

# Charlie®

## **METALWORKER**



## **METAL SHRINKER/STRETCHER SET**

MODEL NO: CMSSCS

PART NO: 7610950

## **USER INSTRUCTIONS**

ORIGINAL INSTRUCTIONS

GC09/23-Rev 2

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# INTRODUCTION

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Thank you for purchasing this CLARKE product.

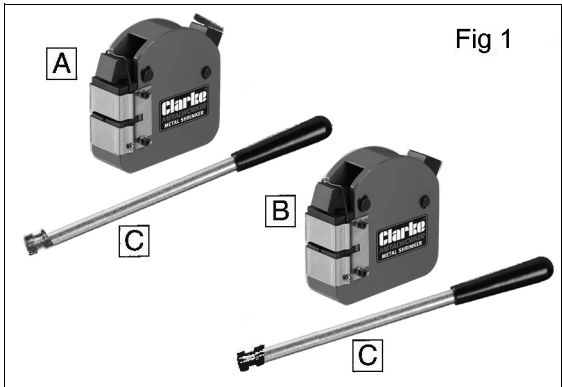
The CMSSCS Metal Stretcher/Shrinker Set is a handy pair of tools for sheet metal fabricators who need custom, curve shaped metal straps, trim and flanges for auto body repair and general sheet metalwork.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you and you can look forward to your purchase giving you long and satisfactory service.

## INVENTORY

- A) Shrinker Body c/w Dies
- B) Stretcher Body c/w Dies
- C) Levers

Fig 1



## SPECIFICATIONS

- Max thickness-aluminium  
.....16Ga/1.5mm
- Max thickness-mild steel  
.....18Ga/1.2mm
- Max thickness-Stainless Steel  
.....20Ga/1.0mm
- Mounting bolt hole size- 3/8”(x2)

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# SAFETY PRECAUTIONS

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**WARNING: THE USER MUST FOLLOW ALL INSTRUCTIONS WITHIN THIS INSTRUCTION BOOKLET**

To protect against injury observe the following precautions when using this product. Clarke International is not responsible for misuse of the equipment.

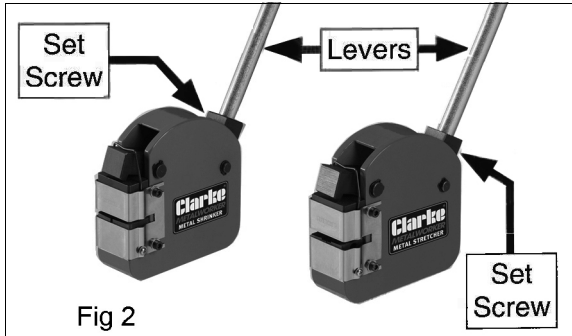
- ALWAYS secure the tool in a bench vice before use.
- ALWAYS keep the work area free of obstructions.
- NEVER try to bend material other than hot-rolled mild steel.
- NEVER modify the tool or use a handle extension arm other than the one provided.

## ASSEMBLY

The shrinker/stretcher set just requires final assembly by installing one lever into each tool body and securing with the pre-installed M5 setscrews.

Tools required;

Hex wrench 3mm



## MOUNTING

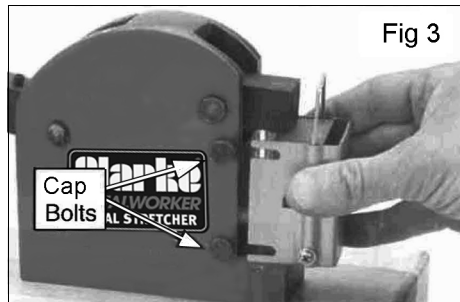
The shrinker and stretcher are portable and can be clamped in a vice for use. However, to take full advantage of the set and to get 360° access to your workpiece, you can mount these tools to a stand intended for a bench grinder. To prevent tipping, be sure to fasten the stand to the floor.

### MOUNTING THE SHRINKER AND STRETCHER

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

### SETUP

1. Raise the handle, loosen the cap bolts using the hex wrench and unclip die retainer from the pressure arm. Slide the die assembly away from the casting (see Figure 3).
2. Grasp the die retainer clip and pull the upper jaw from the die housing.



**NOTE:** Be careful not to lose any springs.

3. Lay out the die components as shown in Fig 4.
4. Clean grease, metal shavings, and debris off the 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 the jaws soak in mineral spirits overnight, and then use a wire brush or a fine dental pick to remove debris.

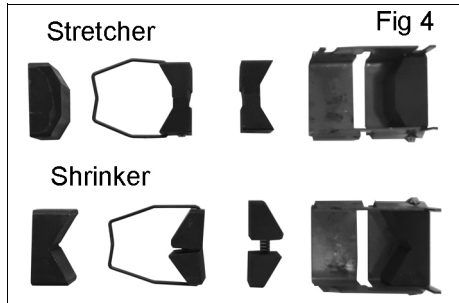
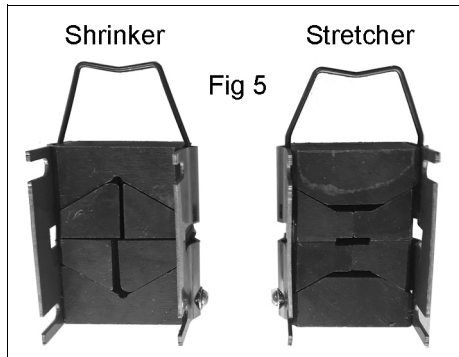


Figure 4 shows die and jaw assembly order.

5. Use Figures 4-5 as a guide to arrange the die parts in the correct order and reassemble.
6. The shrinker/stretchers are ready for operation.

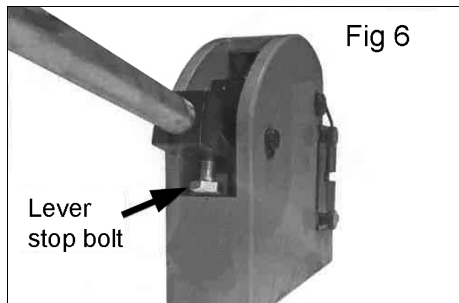


## OPERATION

The Shrinker/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.



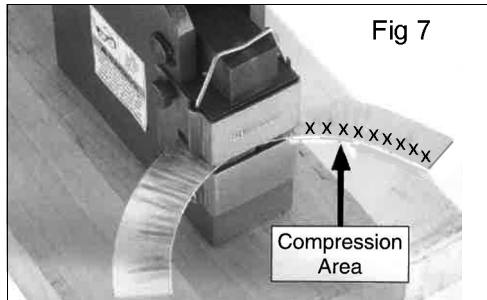
The lever stop bolt (see Figure 6) can be adjusted with a 3mm wrench to allow the clamping lever to stop at the same location each time the lever is pulled down.

**NOTE:** If the metal splits during the 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, the radius of the desired bend may be too small for the metal, or the metal is of the wrong type.

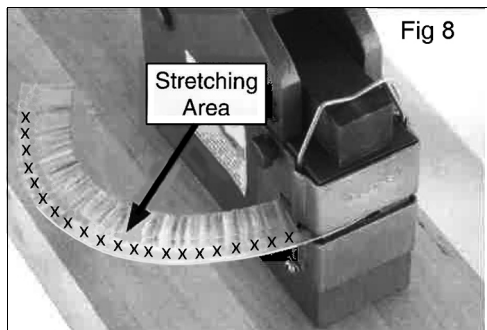
## USING THE SHRINKER/STRETCHER

1. Verify the jaw teeth are free of debris.
2. Determine your job requirements:

Using the shrinker, a curve in the metal is created by compressing the inside radius of a curve (see Figure 7).

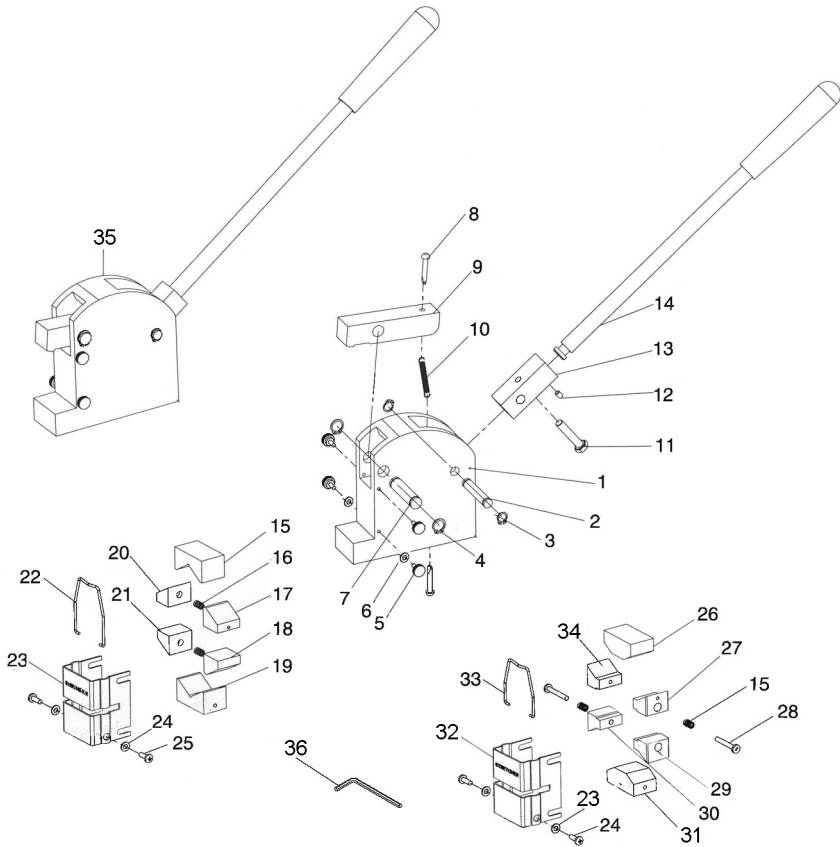


**NOTE:** Shrinking/stretching will create small teeth marks from the jaws and cannot be avoided. Limit the depth of any teeth marks by making more, lighter pulls with the lever.



**CAUTION:** WHEN THE TOOLS ARE NOT IN USE OR WILL BE PLACED IN STORAGE FOR A PERIOD OF TIME, WE HIGHLY RECOMMEND REMOVING THE DIES FROM THE TOOLS. 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.

# COMPONENT PARTS



## COMPONENT PARTS

	DESCRIPTION
1	Stretcher body
2	Fulcrum arm pin
3	External circlip 10mm
4	External circlip 12mm
5	Cap bolt M5
6	Flat washer 5mm
7	Pressure arm pin
8	Rivet
9	Pressure arm
10	Extension spring
11	Bolt M8 x 35
12	Set-screw M5 x 8
13	Fulcrum arm
14	Lever
15	Upper V-block (shrinker)
16	Compression spring
17	Upper jaw (right-shrinker)
18	Lower jaw (right-shrinker)

	DESCRIPTION
19	Lower V-block(Shrinker)
20	Upper jaw (Left-Shrinker)
21	Lower jaw (Left-Shrinker)
22	Retainer clip (shrinker)
23	Die retainer (shrinker)
24	Flat washer 4mm
25	Cross head screw M4 x 12
26	Upper V-block (stretcher)
27	Upper jaw (Right - stretcher)
28	Cross head screw M4 x 30
29	Lower jaw (Right - stretcher)
30	Lower jaw (Left - stretcher)
31	Lower V-block (stretcher)
32	Die retainer (stretcher)
33	Retainer clip (Stretcher)
34	Upper jaw (Left - stretcher)
35	Shrinker body
36	Hex wrench 3mm

## GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

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