

## **Electronic Pressure Transducer Calibration Evaluation Procedure**

This document contains the necessary information to perform an analysis of the electronic pressure transducer(s) on Custom Crimp test benches. The models that are relevant to this procedure are as follows:

BE 1500E

BE 2500E

BE 3500E

IND 350/1500E

IND 350/2500E

IND 350/3500E

Special Order Benches that are electronic control. Contact Custom Crimp if the test bench in question falls under relevance for this procedure.

The following procedure is recognized by Custom Crimp as an effective way to evaluate whether the electronic pressure transducer on the test bench is operating correctly and in the tolerance of the end user. The procedure checks for calibration accuracy as well as zero point accuracy. Custom Crimp does not perform recalibration of electronic pressure transducers and does not issue new calibration documentation. This procedure is intended to help diagnose whether the electronic pressure transducer in question is performing correctly and offering suggestions on repairing the unit based on the test outcomes.

In order to check the calibration of the pressure transducer, an analog dial gauge will be needed. It is important to use a gauge that is trusted to be accurate to prevent skewed and inaccurate readings. The pressure range of the gauge is not critical but it is recommended to use a minimum of 10,000 psi in order to collect several data points. The test bench manifold should be free of any customer attached test pieces (hoses, valves, etc.). The gauge should be attached to one of the test ports on the manifold block. The gauge should be the only item attached to the testing side of the manifold.

Once the gauge has been installed in the manifold block, the test bench is ready to be used. The hypothetical test explained here will use a 10,000 psi gauge. The tester should be run several times with each test increasing by 1000 psi. In this case, there will be a test from 1000 psi all the way to 9000 psi in 1000 psi increments. Do not run a 10,000 psi test because the gauge can produce skewed results when taking to the max limit. During each test, record the gauge output when the test reaches pressure. Each test only needs to be as long as it takes to successfully record the gauge pressure. There is no benefit holding the test for 10 seconds or 1 minute. In addition to recording the gauge pressure, also record the live pressure reading on the touch screen. This is used to compare against the gauge results.

Once all the tests are performed, record the results of each pressure test next to each other for comparison. If the results are very similar, the transducer is in good working order. Results will look like:

<u>Test Pressure</u>	<u>Gauge Output</u>	<u>Transducer Output</u>
1000	1000	1000
2000	2000	2000
3000	3000	3000
4000	4000	4000
5000	5000	5000
6000	6000	6000
7000	7000	7000
8000	8000	8000
9000	9000	9000

This is exaggerated because likely they will differ by a few psi from each other.

If the results look like the following, there is a zero point issue with the test bench.

<u>Test Pressure</u>	<u>Gauge Output</u>	<u>Transducer Output</u>
1000	1000	1200
2000	2000	2200
3000	3000	3200
4000	4000	4200
5000	5000	5200
6000	6000	6200
7000	7000	7200
8000	8000	8200
9000	9000	9200

If the pressure transducer reads consistently above or below the gauge readings for all the recorded points, the transducer is likely off on the zero point. This can be adjusted for test benches equipped with electronic pressure transducers from Stellar Technology. Adjustment can be made with the adjustment screw in the pressure transducer. Industrial test bench models, such as the BE 350/1500E, have two pressure transducers. The 0-5000 psi transducer located in the industrial pressure circuit cannot be corrected. It will need to be replaced.

If the results look like the following, there is a calibration issue with the test bench.

<u>Test Pressure</u>	<u>Gauge Output</u>	<u>Transducer Output</u>
1000	1000	900
2000	2000	1925
3000	3000	2950
4000	4000	3975
5000	5000	5000
6000	6000	6025
7000	7000	7050
8000	8000	8075
9000	9000	9100

If the results read like above, there is likely a calibration issue. The span reading from the transducer is likely damaged or fallen from correct factory calibration. This will need to be addressed by sending the transducer in for a recalibration procedure and repair. This issue cannot be repaired by the end user.

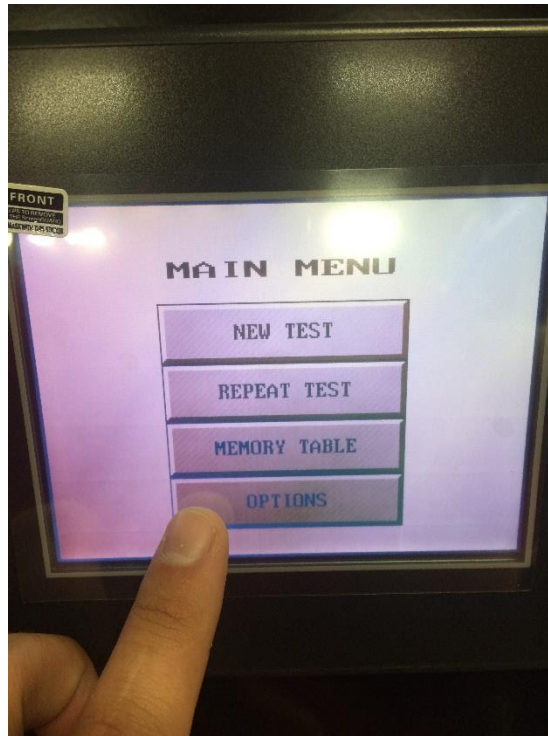
The prescribed procedure by Custom Crimp can be performed as often as felt necessary. Custom Crimp does not detail how often, if at all, the procedure needs to be performed. This comes at the satisfaction of the internal operation of the user and the request of said user's customers. If any questions arise, feel free to contact Custom Crimp and an engineer or technician can answer any questions.

08/31/15

## Re zeroing Pressure Transducer

If the pressure transducer results indicate the zero point needs to be readjusted, the following procedure will resolve the issue.

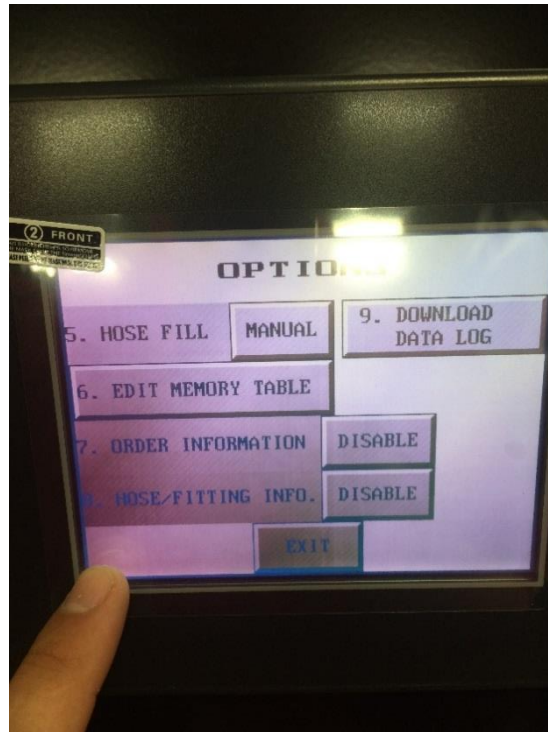
#1



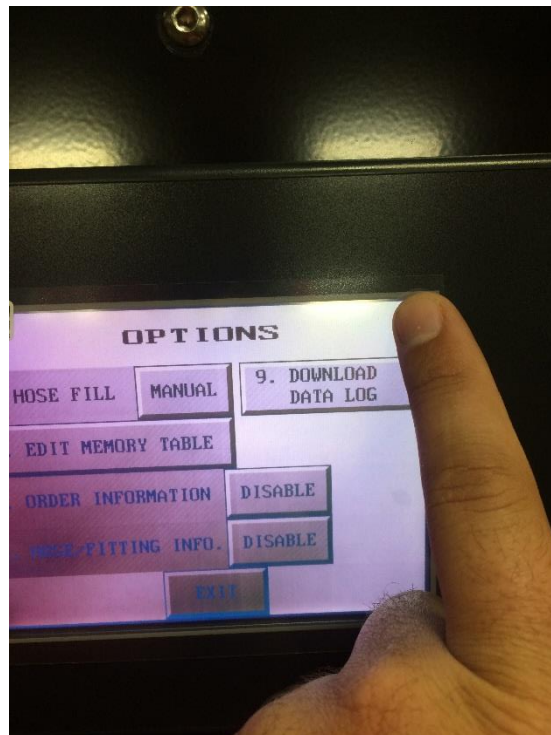
From the main menu page, select the “OPTIONS” button.

08/31/15

#2



Once into the “OPTIONS” page, scroll to the second page. Once in the second page, press the left corner and then the top right corner shown in the picture below.



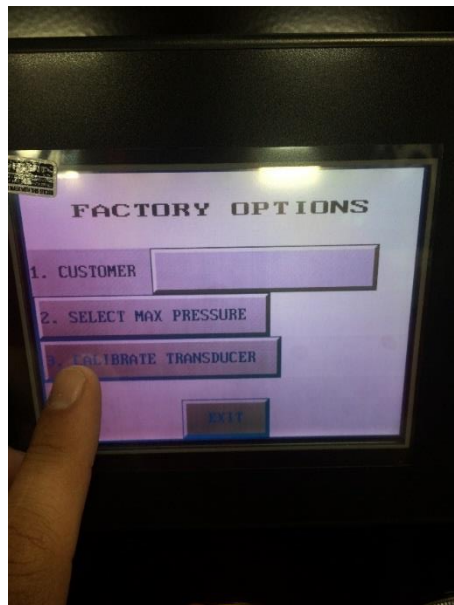
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#3



If step 2 has been do correctly, a keypad should appear on the screen. The password in 6128. Press enter once the password has been entered.

#4



Select the “CALIBRATE TRANSDUCER” option on the visible Factory Options page.

08/31/15

#5



Once in the Calibration Screen, notice the raw counts and the current PSI. The current PSI should read 0 on a correctly zeroed tester. The counts are the unit of measurement read by the tester from the pressure transducer. If the tester hypothetically said 120 psi and 15 counts, the machine will need to be adjusted to read 0 psi and 0 counts. Steps 6 and 7 go along with step 5.

Once steps 5, 6, and 7 have been done and the tester is dialed to zero, DO NOT hit the save button. Press the EMERGENCY STOP to get out of the CALIBRATION service screen. The save button is for a different adjustment and will cause the software to readjust its reading. If the save button has been pressed, call Custom Crimp and a service tech will work with you to reset the software.

08/31/15

#6



The trimmer on the pressure transducer will need to be reached in order to re zero the unit.

#7



The cover screw will need to be removed. Underneath of this cover screw is a small set screw "trimmer pot". This is the screw that will need to be adjusted. Turning the screw Clockwise and Counterclockwise should produce a change to the counts and psi readings on the screen.



08/31/15



The Model # and serial # are located on the barrel of the pressure transducer.