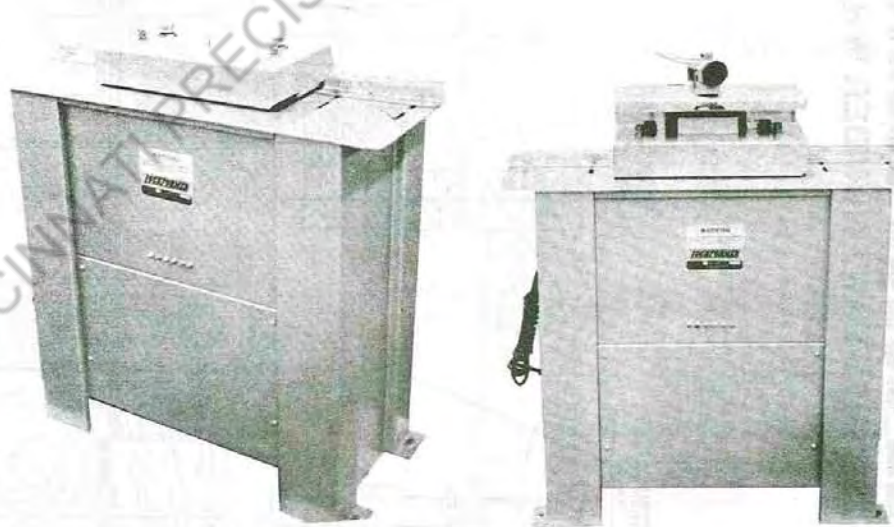




# LOCKFORMER

**20 or 22**  
**Instructions and Parts Diagrams**  
**with Auto Guide Flanger Mounted**



711 OGDEN AVENUE



LISLE, ILLINOIS 60532

## WARRANTY

Our guarantee on the products we manufacture is limited to repair or replacement without charge, of any part found to be defective in materials or workmanship. This guarantee is for a period of one year (unless otherwise specified) from the date of shipment from our factory, for all mechanical features of the machine, except purchased components that carry the warranty of the original manufacturer.

Warranty parts and components will be shipped freight collect from Lisle, Illinois. If the defective part has not been received by Lockformer within 15 working days after receiving the replacement part, your company will be responsible for the cost of replacement.

The warranty provided in this clause is in lieu of all other warranties, express or implied, arising by law or otherwise, including the implied warranties of merchantability and fitness for a particular purpose which are hereby disclaimed by Lockformer and excluded from this agreement. This warranty shall not be modified for any reason. In no event shall Lockformer be liable for consequential or incidental damages.



## CAUTION

**To provide clarity to points in question the illustrations and photos appearing in this manual are shown with cover(s) removed.**

**NEVER OPERATE THIS EQUIPMENT UNLESS ALL COVERS AND GUARDS ARE IN PLACE.**

The information in this document has been reviewed and is believed to be completely accurate. However, no responsibility is assumed for inaccuracies. Furthermore, the LOCKFORMER COMPANY reserves the right to make changes to any products herein, at any time, to improve reliability, function, or design. The LOCKFORMER COMPANY does not assume any liabilities arising out of any use of any product described herein, neither does not convey any license under its patent rights nor the rights of others.



# SAFETY GUIDELINES



You are not ready to operate this equipment if you have not read and understood the safety information in this manual.



## WARNING:

Do not wear loose clothing, neckties, improper gloves, or jewelry while operating this machine. If long sleeves must be worn, avoid loose cuffs or buttons. Tie back or contain long hair.

Wear proper gloves to prevent lacerations caused by sharp edges of stock as it travels through the forming operation.

Never operate this equipment unless all covers and guards are properly installed.

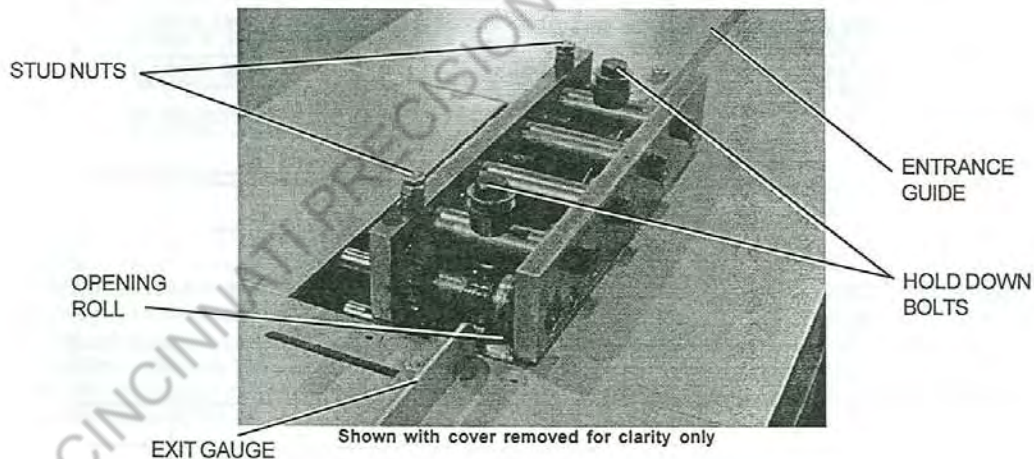
Be alert for loose, worn, or broken parts. Never operate this equipment unless it is in good working condition.

As the stock feeds into the rolls, a pinch point is created as the stock advances. Keep hands clear of this and all pinch points.

Always disconnect the main power supply power and install lock outs when making adjustments or repairs.

When transporting, take into consideration that this machine is top heavy.

Remember that the information contained in this manual is only a portion of an adequate training program. It must be coupled with specific instructions for your application along with full information of national and local safety regulations that may apply.



## Installation

Provide a clean, flat, well lighted installation site. Level the machine and anchor it to the floor. Inspect the gears and drive assembly, and remove any debris that may have accumulated during shipping.

Standard electrical installation requires a 115 volt grounded power supply. Provide a 115 volt receptacle at the point of operation. If a 230 volt motor is ordered, install the power supply in compliance with local and national electrical codes. For further information, contact a certified electrician or the Lockformer Service Department at (630) 964-8000.

## Operating Instructions

### BASIC OPERATION

Hold the stock against the entrance gauge and slide it into the forming head. Be sure that the stock remains against the gauge until the trail edge of stock is engaged in the rolls.

Note: Minimum part length is 7 inches. If a shorter piece is needed, run a long piece, then notch and cut it to size.

Make hold down adjustments, as outlined below, to accommodate slight variations in metal thickness and hardness.

### HOLD DOWN ADJUSTMENT PROCEDURE

1. DISCONNECT POWER !
2. Install lock outs to prevent accidental start up.
3. Remove top cover.
4. Tighten the hold down bolts until snug, then loosen them 3/4 turn.  
This setting should give good results for all stock thicknesses.
5. INSTALL THE COVER, remove lock outs, restore power.
6. Run a test piece.

If the stock slips in the rolls, tighten the hold down bolts equally in small increments until the desired results are obtained.

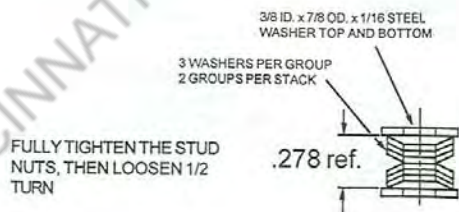
If the stock curls up after forming or shows extremely heavy pressure marks, loosen the hold down bolts slightly.

7. Machine is now ready for production.

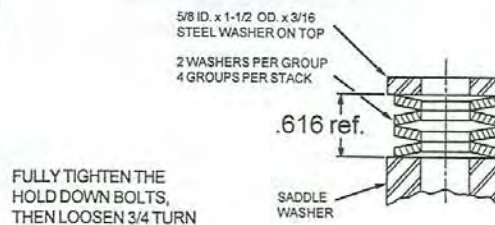
Do not adjust hold downs unless the stock slips in the rolls, pulls away from the entrance gauge, or curls when exiting the rolls.

### BELLEVILLE SPRING WASHERS

#### **3/8" HOLD-DOWN STUDS**



#### **5/8" HOLD-DOWN BOLTS**



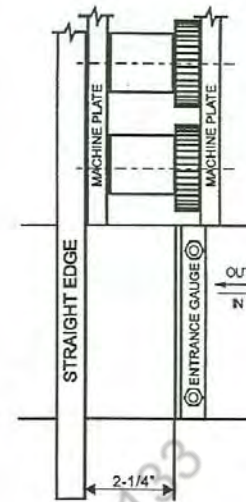
**PITTSBURGH LOCK****HAMMER-OVER LEG ADJUSTMENT**

The width of the Pittsburgh lock hammer over leg is adjustable. Move *only* the right hand entrance gauge in to produce a wider leg and out for a narrower leg. ALWAYS move both ends of the entrance gauge equally, keeping it parallel to the top machine plates.

Never move the exit gauge bar for this roll set. This gauge is not intended to contact the material under normal circumstances.

**OPENING ROLL****CAUTION**

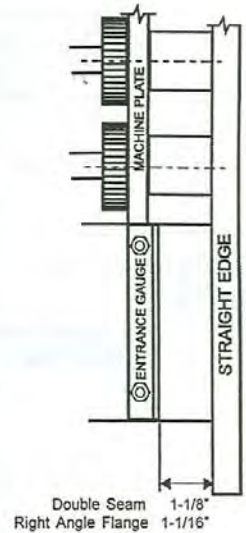
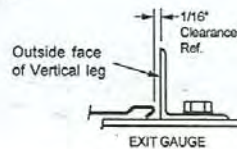
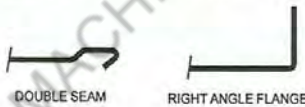
The flat roll mounted horizontally after the last roll station maintains the opening of the gap in the Pittsburgh lock. If burrs or twists caused by snips are present on the stock, they should be flattened. Failure to do this can result in breakage of the opening roll.

**INSTALLATION and OPERATION OF AUXILIARY ROLLS**

NOTE: Standard auxiliary rolls are interchangeable between the standard Lockformer 20 and the Super-Speed models. Since different entrance gauges are required, the model for which the rolls are intended should be specified

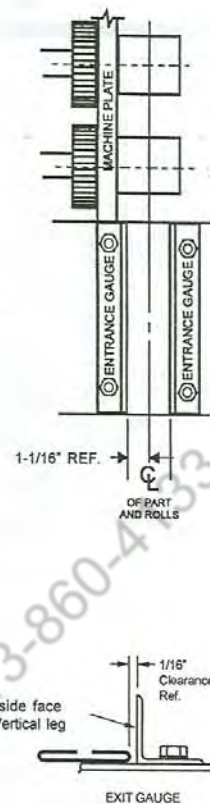
**DOUBLE SEAM or STRAIGHT RIGHT ANGLE FLANGE ROLLS**

1. DISCONNECT POWER.
2. Install lock outs to prevent accidental start up.
3. Remove the cover.
4. Unscrew and remove the right hand side table top section. This will expose the auxiliary shafts on which the rolls will be mounted.
5. Select the first pair of rolls which are marked T1 (Top roll first station) and B1 (Bottom roll first station). Slide them as a mated pair onto the shafts. All information stamped on the rolls must face outward. Slide a key into each keyseat. Follow this procedure in sequence with each remaining pair of rolls.
6. Fasten the rolls onto the shafts with the screws and washers provided.
7. Mount the entrance gauge and set it to the dimensions shown in the illustration.
8. Mount the exit gauge so the outside face of the vertical leg is parallel to the part as it passes over the exit table. Set to allow approximately 1/16" clearance between the part and the exit gauge.
9. Replace the table top.
10. INSTALL THE COVER.
11. Remove the lock outs.
12. Restore power to the machine.



## DRIVE CLEAT ROLLS

1. DISCONNECT POWER.
2. Install lock outs to prevent accidental start up.
3. Remove the cover.
4. Unscrew and remove the right hand side table top section. This will expose the auxiliary shafts on which the rolls will be mounted.
5. Select the first pair of rolls which are marked T1 (Top roll first station) and B1 (Bottom roll first station). Slide them as a mated pair onto the shafts. All information stamped on the rolls must face outward. Slide a key into each key seat. Follow this procedure in sequence with each remaining pair of rolls.
6. Fasten all rolls except the top number 2 onto the shafts with the screws and washers provided. Do not insert a mounting screw into the top 2 rollshaft; this allows the roll to "float" laterally, and center itself to the bottom roll as the stock passes through.
7. Mount the entrance gauges so that the centerline of the stock aligns with the centerline of the rolls.
8. Tighten the stud nuts so that the T5 and B5 rolls do not separate as the drive cleat passes through.
9. Mount the exit gauge so the outside face of the vertical leg is parallel to the part as it passes over the exit table. Set to allow approximately 1/16" clearance between the part and the exit gauge.
10. Replace the table top.
11. INSTALL THE COVER.
12. Remove the lock outs.
13. Restore power to the machine.



**IMPORTANT:** BE SURE TO CUT STOCK EXACTLY 2-1/8 INCHES WIDE TO INSURE AN ACCURATELY FORMED CLEAT.

## MAINTENANCE

### LUBRICATION

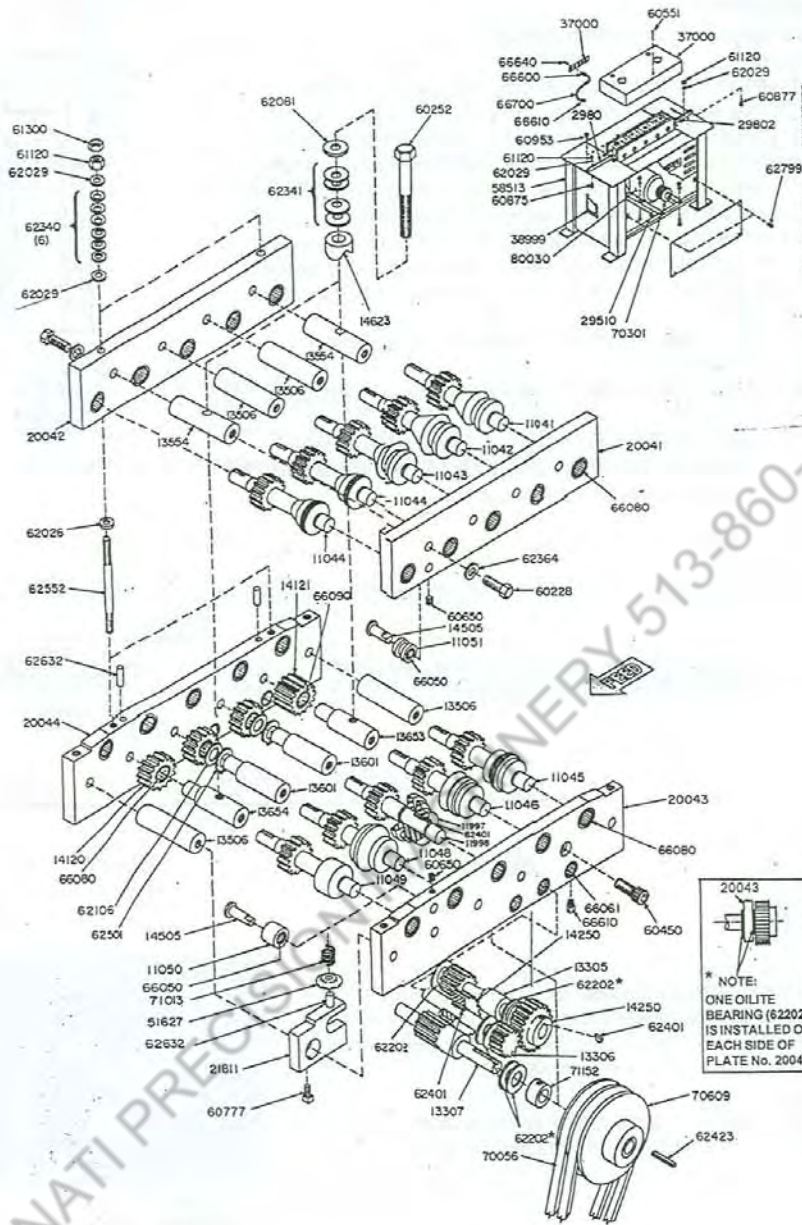
Six grease fittings are located on the side panel of the stand. Lubricate these fittings after every eight hours of operation. The recommended lubricant is Molub-Alloy 777-1 or equivalent. Apply grease to all drive gears after every 40 hours of operation.

If the machine is to be used in a damp environment, apply a film of oil or grease to all unpainted metal surfaces to prevent rust.

### CLEANING THE ROLLS

Keeping the roller dies clean is an important step toward efficient operation of your machine. Lockformer's GALV-OFF aerosol spray cleaner, will soften galvanized build up so that it flakes off by itself. Daily use is recommended to prevent harmful deposits from building up. GALV-OFF cleans and lubricates, as well as protects the forming rolls.





DRAWING NO. XXXXX

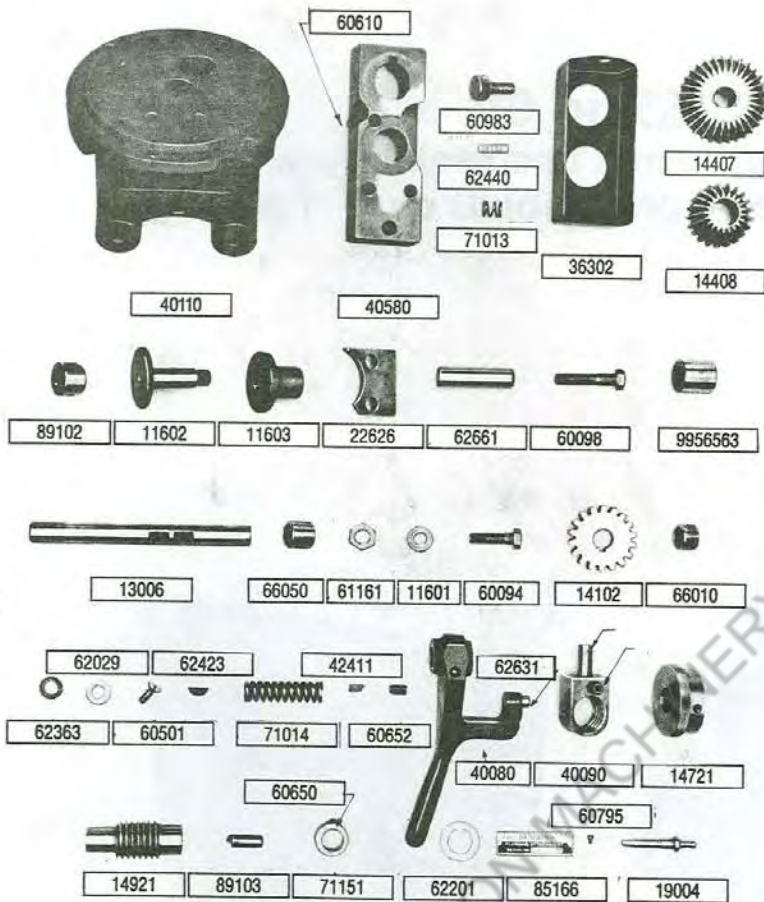
CINCINNATI PRECISION MACHINERY 513-860-4133





# 20 or 22 Gauge Lockformer Auto-Guide Flanging Attachment Parts List

PLEASE GIVE PART NUMBER WHEN ORDERING PARTS



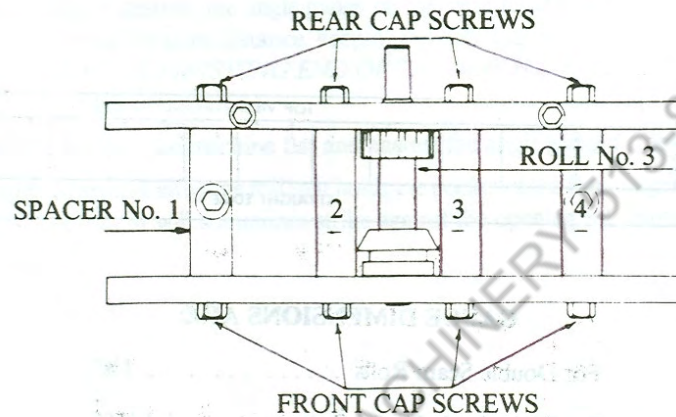
PARTS LIST AND DESCRIPTION		
Part Number	Description	Pieces Per Unit
40110	Base Casting	1
40580	Steel Forming Head	1
60983	Thumb Head Screw	1
62440	Special Machine Key	1
71013	Compressions Spring	1
36302	Cover	1
14407	Bevel Gear	1
14408	Gear (Comb. Spur & Bevel)	1
89102	Lifter Plug	1
11602	Knurled Forming Roll	1
11603	Plain Forming Roll	1
22626	Spacer Plate	1
62661	5/8 x 2-1/4 Dowel Pin	1
60098	3/8-16 x 2 HHCS	2
9956563	Inner Race Assembly (66010 & 66164)	1
13006	Roll Shaft	1
66050	Bearing B1020	2
61161	1/2-20 Hex Lock Nut	1
11601	Adjustable Guide Roll	1
60094	3/8-16 x 1-1/4 HHCS	4
14102	Steel Gear	2
62363	Lock Washer 3/8	4
62029	Washer 3/8 x 1/16	2
60501	1/4-20 x 1/2 FHMS	4
62423	3/16 x 1-1/2 Key	1
60655	5/16-18 x 3/4 SSS	1
62631	3/8 x 3/4 Dowel Pin	1
60610	1/4-20 x 1/4 SSS	3
66010	Bearing B108 Torr.	4
42411	Modified Woodruff Key 61	1
40080	Compensator Arm	1
40090	Tension Screw Nut	1
14721	Gauge Dial	1
14921	Tension Screw	1
19004	Tension Spring Push Rod	1
62641	Dowel Pin 7/16 x 1-1/2	1
71014	Spring	1
89103	Sensory Casting	1
60303	1/4-20 x 3/4 SHCS	1
71151	Collar 5/8	1
85166	Name Plate	1
50258	Stand (Forming Table)	1
62201	5/8 x 1/16 Washer	2
36001	Cover Clamp	2
39501	Cover Guard	1
60309	1/4-20 x 1/2 SH Screw	1
60650	1/4-20 x 3/8 Set Screws	2
66164	Bearing B107	1

# Flanging Attachment for Lockformer Models 20 & 22

## To Install Auto-Guide Power Flanging Attachment

1. Remove top cover from Lockformer.
2. Loosen front cap screws on spacers No. 1 and 4.
3. Remove spacers No. 2 and 3 by taking out front and back caps screws.
4. Set flanging attachment over the forming head so that the combination bevel and spur gear meshes with the gear on Pittsburgh Lock roll No. 3.
5. Fasten flanging attachment with the cap screws which held spacers No. 2 and 3 in place.

**CAUTION: Be sure to tighten all cap screws!**



## To Operate Auto-Guide Power Flanging Attachment

### Adjust Unit For Gauge Material To Be Used

To adjust clearance between flanging rolls, tighten the adjusting screw on the front of the block of the machine all the way, then loosen the screw approximately one eighth of a turn. (This setting is usually correct for 26 gauge material). Do not set front gauge adjusting screw too tight. It should be set just tight enough to draw the metal through the rolls. Too tight a setting will stretch and wrinkle the material.

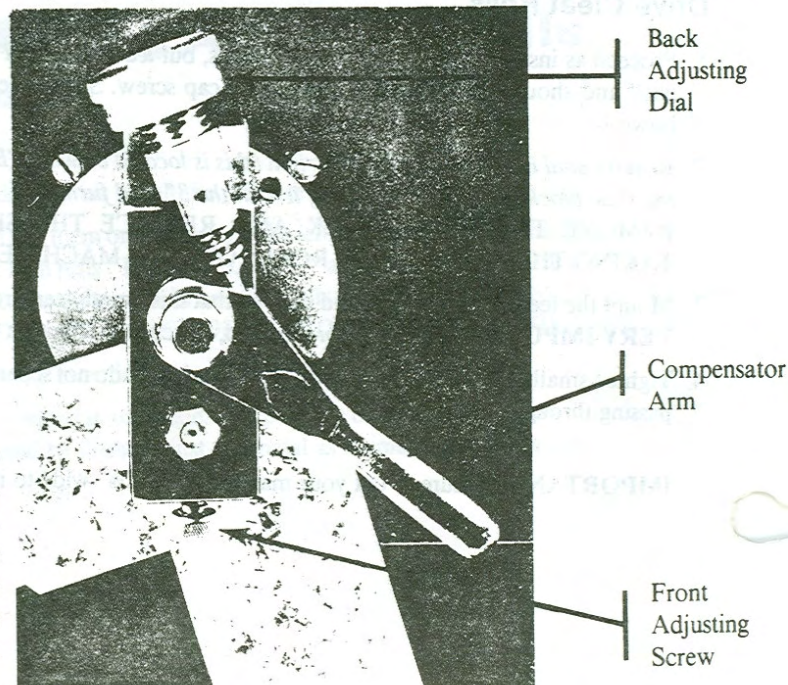
To adjust the spring tension on the compensator arm, tighten the adjusting dial on the back side of the flanger to the stop and then turn back to the proper gauge setting shown on the adjusting dial.

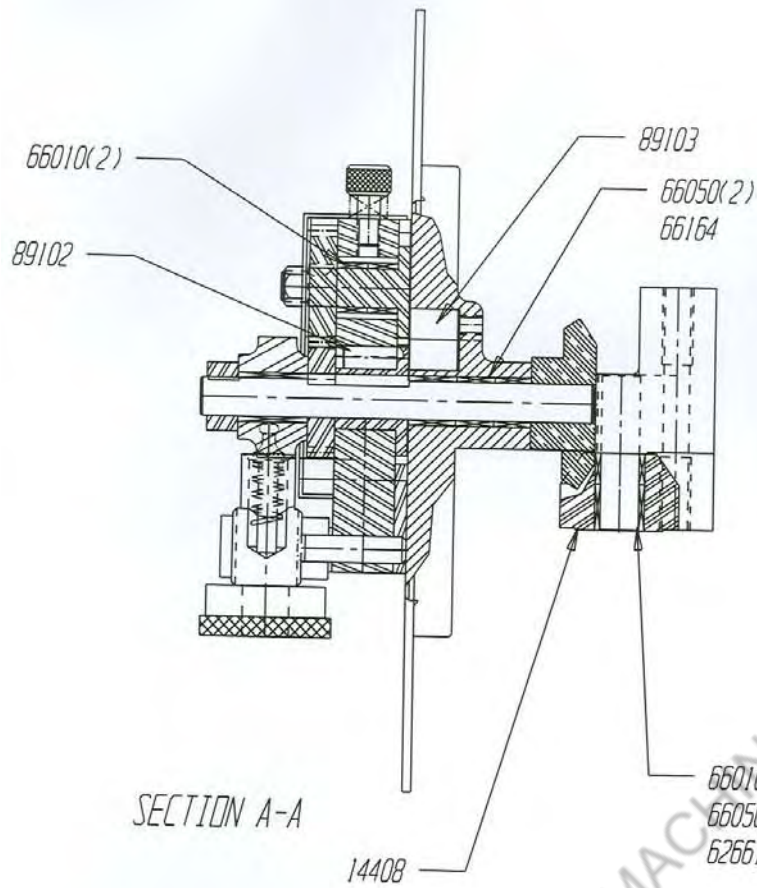
### Turn Up A "Starting Flange"

on the material before inserting it into the rolls. This is done by inserting the leading edge of the work to be flanged in the slot cut into the table and bending the piece away from the operator approximately 45°. Start the leading edge of the material into the rolls. As the material passes through the rolls, the compensator arm will make contact with the material and guide it through the rolls. If the material pulls out of the rolls, it is an indication that either the front adjusting screw is too loose or the back adjusting dial is not tight enough.

### Important

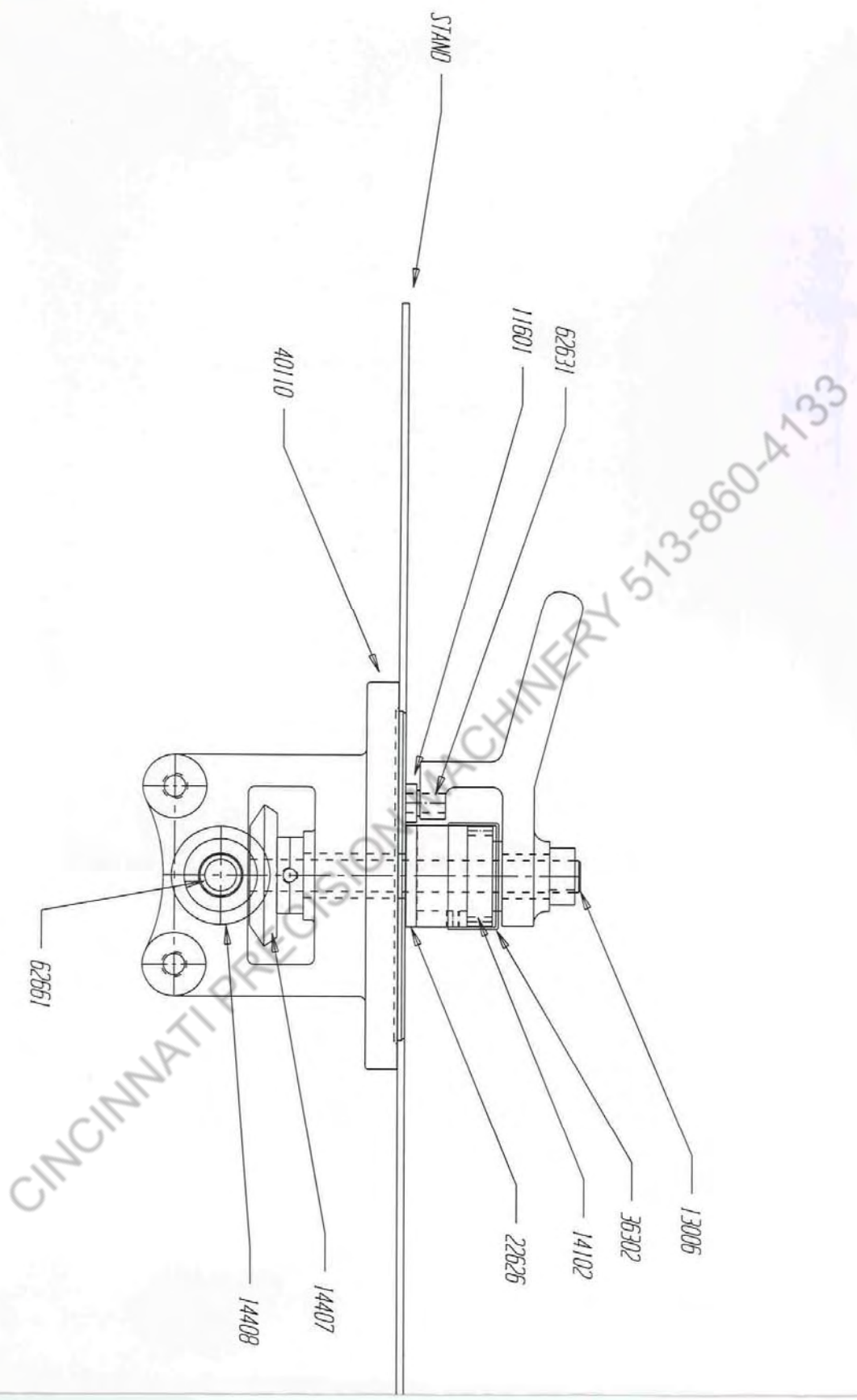
When starting a partially formed section that contains an inside curve, push the compensator arm back until it locks out of position. Feed partially formed section into the rolls and the machine will pull the material through. As the rolls approach the section that is not formed, bring the compensator arm to the material holding the spring tension off the piece until the unformed section comes to the rolls; then bear pressure to the piece until the flange picks up, then release compensator arm so that "automatic" guiding is resumed.





FORMING HEAD...150101

THE LOCKFORMER CO.			711 OGDEN AVE. LISLE, ILLINOIS 60532		6
MACHINE 20-22 GA FLANGER			PART NUMBER		5
PART NAME FLANGER ASSY			56366		4
MATERIAL			HEAT TREAT		3
SCALE 2:1			DATE 1-22-97		2
FRAC. TOL.	DEC. TOL.	ANG. TOL.	DRAWN BY M R	CHECKED BY	REVIS



56366

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