

Z Axis Check & Adjustment (MVX Class Machines)

Part 1: Check the 3 focusing positions for correct table height.

DO THE FOLLOWING PROCEDURE WITH THE FLAT ALUMINUM TABLE IN PLACE ONLY. DO NOT USE THE HONEYCOMB CUTTING TABLE FOR THIS PROCEDURE.

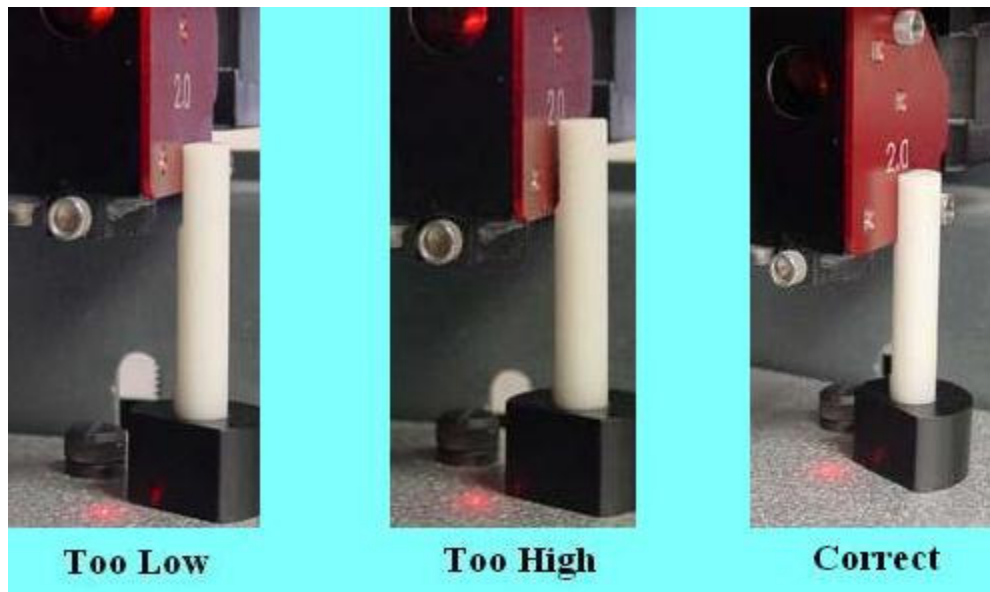
Refer to the diagram on the next page that shows the three focusing positions of the engraver:

Position 1 (Upper Left Corner)

Position 2 (Lower Left Corner)

Position 3 (Center Right)

The first step is set the table height in **Position 1** (upper left corner) by the focus tool. Make sure the focus tool is position correctly as shown in the image below:

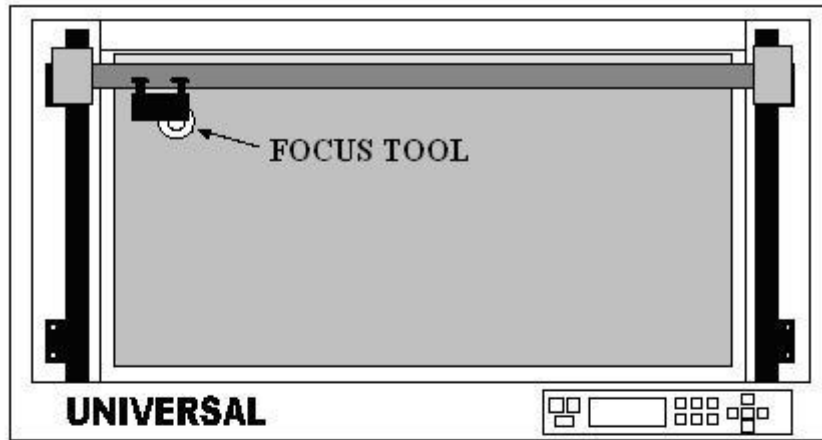


DO NOT MOVE THE TABLE ONCE THE HEIGHT HAS BEEN SET IN POSITION 1.

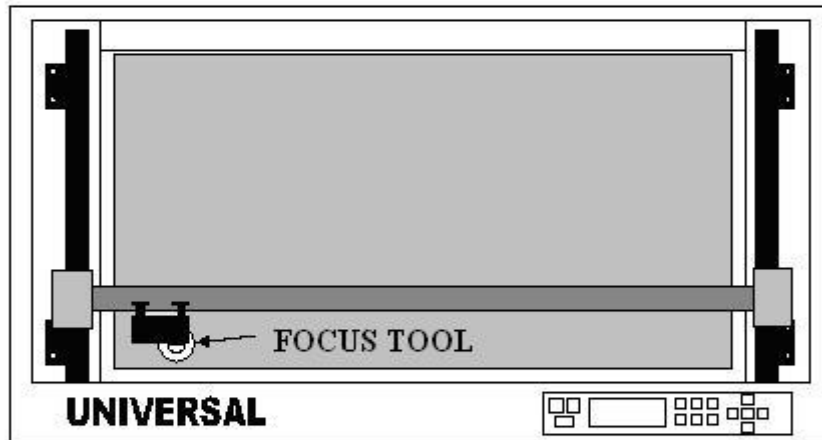
After you have the table height correctly set in **Position 1** (Upper Left Corner), move the focus carriage to **Position 2** (Lower Left Corner). Use the focus tool to measure table height in this position (Lower Left Corner). It should be the same height in Position 2 as in Position 1. If the table height is not the same, the table will have to be leveled – proceed to **Part 2: Adjust the table height** on page 3 of this procedure. If the height is correct, continue with the procedure.

After the table height has been verified correct in both Position 1 (Upper Left Corner) and Position 2 (Lower Left Corner), move the focus carriage to **Position 3 (Center Right)**. Use the focus tool and check the table height in this position. If the table height is correct here, double check Position 1 & Position 2 again to verify the table is correct in all three positions; If the table height is not correct in either Position 2 or Position 3 (as compared to Position1), then proceed to **Part 2: Adjust the table height** on page 3 of this procedure. If the table height is correct in all three positions, then table adjustment is not necessary and the procedure is finished.

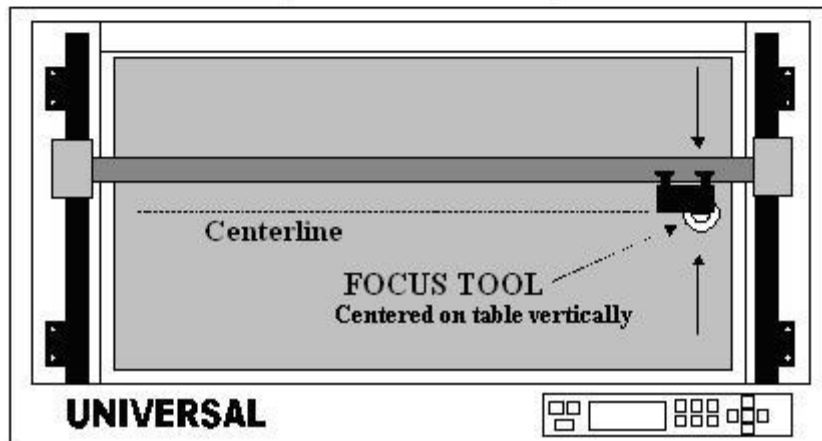
POSITION 1



POSITION 2



POSITION 3



Part 2: Adjust the table height.

TOOLS NEEDED:

Standard Allen Wrench Set

Flashlight

Rag or old glove

Household grade White Lithium grease (available at hardware stores for about \$3)

Move the Z table to perfect focus, as measured by the focus tool, in **Position 1** (Upper Left Corner).

If the table is seized up or otherwise will not move, then continue to next step.

TURN OFF THE ENGRAVER AND UNPLUG IT FROM THE AC WALL POWER SOCKET.

If the table is stuck down or otherwise will not move, it will be necessary to move the right lead screw by hand (Figure 5). Turn the lead screw until the table raises high enough where you can easily access the long cover plate that covers the middle portion of the Z serpentine belt. With an Allen wrench, remove all the screws that hold down this center plate and set aside. Be careful not to lose any of the screws.

With the cover removed, the center portion of the Z belt is now exposed. Moving the table by tugging on the Z belt will move the table much faster than by moving the right lead screw. Move the table up to the correct height for perfect focus in Position 1 (Upper Left Corner).

NOTE: When adjusting the Z-Axis Belt by hand, hold the two left side Idler Pulleys down while moving the belt, otherwise the Idler Pulleys can slip off and then you have to start all over again.

Once the table height is set, as measured in Position 1, do not move the Z belt again – this will throw everything off and the procedure will have to start all over again.

Move the arm to Position 2. Using the Focus Tool, observe whether or not you will need to raise or lower the table. To adjust the front left side of the Table up or down, rotate the entire Left Side Z-Plate, by hand, by loosening the (3) Lockdown Screws and pivoting the entire Plate on the Pivot Screw (figure 4). Observe the Focus Tool on the Table at the same time. Once obtaining focus in the lower left side of the Table, using the Focus Tool and rotating the Plate, tighten down the Lockdown Screws. Repeat steps 1 and 2 of this procedure until Position 1 and Position 2 are exactly at the same focusing height.

Move the arm to Position 3. Make sure that the Focus Tool is at the far right side of the table and centered vertically. Note whether you need to bring that side of the Table up or down in order to establish focus on the Table. If it is perfect, the procedure is finished. If table height is incorrect, then continue with the procedure.

Loosen the Belt Pulley's Lockdown Screw. This releases a clamping mechanism that attaches the Belt Pulley to the Lead Screw. With your fingers, rotate the Lead Screw by grabbing the threads of the Lead Screw (you will get a little grease on your fingers or you can wear rubber gloves), and adjust the Table until you are focused on the Table as Position 3 shows. You will notice that you can rotate the Lead Screw without it turning the Z-axis Belt (the big one). This is because you loosened the Lockdown Screw on the Belt Pulley. Once you have obtained focus, tighten down the Lockdown Screw on the Belt Pulley.

Install the Belt Cover with the (6) Buttonhead Screws. Apply fresh grease to all (3) Lead Screws. Turn the machine ON and run the Table up and down to work in the grease. Make sure that you have a nice even coating of grease, on the Lead Screws, throughout the entire length of travel of the Z-axis Table. After you have the Table running up and down smoothly, re-home the Z-Axis and the process is now complete.

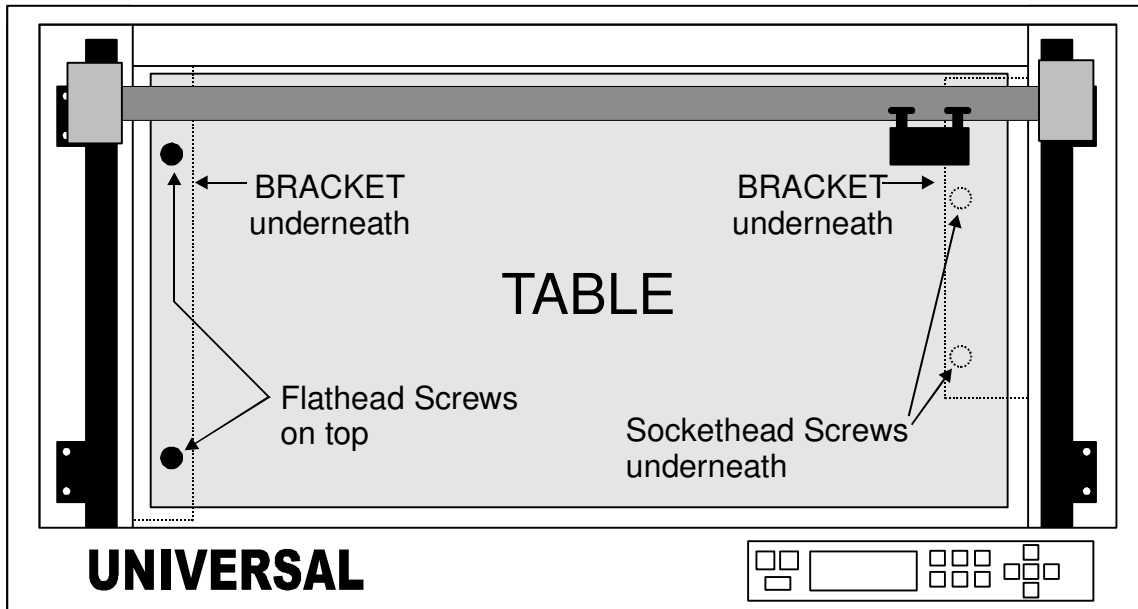


FIGURE 1

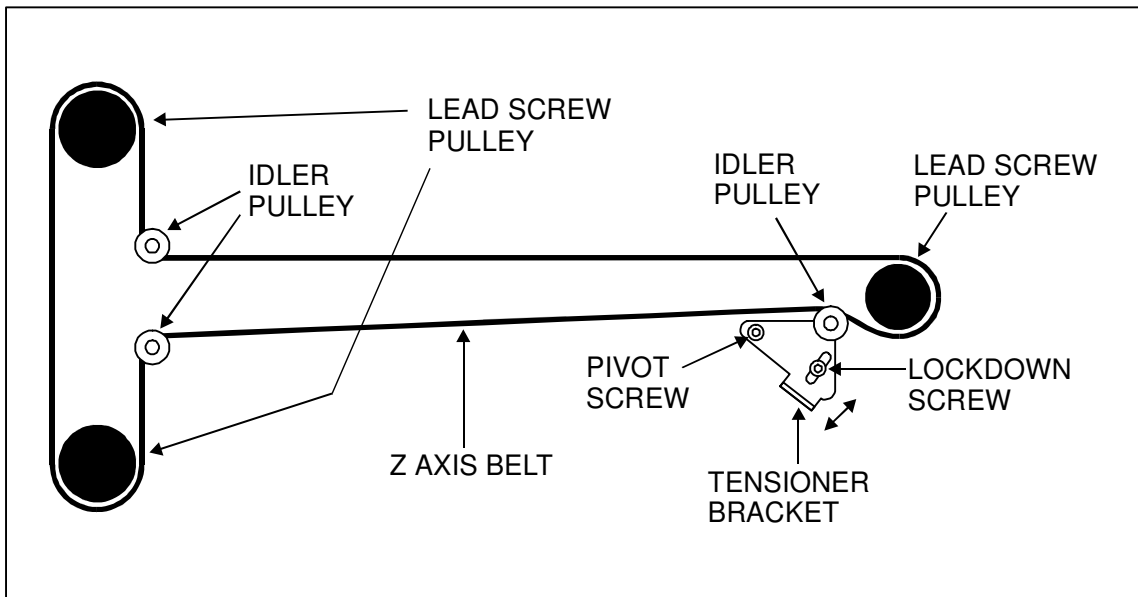


FIGURE 2

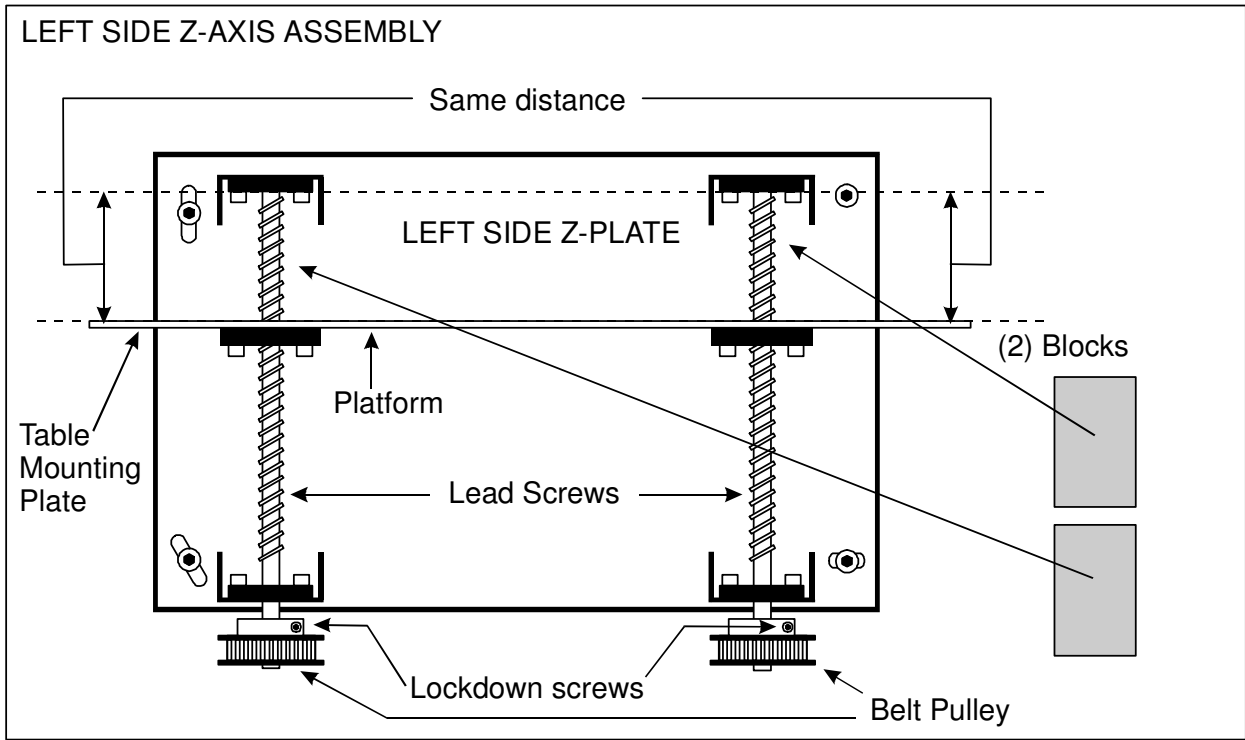


FIGURE 3

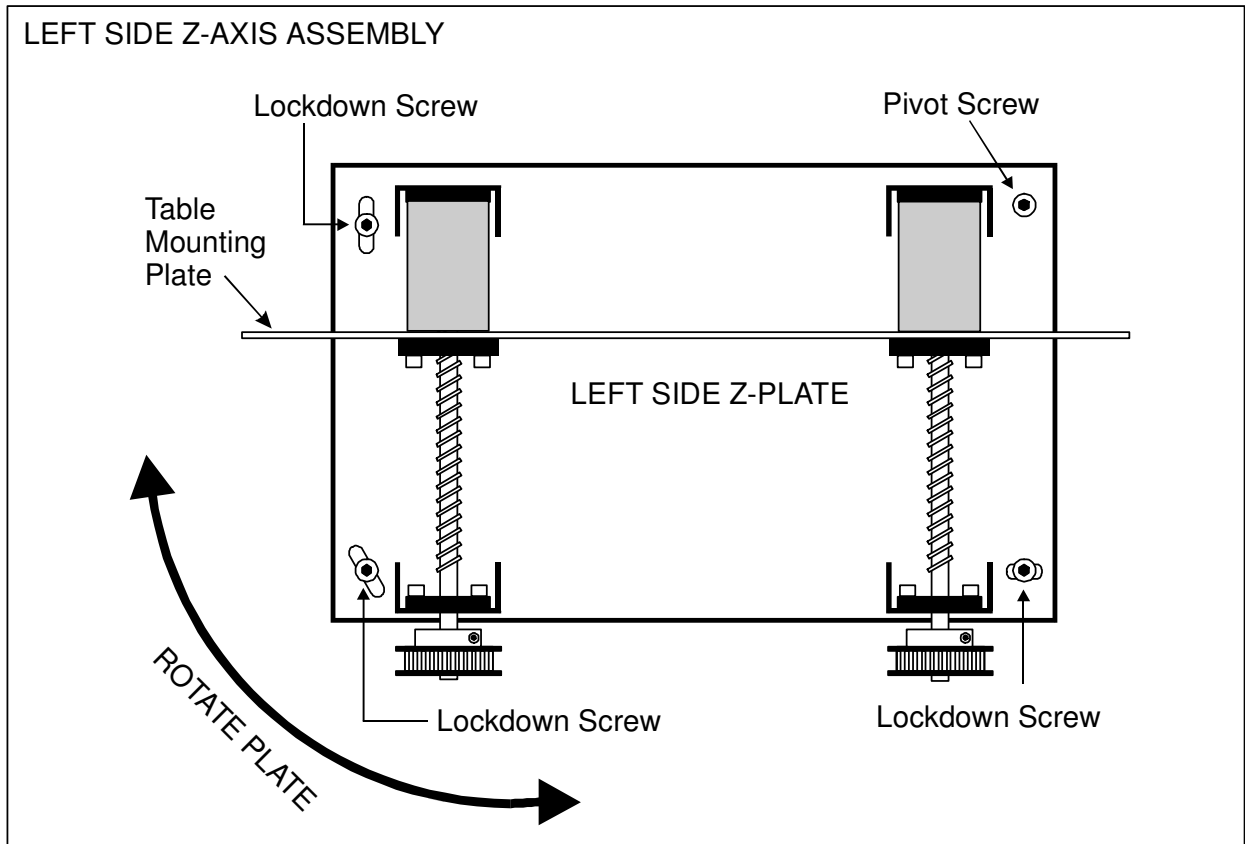


FIGURE 4

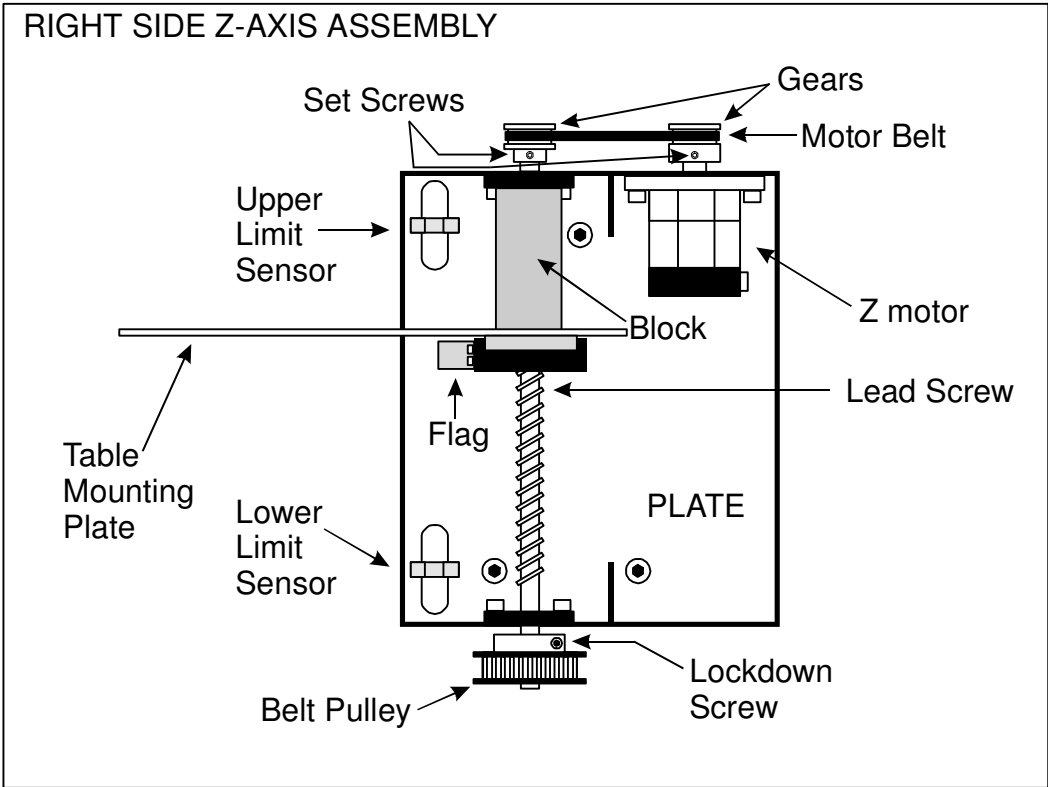


FIGURE 5