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Sherline/MASSO Chucker Lathe Tool Calibration

Here is a link to the MASSO page for lathe tool calibration: https://masso.com.au/masso-documentation/?section=lathe-tool-calibration-steps.

This page will show you the basic steps that you will need to do in order to set your tool offsets.

In this document, we are adding a few additional comments and information that are specific to our CNC Chucker Lathe.

13.1. Lathe Tool Calibration Steps

Step 1:

Open the **MDI window** using **CTRL+M** and load the tool you would like to calibrate. In this example we will be calibrating Tool No.1.

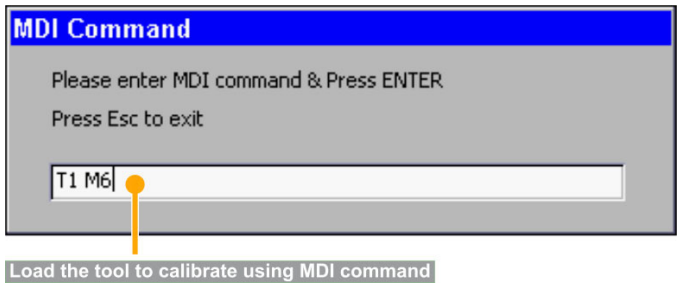


FIGURE 1

NOTE: You must do step #1 before calibrating each tool so the computer will know which tool you are using.

Step 2:

Machine a small test piece or use an existing piece (with a known diameter that is running true).

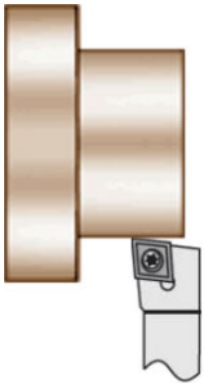


FIGURE 2

Step 3:

Go to **"F3-JOG"** screen and touch the front face of the test piece (see Figure 3).

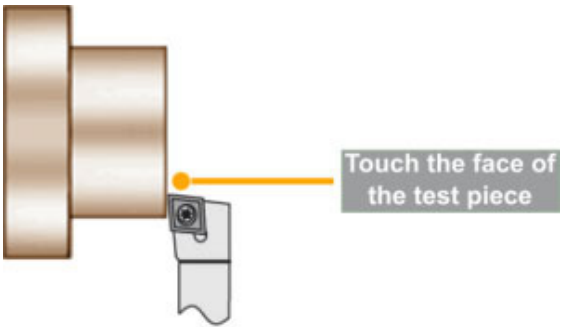
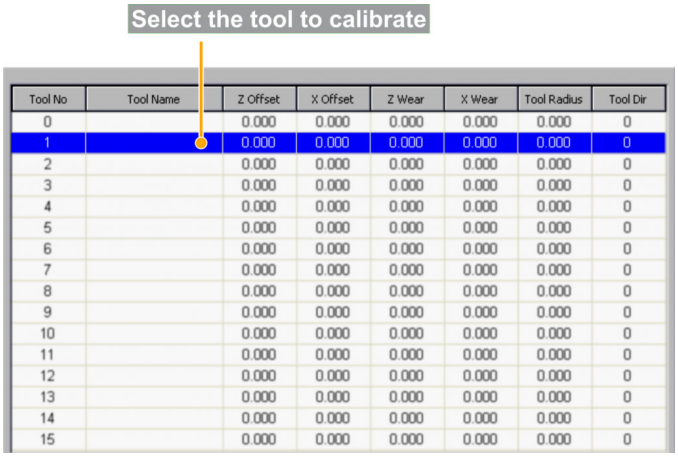


FIGURE 3

Step 4:

Go to **"F4-Tools"** screen and select the tool number you want to calibrate.



Tool No	Tool Name	Z Offset	X Offset	Z Wear	X Wear	Tool Radius	Tool Dir
0		0.000	0.000	0.000	0.000	0.000	0
1		0.000	0.000	0.000	0.000	0.000	0
2		0.000	0.000	0.000	0.000	0.000	0
3		0.000	0.000	0.000	0.000	0.000	0
4		0.000	0.000	0.000	0.000	0.000	0
5		0.000	0.000	0.000	0.000	0.000	0
6		0.000	0.000	0.000	0.000	0.000	0
7		0.000	0.000	0.000	0.000	0.000	0
8		0.000	0.000	0.000	0.000	0.000	0
9		0.000	0.000	0.000	0.000	0.000	0
10		0.000	0.000	0.000	0.000	0.000	0
11		0.000	0.000	0.000	0.000	0.000	0
12		0.000	0.000	0.000	0.000	0.000	0
13		0.000	0.000	0.000	0.000	0.000	0
14		0.000	0.000	0.000	0.000	0.000	0
15		0.000	0.000	0.000	0.000	0.000	0

FIGURE 4

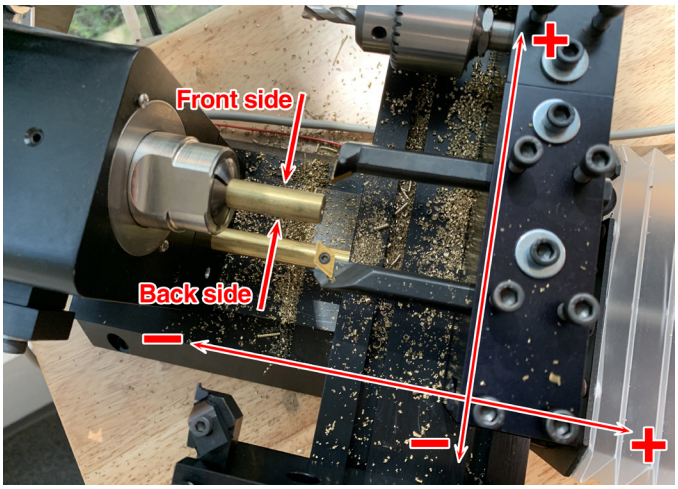


FIGURE 5—Picture of the jog directions for the chucker lathe. The arrows show the direction that the tool will move.

Step 5:

Give a name to the tool for your reference in the **"Tool Name"** field.

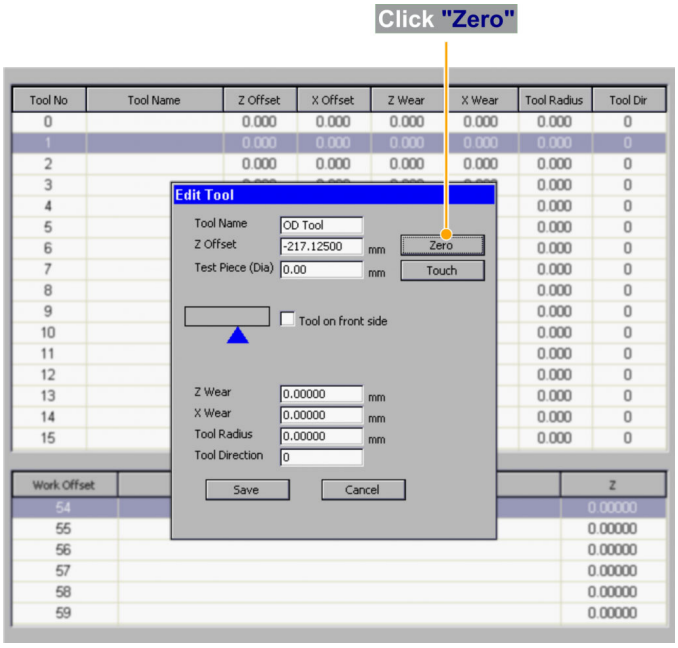


FIGURE 6

Now move the courser and click on the Z-Offset window with your mouse.

With your tool touching the face of the part, click on the (Zero) button.

This will input the Z Machine Position for the current position of the tip of your tool.

Step 6:

Now go to **"F3-JOG"** screen and touch the tool to the side of the test piece.

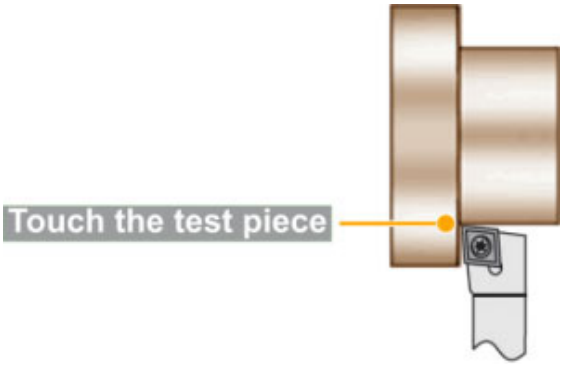


FIGURE 7

Step 7:

Measure the diameter of the test piece and note the value (see Figure 8).

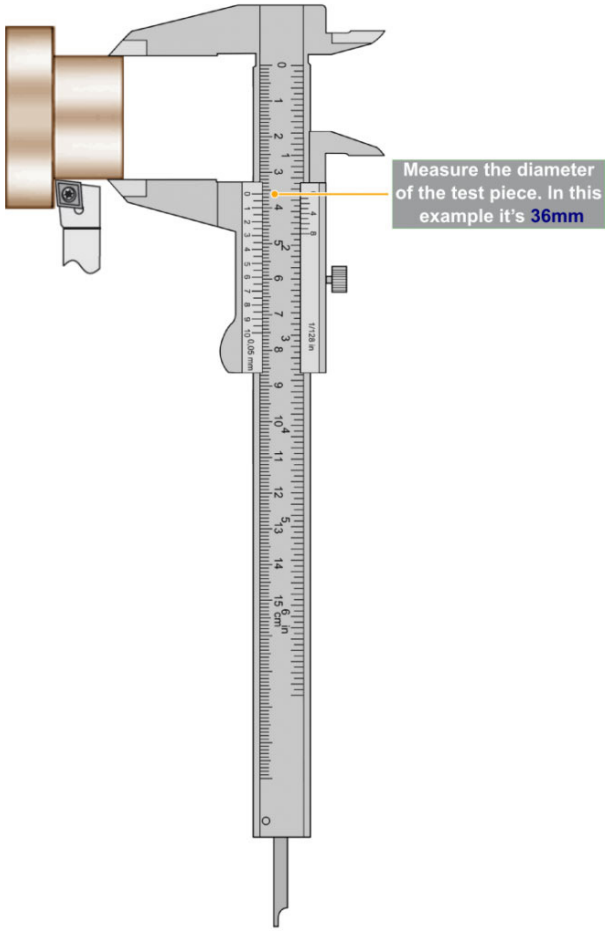


FIGURE 8

Step 8:

Go back to **"F4-Tools"** screen and enter the measured diameter value in **"Test Piece (Dia)"** box and click **"Touch."** This will input the X-axis machine position of your tool plus the radius of the test piece into the box for your X-axis offset.

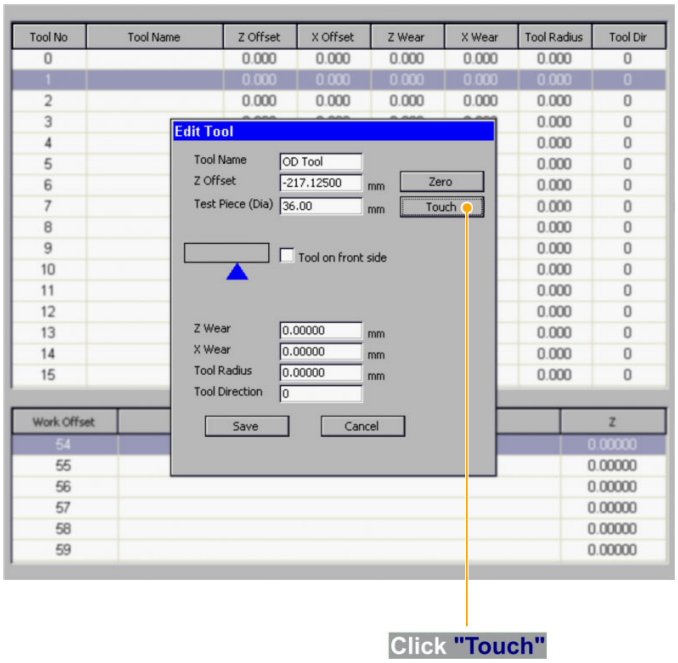


FIGURE 9

Step 9:

Next, select whether the tool is on the front side or the back side and make sure that the **"Z Wear"** and **"X Wear"** values are **0.00**.

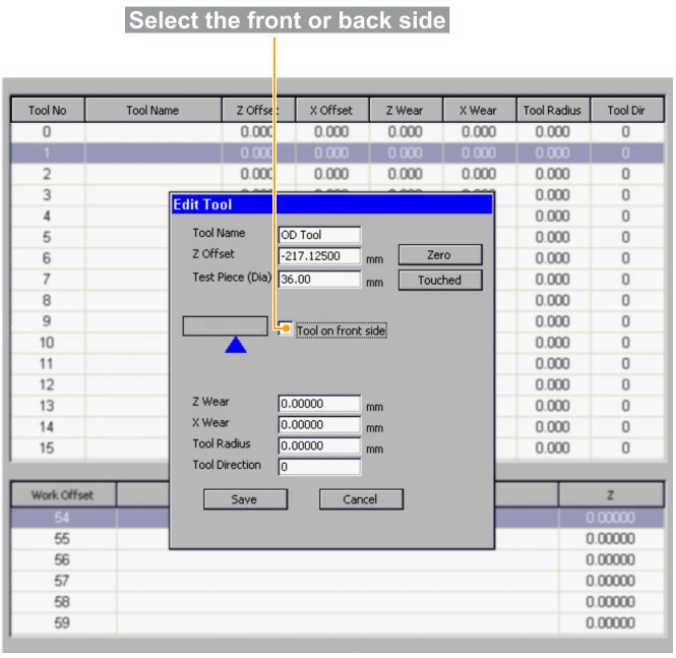


FIGURE 10

NOTE: On our Chucker Lathe, the front side of the part is the side that the stepper motor is on. This is opposite of what the picture on the **"Edit Tool"** window shows (see Figure 5 on page 1 for reference).

Step 10:

Move cursor to **"Save"** button and press the **"Enter"** key to save and complete the tool calibration.

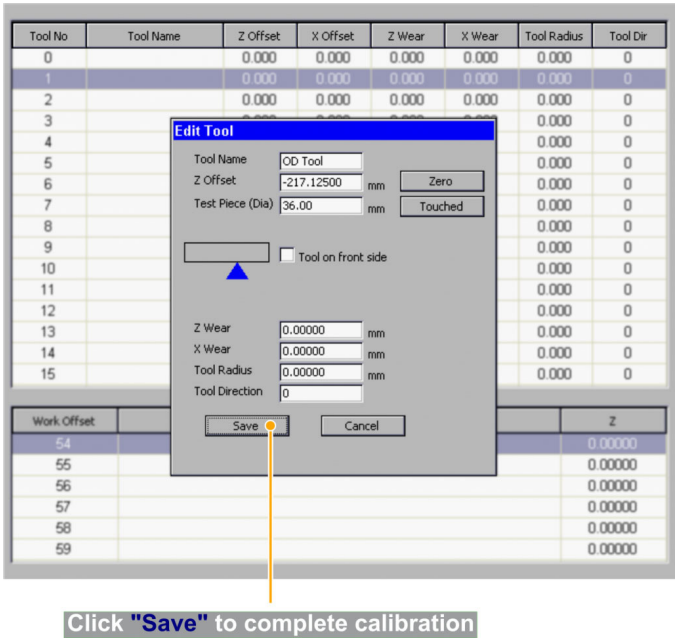


FIGURE 11

NOTE on Cutter Wear Offsets

On many CNC controllers, your offset direction for a front-side mounted tool and a back-side mounted tool would be different. In order to make the outer diameter of a part smaller, you would need to move X (-) direction for a front-side tool, and X (+) direction for a back-side tool.

When you choose front or back side on the tool edit page, the MASSO control knows which side of the part your tool is on. Therefore, any move towards the centerline of your part is an X (-) move regardless of your tool orientation (front or back side).

Thank you,
Sherline Products