The Height Control Motor is a Servo Motor with an on Board Computer Chip with a Specific loop Program. This Program is telling the motor to come down and sense resistance. When that resistance is felt the Servo motor is seeing that resistance, and is then telling the program to back off to its pre-determined height then telling the height control box to fire the torch.

If for any reason the Height Control Motor encounters more resistance in it travel to sense the plate make the servo motor work harder to maintain its current position eventually over heats the motor causing height control motor failure.

Early indication that there is a problem is when a g-code file is started in the software rapids to its first cut; the height control starts to come down but stops maybe halfway down or even an inch. The motor thinks it is sensing material but in reality not then firing the Torch. This would be an early indicator that there is more resistance seen in the lifter station.

A temporary solution to overcome the problem until proper maintenance can be provided to the lifter station can be done by going to the Setup menu in a Blue Screen Height control model and scrolling down to a setting called Set Touch Torque. The Touch Torque number can be increased in value to tell the height control to overcome any extra resistance it may see when traveling so that the torch can be able to sense the material.

A Lifter Stations normal Touch Torque range is 15-18.

If that number goes to 19 or higher it would be highly recommended to do some maintenance. It is best to take the lifter station off the gantry when doing this so that you won't have gravity working against you.

Excessive Touch Torque is an indication of one of two things, alignment or build up. On a new AVHC the assembly will be clean so build up is not a factor but in the manufacturing and

shipping process the two parallel rails that the assembly rides along can become misaligned. To adjust these rail loosen up the two plates on either end of the assembly so that the rails can be manipulated.
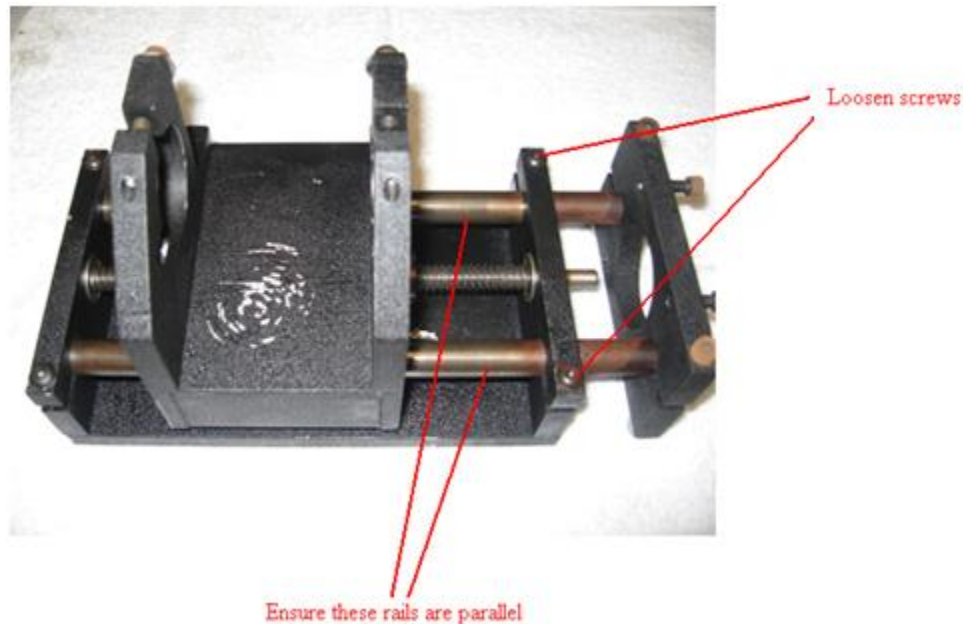

After aligning the rails if the AVHC still does not travel to the material or if the AVHC has been used for a while prior to this problem happening what may be causing the resistance is build up or dust on either the rails or screw that the AVHC moves along. To clean the AVHC begin by disassembling all of the components and lay them out on a clean towel. Clean each part with 3-in-1 oil or other light air tool oil, WD-40 or similar solvents should be avoided as they can corrode some components of the AVHC over time. Once all parts are cleaned reassemble the AVHC, ensure that the guide rails are parallel and that the screw can move the slide assembly freely just by hand turning the screw.

►If the table begins its motion before the plasma cutter has pierced this indicates an incorrect delay setting.   Depending on how the AVHC is set up the delay will be changed in various places. If **Pierce Complete** is enabled then the delay setting will be in the AVHC under **Pierce Delay**. Increase this time until the machine pierces completely prior to moving the motors. If **Pierce Complete** is disabled the delay setting is changed in under **Configuration > Programming > M-code Definitions**, the delay is the **Plasma On** setting.

►While cutting in **Auto** mode the AVHC can rise up or dive into the material. If this occurs a common cause is the **Set Voltage** not being set to the correct value. Refer to the Test Cutting section steps on calibrating the **Set Voltage**. If the **Set Voltage** has been correctly established and the AVHC still fluctuates wildly ensure that the ground clamp is attached to the material. If the ground has a weak or intermittent connection with the material then the **Current Voltage** can fluctuate when it shouldn't be.

There are some components in the lifter station that need to be checked for excessive wear that would contribute to the added resistance.
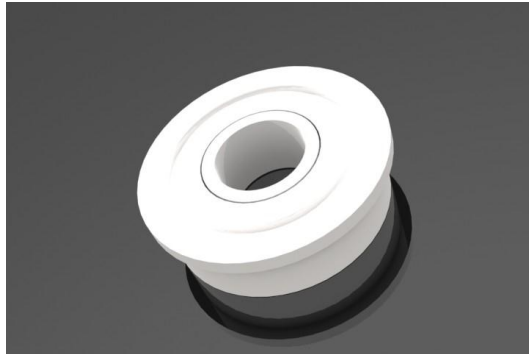
 AVHC Flange Bearings

Place you finger on the center. You should be able to feel the bearing turn freely in the center. If there is grinding sensation felt replace the bearings with new ones.

 Bronze Nut

With the Lead Screw removed inspect the threads for wear. Over a period of time Plasma Dust and Debris will accumulate in the threads adding to additional resistance when traveling. Using Q- tips and WD 40 you can clean the debris away from the threads. If after cleaning the threads you see thread wear replace those with new ones.
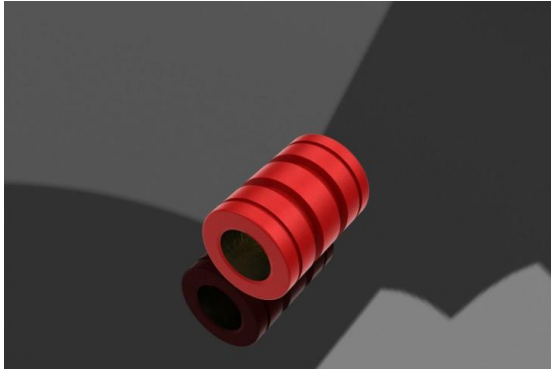
AVHC Linear Bearings

There is a total of 4 of these located in the main block. Leaving the block assembled place on of the Linear Rods through the block. If there is excessive play you will want to replace these bearings. Just as a note one side may feel tighter than the other side. This is due to the block itself is machined a little smaller to keep the block straight to the plate. The bearings can slide out on one side versus the other side requiring a little physical effort to get the bearings to come out.
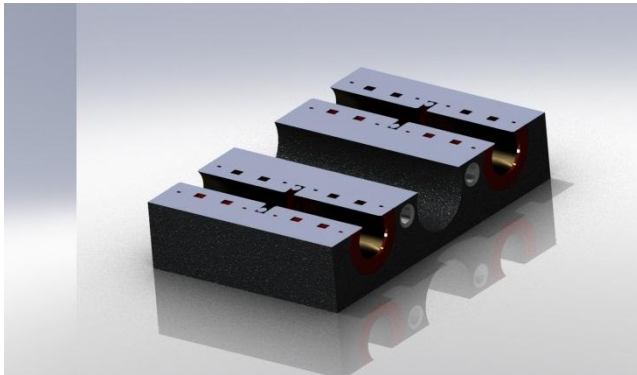
Bearing Block
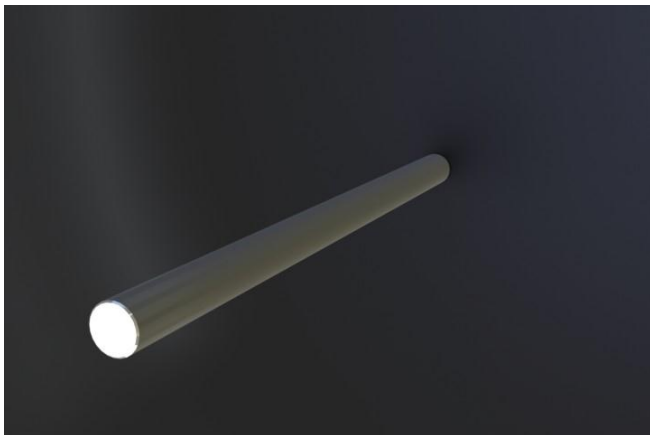
AVHC Linear Rods

Check the two rods for excessive buildup of debris including rust if you are working in a wet area or where humidity is high.   If there is a buildup of residue that cannot be removed replacement rods will be needed. This can be prevented by keeping the rods and the lead screw lubricated with 3-1 oil.

AVHC Smart Motor Mounting

When mounting the AVHC motor to the motor mount plate make sure that the upper set screw on the Spring Coupler is still loose. Leaving the set screw loose will allow the AVHC motor to mount completely flush to the motor mount plate. Insert the four hex bolts and tighten them down securing the motor to the plate. Once mounted tighten the upper set screw to engage the shaft of the motor to the Spring Coupler. Reattach the Data Cable to the top Data Connector on the motor.