

# BRIGHT COOP CAGE SQUARING PROCEDURE

## INTRODUCTION

In order to square a bent cage, a specially designed force application tool with three adaptor anvils is required. The tool is shown in Figure 1. The ram has a 10 1/8" stroke, has a 20,000 pound force rating and is powered by a hand operated unit. Approximately 7,000 pounds force is required for straightening cages.

Cages are squared by applying the tool across the long diagonal of deformed sides. Each half of the cage is squared independently. For squaring, the cage is considered to be two adjacent cubes sharing a common side. If each side of each cube is squared, then the whole cage is squared, including the common center side.

## LABELS AND DEFINITIONS

For this instruction, the various cube sides have been labeled as shown in Figure 2 . The easiest way to measure squareness is to measure and compare the two diagonals on each cube side as shown in Figure 3. There are 10 accessible sides but only three different diagonal measurements. "Standard" diagonals are given in Figure 4. The measurements are made to actual corners as indicated in Figure 4A.

## SAFETY PRECAUTIONS

Always wear adequate safety equipment when using the squaring tool. Steel toe shoes, hard hats, leather gloves, and safety glasses are recommended.

If the ends of the front and back center bars are deformed so that the spur anvil cannot safely engage them, they must first be straightened, if possible, and/or the anvil must be chained or clamped in place.

## SQUARING PROCEDURE

Unless the cage is severely deformed, it is usually not necessary to remove doors and floors. When squaring a front side, go slow and relieve any binding from the doors by partially opening them.

Each separate deformed cube side is squared by the same procedure, so only one detailed description is given. However, a different ram anvil is required to adapt to the cage for different sides. See Figures 5, 6 and 7.

### SELECTION OF STARTING SIDE

By measuring diagonals, determine the most severely deformed side and start with it. Square it and proceed to the next most severely deformed side, etc. Sides interact with one another to some extent and in some cases, squaring a severely deformed side will allow adjacent sides to return to normal shape without a squaring operation. For a similar reason, after squaring all deformed sides, it may be found that one or more sides previously squared are now out of square in the opposite direction and must be squared again. Do not attempt to anticipate this!

Note that if two diagonals of a side are within 1/2 inch of each other, the side is square enough and need not be worked.

### SQUARING A DEFORMED SIDE (Refer to Figure 8)

1. Place the cage so the desired side is up, or place the cage on supports so the desired side has enough ground clearance for the squaring tool to be placed across the diagonal.
2. Put the proper anvil on the ram and retract the ram. Secure the boom anvil in the closest hole to the ram that will clear the diagonal.
3. Apply the squaring tool across the long diagonal.
4. Apply a small force to the ram to remove all looseness and check both anvils for proper seating.
5. Look up the standard diagonal measurement for the side you are working in Figure 4. Measurements are to real corners per Figure 4A.
6. Apply a scale across the short diagonal.
7. Apply force to the ram while watching the change in the short diagonal measurement. As force is applied, the diagonal under the squaring tool will decrease and the diagonal being measured will increase.
8. When the measured diagonal is one inch greater than desired, release the ram and allow it to return to approximately zero force. Spring back (internal stress) will reduce the

measurement, probably by one inch or more. Note the new diagonal measurement. If it is within 1/4 inch, plus or minus, of the desired dimension, the side is square enough and this squaring operation is complete. If it is over 1/4 inch less than desired, note the difference and record it for use in the next step.

9. Reapply force until the diagonal being measured is back to one inch greater than the desired length. Continue force application to increase the measurement further by the amount recorded in step 8.
10. Release all force and verify that the side is square enough.

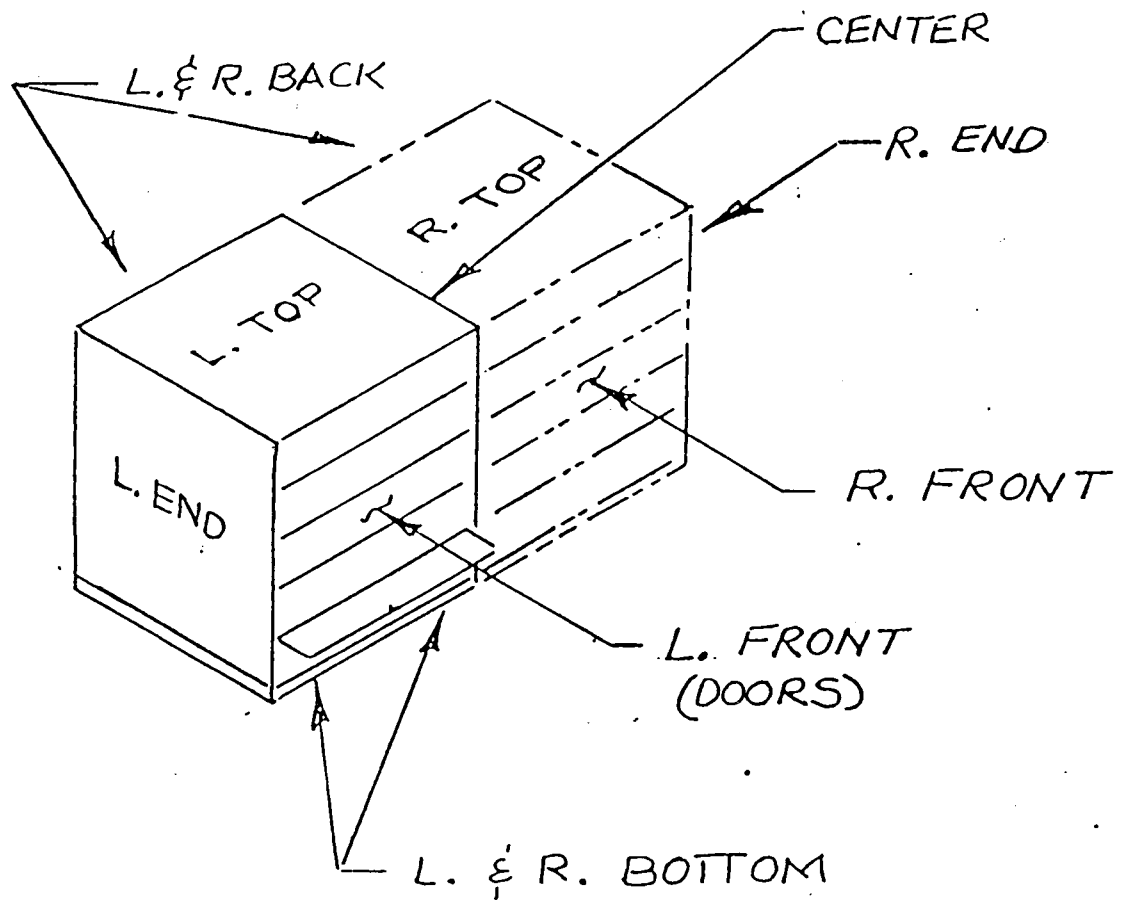
### SPECIAL INSTRUCTION FOR SQUARING CENTER SECTION

The squaring tool cannot be applied directly to square the center section "side". If this section must be squared, it is always done last and a special procedure and special tools have been devised. Contact Bright Coop if squaring of the center section cannot be achieved by squaring the accessible sides.

### FURTHER STRAIGHTENING

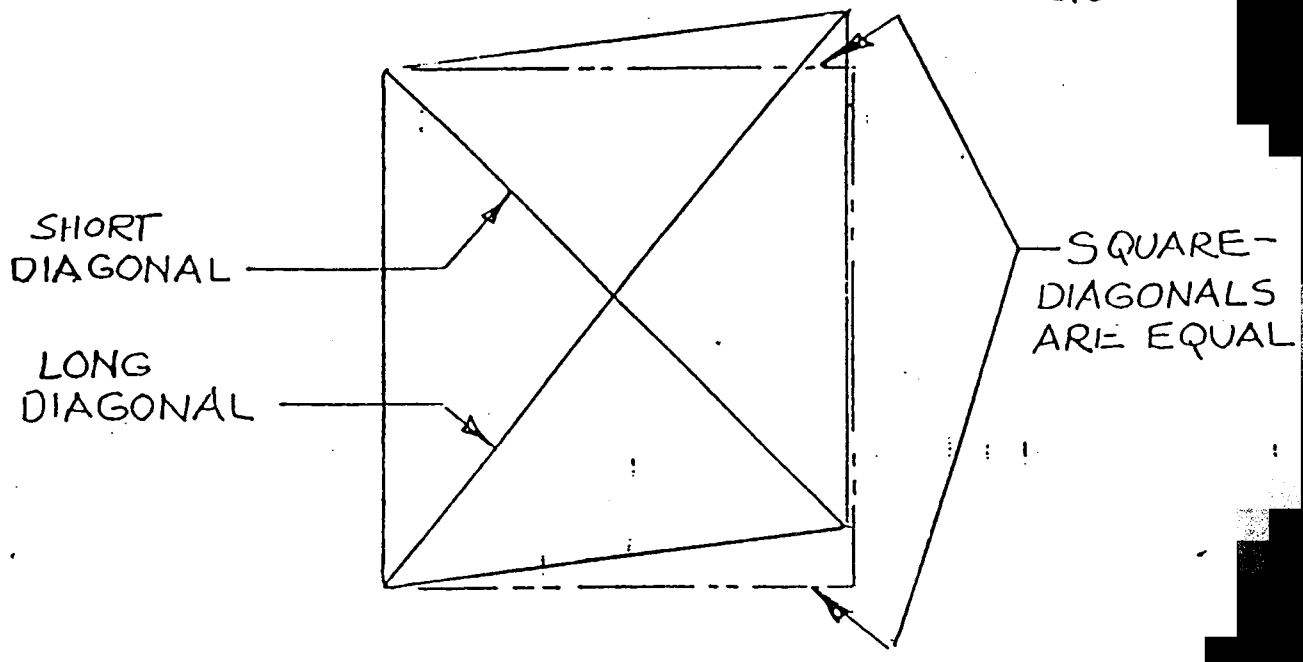
By following the foregoing instruction, the cage will be returned to an adequately rectangular form. There may be broken welds, bent tubes, bent doors, or buckled floor straps. Repair these by usual methods or by replacement of damaged members after determining the repair is functionally necessary. The cage has many parallel members. A few cracked welds or bent tubes are not usually significant to function. Cosmetic repairs are not recommended.

Buckled floor straps may be hazardous to the chickens. The best repair is replacement of the straps.



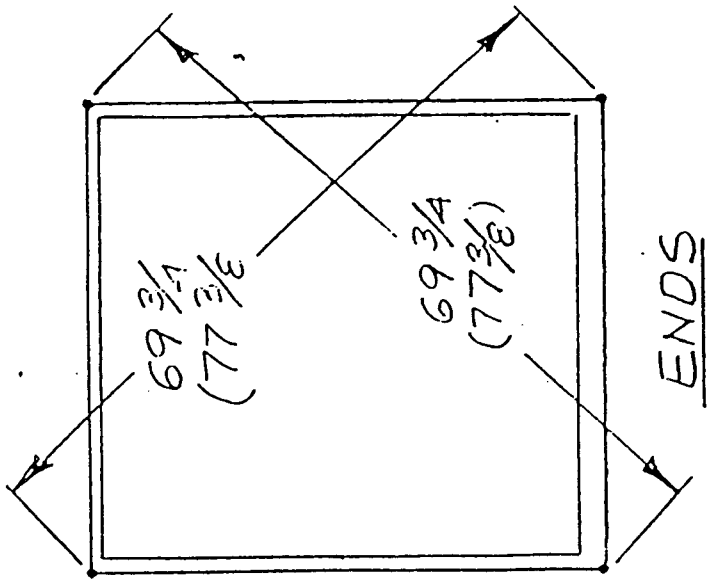
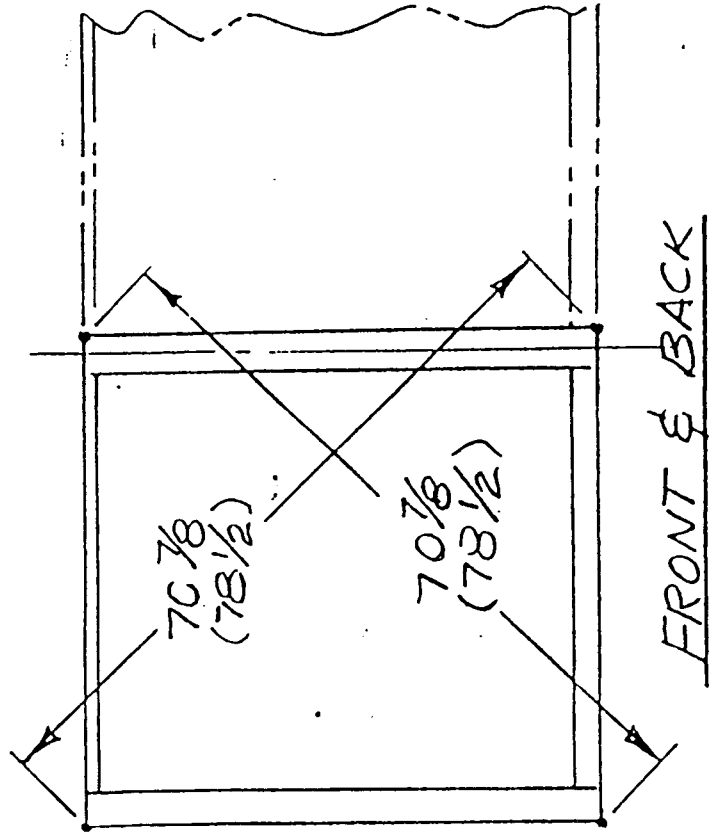
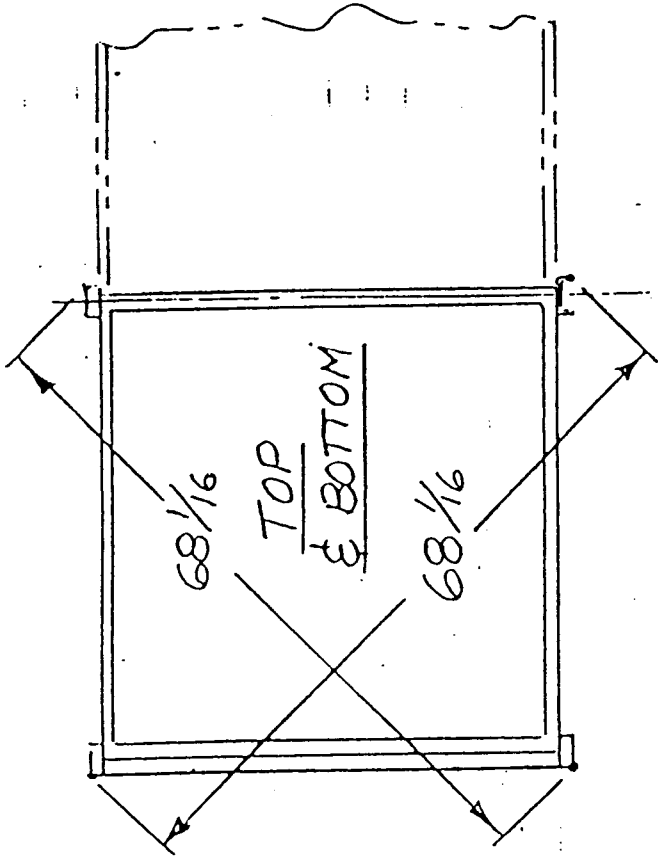
LABELS FOR CUBE SIDES

FIG. 2

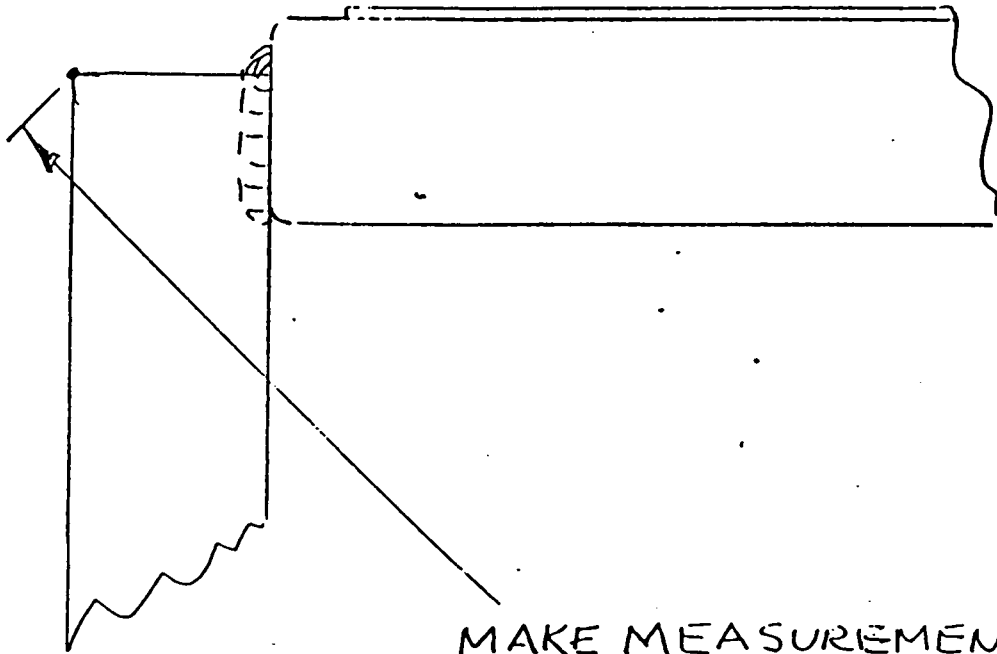


TYPICAL DEFORMED SIDE

FIG. 3



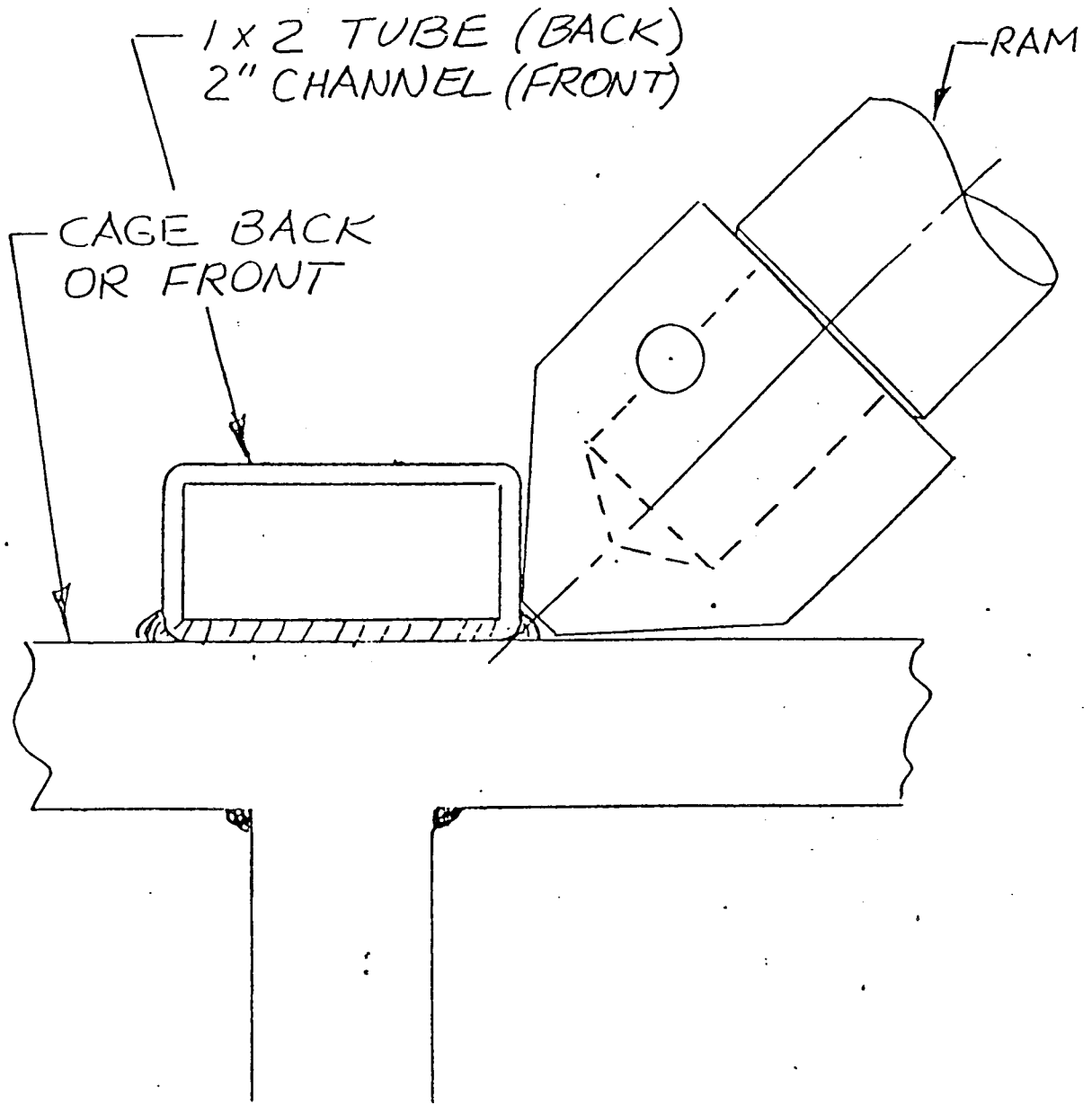
STANDARD DIAGONALS - 5 TIER CAGE  
 - (6 TIER CAGE)



MAKE MEASUREMENTS  
IS TO THE ACTUAL  
CORNERS

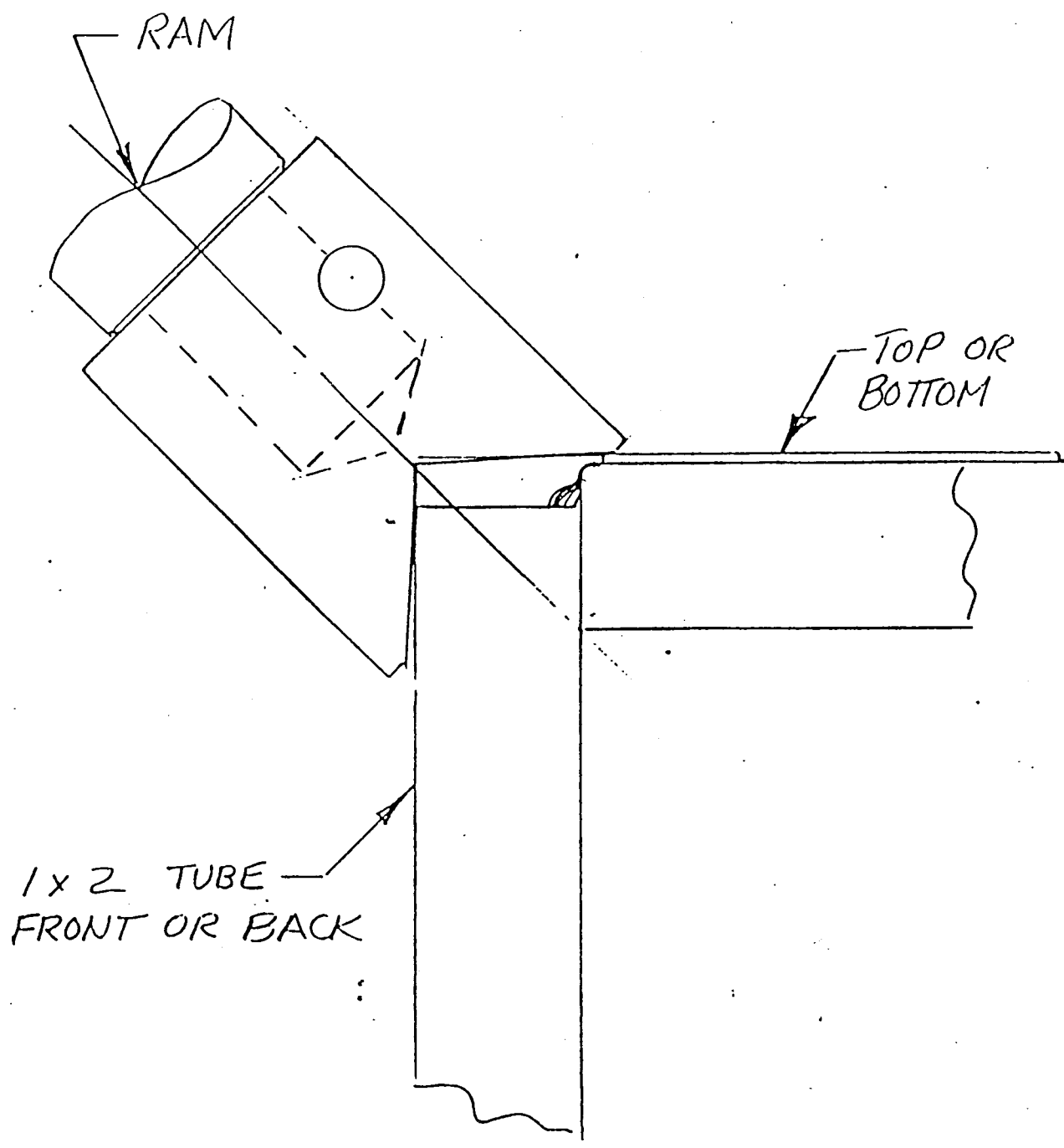
MEASURING DIAGONALS

FIGURE 4A



MALE ANVIL  
USE ON CENTER TOP  
OR BOTTOM AS SHOWN  
(FULL SIZE)

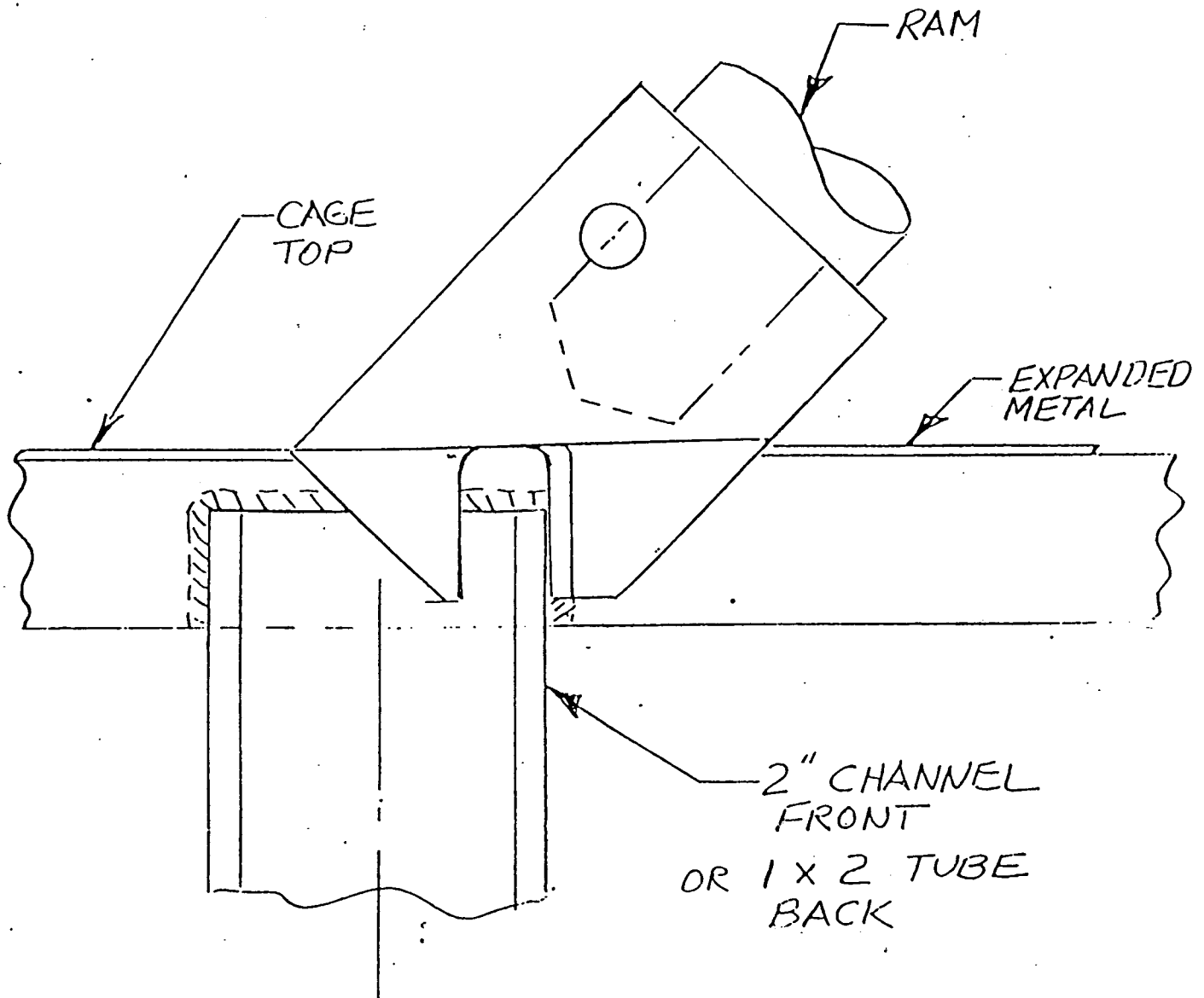
FIG. 5



# FEMALE ANVIL

USE ON END CORNER  
AS SHOWN  
(FULL SIZE)

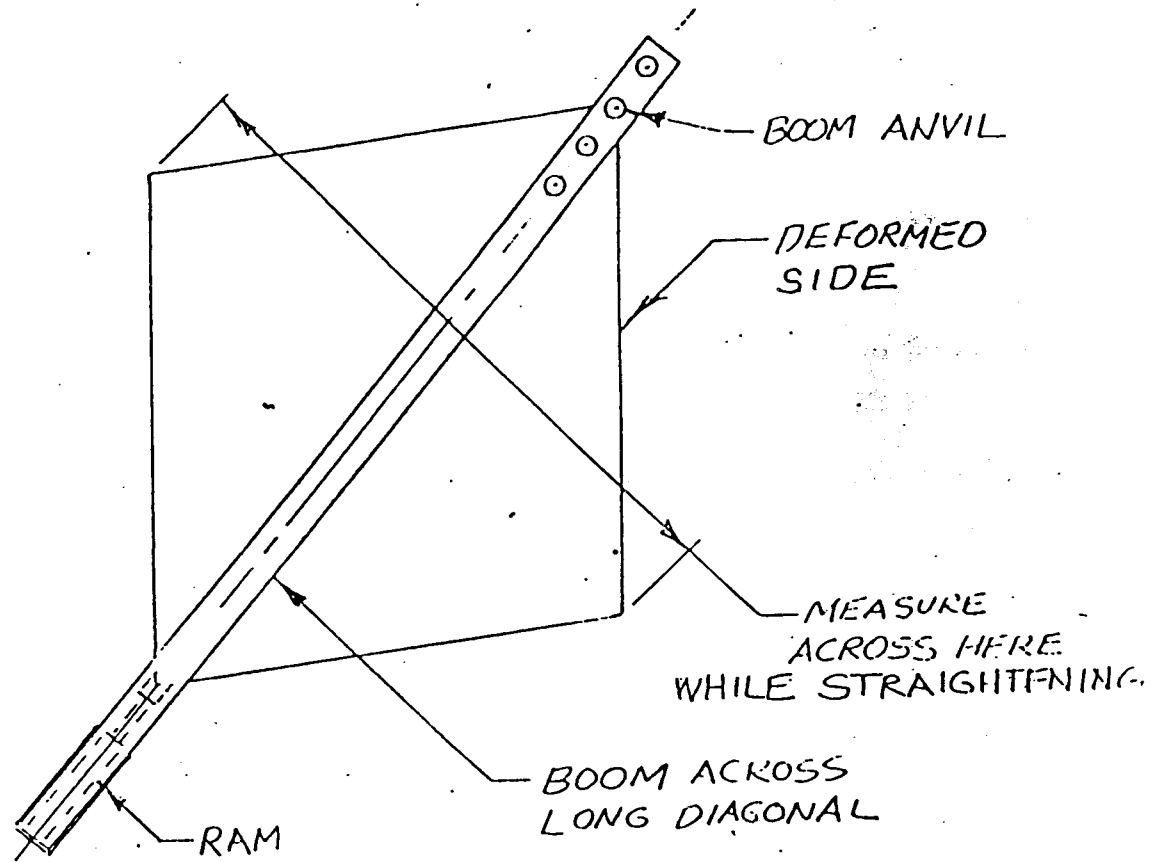
FIG. 6



## SPUR ANVIL

USE ON CENTER FRONT  
OR BACK AS SHOWN  
(FULL SCALE)

FIG. 7



SQUARING A DEFORMED SIDE.

FIG. 8