

## Work (Torch to Punch) and Diameter (Kerf) Offset Procedure in MM

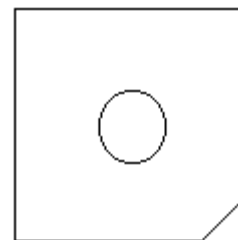
This procedure should be used to properly adjust the G55 offset to ensure the punch hole to torch cut accuracy as well as cut to cut accuracy is correct

1. Load the ram with a punch and die set of your choice (normally 10 – 20mm in diameter) using the procedure for your model of equipment. Ensure the die clearance is correct for whatever material thickness you are using
2. Load and execute the program listed. This will generate a part similar to the one shown. Follow the instructions listed in the program to set part location on the material and set the cutting speed for the material being used. Note: Block numbers 7 and 11 are needed ONLY for the 3400 and 4400. Skip these lines on other models

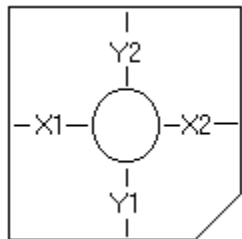
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N1G00M85
N4G54
N5G21
N6G90M42
N7G161 (Only for 3400 and 4400)
N9M00
(JOG TO THE CENTER OF SQUARE)
N10G92X0.Y0.
M75
X0.0Y0.0
M85
M65
N11G160Y-0.0 (Only for 3400 and 4400)
N12G55G00X55.0Y55.0
M00(VERIFY CUT SPEED IN NEXT BLOCK)
N14M17F2500.0
N15G01X50.0Y50.0G41D01
Y-40.0
X40.0Y-50.0
X-50.0
Y50.0
X50.0
X55.0Y52.0G40D00
N18M18
M80
N21G54G161
N22M31
N23M30

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- Using the following reference, measure the distance from the edge of the punched hole to the cut edge. Remember, the most accurate part of the cut is the bottom edge



X1 \_\_\_\_\_  $(X1-X2)/2=$  X Difference  
 X2 \_\_\_\_\_ X Difference \_\_\_\_\_  
 Y1 \_\_\_\_\_  $(Y1-Y2)/2=$  Y Difference  
 Y2 \_\_\_\_\_ Y Difference \_\_\_\_\_

While determining the difference value to input, keep the following in mind:  
 When adjusting the X on ALL models, a positive (+) value will make X1 smaller  
 When adjusting the Y on ALL models, a positive (+) value will make Y1 smaller

- If the X and Y differences are less than 0.25 mm and the part measures 100 mm (+/- 0.25 mm), you are finished. If the results are off, continue with step 5
- Press **Offset Setting**
- Press **Work**
- You will be adjusting the G55 (Offset 2) values in X and Y, using the differences calculated in step 3 & 4. If your machine has an A or V axis, make this value match Y. Move the cursor over the G55 value that requires adjustment. Type in the difference as calculated and press **+INPUT** softkey  
**Note:** If you need to subtract, just type in the negative number and press **+INPUT** softkey (adding a negative number = subtracting)
- Make another part using the program listed above. Your hole should now be centered. If not, repeat steps 3-8. If so, and the part is 100 mm (+/- 0.25 mm), you are complete. If not, proceed to step 9
- To adjust the cut size of your parts, a diameter (kerf) offset is used. This value could be a number between 1 and 32 as set by your programs. In this example, you can see a D01 at the end of line 15 in the program. This tells the machine to offset by the amount set in slot 1 of your diameter offset chart to compensate for the material removed by the torch. Typically, on an outside cut, the larger the offset amount the larger the part will be. To increase the part size, increase the offset. Subtract to make the part smaller. The offset value is on the **Offset Setting** screen under **Offset**. Note: With an inside cut, the offset is reversed (larger offset = smaller hole)

When adjusting the parts size, X & Y should be close (+/- 0.25 mm) to each other. If they differ from each other greatly, you should check your consumables and/or torch to make sure you are getting a straight (less than 5 degree) cut. If the cut quality is good, you should check for mechanical looseness in all axis

End of Procedure