



# Operating Instructions and Parts Manual

## Manual Slip Roll

Model SR-2420M



**Baileigh Industrial**  
P.O. Box 531  
Manitowoc, WI 54221-0531  
Ph.: 920-684-4990  
Fax: 920-684-3944  
Baileigh-Sales@jpwindustries.com

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## 2.0 Safety Instructions

### **⚠ WARNING**

**Failure to follow these rules may result in serious personal injury**

1. Only trained and qualified personnel can operate this machine.
2. Make sure guards are in place and in proper working order before operating machinery.
3. Remove any adjusting tools. Before operating the machine, make sure any adjusting tools have been removed.
4. Keep work area clean. Cluttered areas invite injuries.
5. Overloading machine. By overloading the machine, you may cause injury from flying parts. DO NOT exceed the specified machine capacities.
6. Dressing material edges. Before bending sheet metal, always chamfer and deburr all sharp edges.
7. Do not force tool. Your machine will do a better and safer job if used as intended. DO NOT use inappropriate attachments in an attempt to exceed the machines rated capacity.
8. Use the right tool for the job. DO NOT attempt to force a small tool or attachment to do the work of a large industrial tool. DO NOT use a tool for a purpose for which it was not intended.
9. Dress appropriately. DO NOT wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
10. Use eye and ear protection. Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
11. Do not overreach. Maintain proper footing and balance at all times. DO NOT reach over or across a running machine.
12. Stay alert. Watch what you are doing and use common sense. DO NOT operate any tool or machine when you are tired.
13. Check for damaged parts. Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
14. Observe work area conditions. DO NOT use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. DO NOT use electrically powered tools in the presence of flammable gases or liquids.
15. Blade adjustments and maintenance. Always keep blades sharp and properly adjusted for optimum performance.
16. Keep children away. Children must never be allowed in the work area. DO NOT let them handle machines, tools, or extension cords.
17. Store idle equipment. When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
18. DO NOT operate machine if under the influence of alcohol or drugs. Read warning labels on prescriptions. If there is any doubt, DO NOT operate the machine.

**Familiarize yourself with the following safety notices used in this manual:**

### **⚠ CAUTION**

This means that if precautions are not heeded, it may result in minor injury and/or machine damage.

### **⚠ WARNING**

This means that if precautions are not heeded, it may result in serious injury or death.

### **⚠ DANGER**

This means that if precautions are not heeded, it will result in serious or fatal, injury.

**Save the Instructions**

## 3.0 About This Manual

This manual is provided by Baileigh Industrial, covering the safe operation and maintenance procedures for a Baileigh Model SR-2420M Manual Slip Roll. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Technical Support handles questions on setup, operation, schematics, warranty issues, and individual parts needed. Our Technical Support department can be reached at 920-684-4990.

If there are questions or comments, please contact your local supplier or Baileigh Industrial. We can also be reached at our web site: [www.baileigh.com](http://www.baileigh.com).

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

### **WARNING**

**Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!**

Register your product online -

<https://baileigh.com/product-registration>



## 4.0 Specifications

Table 4-1

|                          |                                      |
|--------------------------|--------------------------------------|
| Model number             | SR-2420M                             |
| Stock number             | BA9-1007297                          |
| Power                    |                                      |
| Power                    | Manual                               |
| General Specifications   |                                      |
| Upper Roll Diameter      | 2" (50.8mm)                          |
| Minimum Forming Diameter | 3" (76.2mm)                          |
| Wire Grooves             | Yes – 3                              |
| Capacity (Mild Steel)    | 20ga. (0.9mm)                        |
| Forming Width            | 24" (610mm)                          |
| Weights and Dimensions   |                                      |
| Shipping Weight          | 220 lbs.(100kg)                      |
| Shipping Dimensions      | 44" x 15" x 21" (1118 x 381 x 534mm) |

## ⚠ WARNING

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

## 5.0 Setup and Assembly

### 5.1 Unpacking and Checking Contents

The Baileigh Model SR-2420M manual slip roll requires minimal assembly. After opening the crate, remove the slip roll machine and place on a bench or table capable of supporting the machines weight. Now remove the protective plastic sheeting from each roll.

**Note:** If using a razor blade or knife be careful not to scratch the rolls.

Remove the crank handle from the lower roll shaft, turn around, and replace on the shaft so the roll pin engages the crank handle hub.

**IMPORTANT:** Before securing the machine to a table or bench, make sure the handle is free to rotate completely around, without pinching your hand or fingers.

### 5.2 Cleaning

Your machine may be shipped with a rustproof waxy oil coating and grease on the exposed unpainted metal surfaces. To remove this protective coating, use a degreaser or solvent cleaner. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.

Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.

## ⚠ WARNING

**DO NOT USE** gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

## ⚠ CAUTION

When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

### 5.3 Installation

**IMPORTANT:**

Consider the following when looking for a suitable location to place the machine:

## ⚠ WARNING

Before operating the Baileigh Slip Roller, make sure it is firmly bolted to a table, bench, or the floor. If it tips over on you, it could cause severe injury or death.

- Overall weight of the machine.
  - Weight of material being processed.
  - Sizes of material to be processed through the machine.
  - Space needed for auxiliary stands, work tables, or other machinery.
  - Clearance from walls and other obstacles.
  - Maintain an adequate working area around the machine for safety.
  - Have the work area well illuminated with proper lighting.
  - Keep the floor free of oil and make sure it is not slippery.
  - If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
  - Make sure the workbench is properly reinforced to support the weight.
  - The strongest mounting option is where the holes are drilled all the way through the workbench and the machine is secured with bolts, washers, and nuts.
1. Locate the Baileigh SR-2420M on your work surface.
  2. Using the base as a template, mark the holes on the mounting surface.
  3. Drill thru and bolt down the base. Customer to provide necessary hardware.



Figure 5-1

## 6.0 Operation

### ⚠ CAUTION

Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

### ⚠ CAUTION

When handling large heavy sheets make sure they are properly supported.

Before using the Baileigh 2420M Slip Roll, check the mounting and adjustment of the machine. Rotate the handle and check whether the two gears have good, firm contact with each other. All three shafts should be clean and free of any metal debris.

DO NOT exceed the rated capacity on this slip roll. It has been tested at the factory to roll 20ga. (0.9mm) x 24" (610mm) wide mild steel.

The SR-2420M slip roller has three 2.00" (50.8mm) diameter rolls. (fig. 6-3) The two front rolls, one placed vertically above the other are clamping rolls. The top roll is fixed and the bottom roll is adjustable with two knobs (A). The rear idler roll controls the diameter of the finished piece part and is adjusted with two bolts (B). Always make sure the gap along the full length of the rolls is consistent. (fig. 6-1) If the rolls are not adjusted exactly parallel, the material will spiral during the rolling process. Because material springback varies with the kind of material being formed, only by test forming several pieces can the correct adjustments be made.

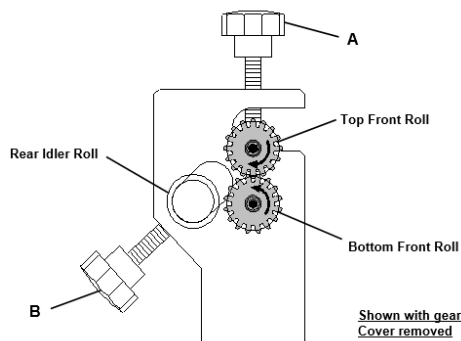


Figure 6-1

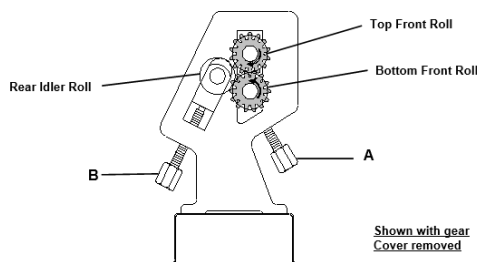


Figure 6-2

Always make sure the gap along the full length of the rolls is consistent. (fig. 6-3).

If the rolls are not adjusted exactly parallel, the material will spiral during the rolling process.

Because material springback varies with the kind of material being formed, only by test forming several pieces can the correct adjustments be made.

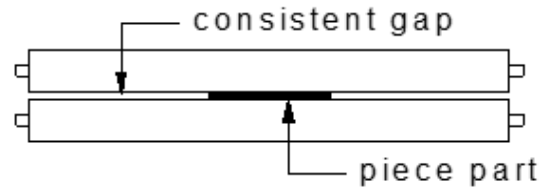


Figure 6-3

## 7.0 Plate Rolling Procedure

### 7.1 Determining Length of Material

LENGTH OF MATERIAL necessary to form the desired size circle is the first consideration in circle forming. To determine the approximate length of material needed use the formula:  $C = \pi \times D$ , Where C is the circumference,  $\pi$  is the value of 3.1416, and D is the diameter. For example, to find the length of material (C or Circumference) to form a 12" (304.8mm) diameter circle, multiply  $3.1416 \times 12$  ( $3.1416 \times 304.8\text{mm}$ ), the result is 37.70" (957.55mm) or the approximate length of material needed. Cut a few pieces of material to this length for test forming. Material may have to be lengthened or shortened depending upon results of the test forming run.

### 7.2 Pre-Bending and Finish Rolling

PRE-BENDING is the operation where the ends of the material are bent to the same radius as that of the finished piece. This principle is used to get the best results in full circle bending.

Before bending, do the following:

- Clean any dust or grease from the material.
  - Make sure the edges of the material are free of chips and burrs.
  - Check that the material is flat.
  - Have a template of the finished diameter to compare with.
  - Always work in the center of the rolls.
1. Load the material forward to a point as in view "A".
  2. Turn the two adjusting knobs (B) clockwise (cw) until you have an approximate radius to your finished piece. See view "B"
  3. Back the piece out, turn the piece part, and repeat the above sequence for the other end. See view "C"

- Now that you have a pre-bend on both ends, it's time to roll the final diameter.
- Back down the rear roller and start rolling the piece forward and reverse as shown in view "D".
- Start raising the rear roll gradually and continue rolling the piece forward and reverse until you have reached the finished diameter.

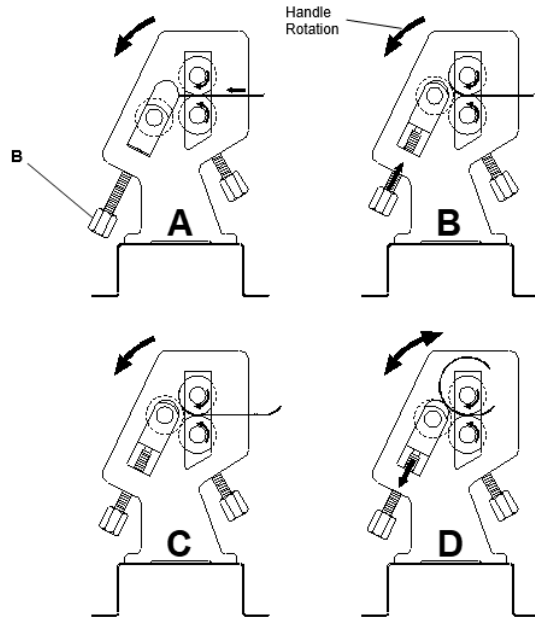


Figure 7-1

### 7.3 Removing Rolled Piece Part

- Grasp the handle on the locking plate and pivot clockwise (cw) to release from the lock bolt (C) (fig. 7-2).

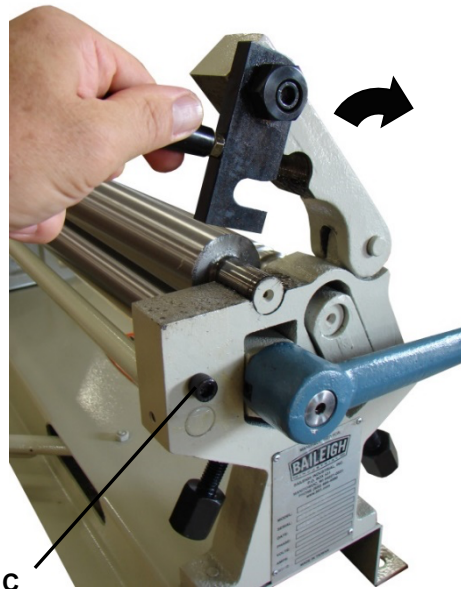


Figure 7-2

- Lay back the cover to expose the roller shaft.
- Grasp the pull handle as in (fig. 7-3) and pull to the right, which pivots the top roll up.



Figure 7-3

- You can now remove the finished piece part.
- Once removed, slide the pull handle to the left to lower the roll.
- Rotate the cover back onto the roller shaft and secure the locking plate.
- You are now ready to roll another piece.

## 8.0 Bending Allowance

To bend sheet metal accurately, you will need to consider the total length of each bend. This is referred to as bend allowance. Subtract the bend allowance from the sum of the outside dimensions of the piece part to obtain the actual overall length or width of the piece. Because of differences in sheet metal hardness, and whether the bend is made with the grain or against it, exact allowances must sometimes be made by trial and error. However, bend allowances for general use can be obtained from metal working books or from the Internet.

## 9.0 Understanding Springback

Springback, also known as elastic recovery, is the result of the metal wanting to return to its original shape after undergoing compression and stretch. After the bending leaf is removed from the metal and the load is released, the piece part relaxes, forcing the bent portion of the metal to return slightly to its original shape. The key to obtaining the correct bend angle is to over bend the metal a little and allow it to spring back to the desired angle. All metals exhibit a certain amount of spring back.

## 10.0 Material Selection

### ⚠ CAUTION

**It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.**

When selecting materials keep these instructions in mind:

- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

**Note:** Thorough cleaning of the rolls is necessary to avoid possible sliding of the material through the rolls.

## 11.0 Maintenance

### ⚠ WARNING

**Maintenance should be performed on a regular basis by qualified personnel.**

### ⚠ WARNING

**Always follow proper safety precautions when working on or around any machinery.**

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.

- Apply rust inhibitive lubricant to all non-painted surfaces.

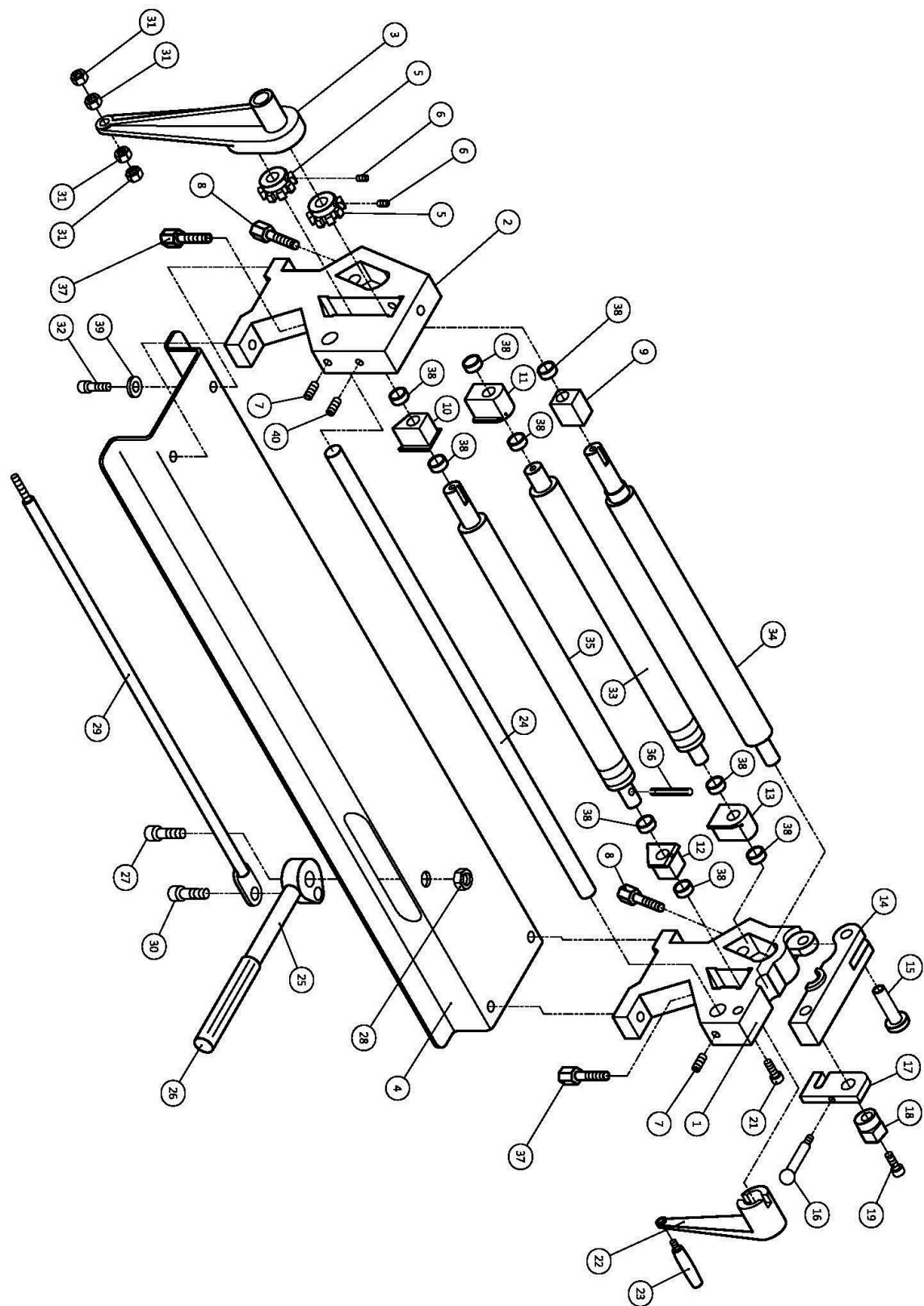
**Note:** Proper maintenance can increase the life expectancy of your machine.



Figure 11-1

## 12.0 Replacement Parts

### 12.1.1 Manual Slip Roll Assembly – Exploded View



## 12.1.2 Manual Slip Roll Assembly – Parts List

| Index No | Part No     | Description                         | Size               | Qty |
|----------|-------------|-------------------------------------|--------------------|-----|
| 1        | **          | Side Frame R                        |                    | 1   |
| 2        | **          | Side Frame L                        |                    | 1   |
| 3        | **          | Gear Guard                          |                    | 1   |
| 4        | **          | Fixed Base                          |                    | 1   |
| 5        | BA9-1227793 | Gear                                | .875" Bore         | 2   |
| 6        | BA1-10888   | Set Screw                           |                    | 2   |
| 7        | **          | Set Screw                           | 5/16-18 x .31" Lg. | 2   |
| 8        | BA9-1227300 | Adj. Screw, Rear                    |                    | 2   |
| 9        | **          | Upper Block, L                      |                    | 1   |
| 10       | **          | Lower Block, L                      |                    | 1   |
| 11       | **          | Rear Block, L                       |                    | 1   |
| 12       | **          | Lower Block, R                      |                    | 1   |
| 13       | **          | Rear Block, R                       |                    | 1   |
| 14       | **          | Cover                               |                    | 1   |
| 15       | **          | Rivet                               |                    | 1   |
| 16       | **          | Handle                              |                    | 1   |
| 17       | BA9-1010676 | Locking Plate                       |                    | 1   |
| 18       | **          | Cam                                 |                    | 1   |
| 19       | **          | Screw                               | 3/8-16 x 1.00" Lg. | 1   |
| 21       | **          | Spring Pin                          | 3/8-16 x .50" Lg.  | 1   |
| 22       | **          | Crank Handle                        |                    | 1   |
| 23       | **          | Handle Holder                       |                    | 1   |
| 24       | **          | Locking Link                        |                    | 1   |
| 25       | **          | Pull Handle                         |                    | 1   |
| 26       | **          | Hand Grip                           |                    | 1   |
| 27       | **          | Screw                               | M8 x 1.25 x 25mm   | 2   |
| 28       | **          | Nut                                 | M8 x 1.25          | 1   |
| 29       | **          | Pull Rod Assy.                      | 24 inch            | 1   |
| 29       | **          | Pull Rod Assy.                      | 36 inch            | 1   |
| 30       | **          | Screw                               |                    | 1   |
| 31       | **          | Nut                                 | 3/8-16             | 4   |
| 32       | **          | Screw                               | 3/8-16 x 1.00" Lg. | 4   |
| 33       | **          | Rear Roll                           |                    | 1   |
| 34       | BA9-1013233 | Upper Roll                          |                    | 1   |
| 35       | **          | Lower Roll                          |                    | 1   |
| 36       | **          | Spring Pin                          | .31" Dia.          | 1   |
| 37       | **          | Adj. Screw, Lower                   |                    | 2   |
|          | BA9-1010674 | Side Frame (R.H) with cover & rivet |                    | 1   |
| 38       | **          | DU                                  |                    | 9   |
| 39       | **          | Washer                              |                    | 1   |
| 40       | **          | Set Screw                           |                    | 1   |

\*\* These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.