Owens Design
Capital Equipment Design & Manufacturing

CUSTOMER CASE STUDY

SOLAR PHOTOVOLTAIC INDUSTRY

PHOTOVOLTAIC CELL PROCESS AUTOMATION

The Situation

A solar startup company had an urgent need to develop an automated process tool to deploy their innovative solar photovoltaic (PV) technology. The company had successfully demonstrated their process with manual process tools and now needed to quickly ramp their capacity to meet the expanding requirements of the solar industry.

PV Cell Input Gripper

The Challenge

The tool must process the fragile cells at high speed then sort and precisely place them into custom carriers for the next operation.

Vision is required at the input and output to inspect for surface and dimensional defects and provide positional feedback for the robotics. The solar company needed to rapidly design and build a fully automated system and support ongoing manufacturing and improvements for their aggressive ramp schedule.

The Solution

Owens Design worked collaboratively with the customer to develop a high speed reliable process. The process was incorporated into a turnkey automated prototype in 18 weeks. The prototype tool achieved the cycle time and yield goals the customer needed for production. Owens Design then incorporated the learning from the prototype into the next generation process tool resulting in higher throughput and full integration with the prior process step.

Integrated PV Cell Vision Inspection at Input Station

High Throughput PV Cell Process Automation

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