



T O O L S

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UNIVERSAL BENDER

Assembly and Operating Instructions..



UNIVERSAL BENDER SPECIFICATION

CAPACITIES	Overall Size	Weight
5/16" Diameter Wire 1" x 1/8" Strip	9" L x 3-1/2" H x 2-1/2" W (not including Lever)	8Lbs

OPERATING PROCEDURES

Note: The Universal Bender must be clamped to a solid workbench or affixed in the T-slot of a stable machine tool.

To Make Eyes and Centered Eyes:

1. Attach the Handle (#17) to the working plate (#2) using the 1/2" shaft (#10) with or without the 1" circle (#14), the 1/4" shaft (#11), or the 3/16" shaft depending upon your desired result. Secure the shaft with the Hex head screw (#22). When you are standing opposite the vise control knob (#13), the handle should be to your right and as far as possible against the body of the bender.
2. Put the material you wish to bend in between the selected shaft and the vise (#6) and clamp it down as shown in figure 1.
3. Put the shaft (#9) into one of the handle's holes. Use the hole as close to the bender as the material will permit.
4. Hold the material lightly with your thumb to ensure parallel result (if desired).
5. Pull the handle in a clockwise direction for a 1/4 turn. This should result in a 90 degree bend. If desired, you may insert the stop pin (#16) at appropriate hole for repetitive bends. Typically, this will be the hole at the front of the bender (furthest away from the Vise control knob), second from the right as shown in figure 2.
6. Loosen the vise, position the material so that your bend is opposite the handle when it is in the starting position. The straight part of the material should be extending out towards the handle; a slight amount of the bend should be clamped when the vise is tightened.
7. Re-clamp the material. Continue the above process until the material makes one full revolution. A slight over bending on the final step is required due to spring back, as shown in figure 3.
8. If you are working with heavy gauge wire, it may be necessary to use the sharp angle plate (#15) to prevent slipping. If this becomes necessary, it should be put on its side with angle portion facing

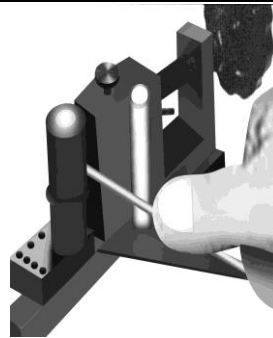


Figure 1

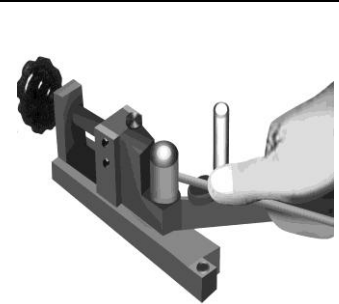


Figure 2

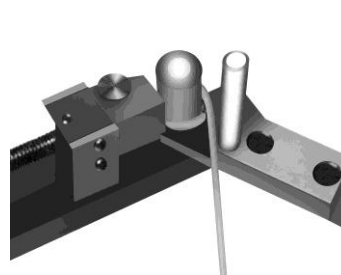


Figure 3

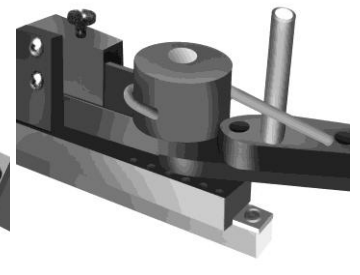


Figure 4

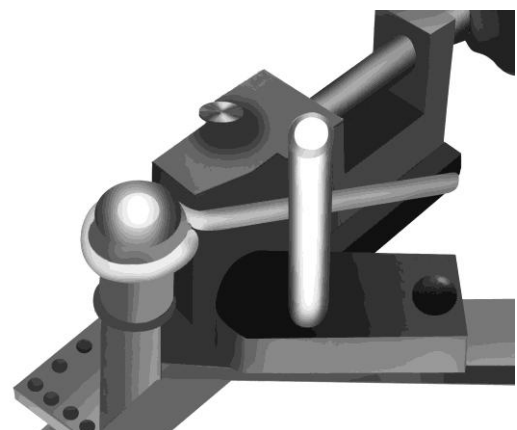


Figure 5

up with one side of the hole facing up with one side of the hole facing the vise and other the shaft being used, as shown in figure 4.

9. If you wish to center the eye, position the handle so that the material is on the opposite side of the handle. This will allow the handle to be moved counterclockwise.

10. Re-clamp the material in such a way that the straight section is at right angles to the vise.

11. Move the handle counterclockwise until it meets the bender, as shown in figure 5.

Bending Coils and Loops:

1. Repeat the top seven steps.
2. For Loops and coils, you must lift the material slightly on the third bend to allow it to rise above the already bent material as shown in figure 6.
3. If you are doing coils, you may want to use a spacer for the repetitive to ensure that the spaces between the loops are even and regular as shown in figure 7.

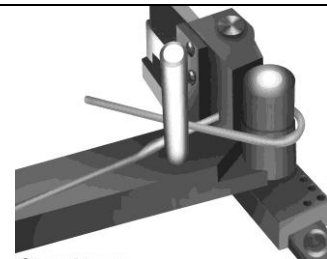


Figure 6

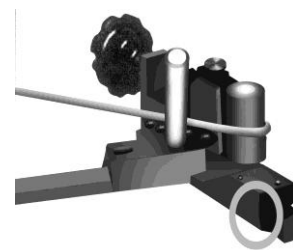


Figure 7

To Make “s” Shapes:

1. Use the 1” Circle with the 1/2” shaft on the body as described in step 1 of “Eyes and Centered eyes”.
2. Put the Sharp Angle plate onto the short shaft on the handle as shown figure 8.
3. Use a short section of stock approximately 2-3/4” to 3” in length. Clamp your stock in the vise so that the edge of the material is even with the edge of the circle.
4. Make a complete clockwise bend.
5. Leaving the handle in the left most position, move the material so that the first loop is on the angles side of the vise’s jaw and the edge of the stock is even with the edge of the circle as shown in figure 9.
6. Make a complete counterclockwise bend.

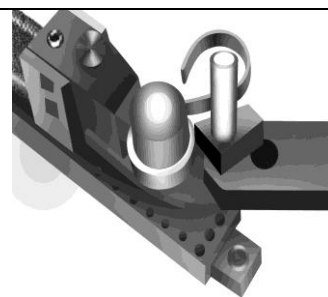


Figure 8

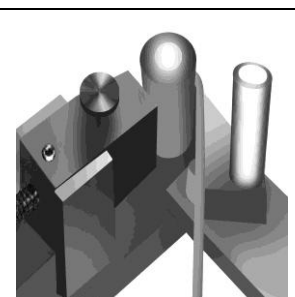


Figure 9

Using the Gauge:

1. The gauge (#23) is used when you need more than one piece bent at precisely the same length.
2. Simply insert the gauge into the side of the bender so that the end of it is the exact distance away from the bender for the length of stock you need. Tighten the Gauge clamp (#24) as shown in figure 10.
3. Use the gauge and the stop pin when you need to make squares. It will enhance your final results immensely as shown in figure 11.

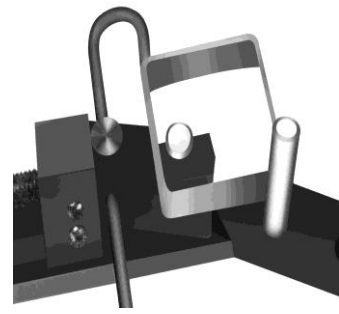


Figure 10



Figure 11

PART LIST

Part#	Description	Qty	Part#	Description	Qty
1	Base	1	13	Vise Control Knob	1
2	Working Plate	1	14	1" Circle	1
3	Small Plate	1	15	Angle Plate	1
4	Slide Track	1	16	Stop Pin	1
5	Vise Body	1	17	Handle	1
6	Right Vise Plate	1	18	M12 Cap Nut	1
7	Left Vise Plate	1	19	M6*35 Screw	1
8	Connecting Plate	1	20	Connecting Screw	2
9	Short Shaft	1	21	M5*12 Screw	4
10	1/2" shaft	1	22	M8*9 Hex head Screw	2
11	1/4" shaft	1	23	Gauge	1
12	3/16" shaft	1	24	Gauge Clamp	1

