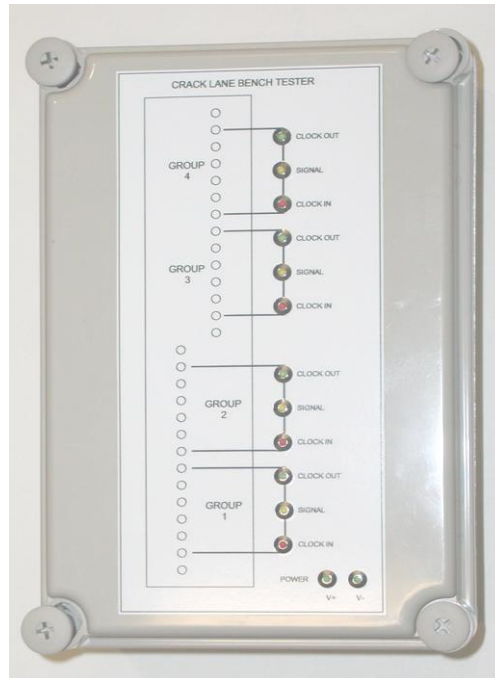




## Crack Detector Lane Bench Tester Manual



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## Important - Please Read

Never open the Crack Detector Lane Bench Tester without first removing the AC power. There is no reason that you should ever have to be inside of the Crack Detector Lane Bench Tester. Fuse access is outside the box by the power switch.

Always have power off when connecting the Crack Detector Lane Bench Tester to the Crack Detector Lane under test.

Note: The Crack Detector Lane, or sometimes called Crack Lane or Check Lane is a product of Diamond Systems, Diamond Automation, Inc.

## Important - Please Read

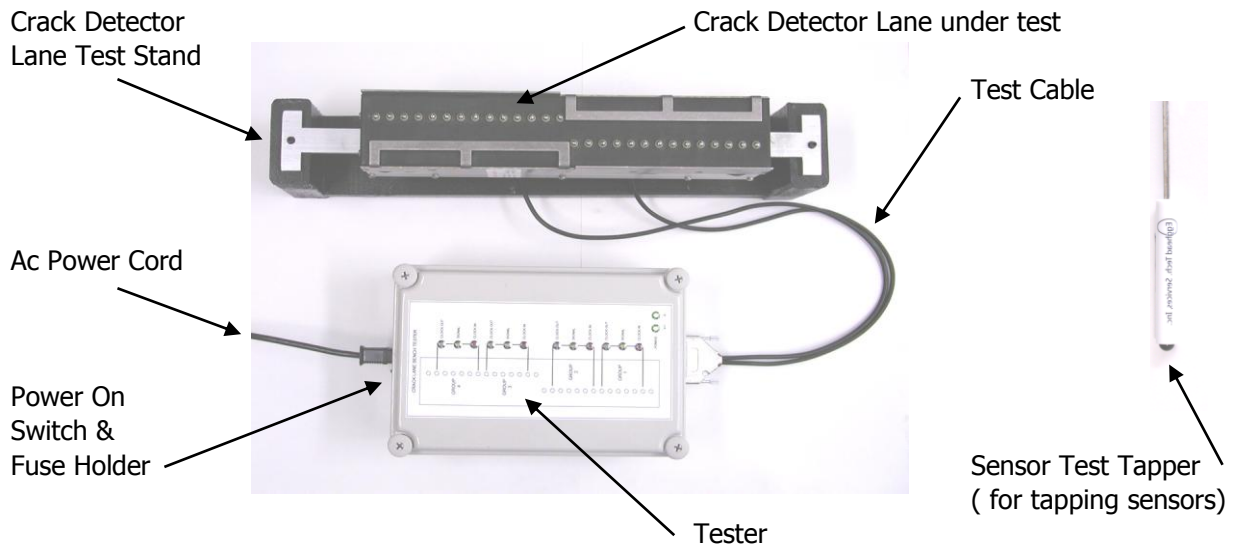
The information provided in this manual has been carefully checked and is believed to be accurate. However, changes are made periodically, and these changes are incorporated in newer publications.

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## Crack Detector Lane Bench Tester Setup



### How does it work?

Connect the Crack Lane to the test cable. Set the Crack Lane onto the Crack Lane Test Stand. Turn on Tester and with the special Tapper, or use egg, tap each sensor. When each sensor is tapped, a yellow indicator will flash. If the sensor being tapped is a first sensor of the group, along with the yellow indicator, a red indicator will flash. If the sensor being tapped is the last sensor of a group, along with the yellow indicator, a green indicator will flash. You will soon get a feel for how little of a tap is required.

### What will it find?

If a sensor is dead, no light will turn on as you tap it, or it will always be on, even when not tapped. If you have to tap the sensor harder than normal to make the yellow indicator come on, that sensor is defective or the rubber membrane may need replacing. If you tap a sensor and other sensors turn on, it could mean your tapping way too hard, rubber membrane dried out, sensor's wire touching other sensors, or defective pre-amp circuit board. If a clock in, red indicator, or clock out, green indicator fail to flash, but the signal, yellow indicator, flashes, you have a bad pre-amp circuit board or broken wire. A bonus feature is that you can test, with a good crack lane, Crack Lane Cables. If one or both of the green indicators -V , +V turns off, there is a electrical short in the Crack Lane This is just a static tester. How the eggs travel on the lane will effect the Crack Lane performance.

### Tester Specification:

**Power:** 85-264 VAC, 47-63Hz, 1-.5Amps

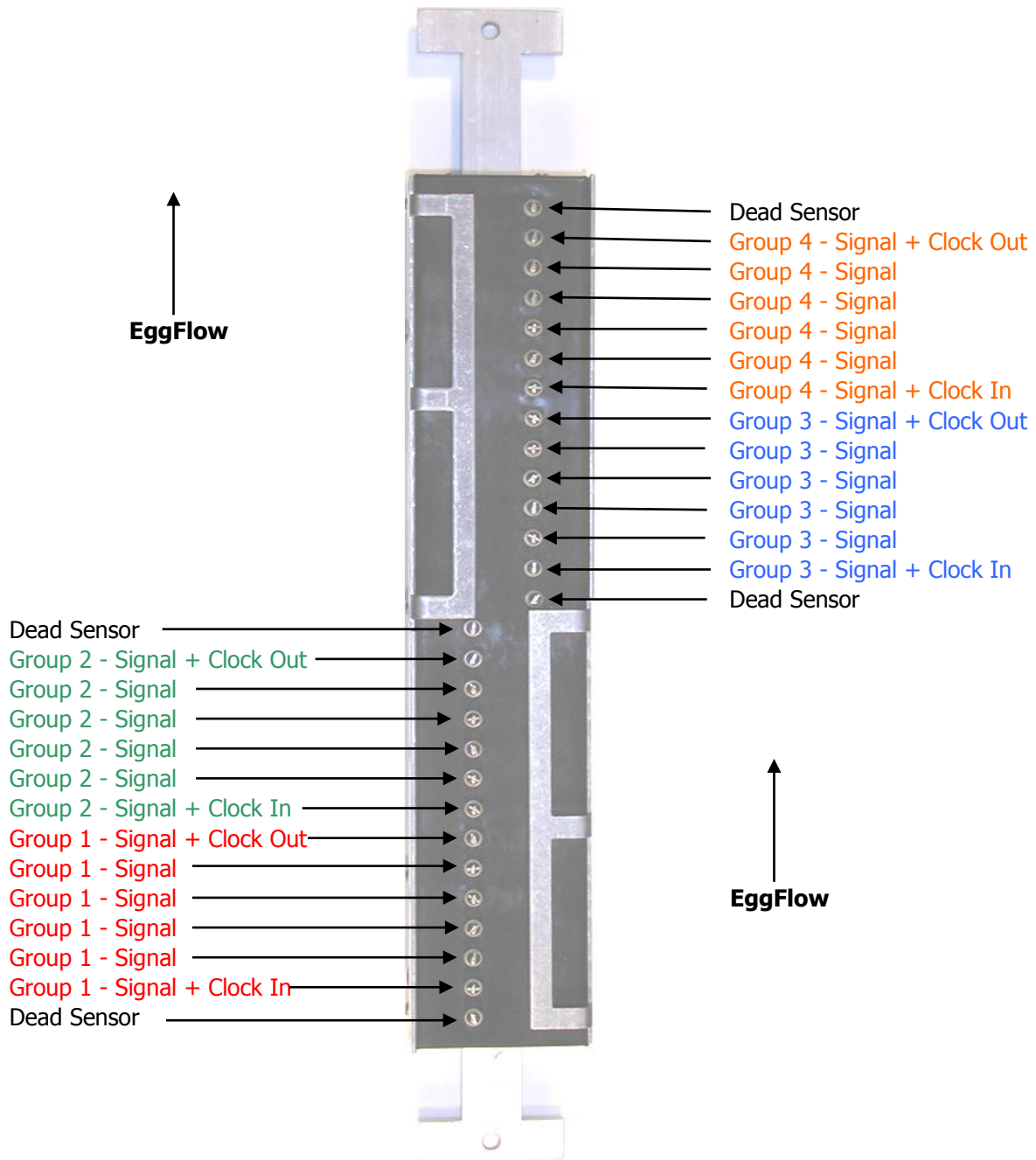
**Working Temp:** -20 to +70 deg C

**Size:** 11"x7.5"x5.5" ( LxWxH ) approx.

**Weight:** 2lbs approx.

**Includes:** Tester, Crack Lane to Tester Cable, Test Tapper, Crack Lane Test Stand, & Instructions,  
**Warranty:** 1 year.

## Crack Lane Sensor Identification



### What's a Dead Sensor?

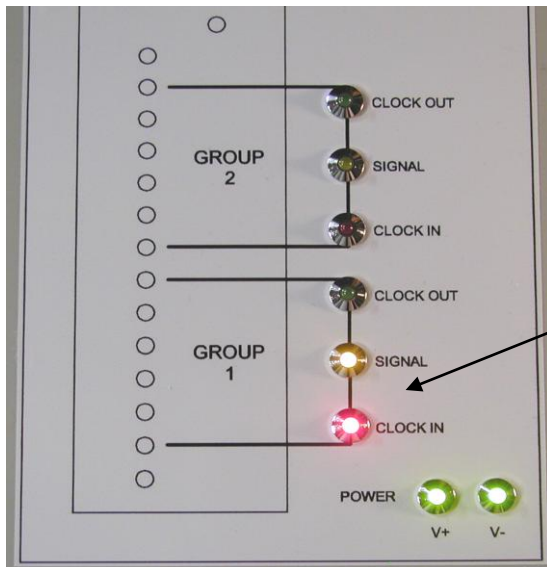
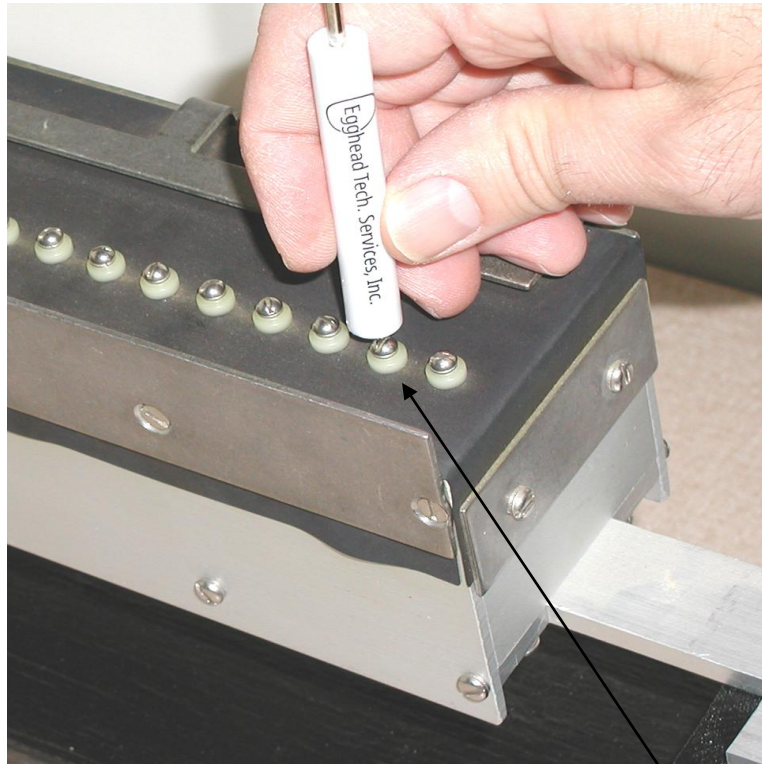
Dead Sensors have no electronics in them, they are used for egg alignment purposes.

**Test Procedure:**

Connect Test Cable to the Crack Lane under Test.  
Turn the Tester on. The Power +V and -V Indicators will be on.

When tapping a sensor it is important to tap the sensor gently and on the center of the sensor. You will soon get a feel on how lightly to tap the sensors.

Tap the Group 1 First sensor, both the Red Clock In Indicator and the Yellow Signal Indicator will flash on each time the sensor is tapped.



**What's Happening!**

The Red Clock In Indicator is telling the electronics that an egg has entered Group 1.

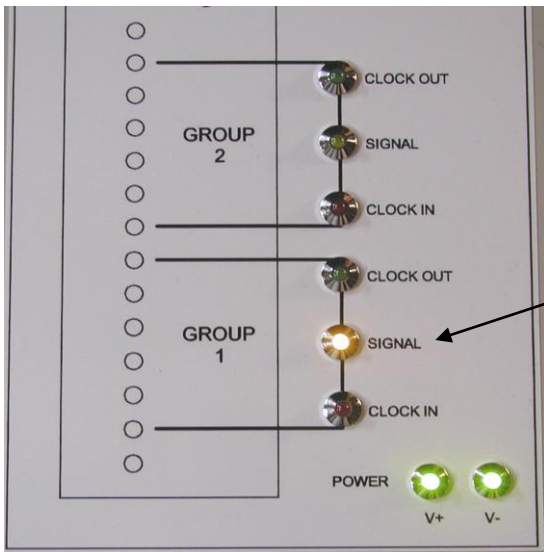
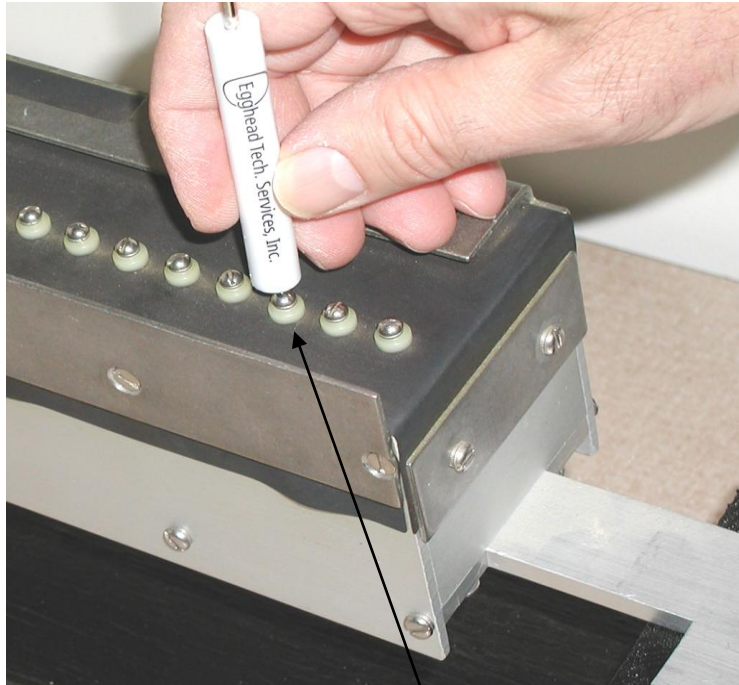
The Yellow Signal Indicator is telling the electronics that the egg shell is not cracked.

Tap the Group 1 Second sensor, just the Yellow Signal Indicator will Flash ( shown in picture )

Tap the Group 1 Third sensor, just the Yellow Signal Indicator will Flash

Tap the Group 1 Fourth sensor, just the Yellow Signal Indicator will Flash

Tap the Group 1 Fifth sensor, just the Yellow Signal Indicator will Flash



### What's Happening!

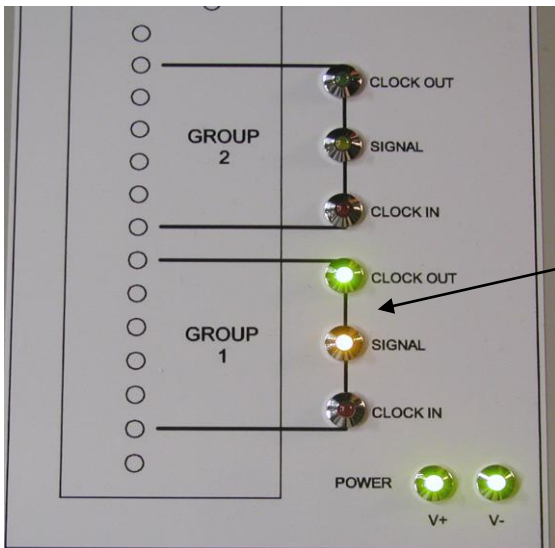
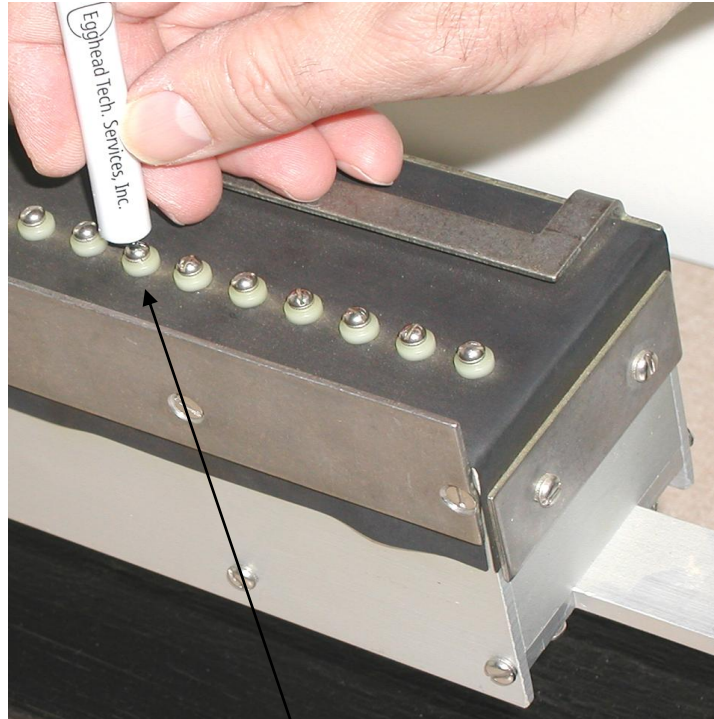
The Yellow Signal Indicator is telling the electronics that the egg shell is not cracked.

Tap the Group 1 Sixth sensor, both the Green Clock Out Indicator and the Yellow Signal Indicator will flash on each time the sensor is tapped.

Perform the same test for Groups 2, 3 & 4

### Why are there 4 Groups?

Because there can be up to 4 eggs on a CD Lane at one time.



### What's Happening!

The Green Clock Out Indicator is telling the electronics that an egg is leaving Group 1.

The Yellow Signal Indicator is telling the electronics that the egg shell is not cracked.

## **Trouble Shooting a Crack Detector Lane**

### **When tapping the Group's Signal + Clock In Sensor:**

Clock In red indicator flashes, but the Signal yellow indicator does not flash.

- 1) Defective Sensor.
- 2) Defective Pre-Amp Circuit Board.
- 3) Broken wire inside Crack Detector Lane.
- 4) Rubber Membrane old and too stiff.
- 5) Contamination inside Crack Detector Lane.

Clock In red indicator does not flash, but the Signal yellow indicator does flash.

- 1) Defective Pre-Amp Circuit Board
- 2) Broken wire inside Crack Detector Lane.

### **When tapping one of the 4 Signal only Sensors:**

Signal yellow indicator does not flash.

- 1) Defective Sensor.
- 2) Defective Pre-Amp Circuit Board.
- 3) Broken wire inside Crack Detector Lane.
- 4) Rubber Membrane old and too stiff.
- 5) Contamination inside Crack Detector Lane.

Signal yellow indicator stays on all the time.

- 4) Rubber Membrane old and too stiff.
- 2) Defective Pre-Amp Circuit Board.
- 3) Broken wire inside Crack Detector Lane.
- 4) Rubber Membrane old and too stiff.
- 5) Contamination inside Crack Detector Lane.

Have to tap the sensor harder than normal to make the Signal yellow indicator to flash.

- 1) Rubber Membrane old and too stiff.
- 3) Sensor's wires touching something inside Crack Detector Lane.

### **When tapping the Group's Signal + Clock Out Sensor:**

Clock Out green indicator flashes, but the Signal yellow indicator does not flash.

- 1) Defective Sensor.
- 2) Defective Pre-Amp Circuit Board.
- 3) Broken wire inside Crack Detector Lane.
- 4) Rubber Membrane old and too stiff.
- 5) Contamination inside Crack Detector Lane.

Clock Out green indicator does not flash, but the Signal yellow indicator does flash.

- 1) Defective Pre-Amp Circuit Board
- 2) Broken wire inside Crack Detector Lane.



## Trouble Shooting a Crack Detector Lane

**When Crack Lane is connected to the Crack Detector Bench Tester, one or both of the green +V , -V indicators turns off.**

- 1) There is an electrical short inside the Crack Detector Lane.
- 2) Pre-Amp circuit board inside Crack Lane is defective.

**The Crack Detector Lane works on the Crack Detector Bench Tester but fails in the Grader.**

The Crack Detector Lane Bench Tester can only perform a static test. If Crack Detector Lane works on the Bench Tester, but fails in the Grader, check the following.

- 1) Check Sensor alignment.** Sensor's need to be in a straight row. Mis-aligned sensors can cause false signals or missing signals.
- 2) Check Sensor height.** If sensor's height are not the same, the egg can bounce which will cause a poor or missing hit of a sensor.
- 3) Rubber membrane can be torn,** causing moisture into the components of the Crack Detector Lane. Once moisture is in the inside of the Crack Detector Lane, it can short out of load down the sensors signals.
- 4) The seal on the Sensor is broken,** and when moisture is high, will load down or short out the sensor signal.

### Crack Detector Lane Bench Tester Replacement Parts

Description	Part No.
Crack Detector Bench Tester	8010110
Crack Detector Lane Test Stand	8010140
Crack Lane to Tester cable	8010130
Sensor Test Tapper	8010160
AC Cable - North American 120Vac	8010170
Manual	8010150
Replacement fuse	GDC-2A

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