

A photograph of a car body on an assembly line. Several orange robotic arms are visible, some with blue cables. The car body is silver and appears to be in the final stages of assembly. A blue semi-transparent box is overlaid on the left side of the image, containing text.

Visual Inspection in Manufacturing - Defect Detection & Quality Control

We help to provide a comprehensive visual inspection platform that allows manufacturing companies to automate their manufacturing quality processes and reduce dependency on manual inspection.

Trident's Vision Intelligence System

To comply with high-quality demands from customers, businesses need to adopt new quality analysis technology. Trident offers Vision Intelligence System for manufacturing in Automobile, Glass, Pharmaceutical, FMCG, Laminate, and Cement verticals. To detect defects, measure dimensions of parts, Access high-speed detection on conveyors, detect missing components, read Barcodes and QR Codes, classify products, and much more with optical and thermal camera vision.



Increase Manufacturing Output

Attaining perfection of the product is done at initial level without getting to next inspection station with support of TGBS vision platform

Reduce Inspection Time

Increase in speed and accuracy in detecting defects help reduce overall inspection time and manufacturing yield

Maintain Process Consistency

Follow consistence and accurate method for inspection rather than manual method

Vision Intelligence System for your Industry



Automotive



Manufacturing



Retail & FMCG



Packaging & Printing



Pharmaceutical



Glass



Laminate



Cement

Vision Intelligence System for Automotive Industry

Our robust Visual Quality Inspection tool assures hassle-free deployment and reliable performance within any factory environment and automated equipment. Classify different variants of the product based on any differentiating factor i.e., color, shape and design. Detects visual defects like dent, scratch, burr, chip etc. It doesn't matter if you are a system integrator, line builder, or equipment supplier, we have a solution for all.



Identify

Read Barcode Labels and 2D barcodes straight from the marked parts, verify labels, and also direct part marks (DPM)

Inspect

Detects cracks, wrinkles, dents in any part while automobile manufacturing. Also, identify piston defects (foundry defects and mishandling)

Measure, Gauge, Guide

Measure dimensions of parts, outer and inner diameters of O ring, angle of the metal tips. Also, positions of labels and edges

Vision Intelligence System for Retail and FMCG Industry

No need to check every dimension and detail manually, switch your technology to intelligent quality detection, check the structural quality, dimensional accuracy, and operations quality in just a matter of seconds. Assure accurate ingredients and up-to-the-mark quality. As soon as you let automatic detection in, even particles that are hard to be found from naked eyes are spotted. Detect any foreign particles like metal, insects, unwanted ingredients, dirt, wood, small animals, and thorns. Make sure the color is accurate and your product looks perfect.



Vision Intelligence System for Packaging and Printing

Adopt automated visual defect detection to abolish packaging defects and comply with quality standards. Trident's Vision Quality Inspection spots packaging errors such as improper packing, irregular pasting, etc. in FMCG. Ensure accurate and perfect packaging of individual products, access high-speed detection on conveyors, detect missing components, read Barcodes and QR Codes, classify products, and much more with optical and thermal camera vision. Claim faster packaging operations, minimize waste, cut costs, and add up to your profit margin with our Vision Quality Inspection.

Component Presence

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Operational Quality

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Printing Accuracy

Check if the logo has been printed in the correct position of the package. Identify if the design is accurate and placed properly.

Dimensional Quality

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Packaging & Labeling

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Color Monitoring

Monitor color quality with visual quality inspection. Ensure the shade complements the correct spectrum of the illustrated picture.

Structural Quality

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Pick & Place

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut elit tellus, luctus nec ullamcorper mattis, pulvinar dapibus leo.

Proper Pasting

Check if the packaging has been pasted properly, ensure strong adhesiveness. Spot loose labels and check if the label has been pasted at the accurate spot

Vision Intelligence System for Pharmaceutical Industry

With an increasing need for patient safety and traceability, manufacturers like medical devices, bioscience products, and pharmaceuticals need a more cost-effective technology to inspect manufacturing quality. Trident Information Systems vision Quality Inspections and industrial identification solutions can give a hand. Control the quality of packaging, inspect infusion bottles and track your product swiftly.

Trident offers a cost-effective VQI and related industrial services with 100% automation. Save up your capital and bust manual errors



Quality control of blister packs

Track missing, defected, powdered, or chipped tablets or foreign tablets with a Visual Quality Inspection.

Inspection of vials, injection and infusion bottles

Inspect the quality of containers, seals of stoppers, crimps, and caps. Also, monitor the filling levels.

Product tracking with Track & Trace

Read all types of industrial codes, inspect labels, read and verify optical characters (OCR and OCV)

Vision Intelligence System for Glass Industry

Glass being one of the most brittle objects among all is needed to be dealt with extra care, spot defects during production such as distortion and refraction on side glass and windshield, etc. check if the logos look accurate and detect any scratch, patch, or marks. Make sure if all the parts have been glued properly and your product is now ready to be packed. Spot one of the most common defects i.e., bubbles, the hollow spaces filled with gas. Identify any blemish on the surface caused by mechanical or chemical contamination.



Distortion detection

Spot any sort of refraction or distortion on the windshield, side glass, and so on. Also check dust, scratch, patch marks, etc.

Logo Inspection

Check if the logos are accurately printed. Claim accurate dimensions and Identify any irregularities and distortions.

Check Fixatives

Inspect hard glue or gaps appearing in the joints, check if there are bubbles in the sealant and if everything is fixed properly.

Vision Intelligence System for Laminate Industry

Eliminate the risk of dispatching defective sheets caused by foreign particles or human errors to distributors. Make sure the barcode is correct to secure traceability and accurate dispatches. Ensure accurate chemical mixtures during the mixing process. Keep automatic records of laminate placements and pick up operations and identify machine alerts, monitor health, and compute their efficiency. Trace any foreign particles, resin spots, dust particles, design defects, and mosquito defects. Eliminate human quality inspections and automatically trace the causes of recurring defects.



Detect Defects

Detects minute defects such as foreign particles, resin spots, dust particles, design thorns, and mosquito defects immediately. Eliminate human errors with vision quality inspection

Sheets and barcode Accuracy Monitoring

Cut time on reprinting barcodes and making corrections, increase the accuracy of sticking barcodes and classify the pictures of sheets via visual insight services.

Enhanced Weighing Operation

Use IoT to monitor solution levels, weights, the temperature within the tanks, also the other operating conditions and let it access these sensor data on the output quality.

Vision Intelligence System For Cement Manufacturing

Check cement consistency, chemical solutions and detect if there are any unwanted particles present within. Automatically check defects from the bottom of the surface. Monitor cement color (ideally grey with a hint of green), identify if there are any lumps, and make sure the texture is as smooth as it should be. Identify if there are contaminants such as sand, dust, metal particles, etc. Trident's Vision Quality Inspection allows easy and accurate defect detection and saves a good deal of time and effort.



Color Test

Monitor if your cement shade is accurate i.e., it should be uniformly grey in color with a hint of green shade

Lumps Detection

Detects if the cement is not forming any lumps due to moisture content present in the atmosphere.

Texture Monitoring

Monitor the cement texture accurately. Detects any adulterated sand particles that may disrupt its smoothness



Case Study from Leading Manufacturing Industry

"We needed continuous inspection of each packet which can run between 300-600 packets per minute over conveyor belt, as currently inspection is done after every 30 minutes and it can tend to manufacture 9000-18000 defected packets per minute which is a surplus loss. After on boarding to Visual Quality Inspection this rate has been decreased as any wrong/defected product inspected by camera gives an alert to the human inspector on real time basis".

READY TO TAKE THE NEXT STEPS WITH TRIDENT'S MACHINE VISION SOLUTIONS

Contact us today to schedule a quick chat about your project, or sign up for one of our monthly demos!

[Request For Demo](#)