VARIABLE SPEED STRAIGHTENING MACHINES

For Medium Sizes of Coil Stock

- Remove coil curvature from coil stock .018" to .065" thick, up to 8" wide.
- Synchronize straightening and feeding speed with the operating speed of the press.
- In hand feeding, supply the stock through the straightener rolls to a positive stop.
- Straighten blanked out parts for subsequent assembly operations.

Easily moved from one press to another.

Supplied in varied constructions to handle special widths and thicknesses of stock.

Bring speed, efficiency and economy to the handling, processing and feeding of coil stock.

F. J. LITTLE MACHINE CO.
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Bulletin C-12, Page 1 (Revised)
The "308" Straightens Coil Stock
.018" to .065" thick / Up to 8" wide

COIL STOCK EMERGES FLAT
from a 308 straightener. The curvature is gone. The stock is ready for stamping or blanking on either automatic or hand-fed presses, or for cutting to lengths in a shear. The 308 is also used for straightening blanked out parts for subsequent assembly operations.

VARIABLE SPEED ADAPTABILITY
The ten variations of 308 Straighteners all function in the same manner. Stock is pulled through the straightener rolls by a pair of pinch rolls which are motor driven through a variable speed transmission providing a speed ratio of 6 to 1. It is easy to adjust the straightener to supply the straightened stock at the correct speed for the press used. A control arm operating a switch regulates the stock loop between the straightening machine and the press. An electric clutch and brake can be supplied for situations where the stop and start action of the control arm puts undue stress on the motor. The advantages are described in detail on page four of this bulletin.

CUSTOM BUILT AT
STANDARD MODEL ECONOMY
The ten variations of standard construction of the 308 series straighteners provide a high degree of adaptability. Littell engineers need only to know the sizes, thicknesses and type of coil stock to be straightened in order to provide exactly the right model 308 for any shop's medium range stock straightening requirements.

As stated previously, all 308 straighteners are identical in basic design. Variations are in roll diameter, roll centers, number of rolls and types of bearings. The width and thickness range of the stock to be straightened is the basis for determining which 308 model best applies. Some 308 models have straightener rolls mounted in ball bearings. Other models have the straightener rolls mounted in needle bearings with the lower rolls power driven. Power driven rolls are generally recommended. They permit handling of heavier stock than do ball bearing straightener rolls. They often permit starting new coils with no raising of straightener rolls, no readjusting.

The model number of any 308 series straightener identifies its individual characteristics. The initials "BB" following the numeral mean that all straightener rolls are ball bearing. The initials "PD" mean that the lower straightener rolls are power driven. The letters "S" or "L" indicates the size of the straightener rolls. "S" means 1 3/4" diameter. "L" means 2 3/4" diameter. Thus, a No. 308-7BBB (Fig. 4) indicates seven straightener rolls, all straightener rolls ball bearing, and 1 3/4" in diameter.

SPECIAL MODELS FOR
THICK AND THIN STOCK
When the thinnest stock in the range handled by the 308 series is to be straightened, the 308 model can be furnished with a 9-roll straightener head, with the lower rolls power driven. If the stock is even less than .018" in thickness, the need is for a Littell 208 series straightener. Description of this 17-roll straightener, with 1" or 1 1/4" diameter straightener rolls on 1 3/8" centers, is to be found in Littell Bulletin C-1.

For stocks 8" or more wide and over .065" thick, a number of heavy duty Littell Straightening Machines are available. The maximum width and thickness of stock to be handled determines the specifications of the straightening machine best adapted to the stock. This information regarding stock width and thickness should, therefore, be furnished with any inquiry.

Complete information on Littell Heavy Duty Straightening Machines is to be found in Littell Bulletins C-20, C-30, C-35, C-40, and in Bulletins F-5, F-10, and F-20. Copies are obtainable on request.
5-ROLL POWER DRIVEN STRAIGHTENER
WITH GUARDS REMOVED
Recommended for heavier materials. The two upper rolls are adjustable to handle different thicknesses of stock. The three lower rolls are power driven. Direction of feed is right to left. Capacity and other details of this straightener are shown at the top of page 4.

7-ROLL BALL BEARING STRAIGHTENER
WITH GUARDS REMOVED
Recommended for straightening thin stock. The three upper straightener rolls are raised or lowered either individually or together by means of a crank wrench. Gauges on the side frames indicate the settings. Straightener rolls diameter is 1¾" or 2⅛", depending on thickness of material. For capacities and further details, see the specifications at top of page 4.

7-ROLL POWER DRIVEN STRAIGHTENER
WITH GUARDS REMOVED
Showing gearing arrangement for power driving the two pinch rolls and four lower straightener rolls. T-iron stock guides keep the incoming stock centered. The three upper straightener rolls are raised or lowered individually or together by means of a crank wrench. Roll settings are indicated by gauges on the side frames. This type of straightener is recommended for use on slightly heavier stock than the 7-Roll Ball Bearing Straightener also pictured in this page (Figure 4). Straightener rolls are supplied either 1¾" or 2¼" diameter depending upon stock to be straightened. Capacity and other details are listed in the chart at top of page 4.

MODEL 308-7PD STRUCTURAL VIEW
Right side view with guards and door removed. Visible from top to bottom inside the fabricated steel base are the chain drive mechanism of the pinch rolls, the 25 to 1 speed reducer unit and the 6 to 1 variable speed transmission. Also in plain view is the 1 HP, 220/440 volt, 3-phase, 60 cycle motor.

VARIABLE SPEED STRAIGHTENER COMBINED WITH COIL CRADLE REEL
One compact unit holds the coil, removes coil curvature, and supplies the straightened stock to punch press or shear. Supported on 3 ball bearing rolls, the stock uncoils smoothly, with guide plates preventing side motion. Arm Loop Control automatically starts and stops the motor so as to provide even flow to press or shear. Straightening speed is adjusted by a 6 to 1 Variable Speed Transmission. Other than standard speed range of 10 to 60 fpm can be furnished on request. On casters for easy mobility. Cradle holds 2,000 pound coils of 8" max. width, 40' max. O.D., and 10" minimum I.D. (Minimum stock thickness of .040" accommodated by this cradle.) Pinch Rolls are 3½" in diameter, 8½" long. Number, type, and dimensions of straightener rolls are determined by stock to be straightened. See specification table on page 4.
TYPICAL "308" SPECIFICATIONS

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<tr>
<th>Similar to Fig.</th>
<th>Size</th>
<th>Max. Width of Stock</th>
<th>Dia.</th>
<th>Center to Center</th>
<th>Rolls No.</th>
<th>BB or PD</th>
<th>Capacity in Steel Half Hard</th>
<th>Price</th>
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<td>7 PD</td>
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NOTES: 1. BB means all Straightener Rolls are idlers mounted on Ball Bearings.
2. PD means lower Straightener Rolls are power driven from pinch rolls and upper Straightener Rolls are idlers mounted on Ball Bearings.
3. Standard Feed line height 40".
4. Pinch Rolls on all #3 are 3 1/2" diameter.
5. A 1 HP motor on #308 and a 1 1/2 HP on #312 Machines.
6. Floor space on #308—19" x 28"; on #312—23" x 28".
7. Shipping Weight on #308—800 lbs. on #312—900 lbs.
8. Standard speed of this machine is 10 to 60 feet per minute or 5 to 30 feet per minute, or special as required.
9. Where speed must exceed 120 feet per minute, a clutch brake is required.

ELECTRIC CLUTCH BRAKE EQUIPS NO. 308 MACHINES TO HUMP FEED OR STRAIGHTEN AT HIGH SPEED

Any Littell No. 308 Straightener can be ordered with a Warner Electric Clutch-Brake Assembly attached to the lower pinch roll shaft. With this arrangement, the straightener motor runs continuously, unaffected by movement of the control arm. The control arm simply engages the clutch or brake as the operation requires. With no starting torque strain on the motor involved, frequency of starting and stopping is practically unlimited and production potential multiplied. Furthermore, instant, full speed starts make it possible to supply a large quantity of straightened stock in a short time, and permit hump feeding to a press or shear.

The Electric Clutch-Brake also eliminates the excess over-run of stock common to high speed work with sudden stops. The electric control arm keeps the clutch engaged as long as stock is required. When sufficient straightened stock has been produced, the electric control arm drops down, disengaging the clutch and engaging the brake at the same instant. The result is instantaneous stopping of the straightening rolls and shut-off of excess stock.

To order, specify No. 308 model, with Warner Clutch-Brake. Example—No. 308-7PD with Warner Clutch-Brake.

## Fig. 9

This illustration shows hump feeding to a shear. The arm control is set above the stock to permit the amount of hump desired. Hump feeding to a punch press is essentially similar except that the positive stop is located in the die. The moment the stock hits the stop the operator trips the press to form or blank the part. Immediately after stamping, new straightened stock supplied from the hump is automatically pushed to the stop in the die for another cycle of operation.

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