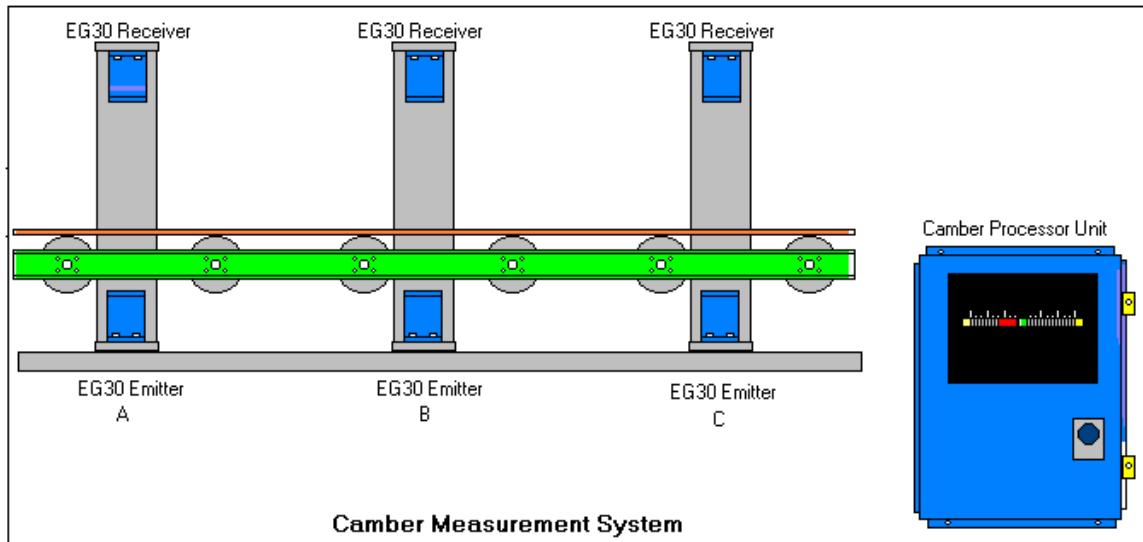




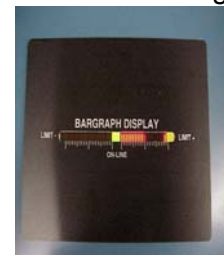
Continuous Online Camber Measurement System Using Scan-A-Line Non-Contact Measurement Technology



Product Camber can be a serious problem in the many different manufacturing processes. Unfortunately product camber is seldom measured until the processes have been completed. Products with excess camber must either be reworked or scrapped, adding unnecessary material, energy, labor and waste disposal costs. Online camber measurement can detect camber problems before the process is producing reject material. By making appropriate adjustments to the process, either by manual adjustment or automatic control, the process can usually be corrected to produce top quality product.



Camber measurement requires the installation of three equally spaced Scan-A-Line edge position sensors along the travel path of the process to be measured. The sensors are carefully aligned to ensure that their measurement centerline positions all fall along a straight line. The product edge positions, as measured by the outside sensors, are then added together and divided by two. If the object being measured has no camber, the edge position from the center sensor will equal the average of the two outside edge positions. Any deviation, positive or negative, will indicate the camber of the product.



Note that the process path does not need to be perfectly parallel to the line defined by the sensor centerlines. The resolution of the sensors (typically 0.01 inch) and the fixed spacing of the sensors will define the sensitivity and accuracy of the system. Roll formed wire shapes and small extruded strips can be measured, using a first edge sensor option. Products with variable thickness can be accommodated by placing the sensor / receiver over one end of the emitter. This permits measurement of the bottom surface edge positions. Although the process can pass over any portion of the sensor measurement windows, it is important to restrict the process Passline for accurate camber measurement.



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