

## ***TEACHING THE EDGE DETECTION SENSOR***

The edge detection sensor is a precise way of detecting a pouch at a predetermined point in Urania equipment. The sensor is used to trigger devices, calculate pouch width and straightness, and locate the top edge of each pouch.

When the edge detection sensor is used to identify the top of each pouch removed from the magazine, it allows the operator to load faster with less precision. Once the edge is determined for a specific pouch, the system does a series of calculations to ensure the pouch is presented through the rest of the cycle in a consistent vertical location.

This sensor should never be moved or disabled once proper operation is established. If the sensor has been physically re/moved contact Urania for further guidance.

The edge detection sensor is a class 1 laser sensor and should never be stared into or pointed in a line of sight. The sensor is pointed directly at a datum reference on the machine. The static display of the sensor should read '100'. This means that 100% of the emitted light is reaching the datum with no interference. Under normal operation, as a pouch blocks the sensor the emitted light percentage will drop (sometimes to 0%) depending on the distance the pouch is from the sensor and its opacity.

If the static value is not near '100', the sensor must be retought. Do this by simultaneously pressing the two buttons shown above for three seconds with the sensor beam hitting the desired datum.

Press these two buttons for 3 seconds to set the sensor datum



On some arrangements, the datum is a fixed plate usually made of aluminum or Delrin. On some systems (such as the Packaging Answer) the datum is the vacuum plate (with red cups) that removes the pouches from the magazine. The operator must manually position the vacuum plate at the same height it removes pouches from the magazine. The plate is controlled by two air cylinders that stroke 25mm and 50mm for a total of 75mm of stroke. The proper height is with the 50mm cylinder extended and the 25mm cylinder retracted. With the red beam hitting the aluminum portion of the pickup plate, press the two buttons as shown above.

Vacuum plate at pouch removal height and red laser beam hitting aluminum section



The threshold of the laser sensor is the value (% of emitted light returned) that triggers the sensor. Once operating (and displaying 100%) pressing either the up or down button will display the current threshold. The same up or down buttons are used to raise or lower the threshold. 75% is a good starting point for this threshold (meaning 25% of the emitted light has not returned to the sensor head). It is important that the datum is taught correctly so that a pouch will create a definitive difference in emitted light returned. Clear pouches tend to be the worst case because they allow more light to pass through to the datum then return to the sensor head.