

Connecting and Zeroing AMP Clamps

Connecting an AMP Clamp to the eSCOPE ELITE requires a BNC Cable, a Ground Extension Cable, and an AMP Clamp.

Trivia – The connector was named the BNC (for Bayonet Neill–Concelman) after its bayonet mount locking mechanism and its inventors, Paul Neill, and Carl Concelman.



Connecting the AMP Clamp

Precautions

- Make sure there is no debris in the clamp jaws
- Carry new quality 9v Batteries, there is a high probability yours are either dead or low voltage.
- May sound strange but tape the on off switch in the off position when done.
- Do not go around both wires, this will cancel the signal and give you a flat line
- Will not work on shielded or taped wires.

For illustration purposes, we are going to connect the AMP Clamp to Channel 1.

You should always connect the ground on the scope to the negative battery post of the battery.



Connect the BNC cable for Channel 1 to the eSCOPE ELITE.

The yellow banana plug end will insert into the red connector of the AMP Clamp.

In your kit, there are ground extension cables (outlined in red below).



Please be aware that the extension ground cables used for AMP Clamps and ATS eCOPs can have two different lengths on the ends. The longer end (does not always have a red cap) goes into the AMP Clamp or eCOP and NOT the BNC Cable.



This is what it looks like if the longer end is inserted into the BNC Cable. There will be about a quarter inch of exposed metal that if it encounters the positive battery post or a positive wire it may blow the ground fuse.



Connect one end of the ground extension cable to the connector on the BNC cable (shown below) and the other end into the black connector of the AMP Clamp.

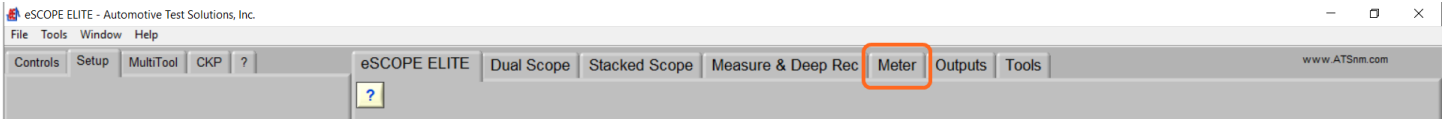


The jaws of the Amp Clamps have an arrow that indicates current flow. If the amp reading seems reversed, you can simply click on the INVERT button to correct, there is no need to reposition the AMP Clamp.

1. Zeroing the AMP Clamp

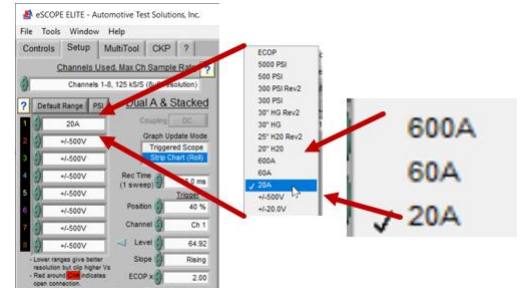
Set the eSCOPE ELITE tab to Meter.



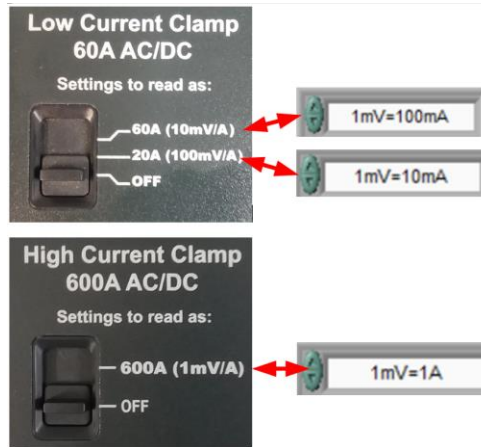


Set the slide switch on the AMP Clamp to your desired setting.
 Verifying the Power Light is Green, and the LO BAT is not illuminated.

Time to zero it.
 (Do NOT have the clamp around any wires at this point)
 Set Channel 1 to the appropriate AMP Clamp setting.
 Either 20A, 60A or 600A.



Note: Some versions of the AMP Clamp may show the values shown below:



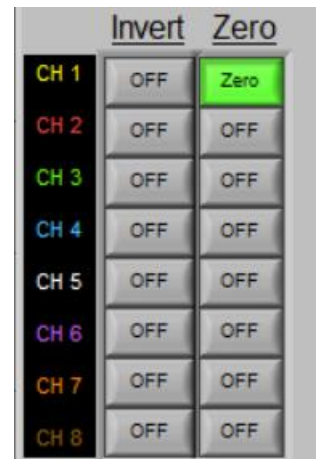
The Low AMP clamp is a simple push of the blue zero button.
 On the High AMP clamp, see that attached picture and turn the zero knob until Channel 1 reads zero or close to zero.



Now you have zeroed the AMP Clamp electrically, let us zero them positionally.

Basically, that means the amperage readout will start at zero on the oscilloscope and reflect accurate values. This is accomplished by turning Zero on for Channel 1 as shown.

AMP Clamps are directional, the arrow in the jaws of the clamp indicate the direction of current flow. Please ensure the jaws of the AMP Clamp are clean and closed to capture a proper signal.



Now place the AMP Clamp around your wire, ensuring the clamp jaws are closed.

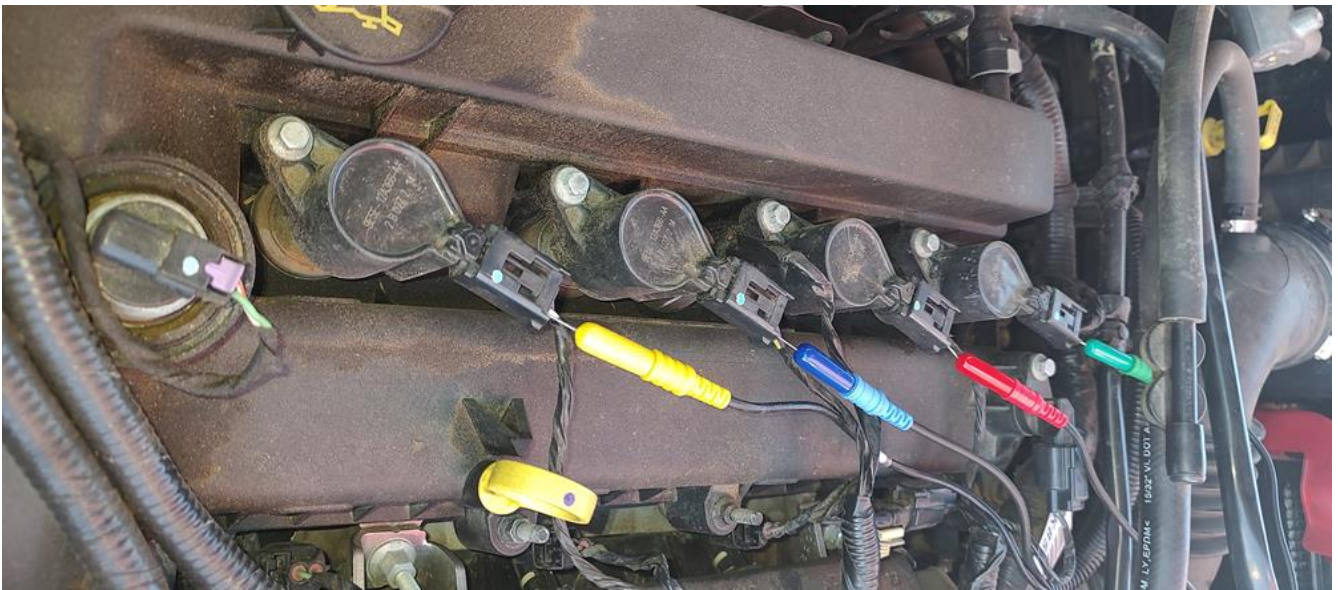
I am using my 2012 Ford Escape XLT 2.5 for the following examples:

Ignition Coils

I am back probed into all 4 coils, and I have the AMP clamp on Fuse 26.

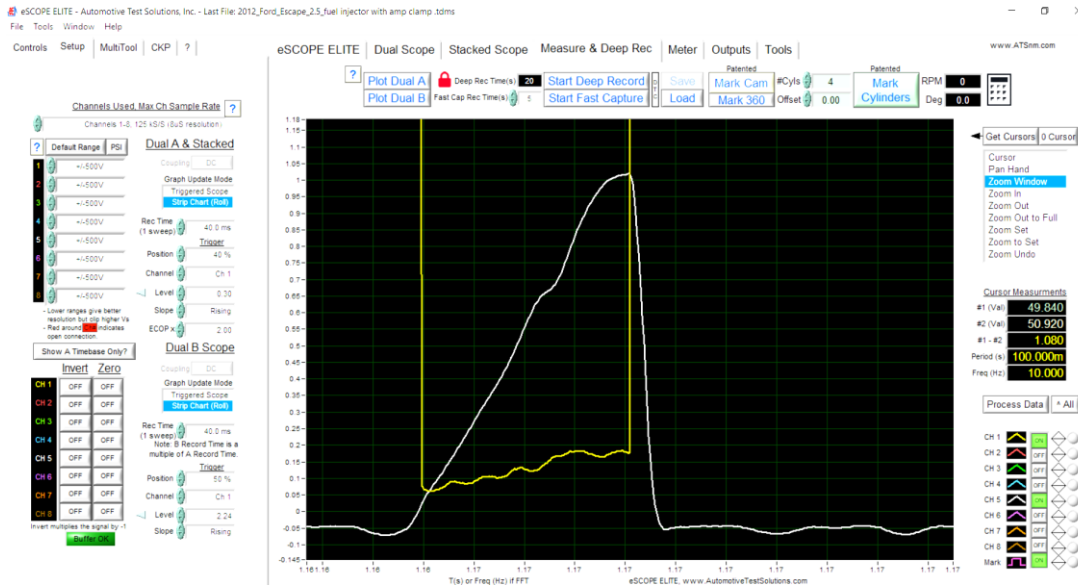
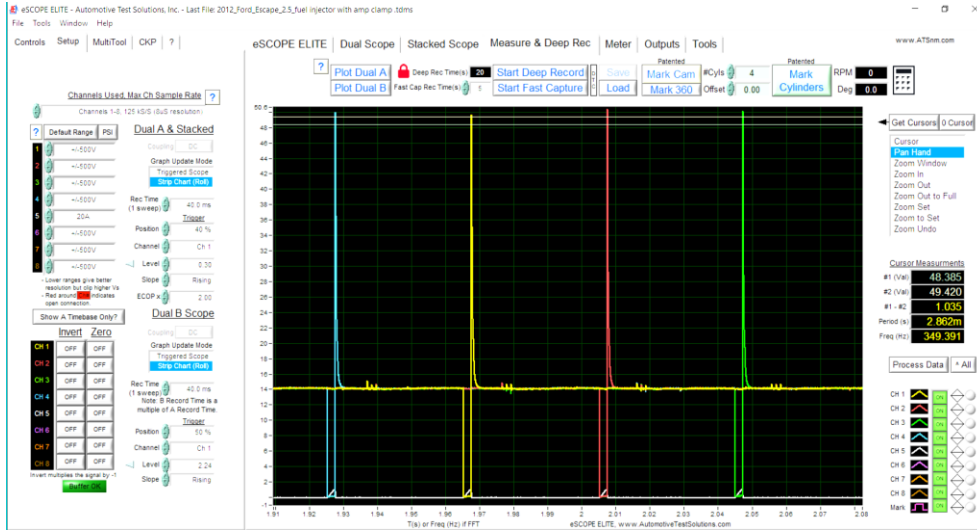
Now this does not work on all vehicles but on the 2012 Escape, Fuse 26 only powers the ignition coils.

I did back probe following the firing order 1-3-4-2



Fuel Injector Capture with Current Ramp

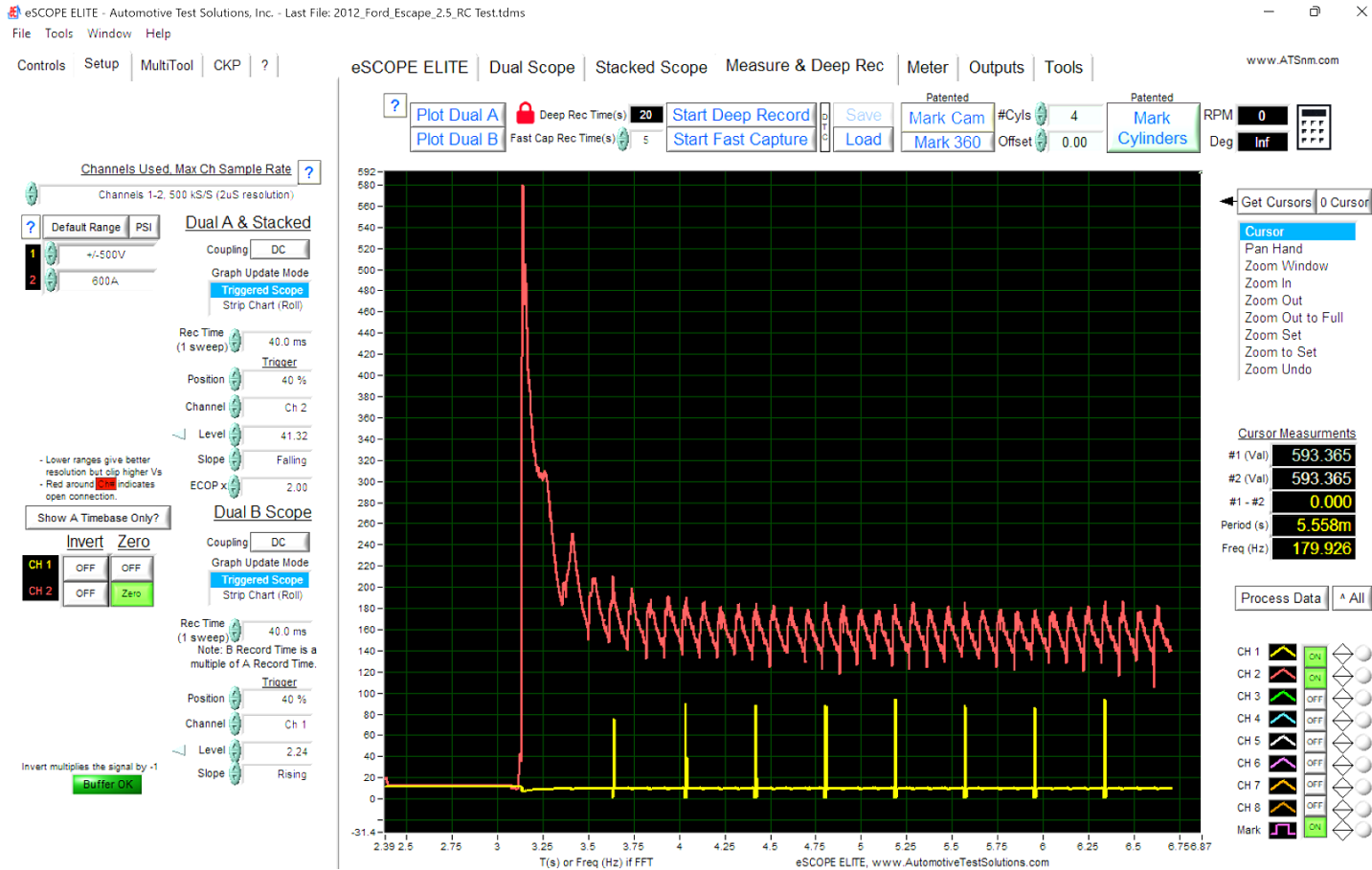
I connected to all four injectors, 1 – 4 respectively and Channel 5 was connected to Fuse 23 using the Fuse Buddy and a 20 AMP Clamp.

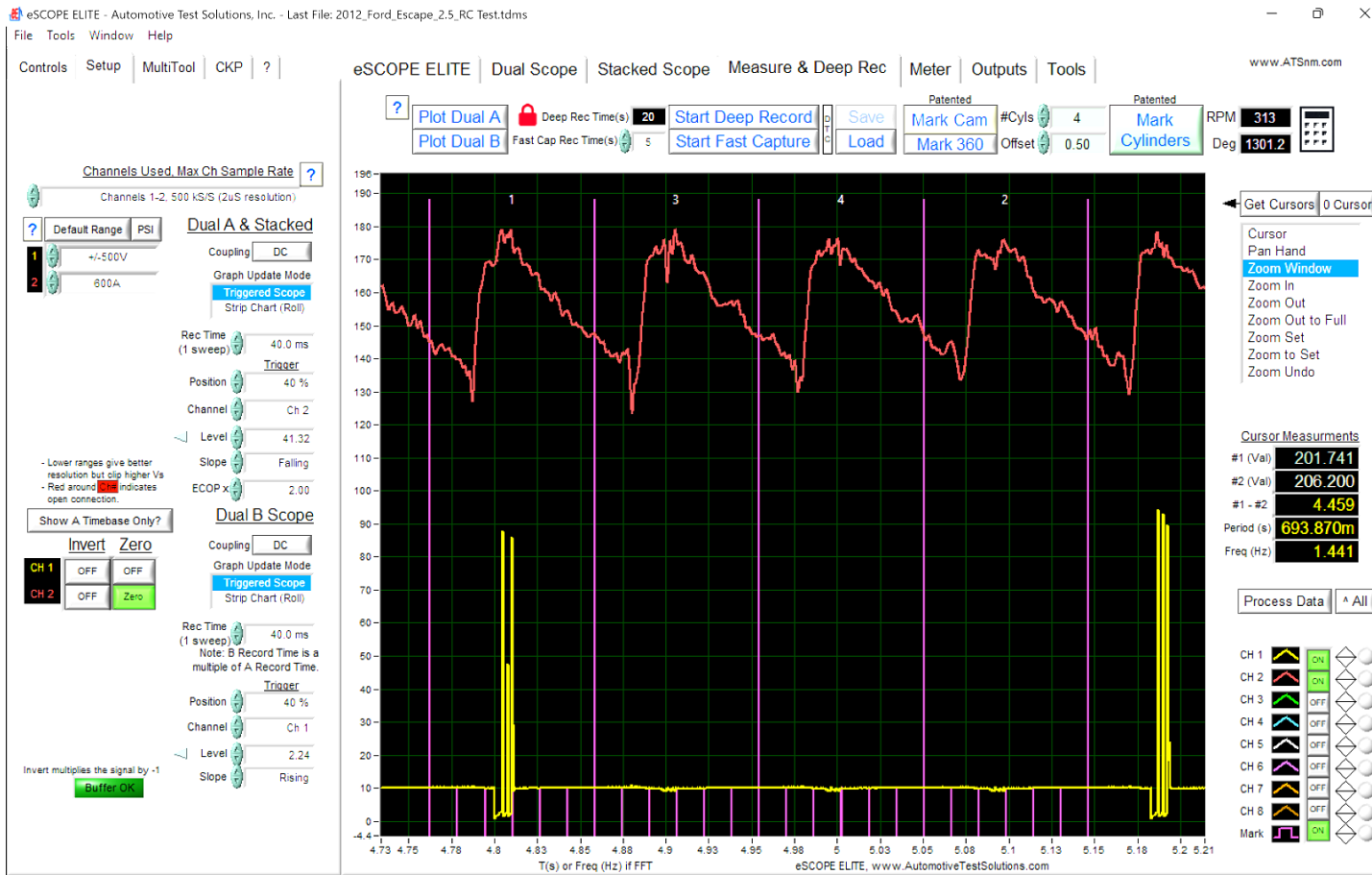


Relative Compression Testing

I connected Channel 1 to Ignition Coil 1 for a reference and the 600 AMP Clamp to the negative cable on the battery. You can connect to either positive or negative cables, just orient the AMP Clamp in the direction of current flow or invert the signal if needed.

The fuse for the Fuel Injectors was removed to prevent starting. Flood mode could not be used as it disables the coils and we would not be able to get an ignition reference point.





A relative compression test on this 2000 Honda Odyssey 3.5 shows an entire bank with a compression issue.

