

Lockformer / 20 Gauge Capacity Punch Snap Lock Machine

CAPACITY

20 Gauge Galvanized and Lighter

MATERIAL REQUIREMENTS:

- (1) 1-5/16" Receiver Lock
- (2) 7/16" Button Flange (90°)

Total amount of material 1-3/4". This amount is to be added to formed sections for calculation of sheet sizes. The above dimensions can be somewhat modified by varying the entrance gauge settings to suit the requirements of a specific project or material.

NOTE: The machine has been tested and adjusted at the factory on 20 gauge through 26 gauge material and as delivered is ready for normal operation.

ELECTRICALS:

Standard electricals: 3 H. P. 220/440 volts, 60 cycle, 3 phase motor and starter. Wire starter for voltage indicated on order. Normal wiring 220 volt operation unless otherwise indicated.

OPERATION:

Start machine and feed material into either roll set by holding the material flush against the gauge and feeding material into the rolls. Keeping the material with the same side up, run the second lock on the opposite side of the sheet. Check the end results and adjust accordingly if locks are not satisfactory.

RECEIVER LOCK:

(Inboard Roll Set)

The main adjustments affecting the receiver lock are the three hold down studs that pass through the spacer bars, (they are stamped #1, 2 and 3) the entrance and exit gauge bar settings.

To adjust the, three hold down studs proceed as follows:

- (1) Loosen the 1/4" lockscrews on the hold down studs.
- (2) Tighten all three studs tight.
 - (A) #1 Stud (entrance end of machine) 1/8 to 1/4 turn loose.
 - (B) #2 Stud (Center) 1/4 to 1/2 turn loose.
 - (C) #3 Stud (Exit) 3/8 to 1/2 turn loose.

The settings may be changed slightly to obtain the most satisfactory piece. When the proper settings are obtained tightened the 1/4" Lock Screws.

BUTTON FLANGE LOCK: (Auxiliary Rolls)

The two 3/8 Studs that pass through the plates and the auxiliary side of the machine are the only points of adjustment for forming the 90° flange.

To adjust the auxiliary rolls proceed as follows:

- (1) Tighten the two studs.
- (2) Loosen 1/4 to 1/2 turn.

If the material shows signs of stretch or excessive pressure loosen studs slightly. The material should emerge from the machine with a properly formed angle to obtain 90° duct corners when locks are snapped together. The angle can be controlled by the

location of the top number eight forming roll on the shaft and the positioning in or out of the idler bracket located at the seventh and eighth roll station.

To adjust the above proceed as follows:

- (1) Remove the two idler bracket retaining cap screws. Note shims are placed between the bracket and the plate. Shims may range from .020 to .030 to insure proper flange. CAUTION: Do not lose shims.
 - (2) Remove top and bottom #8 roll station.
- Note: Loosen set screw in T-8 roll station.
- (3) To increase angulation of formed flange add from .010 to .040 shims 7/8" I.D. on the roll shaft.
 - (4) Place the roll onto the shaft securely by tightening set screw.
 - (5) Replace bottom 8 roll.
 - (6) Replace Idler Bracket Assembly.

NOTE: If duct snaps together and forms an angle of less than 90° then too much pressure is applied by the top 8 roll or Idler Bracket Rollers. Adjust roller and bracket to obtain proper results.

GAUGE SETTINGS: (See Sketches #1, 2 & 3)

Improperly formed receiver lock or height of flange could be caused by improper entrance gauge settings.

To reset entrance gauge proceed as follows.

- (1) Place a straight edge along the outer edge of the machine plate for the receiver lock and along the outer edge of forming roll station #2, through 6 for the bottom flange. (The number 1 roll station rolls are shorter in length so that they may be shimmed away from the machine plates to locate the punch closer to the bend line, thereby achieving a tighter fit on the snap.

WARNING: The gauge setting should not be made while the #1 station is shimmed away from its normal location and protruding beyond the other roll stations. The top #1 roll is fastened to the shaft by a bolt and washers. The bottom roll is not restrained by the bolt and washer but is held in position by a shoulder on the #1 roll and it should be allowed to float. The shim, if required, should be placed behind the top roll only.

- (2) Measure in from the straight edge to the extreme ends of the entrance gauge bar the required amounts listed below:

Receiver Lock 3-5/64" from end of bar closest to #1 Roll. 3-1/8" from end of bar furthest from #1 Roll.

Button Flange 1" from end of bar closest to #1 Roll. 1-1/32" from end of bar furthest from #1 Roll.

The above settings are approximate and may be slightly increased or decreased to meet specific requirements.

TROUBLE CHECKS:

Due to the unusual physical characteristics of certain types of material, it may become necessary to reset the entrance gauge bar in its entirety. In the event that the material pulls away from the gauge or the lock is not formed properly, the gauge taper can be increased -or the entire gauge setting may be increased or decreased slightly to achieve required results. Exit gauge bars are set to, but not against the formed edge of the material when emerging from the machine.

When running certain types of material, it may be necessary to add a slight lubricant to the edge of the sheet being formed to aid the flow of material into the finished lock. The above may be required if the 1/8" return hem does not form properly - or is irregular in nature or tends to wave at ends of the formed section - or entrance gauge adjustments do not correct or compensate for the proper formation.

The lubricant may be any light machine oil applied either manually or by a felt wiper pad mounted on the machine.

To obtain the best lock, it will be necessary to insure that the material is in contact with the entrance starting gauge throughout the complete length of the sheet being formed. Certain materials, as well as hold down adjustment, may have a tendency

to allow the material to drift away from the gauge. When this occurs the lock will be improperly formed - and you may also lose the hem return. The same condition will exist if the entrance gauge is not set correctly. To minimize end kick or exit deformation, the material should be held to the exit gauge as the material emerges from the machine.

STRAIGHTNESS:

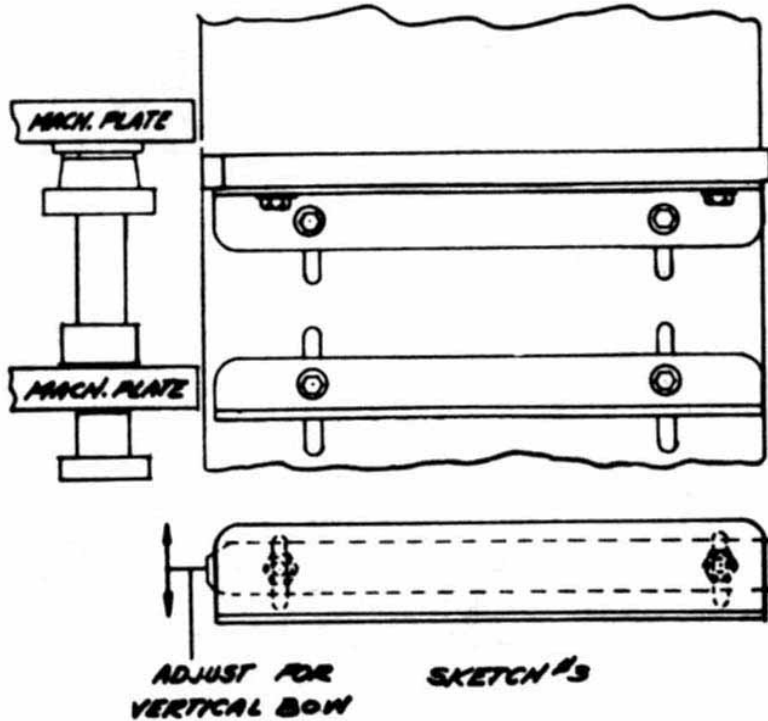
A side bow or barrel effect on the receiver lock can be adjusted by changing stud settings and making sure that exit gauge is not bearing against formed edge.

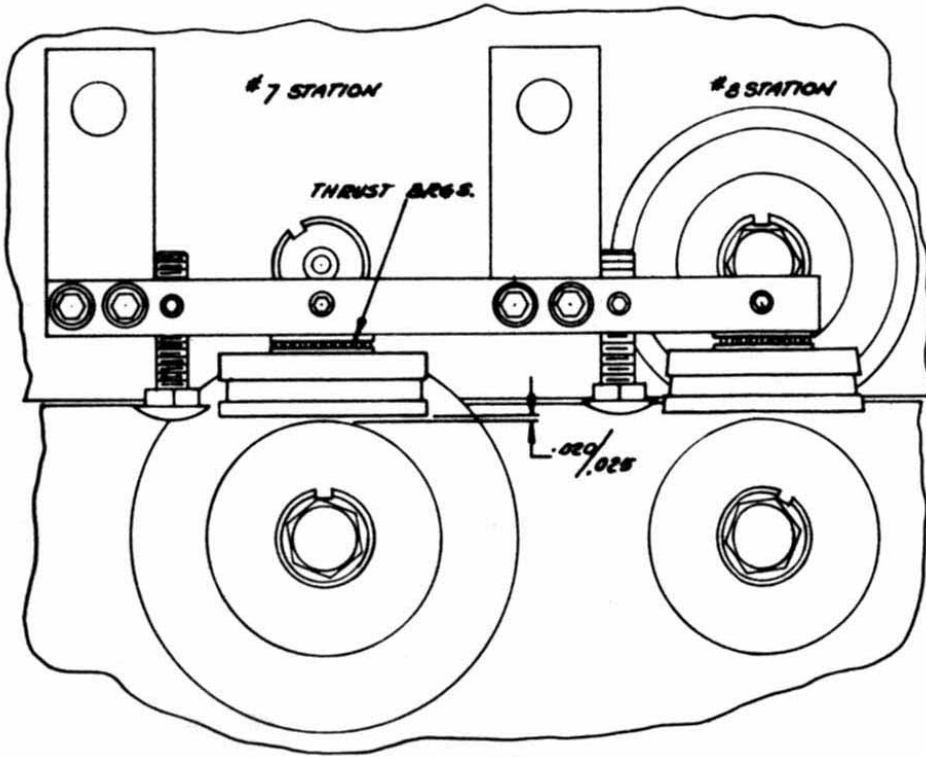
Upward or downward bow can be eliminated by raising or lowering the adjustable gauge bar on the exit end of the machine. Upward bow can be compensated by lowering the exit bar and applying an increased amount of pressure to the formers lock. A downward bow indicates too much pressure against the material - Raise bar slightly.

Should the auxiliary button flange bow downward the exit plate may be raised to eliminate bow. Upward bow is indicative of exit plate being too high.

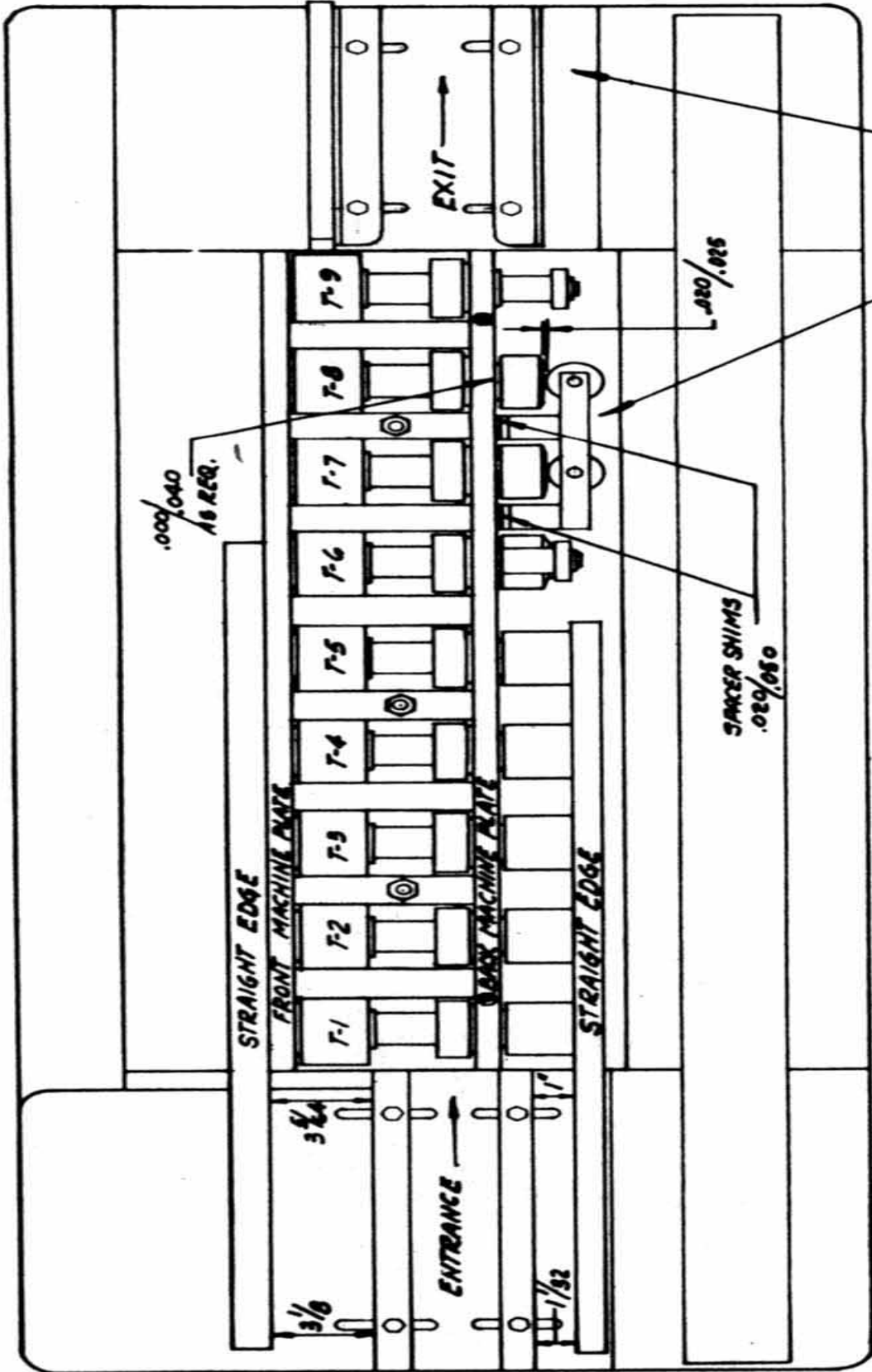
LUBRICATION:

There are seven lubrication fittings located on the underside of the stand roller case. These fittings are for the high speed reduction bearings which should be lubricated after every four hours of operation. Lubricate gears periodically as required. Recommended lubricant: Standard Viscous #3 (a product of the Standard Oil Company) or equivalent.



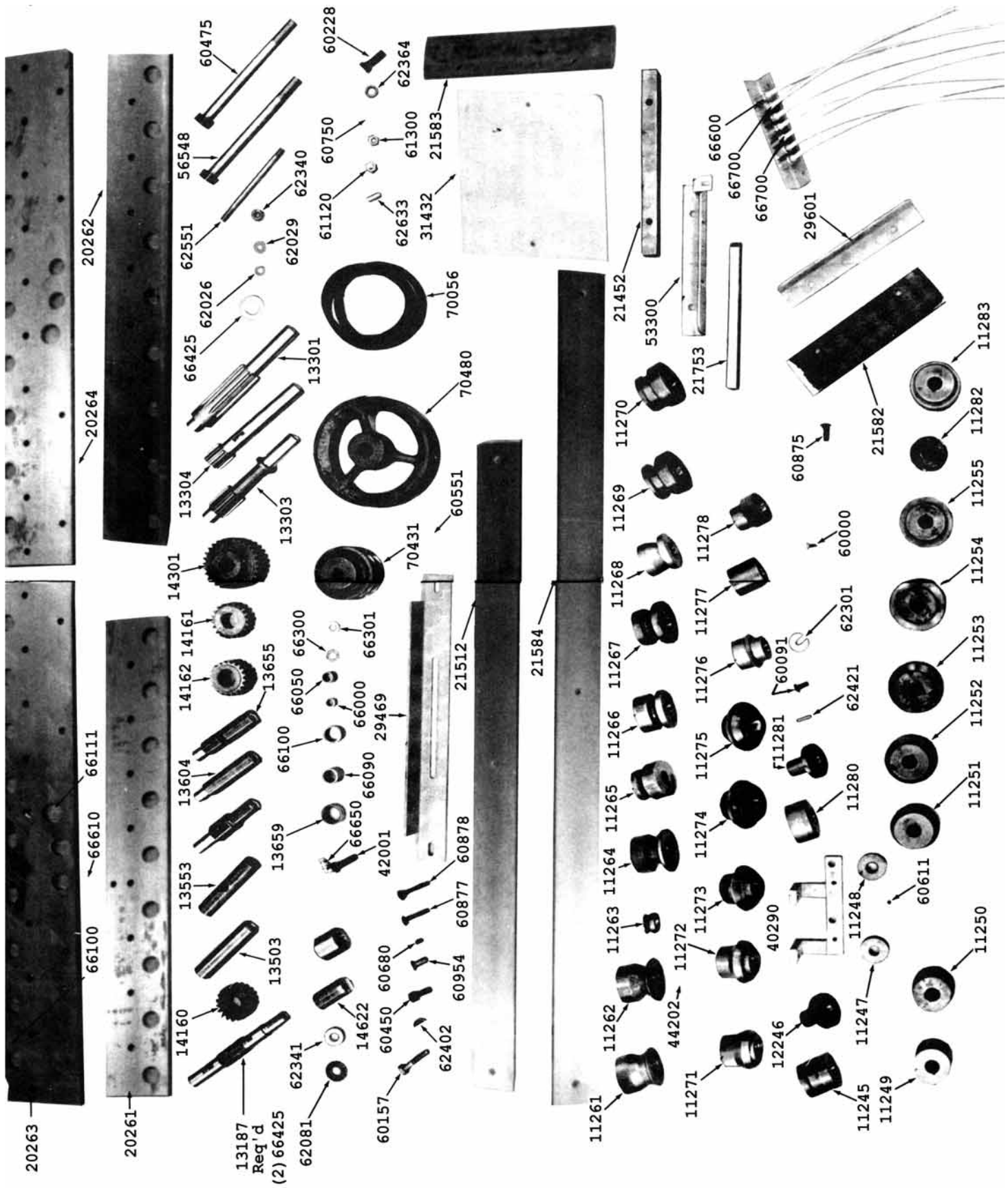


SKETCH #2



TOP VIEW
 ENTRANCE AND EXIT LOCATIONS AND ADJUSTMENT POSITIONS
 SKETCH #1

SEE SKETCH #2
 SEE SKETCH #3



20263

20261

13187
Req'd
(2) 66425

62081

60157

14622

60450

60680

62402

60954

60877

60878

21512

60551

70431

70480

70056

70228

62364

61300

21583

62633

31432

61120

60750

66610

66111

13553

13604

14160

14162

14161

13655

66100

66050

66300

66000

66301

29469

66650

66090

42001

13353

13659

13304

13303

13301

66425

62026

62029

62340

62551

56548

60475

20264

20262

14301

66610

66111

13304

13303

13301

66425

62026

62029

62340

62551

56548

60475

61120

60750

62633

31432

61300

21583

70056

70480

70431

60551

21512

21584

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61120

PARTS LIST

NEW PART NO.	DESCRIPTION	PIECES PER UNIT	NEW PART NO.	DESCRIPTION	PIECES PER UNIT
20263	Lower Front Plate	1	60450	1/2-13 x 1 SHCS	1
20264	Lower Back Plate	1	60954	1/2-13 x 1 FHSCS	4
20261	Upper Front Plate	1	60680	3/8-16 x 3/8 SSS	3
20262	Upper Back Plate	1	60877	3/-16 x 1-3/4 CB	3
13125	Roll Shaft	18	60878	3/8-16 x 2 CB	1
14160	Drive Gear	18	58508	Stand Assembly	1
13505	Plain Spacer	11	29469	Motor Base	2
13553	Spacer Drilled on Center	3	60551	1/4-20 x 1/2 RHMS	3
13659	Main Idler Spacer	1	85178	Lockformer Logo	1
13604	Idler Spacer Plain	5	39504	Cover Assembly	1
13655	Spacer Drilled on Center Idler	2	21512	Material Support B.L.F.	1
14162	Main Idler Gear	1	31432	Entrance Table Pad Fem	1
14161	Idler Gear	7	21584	Material Support Auxiliary	1
14301	Drive Gear	1	21583	Entrance Table Pad Assembly	1
13301	1st Drive Shaft	1	11261	20 BLF T1	1
13304	2nd Drive Shaft	1	11262	20 BLF T2	1
13303	3rd Drive Shaft	1	11263	Idler Roll 2, 3	1
66425	TT1079 1 Thrust Bearing	25	44202	Spacer	2
62026	3/8 x .052 Washer	2	11264	20 BLF T3	1
62029	3/8 x 1/16 Washer	15	11265	20 BLF T4	1
62340	3/8 Blvl. Washer	24	11266	20 BLF T5	1
62551	3/8-16 x 6-1/2 Stud	2	11267	20 BLF T6	1
56548	Hex. Stud Assembly H.T.	1	11268	20 BLF T7	1
60475	Hex. Stud Assembly	2	11269	20 BLF T8	1
62081	5/8 x 3/16 Washer	3	11270	20 BLF T9	1
62341	5/8 Blvl. Washer	24	21452	Entrance Gauge Bar	1
14622	Saddle Washers	3	21810	Entrance Hold Down	1
42001	Lube Bolt	1	11271	20 BLF B1	1
66111	HJ 162412 Torr Bearing	2	11272	20 BLF B2	1
66090	B1416 Torr. Bearing	7	11273	20 BLF B3	1
66100	B1612 Torr Bearing	38	11274	20 BLF B4	1
66101	B1612 OH Torr. Bearing	4	11275	20 BLF B5	1
66000	888 Torr	2	11276	20 BLF B6	1
66050	B1012 Torr Bearing	1	11277	20 BLF B7	1
66300	NTA 815 Torr	2	11278	20 BLF B8 B9	2
66301	TRA 815	4	53300	Exit Gauge Assembly	1
80103	Motor Control	1	21753	Hold Down Bar	1
82249	W49 Heater Element	3	11245	T1 Forming Roll	1
80483	BX Connector 3/8	1	12246	T2, 3, 4, 5, 6, Forming Roll	5
80422	BX Cable 12 3 66	1	40290	Idler Bracket Mach.	1
80071	3 H. P. 3 60 36 145	1	11247	T7 Idler Roll	1
70431	2 BK 40 7/8 Sheave	1	11248	T8 Idler Roll	1
70480	2 BK 80 H 1 Sheave	1	60611	1/4-20 x 3/8 SSS	2
70056	5 L 540 Belt	2	11280	T8 Forming Roll	1
62633	3/8 x 1 Dwi.	2	11281	T9 Forming Roll	1
61120	318-16 H.N. Hvy. S.F.	4	62421	3/16 Sq. x 7/8 Key	17
61300	318-16 Jam Nut S.F.	2	60091	3/8-16 x 1 HHCS	17
60750	1/4-20 x 1/2 Sq. HSS HT	3	62301	3/8-C Washer	15
62364	1/2 Lock Washer	43	11249	B1 Forming Roll	1
60228	1/2-13 x 1-1/2 HHCS HT	38	11250	B2 Forming Roll	1
60157	1/2-13 x 2-1/4 HHCS	2	11251	B3 Forming Roll	1
62402	15 Woodruff Key	39	11252	B4 Forming Roll	1

NEW PART NO.	DESCRIPTION	PIECES PER UNIT
11253	B5 Forming Roll	1
11254	B6 Forming Roll	1
11255	97 Forming Roll	1
11282	B8 Forming Roll	1
11283	B9 Forming Roll	1
21582	Exit Base Plate	1
29601	Exit Gauge	1
66640	1610 Gear Fittings	7
66610	886L Hlf. Union	7
66650	Angle Body	1
66600	886L Female Coupling	7
66700	Nyla Tubing 4/15	60
66700	Nyla Tubing 3/19	57
60000	1/4-20 x 1/2 HHCS	2
60875	3/8-16 x 1 C.B.	10
14504	Idler Roll Pins	2
21303	Entrance Gauge	1
37000	Grease Fitting Shim	1
51900	Fibre Gear Assembly	1
60047	5/16-18 x 3/4 HHCS	2
60048	5/16-18 x 1/4 HHCS	4
60304	1/4-20 x 1 SHCS	1
60401	3/8-16 x 3/4 SHCS	1
60500	1/4-20 x 3/8 FHMS	5
60575	10-24 x 3/8 RHMS	4
60593	10-32 x 7/16 FHMS	2
60795	4 x 3/16 Drive Screw U. Cad.	4
61040	10-24 H. N.	4
61101	5/16-18 H.N. Hvy. S.F.	4
61122	3/8-16 H.N. Fin.	2
62010	5/16 x 1/16 Washer	8
62362	5/16 Lock Washer Med.	4
80484	BX Connector 3/4	1
80601	Rg. Tng. Terminal	4
80928	Back Enclosure	1
85156	Name Plate	1