# SCORPION 2D & 3D ROBOT INSPECTION
CASE STORY - AUTOMOTIVE PRESSURE SENSOR
100% INSPECTION - ZERO DEFECTS

Flexible automation means robots, automation and vision working together. This reduces cost and increases the flexibility and possibility to produce several product variants in one production line at the same time - 24 hours a day - with profits. The vision system's ability to locate and identify objects are critical elements in making these systems.
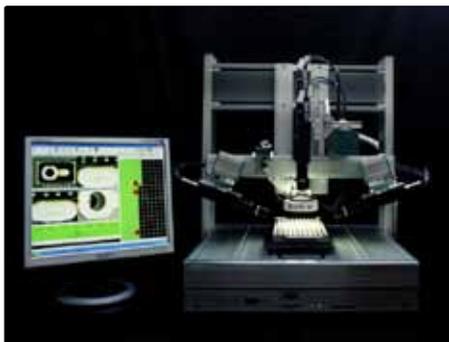
Scorpion Vision Software®, Sony Desktop Robot, Sony firewire cameras, Vision PC running Windows V7

Sony Desktop Robot's winning combination of superior performance and compact size, combined with Sony Firewire cameras and Scorpion Vision Software® are redefining the meaning of optical inspection systems. Advanced inspection systems are put into operation in the matter of days using only standard components.

Scorpion has been used in robot vision and inspection system for many years. Scorpion has a complete toolbox of robust and reliable image processing tools needed for robot vision, gauging and assembly verification. Included are high accuracy and sub-pixel object location tools making it a perfect companion to Sony's world class components.

SCORPION ROBOT INSPECTION FEATURES

SEAMLESS SONY DESKTOP ROBOT INTEGRATION
The robot is seamlessly integrated with Scorpion Vision Software. The Scorpion Robot Control Module removes the need for robot programming. The module includes a robot program making it easy to move and position the robot from Scorpion. Scorpion connects to the robot over RS-232.
Every aspects of Start/Stop/Home Position, Emergency Stop, IO, Program Selection and 3D movement are controlled.

DIGITAL CAMERAS ENSURE SUPERIOR IMAGE QUALITY
Using high quality firewire, smart or GigE cameras, the image quality is ensured even when mounting the camera on the robot. Wireless image transmission is supported when using GigE cameras.
In complex applications where two or more cameras are needed, the cameras are synchronized using hardware triggering.

Sony XCD V60E camera

USER INTERFACE
Scorpion has a feature rich, functional and configurable Man Machine Interface with image display, data input pages, web pages, ActiveX containment, result panels, image history list, real time trends, logging, event log and quality alarms.

### APPLICATION SPECIFIC CONFIGURATION INTERFACE
Data Input and custom HTML pages make it fast and easy to implement application specific configuration tailored to each application.

RELIABLE IMAGE PROCESSING
Image Processing is robust, fast and flexible in a non-programming point & click environment with more than 80 powerful vision tools.

OPTIMAL OBJECT LOCATION WITH POLYGON-MATCH™
PolygonMatch™ is an optimal way to locate objects with subpixel accuracy. Multiple polygons define the shape or model of the object. When using the model the same shapes are extracted from the images and fitted to the original model with the highest possible accuracy.
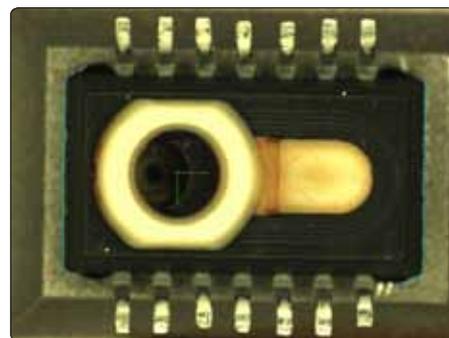
*The chip is located with Polygon-Match™*

HIGH PRECISION GAUGING WITH ROBUST LINEFINDER™ TOOL
Combining 6th order lens calibration with the robust LineFinder™ tool makes it easy to implement gauging systems with resolution better than 1/10th of a pixel.

SCORPION
VISION SOFTWARE®

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TORDIVEL

Easy to use color classi_cation with ColorMatcher™

ColorMatcher™ detects reliably the smallest color differences based on reference images. Multiple references improves sensitivity and are easily added by clicking in the area of the images where the actual color is located.
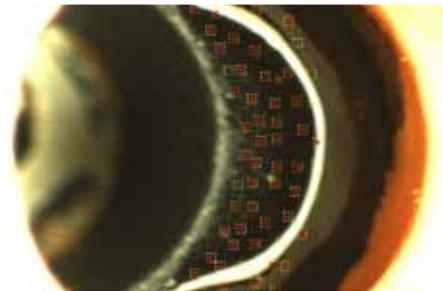
Glue coverage measured in an area tailored to the inspected object

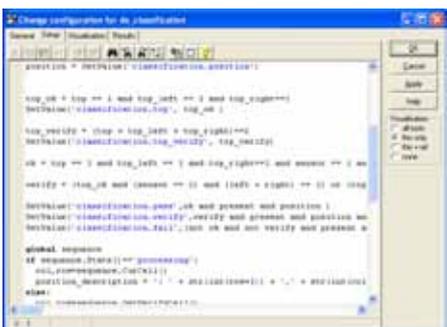## Traceability with optional Data and Image Logging

By logging measured values and images tagged with process data, invaluable information is stored helping the production engineer to document the condition of every single manufactured product.

Mechanics

Profiles are built using standard Montech Profiles.

Flexible Interfacing and Fuzzy Logic with Python Scripting

Scorpion's integrated Python Scription Kernel is ideal to implement classification logic, interface SQL databases and to interface other devices over rs-232, tcp/ip or OPC.

Python scripting

Reference System Automotive Pressure Sensors 100% Inspection

Scorpion is inspecting a tray of 180 pressure sensors in six minutes, helping the customer to zero defects and to avoid the cost of the alternative manual microscope inspection. The robot is equipped with four high quality high performance Sony XCD-710CR digital color cameras.
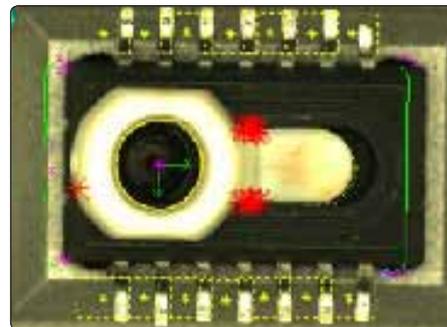
The Cast Pro II covers 350 x 350 mm with a precision of 0.02 mm - available in 2,3 and 4 axis version.
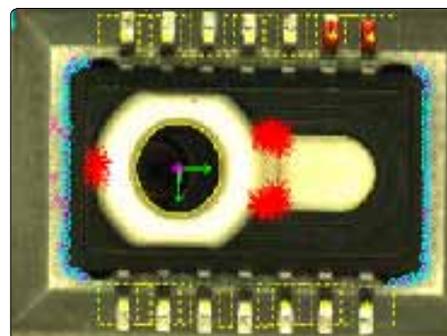
Sony Cast II Pro Desktop Robot, four Sony firewire cameras, Scorpion Vision Software®, PC running Windows XP
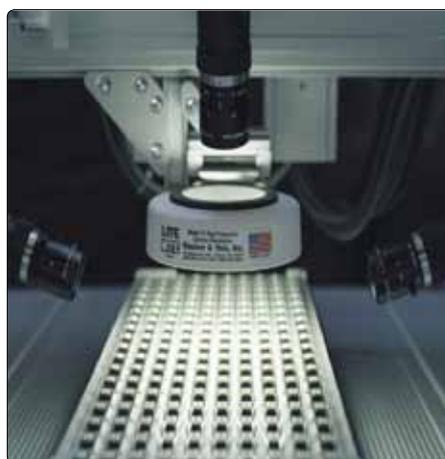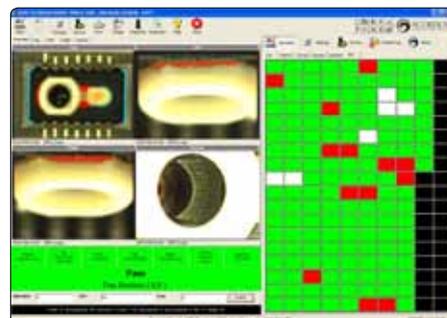
The pressure sensor is 100% inspected for position - missing parts - orientation - glue coverage and more.

Out of position

Glue on pins

Clicking in the matrix on the screen moves the robot in position and reinspects sensor.

For more information:

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