# IGAM CV100R

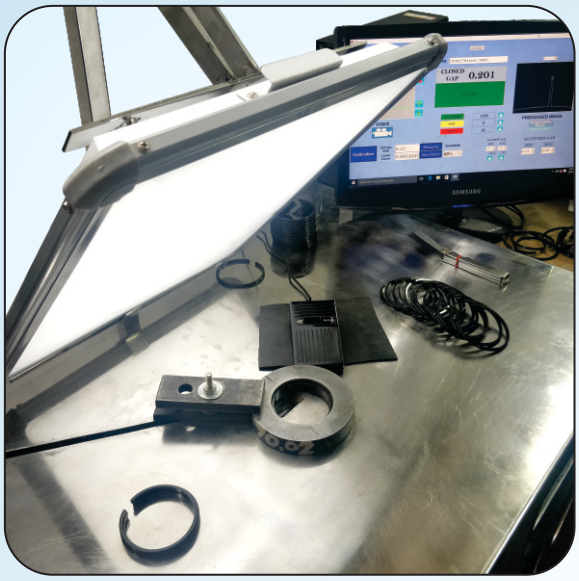
*Semi Automatic Machine Vision System for Closed Gap Measurement of Piston Rings*

Industrial Automation
Moisture Control Systems
Machine Vision

NAACS

**Neural Automation & Control Systems**

IGAM CV100R by NAACS



**IGAM CV100R** is a newly crafted machine vision system from NAACS with the aim of precise specific inspection in a cost effective manner in the field of Piston Ring manufacturing. Herein, we use a camera that measures the closed gap of each piston ring (Least count up to 4 microns) with the help of our intricately developed software.

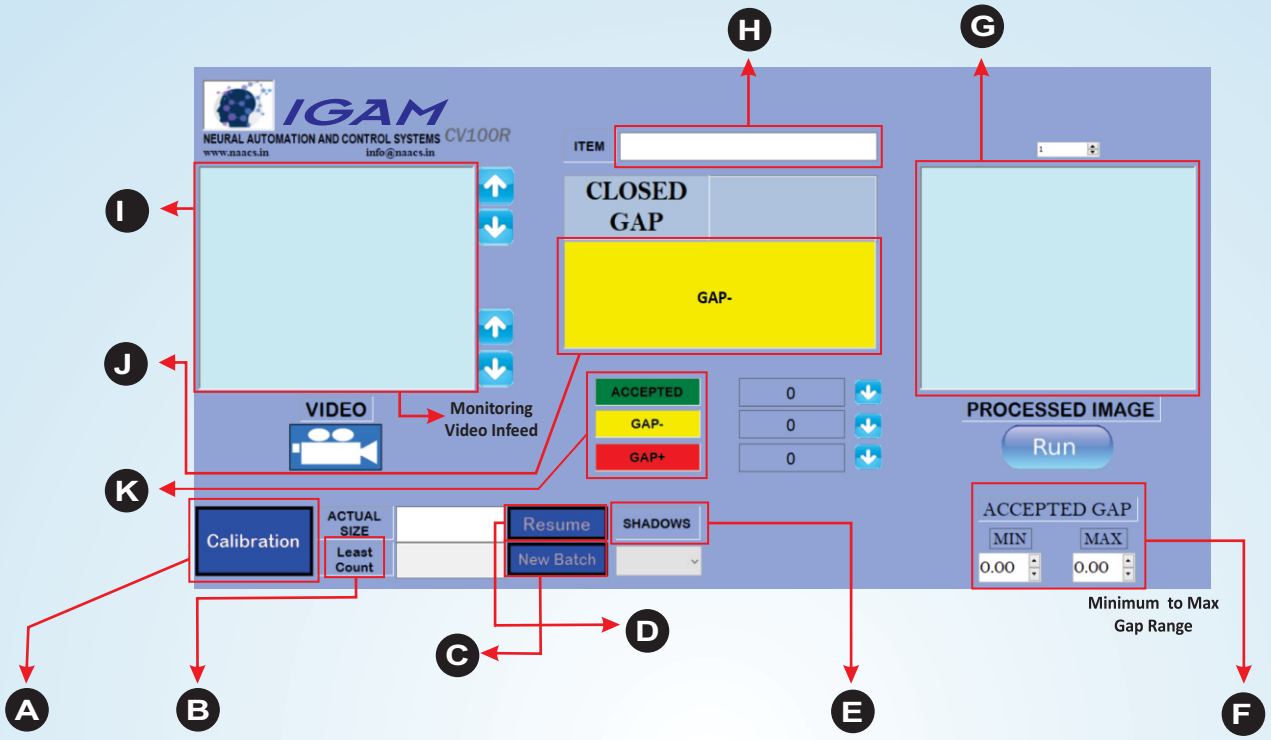
**IGAM** comes with a workstation prefixed with a computer.

Our workstation has an inbuilt Camera and LED lamp located strategically to help make the process of measuring the closed gap as easy as possible.

The prefixed computer has a pre-loaded NAACS software which is in sync with the camera to give accurate measurement. Once the ring is placed in the gauge, and switch is pressed, our computer screen will display the measurement.

# Description of Interface

The in built computer in our workstation comes with a 21 inch LED Backlit display that is pre-installed with our Easygap interface. With some research and on site experience, we endeavoured to make an extremely user friendly interface that can be operated by any individual.




**A** This tab is used to calibrate the camera as per the actual gap size at the time of initiating a new batch. The first ring of the batch is placed in the ring gauge.

Once the Actual Size of the gap is entered at the blank area besides the Calibrate tab and the camera is focused as displayed in the video, the least count is achieved(displayed below the size gap), we press the Calibrate tab to begin the gap measurement of new batch.

**B** This is another feature developed to make sure we achieve the desired result with accuracy on consistent basis.

The least count is achieved once the calibration process is done. However, it is done in sync with Calibration.

Least count can achieved by adjusting the zoom level of the gap during the calibration process, which is an easy task.

**C** Click on this tab to start a new batch. All settings including calibration are reset after clicking on the tab

**D** Press this Tab to continue with the ongoing batch.

**E** This is another very interesting feature developed to make sure that our gap measurement is not hindered by any arbitrary obstacles. In this case, at times, there are dust particles on the ring that can give erratic results since the camera might conceive it as part of the piston ring thus giving inaccurate results.

To neutralise this, we have incorporated 'shadow' feature wherein any dust residue or oily surface on the ring will be automatically presumed to be the part of the 'gap' and not as part of the 'ring' , subsequently giving us accurate results.

**F** ACCEPTED GAP : Herein, one can feed in the minimum and maximum gap range . This will be the accepted gap range.For instance, If the perfect gap is 0.42.(?) . But your acceptance is .07mm '+' or ' - '. Then our gap range would be Min : 0.35, Max: 0.49.

**G** It displays the still image of the the video feed thereby showing the microscopic view of the gap of each ring entered.

**H** ITEM : it can be a code for each batch of rings that you are measuring.

**I** Video Feed: It shows the microscopic view of the piston ring. Here there are arrow marks to adjust the focus of the camera. as per the gap of the ring displayed in the video feed so that the microscopic view of closed gap is visible

**J** GAP SIGNAL : This tab will turn Green/ Yellow / Red once the ring is measured.

Green, showing the ring gap is approved, Yellow showing the gap is less than the minimum set limit and Red ,signifying the gap is over the maximum set limit.

**K** Besides these tabs, there are counters that display the number of rings that have been ok/reworkable/rejected.

## Client List :

- Radha Soami Satsang
  Beas, Punjab
- Mayur Group
  Kanpur
- Nezone Foods Pvt LTD
  Assam
- Nebisco Biscuits
  Assam
- Agra Roller Flour Mills
  Agra
- Luthra Engineering works
  Agra
- LPR Exports Engine Components Pvt LTD
  Agra
- Chanda Roller Flour Mills
  Jharkhand
- Misruf Roller Flour Mills
  Assam
- Diwan Chand Suraj Prakash Jain
  Agra
- Anand Exports
  Agra
- Mool Chand Shyam Lal Roller Flour Mills
  Agra
- Dikun Pack Pvt LTD
  Kanpur


# Neural Automation & Control Systems

**25/46, Gandhi Nagar, Agra – 282003**

email : neuralacs@gmail.com

www.naacs.in

Yash Dhandharia
+91-9670985795

Anshuman Goyal
+91-9319210848

Ashwin Agrawal
+91-9719177616