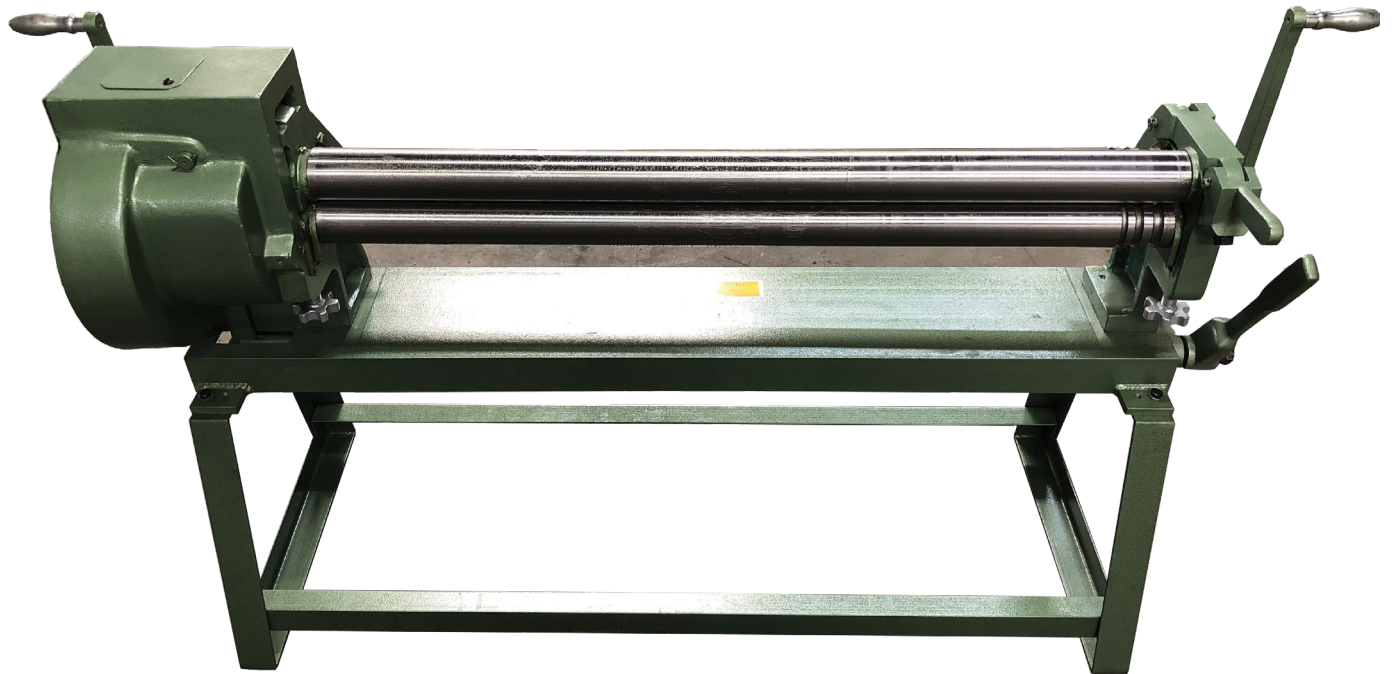


TIN KNOCKER
TK 1648 MANUAL ROLLS

INSTRUCTIONS & PARTS DIAGRAMS



RED RIVER MACHINERY
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TIN KNOCKER SAFETY PRECAUTIONS

1. Never use a machine or tool for anything other than its intended purpose. Use the proper tool and equipment for the task.
2. Do not remove, paint over, alter, or deface any machine-mounted warning and instruction plates and signs.
3. Do not operate the machine in excess of its rated capacity.
4. Beware of protruding machine elements or assemblies. Avoid any pinch-points created by the movement of the machine's components.
5. Know the safety and operating instructions contained in this manual. Become familiar with and understand the limitations of this slip roll. Always practice safety.
6. Wear protective foot wear of safety shoes. Jewelry such as rings and watches should be removed when operating the machine.
7. Rolls should be securely bolted to a work table or bench. The bench should be bolted to the floor.
8. Always keep hands clear of entry area to rolls while operating.
9. Do not misuse the slip rolls by using them for other than their intended use.
10. Keep the work area clear and clean to avoid tripping or slipping
11. Remove the second crank handle when only one person is operating the machine.

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

INSTALLING THE MACHINE

Locate the slip roll in a well-lighted area on a solid, level floor. The clip roll must be securely bolted to a work bench or optional stand.

Caution: The slip roll weighs nearly 800 lbs. A heavy-duty work bench is required to support this weight. The work bench or stand must be securely mounted to the floor. NOTE: The slip roll should be positioned on the work bench so that both crank handles rotate freely without meeting any obstructions. Use lag screws or bolts with expandable shields or similar holding devices thru the mounting feet located on the bottom of the side panels to mount work bench to floor.

The TK 1648 slip roll is equipped with four leveling screws and lock nuts 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. If the slip roll is mounted on a wood topped bench use metal plates (not provided) under the leveling screw.

OPERATING THE MACHINE

The full-length capacity of the TK 1648 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	TK 1648 SLIP ROLL
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.

The two front rolls feed the material through the machine as the right-hand crank handle is turned in a clockwise direction. For forming capacity materials an additional left-hand crank handle 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 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 adjust to control the radius of bend of the material being worked by means of the back roll adjustment screws. 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 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 1648 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 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 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 to its fully open resting position and elevating the top roll by means of the roll lift handle. The degree of roll lift can be adjusted by moving the handle in the desired location. The latch pressure can be adjusted by tightening or loosening the top latch set screw and locking the bolt in place by tightening the top latch nut.

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

MAINTENANCE

All roll and gear bearing surfaces are equipped with standard grease fittings. Some of these grease fittings are only accessible by removing the top cover plate and the rear cover plate. These areas should be lubricated using a grease gun once each week. We recommend a good industrial lubricating grease. After every thirty days of operation, apply grease to the gears by removing the top cover plate and main housing end plate. Inspect all bolts and set screws on a regular basis to ensure that they are secure. We recommend that the rolls be lightly oiled when not in use to prevent rusting.

Slip Roll Specification

Model	TK 1648
Maximum capacity, mild steel	16 ga / 1,6mm
Maximum Forming Length	49 in / 1244mm
Diameter of Rolls	3 in / 0.76mm
Minimum Forming Radius	1 1/2 in / 0.38mm
Wire Grooves	3/8, 1/2, 5/8 in
	9.5, 12.7, 15.8mm
Gearing Ration	4 : 1
Shipping Weight	1100 lbs. / 500 kg

Tin Knocker 1648 Rolls

Forming Machines, or Slip Roll Formers, are intended for rolling sheet metal or forming cylinders of various diameters.

The two pinch rolls feed the sheet against the rear roll, curving the sheet and forming the cylinder. The rear or forming roll can be adjusted by screws on the rear of left and right end housings, varying the diameter of the required cylinder. Pinch rolls can be adjusted for stock thickness by screws on front of end housings.

The capacity ratings of Tin Knocker forming machines are based on forming mild steel, fully annealed, the full length of the rolls and are considered as standard by the sheet metal trade for forming rolls of a specified diameter and length. Definite capacities, however, depend upon the diameter and length of

cylinder to be formed and the number of passes through the rolls to obtain a given diameter. Stiffness of material and uniformity desired are also factors. When a forming machine is overloaded, the immediate result will be deflection in the center of the rolls, resulting in cylinders bulged in the center.

To reduce the number of rear roll adjustments when sheets are of light gauge, proceed as follows:

- 1) Insert the sheet between two pinch rolls.
- 2) Bend the sheet upwards and slightly around the top roll.
- 3) Continue to pass the sheet through the machine.

This will also reduce the flat spot on the leading edge of the sheet.

The right-hand housing is provided with a hinged journal cap and lifting latch. After the cylinder is formed, the latch is lifted and the lever is pressed down. This raises the top roll and the cylinder can be slipped off the roll without distortion.

Forming machines are provided with grooves in the right end of the lower and rear rolls to allow for forming cylinders with a wired edge.

WARNING: Before operating, machines must be bolted to work bench. If floor stand has been provided, machine must be bolted to floor stand with bolts provided. Stand must be securely lagged to floor.

INSTRUCTIONS

CAUTION: Be sure that the machine is securely bolted onto pedestal or to customer supplied bench. Pedestal or workbench should be bolted to floor.

1. Adjust Lower Roll (11) to grip the metal firmly and evenly but without straining the machine. Lower Roll (11) is adjusted up or down with the two lower Adjusting Screws (29).
2. Adjust Rear Roll (12) to form the metal up as it travels through the rollers. Rear Roll (12) is adjusted up or down with the two rear Adjusting Screws (22). Be sure Rear Roll (12) is parallel with Lower Roll (11). If rolls are not parallel, the formed metal will be conical in shape instead of cylindrical.
3. Feed the stock to the rolls only from the front.
4. As the front rolls grip the stock, lift the rear end of the metal upward. This will help reduce the flat spot on the leading edge of the sheet and will also cause the leading edge to pass over the rear roll readily.
5. The diameter of the formed cylinder is determined by the position of the Rear Roll (12). To increase the diameter of a cylinder, lower Rear Roll (12) by turning the two-rear Adjusting Screws (22) counter clockwise. To reduce the diameter of a formed cylinder, raise Rear Roll (12) by turning the two rear

Adjusting Screws (22) clockwise. The two rear Adjusting Screws (22) should be turned an equal number of turns in order to keep the Rear Roll (12) parallel with the front gripping rolls.

6. To remove a cylindrical piece without distorting it, lift up Locking Handle (27), raise Right Hand Housing Cap (1/2) and turn Cam Handle (15) down. This raises the outboard end of the Upper Roll (10) and allows the formed cylinder to be slipped off of the Upper Roll (10).
7. The Lower Roll (11) and the Rear Roll (12) have grooves of varying widths in one end. These are for the purpose of accommodating a wired edge when forming a shape or when forming wire into a ring.
8. "X" points should be lubricated daily with a good grade machine oil. "Y" points should be greased weekly with Alemite #33 or equal.

Parts For 1648 Slip Rolls			
Fine No.	Part No.	Description	No. REQ'D.

WARRANTY

All new machines are sold with a one-year limited warranty, on factory defective parts. The warranty is limited to the original user. TAAG Machinery Co. at its option, will repair, replace or refund the purchase price of any part, tool or machine that fails during the warranty period. TAAG Machinery Co. will pay normal shipping charges for replacement parts. After 90 days from date of purchase, all express or overnight delivery charges are the responsibility of the customer. Purchaser must deliver to

TAAG Machinery Co., at the address below, any written claim, with proof of original purchase. Replacement parts will be invoiced to purchaser and credit issued when the failed part is delivered to TAAG Machinery Co. Removal, reinstallation or replacement parts shall be at purchasers' / user's expense. Failure due to improper use of the machine voids the warranty.

NOTE: 1. This machine has been tested and adjusted prior to shipment but can and often does require readjustment due to vibration and bouncing during transport. Following the procedures described within can easily do readjustment. These are procedures with which you, as a user, should be familiar, as you will use them repeatedly over the life use of the machine. If you have difficulty in performing these procedures, we are here to support you.

2. Opening rolls (for Philipsburg Lock) are consumable items and not subject to warranty.

We disclaim any responsibility whatsoever to the customer or to any other person for injury to person, or damage to or loss of property or value, caused by any product which has been subjected to misuse, negligence, or accident; or misapplied; or modified or repaired by unauthorized persons; or improperly installed. We shall in no event be liable for any consequential damage, loss or expense arising from the use of, or inability to use, our product.