# Trucut THC Instructions

The Trucut automatic height control works by reading the tip voltage from the plasma and raising/lowering the torch to make that voltage match a voltage set by the operator on the THC remote control.  The remote consists of 5 screens, each containing different functions.  We will discuss each screen and what each does….

- **Home Screen**

  The home screen is where you will leave the remote 99% of the time.  Here you can turn the THC on and off by pressing the ON/OFF button, increase the set voltage (height) by pressing the up arrow and decrease the set voltage by pressing the down arrow.  The home screen also has a indicator tag in the upper right corner to indicate whether the anti-dive feature is active.   Current tip volts are displayed above set volts.  Press the right arrow to move the next screen.

- **Motion Sensitivity**

  Motion sensitivity adjusts the reaction time of the THC.  A higher number here makes the THC respond faster to a change in height, but also makes it more unstable and "jittery".  A lower number makes the motion more stable and smooth.  This setting defaults to "2".  To change the sensitivity, press the up and down arrows.  Ou can set sensitivity between 1 and 6.

- **Anti-Dive Sensitivity**

  This controls the point at which the internal anti-dive activates.  This is a percentage.  For instance, a setting of 8 would cause anti-dive to activate at 8% above the set voltage.  If set voltage were 120V and Anti-Dive Sensitivity were 8, anti-dive would engage and inhibit Z motion when it sensed 129.6V.

  Why is this important?  When the plasma crosses a gap or hole, the tip voltage goes up and the response from the height control will be to lower the torch to reduce the voltage.  By recognizing that we crossed a gap, we can engage anti-dive and prevent the torch from diving into the gap or hole and crashing.

  If you notice the torch diving into holes, lower this number.  If you are cutting material that tends to warp rapidly, like light gauge steel or aluminum, raise this number to prevent anti-dive from engaging accidentally.  This number defaults to 14.  To change the number, press the up and down arrows.  To effectively disable anti-dive, enter a high number here, such as 30.

When Anti-Dive engages, a flag labeled ANTI-DIVE will appear on the upper right corner of the home page on the remote. When the ANTI-DIVE flag is visible, there will be no Z axis movement.

- **THC On Delay**

This number controls when the THC engages. You can use this delay to make the torch clear slag on thicker metal. For instance, if you pierce ½" plate at .25" and engage the height control instantly, the torch could dip into the slag puddle left by the pierce. Increasing the delay would make the torch travel a short distance at pierce height before dropping to cut height, clearing the slag puddle.

This number defaults to 2. To change this number, press the up and down arrows.

- **Manual Height Control**

This screen allows you to control the torch height manually while cutting. To use this feature, the THC must be turned off on the Home screen. This feature is particularly useful for those using an Oxy/Fuel torch where no voltage based automatic height control is available.

# Basic Operation

For the height control to operate properly, you must first set the target voltage, or set voltage. This is done using the up and down arrow keys on the home page. There are two ways to determine a starting point for the set voltage.

- Open the Hypertherm manual that came with your plasma and look at the cut chart for the amperage and consumable you are using. Look under Best Quality Settings and enter the voltage from the chart on the THC remote.

- Turn off the THC from the home screen and cut a small sample part. Pay attention to the Tip Volts on the remote. Set the set volts to the same number. This will get the height close. After you start cutting you can dial it in.

Once you have a starting point for the set voltage, you can dial it in closer while it's cutting. As you change the set volts while cutting, the height will respond instantly. If the height looks too high, lower the set volts. If it looks too low, raise the set volts.

Once you have it dialed in, make a note of that number for the amperage and material you are running.  After a few jobs, you'll remember the set volts, and if you notice it is off a little, you can adjust it on the fly without ruining the job.

Pierce height has little effect on the cut height since cut height is controlled solely by arc voltage.  If the pierce height is off when the cut begins, the height will move rapidly to the cut height determined by the set volts entered on the home screen when the THC enables.