

NATIONAL

SAFETY & INSTRUCTION MANUAL

MODEL NR4816 POWER ROLL MACHINE

MADE IN USA



Trick-Tools.com

80 Truman Road
Pella, IA 50219

Phone: 1-877-VAN-SANT
E-mail: sales@trick-tools.com



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Record Machine Information Here
(Necessary for Factory Service, Replacement Parts, Etc.)

Serial Number: _____
Date Installed: _____
Purchased Thru: _____

SAFETY

WARNING This machine MUST be wired to Central Power Source by a Qualified Electrician Using Materials and methods prescribed by LOCAL ELECTRICAL CODES.....

WARNING DO NOT operate this machine without manufacture's LEFT and RIGHT COVERS (#48 & #72) and GEAR COVER (#83) installed properly. The Covers and Guard are designed for safety...

NEVER operate this machine with FRONT OR BACK PANEL removed...

Always check machine before every use for loose material between ROLLS (#1, #6, & #18). Always check for broken or damaged parts before using your ROLL. GEAR COVER (#83) And other Machine Parts should be checked for damage, alignment, binding, breakage, and correct mounting to insure they are working properly. Repair or Replace Damaged Parts for Safe Operation.

WARNING DO NOT operate or store this machine in Damp Or Wet Conditions

ALWAYS Feed material from the FRONT of the machine ONLY...

NEVER Roll Material that is OVER CAPACITY or material Machine is NOT designed to Roll.

(THIS MACHINE IS DESIGNED TO ROLL 16GA. MILD STEEL OR LESS)

Safety

Do NOT "stack" material, design is for SINGLE LAYER ONLY. Putting more Than one (1) piece of material in Machine at a time will **OVERLOAD MACHINE** and can cause possible damage and / or injury.

NEVER force machine to roll.

ALWAYS lay material **FLAT** on Table (#78). Do NOT support material beyond Safety line (See Safety Zone pg. 4) **CLAMPING** May Result in Serious Injury.

Machine is designed to be operated by one (1) person **ONLY**. Operator should Be in FRONT of Machine with **Hands and Fingers** BEHIND the Safety Line. (See Safety Zone pg. 4)

NEVER use a helper to support or assist in feeding or pulling the metal.

NEVER place any part of your body in Roll or Gear Area (See Safety Zone pg. 4)

Turn this machine **OFF** before leaving Work Area.

ALWAYS unplug machine **BEFORE** performing any type maintenance.....

Maintain good footing and balance... **NO NOT OVERREACH**

Wear snug fitting clothing, short sleeve shirts, and no-slip footwear that will **NOT** become caught on material.. **NEVER** wear neckties, gloves, rings, watches, Necklaces, bracelets, or any other type of jewelry, loose or baggy garments, or Accessories of any type. Cover up or tie long hair back.

Keep floors dry, free of slippery materials and clutter, and maintain good Lighting in Work Area.

Store items away from Machine. (See Safety Zone pg. 4) Do NOT climb on Machine to reach Items. **NEVER** stand on table (#78).

SAFETY

DO NOT use this machine if you are fatigued
USE COMMON SENSE when using this Machine

THINK SAFETY AT ALL TIMES

ALWAYS Use replacement parts that are manufactured for
this Machine.

FOLLOW PREVENTATIVE MAINTENANCE GUIDE DAILY

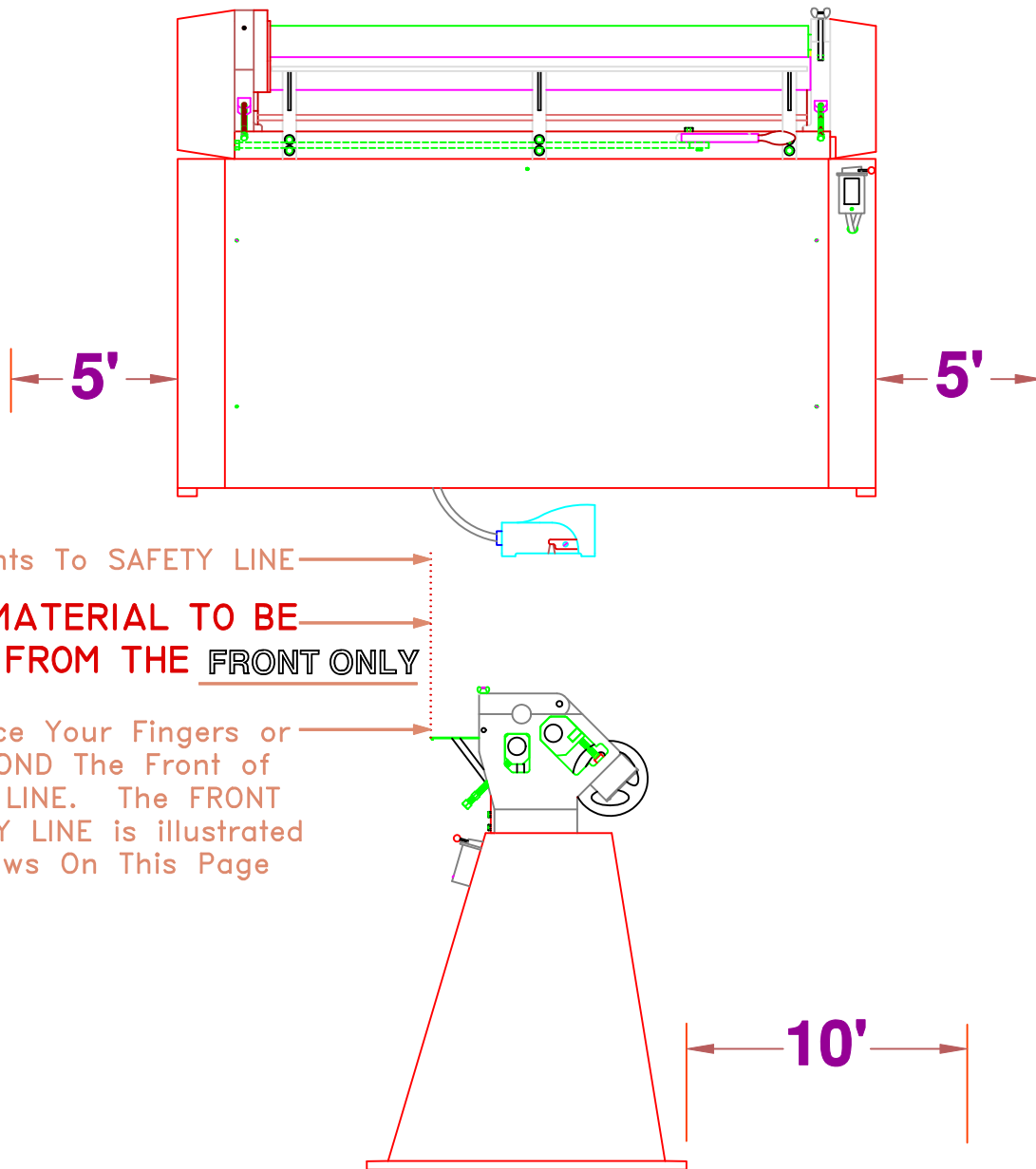
ALWAYS WEAR SAFETY GLASSES OR ANY APPROVED
EYE PROTECTION DEVICES WHEN OPERATING THIS
MACHINE.

KEEP FINGERS CLEAR OF ROLL AND GEAR AREAS...

SAFETY SAVES AND SAFETY PAYS

SAFE ZONE

(Working Areas)

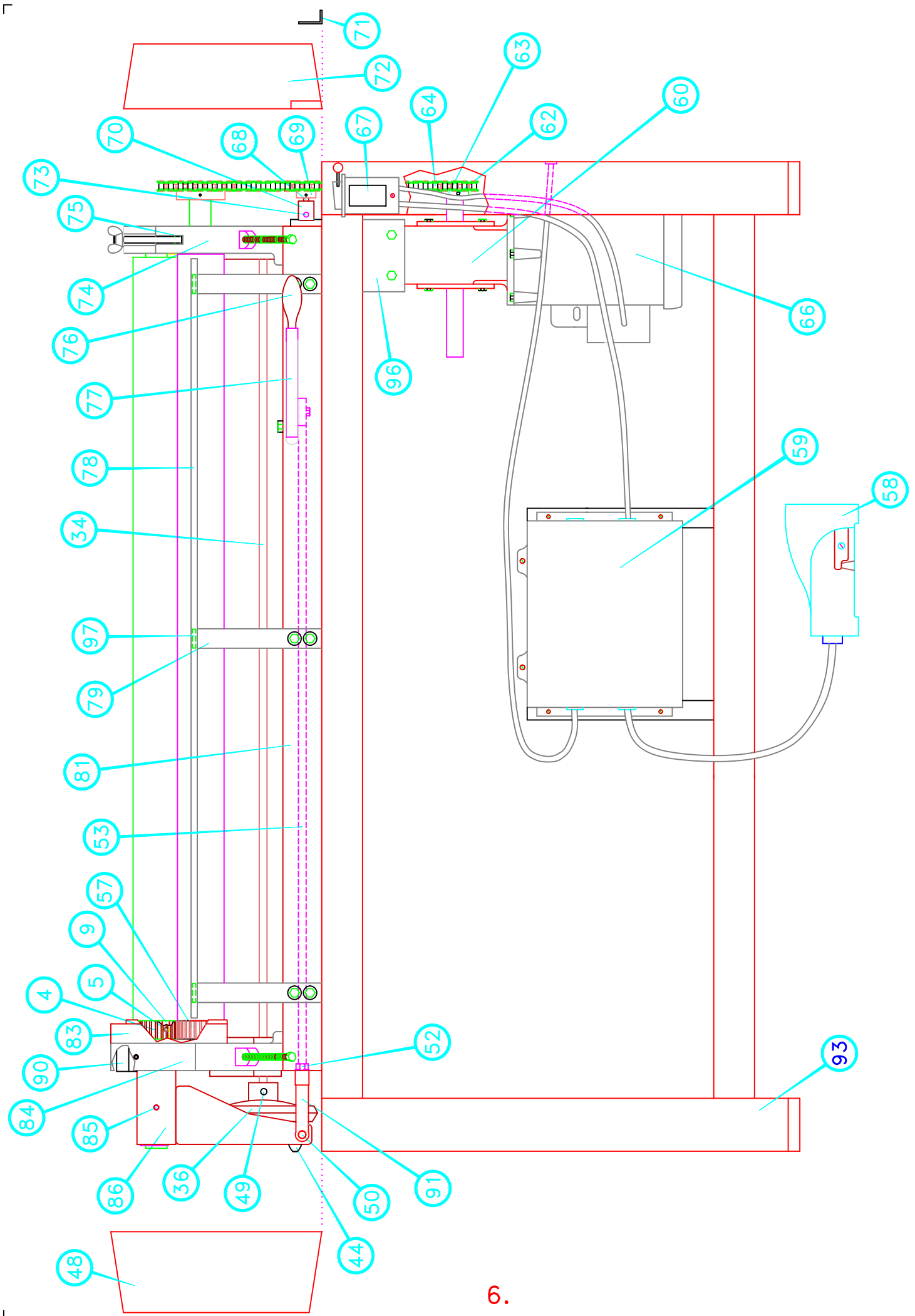


1. Allow a minimum five (5) feet of open area, free of materials, and machinery on BOTH sides (Left & Right) of Machine.
2. Allow a minimum ten (10) feet of open area, free of obstructions, etc. in REAR of Machine.
3. Do NOT operate Machine when people or obstructions are WITHIN SAFE ZONE. SERIOUS INJURY MAY OCCUR.
4. Do NOT stack, store or place material, machinery, or any other obstructions in FRONT of Machine that might cause tripping or in any way present a HAZARD to operators and/or helpers.

KEEP WORK AREA CLEAN and SAFE ZONES CLEAN

NATIONALPARTS LIST NR4816 POWER ROLL *A
FOR ITEMS ON PAGE 6

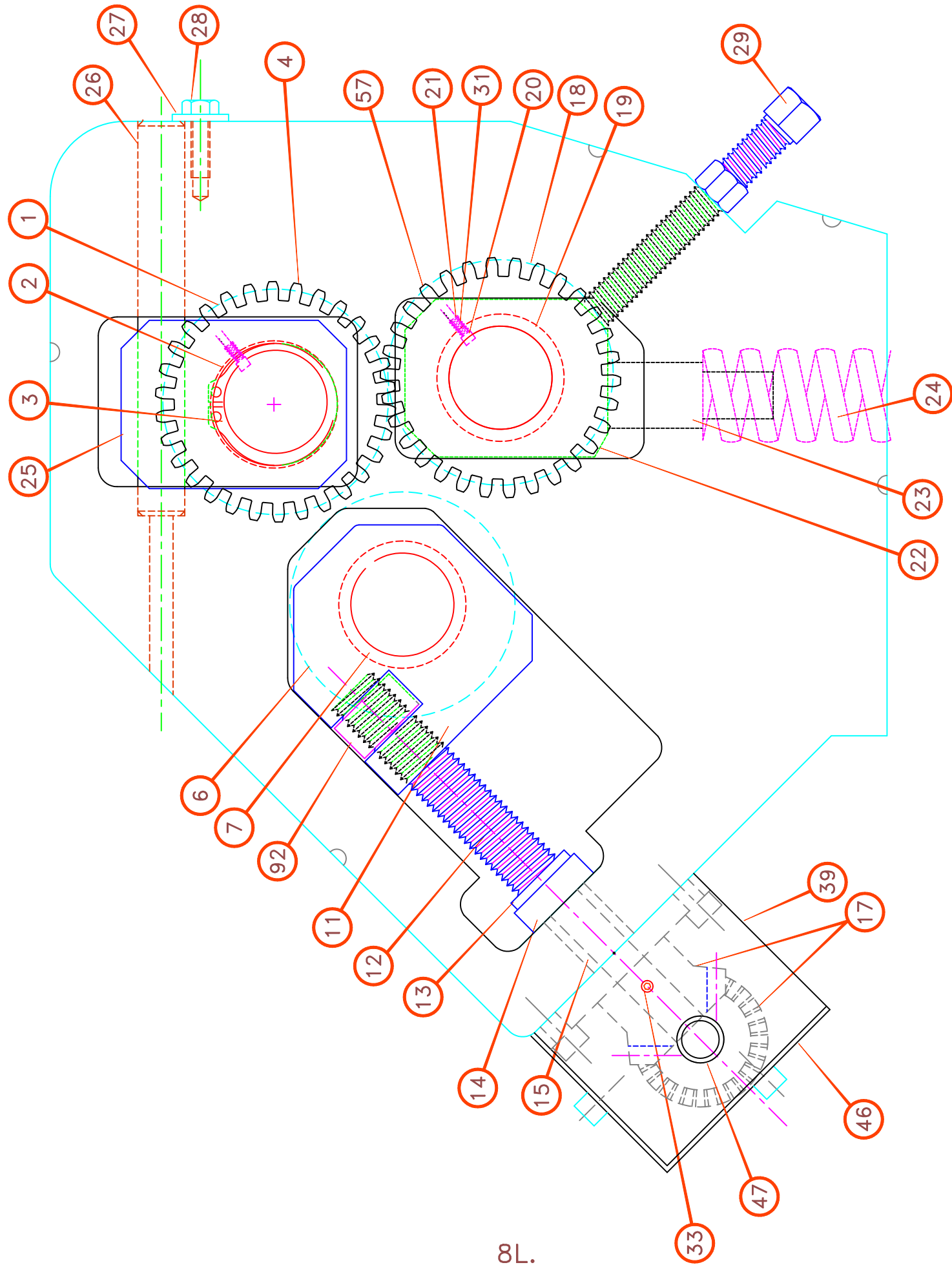
4.	Lift Roll Gear	1	68.	Chain Tension Block Pin	1
5.	Set Screw	2	69.	Idle Sprocket	1
9.	Key—Half Moon	2	70.	Chain Tension Block	1
34.	Worm Gear Adjusting Rod	1	71.	Cover Bracket	1
36.	Handwheel	1	72.	Right Cover	1
44.	Handwheel Knob	1	73.	Set Screw	1
48.	Left Cover	1	74.	Right Endplate	1
49.	Set Screw	1	75.	Split Pin	1
50.	Pin	1	76.	Lift Lever Handle	1
51.	Deleted	—	77.	Lift Lever	1
52.	Jam Nut	1	78.	Table	1
53.	Lift Rod	1	79.	Table Bracket	3
54.	Deleted	—	80.	Nameplate (Not Shown)	1
55.	Deleted	—	81.	Base	1
56.	Deleted	—	82.	Deleted	—
57.	Main Drive Roll Gear—Left	1	83.	Gear Cover	1
58.	Footswitch	1	84.	Left Endplate	1
59.	Electric Box	1	85.	Grease Fitting	1
60.	Gear Box	1	86.	Lift Roll Lift Bracket	1
61.	Deleted	—	87.	Deleted	—
62.	Set Screw	1	90.	Lift Roll Block	1
63.	Gear Box Sprocket	1	91.	Lift Rod Yoke	1
64.	Chain	1	93.	Stand	1
65.	Deleted	—	94.	Front Panel (Not Shown)	1
66.	Motor	1	95.	Rear Panel (Not Shown)	1
67.	Drum Switch	1	96.	Gear Box Mounting Bracket	2
			97.	Swing Lock Plate	3



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PARTS LIST NR4816 POWER ROLL *B FOR ITEMS SHOWN ON PAGE 8L.

1.	Lift Roll	1	26.	Top Block Pivot Pin	1
2.	Bushing	2	27.	Pivot Pin Retaining Washer	1
3.	Lock Ring	2	28.	1/4-20 HEX BOLT	1
4.	Lift Roll Gear (T-30)	1	29.	Adjusting Lock Bolt	2
6.	Adjusting Roll	1	33.	Set Screw	2
7.	Bushing	2	39.	Gear Box	2
11.	Rear Sliding Adjusting Block	2	46.	Gear Box Cover	2
12.	Rear Adjusting Screw	2	47.	Bushing	2
13.	Thrust Collar	2	57.	Main Drive Gear (T-30)	1
14.	Thrust Bearing	2	92.	Rear Sliding Adj. Block Nut	2
15.	Flanged Bushing	2			
17.	Bevel Gear	4			
18.	Main Drive Roll	1			
19.	Bushing	2			
20.	Key	3			
21.	Set Screw	3			
22.	Front Sliding Adjusting Block	2			
23.	Spring Guide	2			
24.	Spring	2			
25.	Top Sliding Block	1			



8L.

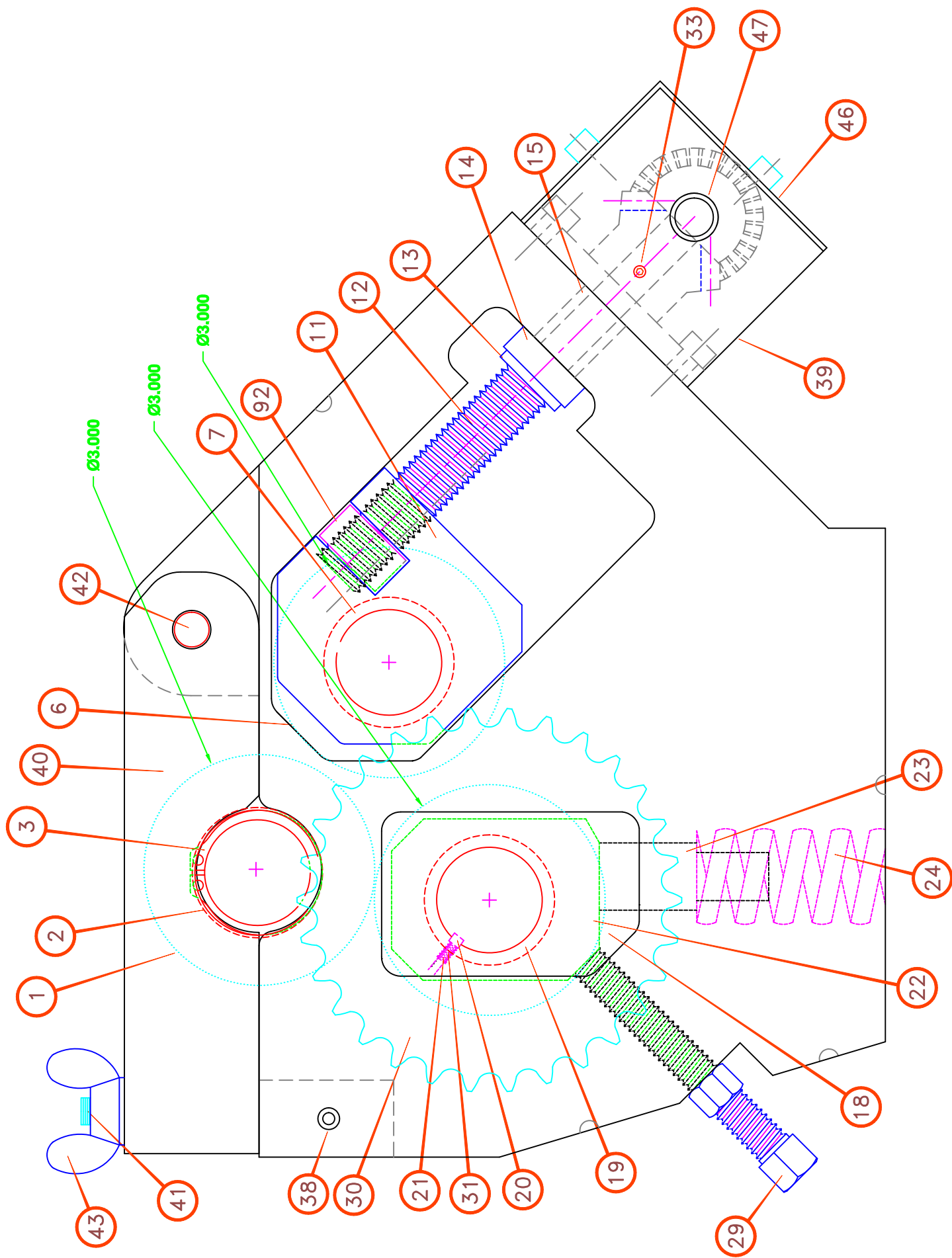
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PARTS LIST NR4816 POWER ROLL *B

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PARTS LIST NR4816 POWER ROLL *B FOR ITEMS SHOWN ON PAGE 8R

1.	Lift Roll	1	26.	Gear Retaining Pin	1
2.	Bushing	2	27.	Adj. Roll Drive Assembly	1
3.	Lock Ring	2	28.	Main Drive Roll Assembly	1
6.	Adjusting Roll	1	29.	Adjusting Lock Bolt	2
7.	Bushing	2	30.	Main Drive Roll Sprocket	1
8.	Adjusting Roll Gear	1	31.	Set Screw	1
10.	Set Screw	1	33.	Set Screw	2
11.	Rear Sliding Adjusting Block	2	35.	Worm	2
12.	Rear Adjusting Screw	2	37.	Pin-Worm to Shaft	2
13.	Thrust Collar	2	38.	Swing Bolt Pin	-
14.	Thrust Bearing	2	39.	Worm Gear Box	2
15.	Bushing	2	40.	Roll Latch	1
17.	Drive Worm Gear	2	41.	Swing Bolt	1
18.	Main Drive Roll	1	42.	Latch Pin	1
19.	Bushing	2	43.	Wingnut	1
20.	Key	3	45.	Main Drive Gear	1
21.	Set Screw	1	46.	Worm Gear Box Cover	2
22.	Front Sliding Adjusting Block	2	47.	Bushing	2
23.	Spring Guide	2	88.	Gear Connecting Links-Step	2
24.	Spring	2	89.	Gear Connecting Links-Flat	2
25.	Idler Gear	1	92.	Rear Sliding Adj. Block Nut	

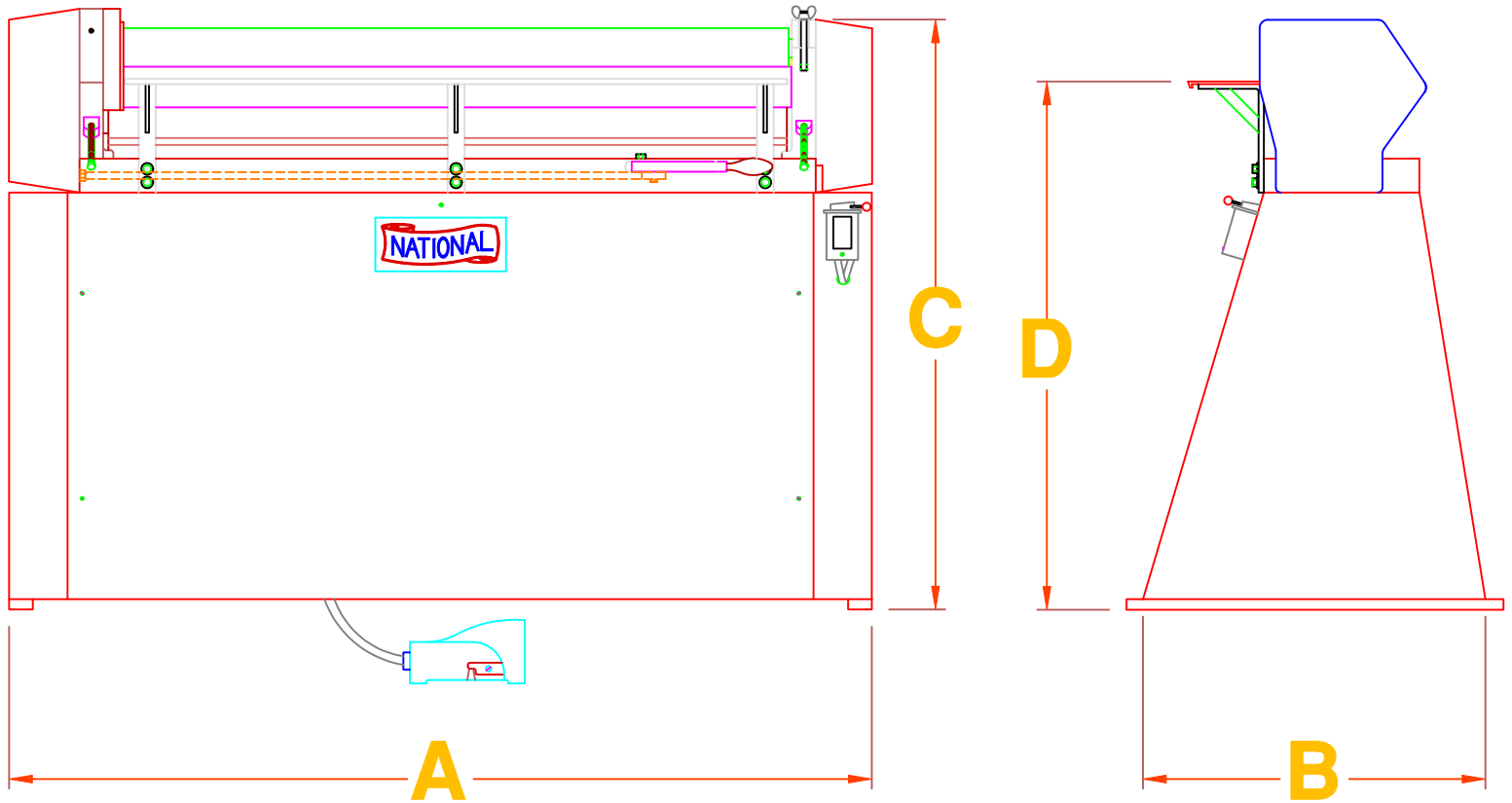


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PARTS LIST NR4816 POWER ROLL *B

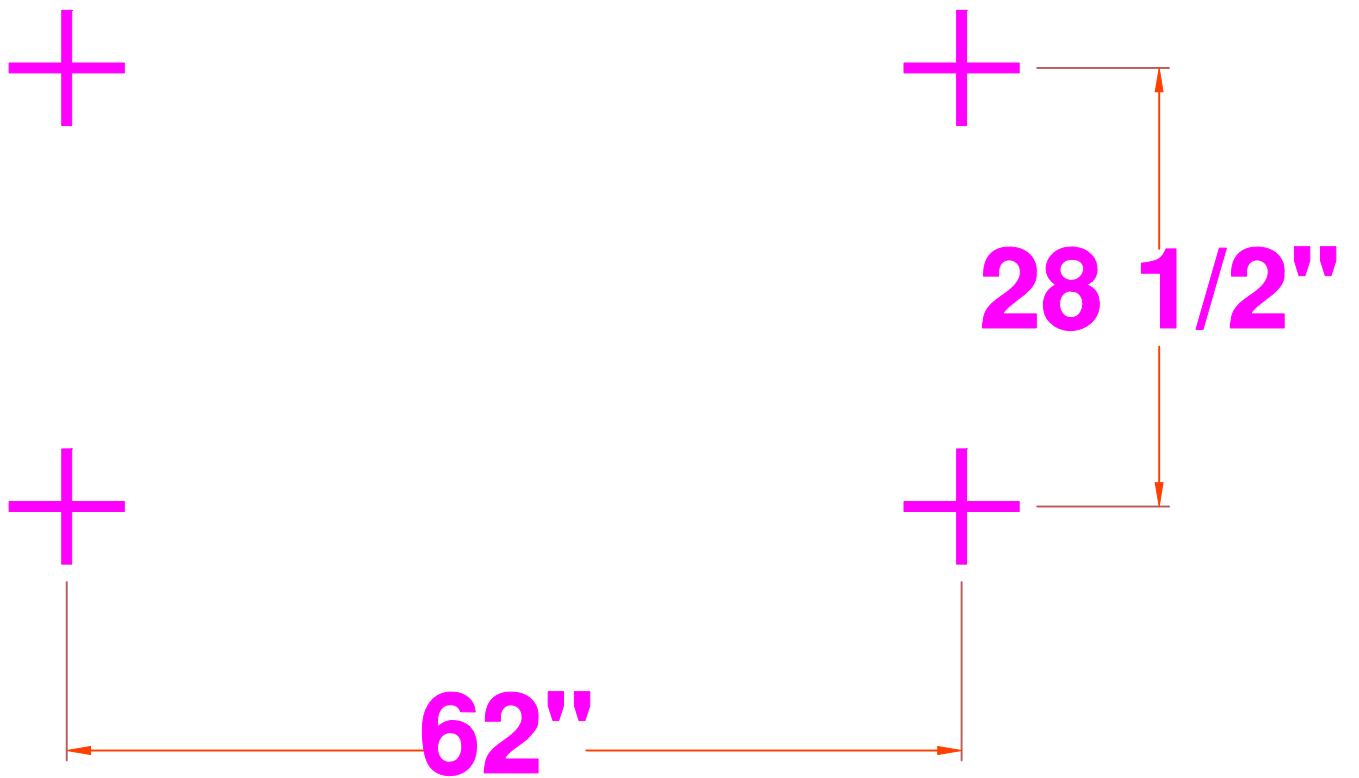
MACHINE DIMENSIONS



A - 64"
B - 26"
C - 43 3/4"
D - 39 1/2"

Shipping Weight - 1,200 lbs.

ANCHOR POINTS



ELECTRICAL INFORMATION

1. **Insure that transformer PRIMARY VOLTAGE wiring is compatable with Commercial Power being terminated. (See Core & Coil Transformer Chart for 3 Phase applications pg. 13)**
2. **Terminate Incoming Voltage Lines as shown on Electrical Schematics: (See Electrical Schematics pg. 14, 15, 16, 17 & 18)**

(Local Codes prescribe Gauge and other Specifications for Wiring to the machine. Consult the Amperage Chart on pg. 12 For your voltage.)

IT IS THE USER'S RESPONSIBILITY To SUPPLY SHORT CIRCUIT PROTECTION DEVISE (S) as prescribed By LOCAL, ANSI, and OSHA codes.

3. **For Motor direction put drum switch in forward mode, if Roll is running in Reverse, switch L1 and L3 in electrical box to set forward mode correctly For 3 phase motors**

RATED AMPERAGES POWER ROLL FORMING MACHINE

3 PHASE

MOTOR	VOLTS	AMPS (**1)	OVERLOAD
1 H.P.	220	3.4	TA25 DU4.0
1 H.P.	440	1.7	TA25 DU2.4
1 H.P.	575	1.4	TA25 DU2.4

SINGLE PHASE

MOTOR	VOLTS	AMPS (**1)	OVERLOAD
1 H.P.	110	12.8	TA25 DU19
1 H.P.	220	6.4	TA25 DU11

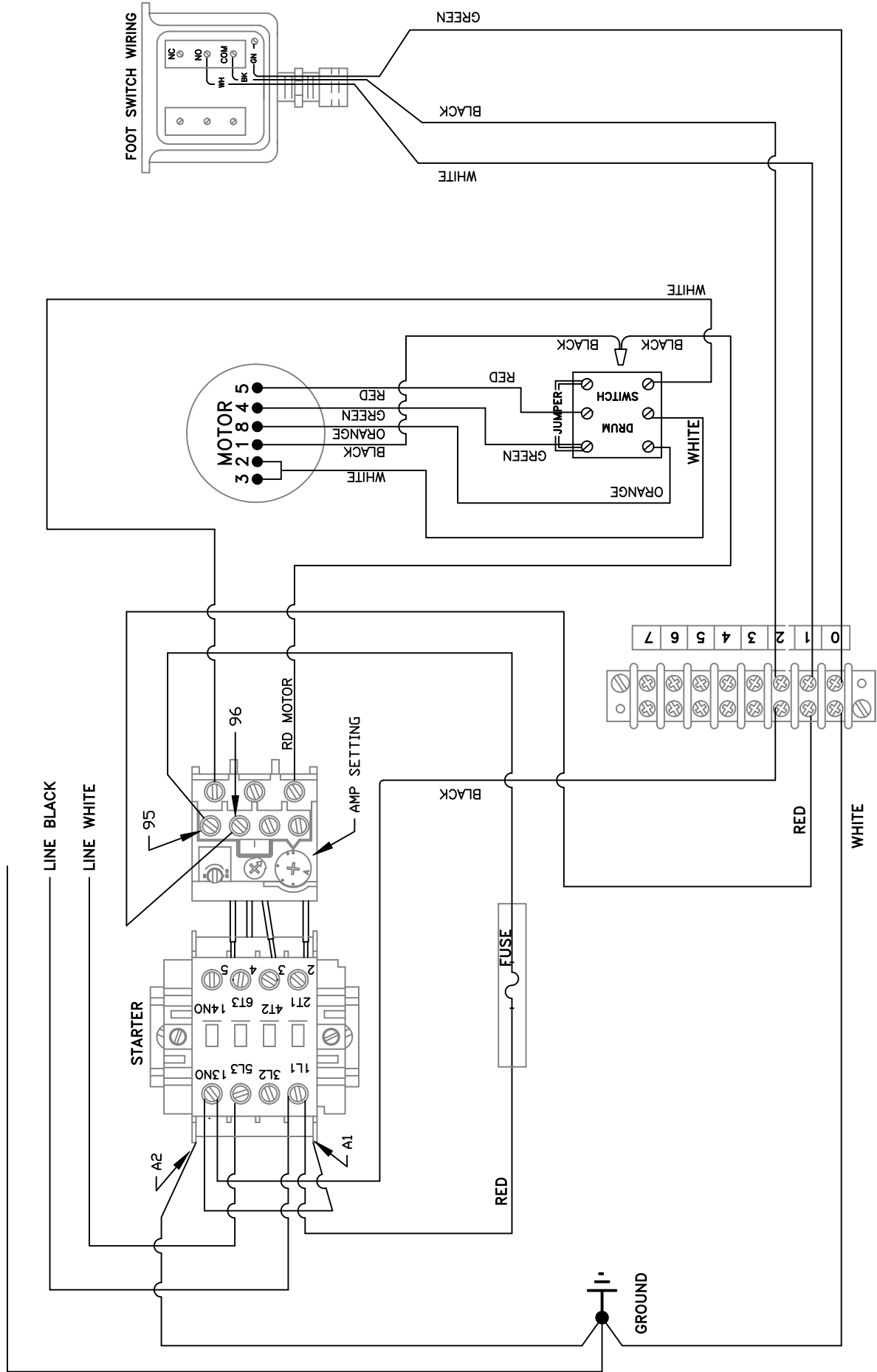
1. Amperages are based on use of BALDOR Electric Motors.
Other motors, consult motor data plate.

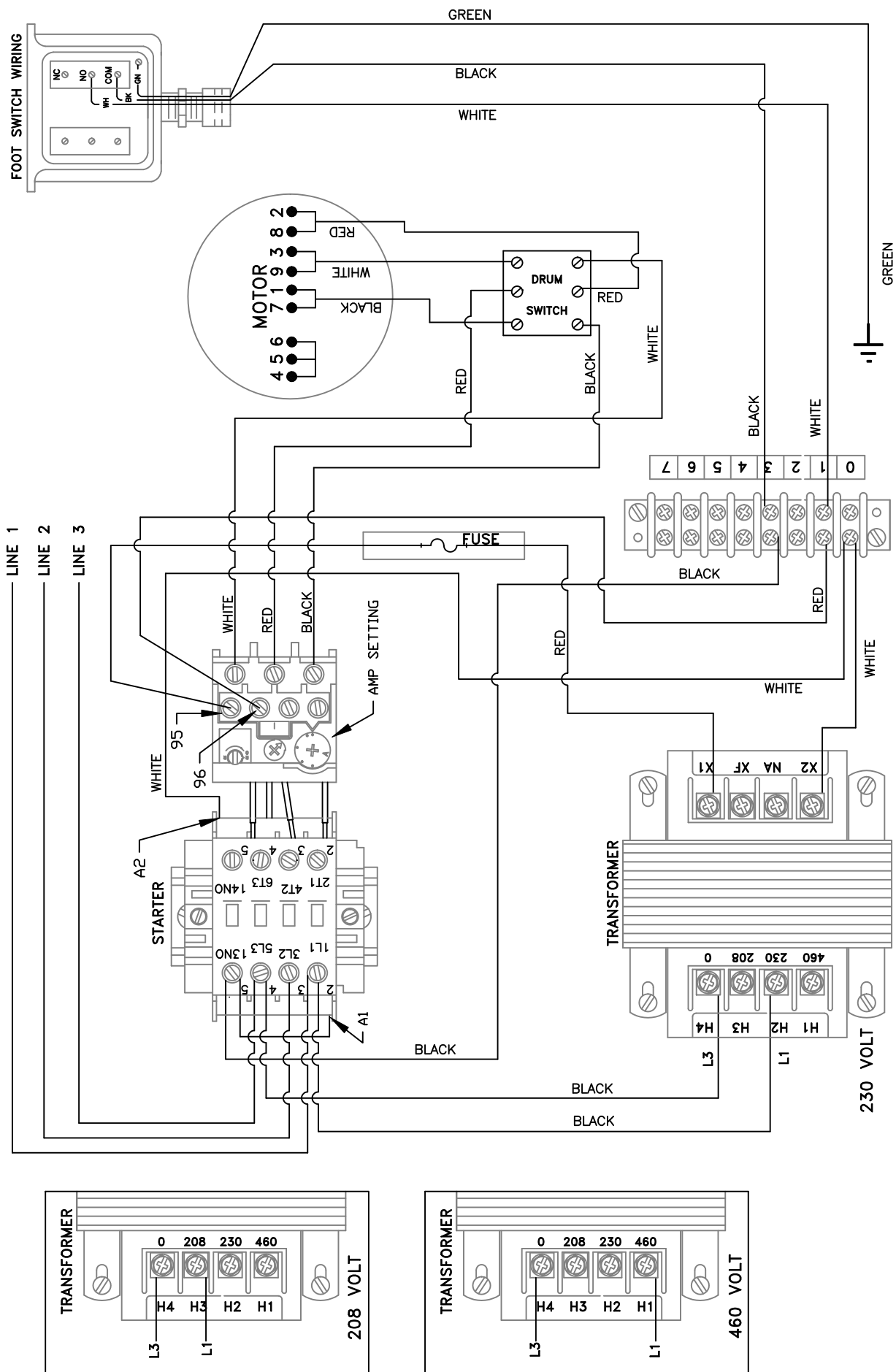
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GROUND

LINE BLACK

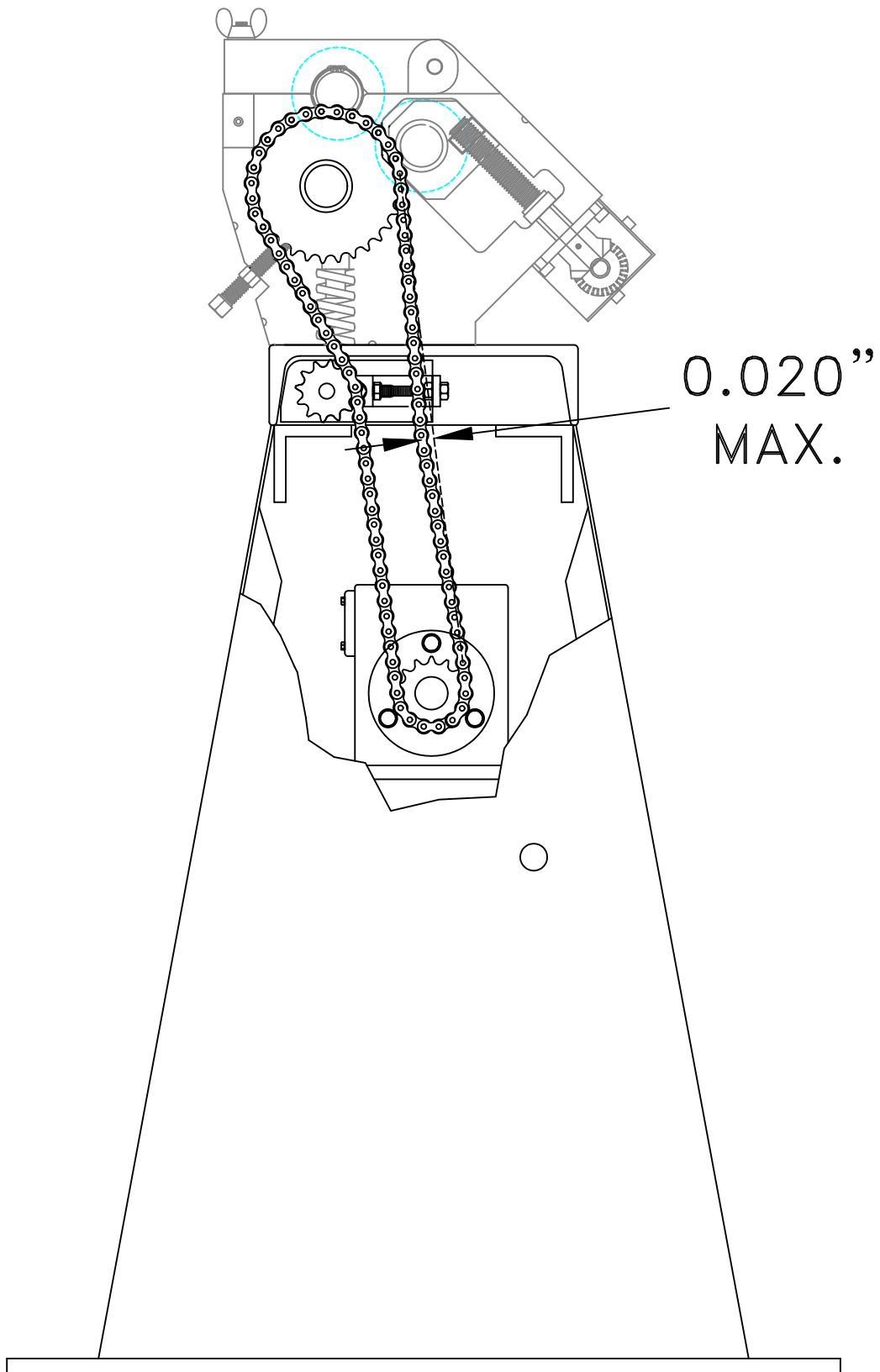
LINE WHITE





THREE PHASE POWER ROLL ELECTRICAL SCHEMATIC

CHAIN TENSION DIAGRAM



BASIC OPERATION

1. Calculate length of metal necessary to form roll of diameter desired:

CIRCUMFERENCE = πd or Circumference = $2 \pi r$

$\pi = 3.1415927...$ Convenient Approximations are $3 \frac{1}{7}$ or 3.14

2. Main Drive Roll (#18) is used for metal thickness and the adjusting Roll (#6) is used for forming the desired diameter. Place the metal to be rolled on Table (#78) between the main Drive Roll (#18) and the Lift Roll (#1). Adjust the Main Drive Roll (#128) against the metal, then back the Adjusting Lock Bolt (#29) back 1/2 turn. Use the Hand Wheel (#36) to set Adjusting Roll (#6) to approximately 1/4 of desired diameter.

3. Move Drum Switch (#67) to **FORWARD** position and depress Footswitch (#58).

Do **NOT** attempt to obtain desired diameter on first pass as warping and / or funneling may occur.

4. Readjust and Repeat as necessary to form desired diameter.

5. After desired diameter is obtained, turn machine OFF, then loosen Wing nut (#43) and Raise Roll Latch (#40). Raise Lift Roll (#1) by moving Lift Lever (#77) and remove material from Lift Roll (#1).

6. Lower Lift Roll (#1) and Roll Latch (#40), then tighten Wing nut (#43). Do **NOT** operate Machine without Wing nut (#43) SECURELY IN POSITION.

**** FOLLOW ALL SAFETY PROCEDURES ****

POWER ROLL MACHINES

PREVENTATIVE MAINTENANCE

1. Keep ALL moving parts lubricated.
2. Check Drive Chain Tension pg. 19, and Lubricate WEEKLY.
3. Check ALL Gear Set Screws DAILY.
4. Inspect Footswitch (#58) and Electrical Wires/Cords DAILY.
5. Keep Rolls (#1, #6, & #18) Clean, Free from debris, and Lightly Lubricated.

RECOMMENDED LUBRICANTS

LIFT ROLL (#1), AND MAIN DRIVE ROLL (#18)

Lubricate with a lightweight oil DAILY

ROLL GEARS (#4, #57, #18, AND #45) Valvoline Multi-Purpose
Lithium Grease PN:609 or equivalent

FRONT SLIDING ADJUSTING BLOCK (#22) Valvoline
Multi+Purpose Lithium Grease PN:609 or equivalent

WARRANTY

ROLLS

National Sheet Metal Machines, Inc. Warrants this product to be free for defects in material and / or workmanship for a period of THREE (3) YEARS from the date of purchase. National Sheet Metal Machines, Inc. promises to replace any of this product that proves upon our inspection and within THREE (3) YEARS from date of purchase to be defective in material or workmanship.

All labor and / or transportation cost or charges incidental to Warranty service are at the expense and shall be borne by the Purchaser / User.

In NO event shall National Sheet Metal Machines, Inc. be liable for incidental or consequential damages, for damages as a result of neglect, misuse, abuse, or alterations of any kind to the machine.

No person is authorized to change, add to, or create any Warranty or obligation other than that set forth herein.

This machine is designed for and has been factory tested to roll Mild Steel of Low Carbon (20 - 25%) composition.

It is the Purchaser / User's sole responsibility to obtain material that is AT or BELOW specified standards.

National Sheet Metal Machines, Inc. accepts NO liability or assumes any responsibility for damages, accident or injury, or any charges incurred as a result of this machine.

To obtain Warranty service, contact the dealer from which machine was purchased.



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