

**Durham Geo-Enterprises, Inc**  
**2175 West Park Ct.**  
**Stone Mountain GA. 30087**  
**1-800-837-0864**

## Calibration Procedure

**Equipment:** S-610 CBR, UCC Load Frame  
E-490 Single Pin Plotter  
Linear Displacement Transducer

### 1). Plotter set up.

- A). Turn E-490 (Plotter) on.
- B). Turn E-40060 (Readout) on.
- C). Insure LDT and Loadcell (input) are attached to E-40060 (Readout).
- D). Insure Cable is attached From E-40060 (Readout output) to E-490 (Plotter).
- E). The following knob configurations are to be set up individually for each unit. Once set, only the zero will need to be adjusted between tests, and only if necessary
  - 1). Switch: VAR, CAL, Zero.
    - a). VAR: normal Operation.
    - b). Zero: to verify Zero anytime Movement has been made.
  - 2). Switch: Invert, Normal.
    - a). Reverses pin movement. Left to Right or Right to left.  
Unit should be set up to move Left to Right.
  - 3). Knob: VAR. (**Caution**)
    - a). This knob is used to set span of pin movement. **Caution** should be used whenever this knob is adjusted and should only be adjusted by qualified operators. **Always lock knob after adjustments are made.**
  - 4). Knob: Zero.
    - a). This knob is used to Set Zero before test is started.
  - 5). Knob: Mv / inch.
    - a). Do not adjust, this knob, it is set to the output of the LDT to achieve the correct span.

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### 2). Calibration Check, and set up. **\*\* This procedure does not certify equipment.**

- A). Before performing this procedure make sure that sufficient knowledge of equipment and understanding of theory are present.
  - 1). Tools needed:
    - a). Feeler gauge , or gage blocks, (known distance)
    - b). LDT attached to platen
- B). Insure the LDT is attached to the platen and the plunger is making contact with the upper crossbar of the loadframe.
- C). Set up the plotter as stated in the above procedure.
- D). Zero the plotter using the lower “Zero” knob.
- E). Insert a known Distance (feeler gage, or gage block) between the upper cross beam and the plunger of the LDT.
- F). The pin will move on the X-Axis of the plotter.
- G). Depending on the distance used (.065 ? ) insure the pin moves to the desired point on the graph.
  - 1). User must understand that the Plotter is setup to give the best graph configuration required for that specific test.
    - a). Example 1: Feeler gage used .100 in. , Pin stops at two (2) large divisions, 20 small divisions. One (1) large division will = .5 in.  
One (1) small division will = .005 in.
    - b). Example 2: Feeler gage of .065 in. , Pin stops at two (2) Large divisions, 20 small divisions. One (1) large division will = .0325 in.  $.065 / 2$   
One (1) Small division will = .0032 in.  $.065 / 20$

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H). The Point at which the pin stops can be adjusted to the users requirements by doing the following.

- 1). Use a feeler gage or gage block that will give the best results at a given spot on the graph paper.
  - a) Example: If the desired small division is .001 use feeler gage of .02 in and set the pin at two (2) large divisions.
- 2). Make sure plotter is zeroed.
- 3). Insert a feeler gage of desired distance.
- 4). Unlock VAR knob and adjust to the desired Point on Graph paper.
- 5). Use “Zero” Switch to quickly check zero. The Zero point may need to be reset.
  - a). Hold Zero switch to the right and use “Zero” knob to reset. Put switch back into the VAR position .
- 6). Check pin placement, If necessary readjust end point using VAR knob.
- 7). Repeat this procedure until the end point and zero are correct.
- 8). Lock VAR knob and recheck the end point and Zero point of pin.
- 9). Once plotter has been set up, the only adjustments that will need to be made will be to zero when necessary, and to check the calibration on a routine bases.

NOTE: It is advisable to check several points to insure calibration. Use different feeler gage measurements and make sure the pin moves to the correct point on the graph.

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### 3). Platen speed Check:

- A). Plotter must be adjusted to the above procedure before Platen speed can be checked.
- B). Insure LDT is in contact with the upper crossbar.
- C). Set controller to speed required.
- D). Start stop watch and S-610 loadframe at the same time.
- E). Check plotter pin at 1 min. intervals.
  - 1). If the Plotter is set up for .065 for two large divisions (.0032 per small division)
    - a) Set controller on S-610 to "0650".
  - 2). The first 1 min reading, the pin should cross the second large division.
  - 3). The 2 min reading, the pin should cross the fourth large division.