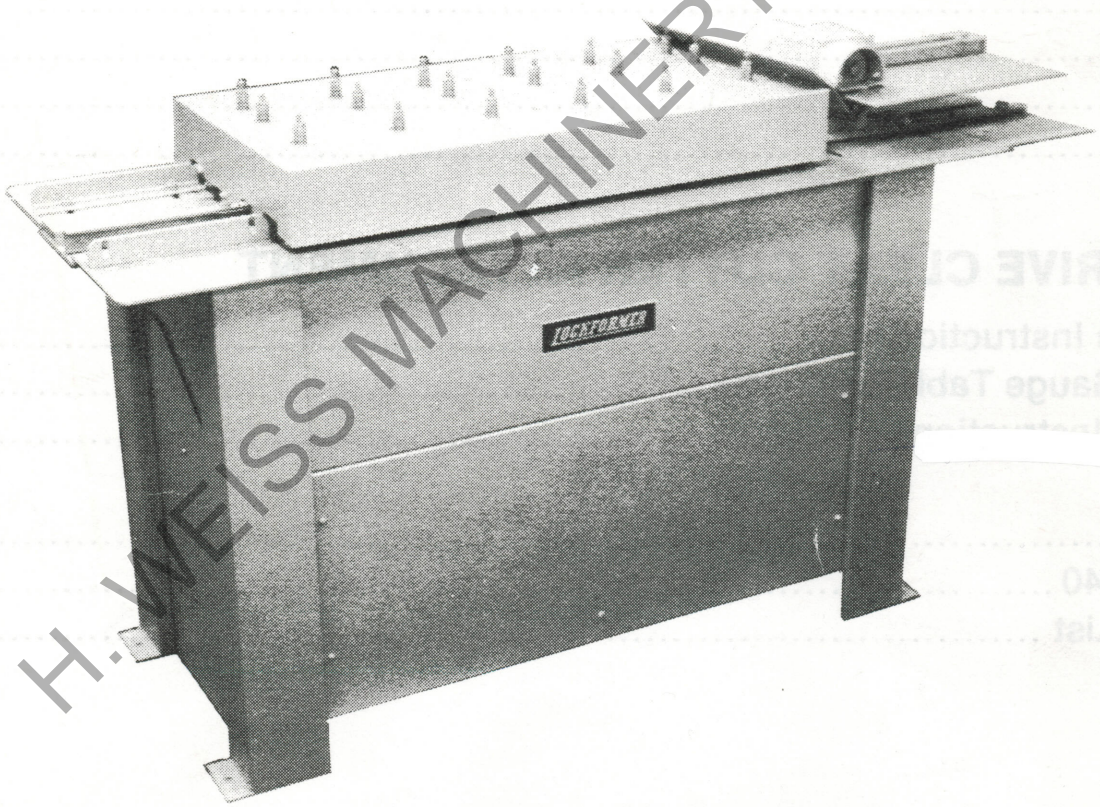
Operating Instructions

LOCKFORMER

Where the Machines of Tomorrow are Made Today℠

TRIPLEX CLEATFORMER AND "S" AND DRIVE CLEAT CUTTER ATTACHMENT



THE LOCKFORMER COMPANY

TRIPLEX CLEATFORMER

Instructions

ELECTRICALS:

5 HP 230/460 volt three phase motor and controls, standard machine wired for 230 volt unless otherwise indicated.

MACHINE SPECIFICATIONS:

"S" CLEAT

Capacity: 22 gauge galvanize or lighter
Stock Width: 3-5/8" + 000-1/32

DRIVE CLEAT

Capacity: 20 gauge galvanize or lighter
Stock width: 2-1/8" + 000-1/32

OPERATION:

A. Strip Stock
Start machine and place properly sheared material between gauge bars and feed material into the rolls.

Check end results and make changes accordingly.

B. Sheet Feed with Slitter (Optional)

Start machine and place sheet against proper gauge bar and feed material into the slitting rolls being sure to keep sheet against gauge bar. Do not force or try to influence the sheet in any way. Machine will automatically feed cut sheet into the forming rolls and deflect balance of sheet over machine cover. On long sheets, best results will be had by turning sheet so that the trail end on the first cut becomes the lead end on the second cut, etc. This procedure will eliminate any tendency for "Trailing-Off" on the slit part.

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ADJUSTMENTS:

The top plate and roll assembly is split into 3 zones of 3 rolls each with simple six point adjustment for each zone. Begin adjustment by tightening all hold down nuts to their solid position then loosen as follows:

A. Zone 1 all studs 1/2 turn loose
B. Zone 2 all studs 3/4 turn loose
C. Zone 3 all studs 1 turn loose

Should machine labor under load stud settings should be loosened 1/8 to 1/4 turn.

Upward bow can be adjusted by lowering the exit adjusting screw located on the exit adjustment gauge assembly. Downward bow can be compensated by adjusting the hold down studs located at the exit end of the machine. Side bow is caused by an unbalanced stud adjustment.

LUBRICATION:

Lubrication fittings for the high speed shafts are located under the stand auxiliary side panel. The high speed bearings should be lubricated after every eight hours of operation (recommended lubricant-Standard Oil Viscous #3, or equivalent.)

Roll stations #4 and #5 (part 11144 and 11145) on "S" Cleat are supplied with three polished angle surfaces to eliminate friction and allow the material to flow smoothly during the forming sequence. The rolls should be lubricated periodically with an application of #20 or #30 SAE lubricating oil to insure a smooth sliding surface.

NOTE: If machine is to be used or stored out-of-doors, an oil or grease film will prevent rusting of surfaces.

INSTRUCTIONS FOR AUXILIARY ROLLS:

Machine auxiliary shafts are designed to accommodate various auxiliary roll sets listed below. To install these rolls, proceed as follows:

1. Remove machine cover.
2. Remove table top side plate on side of machine rolls are to be mounted.
3. If auxiliary rolls are now on machine, remove retaining bolts and washers. Remove all parts not pertaining to the set to be used.
4. Place keys on shafts.
5. Select the first pair of rolls which are marked "T-1" and "B-1" and place them on the shafts at the entrance of the machine (Feed Side). Place the "T-1" roll on the upper shaft and "B-1" on the lower. Repeat procedure with roll stations #2, #3, and #4, etc. until all rolls have been mounted. All rolls marked "T" should be mounted on the top shafts and "B" rolls on the bottom shafts in numerical order. **NUMBER SIDE OF ROLLS MUST FACE OUTWARD.**
6. After rolls are installed, fasten rolls with retaining cap screws and washers.

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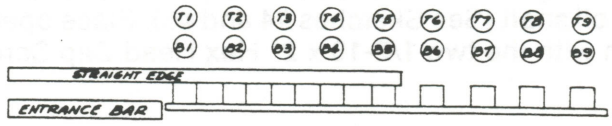
7. Mount entrance and exit gauge bars to stand, using slotted holes provided in stand table top and set entrance gauge by placing a straight edge along the outer edge of the auxiliary rolls; measure the required amounts in from this straight edge to the extreme ends of the entrance gauge bar. See schedule below for various auxiliary sets.



SKETCH #1

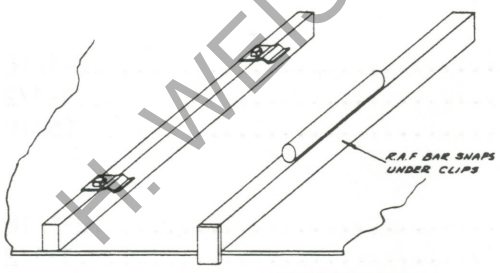
Auxiliary Roll Gauge Settings:

A. Type "S" double seam (22 gauge and lighter) uses approximately 1" material.
Gauge Setting .....(Front) 1-1/8" (Back) 1-3/16"

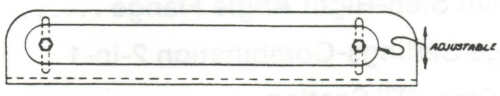
B. Type "L" double seam (18 to 20 gauge galvanize) 7/16" pocket uses approximately 1-1/8" material.
Gauge Setting .....(Front) 1-5/16" (Back) 1-3/8"

C. Standing seam rolls (18-22 gauge galvanize) 3/4" height uses approximately 2-1/8" per completed seam. Forms both single and double edge by simple gauge attachment.

NOTE: Two piece entrance gauge supplied. Drilled bar should be mounted to stand with clips in order to form standing seam. Gauge setting to drilled bar . . . 2". Second gauge bar snaps under clips and is used for right angle flange. See Sketch #2:)



SKETCH #2



SKETCH #3

The top #8 and #9 rolls are fastened by bolts and are allowed to float. The exit angle iron has an adjustable bar that can be lowered to exert pressure on the material, as it emerges from the rolls; thereby, straightening the finished section. See Sketch #3: Set exit gauge to the standing seam shape.

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D. Right angle flange rolls (16-24 gauge galvanize) on straight pieces only. Adjustable to 7/16" high.

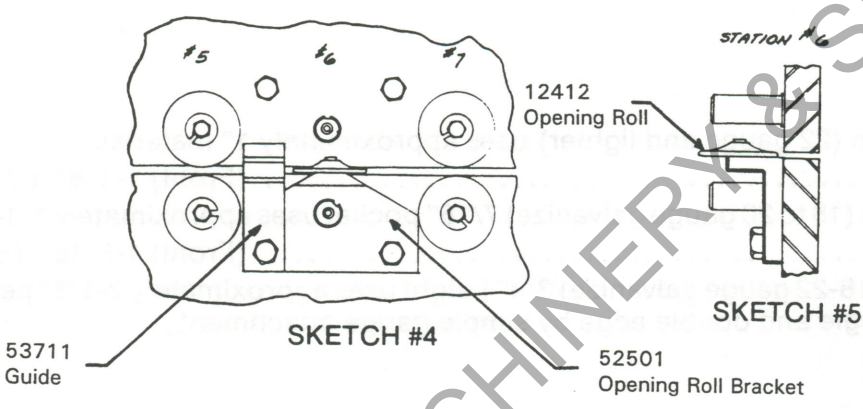
Gauge Setting ..... 1-5/16"

E. 5/16" Auxiliary Pittsburgh (20 gauge and lighter) uses approximately 1" material.

Gauge Setting ..... 1-11/16" to 1-3/4"

A slight taper in gauge setting may be required.

NOTE: To install auxiliary opening roll holder, remove rolls from the #6 roll station and bolts that straddle the bottom 6 roll shaft (See Sketches #4 and #5). Place opening roll holder and slide on machine and fasten with the two 1/2-13 x 2" Hex Head Cap Screws provided.



SKETCH #4

SKETCH #5

F. Drive Cleat Auxiliary (20 gauge and lighter) uses 2-1/8" material.

Gauge Setting ..... 2-1/8"

G. Combination 3-in-1 rolls (capacity 22 gauge and lighter), also 2-in-1, uses approximately 1-3/4" on "T" section, 1-1/8" on standing seam and 1/2" on right angle flange.

Gauge Setting- 3-in-1 Gauge Bar:

Top Step-"T" Section ..... 2-1/16"
Middle Step-Standing Seam ..... 1-1/2"
Bottom Step-Right Angle Flange ..... 15/16"

Gauge Settings-Combination 2-in-1

Top Step-"T" Section ..... 2-1/16"
Bottom Step-Standing Seam ..... 1-1/2"

NOTE: When the first setting is made, the other two will automatically be correct. The other two shapes can be made by placing material to the proper gauge step. The exit angle iron gauge has an adjustable bar that can be lowered to exert pressure on the material as it emerges from the rolls; thereby, straightening the finished section. See Sketch #3 on page 5.

NOTE: WHEN ADJUSTING THE EXIT GAUGE FROM THE 3-IN-1 COMBINATION, BE SURE TO SET IT TO THE "T" SECTION OR DAMAGE WILL RESULT BY MATERIAL INTERFERENCE WITH THE GAUGE BAR.

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H. Female Button Punch Snaplock (20 to 26 gauge galvanize) uses approximately 1-5/16" of material.

Gauge Setting: 2-5/16" closest to forming rolls, 2-11/32" furthest from forming rolls. Taper may be increased or decreased as required for most satisfactory results.

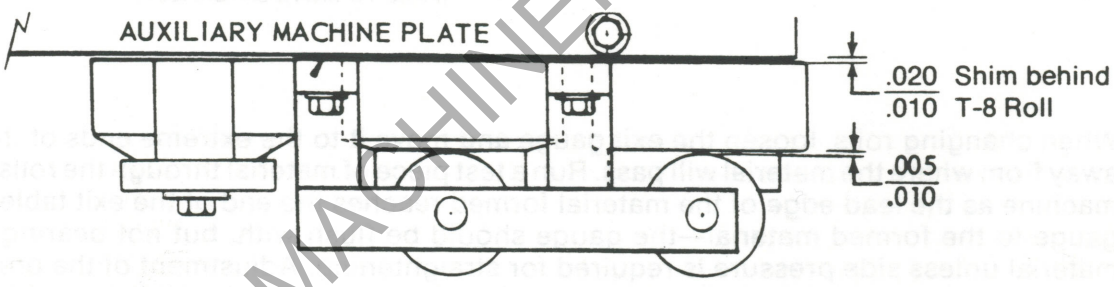
Upward bow can be adjusted by raising or lowering the straightener roll located between stations 8 & 9.

NOTE: To install slide between stations 2 and 3, remove existing idler gear bolt and replace with longer bolt furnished with roll set.

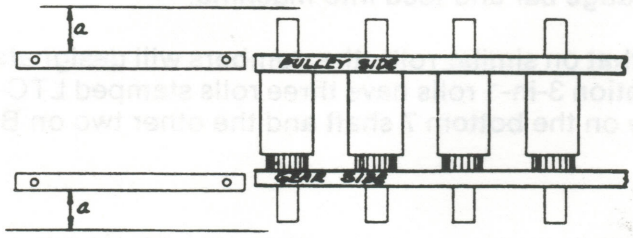
I. Male Button Punch Snaplock (20 to 30 gauge galvanize) uses approximately 7/16" of material.

Gauge Setting ..... 15/16"

NOTE: Remove existing bolts between Top 4 and 5 rolls and Top 5 and 6 rolls and replace with idler bracket and bolts provided with rolls set. See Sketch #6 and #6A.



SKETCH #6



(a-a) SEE ROLL SET TO BE USED

SKETCH #6A

TRIPLEX CLEATFORMER
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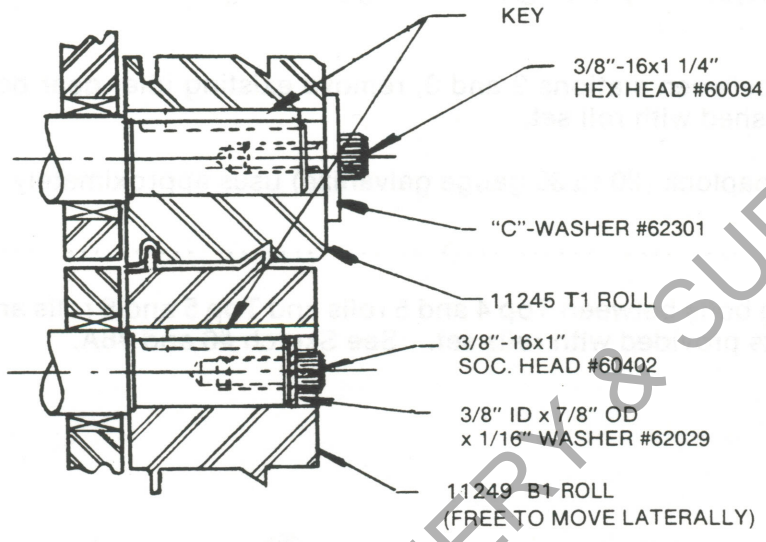
CAUTION: Bottom #1 roll is not fastened with retaining "C" washer. Severe damage will result to roll if instructions are not followed. See Sketch #7.

SKETCH #7



8. When changing rolls, loosen the exit gauge and move it to the extreme ends of the table slots away from where the material will pass. Run a test piece of material through the rolls and stop the machine as the lead edge of the material formed reaches the end of the exit table. Set the exit gauge to the formed material—the gauge should be flush with, but not bearing against, the material unless side pressure is required for straightening. Adjustment of the pressure on the 3/8" studs that pass through the plates will effect the shape and the tendency of the material to hold the entrance gauge. It is important that, when changing rolls, all parts pertaining to each set be removed from the machine and all parts for the set to be mounted be included on assembly.

9. Replace top cover and stand side plate.

10. Place material against gauge bar and feed into machine.

NOTE: Roll coding is such that on similar rolls, the numbers will designate more than one station. EXAMPLE: Combination 3-in-1 rolls have three rolls stamped LTC-2-3-B-7-8-9. These rolls are to be placed one on the bottom 7 shaft and the other two on B-8 and 9.

PREVENTATIVE MAINTENANCE:

To provide efficient, trouble free operation and to prolong the life of this tool, we suggest periodic cleaning of all rolls to remove any galvanize build-up. Galvanize build-up can be reduced to a minimum by applying a light bodied lubricant such as LOCKFORMER GALV-OFF to the forming rolls every six to eight hours of operation.

All bolts and nuts should be tightened every month or more often as required. Transmission belts should be checked for wear and proper tension periodically. Air intake vents on motor should be kept clean to insure proper ventilation.

TROUBLE CHART

TROUBLE / WHAT TO LOOK FOR	POWER NOT CONNECTED.	DEFECTIVE FUSE.	SWITCH CONNECTED WRONG.	LOOSE WIRING CONNECTIONS.	LOW VOLTAGE.	WIRING TO MACHINE TOO LIGHT, CAUSING	MOTOR WIRED WRONG FOR VOLTAGE USED.	LINE VOLTAGE DROP.	WIRING TO MACHINE TOO LONG, CAUSING	SINGLE PHASE: MOTOR WIRING REVERSED IN SWITCHBOX.	THREE PHASE: REVERSE TWO LINE LEADS	LOOSEN NO. 1 ZONE.	TIGHTEN NO. 1 ZONE.	LOOSEN NO. 2 AND 3 ZONES.	MATERIAL NOT BEING HELD TO GAUGE AS IT LEAVES THE MACHINE.	RE-SET GAUGE SETTING.	MATERIAL NOT PROPERLY SUPPORTED	TIGHTEN PLATE STUDS.	LOOSEN THE NO. 1 ZONE.	TIGHTEN THE PLATE STUDS.	ADJUST EXIT GAUGE.
MOTOR WILL NOT START.	X	X	X	X																	
MOTOR RUNS SLOW.					X	X															
MOTOR RUNS HOT.					X		X														
MACHINE ROTATION REVERSED.										X	X										
LEAD EDGE OF MATERIAL RUNS HIGH AND EXIT END RUNS OUT.															X				X		
LEAD EDGE OF MATERIAL RUNS LOW AND EXIT END RUNS HIGH.												X							X		
"S" FOLD DIMINISHES AT EXIT END.														X							
LOCK SHOWS EXCESSIVE PRESSURE ON ENDS.													X								
MATERIAL NOT HOLDING TO FRONT GAUGE.														X							
STANDING FLANGE TOO HIGH OR LOW.																			X		
MATERIAL DOES NOT HOLD TO GAUGE.																			X		X
180° FOLD NOT FORMING PROPERLY.																				X	X
MATERIAL BOWS UPWARD AND SHOWS STRETCH.																					X
LOOSE SEAM IN SNAPLOCK JOINT.																			X		X
EXIT END OF LOCK DAMAGED.																		X			

USE NEW NUMBER WHEN ORDERING PARTS

071 TRIPLEX CLEATFORMER

Parts List

Part No.	Description	Pcs. Per Unit
11141	T & B Forming Roll "S" Cleat T1 & B1	2
11142	T & B Forming Roll "S" Cleat T2 & B2	2
11143	T & B Forming Roll "S" Cleat T3 & B3	2
11144	T & B Forming Roll "S" Cleat T4 & B4	2
11145	T & B Forming Roll "S" Cleat T5 & B5	2
11257	T & B Forming Roll "S" Cleat T7 & B7	2
11146	T & B Forming Roll "S" Cleat T6 & B6	2
11147	T & B Forming Roll "S" Cleat T8 - B9	2
11148	T & B Forming Roll "S" Cleat T9 & B9	2
11170	Top Forming Roll Drive Cleat T1	1
12070	Top Forming Roll Drive Cleat T2, T3, & T4	3
12071	Top Forming Roll Drive Cleat T5	1
12072	Top Forming Roll Drive Cleat T6	1
12073	Top Forming Roll Drive Cleat T7	1
12074	Top Forming Roll Drive Cleat T8	1
12075	Top Forming Roll Drive Cleat T9	1
12076	Bottom Forming Roll Drive Cleat B1	1
12077	Bottom Forming Roll Drive Cleat B2	1
12078	Bottom Forming Roll Drive Cleat B3	1
12079	Bottom Forming Roll Drive Cleat B4, B5 & B6	3
12080	Bottom Forming Roll Drive Cleat B7, B8 & B9	3
13284	Roll Shafts	18
13302	Ist Drive Shaft	1
13304	2nd Drive Shaft	1
13406	3rd Drive Shaft	1
13505	Plain Spacer "S" Cleat 1-1/4" x 5-1/64"	17
13605	Idler Spacer	7
13657	Main Idler Spacer	1
13701	Plain Spacer Drive Cleat 1-1/4"x 2-21/32"	21
13703	Plain Spacer Drive Cleat 1-1/2" x 3/8"	17
13704	Roll Spacer Drive Cleat 1-3/8" x 17/32" 2/keyway	4
14160	Driven Gear	18
14161	Idler Gear (Needs 1-66090 Bearing)	7
14162	Main Idler Gear (Needs 2-66100 Bearings)	1
14301	Driven Gear Main	1
14640	Collar	1
14661	Thrust Collar	2
14930	Hex Spacer Lube	1
20218	Top Plate	9
20219	Bottom Front Plate	1
20220	Bottom Center Plate	1

Part No.	Description	Pcs. Per Unit
20221	Bottom Back Plate	1
21303	Entrance Gauge Bar	4
21305	Drive Cleat Exit Bar	1
24155	Slide (Drive Cleat)	3
24156	Slide Holder	3
25048	Bar Jack	2
29464	Motor Base	2
31907	Sheet Slide ("S" Cleat Gear side)	1
31908	Sheet Slide Roll	1
37000	Grease Fit Shim	2
42001	Lube Bolt	1
58512	Stand	1
51041	Cover	1
51900	Fiber Gear Assembly	1
53304	Exit Gauge ("S" Cleat)	1
60047	5/16-18 x 3/4 HHCS	5
60052	5/16-18 x 1 HHCS	1
60090	3/8-16 x 3/4 HHCS	4
60097	3/8-16 x 1-3/4 HHCS	4
60098	3/8-16 x 2 HHCS	2
60164	1/2-13 x 5 HHCS	21
60166	1/2-13 x 3-1/2 HHCS	4
60228	1/2-13 x 1 3/4 HHCS	29
60302	1/4-20 x 5/8 SHCS	10
60450	1/2-13 x 1 SHCS	1
60551	1/4-20 x 1/2 RHMS	5
60575	10-24 x 3/8 RHMS	4
60593	10-32 x 7/16 FHMS	2
60680	3/8-16 x 3/8 SSS	2
60795	4 x 3/16 Drive Screws TP-U	8
60875	3/8-16 x 1 CB	4
60876	3/8-16 x 1-1/4 CB	4
60877	3/8-16 x 1-3/4 CB	4
60881	3/8-16 x 1-1/2 CB	8
60954	1/2-13 x 1 FH Screws	6
60994	Screw	1
61040	10-24 Hex Nut	4
61101	5/16-18 Hex Nut Heavy SF	1
61120	3/8-16 Hex Nut Heavy SF	14
61122	3/8-16 Hex Nut Fin	26
61160	1/2-13 Hex Nut Heavy SF	6

USE NEW NUMBER WHEN ORDERING PARTS

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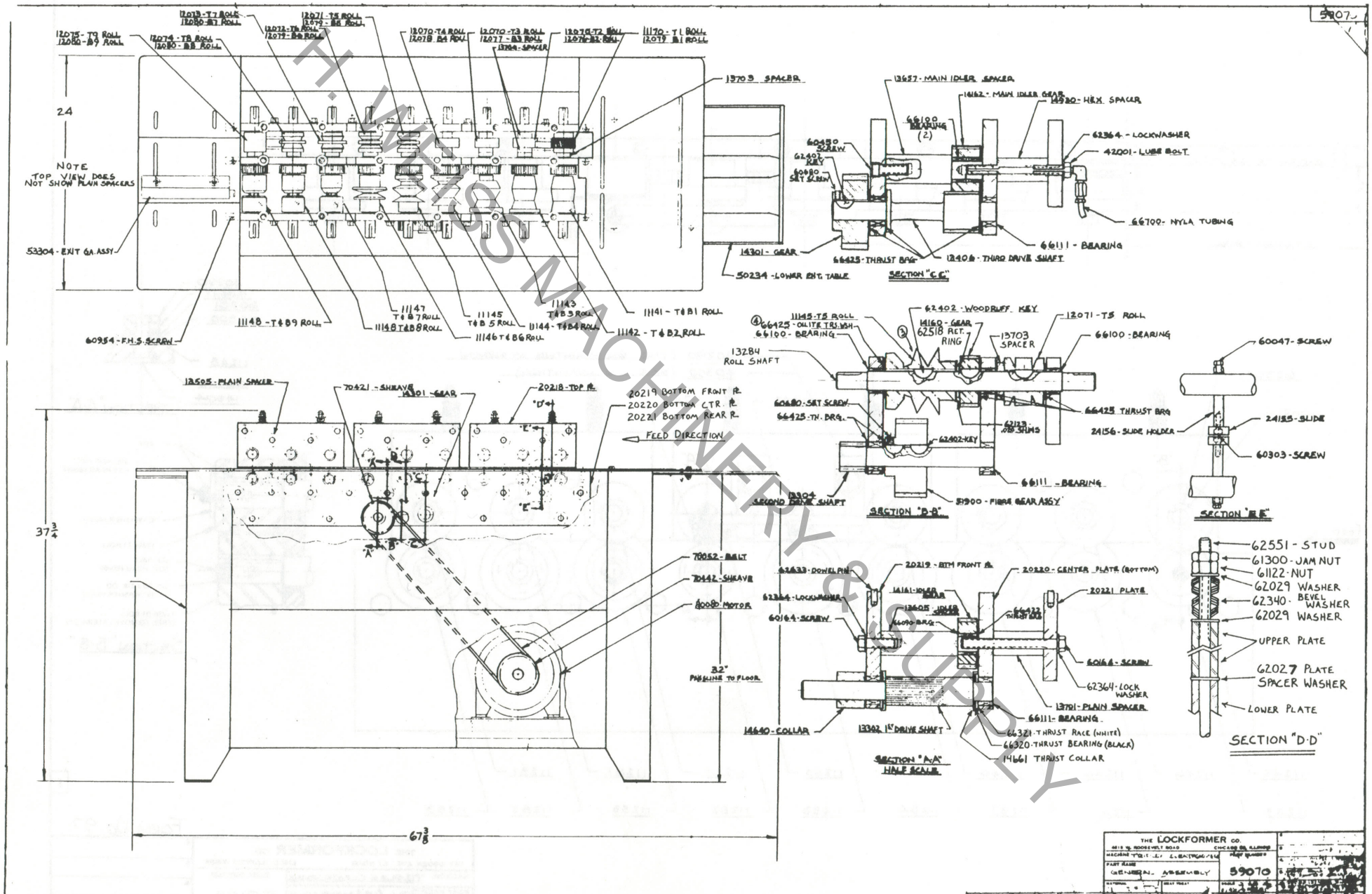
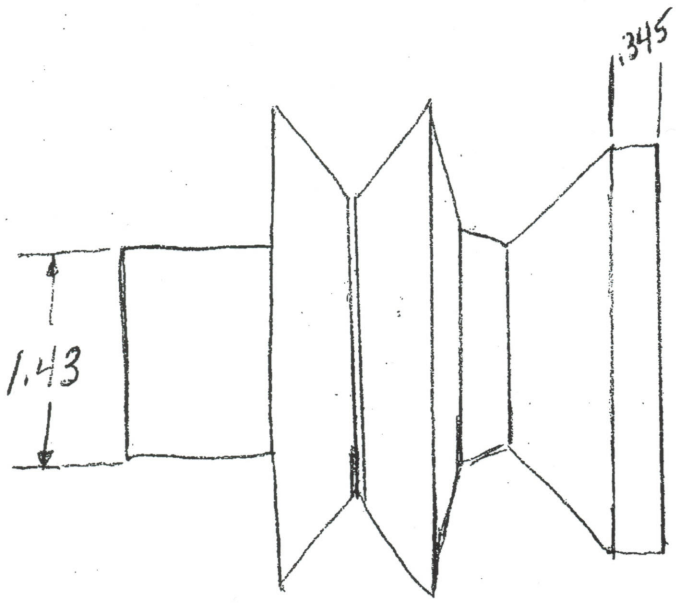
Parts List

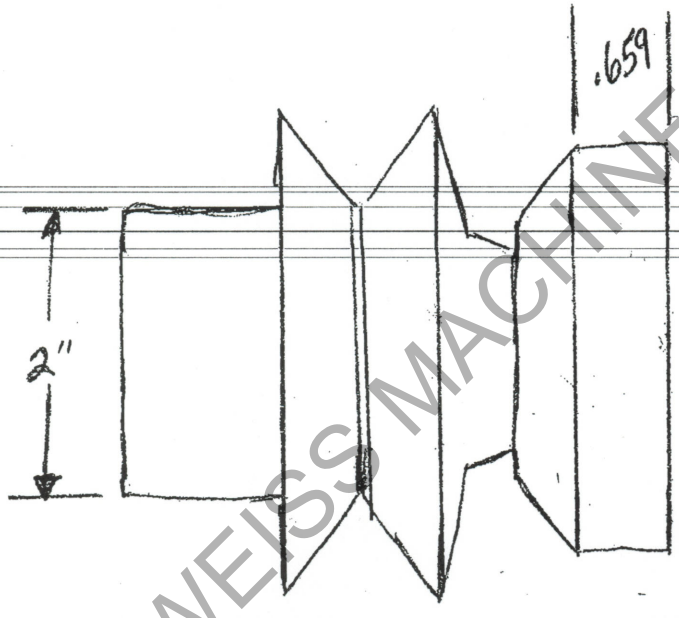
New Part No.	Description	Pcs. Per Unit	New Part No.	Description	Pcs Per Unit
61300	3/8-16 Jam Nut SF	18			
62026	3/8 x .052 Washers	4			
62027	3/8 x .082 Washers	18			
62029	3/8 x 1/16 Washer	50			
62123	1 x .020 Washer	36			
62340	3/8 Spring Washer	216			
62363	3/8 Lock Washer	12			
62364	1/2 Lock Washer	43			
62402	15 Woodruff Key	57			
62518	5160-98 Retaining Ring	18			
62551	3/8-16 x 6-1/2 Stud Hold Down	18			
62633	3/8 x 1 Dowel	12			
66090	Bearing (B1416 Torr)	7			
66100	Bearing (B1612) Torr)	56			
66111	Bearing (HJ 162412 Torr)	6			
66320	Bearing (NTA 1625 Torr)	2			
66321	Bearing (TRC 1625 Race)	2			
66422	Bearing (TT1503-2 Thrust)	7			
66425	Bearing (TT1709-1 Thrust)	78			
66600	Connector (886L Female Coupling)	7			
66610	Half Union (888L)	7			
66640	1610 Grease Fittings	8			
66650	Angle Body	1			
66700	Plastic Tubes 4 pcs.-14" & 3 pcs.-18"	110"			
70052	V Belt 5L480	2			
70421	Sheave 2BK32 x 1	1			
70442	Sheave 2BK45 x 1-1/8	1			
80080	5 HP 3 Phase 60 Cycle 1800 RPM (184)	1			
80103	Motor Control (609 Bow)	1			
80423	BX. Cable 12-3 x 58"	1			
80483	BX. Connector 3/8	1			
80484	BX. Connector 3/4	1			
80601	Ring TNG Terminal	3			
80928	Back Enclosure	1			
82254	W54 Heaters	3			
85178	Lockformer Logo	1			

DRAWING No. 59070





11145 (OLD)



11312 (NEW)

Here is the roll arrangement now:
STA. 1 - 11141
STA. 2 - 11142
STA. 3 - 11143
STA. 4 - 11144
STA. 5 - 11312
STA. 6 - 11260
STA. 7 - 11146 (formerly at sta. 6)
STA. 8 - 11313
STA. 9 - 11314