

Automated High Accuracy Non-contact Profile Diameter Scanner (0.0001" Repeatability)

Designed to increase efficiency, reliability & productivity

NEW PRODUCT

Model: HCS-7215
Travel Range: 38-1/2"
Dimensions: 54" long x 21" wide x 14" high
Drive Mechanism: IA Belt Drive w/ MDrive23
Weight: 69 lbs
Base Material: Aluminum Brackets
Meas. Accuracy: 0.0001" (0.0025mm)
Meas. Range: 0.008" - 1.575" (0.2 - 40mm)
HMI Opr. Interface: 5.7" Color Touchscreen
Visual Indication: Red, Green, Yellow LED Stacklight
Meas. Mode: Visible Red 670nm Laser-CLASS 2
Laser Controller: Keyence LS-5001
Laser Scan Heads: Keyence LS5041 T&R
Drive Controls: Schneider MDrive 23
Power Req.: 120VAC @ 5Amps

Keyence LS-5001 controller & unit power box w/ ON/OFF switch

Height Adjustable laser centering arm

Cable carrier

UHMW support v-blocks

Adjustable supports in 80/20 type support rail

End of Travel sensor



FEATURES:

- Automated profile scan of part diameter with operator selectable start / stop location.
- Go / No Go quick product verification with settable upper and lower diameter specification limits.
- No scratching / marring of product.
- Adjustable support v-blocks accommodate multiple diameters & lengths of products from 1" - 48".
- Objective measurement of all non-transparent and transparent materials: clear glass, metal, ground / opaque glass, plastic, metal extrusions, wood, etc.
- Data can be logged to micro-SD card

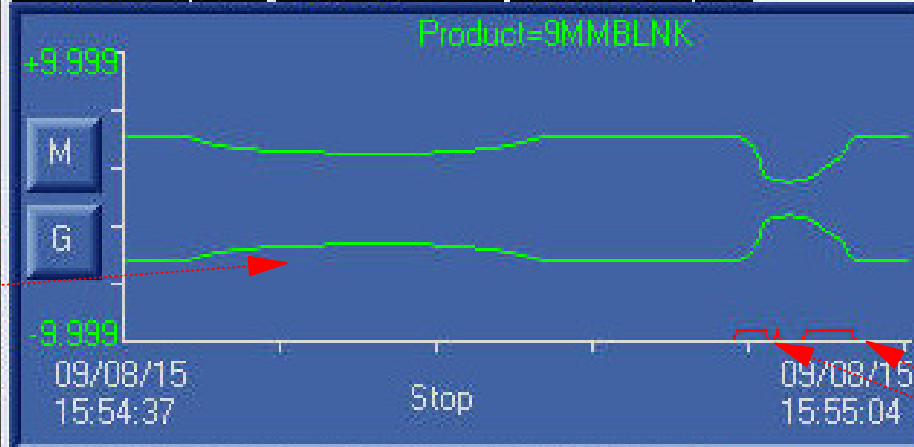
Operator 5.7" HMI touchscreen interface

Main Screen Features

Press here to access option MENU's

UNITRONICS

Scan Rate	Sampling Rate	Diameter	Menu
0.350 in/s	10 ms	0.4334 in	



Shows diameter profile of last part scanned

Press here to save data to micro-SD card.

Show loc of out of spec data

Scan Dis	Location	Scan Time	SCAN
15.118	16.503	42.6 s	

17194>

v570

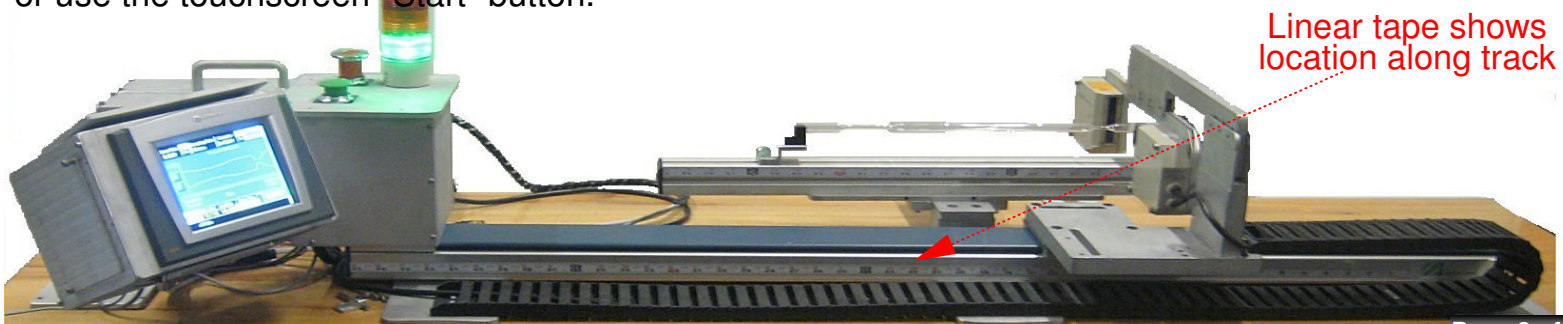
Shows distance scanned by laser

Shows physical location of laser beam

Shows distance scanned by laser

Summary of Scanner Operation:

This is a new automated high accuracy profile laser micrometer measurement system. It is designed to increase efficiency and productivity. This automated laser scanner is capable of measuring profiles as small as 0.0080" up to 1.5750" with an accuracy of +/- 0.0001". The unit comes already programmed and ready to run. The controller graphs the item being scanned and displays the profile on the Unitronics v570 touchscreen interface. The motorized micrometer scanner will take any item, scan a profile of a "good" part, store the data for this part as the standard, and then use that data to compare all other parts scanned to verify if they are within +/- upper and lower specification limits. Any data point not within the limits will be noted on the graphic of the item and the red LED stacklight will illuminate to notify the operator of the location where the part is out of specification. Operator can use the "START" button on top of scanner to begin a scan, or use the touchscreen "Start" button.



Summary of Scanner Operation (cont'd):

Operation of the system is as follows. It can be used in 2 modes.

Mode 1. Measurement At Same Location:

To measure a batch of parts at the exact same location, setup the supplied UHMW v-blocks on the support mounts, position the other support mount, and place the part on the supports against the stop. Setup the upper and lower specification limits for this item to be measured (from product setup screen, press the USL and LSL spec. limits button to change / set part limits) . Once setup is done, position the laser micrometer at the measurement location and place the parts on the v-blocks. The system will denote the part status as GOOD (green light) or BAD (red light) via the LED stacklight. The actual measured value is displayed on the screen. It should only take a few seconds per part to determine if it is within specification limits with an accuracy of ± 0.0001 " (0.0025mm). This is an objective measurement that removes the human bias (how hard / soft the calipers are pressed).

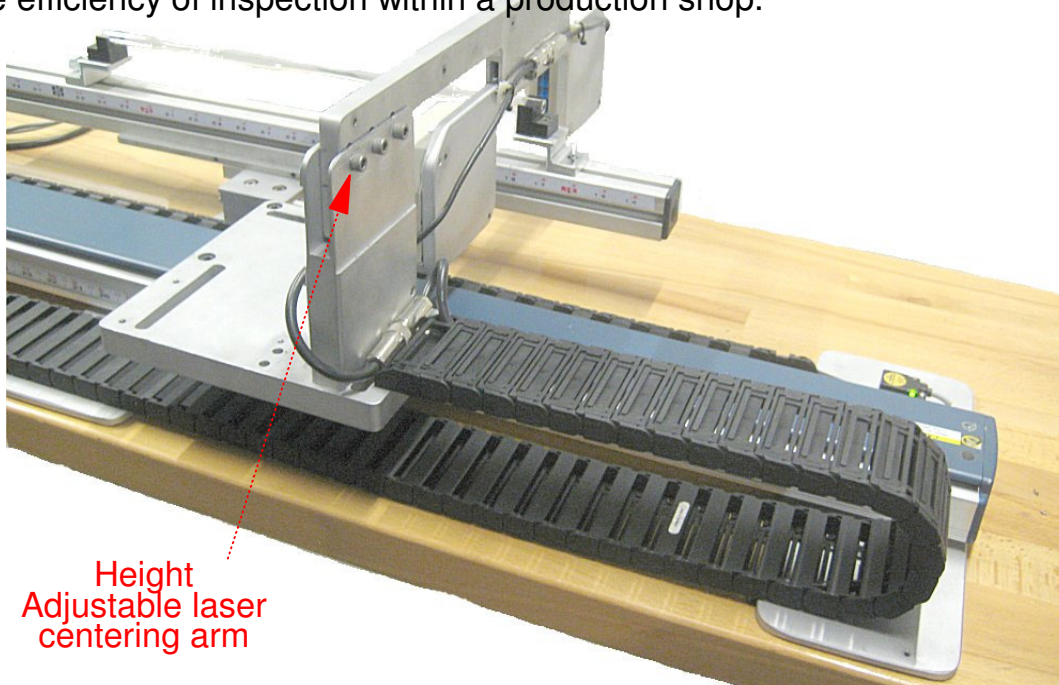
Mode 2. Scan Length of Part:

Select the product to run from the "Product Select" screen. All the saved upper and lower specifications limits will be loaded into the scanner automatically when the product is selected.

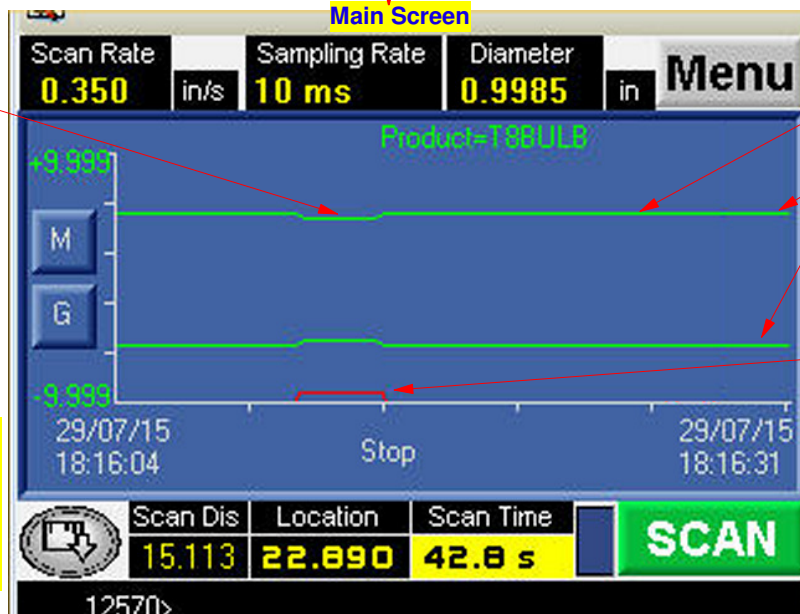
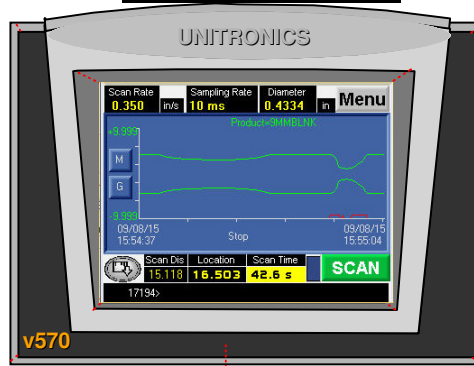
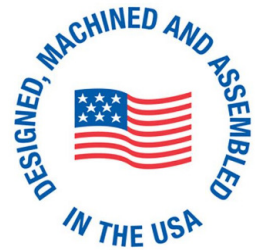
Place the item to be measured on the UHMW v-blocks and press the green "START" button near the stack light, or press the "SCAN" button on the touchscreen. The laser will move along the length of the item to be measured. The LED stacklight will turn RED if any part of the item diameter is outside of the upper or lower specification limits, or turn GREEN if it is within the USL & LSL limits.

If the location of the product to be measured is not within the proper range of the laser measurement beam, the position of the laser heads may need to be adjusted. There are three (3) bolts that allow the laser micrometer heads to be raised or lowered to fit the product being run.

The unit is designed to increase productivity and increase efficiency by providing a non-contact / very accurate and consistent measurement check station. The v-block supports can be moved and positioned anywhere along the T-slot track and have adjustment left or right within the laser measurement area. Custom programming options are also available upon request. This is a great tool to increase efficiency of inspection within a production shop.



Main Screen



- Measured T8 bulb diameter without coating (0.9985" dia.)

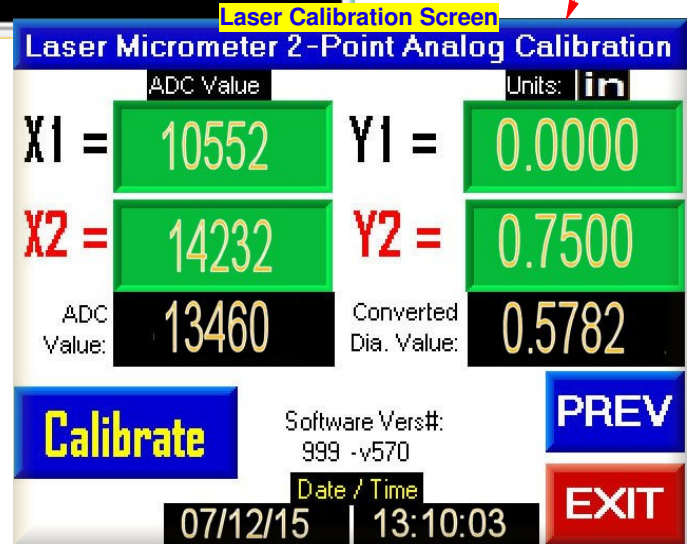
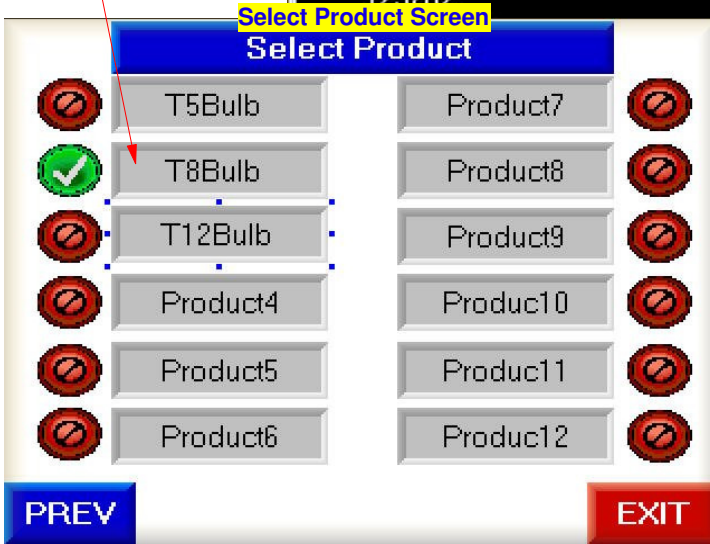
- Measured T8 bulb diameter with coating (1.0435" dia.)

- T8 bulb profile is graphed and data checked against recorded standard data.

- Out of specification data is highlighted in RED.

- Add new products and name them on this screen. Also used to select current product being run. All standard values and specification tolerances are saved with product title and retrieved automatically when product is selected.

- Each of the 4 lasers can be calibrated for the range of product being run. This will allow for best accuracy results.

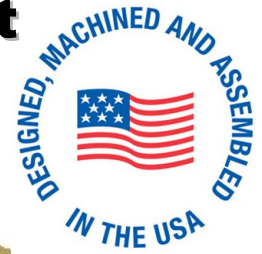


Selection of Options via Touchscreen Menus shown above:

All features of the system can be accessed via the touch screens.

- The "SETUP MENU" to change the displayed units. Selectable measurement units are available for display in millimeters (mm), inches (in) or centimeters (cm).
- The "CALIBRATION MENU" allows re-calibration of the laser for product to be measured. To increase accuracy of measurement, select standards in the range of the product to be measured, and calibrate the system to the product range.
- The "PRODUCT SELECT MENU" allows for selection of product to run, and /or adding new products a your product line changes.

Automated Diameter Profile Measurement System - Features (cont'd)



Keyence LS5041 transmit and receive laser heads

Slot for adjusting v-block supports

Adjustable UHMW v-block in t-slot recess

Adjustment within measurement beam

End Stop Sensor dogs

Automated Diameter Measurement System consists of:

One (1): Unitronics V570 PLC / HMI controller with control application loaded and uploadable image supplied on CD for quick diameter measurement in the form of a green / red stack light that automatically illuminates to indicate pass / fail based on upper and lower specification limits entered from Unitronics v570 touchscreen. Has latest version of operating system loaded using Visilogc Vers 9.7.9. It is new, manufactured in the USA, and is in excellent working and cosmetic condition.

Automated Diameter Profile Measurement System - Features (cont'd)



Linear tape shows location along track

Profile Diameter Measurement System consists of:

One (1): Keyence LS5041 laser micrometer transmitter and receiver pair on aluminum mounting bracket. It also comes with Keyence LS5001 laser controller. The system is mounted on a base that has three (3) aluminum feet that can be used for anchoring system..

One (1): Patlite Red/ Amber / Green stack light mounted on top of the HMI display.

One (1): +24V DC Power supply with 120vAC cable ready for immediate power up.

One (1) Intelligent Actuator (IA) linear belt drive system with 3 " of travel so that the laser can be automatically moved along the length of a part being inspected.

Two (2) adjustable v-block supports for holding the part during inspection.

One (1) Green "Start" button; one (1) red "E-Stop" button.

One (1) analog output (0-10Vdc) default or 4-20ma upon request. A second analog output is also available upon request.

Two (2) digital outputs (+24Vdc) based on upper and lower specification limit setpoints.

One operations manual.