HALO

Utilities

Feeder Power: 110V AC or 220V AC (0.7 kW) single phase

Feeder Air: 90 PSI max, 5 CFM, clean, dry air

Air Quality:

- 15 CFM
- 0.7 Micron particulate
- 2.5 PPM Oil
- Max Pressure: 8 Bars or 110 PSI (Regulated down to 2 bars/30 PSI at the machine)

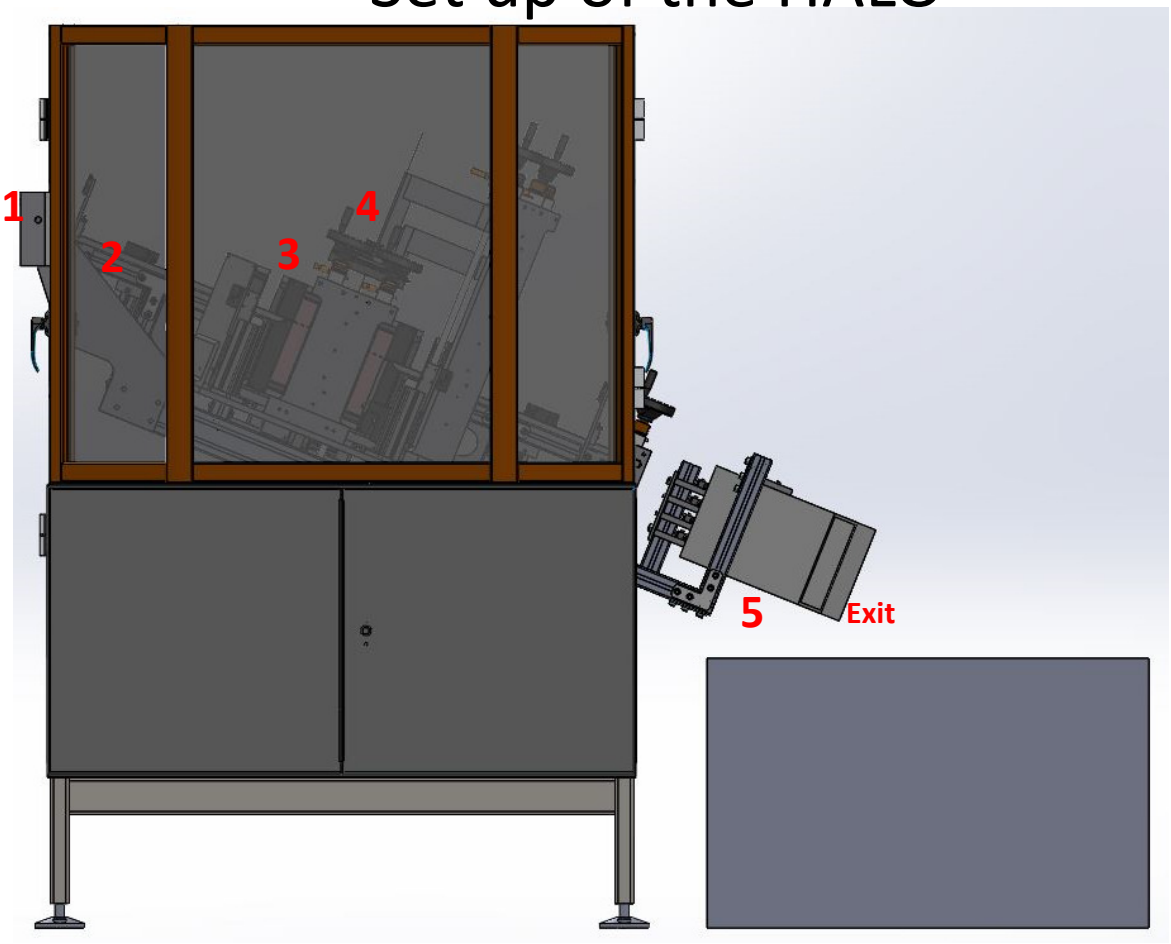
Notes

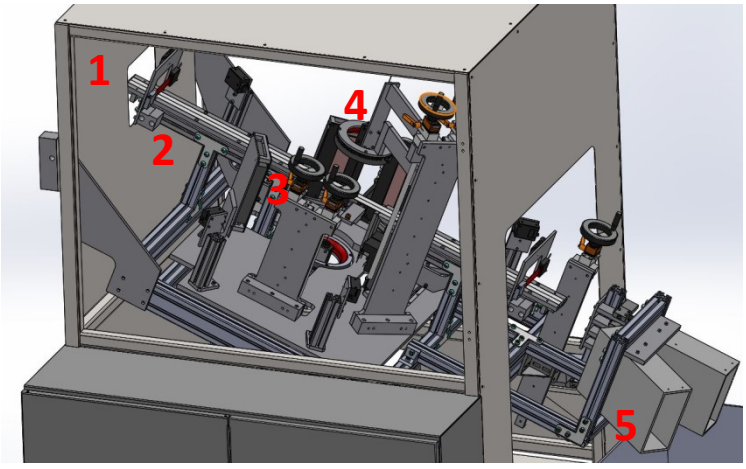
- General Inspection recommends limiting vibration to the equipment as much as possible. Vibration may affect system performance.

- Operational temperature requirements for the HALO are 10 – 30 degrees Celsius (50 – 86 degrees Fahrenheit). Storage and non-operation temperature requirements are 5 – 30 degrees Celsius (41 – 86 degrees Fahrenheit). Humidity levels must be maintained at <80% noncondensing.

- Dirt and/or oil on part samples will result in sorting process faults and reduce measurement accuracy.

Set up of the HALO



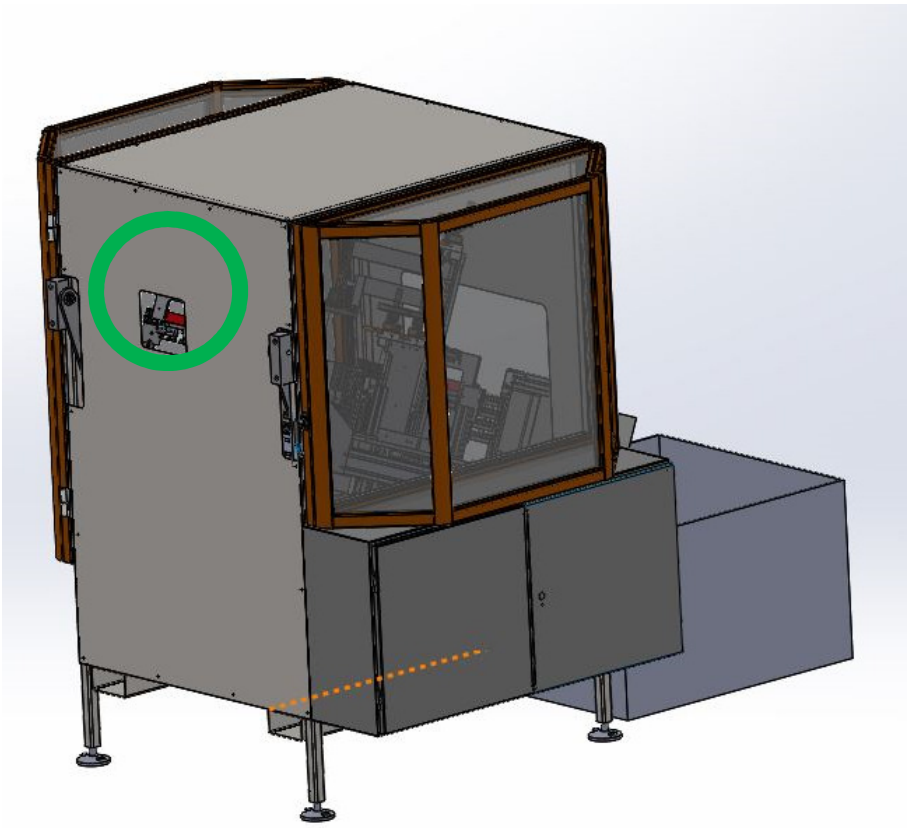


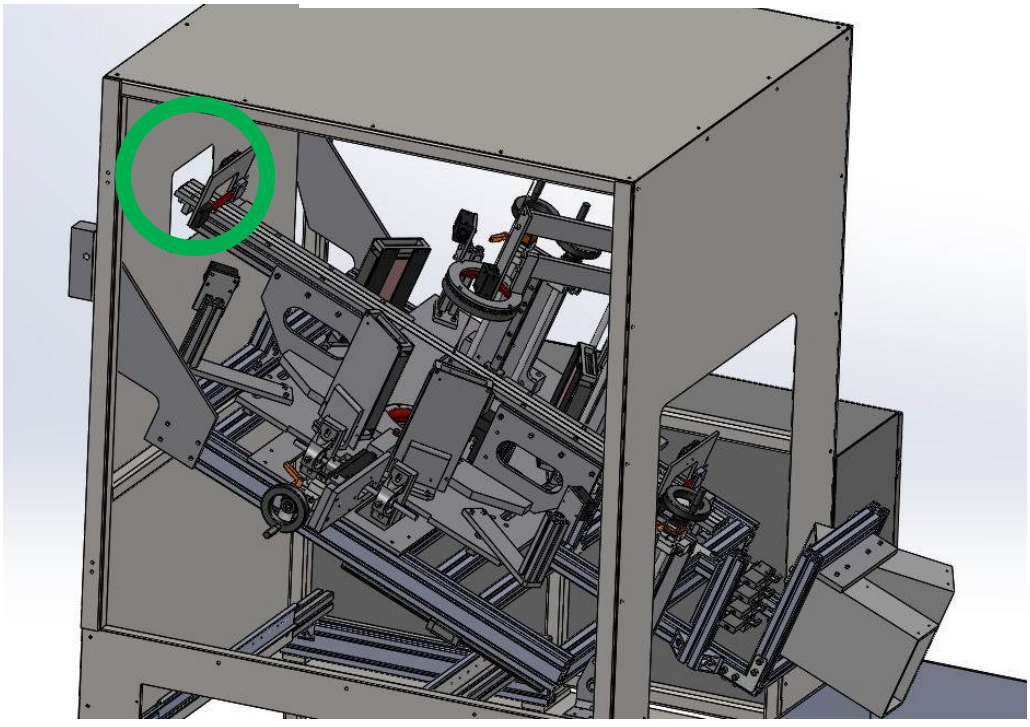
1. Entrance of parts
2. Hang by head track
3. Quad Vision system
4. Top Axial Viewer
5. Part Exit and Bin of parts

Station #1 Entrance of Machine

Entrance of machine: Fed by a standard hang by head feeder, the parts easily transition from the feeder to the Stainless steel hang by head track

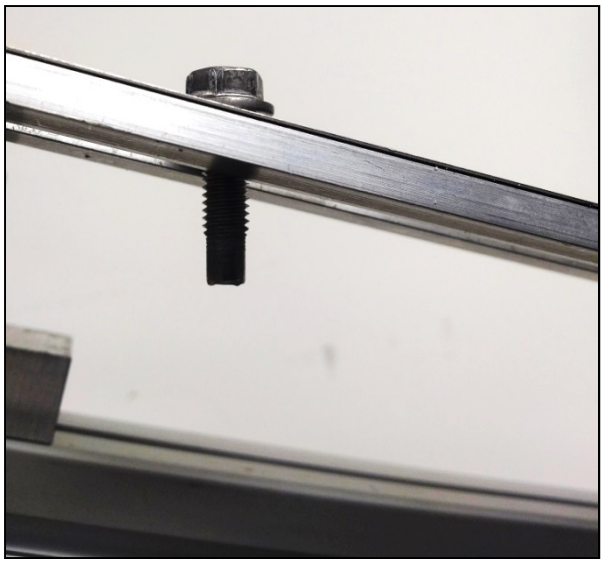
Back of machine: standard hang by head feeder will meet up to this point

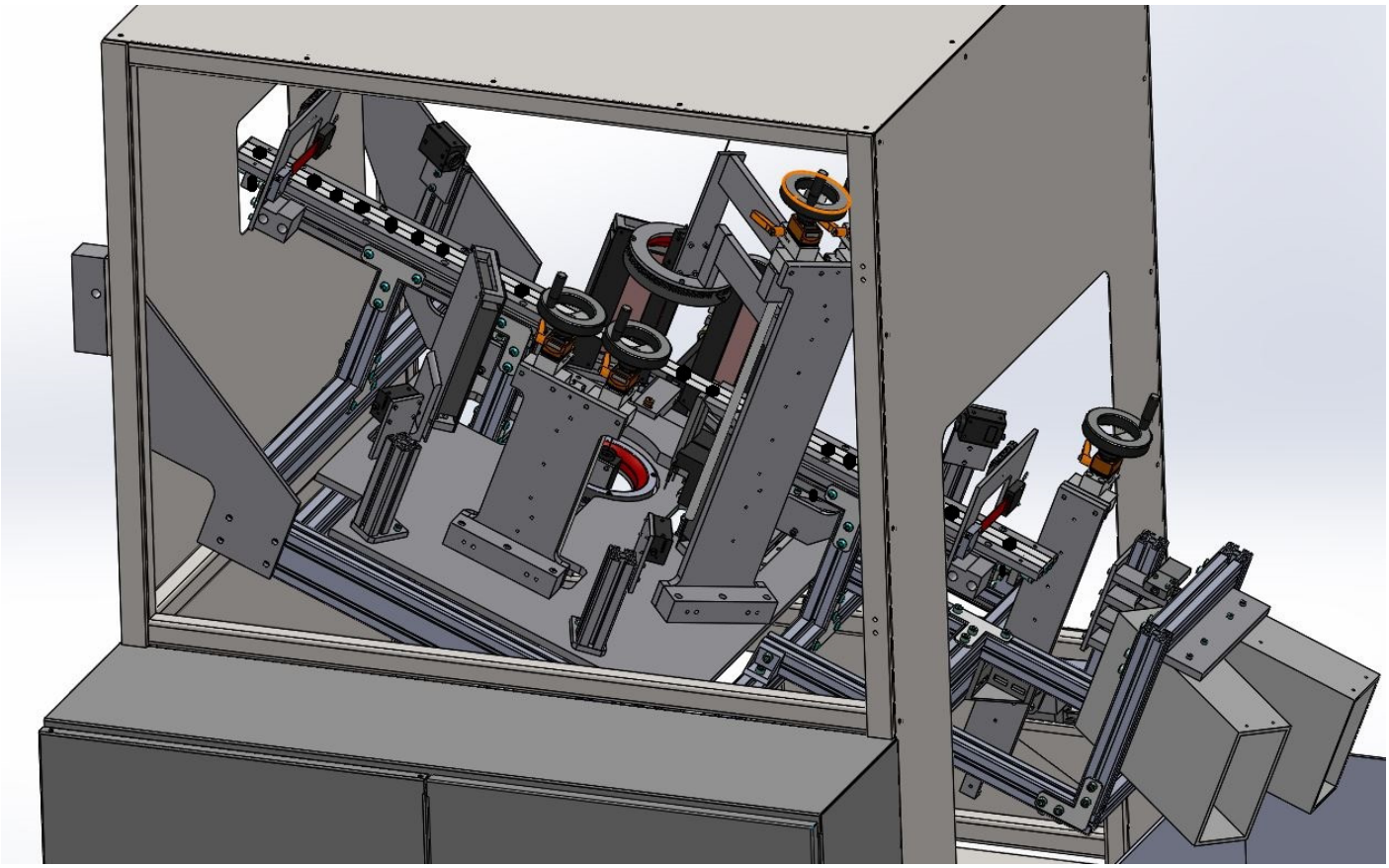




Station #2 Hang by Head Track

Hang by Head Track: Once the parts are transitioned from the feeder bowl, they continue to hang by their head on Gi's stainless steel track. While one side of the track is at a fixed position, the other side includes a single point adjustment. This moves one side of the track to accommodate multiple part sizes.



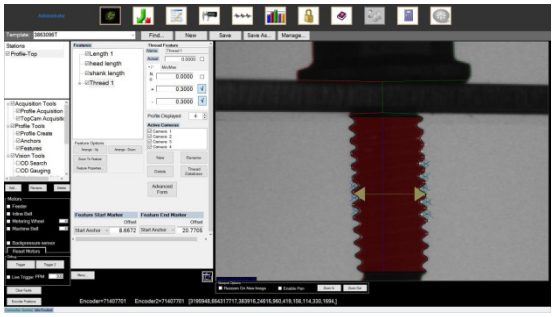


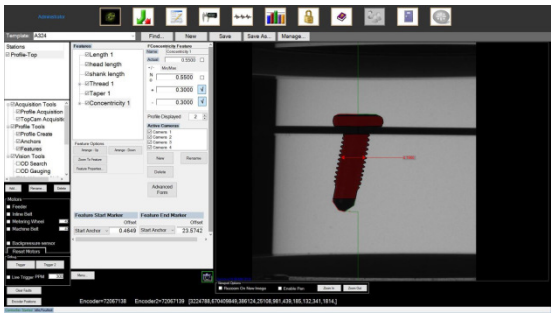
Station #3 Quad Vision System

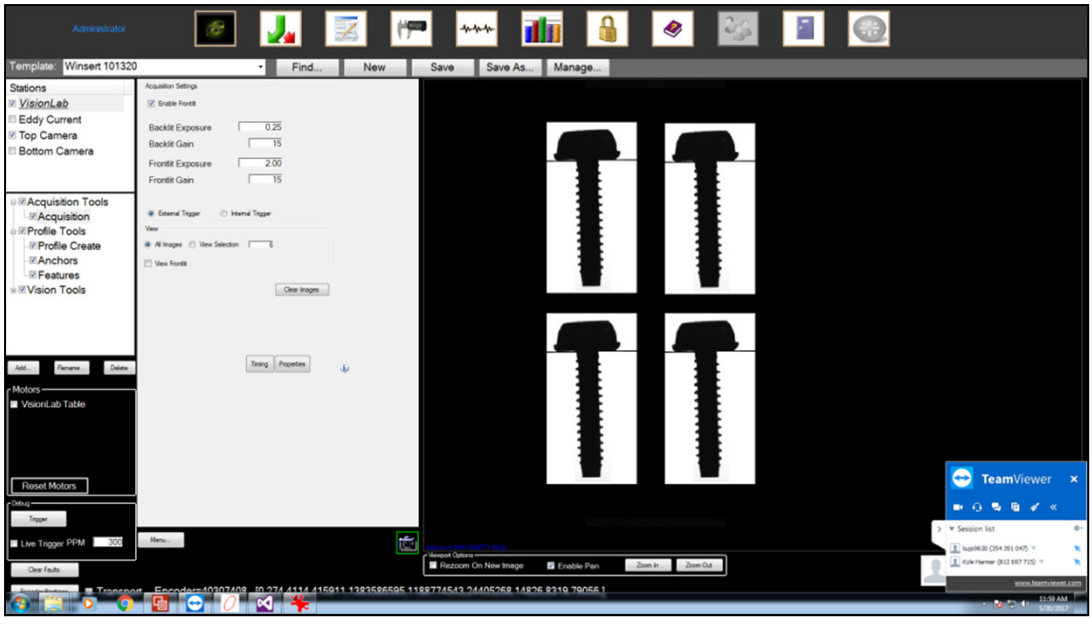
Quad Vision System: Four camera systems surround the part as it travels down the track capturing backlit images. This unique Vision System combined with the top ring light, creates the Halo effect and captures dimensional and visual data for each part.

- Back Lighting for full 360 degree dimensional inspection
- Estimated repeatability: 0.020 mm for lengths and 0.012 mm for diameters.

Diameter	Angles
Radii	Length from specified diameter
Concentricity	Straightness
Diameter from specified length position	Parallelism/ Perpendicularity
Tapers	Lengths
Threads	

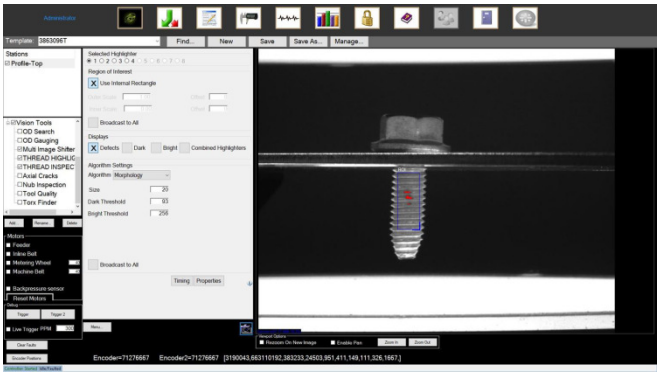


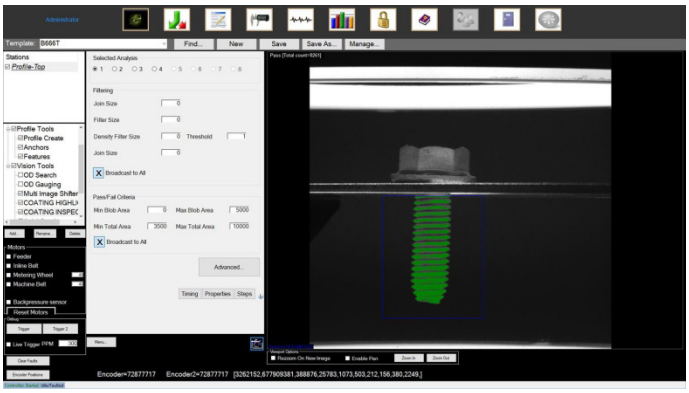


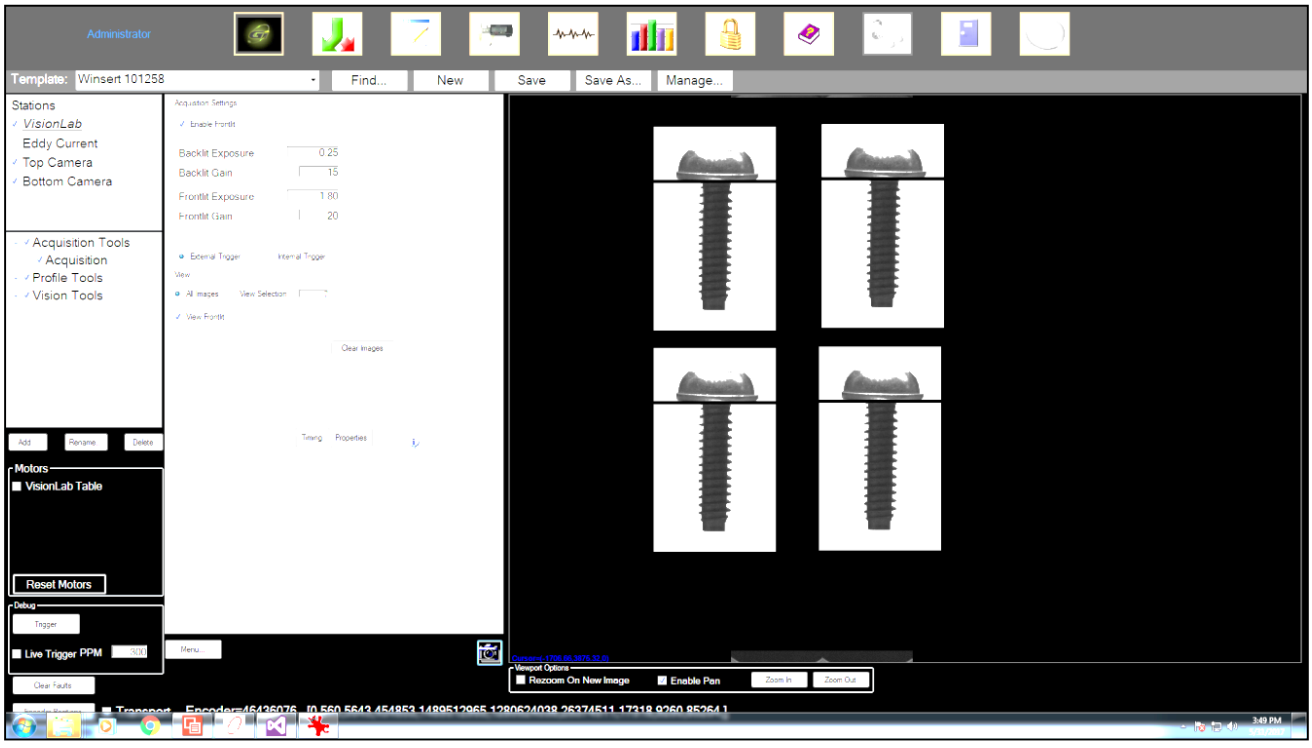


Station #3 Quad Vision System

- Front Illumination for Visual Defect Detection: Cracks, Splits, or Surface Treatment Variations, No coating, Damaged threads



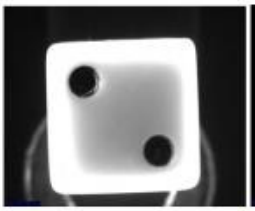




Station #4: Top Axial Viewer

Axial Viewer (optional): Single view camera with sophisticated image analysis software that minimizes surface and lighting variations. A strobe LED ring light illuminates the part head for a image around the head of the part. Proprietary software included.

Detects: Cracks, Scratches, Bad Flange, Washer, Missing features, No Torx



Standard lens can only see one side of the die

Axial Viewer sees five sides of the die

Sample side head crack on a fastener

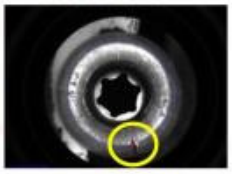
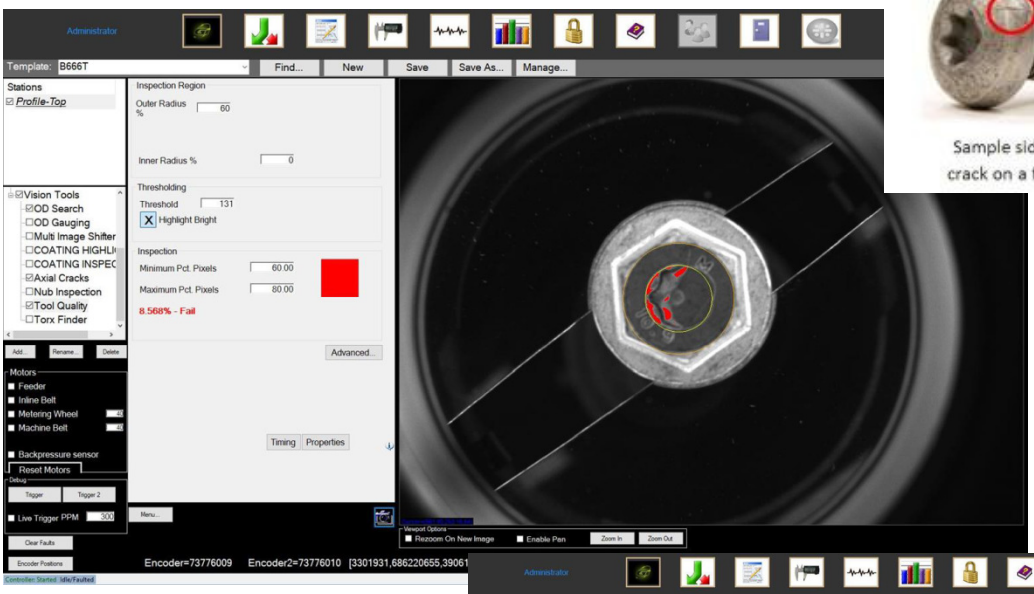
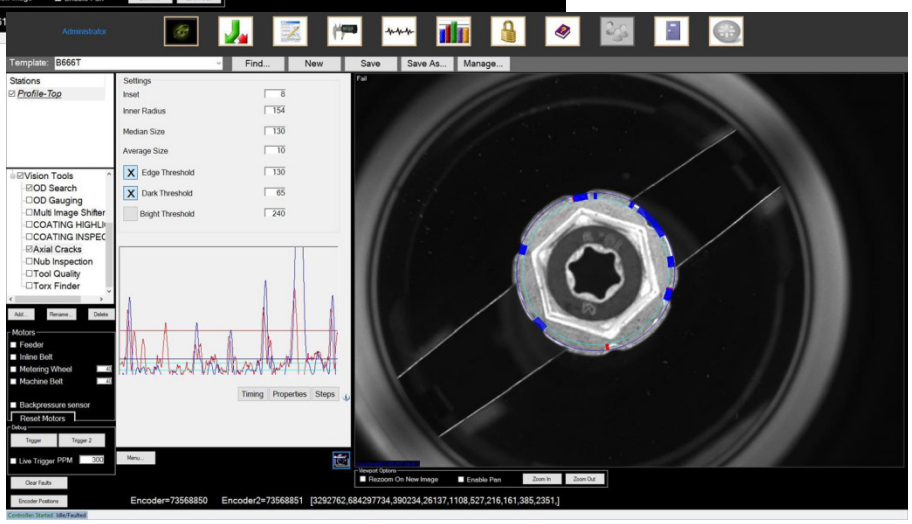


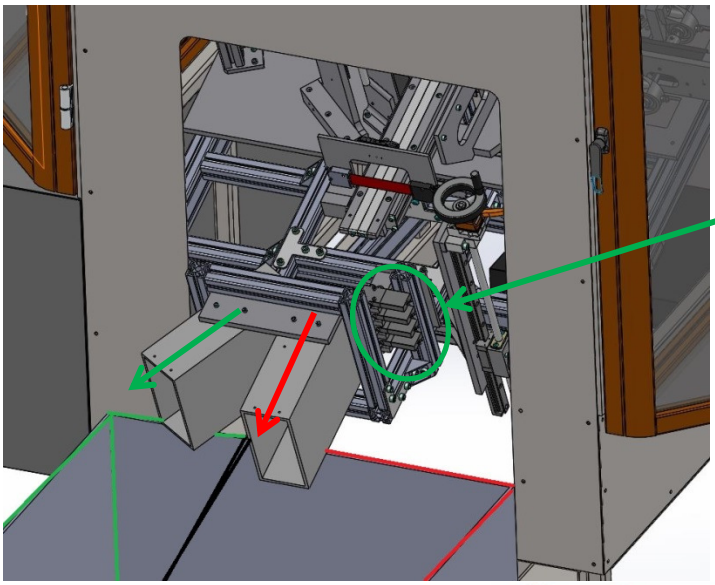
Image of part to the left from Axial Viewer



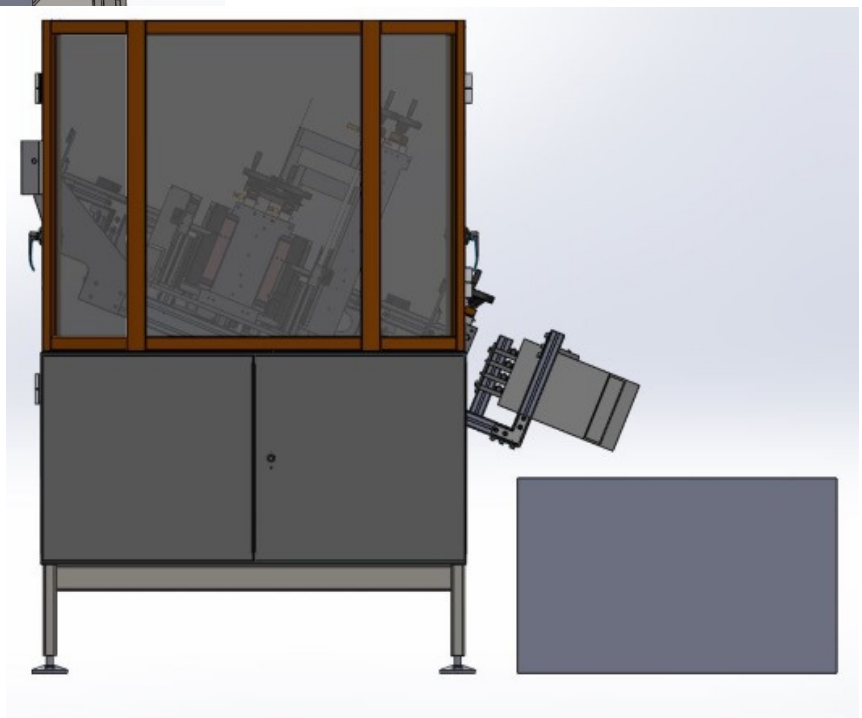


Station #5: Part Exit and Bin

Part Exit and Bins: After the parts pass thru each inspection station they are either rejected or accepted in to the proper chute. A series of air blow off valves direct the part into the proper chute. A failsafe system, part by default are set to fail, only if the part is deemed good, the air will trigger.

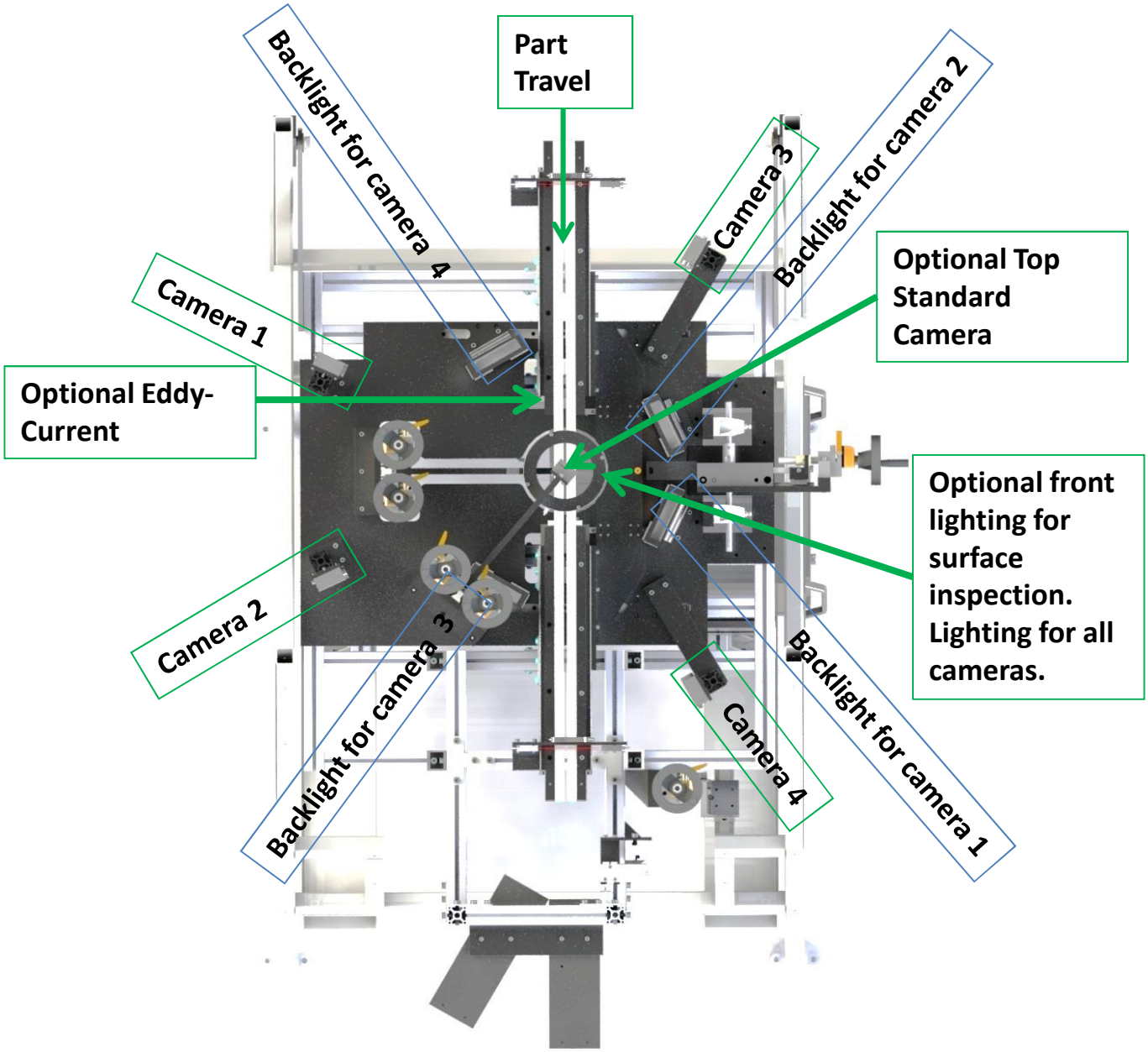


Air blow off valves



Side View

Top View


Backlight for camera 4
Part Travel
Camera 3
Backlight for camera 2
Camera 1
Optional Top Standard Camera
Optional Eddy-Current
Optional front lighting for surface inspection. Lighting for all cameras.
Camera 2
Backlight for camera 3
Camera 4
Backlight for camera 1