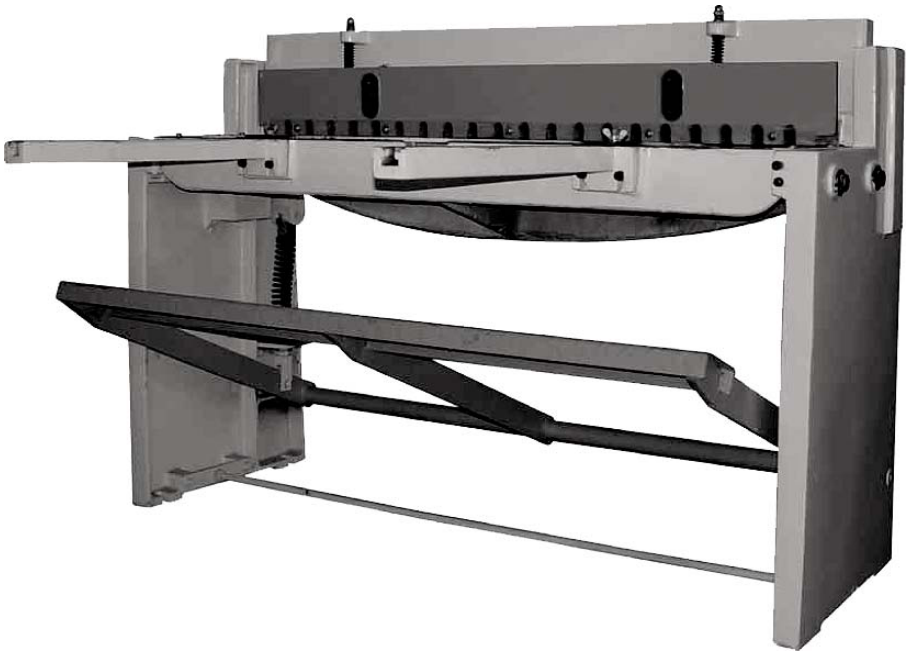
OPERATOR'S MANUAL

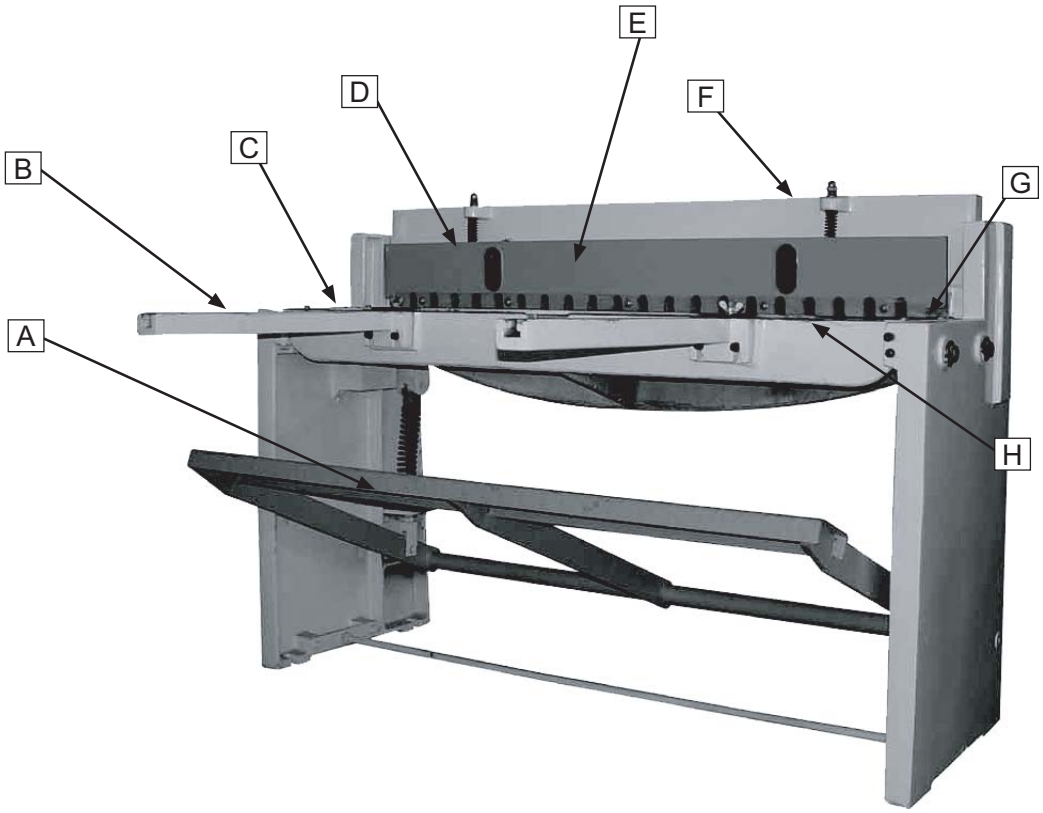
Foot Shear



Warren Machine Tools Ltd

Warco House, Fisher Lane, Chiddingfold,Surrey GU84TD
Tel: 01428 682929 Fax: 01428 685870
E-mail: warco@warco.co.uk
Web: www.warco.co.uk

Identification



A. Foot pedal
B. Front Extension arm
C. scaled guides
D. hold-down
E. safety shield
F. rear extension arm
G. scale
H. table

⚠WARNING

Additional Safety Instructions for Foot Shears

1. **GUARDS.** Keep all guards in place and in working order.

2. **FOOTING.** Never stand on the foot pedal with both feet. Keep one foot on the ground at all times to maintain your balance. Never jump on the foot pedal to make a cut.

3. **HANDS AND FINGERS.** Always keep hands and fingers away from the blade and hold-down.

4. **OPERATOR POSITION.** Keep all body parts out of the way of all moving parts. Serious pinches and cuts could occur.

5. **CAPACITY.** Never exceed the rated capacity for this foot shear.

6. **PROPER USE.** Only use the foot shear for the purpose it was designed. DO NOT cut round stock.

7. **EXTENSION ARMS.** Always be aware of the extension arm location when working around the shear to avoid walking into them, causing injury and damage to the tool.

8. **COMFORTABLE CUTTING OPERATIONS.** Avoid awkward operations and hand positions where a sudden slip could cause your hand or body to fall into a sharp edge or corner.

9. **EXPERIENCING DIFFICULTIES.** If at any time you are experiencing difficulties performing the intended operation, stop using the shear! Contact Tech Support at (570) 546-9663.

10. **BLADE ADJUSTMENTS AND MAINTENANCE.** Always keep blades properly adjusted and sharp.

⚠WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

Assembly

Assembling the Model T20797 consists of installing the foot pedal assembly and the front and rear extension arms assemblies. Installation of the extension arms is an optional step that is dependent on the operations you plan to perform.

To assemble the foot shear:

1. Attach the blade yokes to the arms of the foot pedal with the M14-2 x 50 bolts, washers and nuts, and tighten in position (**Figure 2**).

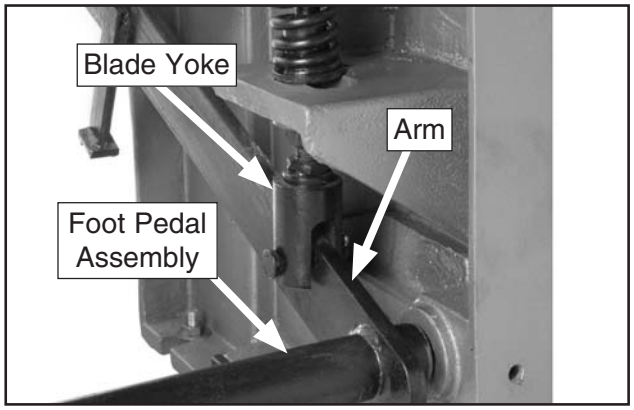


Figure 2. Foot pedal assembly.

2. Loosen, but do not remove the four cap screws on the front of the table.

3. Place the front extension rails over the cap screws and behind the flat washers (**Figure 3)**

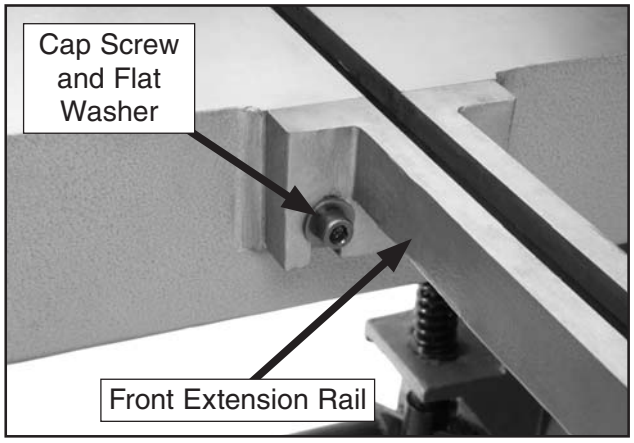


Figure 3. Front extension rail installed.

4. Line up the channel of the front extension rails with the channel on the table.

5. Make sure the ground flat surface on the front extension rail is flush with the top of the table surface.

6. Tighten the cap screws and check to make sure the alignment is still intact. If it is not, re-adjust as necessary.

7. Slide the front work stop into the extension rails. When the foot pedal, front extension rails, and work stops are installed, the machine should look like **Figure 4**.

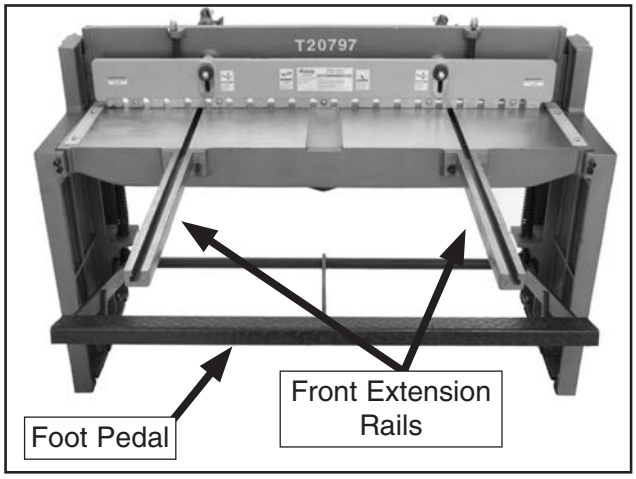


Figure 4. Foot pedal and front extension arms.

To install the rear extension rods (optional):

1. With the scales facing up, slide the rear extension rods into the holes in the back of the blade assembly.

2. Tighten the cap screws (**Figure 5**).

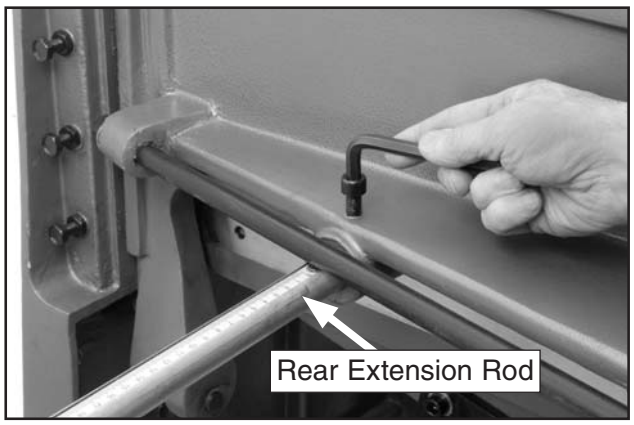


Figure 5. Installing rear extension rod.

3. Attach the rear stop bar to the rear extension rods as shown in **Figure 6** .

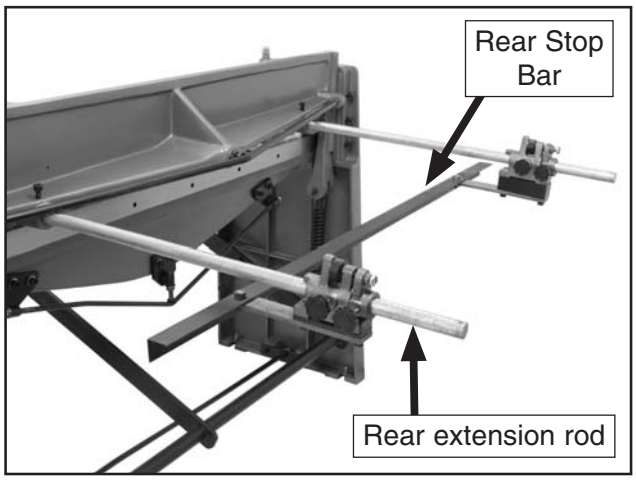
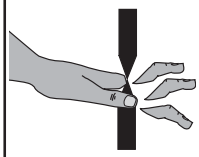


Figure 6. Installing rear extension rods.

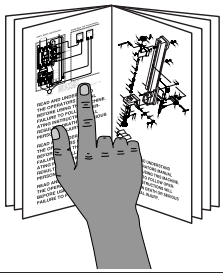
SECTION 3: OPERATIONS

Operation Safety



⚠DANGER

CRUSHING AND SEVERING HAZARD!
Keep hands and fingers out of hold-down and blade path when shearing or serious injury will occur!



⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠WARNING

Bodily injury could result from using this machine. Always wear safety goggles, leather work boots, and heavy duty leather work gloves when operating this machine or whenever handling metal.

NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Basic Controls

Use **Figures 7–8** and the descriptions below to familiarize yourself with the basic operations of the machine.

Foot Pedal: Lowers the top blade downward when stepped upon.

Front and Rear Extensions: Support large workpieces and provide mounting points for the stops. Micro adjusters allow for fine adjustments.

Rear Stops: Align workpieces when performing repetitive operations.

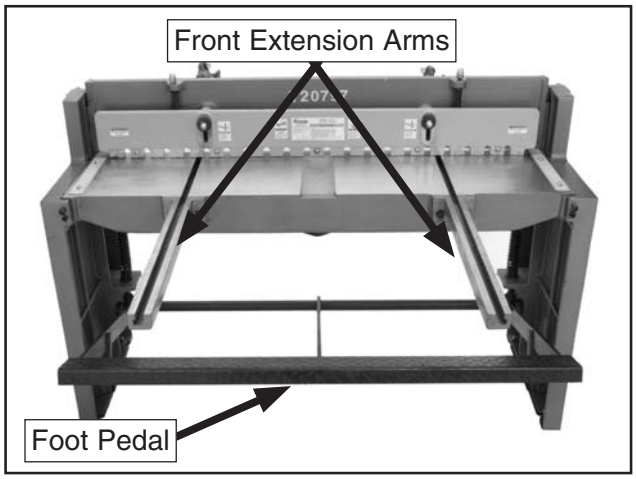


Figure 7. Basic controls.

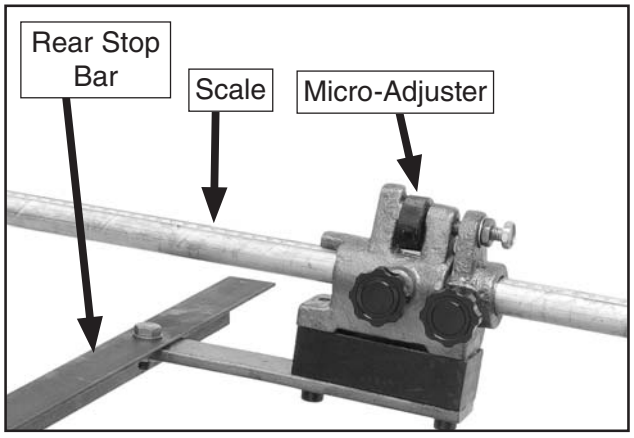


Figure 8. Basic controls (continued).

Hold-Down Adjustment

The hold-down functions as a safety device to secure the workpiece while it is being sheared and to help prevent the operator's fingers from getting in the blade cutting path. The hold-down must be adjusted properly to perform these functions.

The ideal adjustment provides only enough clearance to slide the workpiece under the workstop. For practicality and safety, the workstop should be adjusted to provide approximately ⅛" clearance.

To adjust the hold-down:

1. Tighten the hex nuts on the springs to raise the hold-down off the table (**Figure 10**).

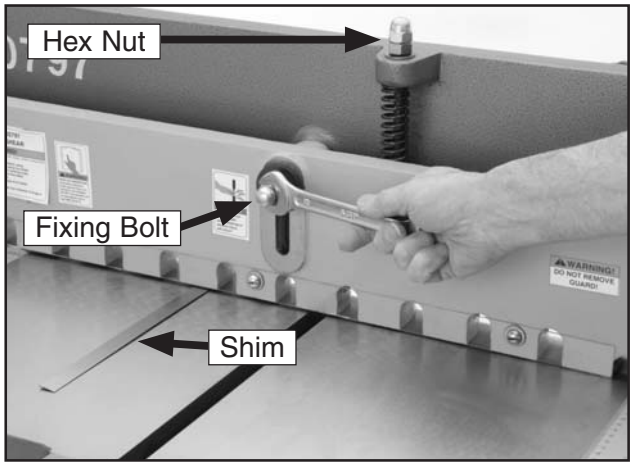


Figure 10. Tightening hold-down.

2. Insert the shim stock under the hold-down, then loosen the hex nut to lower the hold-down until it makes contact with the shim.

3. Repeat **Step 2** at the other side of the shear.

4. Check the gap to make sure the distance is equal across the length of the hold-down.

Tip: *To avoid scratching the surface of your workpiece, apply thin rubber pads to the bottom of the hold-down fingers.*

Blade Adjustment

The blade adjustment has been made at the factory before shipment. A few test cuts will determine if this adjustment is satisfactory for your needs. If it is, you are ready to start using your foot shear. However, you may find it necessary to check the blade adjustment before continuing. Depending on how often you change the type and gauge of material you cut, this adjustment process may become routine.

To perform the blade adjustment:

1. Loosen, but do not remove the two table bolts and table adjustment screws on both sides of the foot shear (see **Figure 11**).

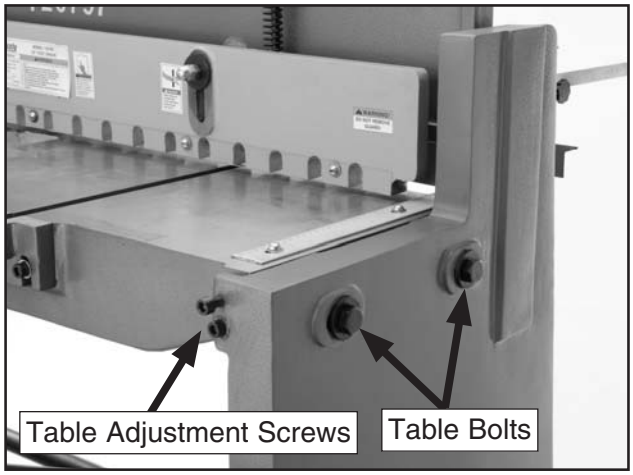


Figure 11. Adjustment screws.

2. Using the foot pedal, lower the blade and hold it in position. (It may help to have your assistant do this step.)

3. Turn the table adjustment screws to move the table and fixed blade until the fixed blade makes light contact with the moving blade.

   NOTICE: *The moving blade should never overlap the fixed blade. This will cause damage to both.*

4. Looking behind the hold-down, make sure the two blades surfaces appear to make light contact all the way across the length.

—If they do, proceed to the next step.

—If you observe a gap between the two blade surfaces, move to the next section **Adjusting Blade Bow** section.

5. Using a sheet of paper, confirm that you have proper contact by making several cuts along the length of the blade. The shear should cut through the paper cleanly.

6. Turn the table adjustment screws to move the fixed blade away from the moving blade so you have a gap of 0.002". Check this measurement with a feeler gauge as shown in **Figure 12**.

Note: *0.002" is a good starting point for most operations. The gap width will change, however, depending on the type and gauge of the material being sheared. This is a trial-and-error process. Test with scrap pieces until you achieve satisfactory results.*

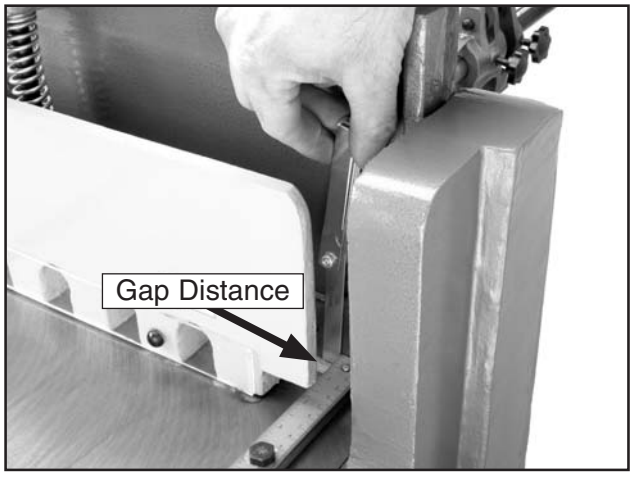


Figure 12. Measuring gap between blades.

7. Repeat **Step 6** on the other side so the gap is uniform across the length of the blade.

8. Tighten the four table bolts and double check the gap to make sure it has not changed.

SECTION 5: MAINTENANCE

Schedule

For optimum performance from your machine, follow this maintenance schedule.

Daily Check:

- Loose bolts, cracked welds, castings, or fingers.
- Worn or damaged pins.
- Any other unsafe condition.

Unpainted Cast Iron

To prevent rust, all unpainted cast iron surfaces on the Model should be regularly maintained
surface protectant

Lubrication

Four main areas need to be lubricated:

- Shearing blades (**Figure 13).**
- Micro adjusting stop assembly (**Figure 14**).
- Gibs and slides (**Figure 15**).
- Foot pedal linkage (**Figure 16**).

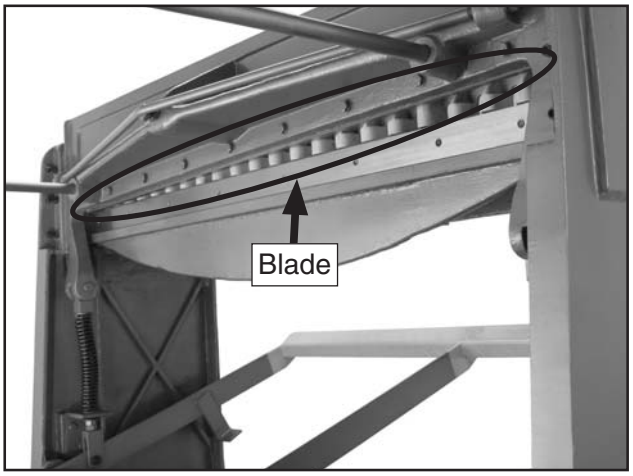


Figure 13. Blade lubrication.

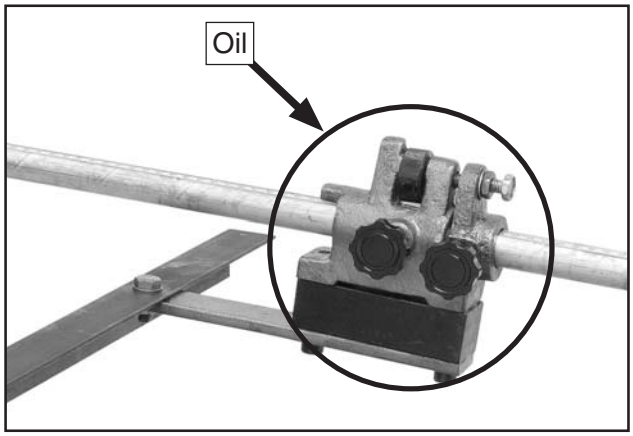


Figure 14. Micro-adjusting stop lubrication.

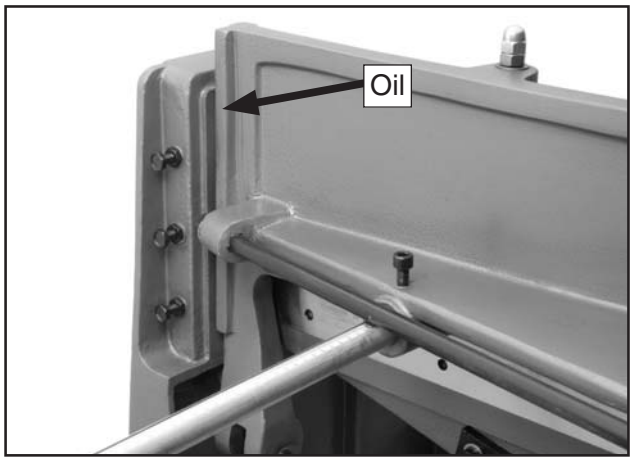


Figure 15. Gib and slide lubrication.

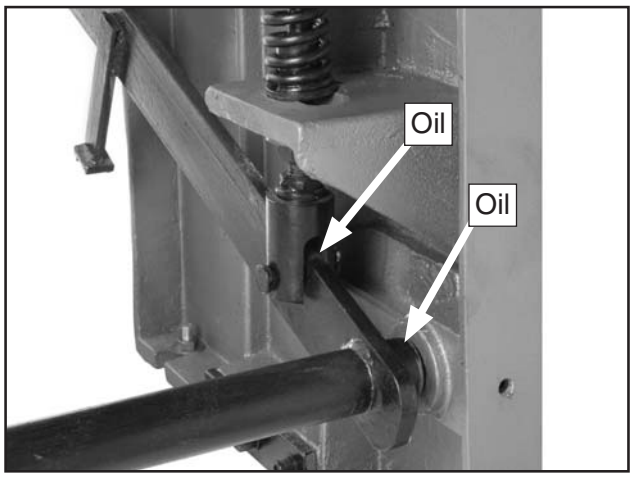


Figure 16. Linkage lubrication.

SECTION 6: SERVICE

Troubleshooting

Symptom	Possible Cause	Possible Solution
Won't cut material.	1. Improper blade gap distance. 2. Cut exceeds machine capacities.	1. Widen gap to accommodate thicker gauge material. 2. Make cuts within the capacity of the machine.
Cuts aren't square.	1. Blade gap unequal across length. 2. Too much bow in blade. 3. Inadequate hold-down pressure. 4. Uneven contact with guides.	1. Adjust blade gap to be equal across length 2. Correct blade bow 3. Adjust gap of hold-down 4. Maintain consistent contact with guides.
Poor quality of cuts, ripping or tearing.	1. Dull blades. 2. Poor blade gap set up. 3. Loose gibs.	1. Replace or sharpen blades. 2. Adjust blade set up. 3. Remove play from gibs.

Blade Sharpening/ Replacement

Note: *After new blades are installed or old blades are sharpened, they must be adjusted.*

The blades can be removed by removing the hex bolts that attach the blades to the castings (see **Figure 17**).

The moving blade has two cutting edges that are ground with a 2° edge relief. Reverse the blade to expose the new cutting edge as soon as one edge is dull. The blade can be sharpened on a surface grinder by grinding both wide sides of the blade.

The fixed blade has one cutting edge with a 2° edge relief and a 1° face relief. It can be resharpened on a surface grinder by grinding the wide side of the blade.

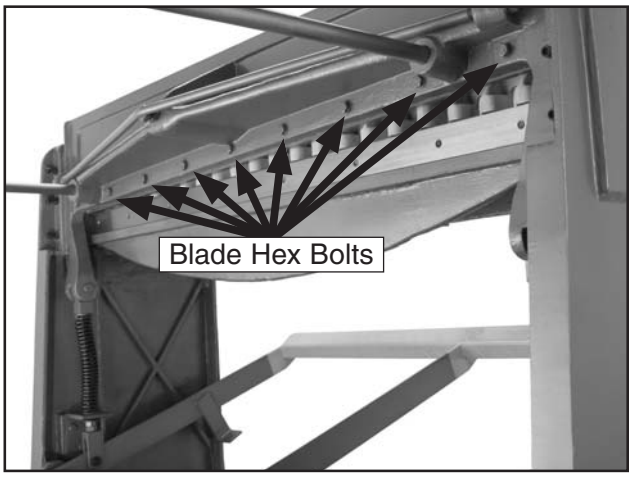


Figure 17. Blade bolts.

Adjusting Blade Bow

The blade bow of the moving blade is adjusted by loosening or tightening the bow bolt at the center of the straightening rod (**Figure 18**). Observe the change in the gap when the moving blade is just below the top of the fixed blade. For optimum performance, the gap must be consistent across the entire length of the blades. After making adjustments to the bow, repeat the **Blade Adjustment** section. Perform a paper shear test to check the blade bow performance.

—If the shear cuts paper on the ends but not the center, turn the bow bolt clockwise until paper can be easily cut across the length.

—If the shear cuts paper at the center but not the ends, turn the bow bolt counterclockwise until the paper can be easily cut across the length.

Figure 18. Example of a paper shear test.

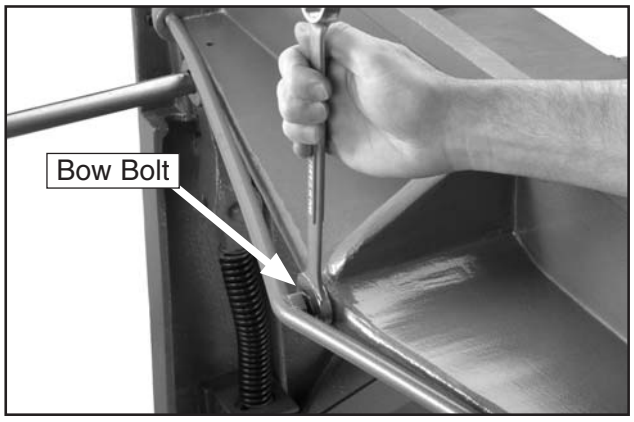


Figure 19. Adjusting bow bolt.

Gib Adjustment

When adjusting gibs, keep in mind that the goal of gib adjustment is to remove unnecessary slide movement without causing them to bind. Loose gibs may allow play in the moving blade resulting in poor cuts on the workpiece and undue wear on the slide. Over-tightening will make lowering the foot pedal difficult and wear out the slide.

Loosen the jam nuts, then tighten each gib bolt (**Figure 20**) until it is snug. Then back of each bolt ⅛ turn and retighten the jam nuts. Test for binding or play after each adjustment by pushing and pulling the top of the cutter bar.

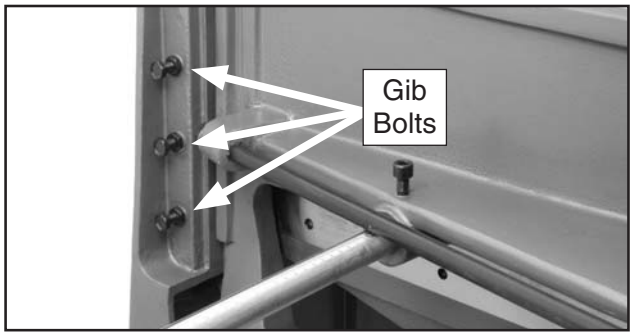
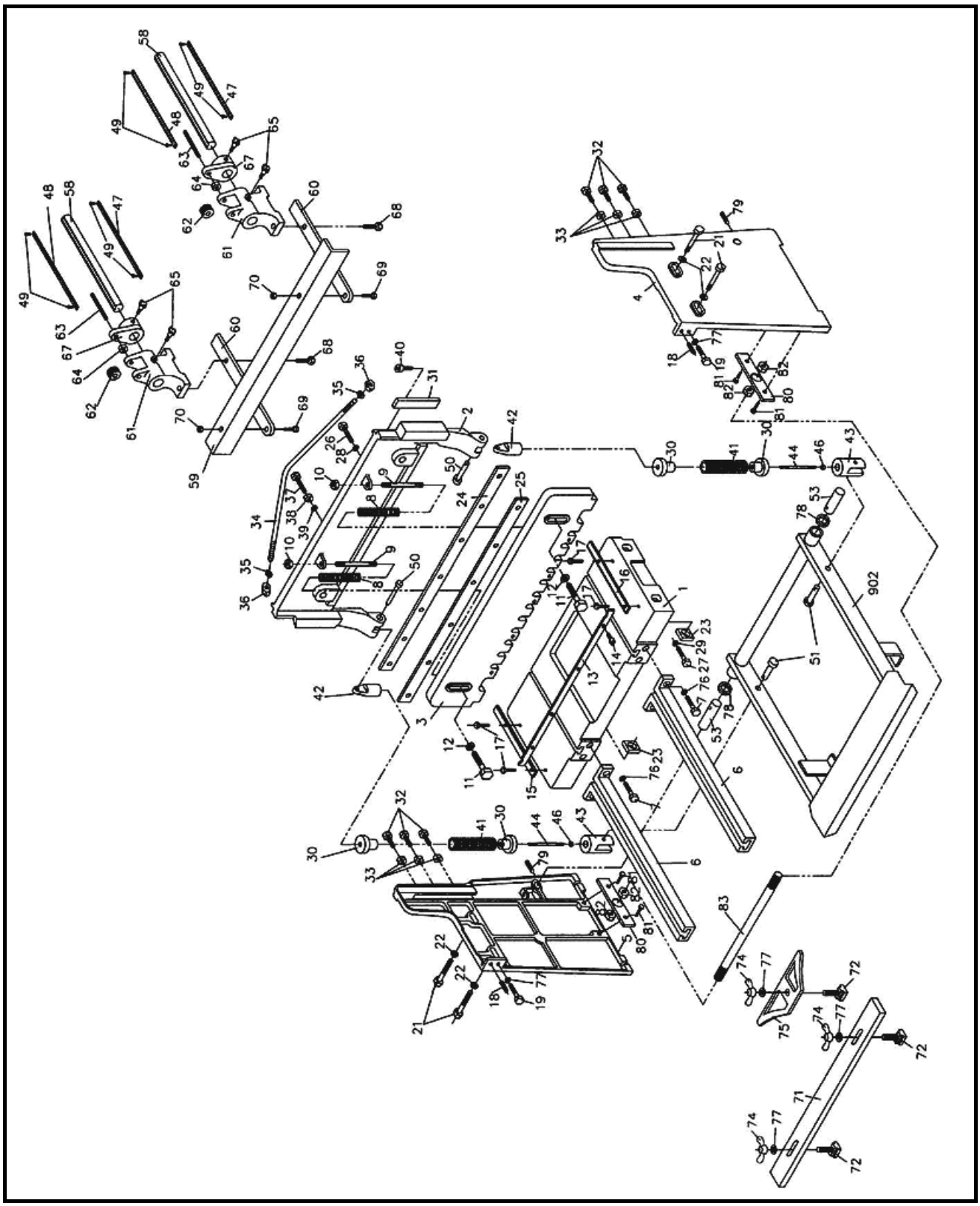


Figure 20. Gib bolt location.

Parts list for Foot Shear - diagram



Parts list for Foot Shear

Index No.	Description	Size	Quantity	Index No.	Description	Size	Quantity
1	table		1	39	washer	M16	2
2	cutter bar		1	40	Hex socket cap screw	M10X30	2
3	hold down		1	41	spring		2
4	R.H. side panel		1	42	swivel top		2
5	L.H. side panel		1	43	swivel botton		2
6	front arm extension		2	44	stud		2
7	screw	M12X45	4	46	nut	M16	2
8	spring		2	47	scale		2
9	stud		2	48	scale		2
10	nut	M12	2	49	screw	M4X8	4
11	screw	M12X80	2	50	pin	Φ12X70	2
12	washer		2	51	pin	Φ12X45	2
13	finger guard		1	53	brake pin		2
14	screw	M6X12	4	58	rod		2
15	table scale (L.H.)		1	59	stop		1
16	table scale (R.H.)		1	60	extension bar		2
17	screw	M8X20	4	61	adjusting block		2
18	set screw	M10X45	2	62	adjusting dial		2
19	screw	M10X50	2	63	adjusting screw		2
21	bolt	M16X115	4	64	nut	M10	2
22	washer	M16	4	65	knob		4
23	nut	M16	4	67	adjusting bracket		2
24	upper knife		1	68	screw	M10X25	4
25	lower knife		1	69	bolt	M10X25	2
26	screw	M10X40	7	70	nut	M10	2
27	screw	M10X45	6	71	stop		1
28	washer		7	72	T-nut		3
29	washer		6	74	wing nut	M10	3
30	spring cap		4	75	bevel gauge		1
31	gib		2	76	washer		4
32	screw	M10X55	6	77	washer	M10	5
33	nut	M10	6	78	washer		2
34	rod		1	79	set screw	M12X35	2
35	washer	M16	2	80	plate		2
36	nut	M16	2	81	screw	M12X35	4
37	screw	M16X80	1	82	nut	M16	4
38	nut	M16	1	83	connection bar	Φ16	1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