

# ROTO NOTCHER

## OPERATION and PROCEDURES MANUAL



# LOCKFORMER

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## **WARNING**

**THIS EQUIPMENT IS DESIGNED TO BE OPERATED WITH ALL COVERS SECURED IN PLACE. OPERATION WITHOUT THESE SAFEGUARDS MAY RESULT IN CONDITIONS WHICH ARE HAZARDOUS TO THE OPERATOR AND OBSERVERS.**

## **SAFETY GUIDELINES**

**Before operating the machine, study and follow the safety precautions in this section. These precautions are intended to prevent injury to you and your fellow workers. They cannot, however, cover all possible situations. Therefore, EXERCISE EXTREME CAUTION before performing any procedure or operation.**

### **Safety Precautions Before Starting The Machine(s)**

**Protect yourself. Wear safety glasses. Do not wear loose clothing, neckties, or jewelry. If long sleeves must be worn, avoid loose cuffs and buttons. Tie back and contain long hair.**

**Keep your work area clean. Remove all scrap, oil spills, rags, tools and other loose items that could cause you to slip, trip and fall.**

**Make sure that hydraulic and pneumatic pressures are at specified levels before operating this equipment.**

**Be sure all guards and covers are in place.**

**Keep this equipment properly maintained.**

**Be alert for loose, worn or broken parts. Do not attempt to operate any machinery with such parts present or if the machinery is making unusual noises or actions.**

**Be sure that this Instruction Manual is kept near the machine so the operator can refer to it when necessary.**

**Be aware of the locations of the **Power Off** or **Emergency Stop** button in case of an emergency.**

## **Safety Precautions While Operating The Machine(s)**

Always be alert whenever operating any machinery.

Only one person should control the machine(s). Never allow anyone to operate the controls while you are working on this equipment. In addition to disconnecting power always use lock outs and warning signs to indicate that you are working on the machine(s).

Keep your hands and arms away from internal workings of the machinery when starting, running or stopping.

Never leave the work area while the equipment is in operation.

Continually observe the notching and forming process. If any unusual condition develops, immediately stop the machine.

When cleaning the machine or any of its components, do not use toxic or flammable substances. Do not perform any cleaning while the equipment is running.

Never over-ride or disable any safety switch or safety interlock.

Do not use an air hose to clean the machine(s). Air pressure may drive dirt and small chips into bearing surfaces or cause bodily injury.

**Do not operate the machine unless all covers are in place.**

Always turn off power to the machine(s) *at the main disconnect* before performing any maintenance or adjustments so accidental start-up or electrocution cannot occur.

Always shut off the power at the main disconnect switch before entering the electrical control box.

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PARTS LIST	

<u>OVERALL DIMENSIONS:</u>	22 inches wide, 20 inches deep, 36 inches high
<u>SHIPPING WEIGHT:</u>	Approximately 300 pounds
<u>STOCK CAPACITY:</u>	22-30 gauge galvanized (flat stock and 5/8" to 1" Standing Seam with 5/8" starting tab)
<u>STOCK WIDTH:</u>	3 inch or 6 inch
<u>FORMING SPEED:</u>	Approximately 30 feet per minute
<u>TAP-NOTCHING DEPTH:</u>	5/8" standard, adjustable to 3/4"
<u>TAP-NOTCHING SPACING:</u>	Approximately 3/4" centers
<u>ELECTRICAL:</u>	115 Volts, Single Phase, 60 Hertz
<u>DRIVE:</u>	3/4 H.P., 1800 R.P.M. motor with thermal overload protection, V-Belt
<u>OPTIONAL ACCESSORY:</u>	Collar Maker to produce Round Starting Collars, Fibre-duct Starting Collars, and Flex-Duct Connectors

When ordering replacement parts, or requesting equipment information, please specify the complete equipment nomenclature identification and serial number. Replacement rolls are ordered by using the numbers stamped on the side face of the rolls.

## SPECIFICATIONS

## REPLACEMENT PARTS ORDERING

**GENERAL INFORMATION**

This unit is used to die-cut tab notches in blank 3" or 6" width flat galvanized steel, or 3/1 roll "Tee" profile galvanized steel. The standard tab-notch depth is 5/8" - however, the machine is adjustable to provide tab-notch depth up to 3/4".

The thickness of the material to be notched can range from a minimum of 22 gauge up to a maximum of 30 gauge. Also, the machine will accommodate a 5/8" to 1" standing seam when using 3/1 roll "Tee" profile galvanized steel.

If desirable, the optional accessory Collar Maker can be added to the machine to fabricate 3" to 14" diameter round starting collars.

**INSTALLATION**

After machine is removed from its shipping crate, check and / or remove all foreign particles that may have fallen into the machine. Select an operating site for the machine that is near a 115 Volt, single phase, 60 Hertz grounded convenience outlet. Make sure the convenience outlet meets all electrical standard and wiring color codes for your geographical area. Once the machine is positioned at the operating site, level and secure machine to floor area.

**PRE-OPERATIONAL ADJUSTMENTS**

Before starting production running of machine, it is recommended that the following adjustments be checked to ensure satisfactory operation and profile. If an optional Collar Maker is installed on the Roto-Notcher, refer to the separately supplied instruction manual for pertinent pre-operation adjustments.

**GENERAL  
INFORMATION****INSTALLATION****PRE-  
OPERATIONAL  
ADJUSTMENTS**

## ADJUSTABLE GAUGE BAR

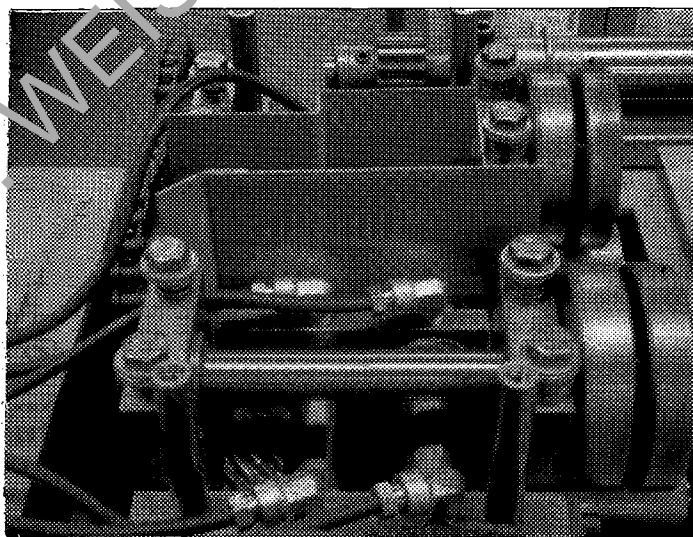
Move the Adjustable Gauge Bar to accept either 3" or 6" stock width. The Adjustable Gauge bar is positioned closest to the machine rolls for 3" stock, and furthest from the rolls for 6" stock. See sketch #1. To make this adjustment, simply remove the two socket head cap screws securing the gauge bar to the table. Then measure your stock width plus  $1/32$ " from the front and back gauge bars (part # 26028) to the adjustable gauge bar and lock into position.

## NOTCH DEPTH

The stock notch depth of  $5/8$ " or  $3/4$ " is obtained by either removing the front and rear gauge bars or adding shims between the gauge bars and front and back plates. Shims are added to *decrease* the notch depth. Removing or changing the thickness of the gauge bars will *increase* the notch depth. See sketch #1.

## PILLOW BLOCK ADJUSTMENT

The four pillow block bolts for each drive roll were factory set, and should give good results. The stock should feed smoothly between the upper drive roll and bottom idler roll. Make adjustments as needed. To reset the bolts to their factory-set position; tighten all eight pillow block bolts down snug, and then loosen  $1/2$  of a turn. See photo below.



## ADJUSTABLE GAUGE BAR

## NOTCH DEPTH

## PILLOW BLOCK ADJUSTMENT

**OPERATION**

Turn the ON/OFF switch located on the right side of the machine to the ON position, and feed a piece of test material through the machine, keeping it flush against the adjustable gauge bar. Observe if machine is operating satisfactorily and profile is correct. If any inconsistencies occur, make necessary adjustments described in the Pre-Operational Adjustment section of this manual.

NOTE - for extreme material lengths, it is necessary to ensure that material is also in contact with the inside of the adjustable gauge bar throughout the complete length of the stock being notched.

**MAINTENANCE**

A good preventive maintenance program is a major step forward to assure trouble-free machine operation. In order to be effective, routine inspection, lubrication and adjustment schedules should be established and followed. The maintenance schedule should be based on normal machine usage, which is considered to be approximately 40 hours of operation weekly. In addition to the grease fittings, grease should also be applied to all gear teeth to help eliminate noise and galling of gears.

**RECOMMENDED LUBRICANTS**

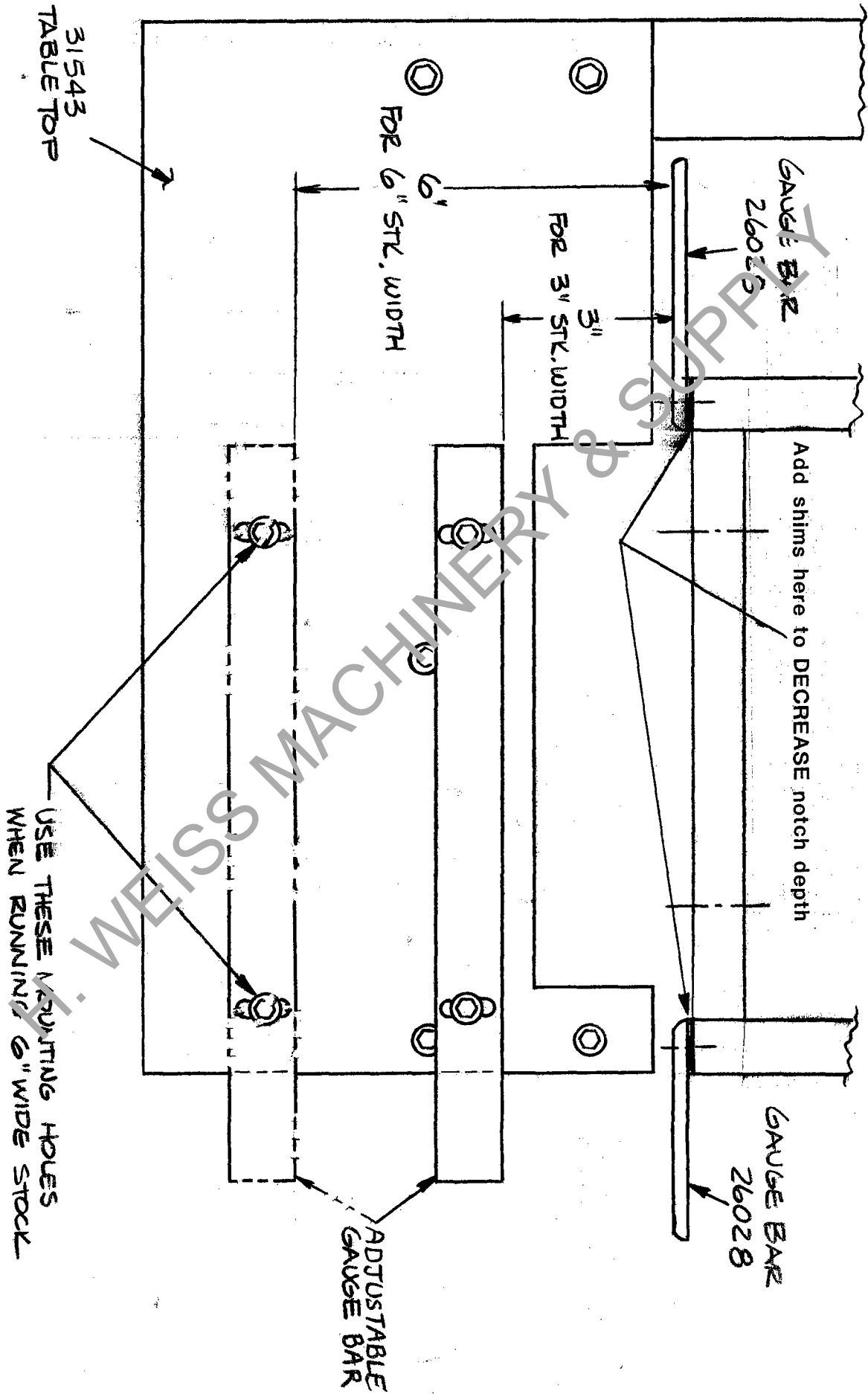
Standard Oil Co. ....	Standard Polarine Viscous Lubricant #3
Imperial Oil & Grease Co. ....	Molub Alloy #2BRB572 or Molub Alloy #3
Div. Of Beatrice Foods	
Mobil Oil Co. ....	Mobil Plex EP2

**OPERATION****MAINTENANCE****RECOMMENDED  
LUBRICANTS**



## TROUBLESHOOTING

<b><u>SYMPTOM</u></b>	<b><u>PROBABLE CAUSE</u></b>	<b><u>REMEDY</u></b>
Stock does not feed smoothly.	<ol style="list-style-type: none"> <li>1. Pillow Block Bolts adjusted too tight.</li> <li>2. Stock binding against Adjustable Gauge Bar.</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust Pillow Block Bolts.</li> <li>2. Readjust Adjustable Gauge Bar.</li> </ol>
Spacing between notches inconsistent.	<ol style="list-style-type: none"> <li>1. Motor Drive Belt loose</li> <li>2. Pillow Block bolt adjusters too loose.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust Belt for greater tension.</li> <li>2. Tension readjust Pillow Block Bolts.</li> </ol>
Notch Depth Inconsistent.	<ol style="list-style-type: none"> <li>1. Gauge Bars loose or Misadjusted.</li> <li>2. Adjustable Gauge Bar Misadjusted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust Gauge Bars.</li> <li>2. Readjust Adjustable Gauge Bar.</li> </ol>
Notcher Inoperative.	<ol style="list-style-type: none"> <li>1. Motor Drive Belt broken</li> <li>2. Motor Malfunction.</li> <li>3. Inoperative ON/OFF Switch.</li> <li>4. Main Power Fuse blown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace Drive Belt.</li> <li>2. Replace Motor.</li> <li>3. Replace Switch.</li> <li>4. Replace Fuse.</li> </ol>



MATERIAL MOVES

GAUGE BAR ADJUSTMENTS

SKETCH #1

## ROTO NOTCH PARTS LIST

COMPONENT	QTY	LOC	DESCRIPTION
0013492	1	3A18	MAIN DRIVE SHAFT
0013493	1	3A18	LWR DRV ROLL SHAFT
0013494	1	3A19	LWR DRV ROLL SHAFT
0013495	1	3A19	DRIVE ROLL SHAFT
0013496	1	3A19	PUNCH DRIVE SHAFT
0013497	2	3A19	ROLL SHAFT UPPER
0014080	1	4A13	DRIVEN GEAR
0014081	1	4A13	PUNCH SHAFT GEAR
0014646	1	4A48	SUPPORT COLLAR
0014950	4	4A58	COVER SPACER STUD
0016090	2	5A17	UPPER DRIVE ROLL
0016091	2	5A17	BOTTOM ROLL
0019447	4	5A44	COVER SPACER
0026020	1	OR07	FRONT PLATE
0026021	1	OR07	BACK PLATE
0026022	1	OR07	END PLT EXIT END
0026023	1	OR07	END PLT GEAR END
0026024	1	6A77	CTR SUPRT PLT
0026026	1	6A78	NOTCH DIE SUPPORT
0026027	4	6A78	PILLOW BLOCK
0026028	2	6A78	GAUGE BAR
0028994	2	7A15	SPACER
0028995	2	7A15	SPACER LWR ROLL SH
0029510	2	OR07	MTR BASE
0032902	1	7A39	LUBE CONN HLDR
0035770	1	OR03	COVER
0040793	1	8A03	NOTCH DIE
0040794	1	8A03	NOTCH BLADE
0042761	2	8A18	KEY MOD
0042778	2	8A19	DRIVE GEAR
0043131	2	8A28	HELICAL GEAR
0051336	1	8A41	NOTCH BLADE GUARD
0057559	1	OR11	SCRIP CHUTE R-NOTCH
0057570	1		ADJ. GAUGE BAR
0058638	1	SSA3	STAND WLDT
0060000	2	ASF3	1/4-20X1/2 HHCS
0060017	4	ASF4	5/16-18X2-1/4 HHCS
0060049	4	ASF4	5/16-18X1 1/4HHCSH
0060105	8	AS20	3/8-16X3 1/2HHCS
0060390	2	ASF6	1/4-20X1-1/2 SHCSN
0060393	12	ASF6	3/8-16X1 SHCS NYLO
0060395	3	ASF6	5/16-18X1-1/4 SHCS
0060397	1	ASF6	5/16-18X1 SHCS NYL
0060399	11	ASF6	1/4-20X1/2 SHCS NY
0060722	1	1C24	1/2-13X1SSS
0061101	4	AS28	5/16-18HN HVY SF
0062000	5	AS32	1/4X062 WSHR
0062010	8	AS32	5/16X1/16 WSHR
0062027	24	AS33	3/8X082 WSHR
0062340	20	1C15	3/8 BLVL WSHR
0062362	4	QL09	5/16 LCK WSHR
0062363	4	QL09	3/8 LCK WSHR
0062370	2	1C17	1/4 LOCK WASHER
0062401	4	1C17	9 WDRF KEY
0062404	4	1C17	61WDRF KEY

COMPONENT	QTY	LOC	DESCRIPTION
0062448	2	1C19	1/4SQX5/8 KEY
0062500	9	AS35	5100-75 RET RG
0062501	4	AS35	5100-87 RET RG
0062518	3	AS35	5160-98 RET RNG
0062523	1	AS35	RET RING 5160-62
0062526	3	AS35	RET RG 5160-75
0062601	2	AS14	3/16X3/4 DWL
0062631	18	AS15	3/8X3/4 DWL
0062714	2	ASF1	3/16X1 ROLL PIN
0066010	1	9A27	B108 TORR BRG
0066021	1	9A27	B128 OH TORR BRG
0066031	1	9A27	B168 OH TORR BRG
0066050	2	9A27	B1012 OH
0066061	7	9A27	B1212OH TORR BRG
0066080	2	9A28	B1412 TORR BRG
0066101	2	9A28	B1612OH TORR BRG
0066160	1	9A30	TT1102-1 THRST BRG
0066310	3	9A38	NTA1018 TORR BRG
0066312	6	9A38	TRB 1018 TORR RACE
0066320	1	9A38	NTA1625 TORR BRG
0066322	2	9A39	TRA-1625 THRUST RA
0066332	5	9A39	NTA-1220 THRS BRG
0066333	14	9A39	TRB 1220 THRS RC
0066354	4	9A40	TRB 1625 THRUST
0066420	5	9A46	TT1205 THRUST BRG
0066430	3	9A46	TT1502-2THRUST BRG
0066600	5	1C06	1/4X1/8 FEMALE CPG
0066610	2	1C06	888L HLF UNION
0066640	5	1C06	1610 GRS FTG
0066659	3	1C07	1/4X90 CONN
0066700	43	1C25	1/4"OD NYLA TUBING
0070024	2	2C43	4L500 BELT
0070401	1	2B51	2AK64 SHV 3/4 B
0070402	1	2B51	2AK20 X 5/8 SHEAVE
0071013	6	3B30	COMP SPRG 3/8ID
0071036	1	3B32	COMP SPRING
<b>Electricals</b>			
0060048	4	AS19	5/16-18X1 1/4 HHCS
0061101	4	AS28	5/16-18HN HVY SF
0062010	8	AS32	5/16X1/16 WSHR
0062362	4	QL09	5/16 LCK WSHR
0080030	1	OR81	3/4HP-1-60-18-56
0080201	1	5B21	600 TAX5 SWITCH
0080384	1	AS36	P-39 HEATER
0080431	1	MM01	BX CABLE 14-2X42
0080481	2	5B28	BX CONN 1/2
0080483	2	5B28	BX CONN 3/8
0080525	1	AS38	CORD SET 14-3 10
0080602	2	8B16	RG TNG TERMINAL
0080607	1	8B16	INSULATING CAP
0080608	1	8B16	WIRE JOINT
0080650	1	5B30	4CS-1/2 DEEP BOX
0080675	1	5B32	HANDY BOX CVR
0085190	1	OR99	ROTO NOTCH NAME PL