

AMT and INFICON – get results.

PROJECT CASE STUDY:

“Tek-Mate” Handheld Refrigerant Leak Detector

Inficon, Inc. is a leading developer, manufacturer and supplier of vacuum instrumentation, critical sensor technologies and process control software, with an emphasis on process engineering expertise, for the semiconductor and related industries.

CHALLENGE:

*Make It Easier
To Handle and Use,
Reduce Overall Costs,
Meet Tight Deadlines.*



BEFORE: Tek-Mate was difficult to grasp, expensive to assemble and maintain.

Working with Inficon, Applied Mechanical Technologies, Inc. (AMT) redesigned the shape and style of the Tek-Mate and helped the company optimize the device for manufacturing. The original design of the “Tek-Mate” detector made it:

- Awkward to use with one hand
- Expensive to manufacture (parts, labor, assembly time)
- Unappealing, with an outdated appearance
- Difficult to service the key components
- Hard to access batteries and sensors for maintenance

In addition, a working prototype was needed for demonstration and sale at an SAE show in less than nine months.

AFTER: New fluid design was engineered to be easily assembled and maintained at a reduced cost.

SOLUTION:

A Complete Rework — The AMT Approach.

At the beginning of the process, AMT brought its design/engineering professionals together with Inficon’s product development team. AMT’s Project Management Process included:

- Brainstorming
- IDHI – Industrial Design Human Interface
- DFMA – Design for Manufacturability and Assembly
- Concurrent Engineering
- Cost-Effective Materials Planning
- Vendor Collaboration
- Prototyping and Tooling
- Benchmarking Results



The power of participation by Inficon and AMT meant the project was well thought out from the start. Schedules, with sign-off approvals, were created up front for the many checkpoints that occurred during the process.

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OBJECTIVE:

Work Concurrently in Distinct Phases.

At AMT, we use phases to plan and execute projects. Below is an overview of how this process worked for the Tek-Mate detector:

- Phase #1: AMT and Inficon determined the requirements for the new product design.
- Phase #2: Brainstorming and concept development took place within the first three weeks.
- Phase #3: Industrial design studies were prepared.
- Phase #4: CAD modeling was used to develop initial designs.
- Phase #5: Functional prototypes were created working with SLA models and Inficon's electronics.
- Phase #6: A materials search was conducted to find cost-effective, better shielding plastics.
- Phase #7: Working with Inficon's molder, molding problems were anticipated and corrected.
- Phase #8: Tooling stage included cross-platform integration of all electronic designs, data conversion and exchange, and final project documentation.
- Phase #9: Working samples were manufactured and demonstrated at SAE show.

RESULTS:

Project Success:

*Inficon took Tek-Mate orders at the show,
AMT met all project-related objectives.*



Please call us at **585.475.1680**, or visit our web site at **www.amteam.com** to find out more.

Put our people, process and technology to work for you.

¹Source: www.INFICON.com