

## USE CASE

# Visual part identification and inspection in manufacturing

## Target

Improve quality, accuracy, and inspection scalability by enabling AI systems to identify parts and detect defects with explainable, traceable reasoning.

## Challenge

Manufacturers have invested heavily in computer vision systems to detect defects and identify parts. But these systems typically return pass/fail outputs without explaining how decisions were made.

- ⚠ Visual AI systems provide results without reasoning or traceability.
- ⚠ Operators cannot verify why a part was flagged or approved.
- ⚠ High false positive rates lead to unnecessary waste and rework.
- ⚠ New product lines lack sufficient defect data for model training.
- ⚠ Inspection expertise is difficult to scale across shifts and locations.

## Solution

With SeekrFlow™, manufacturers apply multimodal AI to analyze visual inputs, generate explanations, and trace decisions back to source data.

The platform enables systems to not only detect defects and identify parts, but also explain what was observed and why a conclusion was reached.

AI-driven outputs are transparent and contestable, allowing operators to validate and correct decisions in real time.

## EXAMPLES

- **Visual part identification:** Identify unlabeled parts using image-based reasoning.
- **Defect analysis:** Detect and explain quality issues in components.
- **Inspection validation:** Verify and review AI-generated inspection results.
- **False positive reduction:** Improve accuracy by incorporating contextual reasoning.

## Impact

- ✓ Improve inspection accuracy and reduce false positives.
- ✓ Increase operator trust in AI-driven quality decisions.
- ✓ Enable scalable, consistent inspection across operations.
- ✓ Accelerate ramp-up for new product lines.