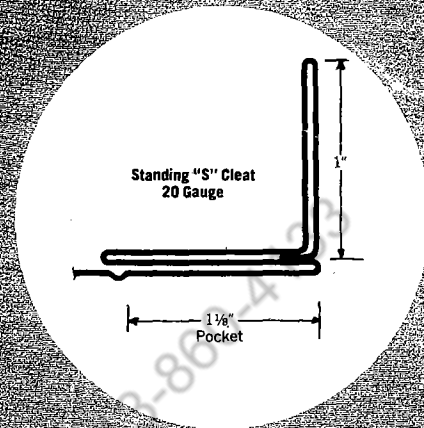
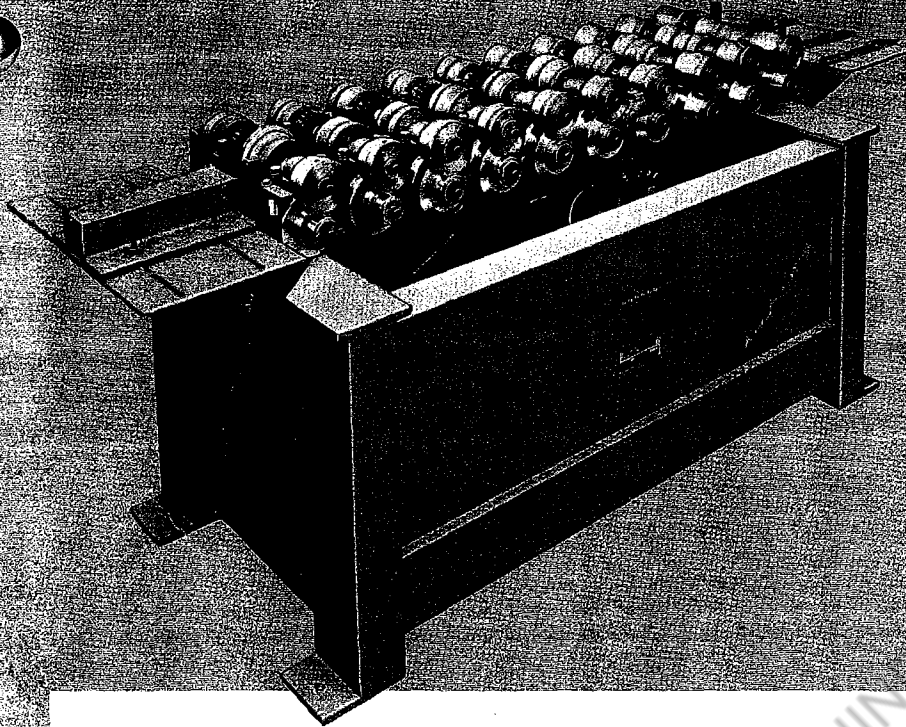


STANDING "S" CLEAT MACHINE

DUCT CONNECTOR MACHINES



The Lockformer Standing "S" Cleat Rolling Machine forms in one pass through the machine, a shape that combines a conventional "S" cleat with a standing seam, providing greater strength and rigidity than a simple "S" cleat. This seam is adaptable to fabrication of large trunk or branch lines in industrial and commercial heating and ventilating units.

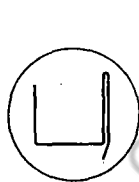
This 10-station machine has been designed and built with the strength and rigidity to provide years of trouble-free day-in-day-out service. The ruggedness of this machine has been proven in

hundreds of shops in over 15 years of service.

The side housing plates are machined solid steel and are precision jig bored for maximum stability and alignment. The upper roll heads are dowel-located for exact position in a three plane axis. The top roll stations are independently adjustable to a positive location.

Extended shafts on both sides of the machine will accommodate many auxiliary rolls for a wide variety of standard shapes used in sheet metal fabrication.

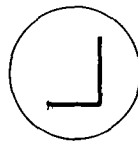
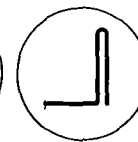
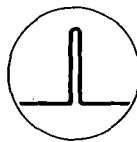
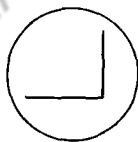
Standard Auxiliary Rolls



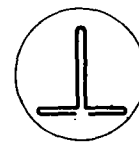
Cup Clip
1 1/8" & 1 1/2"
pocket also
available



**1 1/4" Standing Seam With
Right Angle Flange**
Up to 1 1/2" available
Both standing seam and right angle flange
are formed with same roll set



**3 in 1
Roll Combination**



**REINFORCED "ON-
CENTER" DRIVE CLEAT**
Capacity: 22 Gauge
Inboard or Auxiliary



PITTSBURGH LOCK
Pocket Depth: 1/2"
Capacity: 16 Gauge
Auxiliary

SPECIFICATIONS

Capacity: 20 to 26 gauge. Uses 6 1/4" material stretch out in board.

Speed: 60 to 70 fpm.

Depth of Pocket: 1 1/8".

Height of Angle: 1".

Shafts: 1 1/8" dia. extended both sides. 3 1/2" vertical center. 6" horizontal center.

Motor: 5 H.P., 1800 R.P.M., 230/460 volt, 3 phase, 60 cycle operation.

Drive: Chain Drive.

Stand: Heavy angle iron construction, arc welded, metallic blue finish.

Machine Dimensions: 84" long, 30" wide, 37" high. (Working Height: 33")

Shipping Weight: Approximately 1700 pounds.

General: Hardened and ground shafts, case hardened steel forming rolls, machine cut gears, oilite bronze thrust bearings and needle-type roller bearings throughout. Reduction bearings lubricated through readily accessible Alemite Fitting Panel.

PARTS LIST - STANDING "S" CLEATFORMER

	<u>COMPONENT</u>	<u>QTY</u>	<u>LOC</u>	<u>DESCRIPTION</u>
0419999				
0410101	0011801	1	1A64	9800 B1-R
<u>ROLLS</u>	0011802	1	1A64	9800 B1-L
	0011803	1	1A65	9800 B2-R
	0011804	1	1A65	9800 B2-L
	0011805	1	1A65	9800 B3-R
	0011806	1	1A65	9800 B3-L
	0011807	1	1A65	9800 B4
	0011808	1	1A65	9800 B5
	0011809	1	1A65	9800 B6
	0011810	1	1A66	9800 B7
	0011811	2	1A66	9800 B8-B9
	0011813	1	1A66	9800 B10
	0011814	1	1A66	9800 T1-R
	0011815	1	1A66	9800 T1-L
	0011816	1	1A66	9800 T2-R
	0011817	1	1A67	9800 T2L
	0011818	1	1A67	9800 T-3-R
	0011819	1	1A67	9800 T3-L
	0011820	1	1A67	9800 T4-R
	0011821	1	1A67	9800 T4-L
	0011822	1	1A67	9800 T5
	0011823	1	1A68	9800 T-6
	0011824	1	1A68	9800 T7
	0011825	1	1A68	9800 T8
	0011826	1	1A68	9800 T9
	0011827	1	1A68	9800 T10
	0011828	1	1A68	IDLR ROLL
	0014551	1	4A42	IDLR PIN
	0014630	4	4A45	ROLL CLR
	0014631	22	4A45	ROLL CLR
	0021114	1	5A71	EXIT ADJ GA BOT
	0021115	1	5A71	EXIT ADJ GA TOP
	0021808	1	5A86	IDLR ROLL HLDR
	0028900	1	7A14	EXIT ANGLE LFT
	0028901	1	7A14	EXIT ANGLE RT
	0056610	1	8A60	LEVELER ASSY
	0060052	6	AS19	5/16-18X1HHCS
	0060091	2	AS19	3/8-16X1 HHCS
	0060098	1	QL09	3/8-16X2HHCS
	0060104	1	AS20	3/8-16X2HHCS
	0060153	1	AS20	1/2-13X1 1/2HHCS
	0060485	2	ASF7	10-32 SHCS
	0060680	1	AS10	3/8-16X3/8SSS
	0060881	4	AS25	3/8-16X1 1/2CB
	0061300	1	AS29	3/8-16 JAM NUT SF
	0062029	16	QL09	3/8 X 1/16
	0062301	8	1C15	3/8 C WSHR
	0062362	6	QL09	5/16 LCK WSHR
	0066020	2	9A27	B128 TORR. BRG.
	0071016	1	3B30	EXTENSION SPRG

	<u>COMPONENT</u>	<u>QTY</u>	<u>LOC</u>	<u>DESCRIPTION</u>
0410201	0013186	20	OR69	ROLL SHFT
<u>CHASSIS</u>	0013409	1	3A14	1ST DRV SHFT
	0013504	2	3A20	SPCR PL
	0013551	2	3A26	SPCR PL DR
	0013603	8	3A32	SPCR IDLR
	0013607	1	3A32	SPCR MN IDLR
	0014280	16	4A28	GR DRVN
	0014281	4	4A28	GR DRVN
	0014282	7	4A29	GR IDLR
	0014283	1	4A29	GR IDLR
	0014303	1	4A31	GR MN IDLR
	0014664	1	4A49	MN IDLR WSHR
	0021104	2	5A71	ENTR GA
	0021656	1	5A84	PILOT BAR
	0039912	20	7A67	SPCR SHIM
	0040500	20	OR08	PILLOW BLK 88500
	0050434	1	SS01	FRT PLT ASSY 9800
	0050435	1	SS01	BK PLT ASSY 9800
	0052922	1	OR03	ENT GA ASSY
	0053306	1	OR48	EXIT TBL 10 DUPLEX
	0060090	8	AS19	3/8-16X3/4HHCS
	0060094	2	AS19	3/8-16X1.25HHCS
	0060158	40	AS21	1/2-13X2 1/2 HHCS
	0060243	13	AS22	5/8-11X2 HHCS
	0060245	2	AS22	5/8-11X2 1/2HHCS
	0060260	8	AS22	3/4-10X2HHCS
	0060470	1	AS25	5/8-11X1-1/4 SHCS
	0060875	4	AS25	3/8-16X1CB
	0061122	8	QL09	3/8-16 HN FIN
	0062029	12	QL09	3/8 X 1/16
	0062071	40	AS34	17/32ID WSHR
	0062149	8	1C31	1-5/32X093 WSHR
	0062362	6	QL09	5/16 LCK WSHR
	0062365	22	1C17	5/8 LCK WSHR
	0062366	8	1C17	3/4 LCK WSHR
	0062403	48	1C17	18WDRF KEY
	0062503	68	AS35	5100-112 RET RG
	0062506	1	AS35	5100-175 RET RG
	0062632	40	AS15	3/8X7/8 DWL
	0066105	48	9A28	B1816 TORR BRG
	0066107	3	9A28	B2816OH TORR BRG
	0066108	1	9A28	B2216OH TORR BRG
	0066428	48	9A46	TT2201-2THRUST BRG
	0066460	1	9A49	DU-20 GAR BRG
	0066472	2	9A49	DU26 GAR BRG
	0066600	6	1C06	1/4X1/8 FEMALE CPG
	0066610	2	1C06	888L HLF UNION
	0066621	4	1C06	889 L IMP ELBW
	0066640	6	1C06	1610 GRS FTG
	0066700	144	1C25	1/4"OD NYLA TUBING
	0071015	40	OR24	9562 COMPRESSN SPR
	0085156	1	OR99	LF CAP NAMEPLT
	0085178	1	OR99	LOGO LOCKFORMER

	<u>COMPONENT</u>	<u>QTY</u>	<u>LOC</u>	<u>DESCRIPTION</u>
0410301	0013135	1	3A01	3RD DRV SHFT
<u>LOWER REDUCTION</u>	0013408	1	3A13	2ND DRV SHFT
	0013504	3	3A20	SPCR PL
	0014385	1	4A33	GR RDCT
	0020461	1	OR09	RDCT PLT FRT
	0020462	1	OR07	LWR RDCT PLT BK
	0021885	2	5A88	RDCT BASE BAR
	0056588	4	8A58	CLAMP ASSY
	0060155	4	AS21	1/2-13X1-3/4 HHCS
	0060156	4	AS21	1/2-13X2HHCS
	0060243	4	AS22	5/8-11X2 HHCS
	0060470	2	AS25	5/8-11X1-1/4 SHCS
	0062364	8	1C17	1/2 LCK WSHR
	0062365	4	1C17	5/8 LCK WSHR
	0062504	3	AS35	5100-125 RET RG
	0062703	2	AS18	3/16X1-1/4ROLL PIN
	0066106	4	9A28	B2016OH TORR BRG
	0066330	1	9A39	NTA2031 TORR BRG
	0066331	2	9A39	TRB2031 TORR RACE
	0066427	4	9A46	TT2304-1THRUST BRG
0410401	0043202	2	8A28	D40B20 SPRKT71102
<u>TRANSMISSION</u>	0062431	3	1C17	1/4SQX1 3/8KY
	0070002	2	2C50	B93 BELT
	0070450	1	2B54	2BK55H X 1-1/8BUSH
	0070491	1	2B43	2BK190H W/1-1/8 BU
	0070724	1	MOT	40-2 CHN 84P
73013	0070725	1	1C38	40-2 CONN LINKS
0410501	0022687	2	6A09	RISER BLK
<u>STAND</u>	0024468	1	6A40	UPR JACK SPRT
	0024683	1	6A42	LWR JACK SPRT
	0029422	1	7A18	MTR BASE FRT
	0029423	1	7A19	MTR BASE REAR
	0029424	1	7A19	EXIT ADJ PLT
	0042203	1	8A05	BOLT
	0050031	1		STAND 9800
	0060000	2	ASF3	1/4-20X1/2 HHCS
	0060104	2	AS20	3/8-16X2HHCS
	0060166	2	AS21	1/2-13X3 1/2 HHCS
	0060876	4	AS25	3/8-16X1-1/4CB
	0061160	2	AS28	1/2-13HN HVY SF
	0061300	2	AS29	3/8-16 JAM NUT SF
	0061301	1	AS30	1/2-13 JAM NUT SF
	0062029	4	QL09	3/8 X 1/16
	0062361	2	1C17	1/4 LCK WSHR
	0062363	4	QL09	3/8 LCK WSHR
	0062613	1	AS14	1/4X1 DWL



	<u>COMPONENT</u>	<u>QTY</u>	<u>LOC</u>	<u>DESCRIPTION</u>
<u>0410601</u> <u>ELECTRICALS</u>	0060574	3	ASF9	10-24X3/4RHMS
	0060575	4	ASF9	10-24X3/8RHMS
	0060582	2	ASF9	10-32X1/2RHMS
	0060876	4	AS25	3/8-16X1-1/4CB
	0061040	4	AS27	10-24 HN
	0062029	4	QL09	3/8 X 1/16
	0062363	4	QL09	3/8 LCK WSHR
	0080080	1	AS38	5HP 3 60 18 184
	0080103	1	OR57	609 BOW MTR CNTRL
	0080104	1	5B11	FLUSH PLT
	0080400	1	5B53	BX CABLE 8-3
	0080484	1	5B28	BX CONN 3/4
	0080601	3	8B16	RG TNG TERMINAL
	0080713	1	5B36	SNAP-IN BLANK
	0082256	3	AS38	W56 HTR ELEMENT
	<u>0410701</u> <u>COVER</u>	0029900	4	7A24
0035463		2	OR11	SKIRT CVR
0039526		1	SN50	CVR 10STA STND S
0060350		4	AS23	5/16-18X3/4 SHCS
0060551		4	ASF8	1/4-20X1/2 RHMS
0062361		4	1C17	1/4 LCK WSHR
0062362		4	QL09	5/16 LCK WSHR

CINCINNATI PRECISION MACHINERY 5130-4133



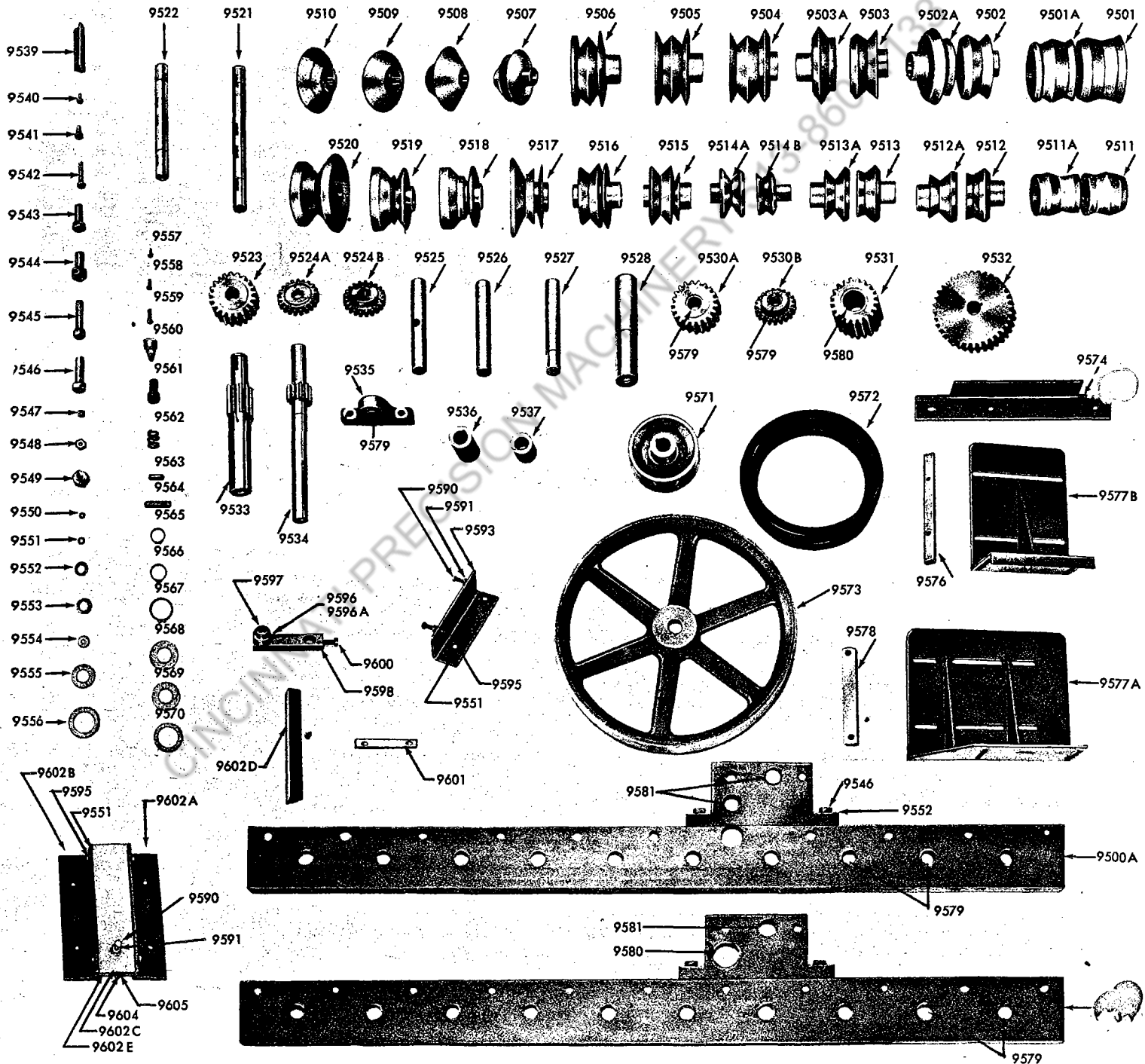
10 STATION STANDING "S"
MACHINE

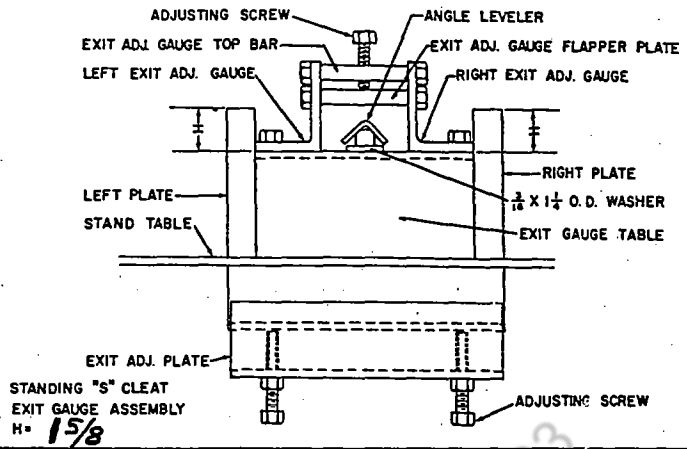
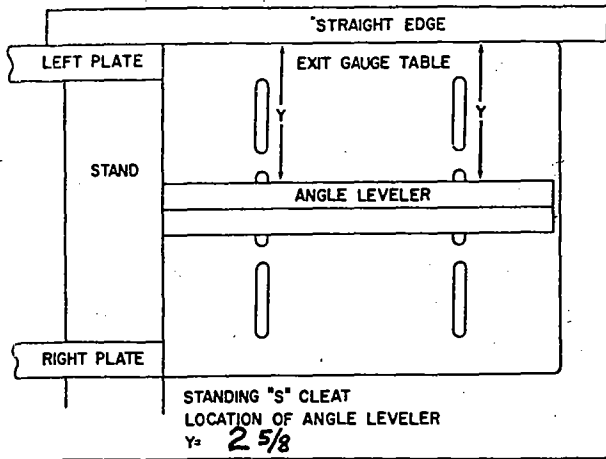
OLD PART NUMBER	NEW PART NUMBER	AMOUNT REQUIRED	DESCRIPTION
9501A	11801	1	B1-R FORMING ROLL
9501B	11802	1	B1-L FORMING ROLL
9502A	11803	1	B2-R FORMING ROLL
9502B	11804	1	B2-L FORMING ROLL
9503A	11805	1	B3-R FORMING ROLL
9503B	11806	1	B3-L FORMING ROLL
9504	11807	1	B4 FORMING ROLL
9505	11808	1	B5 FORMING ROLL
9506	11809	1	B6 FORMING ROLL
9507	11810	1	B7 FORMING ROLL
9508	11811	1	B8-9 FORMING ROLL
9509	11811	1	B8-9 FORMING ROLL
9510	11813	1	B10 FORMING ROLL
9511A	11814	1	T1-R FORMING ROLL
9511B	11815	1	T1-L FORMING ROLL
9512A	11816	1	T2-R FORMING ROLL
9512B	11817	1	T2-L FORMING ROLL
9513A	11818	1	T3-R FORMING ROLL
9513B	11819	1	T3-L FORMING ROLL
9514A	11820	1	T4-R FORMING ROLL
9514B	11821	1	T4-L FORMING ROLL
9515	11822	1	T5 FORMING ROLL
9516	11823	1	T6 FORMING ROLL
9517	11824	1	T7 FORMING ROLL
9518	11825	1	T8 FORMING ROLL
9519	11826	1	T9 FORMING ROLL
9520	11827	1	T10 FORMING ROLL
9521	13185	20	ROLL SHAFTS (double extended shafts)
9522	13107	20	ROLL SHAFTS (single extended shafts)
9523	14280	16	DRIVEN GEAR
9524A	14453	2	STATION 1 DRIVEN GEAR
9524B	14281	2	STATION 2 DRIVEN GEAR
9525	13551	2	PLAIN SPACER DRILLED
9526	13504	2	PLAIN SPACER DRILLED
9527	13603	8	IDLER SPACER
9528	13607	1	MAIN IDLER SPACER
9529	60652	2	SET SCREW
9530A	14282	7/8	IDLER GEAR
9530B	14283	1	IDLER GEAR(HUB)
9531	14303	1	MAIN IDLER GEAR
9532	14385	1	REDUCTION GEAR
9533		1	FIRST DRIVE SHAFT 13410 (12 teeth) / 13409 (12 teeth) / 13407 (10 teeth)
9534	13408		SECOND DRIVE SHAFT
9535	40500	20	PILLOW BLOCKS
9536	14630	4	ROLL COLLAR (1.882)
9537	14631	22	ROLL COLLAR (1.118)
9539	29900	2	COVER SUPPORT
9540	60045	6/2	5/16" X 1/2" HHCS
9541	60090	8	3/8" X 3/4" HHCS
9542	60097	8	3/8" X 1-3/4" HHCS
9543	60242	16	5/8" X 1-1/4" HHCS
9544	60260	8	3/4" X 2" HHCS (HEAT TREATED)
9545	60160	40	1/2" X 2-3/4" HHCS
9546	60245	2	5/8 X 2-1/2" HHCS
9547	61061	12	1/4" SQUARE NUT
9548	61122	14	3/8" HEX NUT
9549	61203	2	5/8" HEX NUT
9550	62361	12	1/4" LOCK WASHER
9551	62362	10	5/16" LOCK WASHER
9552	62365	18	5/8" LOCK WASHER
9553	62366	8	3/4" LOCK WASHER

10 STATION STANDING "S"
MACHINE

OLD PART NUMBER	NEW PART NUMBER	AMOUNT REQUIRED	DESCRIPTION
9554	62029	30	3/8" WASHER
9555	62148	8	SPACER WASHER
9556	14664	1	MAIN IDLER WASHER
9557	60551	6	1/4"-20 X 1/2" MACHINE SCREW
9558	60552	8	1/4"-20 X 3/4" MACHINE SCREW
9559	60553	4	1/4"-20 X 1" MACHINE SCREW
9560	66640	4	ALEMITE
9561	60470	1	5/8" X 1-1/4" SHCS
9562	71015	40	WIRE SPRINGS
9563	62403	63	WOODRUFF KEY # 18
9564	62430	1	SQUARE KEY 1/4" X 1/4" X 1-3/4"
9565	62503	48	1-1/8" RETAINING RING
9566	62504	2	1-1/4" RETAINING RING
9567	62506	1	1-3/4" RETAINING RING
9568	44622	4	1-1/4" I.D. THRUST WASHER <i>use 66427</i>
9569	66428	48	1-1/8" I.D. THRUST WASHER
9570	44623	1	1-3/4" I.D. THRUST WASHER <i>use 66472</i>
9571	70491	1	MOTOR SHEAVE
9572	70002	2	"V" BELT
9573	70450	1	PULLEY
9574	29422	2	MOTOR BASE
9576	21104	2	ENTRANCE GAUGE BAR
9577A	52922	1	ENTRANCE GAUGE TABLE
9577B	53306	1	EXIT GAUGE TABLE
9578	21656	1	ENTRANCE PILOT BAR
9579	66105	48	NEEDLE BEARINGS B-1816
9580	66107	3	NEEDLE BEARINGS B-2016-OH
9581	66106	3	NEEDLE BEARINGS B-2016-OH
9582	80103	1	SWITCH BOX
9583	82256	2	HEATERS
9584		2	BX CONNECTORS NO LONGER USED
9585		1	BX CABLE-ARMORED NO LONGER USED
9586		1	FRONT MOTOR GUARD
9587		1	REAR MOTOR GUARD
9588	39526	1	COVER SUPPORT
9589	50031	1	STAND
9590	60104	3	3/8" X 2" CAP SCREWS
9591	61300	3	3/8" HEX JAM NUT
9592	80080	1	MOTOR
9593	29424	1	EXIT ADJUSTMENT PLATE
9594	85156	1	NAME PLATE
9595	60047	8	5/16" X 3/4" HHCS
9596	11828	1	IDLER ROLL
9596A	66020	2	NEEDLE BEARINGS B-128
9597	14551	1	IDLER ROLL PIN
9598	21808	1	IDLER ROLL HOLDER
9599	62029	1	ROLL HOLDER SPACER
9600	60151	1	1/2" X 1" SQ. HEAD SET SCREW
9601	39912	20	SPACER SHIMS
9602A	28900	1	EXIT ADJ. ANGLE IRON LEFT
9602B	28901	1	EXIT ADJ. ANGLE IRON RIGHT
9602C	21115	1	EXIT ADJ. TOP PLATE
9602D	56610	1	EXIT ADJ. LEVELER PLATE
9602E	21114	1	EXIT ADJ. FLAPPER PLATE
9603	60875	8	3/8" X 1" CARRIAGE BOLT
9604	60485	2	10-32 X 1/2" SHCS
9605	71016	1	FLAPPER GAUGE SPRING
9606	60680	1	3/8" X 3/8" S.S.S.

LOCKFORMER STANDING "S" CLEAT ROLLING MACHINE





OPERATING INSTRUCTIONS

PRELIMINARY: After removing machine from skid, the procedure outlined below should be followed carefully to obtain best operating results. First, remove top cover by unfastening the 1/4" round head machine screws from both ends of the machine. (These are located above the entrance and exit gauges.) Second, place a spirit level across the plates at both the entrance and exit ends of the machine as indicated in the illustration. This must be done to eliminate any twist in the machine. Third, replace the cover after the machine is fully leveled.

MATERIAL: Shear material to a width of 6/4". Capacity of the machine is 20 gauge (.039) or lighter. Pieces 12" long or longer can be handled.

OPERATING INSTRUCTIONS: The machine as delivered has been properly set up and tested at our factory. Normal adjustment should be made by either raising or lowering the Flapper Plate (Drawing #2). Should a more complete adjustment be required the instructions below should then be followed:

EXIT ADJUSTMENTS:

Place a straight edge along the outer edge of the left machine plate (see Drawing #1) and measure in to the "Y" dimensions at the extreme ends of the gauge. Raise the exit gauge table, by the two adjusting screws shown on Drawing #2, to the indicated "H" dimensions. Place the Flapper Assembly into position and run a piece of metal through the machine until the lead end clears the exit table; stop the machine and set the Flapper Assembly to the formed piece of material. The gauge should be set at an angle so that there is approximately 1/32" to 1/16" clearance at the back and a maximum amount at the front edge to clear the beaded edge of the material. Should the material bow upward it can be compensated for by turning the adjusting screw at the top of the Flapper down to exert more pressure on the material. When the piece bows down and loosening the Flapper gauge

has no effect on the piece the entire gauge should then be raised by the two adjusting screws on the underside of the machine.

Various thicknesses of material may have a tendency to react differently when roll formed, therefore, if the material tends to bow to the left or right the "Y" dimension (Drawing #1) may be changed in increments of 1/32" to 1/16" to compensate for side bow.

To obtain the best results when running long lengths it is suggested that a supporting table be placed at the exit end of the machine - the same height as the emerging material to support its weight so that uniform straight lengths can then be expected.

The adjustment of the T-10 Roll will produce a tight or loose "S" fold. The roll could be adjusted by loosening or tightening the spring tension on the four roll studs.

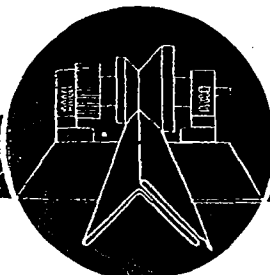
THE ABOVE INSTRUCTIONS MAY REQUIRE SLIGHT VARIATIONS OF THE DIMENSIONS TO COMPENSATE FOR DIFFERENCES IN MATERIAL USED.

SPRING TENSION:

Spring tension on roll stations are set thusly, the #1 station set springs tight then release one full turn (360°). Roll sets 2-10 tighten springs tight, then release two full turns (720°). The T-10 Roll can be adjusted from 1/2 to 2 full turns depending on the gauge material used.

LUBRICATION:

There are four Alemite fittings located on the underside of the machine. These fittings lubricate the high speed bearings of the unit. Lubricate after every eight hours of operation. Grease gears periodically for quiet performance. The slow speed shafts do not require additional lubrication. Check motor periodically. Recommended gear and bearing lubricant - Standard Viscous #3 - A product of the Standard Oil Company.



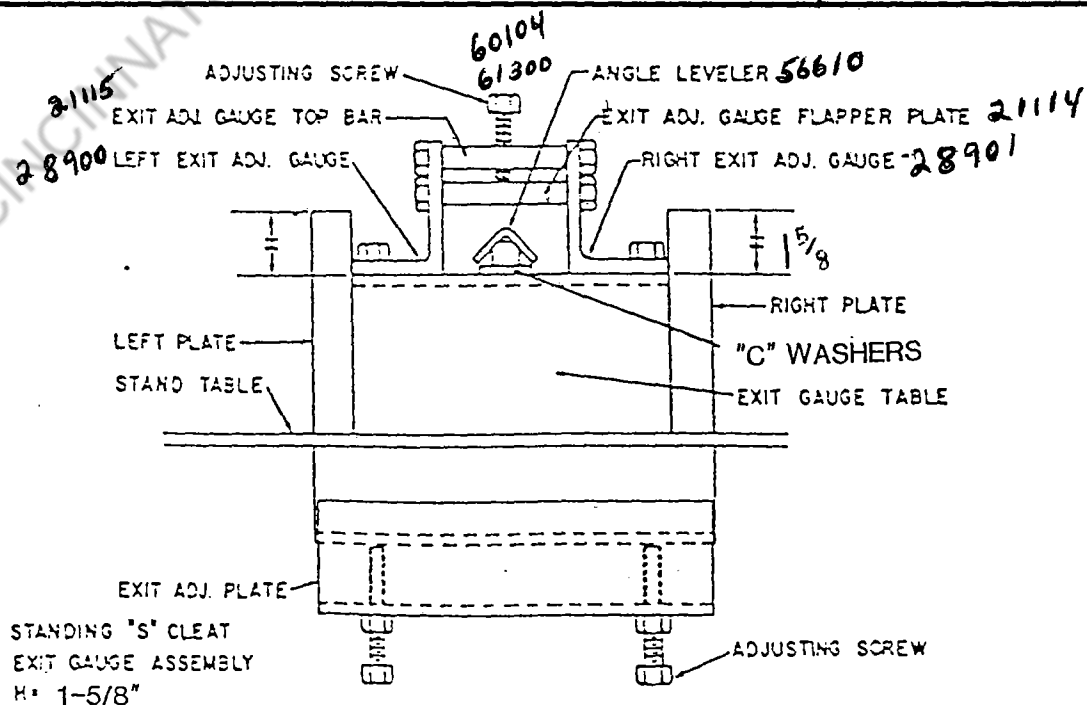
EXIT STRAIGHTENER ASSEMBLY

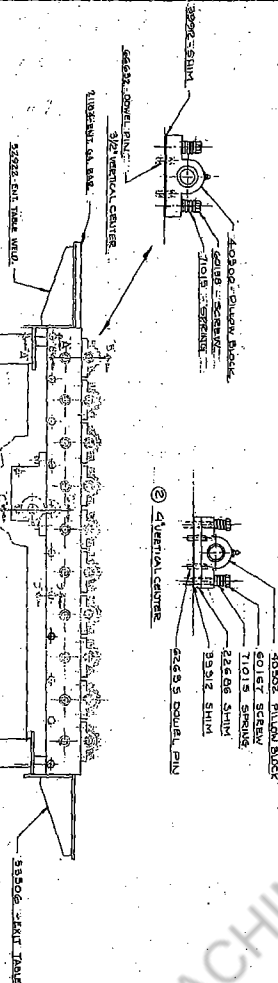
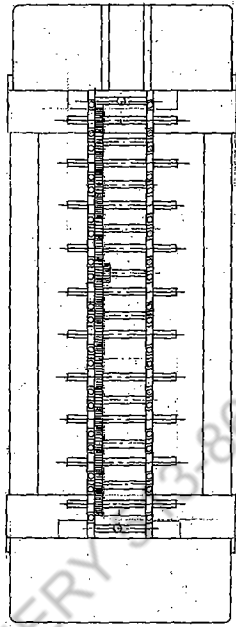
1. Assemble the exit angles and plates as shown in illustration below. Fasten to the exit table with 3/8-16x1-1/2 carriage bolts and a "C" washer for each hole.
2. Assemble the exit adj. gauge bottom (flapper plate) and top by fastening with 5/16-18x1 HHCS and washers.
3. Insert 3/8-16x2 adjusting screw into top bar with 3/8-16 jam nut.
4. Install extension spring onto plates with 10-32 SHCS. NOTE - spring may need to be cut to size. Coil should be 7/16" long.
5. Re-connect the power to the machine and place the exit assembly into position. Replace all covers and JOG a piece of metal through the machine and set the assembly to the formed piece of material. The gauge should be set at an angle so that there is approximately 1/32 to 1/16" clearance at the back and a maximum amount at the front edge to clear the beaded edge of the material.

Should the material bow upward, it can be compensated for by turning the adjusting screw at the top of the flapper down to exert more pressure on the material. When the piece bows down, and loosening the flapper gauge has no effect on the piece, the entire gauge should then be raised by the two adjusting screws on the underside of the machine.

Various thicknesses of material may have a tendency to react differently when roll formed, therefore, if the material tends to bow to the left or right, the angle leveler may be moved in increments of 1/32" to 1/16" to compensate for side bow.

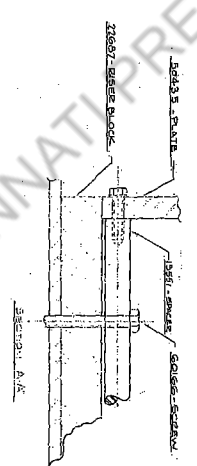
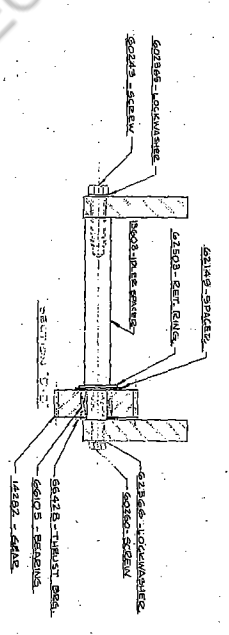
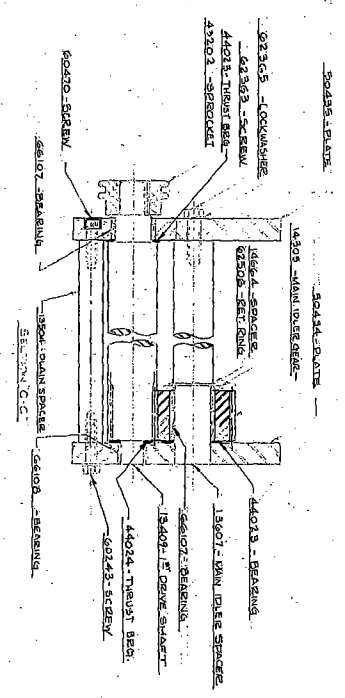
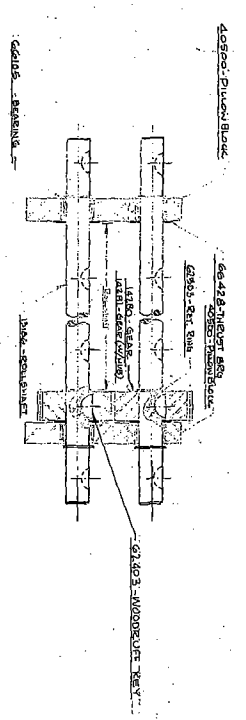
EXIT STRAIGHTENER ASSEMBLY





FOR LOWER PRODUCTION SEE #59083

② PART NUMBERS SHOULD ILLUSTRATES FOR 1/2 VERTICAL, PRODUCTION BEARING MACHINE PARTS LIST



PART LOCK CHINER IN	
FOR 1/2 VERTICAL, PRODUCTION BEARING MACHINE	
DATE	5-7-71
REV.	1
NO.	59087
CINCINNATI PRECISION MACHINERY	