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MODEL T31688 METAL SHRINKER/ STRETCHER SET INSTRUCTIONS

Introduction

The Model T31688 Metal Shrinker/Stretch Set 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.

Specifications

Max Thickness, Aluminum	16 Gauge
Max Thickness, Mild Steel	18 Gauge
Max Thickness, Stainless Steel	20 Gauge
Smallest Radius Bend	3"
Jaw Depth.....	1"
Bolt Pattern.....	2 1/2" on Center
Mounting Bolt Hole Size 3/8"-16.....	2

Inventory

Description	Qty
A. Body & Shrinker Die Set	1
B. Stretcher Die Set.....	1
C. Lever.....	1

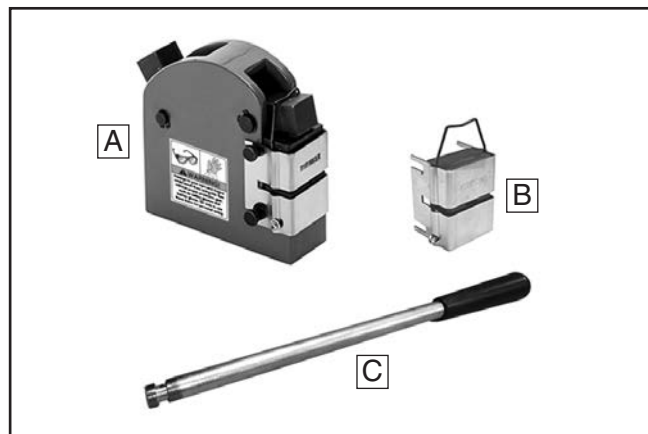


Figure 1. Inventory.

! 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.



Assembly

The Shrinker/Stretch Set comes from the factory almost completely assembled. To finalize assembly, install lever in body (see **Figure 2**) and secure with pre-installed M5-.8 x 8 set screw.

Tools Needed	Qty
Hex Wrench 3mm.....	1

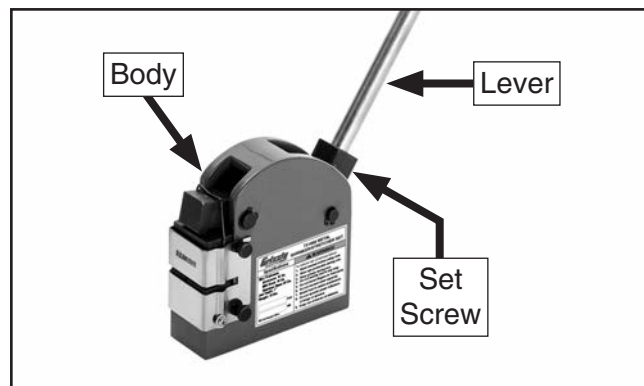


Figure 2. Lever installed in body.

Mounting

The Model T31688 is portable and can be clamped in a vise for use. However, to take full advantage of the shrinker/stretcher and to get 360° access to your 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 mount shrinker/stretcher:

1. Clean and lubricate as outlined in **Setup**.
2. Determine where you want to mount the tool.
3. At mounting location, center punch two points 2½" apart, and drill two ⅜" diameter holes at these locations.
4. Secure tool to workbench or grinder stand with two ⅜"-16 bolts or cap screws of appropriate length to ensure that the fasteners thread into casting at least ½".

Setup

1. Raise handle, loosen (4) knob bolts, unclip die retainer from pressure arm, and slide die assembly away from casting (see **Figure 3**).

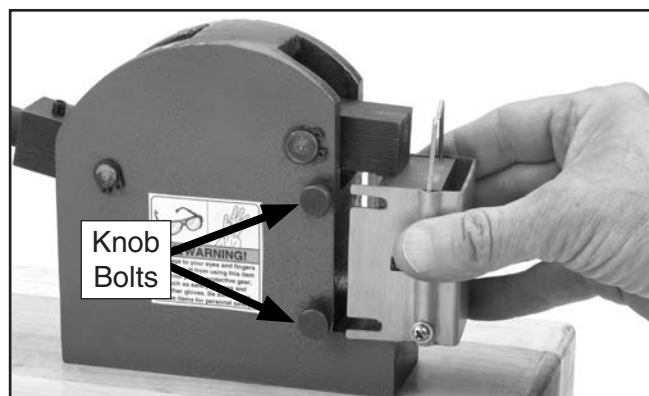


Figure 3. Removing die retainer.

2. Grasp die retainer clip and pull upper jaw from die housing.

Note: Be careful not to lose any springs.

3. Lay out die components, as shown in **Figure 4**.

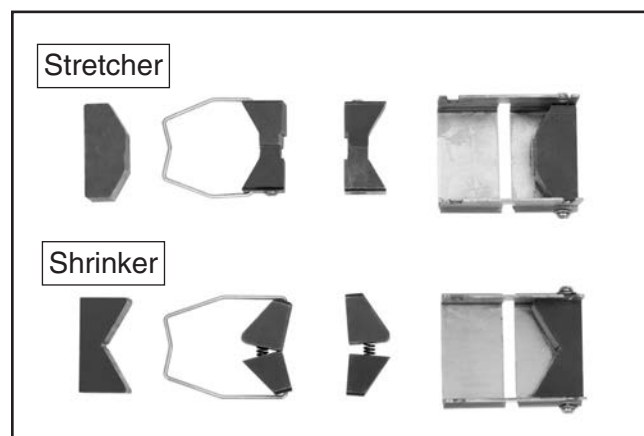


Figure 4. Die and jaw assembly order.

4. Clean grease, metal shavings, and debris off tool and dies, then lightly oil.

Note: Never use a wire wheel, buffer, sand blaster, or sandpaper on jaw teeth. Otherwise, tooth damage may occur. It is better to let jaws soak in mineral spirits overnight, then use a wire brush or a fine dental pick to remove debris.

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

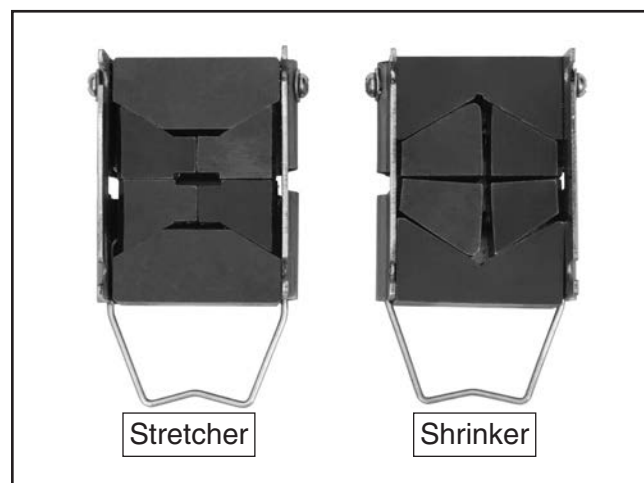


Figure 5. Assembled dies.

6. Shrinker/stretcher are ready for operation.



NOTICE

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

Operation

The Model T31688 Shriner/Stretcher Set is designed to create long, compound-curved metal pieces out of a single strip of metal without multiple splice points. Operation consists of inserting a piece of metal in the tool and pulling down on the lever to compress or expand the metal at various points along the length of the metal strip, creating the bend or shape needed.

During the bending process, as you work along the strip of metal, the clamping pressure exerted by the lever can be adjusted to create curves with a nice smooth arch. The lever stop bolt (see **Figure 6**) can be adjusted with a 14mm wrench to allow the clamping lever to stop at the same location each time the lever is pulled down.

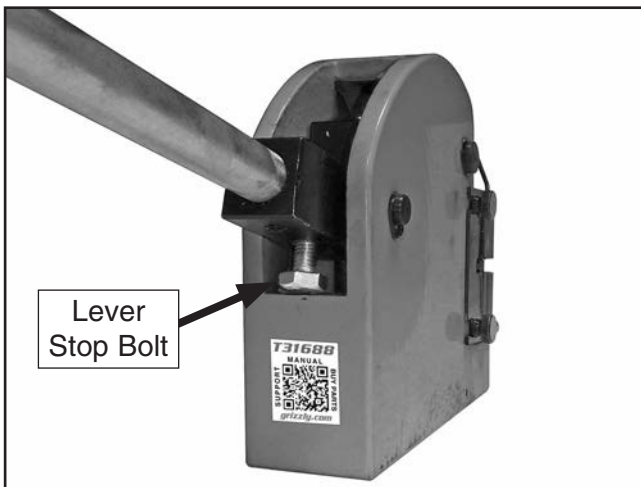


Figure 6. Location of lever stop bolt.

Note: If metal splits during shrinking/stretching procedure, it is typically because too much bend is trying to be achieved with just a few heavy pulls of the lever. To avoid splitting, make pulls lighter and increase number of pulls on lever. If metal still splits, radius of desired bend may be too small for the metal, or the metal is of the incorrect type.

To use shrinker/stretcher:

1. Verify jaw teeth are free of debris.
2. Determine job requirements:
 - Using the shrinker die, a curve in the metal is created by compressing the *inside* radius of a curve (see **Figure 7**).
 - Using the stretcher die, a curve in the metal is created by expanding the *outside* radius of the curve (see **Figure 8**).

Note: Shrinking/stretching will create small teeth marks from the jaws and cannot be avoided. Limit depth of teeth marks by making more, lighter pulls with the lever.

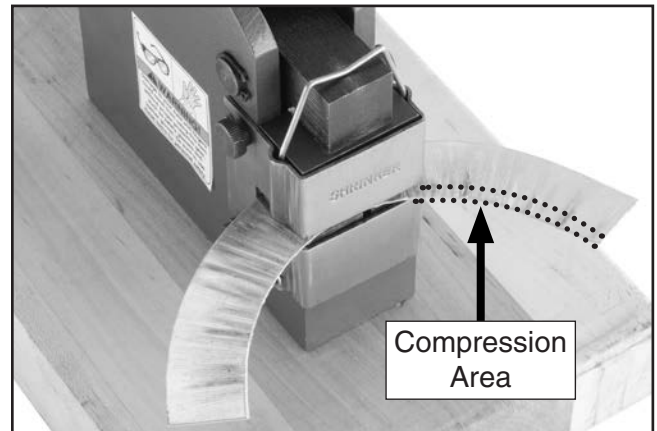


Figure 7. Shrinking a workpiece into a bend.

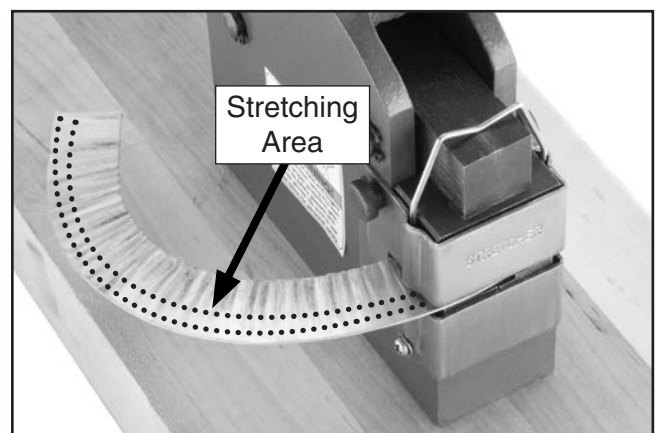
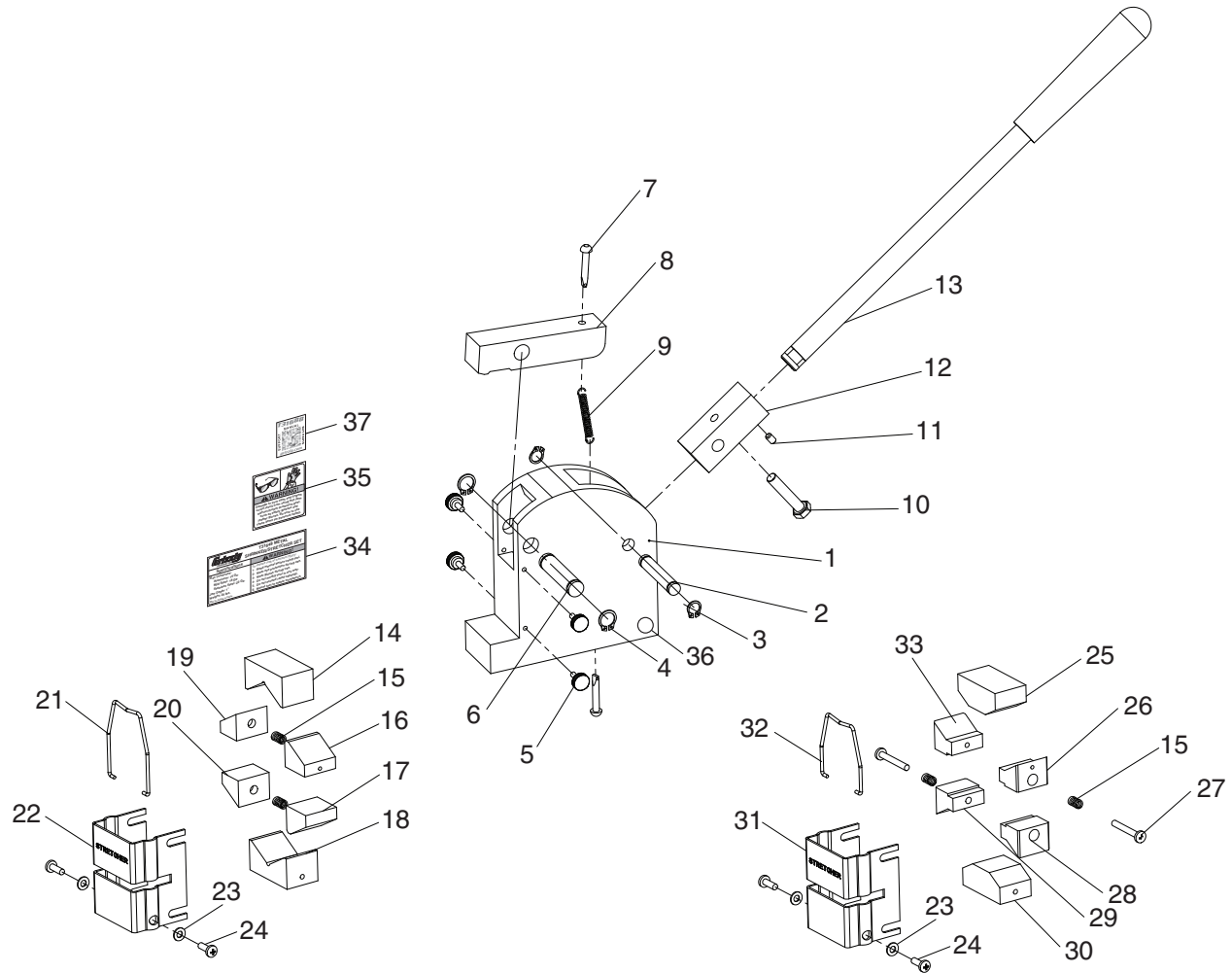


Figure 8. Stretching a workpiece into a bend.



T31688 Parts Breakdown & List



REF	PART #	DESCRIPTION
1	PT31688001	BODY
2	PT31688002	FULCRUM ARM PIN
3	PT31688003	EXT RETAINING RING 10MM
4	PT31688004	EXT RETAINING RING 12MM
5	PT31688005	KNOB BOLT M5-.8 X 8, D12, ROUND KD
6	PT31688006	PRESSURE ARM PIN
7	PT31688007	CLEVIS PIN 5 X 30
8	PT31688008	PRESSURE ARM
9	PT31688009	EXTENSION SPRING
10	PT31688010	HEX BOLT M8-1.25 X 35
11	PT31688011	SET SCREW M5-.8 X 8
12	PT31688012	FULCRUM ARM
13	PT31688013	LEVER
14	PT31688014	UPPER V-BLOCK (SHRINKER)
15	PT31688015	COMPRESSION SPRING
16	PT31688016	UPPER JAW (RIGHT, SHRINKER)
17	PT31688017	LOWER JAW (RIGHT, SHRINKER)
18	PT31688018	LOWER V-BLOCK (SHRINKER)
19	PT31688019	UPPER JAW (LEFT, SHRINKER)

REF	PART #	DESCRIPTION
20	PT31688020	LOWER JAW (LEFT, SHRINKER)
21	PT31688021	RETAINER CLIP (SHRINKER)
22	PT31688022	DIE RETAINER (SHRINKER)
23	PT31688023	FLAT WASHER 4MM
24	PT31688024	PHLP HD SCR M4-.7 X 12
25	PT31688025	UPPER V-BLOCK (STRETCHER)
26	PT31688026	UPPER JAW (RIGHT, STRETCHER)
27	PT31688027	PHLP HD SCR M4-.7 X 30
28	PT31688028	LOWER JAW (RIGHT, STRETCHER)
29	PT31688029	LOWER JAW (LEFT, STRETCHER)
30	PT31688030	LOWER V-BLOCK (STRETCHER)
31	PT31688031	DIE RETAINER (STRETCHER)
32	PT31688032	RETAINER CLIP (STRETCHER)
33	PT31688033	UPPER JAW (LEFT, STRETCHER)
34	PT31688034	MACHINE ID LABEL
35	PT31688035	EYE/HAND WARNING LABEL
36	PT31688036	TOUCH-UP PAINT, GRIZZLY GREEN
37	PT31688037	QR CODE LABEL

Please Note: We do our best to stock replacement parts whenever possible, but we cannot guarantee that all parts shown here are available for purchase. Call (800) 523-4777 or visit our online parts store at www.grizzly.com to check for availability.

