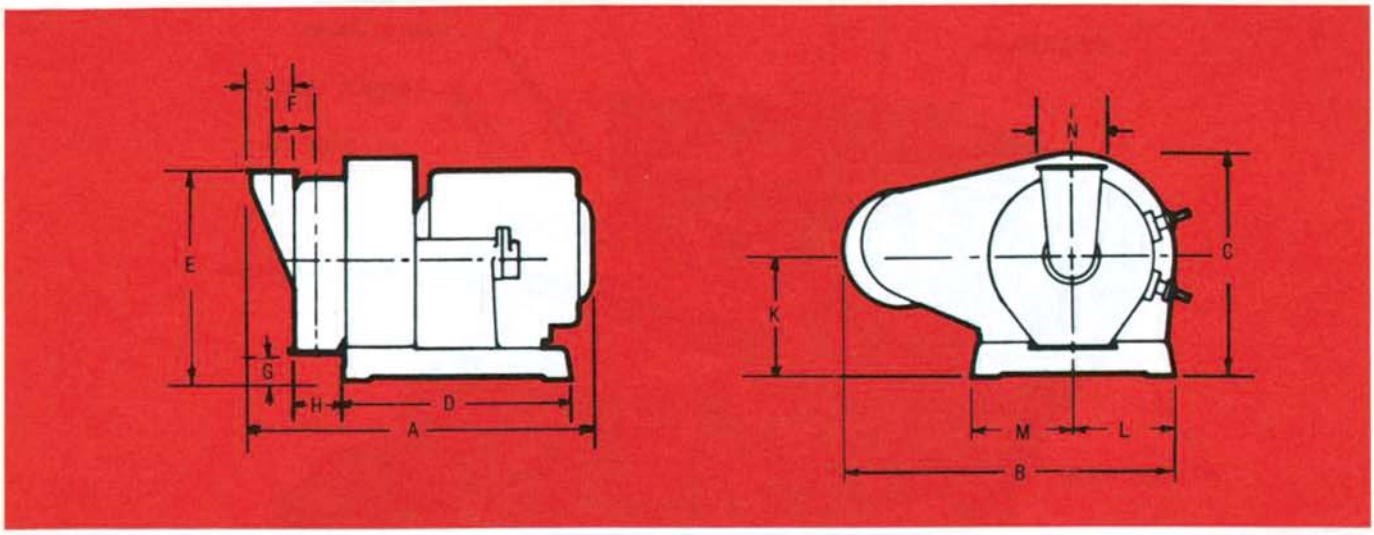
Antioxidants
Catalysts
Cellulose Acetate
Clay
Coal and Lignite
Coke Dust
Cornstarch
Detergents
Fertilizers
Fullers Earth
Graphite
Insecticides
Kaolin
Lignite
Organic Fertilizer
Phenolic Resin
Polyehtylene, Scrap and Powder
Rubber Accelerators
Sawdust
Soaps
Sodium Nitrate
Sodium Nitrite
Superphosphates
Tobacco
Uranium Compounds
Urea
Urea Dolmite
Wood Pulp
Wood Bark

Advantages

- **Reduces bulk and storage space** Pelleting increases the bulk density of material, cuts storage space requirements to an absolute minimum.
- **Reduces dust** - makes the work area more comfortable and minimizes the loss of fine powered ingredients.
- **Improves feeding characteristics**- many powered materials susceptible to flooding at bin discharges can be pelleted to increase particle size.
- **Improves bulk handling** - difficult-to-handle materials assume free-flowing characteristics.
- **Reduces drying and cooling costs** many materials in pelleted form can be cooled and dried more economically by using less expensive equipment.
- **Prevents separation** of combined ingredients to assure product uniformity and quality.
- **Saves labor** in several ways, including the mechanization of many processing steps.
- **Facilitates binding** of two or more ingredients otherwise impossible or difficult to join.
- **Converts waste** materials into useful form.

Dimensions:

Dimensions are approximate. For installation, request certified print.



Model	A	B	C	D	E	F	G	H	J	K	L	M	N
501G	75¼	81¾	48¼	50	45 9/16	9 9/16	6	10 1/8	9	26	22	22	13
500L	50 9/16	63½	39¾	38	39½	7 13/16	5	6 5/8	9 3/8	23	18	23	10

To secure a lab test: (1) Discuss application with Pelleting Sales, Muncy; (2) fill out and return OSHA Form #20 and Pelleting Check List which will be sent you; (3) send in a 5 gallon sample of the product to be pelleted.

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