SHEET METAL STRETCHER/SHRINKER
INSTRUCTIONS

⚠WARNING

Damage to your eyes and fingers could result from using this item without proper protective gear, such as safety glasses and leather gloves. Be sure to use these items for personal safety.

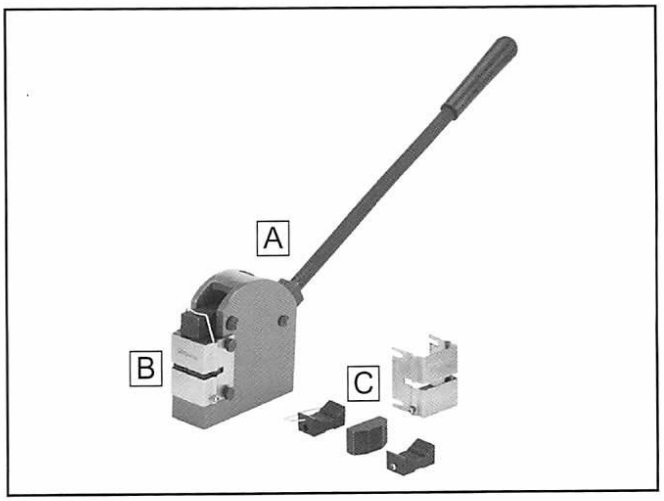


Figure 1.

Specifications

Mounting Bolt Hole Size 3/8"-16..... 2
Bolt Pattern..... 2 1/2" On Center
General Construction .....Cast Iron
Weight w/Dies.....12 1/2 lbs

Capacities

Aluminum.....16 Gauge
Mild Steel.....18 Gauge
Stainless Steel..... 20 Gauge
Smallest Radius Bend .....3"
Jaw Depth..... 1"

Inventory (Figure 1)

A. Stretcher/shrinker 1
B. Stretcher Die 1
C. Shrinker Die..... 1

Installation

The machine is portable and can be clamped in a vise for use. However, to take full advantage of the stretcher/shrinker and to get 360• access to the workpiece, you can mount the tool to a stand intended for a bench grinder. To prevent tipping, be sure to fasten the grinder stand to the floor.

To install the tool:

1. Clean and lubricate the stretcher/shrinker as outlined in **Setup** on **Page 2**.

2 Determine where you want to mount the tool.

3. At the mounting location, center punch two points 2 1/2" apart, and drill two 3/8" diameter holes at these locations.

4. Secure the stretcher/shrinker to the workbench or grinder stand with two 3/8"-16 bolts or cap screws of appropriate length to ensure that the fasteners thread into the casting at least 1/2".

Setup

To setup and clean the stretcher/shrinker:

1. Raise the handle, loosen the four retaining knobs, un-clip the die retainer from the pressure anvil, and slide the die assembly from the casting (**Figure 2**).

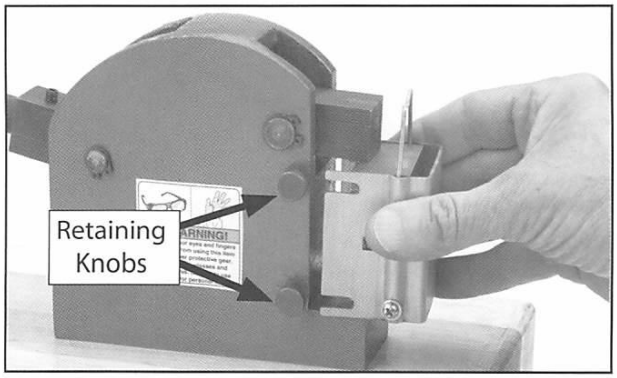


Figure 2. Removing die.

2. On the dies, grasp the die retainer clip and pull the upper jaw from the sheet metal die housing. The rest of the die will come apart easily. Do not lose any springs.

3. I ay out the die components as shown in **Figure 3**.

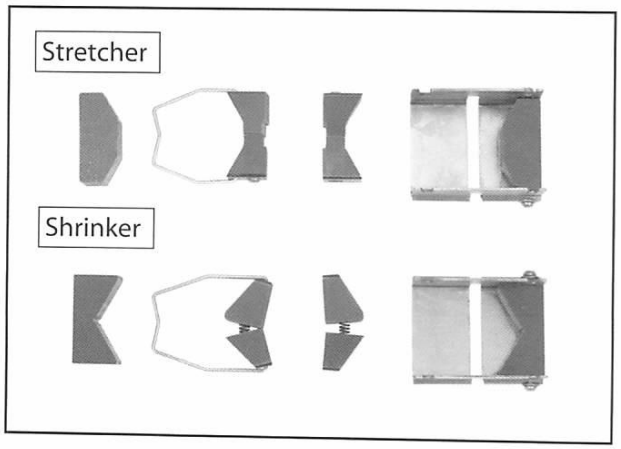


Figure 3. Die and jaw assembly order.

4. Clean any old grease, or metal shavings, or debris off of the tool and dies, and lightly oil.

   Note: When cleaning or removing metal debris from the jaw teeth, never use a wire wheel, buffer, sand blaster, or sandpaper on the jaw teeth. If you do, jaw teeth damage may occur. It is better to let the jaws soak in mineral spirits overnight, and then use a wire brush or a fine dental pick to remove metal.

5. Use **Figures 3–4** as a guide to arrange the die parts in the correct order and reassemble.

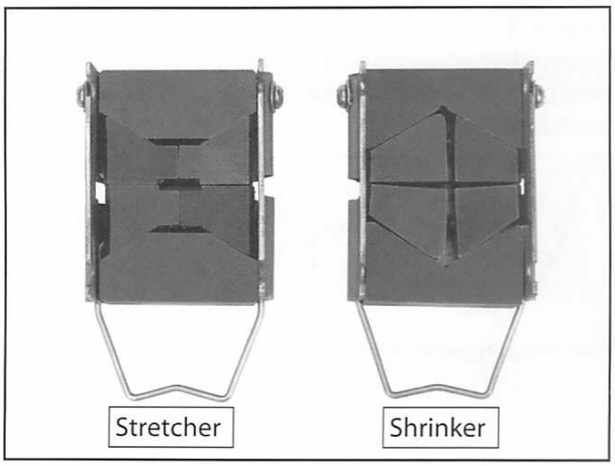


Figure 4. Assembled dies.

6. The stretcher/shrinker is now ready for operation.

NOTICE

When the machine is not in use, or will be stored for a period of time, we highly recommend removing the die from the tool. If the lever is accidently used and the die jaws clamp down against one another instead of a workpiece, the gripping jaw teeth may be damaged.

Operation

The machine stretcher/shrinker is a handy tool for sheet metal fabricators who need custom curve-shaped metal straps, trim, and flanges for auto body repair and general sheet metal work. I ong compound-curved metal pieces can be made out of a single strip of metal without having multiple splice points. Operation consists of inserting a piece of metal in either the shrinker or stretcher die and pulling down on the handle to compress or expand the metal at various locations along the length of the metal strip creating the bend or shape needed. Refer to **Page 4**, and see **Figure 8** for some general examples.

During the bending process when you work along the strip of metal, to control the clamping pressure to make curves with smooth arc instead of an erratic arch with flat spots, the lever stop **(Figure 5)** is adjusted with a 4mm hex wrench to allow the clamping lever to stop at the same location every time the lever is pulled down.

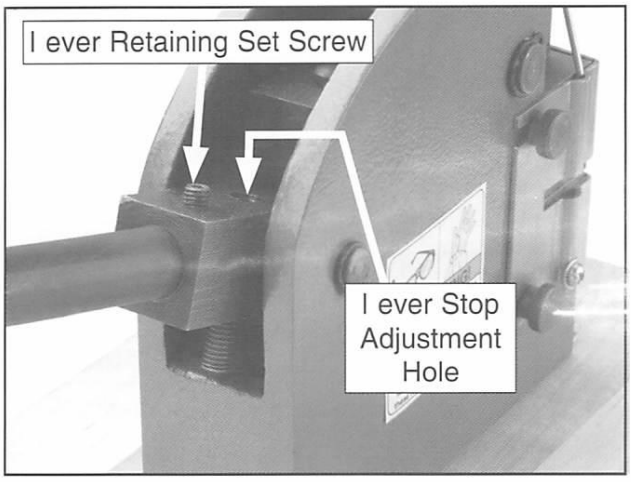


Figure 5. I ever stop.

Note: *If during the stretching or shrinking procedure the metal splits, typically too much bend is trying to be achieved with just a few heavy pulls of the lever.*

To avoid splitting, increase the number of pulls on the lever and make the pulls lighter. If the metal still splits, the radius of the desired bend may be too small for the metal, or the metal is of the incorrect type.

To use the stretcher/shrinker:

1. *Verify the jaw teeth are free of built-up metal. Refer to* **Setup** *on* **Page 2** *to remove clean/lubricate and reinstall the stretcher/shrinker dies.*

2. *Select the required die for your task, loosen the four thumb screws and insert the die. Using the stretcher die, a curve in metal is created by expanding the outside radius of the curve (***Figure 6***). Using the shrinker die, a curve in metal is created by compressing the inside radius of a curve (***Figure 7***).*

   Note: *The location of stretching or shrinking will show small teeth marks from the jaws and cannot be avoided. To limit the depth of the teeth marks, lighter and more iterations of bending help considerably.*

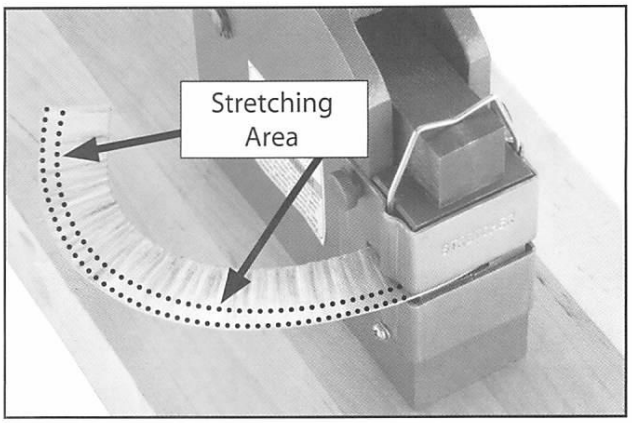


Figure 6. Stretching a workpiece into a bend.

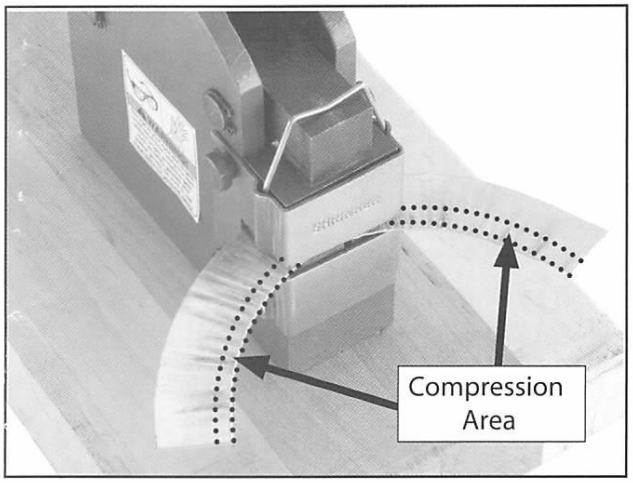


Figure 7. Shrinking a workpiece into a bend.

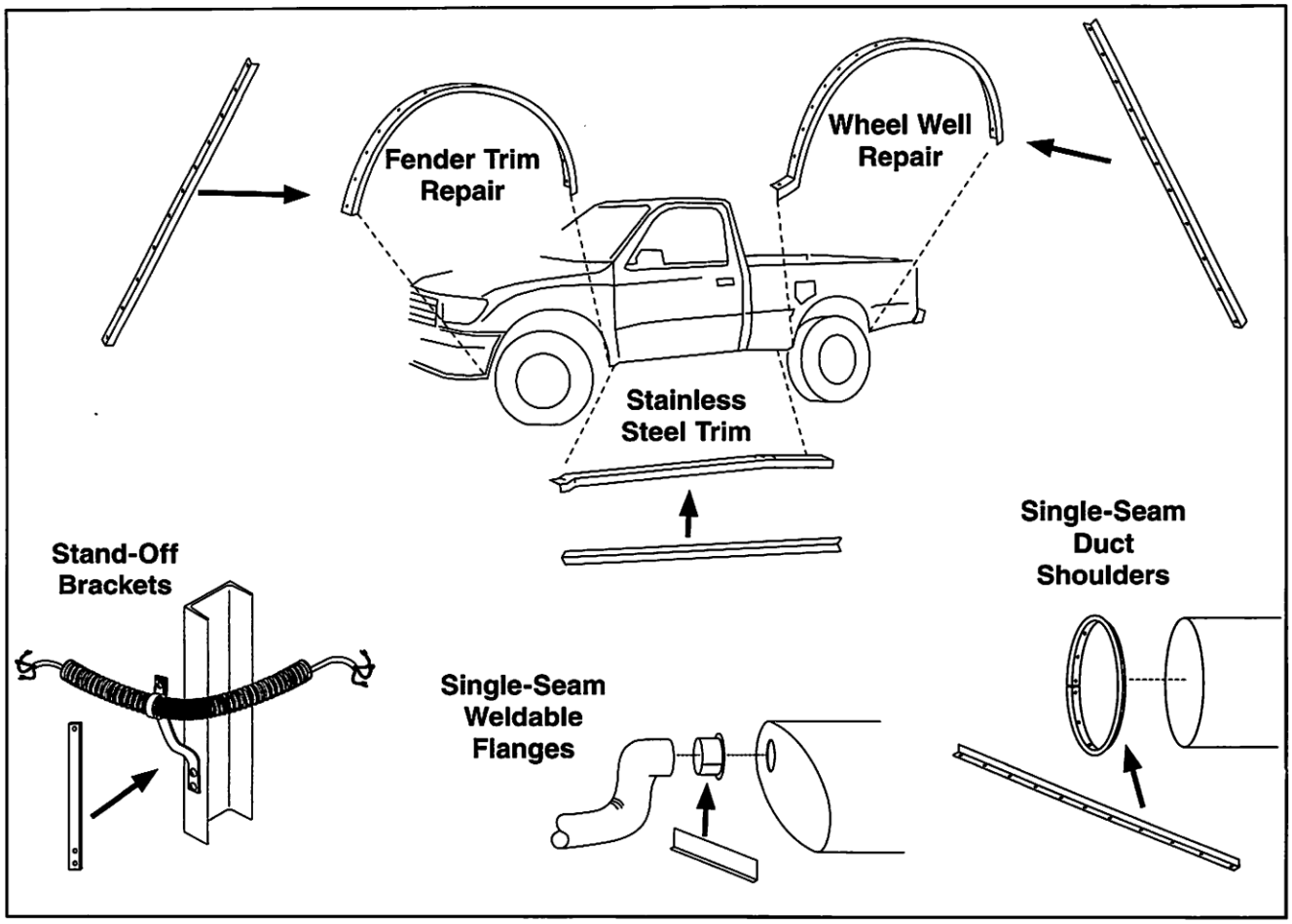
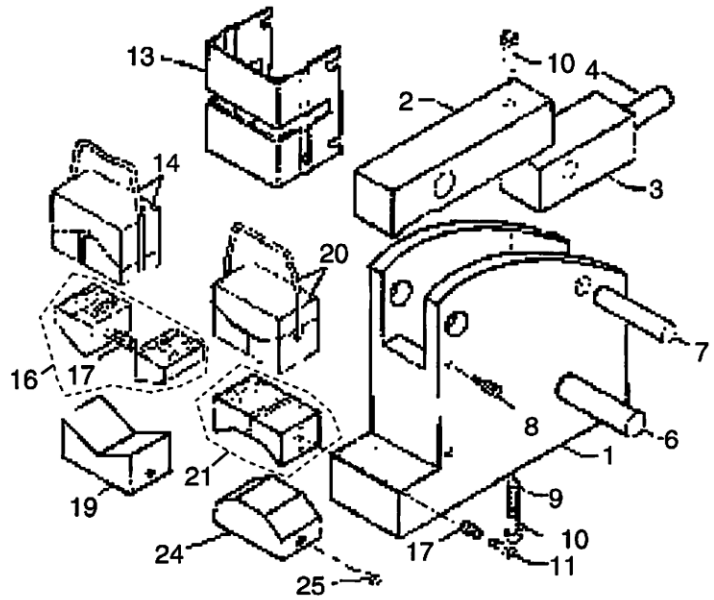


Figure 8. Bend examples .

Parts



REF	DESCRIPTION
1	BODY
2	PRESSURE ARM
3	FULCRUM ARM
4	LEVER W/HANDLE
6	PRESSURE ARM PIN
7	FULCRUM ARM PIN
8	THUMB KNOB
9	COMPRESSION SPRING
10	RIVET
11	PHLP HD SCR 8-32 X 1
13	DIE RETAINER
14	UPPER SHRINKER BLOCK W/JAWS
16	LOWER SHRINKER JAW SET
17	COMPRESSION SPRING
19	LOWER SHRINKER BLOCK
20	UPPER STRETCHER BLOCK W/JAWS
21	LOWER STRETCHER JAW SET
24	LOWER STRETCHER BLOCK
25	PHLP HD SCR 8-32 X 5/8