

## CUSTOMER NAME

**Andrew Rogers Industrial Design**

## LOCATION

**Adelaide, South Australia**

## COUNTRY

**Australia**

## INDUSTRY

**Design and Manufacturing**

## PROJECT DELIVERY DATE

**2010 - Ongoing**

## AUTODESK SOLUTIONS

**Autodesk Inventor****Services Provided**

Industrial design (product design) and Design Management, Value Analysis, Systems Analysis, Full CAD Software for Computer Modelling, Photo-realistic Renderings and Animated Modelling, Model Making via in-house 3D Printers, Laser Cutting and CNC Milling Machines, Prototyping via in-house Precision CNC Milling and 3D Coordinate Measuring Machines, Hundreds of other in-house specialised tooling resources.

**Other Professional Services**

Tooling and Production Coordination, Product Engineering, Electronic Engineering, Drafting and Pattern Making, Tool Design and Tooling, Production, Production Supervision and Quality Control, Logistics Management including Protective, Cost-effective bulk transport packaging, Corporate Graphics, Packaging, point-of-sale requirements and technical manuals, Production and Product review.

**Customer Challenge**

The initial challenge is to design with accuracy while being fully functional. Design for manufacture and testability are crucial aspects of the design process- while most understand design for manufacturing, many overlook the need of design for testability. Design for testability means that the designer knows how to test that a product is optimally functional - to be able to prove through testing, during the manufacture and assembly process, that every component is maximally effective and fully complies with the specifications. Design for testability and strict quality control are a standard part of ARIDs design process, ensuring that each unit produced is of the highest standard.

# Designing Functional Industrial and Commercial Products with Accuracy using Autodesk Inventor



Tecalmit Hose Reel and Grease Pump Industrial Automotive

ANDREW INDUSTRIAL  
ROGERS DESIGNER**Project Goals**

The project goals for the following industrial and commercial products include...

**Comfort Breeze Eclipse and Summit Evaporative Air Conditioners** – To design and specify all mechanical and visual components for 2 ranges of evaporative air conditioners.

**Mistral Airflow Bathroom Fan Heater Lights** – To design and specify all mechanical and visual components for a domestic bathroom exhaust fan.

**Tecalmit Hose Reel and Grease Pump Industrial Automotive** – To style, create the product into a model and provide material and finish specifications.

**Enseal Secure product and packaging authentication technology** – To allow on-the-spot consumer verification of product authenticity and seal integrity, before purchase, simply by touching a smartphone to the capsule.

There is a critical, integral relationship between the design process and the most appropriate specific method for the production of the product. ARIDs intimate familiarity and 'hands-on' experience with the full array of production materials, traditional and contemporary manufacturing processes, their relative advantages, limitations and suitability to the specific requirements, is a critical factor in the design process from the outset, with recursive review and modification being a proven beneficial procedure in this process, to continue to identify and exploit product improvements and production cost savings as product aims and functions, and production technologies, continue to evolve.



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Comfort Breeze Eclipse and Summit Evaporative air conditioners

## Outcomes and Solutions

The outcomes for the products mentioned previously are...

**Comfort Breeze Eclipse and Summit Evaporative air conditioners** - ARID produced the design and all tooling, as well as designing the machinery and factory to build the products.

**Mistral Airflow Bathroom Fan Heater Lights** - The design from concept to computer generated illustrations were finished in Australia, and the product engineering, tooling testing and production were completed in China.

**Tecalmi Hose Reel and Grease Pump Industrial Automotive** - The Hose Reel received the Design Institute of Australia Award of Merit and impressed the company by trebling sales. ARID also produced instruction manuals and training videos.

**Enseal Secure product and packaging authentication technology** - Every stage of product sourcing was recorded, processing and packaging, including geo and date stamping, even to the instant the pack is first opened.

Andrew Rogers, the owner and principal designer, has a clear understanding, proven by a long record of successful product launches and sales, of what makes a product sell and become a commercial success. With this in mind, Andrew's design methodology and practice, simply put, follows this process

After extensive research and idea development, Andrew uses computer aided design (CAD) programs to draft the product. He then produces a physical example using a range of on-site prototyping tools including laser cutting, 3D printers, CNC machining and an ultra-precision 3D coordinate measuring machine.

This real-life, super-accurate modelling, allows the product to be seen, held and examined, as well as thoroughly analysed. Should an option need to be explored or an improvement be identified, another prototype can quickly be produced in-house. Once the design is finalised, it is then recreated using the intended materials via the same in-house resources and 'field tested' for manufacturing by processes ensuring sustainability and cost-efficiency.



Enseal Secure product and packaging authentication technology

## Business Outcomes

ARID has now established its own manufacturing and assembly facility, with a range of high-quality equipment in operation, including injection moulding, a specialised lathe for creating custom precision parts and a large-scale twin head 3D printer. This facility is also controlled by Andrew Rogers, who travels there 6 to 8 times per year, to personally supervise coordination and production there 60 to 80 days every year.

## Conclusion

The additional facility allows ARID to better manage production at all stages and ensure ongoing product quality and consistency. It also means ARID can more easily achieve exacting and timely production while controlling costs, to maintain budgets and ensure the cost-effectiveness of breakthrough products. ARID also supplies all product user interface graphics as part of the design package, as well as all bulk packaging solutions for the most protective and cost-effective transport and distribution of the finished product.