Model 835

ROLL FORMING MACHINE

Pitch Line Speed:
With 5 H P Motor
(Approx 90 fpm)

Dimensions:
Length
Width
Overall Height
Apron Height
Forming Stations
Approx. Shipping Weight
Motor
60 Hertz A.C. Circuit*

5 H P 230-460 Volt, three phase.

1.200 lbs

*Note: Other motor characteristics available at additional cost

Receiving Machine

Visibly check machine for possible shipping damage.

When damage is evident, insist on a notation on the freight bill.

If repairs are necessary, contact Engel Industries, Inc.

Unloading Procedure

Infeed Table

Outfeed Table

Side Panels

Bottom Frame Members

When it is necessary to lift the machine off the transport vehicle
and lower it to the ground, lift or support the machine by using
the skids or by removing the side panels and lifting the machine
by the bottom frame members. (NOTE: Lifting the machine by
the infeed or outfeed table would result in extensive damage to the
machine.) If the machine is unloaded onto a loading dock, then
rollers can be put under the skids, or the machine can be slid
or dragged on the skids.

Positioning Machine

Move the machine to its desired location.

Remove the skids.

Level the machine.

Fasten machine securely to floor.
**Electrical Connections:**

Supply electrical service to the starter box (located under the feed table) in accordance with local electrical codes. Refer to the connecting instructions on the inside of the starter box. **NOTE:** If the machine is powered by a three (3) phase motor, it is possible to initially wire the motor in reverse. If this happens, switch two (2) of the three (3) supply wires. This will correct the rotation of the motor.

**Lubrication:**

After approximately every 80-100 hours or every two (2) weeks, lubricate the machine in the following manner:

1. As a safety precaution, disconnect electrical supply.
2. Remove top roll cover (guard).
3. Apply open-type gear grease to the exposed surfaces of all the gears. Recommend: Chem-A-Lube (made by National Chemsearch Corp. in Dallas, St. Louis, New York, Los Angeles, Montreal) or equivalent.
4. Apply light oil to the forming rolls to prevent galvanize build-up as required.
5. Connect power, turn machine on, and with a pressure type grease gun, apply grease to lube fittings. **NOTE:** Remove right apron for access to fittings on side plate for idler gears. Recommend: Lubriko Grease (Made by Master Lubricants Co., in Philadelphia, Boston, Chicago, San Francisco, Los Angeles, Montreal) or equivalent.
6. For units with oil bath reducers, change oil at least once a year. Recommend: Lubriplate #8 (made by Fiske Bros. Refining Co. in Toledo, Newark) or equivalent.

**IMPORTANT:** Do not use hypoid grease, as it will cause extensive damage to reducer gears.

**Model 300-825**

**Roll capacities and Material Requirements**

<table>
<thead>
<tr>
<th>Shape</th>
<th>Material Required</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>Pittsburg Lock</td>
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<td>20-28 Gauge</td>
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<tr>
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<td>1 3/8&quot;</td>
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<td>1 1/8&quot;</td>
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MODEL 800-825

**Roll Capacities and Material Requirements**

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<td>24-26 Gauge</td>
</tr>
<tr>
<td>Male Button Lock (20 Ga.)</td>
<td>7/16&quot;</td>
<td>20-26 Gauge</td>
</tr>
<tr>
<td>Male Button Lock (24 Ga.)</td>
<td>7/16&quot; (ea. side)</td>
<td>24-26 Gauge</td>
</tr>
<tr>
<td>Acne (Double Seam)</td>
<td>7/16&quot;</td>
<td>20-28 Gauge</td>
</tr>
<tr>
<td>Drive Cleat</td>
<td>2 1/8&quot;</td>
<td>20-28 Gauge</td>
</tr>
<tr>
<td>Reinforced Flat &quot;S&quot;</td>
<td>3 3/4&quot;</td>
<td>22-28 Gauge</td>
</tr>
<tr>
<td>Tap-In-Lock</td>
<td>1 3/4&quot;</td>
<td>22-28 Gauge</td>
</tr>
<tr>
<td>Standing Seam</td>
<td>1 1/8&quot;</td>
<td>22-28 Gauge</td>
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<tr>
<td>Right Angle Flange</td>
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MODELS 835, 1000, S-5-10, 1240, 1535, 1640

**Outboard Roll Sets:**

| Pittsburgh (18 ga.) 3/8" Pocket-            | 1 1/4" Notch-1 1/8" | 18-24 Gauge |
| Pittsburgh (16 ga.) 1/2" Pocket-            | 1 1/2" Notch-1 3/8" | 16-20 Gauge |
| Female Button Lock (20 ga.)                 | 1 3/8"            | 20-24 Gauge |
| Male Button Lock (20 Ga.)                   | 7/16"             | 20-24 Gauge |
| Standing Seam--Duplex                       | 2 1/8"            | 16-20 Gauge |
| Right Angle Flange (16 ga.)                 | 1"                | 16-20 Gauge |
| Tap-In-Lock                                 | 3 1/2"            | 18-24 Gauge |
| Standing Seam--Triplex                      | 2 1/8"            | 18-24 Gauge |
| Right Angle Flange (18 ga.)                 | 1"                | 18-24 Gauge |
| Duplex                                      | 1 5/8"            | 16-20 Gauge |
| Right Angle                                 | 1 1/2"            | 16-20 Gauge |

**Adjustments:**

This machine is factory adjusted, however, after much usage, adjustments may be necessary.
FEMALE SNAPLOCK #8 TOP

20 Gauge Capacity:
Use deep groove for 20 & 22 gauge
Use shallow groove for 24 & lighter

24 Gauge Capacity:
Use deep groove for 24 gauge
Use shallow groove for 26 & lighter

FEMALE PITTSBURGH #7 TOP

16 Gauge Capacity:
Free Standing unit 16 to 20 gauge capacity only
16 gauge rolls on transfer system (18 ga. cap.)
Use deep groove for 16, 20, & 22 gauge
Use shallow groove for 24 & lighter

18 Gauge Capacity:
Use deep groove for 18 & 20 gauge
Use shallow groove for 22 & lighter

Note: By use of the word use, this means roll groove would be
next to the end cap & bolt.
FEMALE BUTTON LOCK

USED FOR 20 & 22 GA.

USED FOR 24 GA. & LIGHTER

END CAP WASHER

BOLT

INBOARD SIDE

OUTBOARD SIDE
FEMALE BUTTON LOCK

Used for 22 & 24 GA.

Used for 26 GA. & Lighter

Spacer

End Cap Washer

Bolt

Inboard Side

Outboard Side

SVC-6
PROCEDURE FOR SPACER POSITIONING
GOVERNMENT LOCK FOR 835, 1000, 1240 ROLL MACHINES

THE 3/8" SPACERS PROVIDED WITH THESE ROLLS ARE USED TO CHANGE THE WIDTH OF THE PART. WHEN A 1 1/8" PART IS DESIRED, SPACER IS PLACED AGAINST SIDE PLATE (OPPOSITE GEAR SIDE AS SHOWN WHEN NOT IN USE), WHEN A 1 1/2" PART IS DESIRED, SPACER IS PLACED ON SPINDLE, (AS SHOWN WHEN IN USE).

TO POSITION SPACERS, LOOSEN BOLT "E" AND PLACE SPACER IN DESIRED LOCATION. THEN, TIGHTEN BOLT "E".

TO ADJUST "A" DIMENSION, LOOSEN JAM NUT "D", TIGHTEN OR LOOSEN BOLT "C" UNTIL PROPERLY SET, THEN TIGHTEN JAM NUT "D".
Instructions for changing Button Punches on Engel Snaplock Machine.

*No. 1. Remove four (4) socket head screws holding head assembly to frame, and slide head back three (3) inches, or so.

No. 2. Remove No. 2 bottom roll by removing Hex Head bolt and end cap washer. Slide roll off of spindle.

No. 3. On the back side of roll there will be four (4) large socket head bolts, and four (4) small socket head cap screws.
   A. Remove four (4) large bolts, and separate the two parts of the roll.
   B. Loosen four small socket head cap screws.
   C. Remove the four (4) punches, and replace with new ones.
   D. It may be necessary to lightly sand the sides of the new punches before they will fit in the slots.
   E. Be sure buttons are all the way to the back side of slot. If necessary, after putting roll back together, tap on the punches lightly with a rubber or brass hammer.
   F. Tighten four (4) large bolts as tight as possible.
   G. Now tighten four (4) small socket head cap screws and replace roll on spindle, replace end cap and bolt.
   *H. Slide head back into position and replace the four (4) bolts holding it into the frame.

No. 4 Upper Slitting Wheel simply by removing end cap and bolt and removing the slitting half of upper roll.

* This applies to transfer system only. On free standing unit remove tie plate only.

NOTE: WARNING DO NOT LOOSEN BOLTS FROM HEAD OF FREE STANDING UNIT.
MS-SQURLD N0. SCG-3
T - TRANSFORMER MODEL 33120-PM
SQ D 9001 P.B. BW 75Y
WIRE COLOUR MAY VARY

230-3-60 VOLTAGE REQUIREMENT
AND 5 0.7 1/2 HP DRIVE MOTOR.
1. FORMING HEADS:

The forming heads of all standard Engel roll forming machines are of the same basic construction, and the lubrication procedure is common to all models. Roll shafts have torrington inner races fitted on each end and rotate in torrington needle bearings pressed into the side frames. These bearings are packed with the proper lubricant at assembly and need no further attention for approximately two thousand (2000) hours of normal service. However, it is recommended that the bearings be repacked every twelve (12) months even though the machine has had relatively few hours of use.

The roll shaft bearings can be repacked by removing the outboard rolls, sliding the inner races toward the ends of the shafts and filling the void between the shafts and the bearings with a proper bearing grease, by means of a grease gun equipped with nozzle that can be inserted in this void. The inner races are then slid back into place and the roller dies reinstalled in their proper relation.

Warning: It will be noted that the extended spindles on one side of the machine will be flush with the outer face of the rolls and the end cap washers "bottomed out". It is necessary that they be placed in the same condition before the opposite the "bottomed" side. Be sure that there is the proper relationship between top and bottom roll sets and all fasteners are secure before attempting to operate the machine.

The idler, or transfer gears, that complete the gear train of the lower shafts rotate on torrington bearings and are lubricated through grease fittings located in the side-plate underneath the outboard rolls on the right (gear side) side of the machine. These should be lubricated with the same grade of bearing grease used on the roll shafts every forty (40) hours.

2. SPEED REDUCTION:

All models equipped with the open gear type speed reducer bolted to the forming head, are lubricated through grease fittings located in the sheet metal panel on the left side of the machine. These should be lubricated every eight (8) hours of operation with the same grease used on roll shafts.

All models equipped with right angle oil bath gear reducers have an oil level plug. This level should be maintained by adding when necessary a 140-wash oil that contains no harmful additives. E.P. or moly grease is not to be used.

Power is transmitted from this reducer to a jackshaft mounted to the underside of the forming head by a roller chain. This chain should be lubricated sparingly with 10-20W engine oil when signs of dryness appear.

The jackshaft(s) rotate(s) in heavy duty torrington bearing assemblies and require the same lubrication schedule as the roll shafts.
3. **DUAL HEAD APPLICATIONS:**

   IN ADDITION TO THE ABOVE, THE DH MACHINE HAS A SPLINED LINE SHAFT OVER WHICH THE MOVABLE HEAD MUST TRAVEL, TWO MACHINE SLIDES (OR WAYS) AND TWO RECIRCULATING BALL SCREWS—ALL OF WHICH MUST BE KEPT FREE OF ANY FOREIGN MATTER. THE BALL SCREWS AND SPLINE SHOULD BE OILED LIGHTLY WITH A 10-20W OIL WHEN NECESSARY AND, PREFERABLY, A DRY LUBRICANT, SUCH AS GRAPHITE USED ON THE SLIDES.

4. **GENERAL:**

   A. **KEEP ALL FASTENERS TIGHT, WITH PARTICULAR ATTENTION TO CAPSCREWS THAT RETAIN ROLLS ON SHAFTS AND VERTICAL ROLL ADJUSTMENTS. CHECK CLEARANCES BETWEEN TOP AND BOTTOM ROLLS AND SEE THAT THEY ARE MAINTAINED.**

   B. **KEEP ALL ROLLER DIES CLEAN, WITH SPECIAL ATTENTION TO ZINC AND CHIP BUILD-UP.**

   C. **OIL ROLLS DAILY WITH LIGHT MACHINE OIL. KEEP ALL ROLLER CHAINS AND BELTS TENSIONED PROPERLY. REPLACE WHEN EXCESSIVELY WORN.**

   D. **AVOID IMPACT OR HEAVY LOADING ON ENTRANCE AND EXIT TABLES.**

5. **SUGGEST LUBRICANTS:**

   - **LUBRICO—DENSITY M-6—FOR ALL TORRINGTONS**
   - **LUBRIPLATE BB—FOR ALL OIL BATH REDUCERS**
   - **MEOLOUBE FOR ALL OPEN GEARS**

   IN THE EVENT THE ABOVE ARE NOT READILY AVAILABLE, CONSULT YOUR LOCAL SUPPLIER FOR EQUIVALENTS.
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WARNING

NEVER PUT YOUR HANDS IN THE POINT OF
OPERATION OF ANY MECHANICAL OR ELECTRICAL
DEVICE.

IF A MACHINE IS JAMMED, NEEDS ADJUSTMENTS,
NEEDS DIE CHANGES, ETC. ALWAYS DO A LOCK-
OUT/TAG-OUT PROCEDURE WHICH MEANS THE POWER
MUST BE OFF AND LOCKED-OUT AND ANY RAMS OR
BEAMS WILL BE BLOCKED TO ENSURE SAFETY. THIS
IS A FEDERAL OSHA REQUIREMENT AND MUST BE A
WRITTEN AND TRAINING TYPE OF PROGRAM.