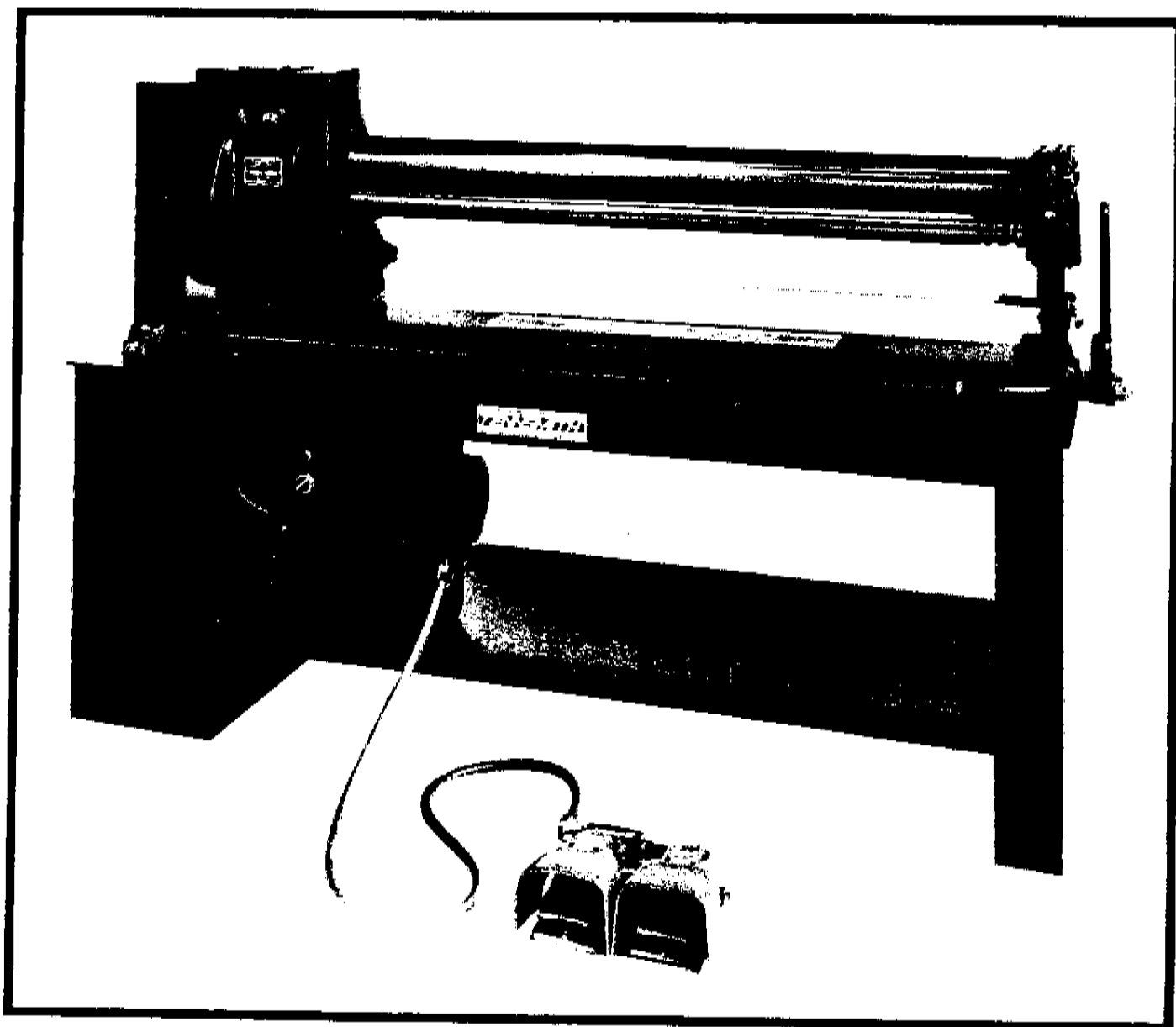


# MODEL SR48P POWERED SLIP ROLL

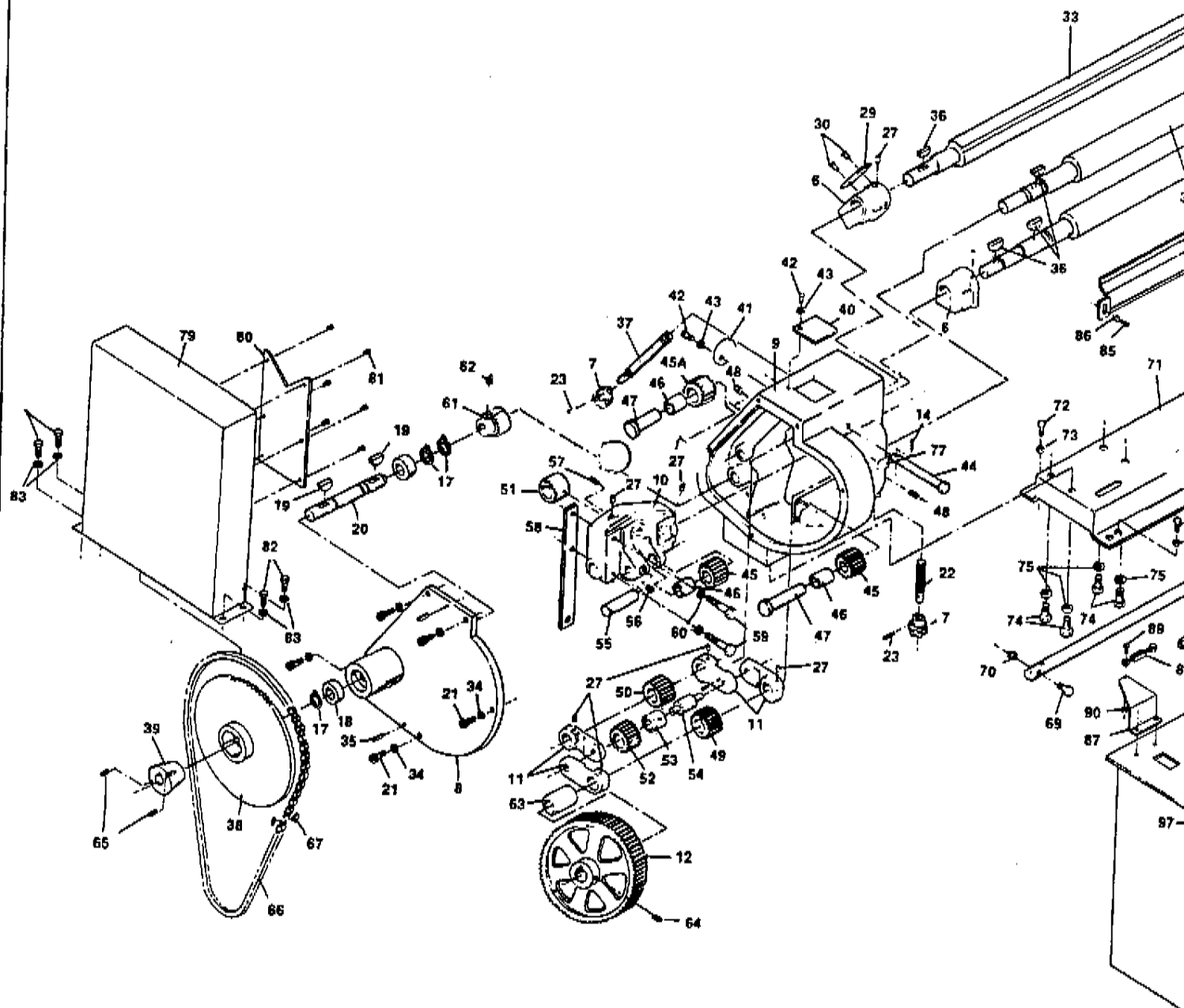
# TENNSMITH®

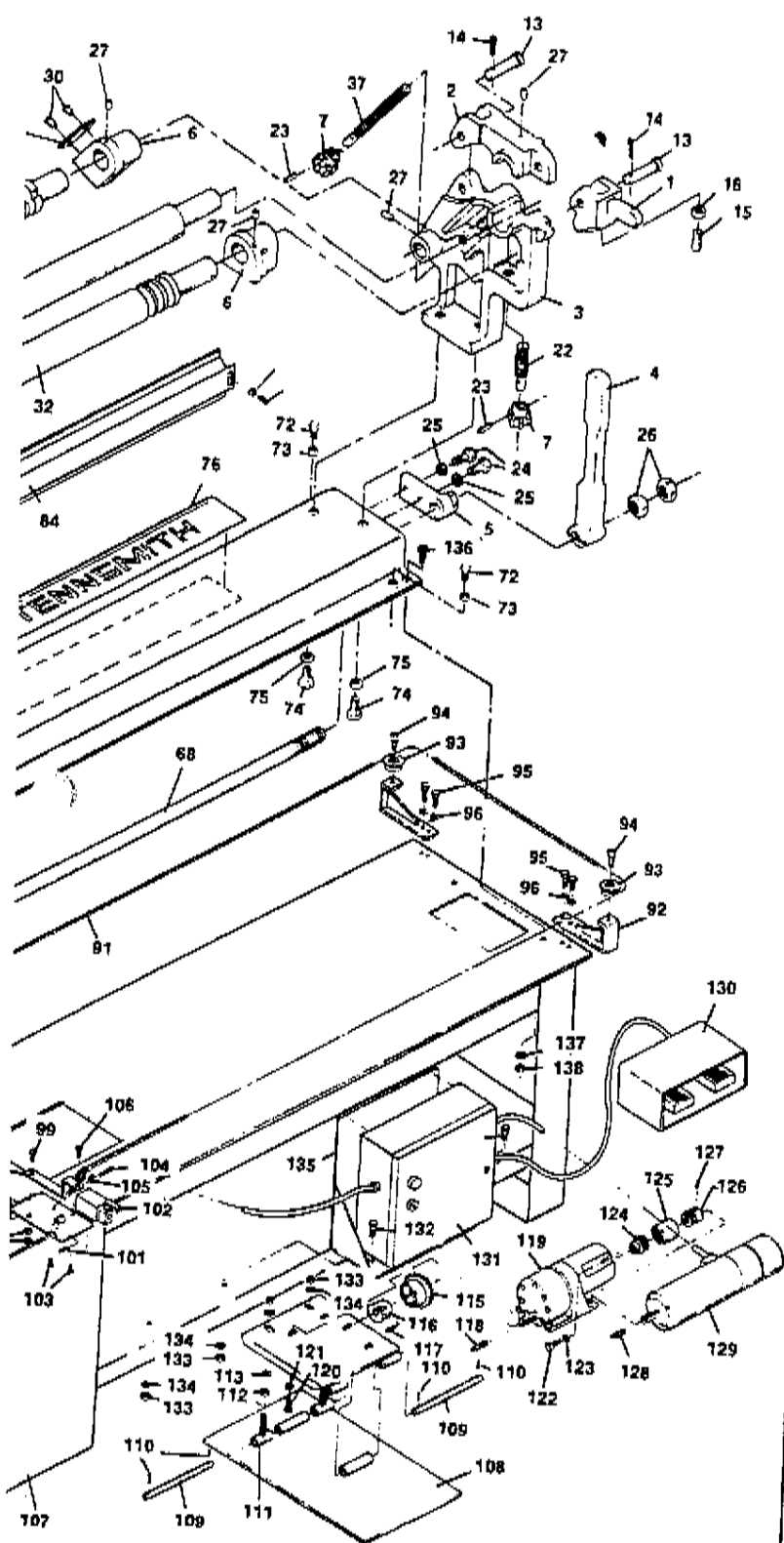


## OPERATION, PARTS & MAINTENANCE MANUAL

SMITHVILLE ROAD; McMINNVILLE, TENNESSEE 37110 USA-931/934-2211

# MODEL SR48P POWERED SLIP ROLL PARTS LIST





ITEM NO.	PART NO.	DESCRIPTION	NO. REQ.
1	SR48-401	LOCK, TOP LATCH	1
2	SR48-402	TOP LATCH	1
3	SR48-403	RIGHT HAND SIDE FRAME	1
4	SR48-404	LIFT HANDLE	1
5	SR48-405	LIFT CAM	1
6	SR48-406	BLOCK, ROLL ADJ.	4
7	SR48-407	HANDKNOB, ROLL ADJ.	4
8	SR48P-4008	COVER PLATE	1
9	SR48-409	LEFT HAND HOUSING	1
10	SR48-410	BLOCK, TOP ROLL SWIVEL	1
11	SR48-411	LINKS	4
12	SR48-412	12" GEAR	1
13	SR48-413	CLEVIS PIN, TOP LATCH	2
14	SR48-414	COTTER PIN	3
15	SR48-415	SET SCREW, LOCK	1
16	SR48-416	NUT, SET SCREW LOCK	1
17	SR48P-481	RETAINER RING	3
18	SR48P-482	BALL BEARING	2
19	SR48P-483	WOODRUFF KEY	2
20	SR48P-484	SHAFT, DRIVE	1
21	SR48P-485	SCREW, COVER PLATE	5
22	SR48-422	SCREW, LOWER ROLL ADJ.	2
23	SR48-423	SPLIT PIN, ROLL ADJ. HANDKNOB	4
24	SR48-424	SCREW, LIFT CAM	2
25	SR48-425	WASHER, LIFT CAM SCREW LOCK	2
26	SR48-426	NUT, LIFT HANDLE LOCK	2
27	SR48-427	GREASE FITTING	13
28	SR48-428	SCALE, RIGHT HAND	1
29	SR48-429	SCALE, LEFT HAND	1
30	SR48-430	DRIVE SCREW, SCALE	4
31	SR48-431	ROLL, TOP	1
32	SR48-432	ROLL, LOWER FRONT	1
33	SR48-433	ROLL, BACK	1
34	SR48P-486	WASHER, SCREW LOCK	5
35	SR48P-487	PIN, COVER PLATE LOCATING	2
36	SR48-436	WOODRUFF KEY	5
37	SR48-437	SCREW, BACK ROLL ADJ.	2
38	SR48P-488	SPROCKET, DRIVE SHAFT	1
39	SR48P-489	HUB, SPROCKET LOCK	1
40	SR48-440	COVER PLATE, TOP L.H. HOUSING	1
41	SR48-441	COVER PLATE, REAR L.H. HOUSING	1
42	SR48-442	SCREW, COVER PLATE	2
43	SR48-443	WASHER, SCREW LOCK	2
44	SR48-444	PIN, SWIVEL BLOCK	1
45	SR48-445	IDLER GEAR	3
45A	SR48-445A	IDLER GEAR - 18T	1
46	SR48-446	BUSHING, IDLER GEAR	3
47	SR48-447	PIN, IDLER GEAR	2
48	SR48-448	SET SCREW, IDLER PIN	2
49	SR48-449	GEAR, LOWER FRONT ROLL	1
50	SR48-450	GEAR, BACK ROLL	1
51	SR48-451	GEAR, TOP ROLL	1
52	SR48-452	GEAR, LOWER IDLER	1
53	SR48-453	BUSHING, LOWER IDLER GEAR	1
54	SR48-454	SPACER PIN, GEAR	1
55	SR48-455	PIN, SWIVEL BLOCK IDLER	1
56	SR48-456	SET SCREW, PIN	1
57	SR48-457	SCREW, SWIVEL BLOCK	1
58	SR48-458	LEVER, LIFTING	1
59	SR48-459	SCREW, LIFTING LEVER	2
60	SR48-460	WASHER, SCREW LOCK	2
61	SR48-461	GEAR, CRANK SHAFT	1
62	SR48-462	SET SCREW, GEAR	1
63	SR48-463	SPACER	1
64	SR48-464	SET SCREW, 12" GEAR	1
65	SR48P-490	SCREW, LOCK HUB	2
66	SR48P-491	CHAIN, DRIVE	1

(CONTINUED ON NEXT PAGE)

ITEM NO.	PART NO.	DESCRIPTION	NO. REQ.	ITEM NO.	PART NO.	DESCRIPTION	NO. REQ.
67	SR48P-492	LINK, CHAIN CONNECTING	1	134	SR48P-548	WASHER, SCREW LOCK	2
68	SR48-468	ROD, LIFTING	1	135	SR48P-547	BRKT., CONTROL BOX	1
69	SR48-469	SCREW, LIFTING ROD	1	136	SR48P-548	SCREW, BASE MTG.	4
70	SR48-470	NUT, SCREW LOCK	1	137	SR48P-549	WASHER, BASE MTG. SCREW LOCK	4
71	SR48-471	BASE	1	138	SR48P-550	NUT, BASE MTG. SCREW	4
72	SR48-472	SCREW, BASE LEVELING	4				
73	SR48-473	NUT, SCREW LOCK	4				
74	SR48-474	SCREW, MOUNTING	6				
75	SR48-475	WASHER, SCREW LOCK	6				
76	SR48-476	DECAL, BASE	1				
77	SR48-477	SERIAL PLATE	1				
78	SR48-478	STAND, OPTIONAL	1				
79	SR48P-493	GUARD, CHAIN	1				
80	SR48P-494	GUARD, SPROCKET	1				
81	SR48P-495	SCREW, SPROCKET GUARD MTG.	6				
82	SR48P-496	SCREW, CHAIN GUARD MTG.	4				
83	SR48P-497	WASHER, SCREW LOCK	4				
84	SR48P-498	GUARD, FRONT ROLL	1				
85	SR48P-499	SCREW, FRONT ROLL GUARD MTG.	2				
86	SR48P-500	WASHER, SCREW LOCK	2				
87	SR48P-501	BRKT., STOP WIRE MTG.	1				
88	SR48P-502	CLEVIS, STOP WIRE	1				
89	SR48P-503	SCREW, CLEVIS MTG.	1				
90	SR48P-504	NUT, CLEVIS MTG. SCREW	1				
91	SR48P-505	WIRE, STOP	1				
92	SR48P-506	BRKT., STOP WIRE PULLEY MTG.	2				
93	SR48P-506A	PULLEY, STOP WIRE	2				
94	SR48P-506B	BOLT, PULLEY MTG.	2				
95	SR48P-507	SCREW, GUIDE MTG.	2				
96	SR48P-508	WASHER, SCREW LOCK	4				
97	SR48P-509	BRKT., STOP SWITCH MTG.	1				
98	SR48P-510	TRIP, SWITCH	1				
99	SR48P-511	SCREW, SWITCH TRIP MTG.	1				
100	SR48P-512	NUT, TRIP LOCK	2				
101	SR48P-513	SPRING, TRIP	1				
102	SR48P-514	SWITCH, STOP	1				
103	SR48P-515	SCREW, SWITCH MTG.	2				
104	SR48P-516	SCREW, STOP	1				
105	SR48P-517	NUT, STOP SCREW	1				
106	SR48P-518	SCREW, WIRE MTG.	1				
107	SR48P-519	STAND	1				
108	SR48P-520	BRKT., MOTOR ADJ.	1				
109	SR48P-521	PIN, MOTOR ADJ. BRKT.	2				
110	SR48P-522	KEY, MOTOR ADJ. PIN	4				
111	SR48P-523	ADJUSTMENT, MOTOR	2				
112	SR48P-524	NUT, MOTOR ADJUSTMENT LOCK	4				
113	SR48P-525	WASHER, ADJUSTMENT LOCK	2				
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	1				
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	COUPLING, 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				

**NOTE: When ordering parts, please specify roll length, model and serial number.**

## FOREWORD

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

## WARRANTY

Your TENNSMITH slip roll is warranted for one full year from date of purchase. The terms of the warranty are stated on the warranty registration card with your machine. Please complete and return this card to activate your warranty.

## SAFETY INSTRUCTIONS

1. Know the safety and operating instructions contained in this brochure. 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:
    - a. A point of operation guard across the front of the rolls (#84).
    - b. A front and rear full length safety cable which acts as an emergency stop device (#91 - #106)
    - c. An electromagnetic brake on the drive motor.
    - d. Foot pedal controls (#130).
    - e. (Optional) A photoelectric presence-sensing device.
- Do not operate this machine with any of these safety devices removed, bypassed or overridden.
3. Be certain this machine is properly wired and grounded to conform to the National Electric Code.
  4. Never leave the machine in a power on condition when unattended.
  5. Always disconnect the machine from the power source before attempting maintenance, repairs or adjustment.
  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 writing the factory.

## MACHINE GUARDING

This machine should 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 Standard B11.12, Roll Forming and Roll Bending Machinery Safety Standards.

## RECEIVING THE SLIP ROLLS

Remove the machine from its crate and carefully inspect the unit for damage. Any damage should be reported to the delivering carrier and to your distributor. Concealed damage should be reported to the delivering carrier immediately to protect your rights to make a claim.

## INSTALLING THE SLIP ROLLS

Locate the machine 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 is equipped with four leveling screws (#72) and lock nuts (#73) to permit the leveling of the roll base (#71) on the bench, thereby eliminating any binding of the various gears or bearings.

## ELECTRICAL SPECIFICATIONS

A wiring diagram is located inside the electrical box (#131) at the front of the machine. 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 rotating 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 microswitch 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 selector switch, foot pedal controls and microswitch 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 mounting bracket (#97) at the left front 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.

## OPERATION INSTRUCTIONS

The full length capacity of the Model SR48P powered slip roll is shown in the chart below. The chart (Figure 1) shows the approximate equivalent capacities of materials other than mild steel. DO NOT exceed the capacity of your slip roll as permanent damage to the machine may result.

FIGURE 1

MAXIMUM CAPACITY	SR48
Mild Steel AISI 1020	16 ga./063
Steel - Low Carbon H.R./C.R.	16 ga./063
Steel - .40-.50% Carbon H.R.	20 ga./036
Stainless Steel - Annealed	20 ga./036
Aluminum - Soft	.120
Aluminum - Hard	.063
Brass 70-30	.075
Bronze, Commercial	.075
Copper, Electrolytic	.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 radius of bend. As a general rule, when your slip roll is overloaded there will be a 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 multiple passes through the rolls. DO NOT try to force material through the rolls as permanent damage to the machine may result.

To operate the machine, turn the electrical selector switch on the front of the electrical box to the "on" position. The pilot light will illuminate to indicate a ready to operate condition. The foot pedal switch controls the rotation of the rolls. The shroud on the foot pedal 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 forward foot pedal is depressed. The pinch roll adjustment screws (#22) are used to move the lower pinch roll (#32) up and down for different gauge material clearance between the two front rolls. The gap between the two front rolls should be equal across the length of the rolls to insure an even advancement of the material being worked.

The rear roll (#33) adjusts 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 the two front rolls should be equal across the length of the rolls to insure an even radius of bend. 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 starting grooves which assist in starting the work past the rear roll.

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 prebending 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 foot pedal control to the point where the material is held in place between the rolls. Bend the work piece by hand upwards around the upper roll approximating the bend radius desired in the finished piece. Then, proceed with forming the work piece as usual. This prebending operation is also useful in reducing the number of rear roll (#33) adjustments required to form smaller radii in capacity materials.

Once the work piece 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 roll lift rod nuts (#26). 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 from 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 the 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.

## LUBRICATION AND MAINTENANCE

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

The gear motor reducer unit (#119) has an internal oil bath for the lubrication of the gears. There is a threaded filler plug on the side of the housing which can be removed to check the oil level. This should be checked every thirty 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 rear cover plate (#41). These areas should be lubricated once a week using a grease gun and a good grade of industrial lubricating grease. Every thirty days of operation apply a light coating of grease to the gears (#12, #45, #45A, #49, #50, #51, #52, #61).

We recommend that the rolls be kept 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.