

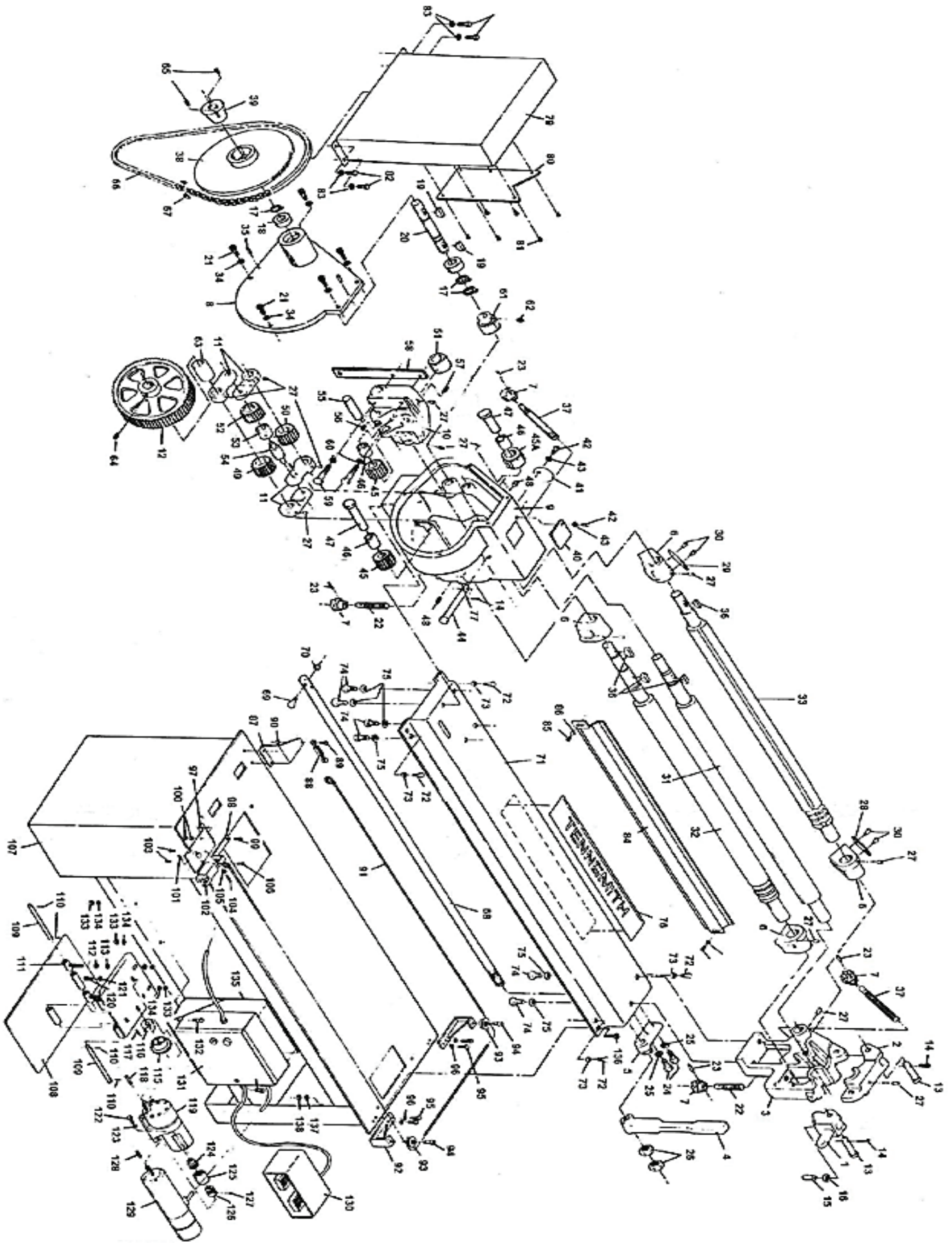


Model SR48P Shown

Model SR48P Power Slip Roll Operation, Parts and Maintenance Manual

Model:	Purchased From:
Serial #:	Date Received:

USA  MADE



SR48P / Parts List

PART #	DESCRIPTION	REQ'D #	PART #	DESCRIPTION	REQ'D #
1 SR48-401	LOCK, TOP LATCH	1	57 SR48-457	SCREW, SWIVEL BLOCK	1
2 SR48-402	TOP LATCH	1	58 SR48-458	LEVER, LIFTING	1
3 SR48-403	RIGHT HAND SIDE FRAME	1	59 SR48-459	SCREW, LIFTING LEVER	2
4 SR48-404	LIFT HANDLE	1	60 SR48-460	WASHER, SCREW LOCK	2
5 SR48-405	LIFT CAM	1	61 SR48-461	GEAR, CRANK SHAFT	1
6 SR48-406	BLOCK, ROLL ADJ.	4	62 SR48-462	SET SCREW, GEAR	1
7 SR48-407	HANDKNOB, ROLL ADJ.	4	63 SR48-463	SPACER	1
8 SR48P-4008	COVERPLATE	1	64 SR48-464	SET SCREW, 12" GEAR	1
9 SR48-409	LEFT HAND HOUSING	1	65 SR48P-490	SCREW, LOCK HUB	2
10 SR48-410	BLOCK, TOP ROLL SWIVEL	1	66 SR48P-491	CHAIN, DRIVE	1
11 SR48-411	LINKS	4	67 SR48P-492	LINK, CHAIN CONNECTING	1
12 SR48-412	12" GEAR	1	68 SR48-468	ROD, LIFTING	1
13 SR48-413	CLEVIS PIN, TOP LATCH	2	69 SR48-469	SCREW, LIFTING ROD	1
14 SR48-414	COTTER PIN	3	70 SR48-470	NUT, SCREW LOCK	1
15 SR48-415	SET SCREW, LOCK	1	71 SR48-471	BASE	1
16 SR48-416	NUT, SET SCREW LOCK	1	72 SR48-472	SCREW, BASE LEVELING	4
17 SR48P-481	RETAINER RING	2	73 SR48-473	NUT, SCREW LOCK	4
18 SR48P-482	BALL BEARING	2	74 SR48-474	SCREW, MOUNTING	6
19 SR48P-483	WOODRUFF KEY	2	75 SR48-475	WASHER, SCREW LOCK	6
20 SR48P-484	SHAFT, DRIVE	1	76 SR48-476	DECAL, BASE	1
21 SR48P-485	SCREW, COVER PLATE	5	77 SR48-477	SERIAL PLATE	1
22 SR48-422	SCREW, LOWER ROLL ADJ.	2	78 SR48-478	STAND, OPTIONAL	1
23 SR48-423	SPLIT PIN, ROLL ADJ. HANDKNOB	4	79 SR48P-493	GUARD, CHAIN	1
24 SR48-424	SCREW, LIFT CAM	2	80 SR48P-494	GUARD, SPROCKET	1
25 SR48-425	WASHER, LIFT CAM SCREW LOCK	2	81 SR48P-495	SCREW, SPROCKET GUARD MTG.	6
26 SR48-426	NUT, LIFT HANDLE LOCK	2	82 SR48P-496	SCREW, CHAIN GUARD MTG.	4
27 SR48-427	GREASE FITTING	13	83 SR48P-497	WASHER, SCREW LOCK	4
28 SR48-428	SCALE, RIGHT HAND	1	84 SR48P-498	GUARD, FRONT ROLL	1
29 SR48-429	SCALE, LEFT HAND	1	85 SR48P-499	SCREW, FRONT ROLL GUARD MTG.	2
30 SR48-430	DRIVE SCREW, SCALE	4	86 SR48P-500	WASHER, SCREW LOCK	2
31 SR48-431	ROLL, TOP	1	87 SR48P-501	BRKT., STOP WIRE MTG.	1
32 SR48-432	ROLL, LOWER FRONT	1	88 SR48P-502	CLEVIS, STOP WIRE	1
33 SR48-433	ROLL, BACK	1	89 SR48P-503	SCREW, CLEVIS MTG.	1
34 SR48P-486	WOODRUFF KEY	5	90 SR48P-504	NUT, CLEVIS MTG. SCREW	1
35 SR48P-484	PIN, COVER PLATE LOCATING	2	91 SR48P-505	WIRE, STOP	1
36 SR48-436	WOODRUFF KEY	5	92 SR48P-506	BRKT., STOP WIRE PULLEY MTG.	2
37 SR48-437	SCREW, BACK ROLL ADJ.	2	93 SR48P-506A	PULLEY, STOP WIRE	2
38 SR48P-488	SPROCKET, DRIVE SHAFT	1	94 SR48P-506B	BOLT, PULLEY MTG.	2
39 SR48P-489	HUB, SPROCKET LOCK	1	95 SR48P-507	SCREW, GUIDE MTG.	4
40 SR48-440	COVER PLATE, TOP L.H. HOUSING	1	96 SR48P-508	WASHER, SCREW LOCK	4
41 SR48-441	COVER PLATE, TOP R.H. HOUSING	1	97 SR48P-509	BRKT., STOP SWITCH MTG.	1
42 SR48-442	SCREW, COVER PLATE	2	98 SR48P-510	TRIP, SWITCH	1
43 SR48-443	WASHER, SCREW LOCK	2	99 SR48P-511	SCREW, SWITCH TRIP MTG.	1
44 SR48-444	PIN, SWIVEL BLOCK	1	100 SR48P-512	NUT, TRIP SWITCH	2
45 SR48-445	IDLER GEAR-16T	3	101 SR48P-513	SPRING, TRIP SWITCH	1
45A SR48-445A	IDLER GEAR-18T	1	102 SR48P-514	SWITCH, STOP	1
46 SR48-446	BUSHING, IDLER GEAR	3	103 SR48P-515	SCREW, SWITCH MTG.	2
47 SR48-447	PIN, IDLER GEAR	2	104 SR48P-516	SCREW, STOP	1
48 SR48-448	SET SCREW, IDLER PIN	2	105 SR48P-517	NUT, STOP SCREW	1
49 SR48-449	GEAR, LOWER FRONT ROLL	1	106 SR48P-518	SCREW, WIRE MTG.	1
50 SR48-450	GEAR, BACK ROLL	1	107 SR48P-519	STAND	1
51 SR48-451	GEAR, TOP ROLL	1	108 SR48P-520	BRKT., MOTOR ADJ.	1
52 SR48-452	GEAR, LOWER IDLER	1	109 SR48P-521	PIN, MOTOR ADJ. BRKT.	2
53 SR48-453	BUSHING, LOWER IDLER GEAR	1	110 SR48P-522	KEY, MOTOR ADJ. BRKT.	4
54 SR48-454	SPACER PIN, GEAR	1	111 SR48P-523	ADJUSTMENT, MOTOR	2
55 SR48-455	PIN, SWIVEL BLOCK IDLER	1	112 SR48P-524	NUT, MOTOR ADJUSTMENT LOCK	4
56 SR48-456	SET SCREW, PIN	1	113 SR48P-525	WASHER, ADJUSTMENT LOCK	4
			114 SR48P-526	PLATE, GEAR REDUCER	1
			115 SR48P-527	SPROCKET, MOTOR	1
			116 SR48P-528	HUB, MOTOR SPROCKET LOCK	1
			117 SR48P-529	SCREW, HUB	2
			118 SR48P-530	KEY, SPROCKET MTG.	1
			119 SR48P-531	GEAR REDUCER	1
			120 SR48P-532	SCREW, GEAR REDUCER MTG.	4
			121 SR48P-533	WASHER, REDUCER MTG. SCREW	4
			122 SR48P-534	SCREW, MOTOR MTG.	4

123	SR48P-535	WASHER, MOTOR MTG. SCREW LOCK	4
124	SR48P-536	COPLING, REDUCER	1
125	SR48P-537	SLEEVE, COUPLING	1
126	SR48P-538	COUPLING, MOTOR	1
127	SR48P-539	SCREW, COUPLING LOCK	1
128	SR48P-540	KEY, MOTOR	1
129	SR48P-541	MOTOR	1
130	SR48P-542	FOOT SWITCH	1
131	SR48P-543	CONTROL BOX	1
132	SR48P-544	SCREW, CONTROL BOX MTG.	2
133	SR48P-545	NUT, CONTROL BOX MTG. SCREW	2
134	SR48P-546	WASHER, SCREW LOCK	2
135	SR48P-547	BRKT.,CONTROL BOX	1
136	SR48P-548	SCREW, BASE MTG.	4
137	SR48P-549	WASHER, BASE MTG. SCREW LOCK	4
138	SR48P-550	NUT, BASE MTG. SCREW	4

FORWARD

This manual has been prepared for the owner and operators of the TENNSMITH Model SR48P Slip Roll. Its purpose, aside from operational instructions, is to promote safety through the use of accepted operating procedures. Read all instructions thoroughly before operating the slip roll.

Also contained in this manual is the parts list for your slip roll. It is recommended that only TENNSMITH or factory authorized parts be used for replacement parts.

3-YEAR LIMITED WARRANTY

TENNSMITH machinery and component parts are carefully inspected at various stages of production and are tested and inspected prior to shipment. We agree that for a period of twelve (12) months from the date of delivery from our authorized distributor to replace, at our option, any machine (or component part thereof) proving defective within the above period. Additionally, we agree that for a period of thirty-six (36) months from date of delivery to replace component parts proving defective within the stated period. All warranty claims are made F.O.B. our plant, providing such machine (or component part) is returned freight prepaid to our plant, or a designated service center of the undersigned, for our examination. This warranty does not include repair or replacement required because of misuse, abuse, or because of normal wear and tear; or electrical components which are warranty by their manufacturer. Further, we cannot be responsible for the cost of repairs made or attempted outside our factory or designated service center without our authorization. No claims for defects will be honored if the name and data plate has been removed. This warranty is made expressly in place of all other warranties or guarantees express or implied, with respect to fitness, merchantability, quality or operative ness. This warranty becomes effective only when the accompanying warranty card is fully and properly filled out returned to the factory within ten (10) days from date of delivery.

SAFETY PRECAUTIONS

1. Know the safety and operating instructions contained in the manual. Become familiar with and understand the hazards and limitations of your slip roll. Be certain that all personnel operating this machine know proper operation and safety procedures. Always practice safety.
2. This machine is equipped with numerous safety devices:
 - i. A point of operation guard across the front of the rolls (#84).
 - ii. A front and rear full length safety cable which acts as an emergency stop device (#91- #106).
 - iii. An electromagnetic brake on the drive motor.
 - iv. Foot pedal controls (#130).
 - v. (Optional) A photoelectric presence sensing device.

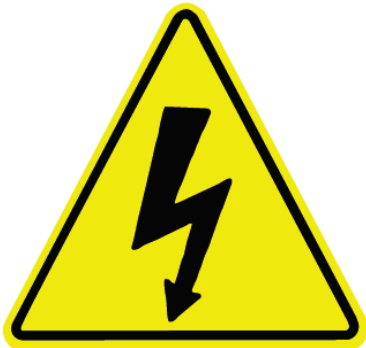
Do not operate this machine with any of these safety devices removed, by passed or overridden.

3. Be certain this machine is properly wired and grounded to conform to the National Electric Code.
4. Never leave this machine in a power on condition when unattended.
5. Always disconnect the machine from the power source before attempting maintenance, repairs or adjustments.
6. Wear approved eye protection such as safety glasses or goggles when operating the slip roll to protect your eyes.
7. Protective type footwear should be worn. Do not wear loose clothing. Do not wear gloves. Long hair should be contained by a hat or hair net. Jewelry, such as rings, bracelets and watches, should not be worn while operating this machine.
8. The machine should be bolted to the floor.
9. Always keep hands clear of the entry area to rolls while operating.
10. Use work holding devices such as tongs for handling small work pieces.
11. Do not exceed the capacity of the machine, which is 16 gauge (0.060 inch) mild steel. Do not use the machine for other than its intended purpose.
12. Keep the work area around this machine clear, clean and in proper order to avoid tripping or slipping.
13. Your machine should display a warning sign with a condensed version of these safety instructions. Do not remove it from the machine. New signs are available without charge by calling or emailing the factory.

THESE INSTRUCTIONS MUST BE FOLLOWED OR SERIOUS INJURY OR PROPERTY DAMAGE COULD OCCUR.

	 WARNING
	<p>Read & understand operators manual before using this machine.</p> <p>Failure to follow operating instructions could result in death or serious injury.</p>

	 WARNING
	<p>Pinch Point Hazard</p> <p>Keep hands clear of rollers. Read instruction and safety information prior to operation.</p>

	 DANGER
	<p>Hazardous voltage.</p> <p>Contact may cause electric shock or burn.</p> <p>Turn off and lock-out system power before servicing.</p>

SAFETY LABELS



SAFETY INSTRUCTIONS

1. **Read and understand instruction manual before, operating, servicing, or maintenance of machine.**
2. **Keep hands and fingers clear of forming rolls.**
3. **Do not wear loose clothing near rolls.**
4. **Provide all proper protective devices and guards that may be necessary or advisable for any particular use, operation, set-up, or service.**
5. **Report any equipment malfunction to your supervisor.**
6. **DO NOT REMOVE THIS INSTRUCTION SIGN.**

MACHINE GUARDING

The machine must have point of operation guards to prevent bodily injury. A guard (#498) is installed on the machine at the factory. This guard can be adjusted up or down to compensate for varying thicknesses of material being formed. Different types of guards may be required for various kinds of forming work. For additional information on guarding roll bending and roll forming machines, contact the American National Standards Institute, New York, NY to request a copy of ANSI Standards B11.12, Roll Forming and Roll Bending Machinery Safety Standards.

RECEIVING THE MACHINE

Remove the slip roll from its crate and inspect the unit for damage. Any loss or damage should be noted in detail on the delivery receipt and reported to your distributor immediately.

INSTALLING THE MACHINE

Caution: The Model SR48 slip roll weighs nearly 1200 lbs.

Locate the slip roll in a well lighted area on a solid, level floor. Use lag screws or bolts with expandable shields or similar holding devices through the mounting holes located on the base of the machine to mount the machine to the floor. DO NOT operate the machine without bolting it to the floor.

The Model SR48P slip roll is equipped with four leveling screws (#72) and lock nuts (#73) to permit the leveling of the machine on the work bench, thereby eliminating any binding of the various gears or bearing. Use these leveling screws to remove any twist in the roll base (#71), thereby eliminating any binding of the various gears or bearings.

ELECTRICAL SPECIFICATIONS

A wiring diagram is located inside the electrical enclosure (#131) and also included in this manual. The connection of this machine to the power source should be made and inspected by a qualified electrician. This machine must be properly grounded. Improper wiring may result in accidental shock which could cause grave injury or death. Motor rotation should match the directional indicators on the foot pedal control housing.

Your machine is normally equipped with a 3/4 hp. 220/440 volt, 3 phase, 60 Hz gear reduction motor. A single phase motor is available as an option. The manufacturer's data plate on the motor will specify this information. The gear motor is equipped with an electromagnetic brake which stops the motor rotation when without power. The brake is equipped with a manual locking lever which can prevent the motor from rotation even when powered. This lever is located on the side of the brake housing. This lever should NOT be used as a substitute for disconnecting the machine from the power supply when performing maintenance or repairs.

Standard electrical specifications include a reversing magnetic starter, on-off selector switch and pilot light, and foot pedal controls. A micro switch is connected to the operator safety cable. When in an open condition, this switch interrupts power to the motor and controls. This switch may be manually reset to a closed condition at the front left hand corner of the machine. The electrical panel must also be reset before the machine can be used. The reset button is located within the electrical enclosure (#131).

The selector switch, foot pedal controls and micro switch are on a low voltage transformed circuit which has its own low amp fuse.

SAFETY CABLE ADJUSTMENT

The safety cable feature of your machine is important for operator safety. When tripped, the cable activates a stop switch (#102) mounted on the stop switch bracket (#97) at the left corner of the machine.

The stop wire (#91) should be kept in a tensioned condition so that when minimal pressure is placed on the cable, the arm on the stop switch will trip. The stop wire (#91) can be tensioned using the stop wire clevis (#88) which acts as a turn buckle. A fine adjustment to the action on the stop switch arm is possible by lengthening or shortening the length of the stop screw (#104) and locking it in place with the stop screw nut (#105).

Keep the stop wire pulleys (#93) lubricated with a good grade of light machine oil.

OPERATING THE MACHINE

The full-length capacity of the Model SR48P powered slip roll is shown in the chart below. The chart (Figure 1) should be used as an approximate material conversion comparison to show equivalent capacities of material other than mild steel. Do not exceed the capacity of your slip roll as permanent damage to the machine may result.

Figure 1

MAXIMUM CAPACITIES	SR48P
Mild Steel	16 ga / .063
Stainless Steel	20 ga / .036
Cold Roll Steel	16 ga / .063
Aluminum, Soft	.120
Aluminum, Hard	.063
Brass, Soft Yellow	.075
Bronze, Phosphor Annealed	.075
Copper, Soft	.120
Copper, Hard	.075

The exact capacity of your slip roll depends on several factors including the nature and uniformity of the material being worked, the length and diameter of the cylinder or curved part being formed, and the number of passes through the rolls to obtain the desired diameter of cylinder or radius of bend. As a general rule, when your slip roll is overloaded there will be deflection at the center of the rolls resulting in a cylinder or curved part that is bulged in the center. The deflection can be minimized by progressively forming the work piece to the desired radius by making two or more passes through the rolls. DO NOT try to force the material through the machine as an unsatisfactory work piece and possible damage to the machine will result.

To operate the machine, turn the electrical selector switch on the front of the electrical enclosure (#131) to the "on" position. The pilot light will illuminate to indicate a ready to operate condition. The foot pedal (#130) switch controls the rotation of the rolls. The shroud on the foot pedal (#130) is marked with an "F" for forward and an "R" for reverse. The two front rolls (#31, #32) feed the material through the machine as the right hand crank handle (#8) is turned in a clockwise direction. For forming capacity materials an additional left hand crank handle (#8) is provided for two person operation if necessary. NOTE: if the machine is being operated by only one person, the left hand crank handle should be removed from the machine for safety. The pinch roll adjustment screws (#22) up and down for a different gauge material clearance between the two front rolls. The gap between the two front rolls should be equal at both ends of the rolls to insure an even advancement of the material being worked.

The rear roll (#33) adjust to control the radius of bend of the material being worked by means of the back roll adjustment screws (#37). The gap between the rear roll and two front rolls should be equal at both ends of the roll to insure an equal radius at both ends of the material being worked. The scales (#28, #29) mounted at each side frame are helpful in maintaining an equal gap. The scales can also be used to record approximate rear roll settings for forming a particular radius in a particular gauge of material. The rear roll features three full length longitudinal grooves which assist in starting the work piece through the rolls.

The Model SR48P is an "initial pinch" type slip roll. One forming problem often encountered with any initial pinch type roll is a small flat spot on the leading edge of the sheet of material being worked. This problem can be minimized by a pre-bending operation prior to running the work piece through the rolls. With the machine in a non-rotating condition insert the work piece between the upper and lower rolls (#31, #32) and advance the material slightly by means of the crank handle(s) to the point where the work piece is held in place between the rolls. Bend the work piece by hand upwards and slightly around the upper roll approximating the bend radius desired in the finished piece. Crank the work piece through the machine. This pre-bending operation is also useful in reducing the number of rear roll (#39) adjustments required to form smaller radii in capacity materials.

Once the material being worked has been formed to the desired shape, removal is accomplished by raising the latch assembly (#1, #2) to its fully open resting position, and elevating the top roll (#31) by means of the roll lift handle (#4). The degree of roll lift can be adjusted by moving the handle (#26) in the desired location. The latch pressure can be adjusted by tightening or loosening the top latch set screw (#15) and locking the bolt in place by tightening the top latch nut (#16).

Wire grooves, 3/8", 1/2" and 5/8" are provided on the right hand end of the rolls for rolling cylinders with wired edges.

MOTOR and DRIVE CHAIN ADJUSTMENT

CAUTION: Disconnect power form the machine before making any adjustments to the motor or drive chain.



Power is transferred from the gear motor to the roll drive train by a loop of industrial roller chain (#66). Should tension on this chain require adjustment this can be accomplished by adjusting the position of the motor adjusting bracket (#108). This bracket is designed to allow the gear motor to pivot by positioning the motor adjustment lock nuts (#112). The drive chain should be tensioned so that there is approximately 1 inch of side play in the chain. Too much chain tension results in chain, sprocket and bearing wear.

The chain can be inspected by removing the sprocket and chain guards (#78), (#80) **DO NOT OPERATE THE MACHINE WITH THESE GUARDS REMOVED.** The chain can be removed from the machine by disassembling the chain connecting link (#67). Keep the drive chain well lubricated with a good grade of chain lubricant.

MAINTENANCE

CAUTION: Disconnect power form the machine before attempting any lubrication or maintenance.



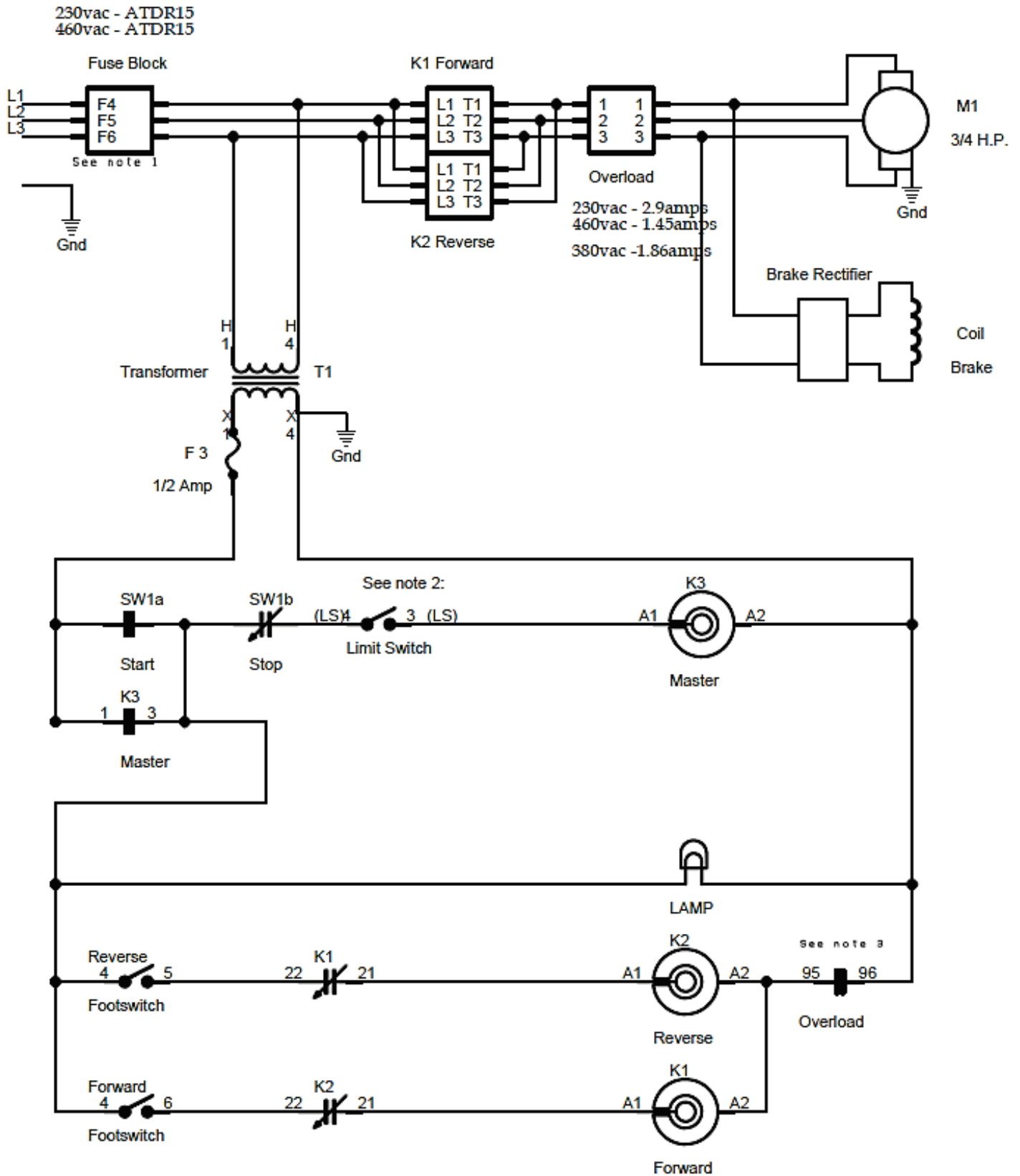
The gear motor unit (#199) has an internal oil bath for the lubrication of the gears. There is an threaded filler plug on the side of the housing which can be removed to check the oil level. This should be check every 30 days. The oil should be replaced after every 1500 hours of operation. Use a premium quality SAE 50 weight gear and spindle oil.

All roll and gear bearing surfaces are equipped with standard grease fittings (#27). Some of these grease fittings are only accessible by removing the top cover plate (#40) and the rear cover plate (#41). These areas should be lubricated using a grease gun once each week. We recommend a good of industrial lubricating grease. After every thirty days of operation, apply grease to the gears (#12, 45, 45A, 50, 51, 52 and #62) by removing the top cover plate and main housing end plate. Inspect all bolts and set screws on a regular basis to insure that they are secure.

We recommend that the rolls be lightly oiled when not in use to prevent rusting.

Your Model SR48P slip roll is designed to require minimal upkeep. It is a good idea to practice periodic maintenance by checking all nuts, bolts and set screws for tightness; lubricating moving parts; and inspecting gears, chains and other moving parts for proper fit and signs of wear. Preventative maintenance will keep your machine in good running condition and prolong the life of your investment.

SR48P 220/440vac 3 PHASE



Note:

1. Fuses F1, F2, F3 – ½ amp 600 volt ATMR
Fuses F4, F5, F6 – 15 amp 600 ADTR
2. Normally open held closed by safety cable
3. Normally open. Held closed by reset

ORDERING PARTS

When ordering parts please furnish the model number and the serial number of your machine.



Slip Roll Specification

Maximum Forming Capacity, Mild Steel	16 gauge/1,6mm
Maximum Forming Capacity, Stainless Steel	20 gauge/1,0mm
Maximum Forming Length	49 in / 1244mm
Minimum Forming Radius	1-1/2 in. / 38mm
Wire grooves	3/8, 1/2, 5/8 in. / 9.5, 12.7, 15.8 mm
Diameter of rolls	3 in. / 76mm
Gear Ratio	4 : 1
Roll Speed	22 rpm
Motor-230/460v, 3-phase, 60Hz	3/4 hp
Dimensions LxWxH	77 x 29x 50 in.
Shipping Weight	1100 lbs / 500 kg



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