

Arc Voltage Height Control Troubleshooting

If the torch is diving into the material it could be that the arc voltage is set too low. The torch will automatically search for the voltage if it cannot find it, thus it will look for it in the material or closer to the power source to maintain its voltage level. To correct this, an increase in the voltage setting may be necessary.

If the Arc Voltage is set too high, the arc may actually spike up and stay further way from the material than normal, or may move too far upward and lose the arc altogether. The initial arc will penetrate the metal but it may not be able to maintain its voltage setting, thus it inevitably moves too high off the material and the arc is lost. To correct this, a decrease in the voltage setting may be necessary.

When the height control unit is being used, the dwell timing should be tested at 3 seconds + (after the torch makes its initial pilot arc and pierce cut) and 1.5 sec after the torch has turned off. Incremental steps should be done to dial in the dwell by an increase or decrease of .25 at first then .10 or .05 to fine tune the machine. You may change these settings in your driver software by opening the Configuration Menu, then click on Custom M-codes. Code 50 is for Plasma ON (3 sec. +/-) and Code 51 is for Plasma OFF (1.5 sec. or less). Make your adjustments in the column on the right under the heading "Delay (sec.)".

If there is no height control utilized, the dwell for the torch on should be around 1.5 sec, and 1 sec after torch goes off. Dialing in you dwell time can be done in increments of .10 +/-.

Refer to the Hypertherm or other manual for your plasma torch cutter, use the settings by material thickness to help dial in your program.

Make sure that your polarity wires are connected especially when running the program with the height control unit. You may use the manual height control without using the polarity leads. Adjust the height of the torch manually so that it is a minimum of 1/8" distance between material and torch. You may need to raise to higher position if material is not completely flat. The Manual setting will not adjust to the material, so be aware of any material warping that may occur.

If the Torch moves toward the material, touches it, then backs off, fires, pierces, then backs off in steps, loses arc but continues to follow program, Check the slow burn fuse in the height control unit. This fuse is a 1 amp, 250 volt, slow-blow, and can be found at Radioshack, part # 270-1063. If this doesn't fix the problem check the fuse in the machine interface

Using the Manual mode to pre-set the Auto mode

You can utilize the manual mode to double check your arc voltage settings by running the torch and watching the LCD readout on the Arc Height Control unit. When the initial cut begins, the torch will pierce the material then move along the cut path. While it is cutting watch to see what the LCD displays, usually it will be reading of somewhere between -100 to -200. The voltage reading that the torch settles into and consistently runs at should be the appropriate setting for use with the automatic height control mode. Run the same program again on unused material, Set your mode to AUTO, put the far left switch to SET, then dial in the settings that you previously read in the manual mode. Push the switch to READ

before running the program. The torch should now be able to cut your path with out any distortion toward or away from the material. Check and document your results.