Bonfiglioli Engineering Case Study:

Custom 3-in-1 Combination Inspection System for Oil-Based Ampoules

A pharmaceutical company based in Brazil came to Bonfiglioli Engineering with a complex challenge: they needed a leak testing solution for an oil-based product—a container type that is notoriously difficult to test using traditional USP <1207> methods.

To maintain regulatory compliance and reduce waste, the company needed a pressure decay solution capable of detecting micro-defects while handling high speeds and delicate ampoules.

Bonfiglioli Engineering provided a feasibility study to demonstrate the capability of its pressure decay technology to detect 10-micron holes in oil-filled ampoules using a 36-station rotary tester processing 24,000 containers per hour.

After a technical site visit and discussions with the customer's Quality team, Bonfiglioli Engineering proposed a fully integrated solution that addressed three separate needs:

1. **Leak detection** using pressure decay for oil-based ampoules
2. **Automatic visual inspection** of the ampoule tip
3. **In-line labeling with verification** of label accuracy and pharma code verification

Bonfiglioli Engineering was the only company able to offer a monobloc combination inspection machine that could fit into the customer's space and meet all three requirements—streamlining their production line and reducing operational complexity.

Bonfiglioli™ Engineering

"The 3-in-1 combination inspection machine is modern, robust, and high-performance. Bonfiglioli Engineering's support has been exceptional, from FAT through installation. We're already working with them to develop additional inspection solutions for our operations."

The customer was impressed by more than just the machine's footprint. The high sensitivity of the 3-in-1 combination inspection machine inspired the customer to upgrade upstream processes to meet the machine's high-performance standards—leading to overall improvements in product quality.

What's more, the solution consolidated three separate machines—normally requiring six operators—into one automated unit run by just two operators, with a single HMI interface.

Output:
24,000 containers/hour with fewer operators and reduced footprint

Results:
Improved overall product quality, regulatory compliance, and operator efficiency.

Bonfiglioli Engineering is proud to support pharmaceutical manufacturers with solutions that don't just meet expectations—but often exceed them.

Interested in learning more?

Contact Us or review our information on **Pharmaceutical Packaging Testing**

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