# TIN KNOCKER

# TK NO. 24 COLLAR MAKER

## INSTRUCTIONS & PARTS DIAGRAM

**RED RIVER MACHINERY**
**1-800-729-0759**
**www.redrivermachinery.com**

# Tin Knocker No. 24 Collar Maker
# 24 Gauge Capacity

Notch, Crimp, Bead & Roll in One Pass!!!

Now you can produce complete round starter collars in one pass through the Tin Knocker No. 24 Collar Maker. Dealers can have 3" to 14" collars when they want them. This machine uses either 3" or 6" wide strips of 24-30 gauge mild steel sheet metals. Collars can be fastened by spot welding, riveting or dimpling.

With power feed rolls, the material is tab notched with a standard 5/8". The notch is adjustable to 3/4" on 3/4" centers. With a simple adjustment, the bead rolls can produce round start collars from 3" to 14".

Notch only! By removing the collar attachment, the tab-notch can be applied to flat stock.

# COLLAR MAKER

| | |
|---|---|
| **CAPACITY:** | **24 GAUGE MAXIMUM** |
| **CAUTION:** | **DO NOT RUN HEAVIER GAUGE** |
| **STOCK WIDTH:** | **3 INCH AS DELIVERED** |
| | **6 INCH WITH ROLL INTERCHANGE** |
| **DIAMETER RANGE:** | **3 INCH MINIMUM/14 INCH MAXIUMUM** |

## OPERATION:

A. Machine as delivered adjusted to Open Diameter Curvature.

To adjust SEE DWG. #59551. Loosen the two wing nuts #CM61473 and raise the pivot roll assembly by turning adjusting screws #57565. The highest position will generate an approximate 3-inch diameter collar. Minor adjustment will generate the desired diameter.

Note: Due to the small diameter the part will curl onto the cover and distort the true radius slightly. The part can be easily cupped by hand to assume the proper configuration.

The Angular Plain of the pivot bars will be approximately:

3 Inch Diameter at 30 Degree/28 Degree

8 Inch Diameter at 15 Degree/13 Degree

Adjustments to control diameter are rapid and 2-3 pieces will give you the desired product. Due to variances in metals---formability due to its hardness (yield) and thickness range in tolerance it was not practical to establish exact settings for diameters required and the need to adjust to the material for the end product has been established.

B. CAUTION**:** Do not operate this machine with covers removed due to exposed gears and rotary punch.

Start machine and place material sheared to proper width (3 inch as machine is delivered) into gauge bar and feed material into the machine. The part will be fed thru the Rotary Notcher and directly into the Roll Bead Crimp function of the Collar Maker.

C. ENTRANCE GAUGE SETTINGS:

SEE GAUGE BAR SKETCH #1. The adjustable bar should be set at stock width plus 1/32 inches to allow the material to pass freely thru the machine. The back edge section can be adjusted to the dimension required by taking the blank and bending a 1 inch 90-degree flange and then fitting this flanged portion between the back gauge bar and front bar allowing approximately 1/32-inch side movement.

D. THE SIDE GAUGE BAR is only used in conjunction with the Collar Maker and should be removed if wider sheets are to be run with Roto Notcher Only. This can be accomplished by removing the Upper Roller Assembly of the Collar Maker and lowering the Pivot Diameter Adjustment Assembly.

This can be accomplished as follows:

1. Remove box end cover.
2. Remove 4 bolts that hold pillow block onto lower assembly.
3. Lower Pivot Diameter Adjustment below tangency of bottom roll.
4. Remove Side Gauge Bar.
5. Replace Box End Cover.
6. Start machine and feed flat sheet or sections with formed tee formed on end with 1 inch maximum tee height---Note tab end must be approximately 5/8 inches.

E. To replace Top Section and convert the machine back into the Collar Maker proceed as follows:

1. Remove Box End Cover.
2. Replace Top Roll Assembly.

CAUTION: Before replacing the Top Roll Assembly JOG the machine with the "Starting Switch" until a "PLUS + SIGN" etched onto the bottom shaft is at the TOP CENTER. When placing the Top Assembly onto the machine rotate the Assembly Shaft so that the "PLUS + SIGN" etched on the End of the Gear is also VERTICALLY UP at TOP CENTER. Assemble Top Assembly to lower portion with BOTH + SIGNS at TOP CENTER. The "PLUS SIGNS" at TOP CENTER insure the timing of the Crimp Rolls,

for a true balanced Vee. The Top Assembly Gear has been positioned by drilling thru the set screw hole into a soft portion of the shaft and locked into position by a set screw. This positioning can be altered and re-centered if a new gear or Crimp Roll is installed onto the unit.

When tightening socket head cap screws of the Upper Assembly, tighten tight to compress the disc springs and then loosen 3/8 to 1/2 turn (135 degree to 180 degree). This adjustment can be varied to suit individual crimp depth requirements, as well as feeding.

3. Replace Side Gauge Bar and adjust as required per previous instructions.

4. Replace Box End Cover.

F. ADJUSTMENTS AND TROUBLE SHOOTING:

1. Material not feeding into Bead and Crimp Roll Collar Maker.

   a. Tighten front studs on Exit Feed Roll of Roller Notcher.

      (2nd. Roll at Exit End of Roto Notcher).

   b. Check Side Gauge Setting for proper width with 1/32 clearance. Check stock for being oversize. Adjust accordingly.

2. Metal Over Feeding into Collar Maker. (Buckle between Exit Feed Roll and Collar Maker).

   a. Exit Feed Roll set too tight --- loosen enough to insure positive feed into Collar Maker.

3. Metal buckling between Feed Rolls at Notch Area.

   a. Entry Feed Roll too tight -- loosen as required.

4. Metal Skewing out of Collar Maker making ends out of match exceeding 1/16 inches.

   a. Tighten hex head cap screw on Bead End pillow block of Collar Maker.

   b. Check for over feeding on Exit Feed Roll.

   c. Check Gauge Setting at Entry End to Collar Maker. Excess Setting beyond 1/32 inches may be cause.

5. Lead edge of bead torn as it exits from Collar Maker or material jams and folds under on small diameter.

    a. Check and lower part #CM40792 (SEE DWG. #59551) slightly or remove and increase lead end radius on a grinder. Note part is thru hardened and grinding will not create a soft area.

    The purpose of The Guide is to minimize the Flat or Reverse Curve caused on the lead end by the rapid forming of the bead in this one roll station.

    The proper locations of the slide would be NOSE DOWN and visually sighting thru the bottom roll slot and the slide. The top edge of the slide should be slightly above the bottom of the slot in the bottom roll. To test proper height run a blank thru the machine with the diameter forming pivot roll in its lowest position. The formed part should come out with a diameter of 14 to 16 inches without the use of the diameter forming attachment.

6. Tab Notch not to Base of Bead.

    a. Remove Box End Cover. Loosen the 2-3/8 Hex Head Cap Screw #CM62363 on Dwg. #59551 and move assembly left or right to add or delete material standard setting of plate, #20035 from the Roto Notcher Plate Assembly is 1/8 inch to 5/32 inch. Plate #20035 has slotted holes to allow this movement.

CAUTION: When tightening assembly be sure to hold the unit in an UP or HORIZONTAL plane.

ENCLOSURES:

Drawing #59551

Sketch #1

Collar Maker Bill of Material # 0960201

Roto Notcher Instructions Complete Form #_____

# PARTS LIST

| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM13492 | MAIN DRIVE SHAFT | 1 | A |
| CM13493 | LOWER DRV ROLL SHAFT | 1 | B |
| CM13494 | LOWER DRV ROLL SHAFT | 1 | B |
| CM13495 | DRIVE ROLL SHAFT | 1 | B |
| CM13496 | PUNCH DRIVE SHAFT | 1 | B |
| CM13497 | ROLL SHAFT UPPER | 2 | B |
| CM14080 | DRIVEN GEAR | 1 | A |
| CM14081 | PUNCH SHAFT GEAR | 1 | A |
| CM14646 | SUPPORT COLLAR | 1 | A |
| CM14950 | COVER SPACER STUD | 4 | A |
| CM16090 | UPPER DRIVE ROLL | 2 | A |
| CM16091 | BOTTOM ROLL | 2 | A |
| CM19447 | COVER SPACER | 4 | A |
| CM26020 | FRONT PLATE | 1 | B |
| CM26021 | BACK PLATE | 1 | B |
| CM26022 | END PLT EXIT END | 1 | B |
| CM26023 | END PLT GEAR END | 1 | B |
| CM26024 | CTR SUPRT PLT | 1 | B |
| CM26026 | NOTCH DIE SUPPORT | 1 | A |
| CM26027 | PILLOW BLOCK | 4 | A |
| CM26028 | GAUGE BAR | 2 | A |
| CM28994 | SPACER | 2 | A |
| CM28995 | SPACER LWER ROLL SH | 2 | A |
| CM29510 | MTR BASE | 2 | A |
| CM32902 | LUBE CONN HLDR | 1 | B |
| CM35770 | COVER | 1 | C |

| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM40793 | NOTCH DIE | 1 | A |
| CM40794 | NOTCH BLADE | 1 | A |
| CM42761 | KEY MOD | 2 | A |
| CM42778 | DRIVE GEAR | 2 | A |
| CM43131 | HELICAL GEAR | 2 | A |
| CM51336 | NOTCH BLADE GUARD | 1 | B |
| CM57559 | SCRAP CHUTE WLDT | 1 | A |
| CM58638 | STAND WLDT | 1 | D |
| CM59550 | GEN ASSEM | | D |
| CM60000 | 1/4-20X1/2 HHCS | 2 | |
| CM60017 | 5/16-18X2-1/4 HHCS | 4 | |
| CM60049 | 5/16-18X1 1/4 HHCSH | 4 | |
| CM60105 | 3/8-16X3 1/2 HHCS | 8 | |
| | | | |
| CM60395 | 5/16-18X1-1/4 SHCS | 3 | |
| CM60397 | 5/16-18X1 SHCS NYL | 1 | |
| CM60399 | 1/4-20X1/2 SHCS NY | 11 | |
| CM60722 | 1/2-13X1 SSS | 1 | |
| CM61101 | 5/16-18HN HVY SF | 4 | |
| CM62000 | 1/4X062 WSHR | 5 | |
| CM62010 | 5/16X1/16 WSHR | 8 | |
| CM62027 | 3/8X082 WSHR | 24 | |
| CM62340 | 3/8 BLVL WSHR | 20 | |
| CM62362 | 5/16 LCK WSHR | 4 | |
| CM62363 | 5/8 LCK WSHR MED | 4 | |
| CM62370 | 1/4 LOCK WASHER | 2 | P |

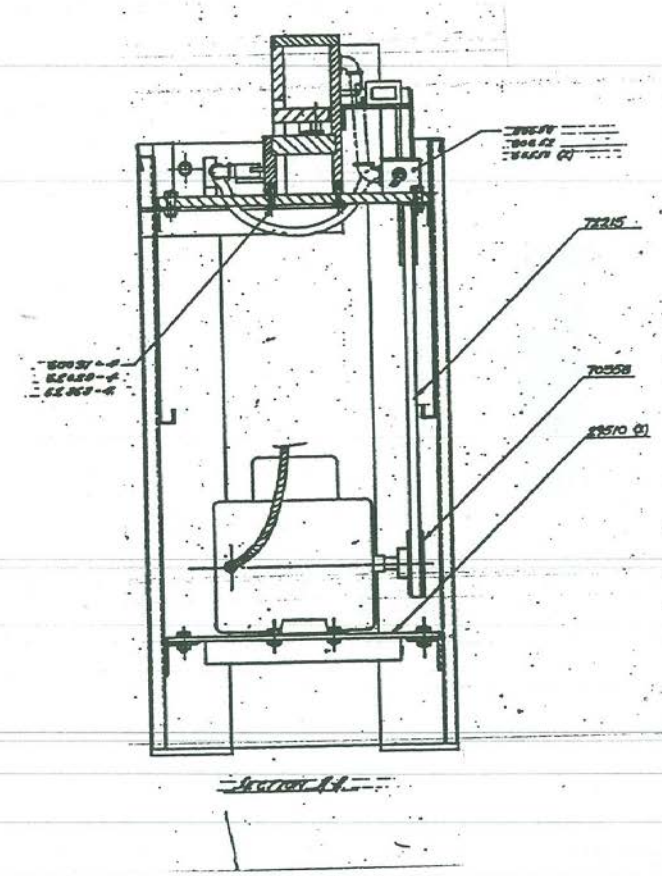
| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM62401 | 9 WDRF KEY | 4 | |
| CM62404 | 61 WDRF KEY | 4 | |
| CM62448 | 1/4 SQ X 5/8 KEY | 2 | |
| CM62500 | 5100-75 RET RG | 9 | |
| CM62501 | 5100-87 RET RG | 4 | |
| CM62518 | 5160-98 RET RG | 3 | |
| CM62523 | RET RING | 1 | |
| CM62526 | RET RG 5160-75 | 3 | |
| CM62601 | 3/16X3/4 DWL | 2 | |
| CM62631 | 3/8X3/4 DWL | 18 | |
| CM62714 | 3/16X1 ROLL PIN | 2 | |
| CM66010 | B108 TORR BRG | 1 | |
| CM66021 | B128 OH TORR BRG | 1 | |
| CM66031 | B168 OH TORR BRG | 1 | |
| CM66050 | B1012 TOR BRG | 2 | |
| CM66061 | B1212OH TORR BRG | 7 | |
| CM66080 | B1412 TORR BRG | 2 | |
| CM66101 | B1612OH TORR BRG | 2 | |
| CM66160 | TT1102-1 THRST BRG | 1 | |
| CM66310 | NTA1018 TORR BRG | 3 | |
| CM66312 | TRB1018 TORR RACE | 6 | |
| CM66320 | NTA1625 TORR BRG | 1 | |
| CM66322 | TRA-1625 THRUST RA | 2 | |
| CM66332 | NTA-1220 THRS BRG | 5 | |
| CM66333 | TRB 1220 THRS RC | 14 | |
| CM66354 | TRB 1625 THRUST | 4 | |
| CM66420 | TT1205 THRUST BRG | 5 | |
| CM66430 | TT1502-2THRUST BRG | 3 | |

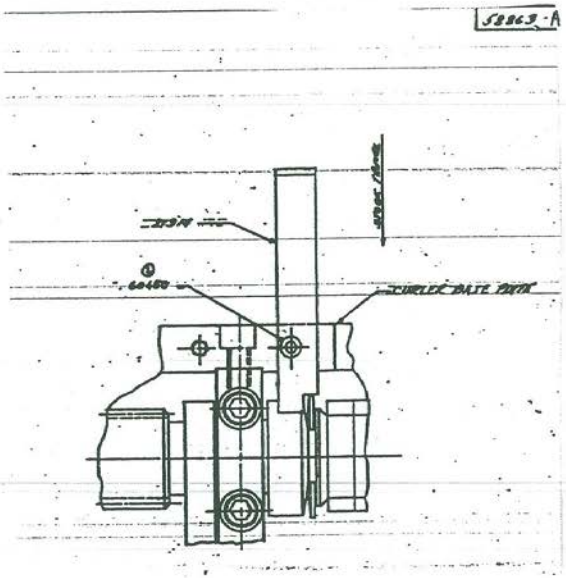
| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM66600 | 886L FEM COUPLG | 5 | |
| CM66610 | 888L HLF UNION | 2 | |
| CM66640 | 1610 GRS FTG | 5 | |
| CM66659 | 1/4X90 CONN | 3 | |
| CM66700 | NYLA TUBING | 43 | |
| CM70024 | 4L500 BELT | 2 | |
| CM70401 | SHEAVE 3/4  0 MACH | 1 | |
| CM70402 | SHEAV 5/8  0 MTR | 1 | |

# BILL OF MAINTENACE LISTING

| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM13498 | LWR CRIMP ROLL SHF | 1 | B |
| CM13499 | UPPR CRIMP ROLL SH | 1 | B |
| CM13777 | SPACER | 1 | A |
| CM13778 | SPACER | 1 | A |
| CM13779 | TOP SPACER | 1 | A |
| CM13780 | SPACER | 1 | A |
| CM13781 | SPACER UPPER | 1 | A |
| CM13782 | SPACER LOWER | 1 | A |
| CM16058 | TOP CRIMP ROLL | 1 | A |
| CM16094 | UPPER BEAD ROLL | 1 | A |
| CM16095 | LOWER BEAD ROLL | 1 | A |
| CM16096 | CURLER ROLL | 1 | B |
| CM16141 | BTM CRIMP ROLL | 1 | B |
| CM26032 | SIDE PLATE | 2 | B |
| CM26035 | MTG PLATE | 1 | B |
| CM26036 | BRG BLOCK | 1 | A |
| CM26038 | PILLOW BLOCK | 2 | A |
| CM36034 | DEFLECTOR PLATE | 1 | B |
| CM40792 | SHOE - MACH- | 1 | A |
| CM42760 | SPUR GEAR | 1 | A |
| CM42779 | SPUR GEAR | 1 | A |
| CM52610 | MTR ADJ BOLT ASY | 2 | A |
| CM57556 | IDLER ARM WLDT RH | 1 | A |
| CM57557 | IDLER ARM WLDT LH | 1 | A |
| CM59551 | SPIN CURLER ASSY | | D |
| CM60014 | 3/8-16X1 1/2 HHCS | 4 | |
| CM60389 | 5/16-18X3-1/2 SHCS | 2 | |

| PART NUMBER | DESCRIPTION | QUANTITY | DWG |
|---|---|---|---|
| CM60392 | 3/8X2-1/2 SHCS NYL | 4 | |
| CM60394 | 3/8-16X3/4SHCS NYL | 6 | |
| CM60613 | 1/4-20X5/8 SSS | 1 | |
| CM60650 | 5/16-18X5/16 SSS | 2 | |
| CM60821 | 10-12 SMS TR-A | 4 | |
| CM61473 | 3/8-16 WING NUT | 2 | |
| CM62000 | 1/4X062 WSHR | 2 | |
| CM62027 | 3/8X082 WSHR | 2 | |
| CM62340 | 3/8 BLVL WSHR | 32 | |
| CM62362 | 5/16 LCK WSHR | 2 | |
| CM62363 | 3/8 LCK WSHR MED | 4 | |
| CM62401 | 9 WDRF KEY | 1 | |
| CM62402 | 15 WDRF KEY | 1 | |
| CM62451 | 3/16 SQX 8 LG | 2 | |
| CM62518 | 5160-98 RET RNG | 3 | |
| CM62526 | RET RG 5160-75 | 3 | |
| CM62611 | 1/4 X 1/2 DWL | 4 | |
| CM66010 | B108 TORR BRG | 2 | |
| CM66030 | B168 O.d. TORR BRG | 2 | |
| CM66060 | B1212 TORR BRG | 2 | |
| CM66100 | B1612 TORR BRG | 3 | |
| CM66160 | TT1102-1 THRST BRG | 2 | |
| CM66333 | TRB 1220 THRS RC | 2 | |
| CM66354 | TRB 1625 THRUST | 1 | |
| CM66420 | TT1205 THRUST BRG | 6 | |
| CM66421 | TT1502 THRUST BRG | 1 | |
| CM66425 | TT1709-1 THRUST BRG | 5 | |
| CM77059 | ROLLER CHAIN SPRKT | 1 | |





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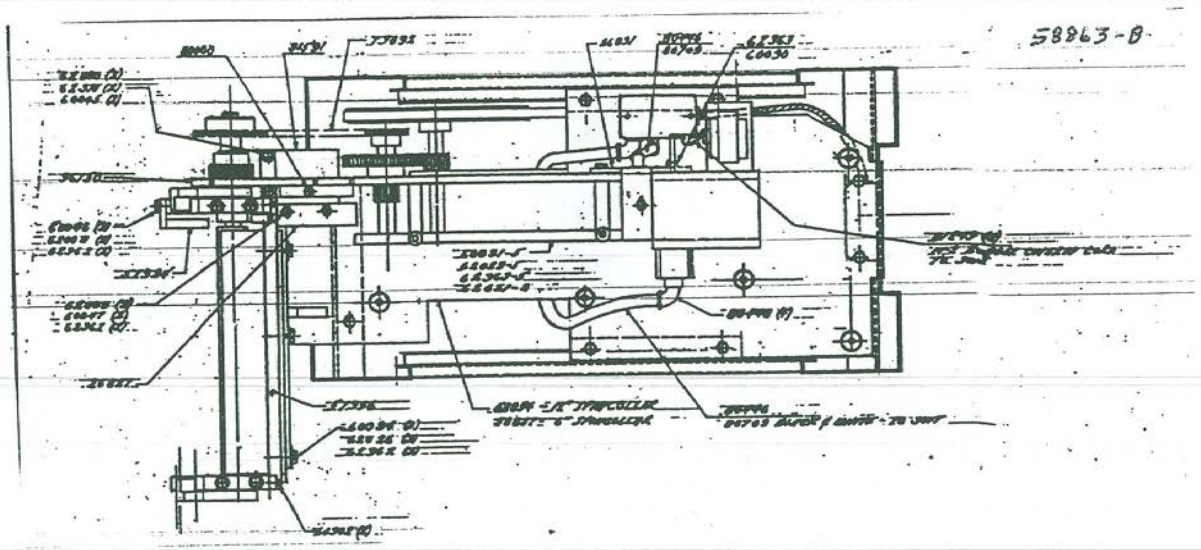


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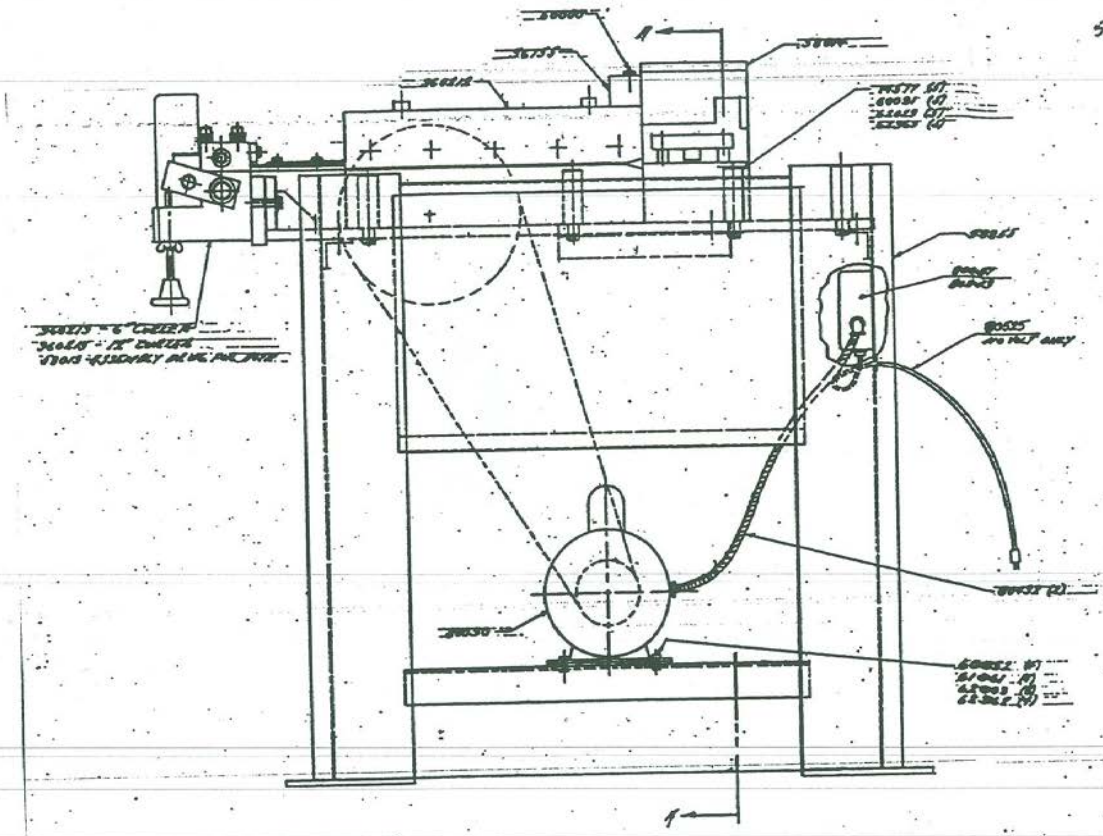


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