



Mechanical Maintenance Guide

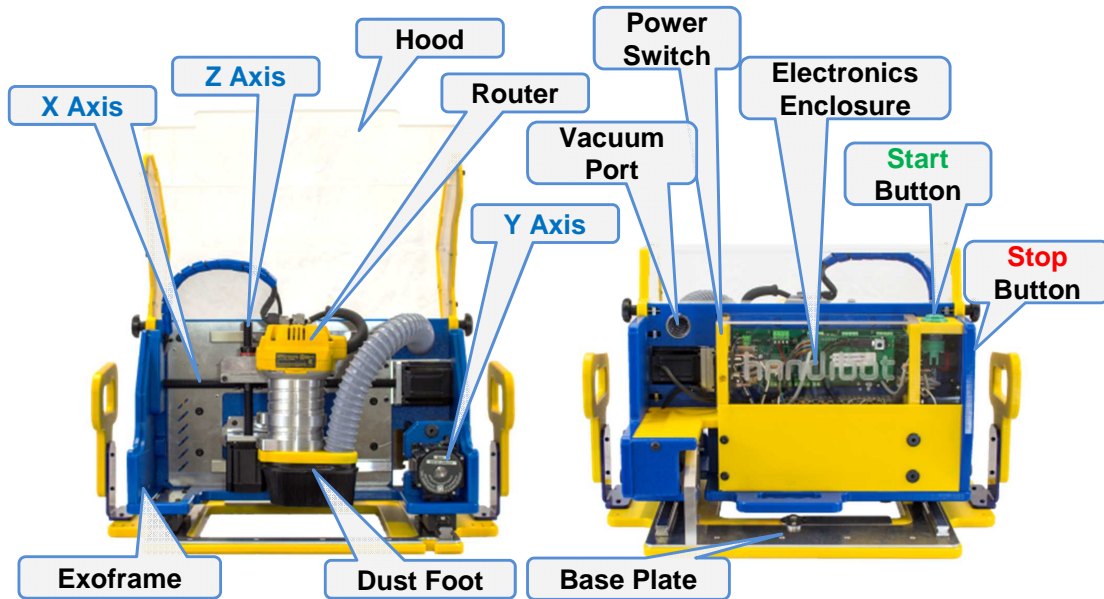
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If your Handibot is not performing as you expect it to—it may be in need of some maintenance. Rough handling during shipping, a crash during cutting, or just typical wear and tear may create the need for a quick tune-up. This guide will help you quickly check your tool over for any mechanical issues that may be hindering the performance of your handibot.

If this guide doesn't locate your problem, refer to the electrical maintenance guide for further troubleshooting of the tool electronics.

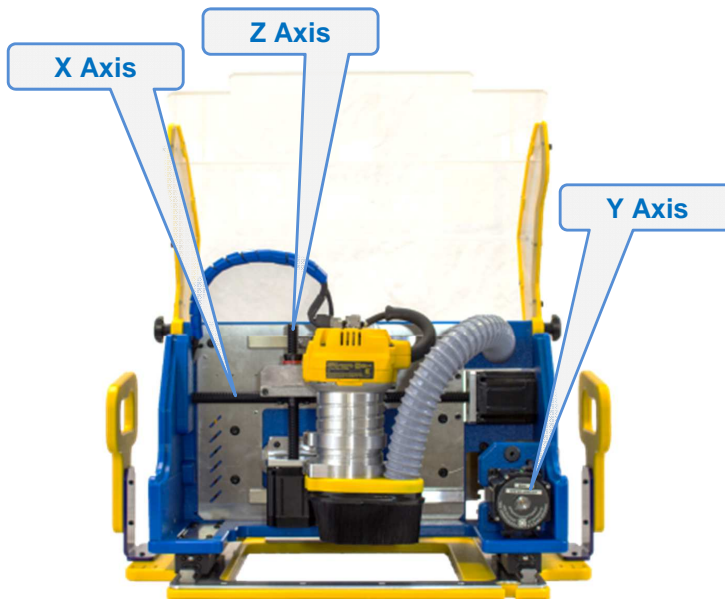
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First, a quick overview of Handibot anatomy.



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The most obvious mechanical problems with the handibot will be a lack of motion in one of the three axes.



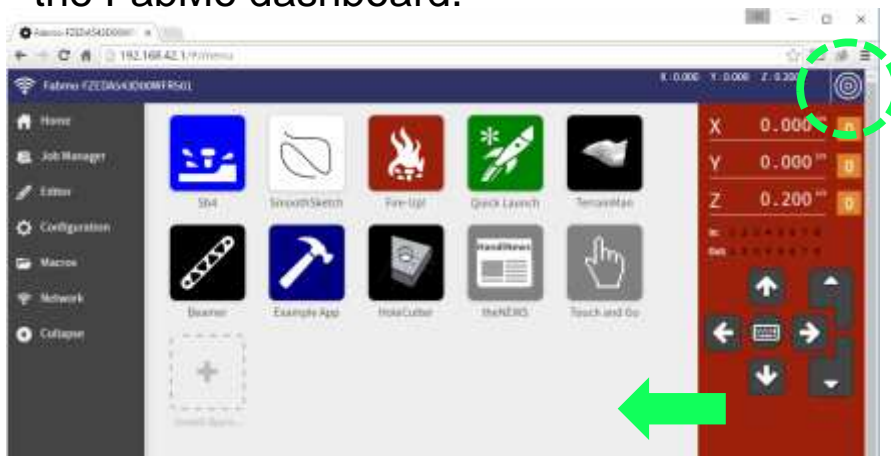
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Always check from environmental obstructions to the motion of your Handibot—A wall, a person, a piece of wood—these can all block the movement of your Handibot.



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First, let's test the motion in each axis. If you're unable to connect to and control the tool, please refer to one of our guides on "hooking up" to your handibot. Once you're connected, open the manual controls of your Handibot by clicking the "onion" button on the top right of the FabMo dashboard.



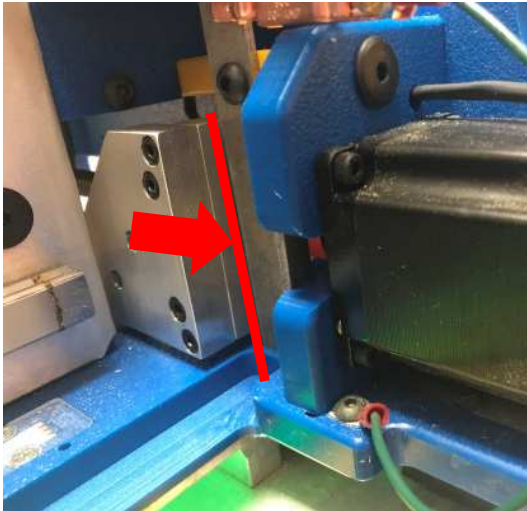
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First, try moving the Y axis. Pressing and holding either of these buttons should cause the tool to move in a smooth, continuous manner. Tapping these buttons will cause the tool to make a quick 0.025" move.



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The Y axis should have a little more than 8 inches of travel. At each end of travel the tool frame will prevent further movement in the Y axis.



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Move the Y axis through its full travel multiple times to verify that it can move smoothly in both directions. If movement seems unsteady, or if the tool stops moving completely—we will need to troubleshoot this axis.

If an unexpected stop in motion is accompanied by a loud squeal (that is the motor trying to turn) then your Y axis performance can be improved by a quick adjustment in its alignment. Please refer to “Aligning Y Axis”—this procedure can be done using the tools that were included with your handibot.

9

If the Y axis motion is inconsistent or the Y axis can move in only one direction—the problem may be with the “anti-backlash nut”. This is the component that grips the threaded motor shaft, and converts rotary motor movement to linear thrust. The figures below show what the nut normally looks like on the Y Axis.



From the back



From the front

10

If it appears cracked, or pieces are missing, email Handibot support and we will send a new one your way. Refer to “Replacing Y Anti-Backlash Nut” for instruction on how to replace this part.



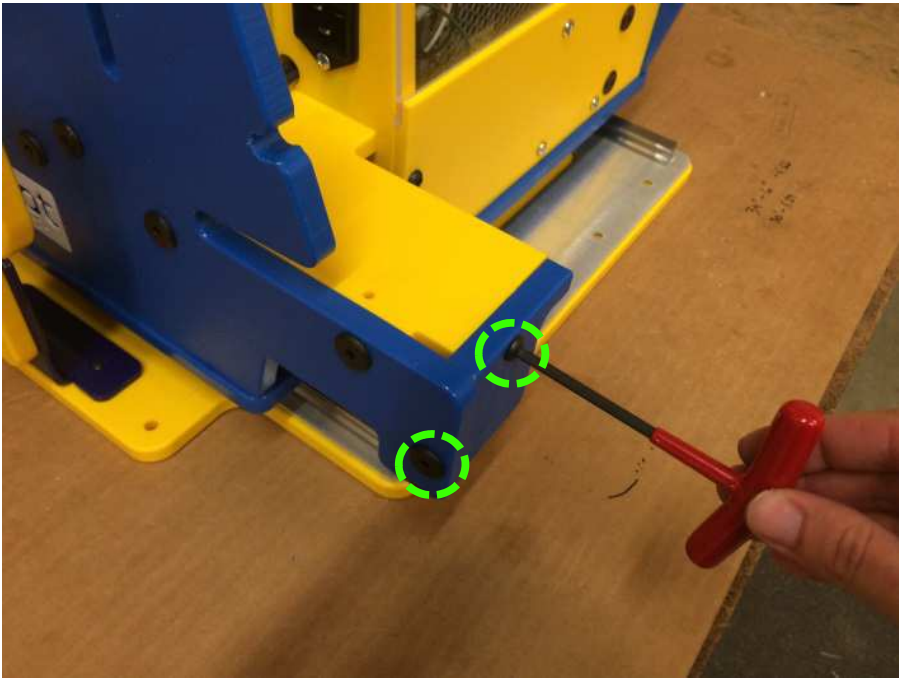
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If the tool is older—you may want to check that the bearings are running smoothly. To do this, you’ll need to disconnect the “anti-backlash nut” from the Y axis motor. Start by removing the Y motor guard—two screws hold it in place.

Remember to power down and unplug your Handibot before removing any screws!

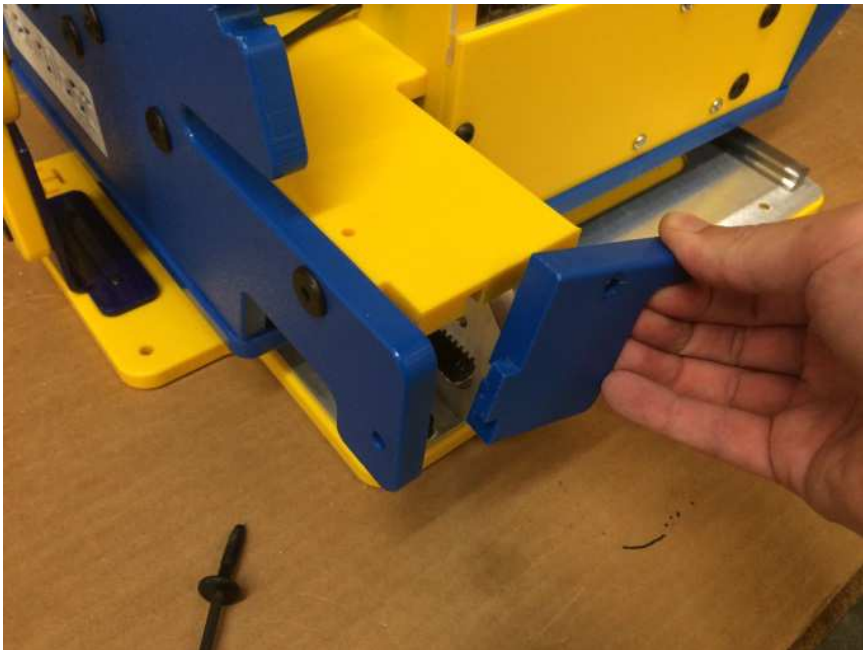
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Using included 4mm wrench, remove the two screws holding the Y Motor Guard in place.



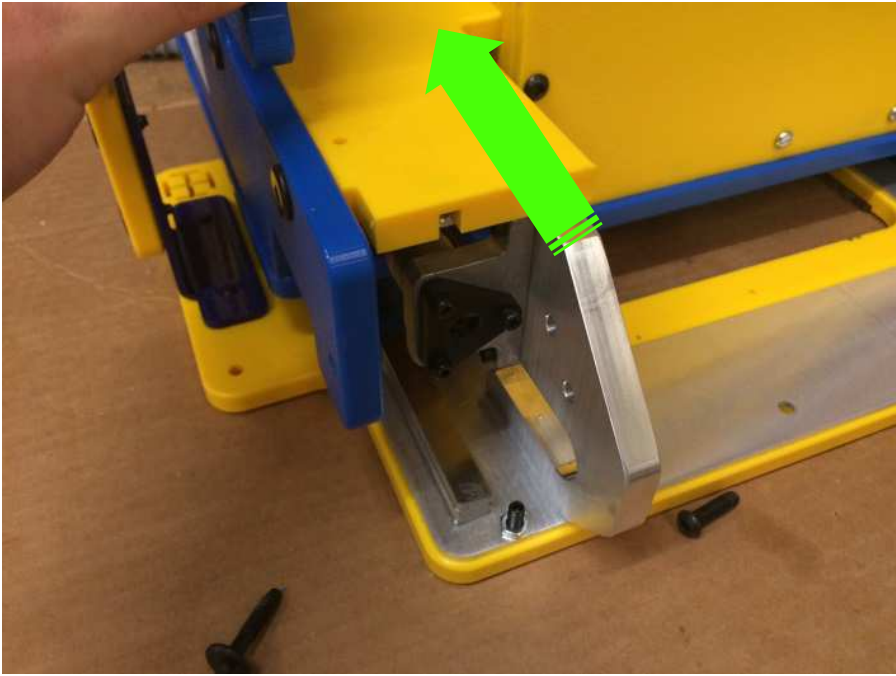
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Pull the Exoframe backwards and slide the Y motor guard out from the tool frame.



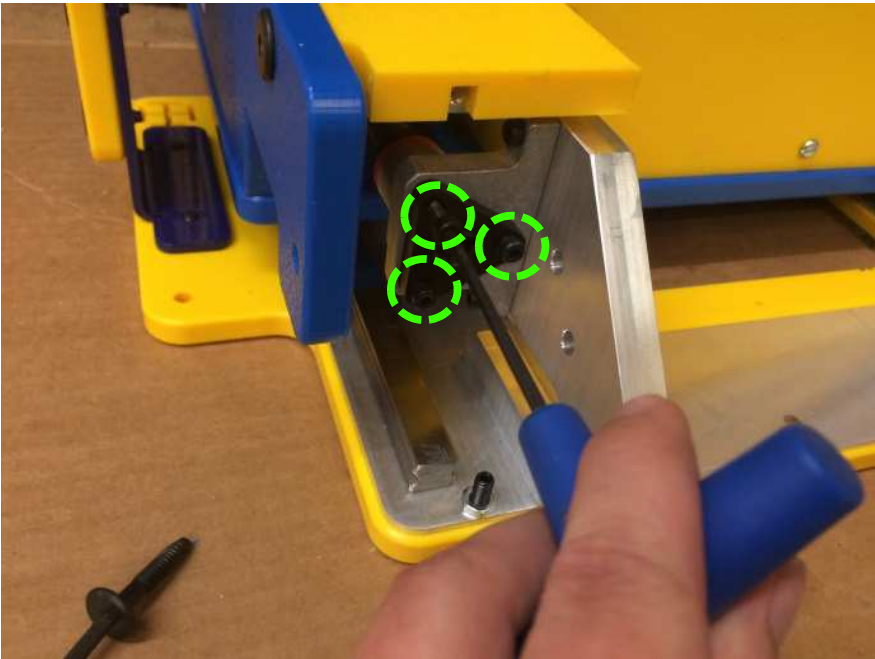
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Push the Exoframe forwards until the Anti Backlash Nut is easily reachable.



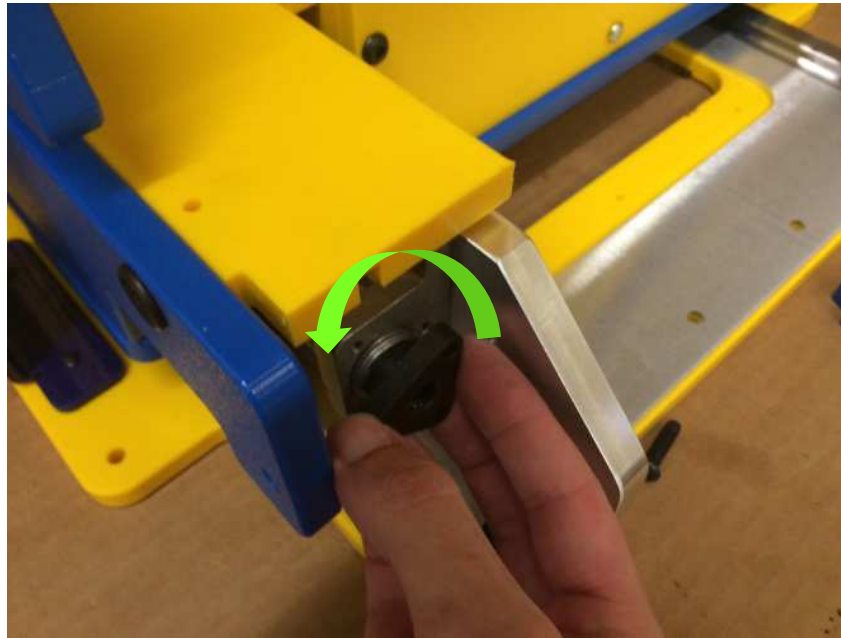
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Using a 3mm wrench, remove the three screws holding the Anti Backlash Nut in place.



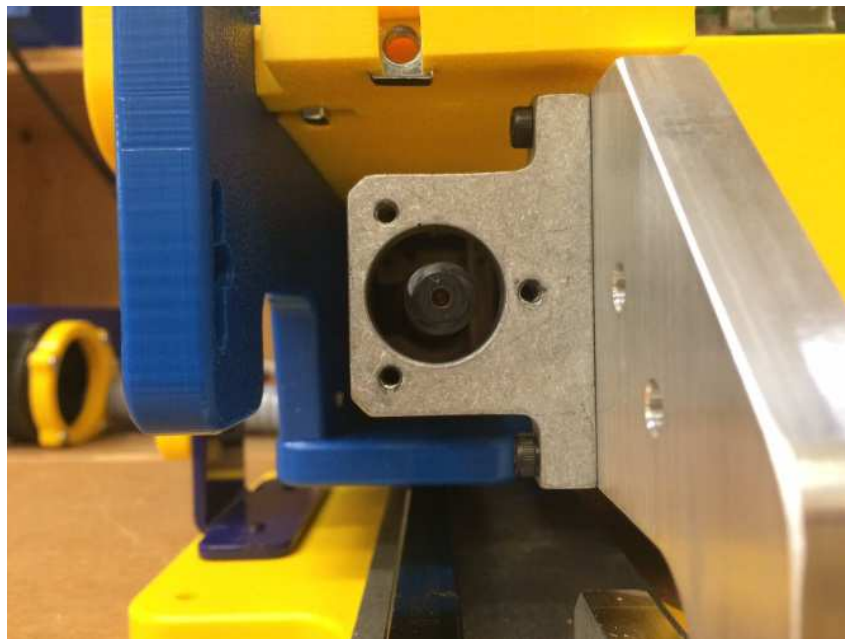
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Spin the Anti Backlash Nut counter clockwise to remove it from the motor shaft



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The motor shaft should be free now.



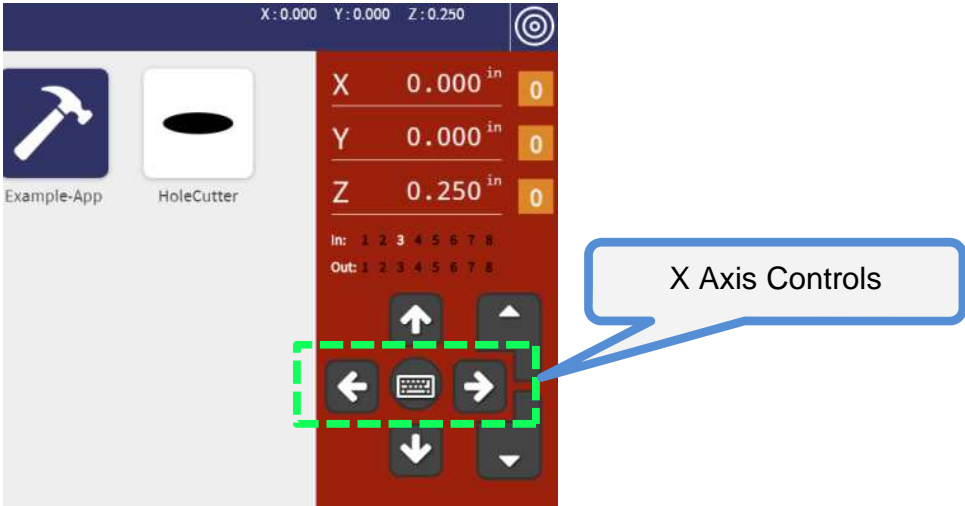
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Manually slide the frame of the handibot back and forth along the Y axis rails. Be careful not to slide the tool too far—if the bearings leave the rails, they can be difficult to get back on!

Check for any sticking points in the motion of the tool. If you find that the tool is unable to get past a certain spot—refer to “Manual Alignment”

19

Next, lets try check the movement of the X axis. These two buttons move the X axis left and right.



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The X axis has a little more than 6" of travel. On the left end of travel, motion is limited by the tool frame. On the right end of travel, motion is limited by a stop-bolt.



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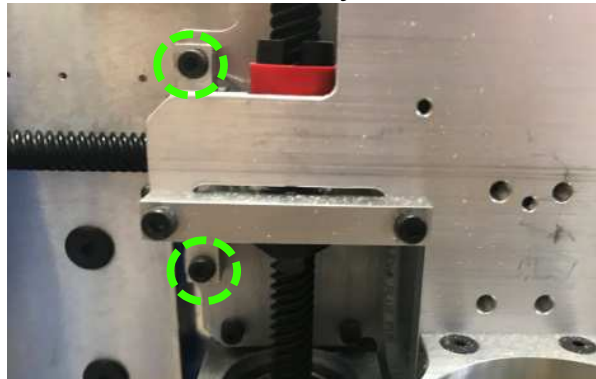
Try moving the tool back and forth multiple times in the X axis. The movement should be smooth and continuous. Here, it is much easier to observe the different components of the drive system. Check the rails for debris, check the anti-backlash nut for damage.



22

If you find that the motor is stalling and preventing full motion of the tool, refer to “Aligning the X Axis”.

If you suspect an issue with the bearings/rails, disconnect the anti-backlash nut by removing the two screws connecting the nut block to the X/Z Carriage Plate. This will allow the X axis to slide back and forth freely—check for binding.

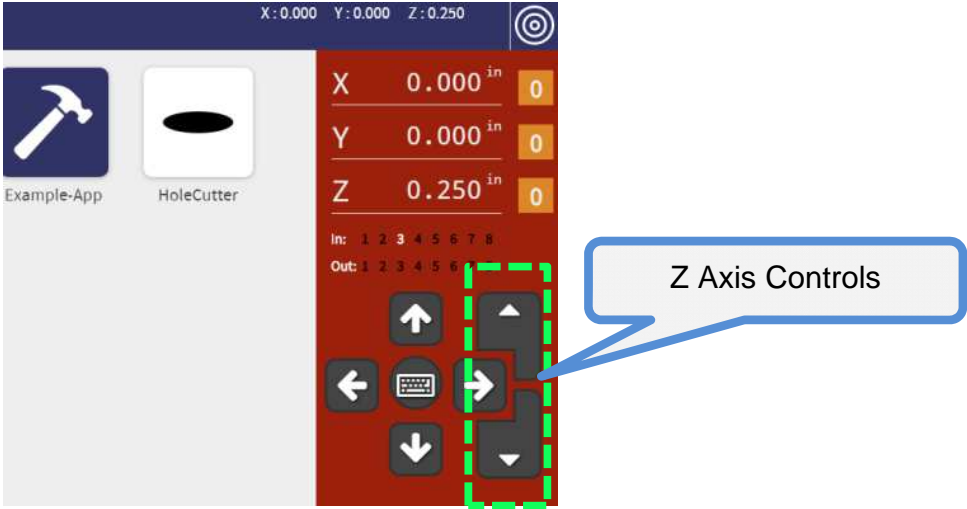


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It is unlikely that damage will have occurred to the anti-backlash nut—but it is possible that the motor shaft itself may be damaged. If the X axis experiences excessive stress, the shaft can break off from the motor. If it sounds like the motor is rotating freely, but the tool is not moving—this may be the case. Send an email to Handibot support for more instructions.

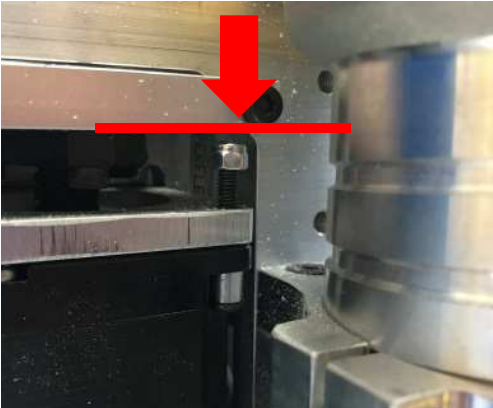
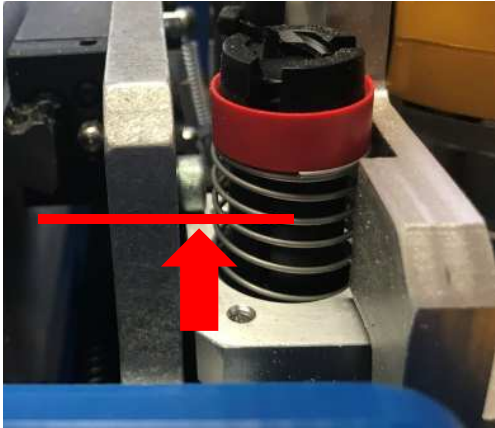
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Finally let's take a look at the Z axis. These two buttons move the Z axis up and down.



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The Z axis has a little over 3.5" of travel. At the top of travel, motion is limited by a stop bolt. At the bottom of travel, motion is also limited by a stop bolt.



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Move the Z axis up and down multiple times. Be aware that as you move the Z axis down, the bit in your router may contact the table below your Handibot. The Z axis is strong enough that it can lift the whole tool up! But your bit may not be that strong...best to remove the router during this test.



27

Check the anti-backlash nut for damage. Check the Z rail for debris. If these are both OK but the Z axis is still binding, refer to “Aligning the Z Axis”

If you suspect an issue with the bearings/rails, disconnect the anti-backlash nut by removing the two screws connecting the nut block to the Z Plate. This will allow the Z axis to slide up and down freely—check for binding.



28

If this guide didn't help narrow down your problem—Handibot is always available for further support. Contact our web support team by visiting our support page:
<https://handibot.com/support.php>