

> Case Study: Engineering & Design

Client: Whirlpool

Whirlpool is a leading designer and manufacturer of home appliances and home appliance accessories.

The Challenge:

Whirlpool had a requirement to augment their internal product development team with engineering support.

BACKGROUND:

Whirlpool needed support throughout their development process with solid modeling and checking of the form, fit, and function of their new freestanding cook tops. For this to happen, they required outside engineering support.

THE TES SOLUTION:

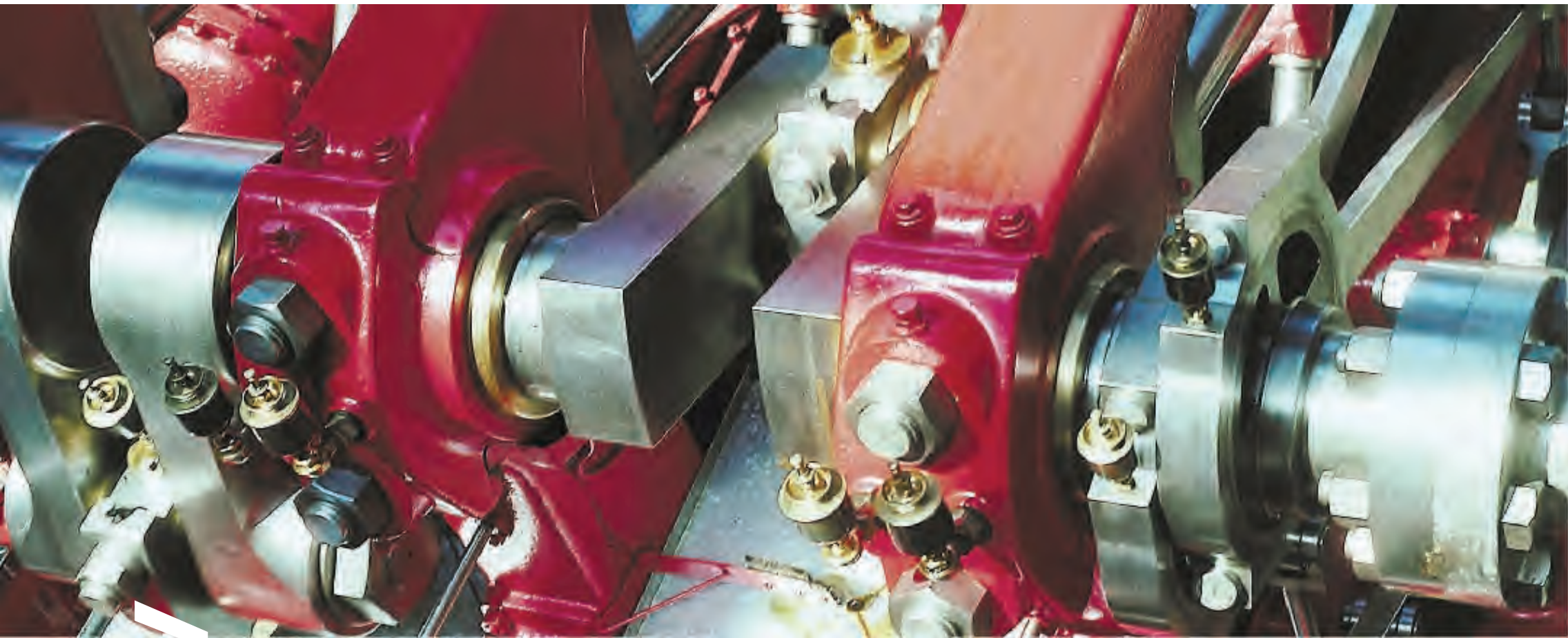
TES provided professional engineering design personnel to meet Whirlpool's needs. The selected personnel assisted with a range of disciplines such as modeling, detailing, layout, sheet metal design, etc. TES also assisted with designs for sides and back housing of convection ovens, cook tops, free-standing stoves, and professional and residential cook tops. They also aided with packaging design.

THE RESULTS:

Having TES personnel assist with design, modeling, etc. allowed Whirlpool's team to work on their primary job function. TES's ability to ramp up and ramp down quickly also allowed Whirlpool greater flexibility when budgeting man hours for projects.



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Engineering & Design Services

Thinkpath Engineering Services, LLC. (TES) – When You Insist on a Professional

Our design services can cover every facet of your design, detailing and drafting needs, from concept to rapid prototyping to a complete turnkey package.

TES's senior level engineers and designers have extensive industry expertise and state-of-the-art technical capabilities to embrace every aspect of your project.

We have provided engineering design services to thousands of customers in virtually every type of engineering project – from aerospace and automobile tooling to printing equipment. We've also designed almost anything you can imagine, from complex automated assembly lines to children's toys, from aircraft controls to hip replacements. As a result, we have developed the technical skill base and management structure to provide expert design engineering for programs of any size.

Expert Staff & Advanced Tools Mean Excellent Results

To effectively deliver our engineering and design services, we combine the expertise of our staff with the best in hardware and software. Many of our professionals have more than 10,000 hours experience with the most up-to-date programs, including the latest releases of the most advanced parametric solid modeling software.

We Specialize in Design for Many Industries, Including:

- Automotive
- Aerospace
- Material Handling
- Automation Equipment
- Military Defense Systems and Equipment
- Medical
- Health Care
- Construction Equipment
- Power Generation and Distribution

Our Services

TES offers a full menu of design services. We can quickly respond to your needs by using our experienced staff in multiple shift operations. Here are just a few of the many services we offer:

- Conceptual Design
- Layouts
- Form Fit and Function Analysis
- Detailing, including Geometric Dimensioning and Tolerancing (GD&T)
- Reverse Engineering
- Development of Technical Data Packages (TDP) Level I through III

Providing The Full Spectrum of Engineering & Design Services

Conceptual Design Through Manufacturing Prints

With countless hours of experience in conceptual design, form fit and function analysis, layouts as well as the creation of manufacturing prints, TES's designers can take your project through every phase of the design cycle. You may have already developed the concept and are interested in TES's ability to take the design the rest of the way through the engineering process. Our unique structure provides the flexibility to offer a turnkey service, as well as the option of picking and choosing only the services you need. TES's design team is well versed in many of the leading high-end parametric CAD programs, and is capable of creating models that can be directly utilized in the manufacturing process.

TES's strength lies in decreasing your design cycle time, allowing you to complete your project on time and under budget.

Reverse Engineering

Companies sometimes create prototypes to assist their R&D department to review the look and feel of new designs prior to manufacturing. Other times, they manufacture parts but do not have the associated manufacturing prints. In both cases, TES's design team can provide a cost-effective solution.

By employing state-of-the-art Coordinate Measuring Machines (CMM) and/or Optical Scanners, TES's design team is able to generate parametric solid models of existing piece parts, assemblies and prototypes. Once this task is completed, a variety of engineering functions can be performed to assist in the finalization of the design to include form fit and function analysis, and the creation of complete manufacturing prints. TES's team has successfully provided reverse-engineering solutions on a variety of products, from ground effects packages for the automotive industry to television sets.



You Can Count On TES

Our engineers and designers are the best in the industry, and have received quality process awards from many Fortune 500 companies. We have the necessary skills, experience and software capabilities to meet all your performance requirements, budget, and deadline – no matter how demanding the project.