

Slip roll machine

Model: W01-1.5X915

W01-1.5X1250A

W01-1.5X1300



Operate manual

Table of contents

1. Warning and safety.....	1
2. Introduction.....	3
3. Set up.....	4
Assembly.....	4
Mounting.....	4
4. Operation	5
Basic control.....	5
Preparation.....	6
Flat rolling.....	6
Creating bends.....	7
Creating cylinders.....	8
Bending wire.....	10
Removing workpiece.....	11
5. Maintance.....	12
6. Trouble shooting.....	12
7. Drawing and part list	13

Warning and safety

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

1. Read the entire manual before starting machinery. Machinery presents serious injury hazards to untrained users.
2. Always use ansi approved safety glasses when operating machinery. Everyday eyeglasses only have impact resistant lenses – they are not safety glasses.
3. Always wear a niosh approved respirator when operating machinery that produces dust. Most types of dust (wood, metal, etc) can cause severe respiratory illnesses.
4. Always use hearing protection when operating machinery. Machinery noise can cause permanent hearing loss.
5. Wear proper apparel. Don't wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
6. Never operate machinery when tired or under the influence of drugs or alcohol. Be mentally alert at all times when running machinery.
7. Only allow trained and properly supervised personnel to operate machinery. Make sure operation instructions are safe and clearly understood.
8. Keep children and visitors away. Keep all children and visitors a safe distance from the work area.
9. Make workshop childproof. Use padlocks, master switches, and remove start switch keys.
10. Never leave when machine is running. Turn power off and allow all moving parts to come to a complete stop before leaving machine unattended.
11. Don't use in dangerous environments. Don't use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.
12. Keep work area clean and well lighted. Clutter and dark shadows may cause accidents.
13. Use a grounded extension cord rated for the machine amperage. Grounded cords minimize shock hazards. Undersized cords create excessive heat. Always replace damaged extension cords.

14. Always disconnect from power source before servicing machinery. Make sure switch is off position before reconnecting.
15. Maintain machinery with care. Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. Make sure guards are in place and work correctly before using machinery.
17. Remove adjusting keys and wrenches. Make a habits of checking for keys and adjusting wrenches before turning machinery ON.
18. Check for damaged parts before using machinery. Check for binding or misaligned parts, broken parts, loose bolts, and any other conditions that may impair machine operation. Repair or replace damaged parts before operation.
19. Use recommended accessories. Refer to the instruction manual for recommended accessories. Improper accessories increase risk of injury.
20. Don't force machinery. Work at the speed for which the machine or accessory was designed.
21. Secure workpiece. Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.
22. Don't overreach. Maintain stability and balance at all times.
23. Many machines can eject workpiece toward operator. Know and avoid conditions that cause the workpiece to "kickback".
24. Always lock mobile bases (if used) before operating machinery.
25. Certain dust may be hazardous to the respiratory systems of people and animals, especially fines dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.
26. Metal edges. Always de-burr sharp metal edges before inserting them into the slip roll. Sharp edges on sheet metal can cause severe cuts.
27. Hand protection. Always wear leather gloves when using this tool.
28. Pinching hazard. Keep fingers out of roller path during operation.
29. Crushing hazard. Make sure rollers and workpieces are fully supported during installation and removal. Wear steel toed footwear during operation to protect your feet if you drop a roller or workpiece.
30. Experiencing difficulties. If at any time you are experiencing difficulties performing the intended operation, stop using the machine!

Introduction

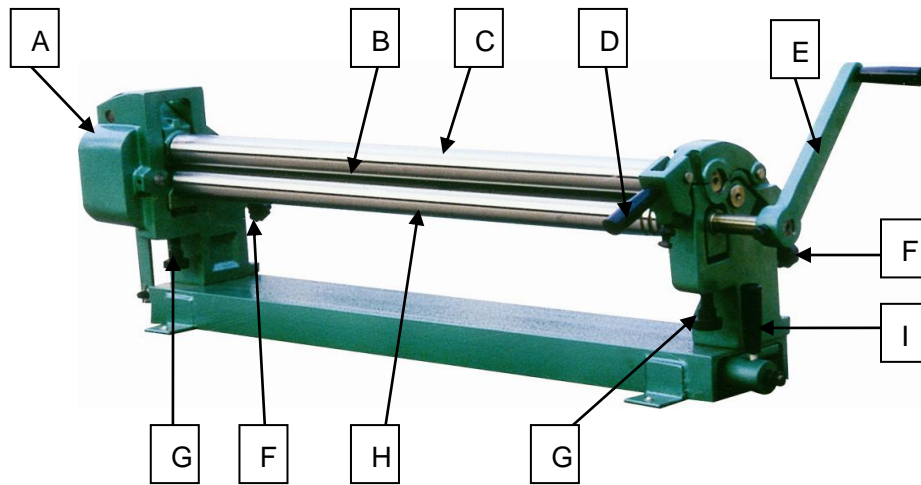


Figure 1

Identification list:

A: gear assembly cover

B: top roller

C: rear roller

D: top roller release lever

E: crank

F: radius adjustment knob

G: thickness adjustment knob

H: bottom roller

I: top roller lift lever

Sample illustration

Throughout this manual, diagram

Are used to illustrate how the

Components of the machine

Are used during the various steps

of operation.

Familiarize yourself with the

Following illustration, its relationship

To the machine, and the symbols

Used in it before proceeding

Through this manual

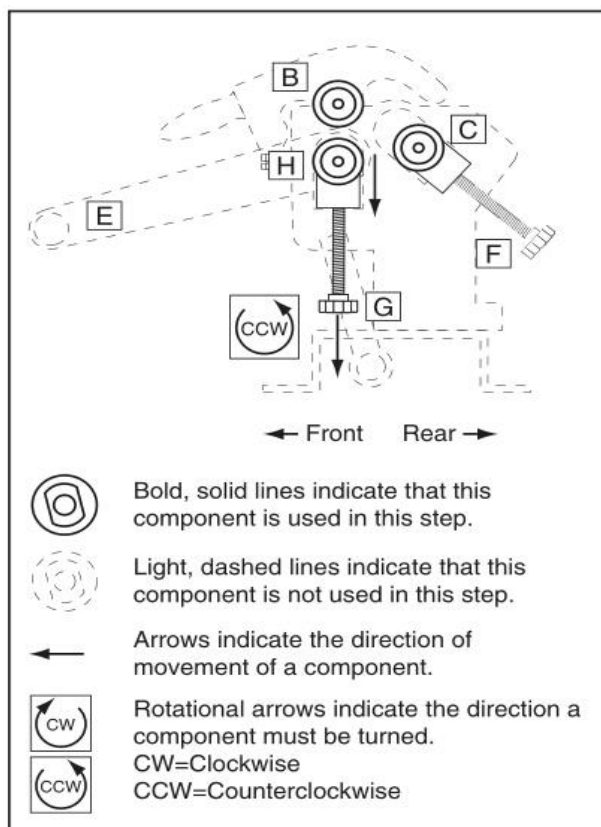


Figure 2

Specification

Model	Item	Max. thickness (mm)	Max. width (mm)	Roll diameter (mm)	Wire size (mm)
W01-1.5X915	374201	1.50	915.00	50.00	5, 7, 9
W01-1.5X1250A		1.50	1250.00	75.00	7, 9, 11
W01-1.5X1300	374202	1.50	1300.00	75.00	7, 9, 11

Set up

Assembly

The machine comes almost fully assembled, all that is required to assemble are the crank and handle

Thread the crank handle into the small end of the crank and tighten, as shown in Figure 3

Slide the crank onto the crank shaft until the crank stops against the beveled shoulders of the shaft. Insert and tighten the hex bolt to secure the crank in place (Figure 4)

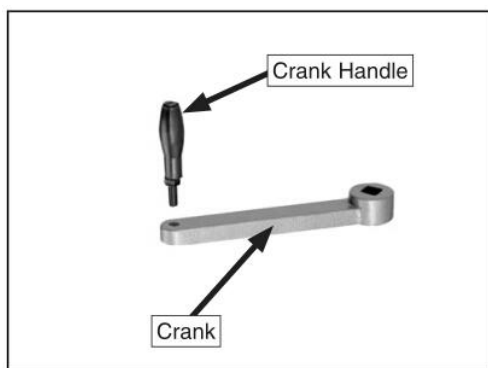


Figure 3

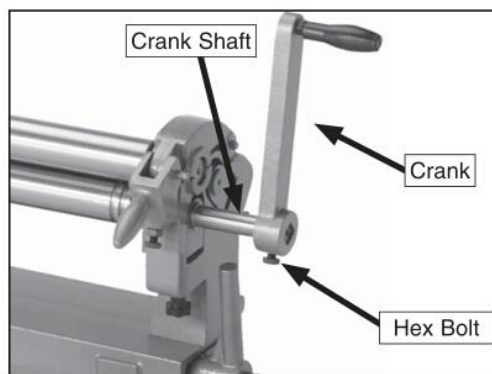


Figure 4

Mounting

Once you have confirmed that your machine is assembled and functioning properly, mount it to a workbench through the holes in the base

The strongest mounting option is a “through mount” where holes are drilled all the way through the workbench, and hex bolts, washers, and hex nuts are used to secure the machine to the workbench.

Another option for mounting is a “direct mount” where the machine is simply secured to the workbench with lag screws.

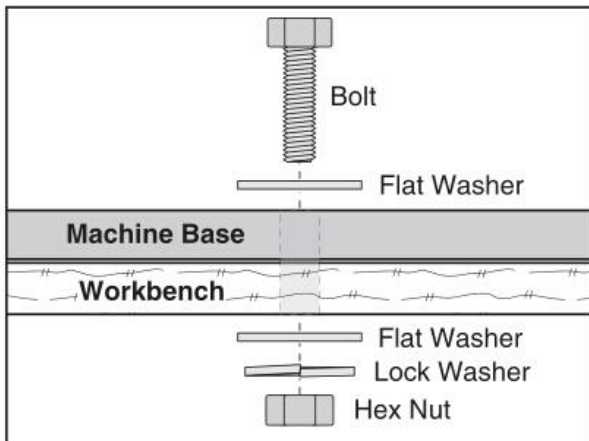


Figure 5 example of a through mount setup

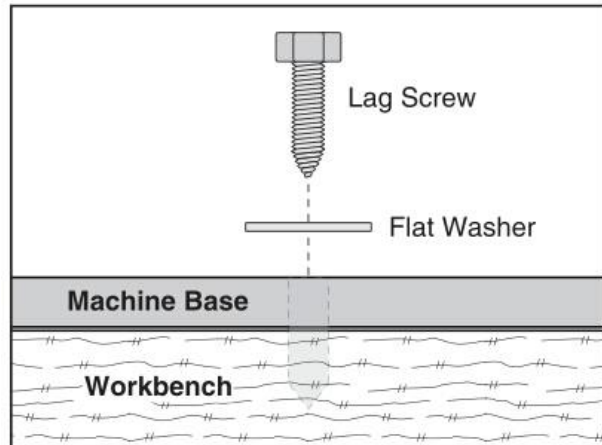


Figure 6 example of a direct mount setup

Operation

Basic controls

Use the descriptions and figures below to become familiar with the basic controls of your slip roll

Thickness adjust knob: raises and lowers the bottom roller to adjust for different thickness

Radius adjust knob: raises and lowers the rear roller to create smaller and larger radius bends.

Top roller lift lever: lifts the top roller to allow removal of cylinder workpieces.

Crank: turns the rollers, feeding the workpiece through the machine.

Top roller release lever: lifts to release the upper bushing assembly.

Upper bushing assembly: opens to allow movement of the top roller

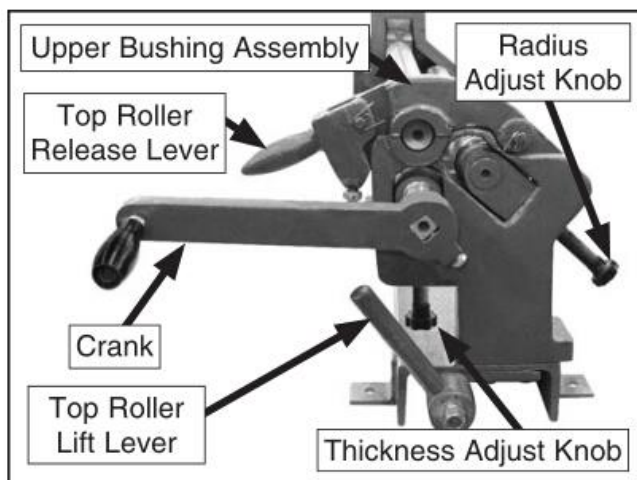


Figure 7

Preparation

Before every use, follow these procedures to set up your slip roll for safe, accurate, and efficient use

To prepare the slip roll for use

1. Turn the thickness adjust knob to lower the bottom roller to approximately 1/4" below the top roller. Use calipers or a spacer to set the distance between the rollers evenly at each end (Figure 8)
2. Lower the rear roller as far as possible. Use calipers or a spacer to set the distance between the rear roller and top roller evenly at each end (Figure 9)

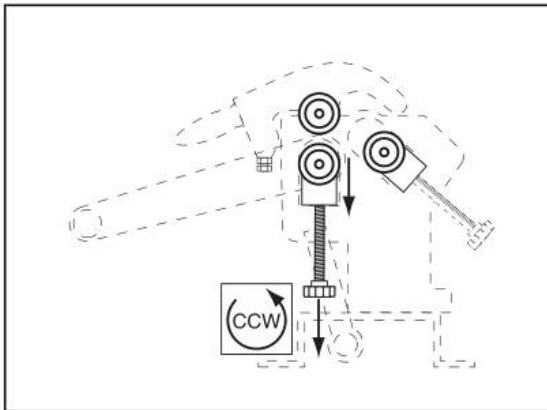


Figure 8

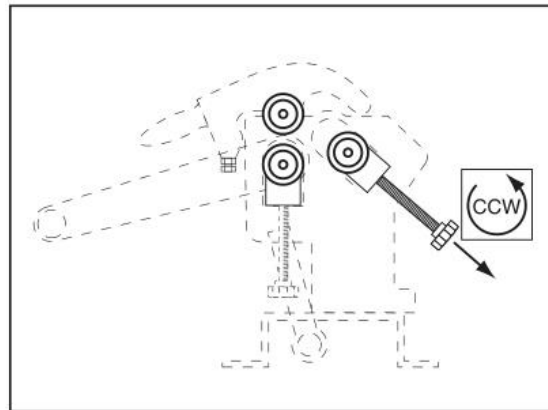


Figure 9

Flat rolling

This slip roll machine can be used to flat roller sheet metal up to 1.50 mm. this can be done to straighten, flatten, and slightly reduce the thickness of soft workpiece such as brass, copper, and aluminum.

To flat roll a workpiece:

1. Place the workpiece between the top and bottom rollers, as shown in figure 10. Turn the thickness adjust knob to lift the bottom roller until the workpiece is held snug between the top and bottom rollers. Be sure to turn the thickness adjust knob on both ends of the roller equal amounts.

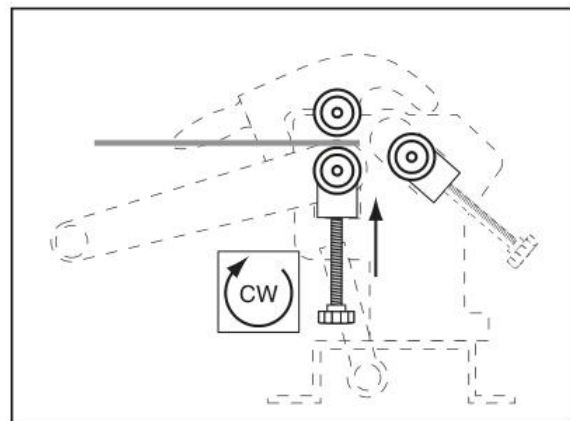


Figure 10

2. Remove the workpiece from between the rollers, then raise the bottom roller slightly by rotating each thickness adjust knob approximately 1/4" turn. Also, make sure the rear roller is lowered completely and will not interfere with the workpiece as it exits the machine (figure 11).
3. With the help of an assistant, feed the workpiece into the rollers while turning the crank (figure 12)

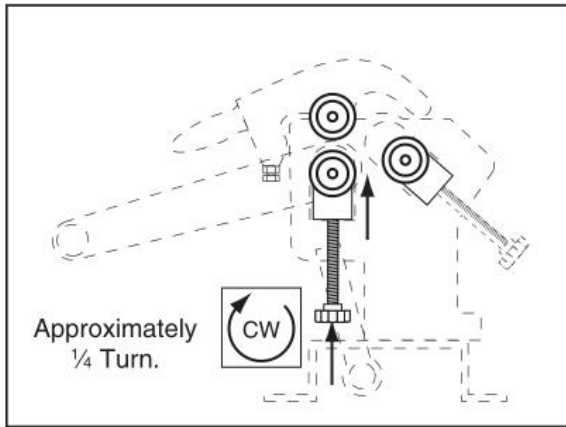


Figure 11

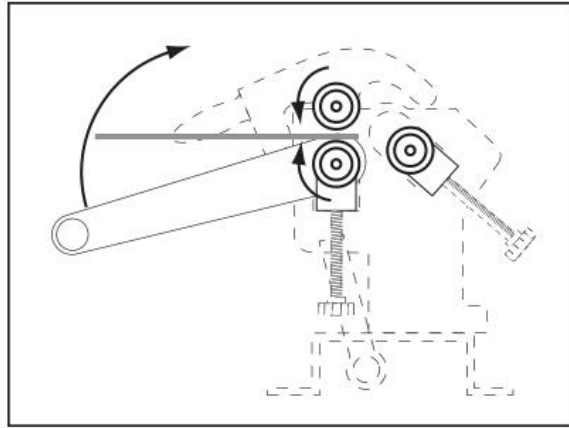


Figure 12

4. Continue processing the workpiece by repeating steps 2 and steps 3, flipping the workpiece each time until the desired results are produced.

Note: Since the rear roller does not lower completely out of path of the workpiece, a slight bend may be created. Flipping the workpiece between passes minimizes the bending effect.

Creating bends

This machine can easily create constant radius bends in sheet metal up to 1.50 mm.

Note: the method for creating a specific radius is a trial-and-error process. Due to the many variations among metal workpieces, no single positioning will create the same curve on all materials we recommend using scrap piece the same dimensions and materials as your final workpiece until the desired curve is achieved.

To create a bend in a workpiece:

1. Place the workpiece between the top and bottom rollers, as shown in figure 13. Turn the thickness adjust knobs to raise the bottom roller until the workpiece is held snug between the top and bottom rollers. Be sure to turn the thickness adjust knobs equal amounts.
2. Turn the crank clockwise to feed the workpiece until its front edge is directly above the rear roller, as shown in figure 14.
3. Turn the radius adjust knobs to lift the rear roller until the desired radius bend is reached (figure 15). Make sure to turn the knobs equal amounts so the rear roller is always parallel with the other rollers. Failure to do so will create a larger radius on one end than the other, resulting in a cone or spiral shape.
4. Turn the crank to process the material through the slip roll. Continue turning until the

workpiece is completely through the top and bottom roller (Figure 16)

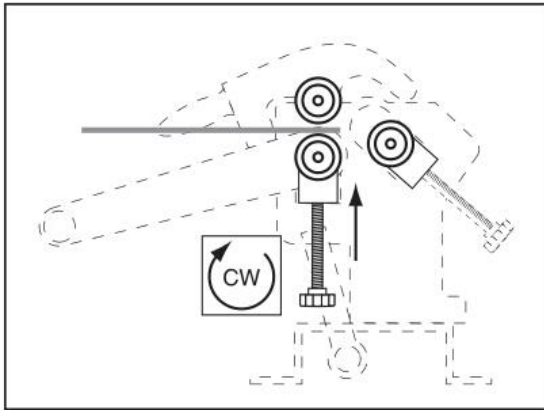


Figure 13 raising bottom roller

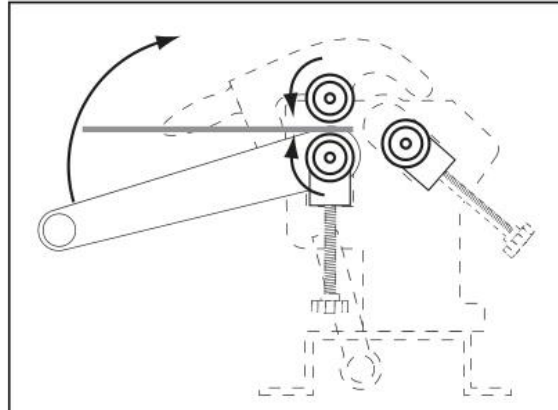


Figure 14 feeding the workpiece

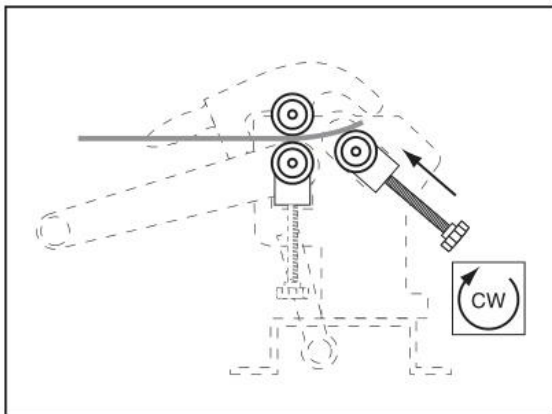


Figure 15 setting the radius

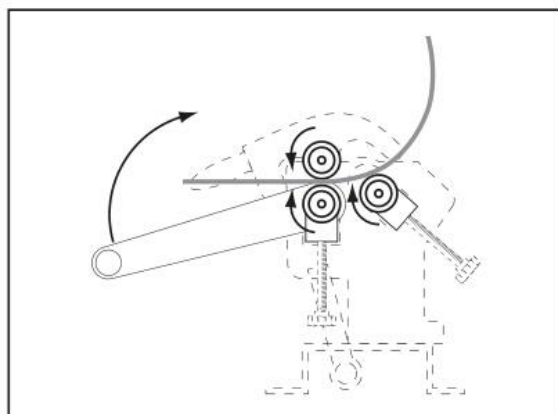


Figure 16 processing the workpiece

Creating cylinders

This slip roll machine can be used to easily and accurately create cylinders.

If you know the diameter of the cylinder you want to create, use the formula below to calculate the length of material needed.

$$C = \pi d$$

C= Circumference (length of material needed)

π = Pi (approximately 3.142)

D= diameter

Example: Suppose you want to create 1 6" diameter cylinder. You would use the above formula as follows

$$C = \pi d$$

$$C = (3.142) \times 6"$$

$$C = 18.852"$$

The result of 18.852" indicates that you need to start with a piece of sheet metal that is approximately 18.852" in length in order to create a 6" diameter cylinder.

You can use the slip roll to create a bend with the correct radius so that the two ends meet, forming a 6" diameter cylinder (figure 17)

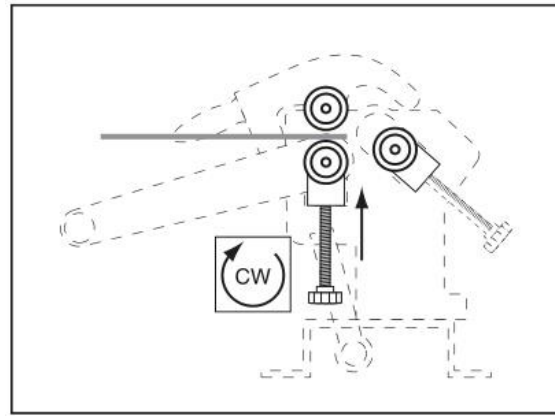
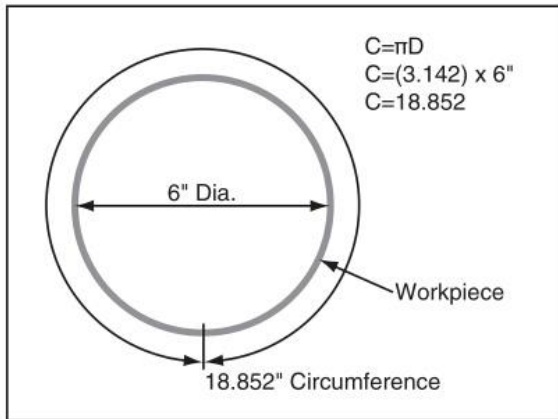


Figure 17 calculating circumference example Figure 18 raising bottom roller

Once you have the necessary length workpiece, follow the step below to create the cylinder.

Note: the method for creating a specific radius is a trial-and-error process. Due to the many variations among metal workpieces, no single positioning will create the same curve on all materials. We recommend using scrap pieces the same dimensions and material as your final workpiece until the desired curve is achieved.

To create a cylinder:

1. Place the workpiece between the top and bottom rollers, as shown in figure 18. Turn the thickness adjust knob to lift the bottom roller until the workpiece is held snug between the top and bottom rollers. Be sure to turn the thickness adjust knob equal amounts.
2. Turn the crank clockwise to feed the workpiece until it is approximately halfway through the roller.
3. Turn the radius adjust knobs to lift the rear roller until the desired radius bend is reached (figure 19). Make sure to turn the knobs equal amounts so the rear roller is always parallel with the other rollers. Failure to do so will create a larger radius on one end than the other, resulting in a cone shape.

Note: always err on the side of making the radius too large rather than too small. It is easy to decrease the radius but very difficult to increase the radius later.

4. Turn the crank to process the material through the slip roll. Continue turning until the workpiece is completely through the top and bottom roller (figure 20).
5. Rotate the workpiece 180°, insert the curved end into the slip roll, then process the workpiece through the machine, as shown in figure 21 and 22.

6. Continue to process the workpiece until the cylinder is formed, as shown in figure 23.

- If the ends of the cylinder don't meet, lift the rear roller equally at both ends, then process the entire cylinder through the slip roll again. Repeat as necessary.
- If the ends of the cylinder overlap, remove the cylinder as described in removing workpiece on next page. Then, either attempt to increase the radius by manually bending it, or scrap the workpiece. Lower the rear roller equally at both ends then process a new workpiece through the slip roll. Repeat this step as necessary.

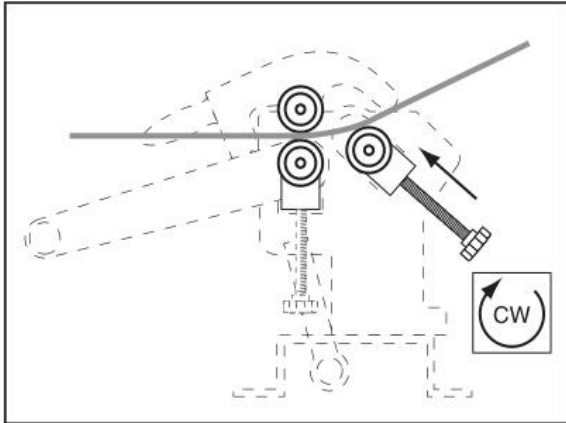


Figure 19 setting the radius

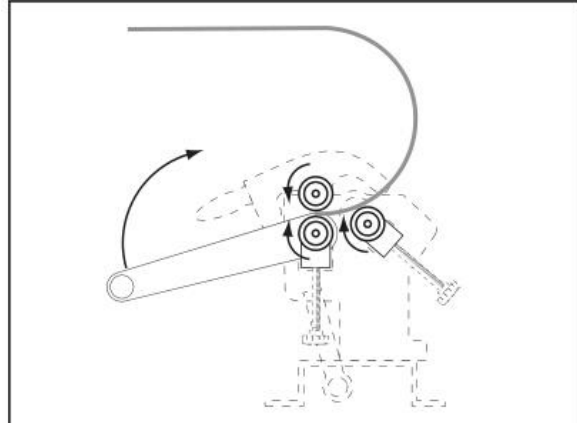


Figure 20 processing the workpiece

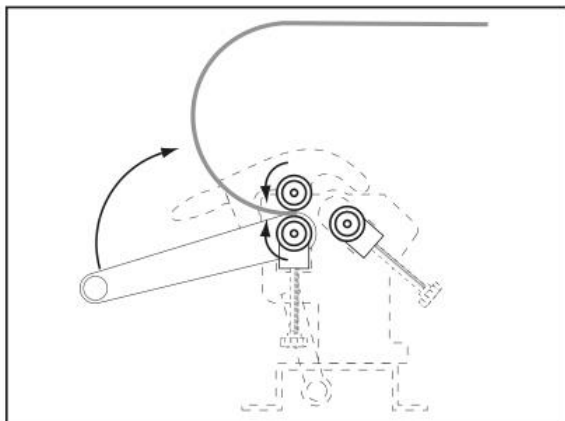


Figure 21 re-inserting the workpiece

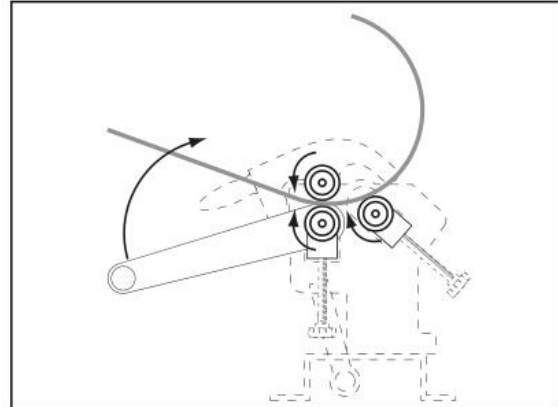


Figure 22 creating the cylinder

7. Remove the workpiece as described in removing workpiece section.

Bending wire

This slip roll machine can be used to shape wires, rods, and small-diameter tubing. Also, the wire grooves can be used when rolling sheet metal that has a wire bead at one end.

To use the wire grooves:

1. Place your workpiece into the smallest possible groove on the wheel. The three sizes are 5.00 mm, 7.00 mm, 9.00 mm (figure 24)

Example: suppose you want to bend a piece of 3.00mm rod. Through it would fit in any of the three grooves, you would use the 5.00mm groove since it is the smallest possible

groove that the rod will fit into.

2. Process the material through the machine as described in creating bends.

If you want to make a loop of wire, follow the instructions in creating cylinders section.

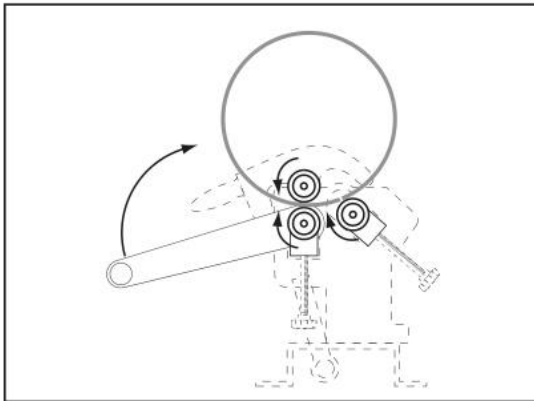


Figure 23 finishing the cylinder

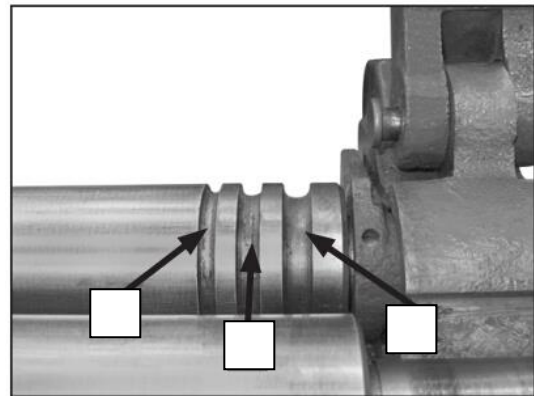


Figure 24 wire grooves

Removing workpiece

To remove cylindrical workpieces:

1. Loosed the jam nut and hex bolt until the top roller release lever can be lifted (figure25).
2. Lift the top roller release lever, then open the upper bushing assembly (figure 26).

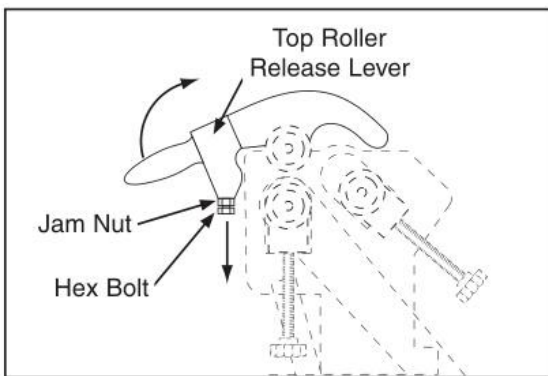


Figure 25 Hex bolt and jam nut

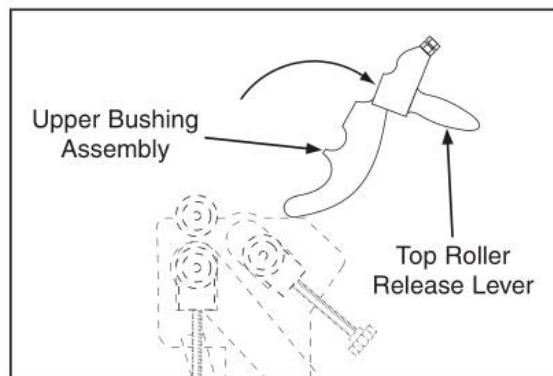


Figure 26 upper bushing assembly release

3. Move the top roller lift lever, as shown in figure 27, to raise the top roller. Remove the workpiece.
4. Return the top roller lift lever to its origina position, close the upper bushing assembly, then lower the top roller release lever (figure28).
5. Finger-tighten the hex bolt and jam nut to secure the top roller bushing.

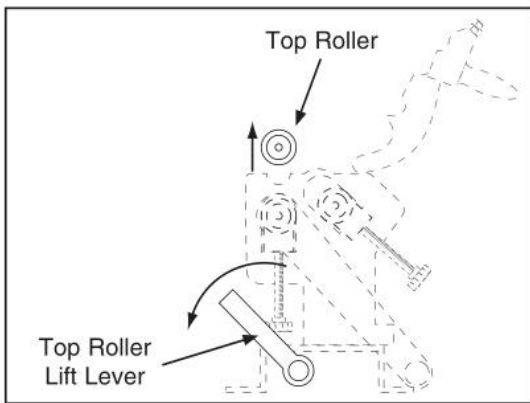


Figure 27 releasing top roller

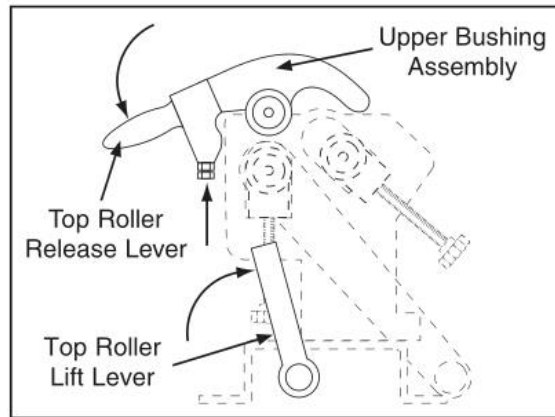


Figure 28 securing top roller

Maintenance

For optimum performance from your machine, you need periodically wipe down the machine to remove dust and oil. Treat all unpainted cast iron and steel with a non staining lubricant after cleaning. Lubricating the machine consists of applying lubricant to the gears, adjustment screw, and the roller bushings. Please check the grease location and oiling bushings as figure 29 and 30.

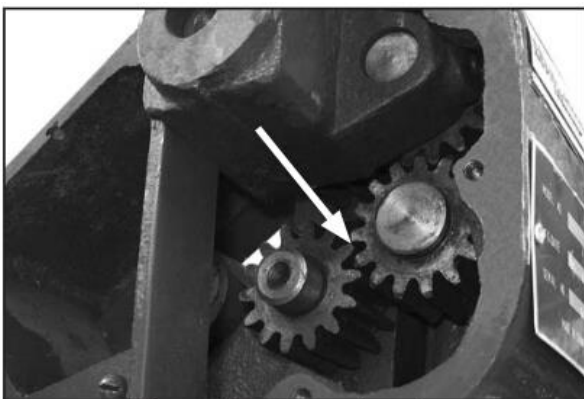


Figure 29 grease location

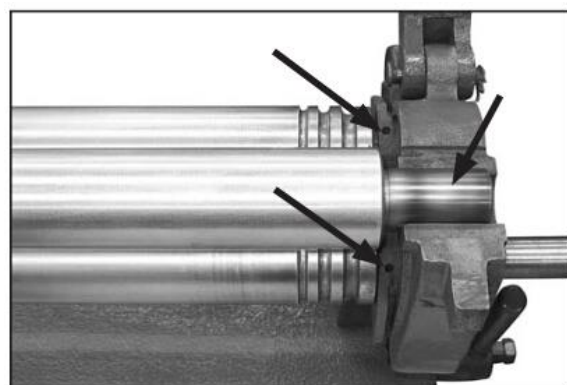
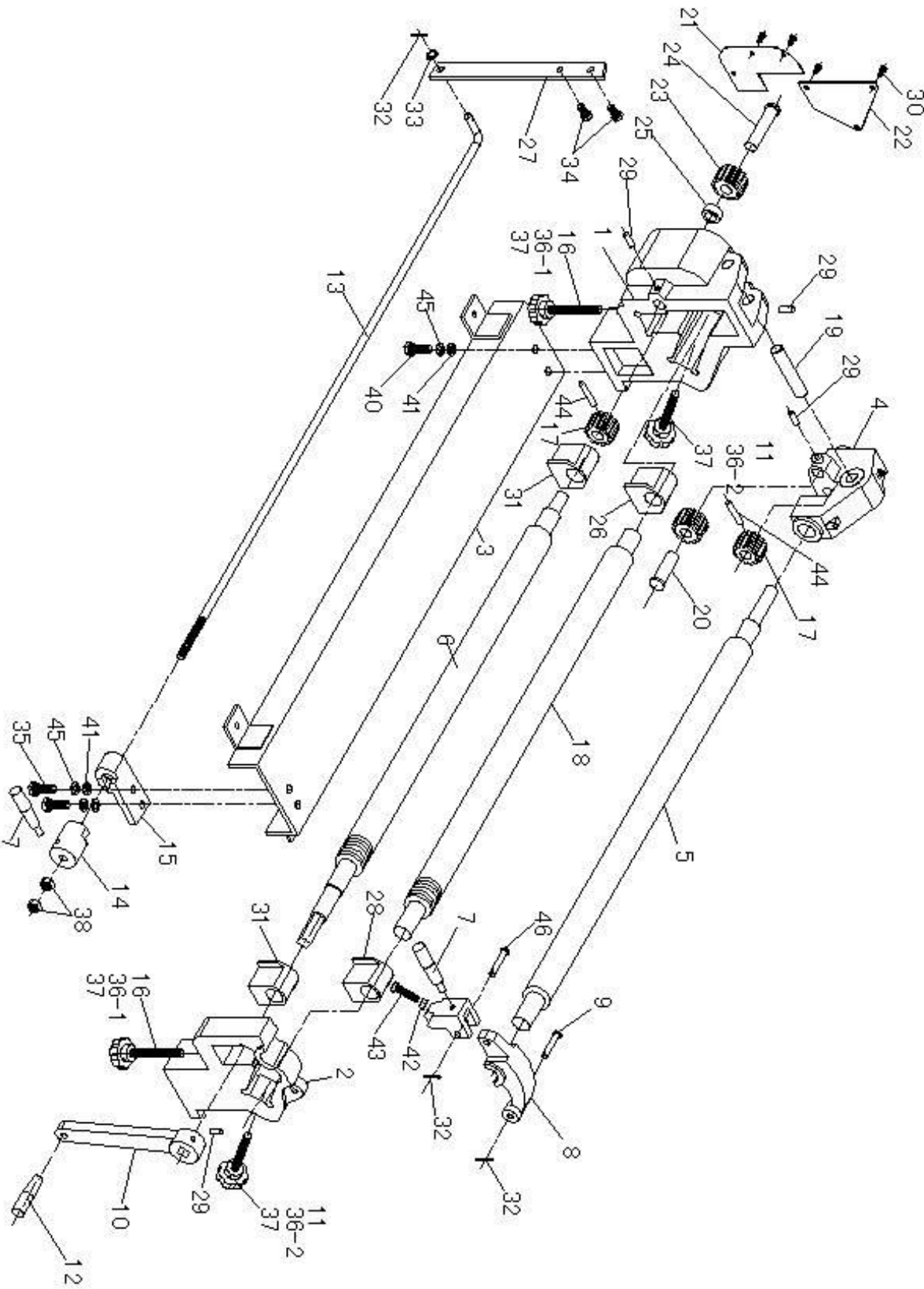


Figure 30 Oil locations

Trouble shooting

Symptom	Possible cause	Possible solution
Slip roll creates cones when trying to create cylinders	Rollers are not parallel	Adjust rear roller adjustment knobs as necessary to be sure the rear roller and top roller are parallel
A noticeable crease is formed in the workpiece	Excessive pressure applied in one spot	Reduce the radius and perform the bend in several passes
Crank does not turn top and bottom rollers	Gears are damaged	Check / replace gears
Slip roll does not bend material	1. Machine capacities exceeded 2. Rear roller not engaged	1. Use materials within the capacity of the slip roll 2. Check / adjust rear roller

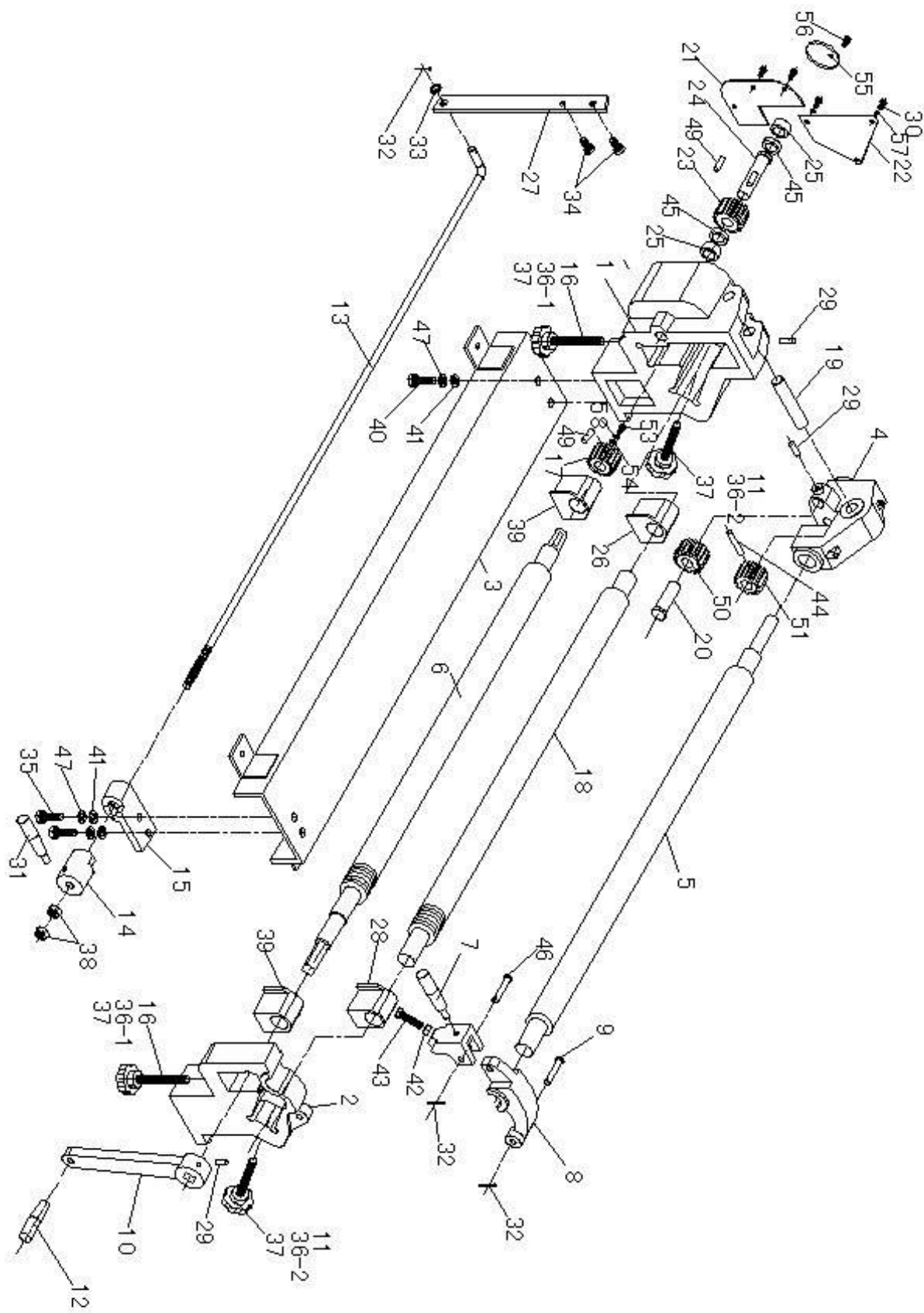
Drawing for W01-1.5X915



Part list for W01-1.5X915

Item	description	qty	Item	description	qty
1	Left frame	1	24	Gear locking shaft	1
2	Right frame	1	25	Bushing	1
3	Base	1	26	Roller stand	1
4	Roller base	1	27	Lever	1
5	Top roller	1	28	Roller stand	1
6	Bottom roller	1	29	Cap screw M8x10	4
7	Knob M10x80	2	30	Cap screw M6x14	6
8	Cover	1	31	Roller stand	2
9	Clevis pin	1	32	Cotter pin 2.5x5	3
10	Crank handle	1	33	Flat washer 12	1
11	Radius adjust screw	2	34	Hex bolt M10x20	2
12	Handle M12x100	1	35	Hex bolt M12X40	2
13	Draw bar	1	36-1	Handle knob	4
14	Knob	1	36-2	Handle knob	2
15	Draw bar stand	1	37	Roll pin 3x25	2
16	Thickness adjust screw	2	38	Hex nut M12	2
17	Gear	1	40	Hex bolt M12x30	2
18	Rear roller	1	41	Flat washer 12	4
19	Pivot shaft	1	42	hex nut M10	1
20	Idler gear shaft	1	43	Hex bolt M10x50	1
21	Cover front	1	44	Roll pin 6x35	2
22	Cover rear	1	45	Lock washer 12	4
23	Idler gear	1	46	Clevis pin	1

Drawing for W01-1.5X1250A / W01-1.5X1300



Part list for W01-1.5X1250A / W01-1.5X1300

Item	description	qty	Item	description	qty
1	Left frame	1	29	Cap screw M8x10	3
2	Right frame	1	30	Cap screw M6x14	6
3	Base	1	31	Handle 12x100	1
4	Roller base	1	32	Cotter pin 2.5x5	3
5	Top roller	1	33	Flat washer 12	1
6	Bottom roller	1	34	Hex bolt M10x20	2
7	Knob M10x80	2	35	Hex bolt M12X40	2
8	Cover	1	36	Handle knob	4
9	Clevis pin	1	37	Roll pin 3x25	4
10	Crank handle	1	38	Hex nut M12	2
11	Radius adjust screw	2	39	Roller stand	2
12	Handle 12x100	1	40	Hex bolt M12x30	2
13	Draw bar	1	41	Flat washer 12	4
14	Knob	1	42	hex nut M10	1
15	Draw bar stand	1	43	Hex bolt M10x50	1
16	Thickness adjust screw	2	44	Roll pin 6x35	2
17	Gear	1	45	Bushing	4
18	Rear roller	1	46	Pin	1
19	Pivot shaft	1	47	Lock washer 16	4
20	Idler gear shaft	1	49	Key 8x25	2
21	Cover front	1	50	Gear	1
22	Cover rear	1	51	Gear	1
23	Idler gear	1	53	Bolt M8x16	1
24	Gear locking shaft	1	54	Washer 8	1
25	Needle bearing 7943-25	1	55	End cover	1
26	Roller stand	1	56	Bolt M6x14	6
27	Lever	1	57	Lock washer 6	6
28	Roller stand	1	58	Lock washer 8	1

Note: This manual is only for your reference. Owing to continuous improvement of the machines, Changes may be made at any time without obligation on notice.