

Cascade Came Bender

The cascade came bender is designed to form three shapes in zinc, copper and brass comes. The top groove of the rollers is used to form the H shape in comes, the center groove for flat H shape and the bottom groove for the border shape. The comes may appear to tighten in the grooves due to expansion, so it is essential that **lubrication** in the form of heavy oil or grease be used in the bottom groove.

Different Metals vary in hardness. Zinc, being the softest, will form the easiest, copper is a little more difficult, and brass is by far the most difficult. The key to forming the more difficult metals is "**patience**". The process cannot be rushed. Read the following directions carefully for the forming of border shape in comes, and follow the same process to form the round H shape or the flat H shape.

1. First, secure the came bender to a table that is solid and will not roll around on the floor. Make sure the adjusting screw is toward you at the edge of the table. The circle is going to be formed away from you, and starting to form the material may require a fair amount of room.
2. With the pressure roller well away from you, insert a piece of border came in the lowest groove of the two follower rollers, with the open side of the came away from you. 1/4" border came will fit snugly in this groove. Make sure grease is in the wide grooves or on the sides of the came.
3. Bring the pressure roller forward and insert the edges of the came in the slots on either side of the knurled centerpiece. The knurled centerpiece rides against the center flat of the came and is the real driving contact.
4. With a little pressure applied from the adjusting screw, rotate the pressure roller handle until the end of the came is directly over one of the follower rollers. Reverse the process to the other end of the came. You should now see a slight curve in the came.
5. With the came at one end, apply a bit more pressure, at first only quarter turn, and run the came through to the other end. Repeat this process, always applying more pressure when the came is at one end or the other. The circle will get smaller with each pass and if you want to form a complete circle you must continue the process until the ends overlap past the straight tips. When you are satisfied the circle is correct, move the pressure roller well back and remove the came.
6. If you want to frame something within a circle you must make two saw cuts. The first cut must always be at the overlap, cutting through both overlapped comes, to remove the tips. If there is a gap at the cut, you can put the came back in the bender and run the circle all the way around to tighten up the circle. Because you cannot insert glass into this circle, you must make another cut directly to opposite the first cut. Insert the glass and solder the joints. If you wish, you can make the second cut with a hacksaw blade, from the inside of the circle, stopping just before cutting the flat at the back of the came. You can then fold the came open, insert the glass, close the circle and solder the joints.
7. when forming brass, you must increase the pressure very slowly to avoid deforming the material. With each pass of the came, you might increase the pressure as little as 1/16" of the turn. This is where the patience comes in, and the use of grease on the came will ease the forming. The product may appear very dirty in the forming process, but it will clean up nicely and may be polished later with steel wool.

If you have any questions concerning the bender or other Cascade products, Please contact your dealer, who will pass them on to us. Your comments and suggestions will always be appreciated.