

## Services Brochure

### Non-Contact 3D Scanning

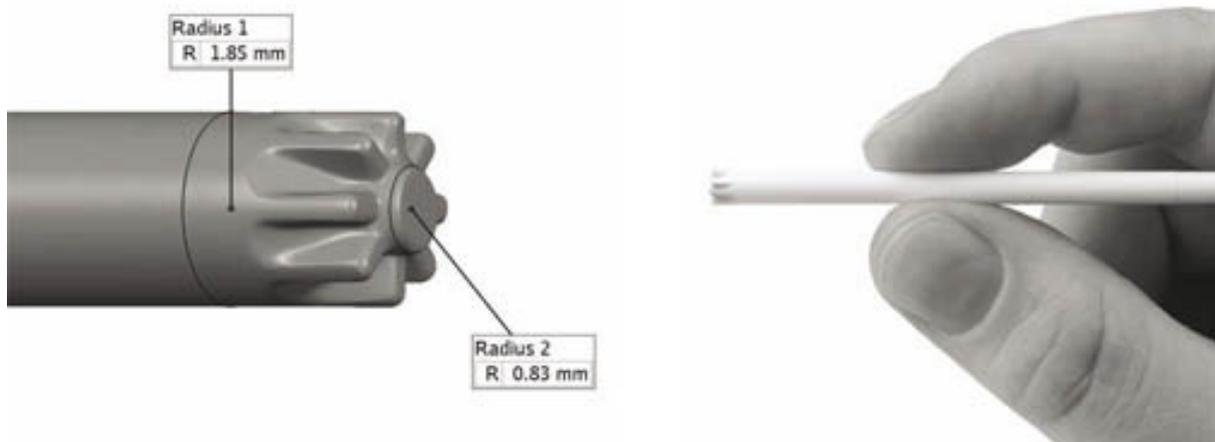
3D scanning involves measuring physical objects such as tools, models, prototypes, parts and components and converting the data into ready to use 3D digital information for use in downstream applications.



Objects ranging in size and complexity can be measured quickly and with high precision. From small plastic injection moulded parts such as bionic hearing implants, to large boats, aircraft and trains. All of our scanning systems are completely portable enabling the service to be conducted at customer sites or in house at our Melbourne based scanning studio.

With the advantage of using market leading technologies on a daily basis and staying abreast of constantly evolving advancements, Scan-Xpress is able to offer its customers ready access to the benefits these cutting edge tools provide.

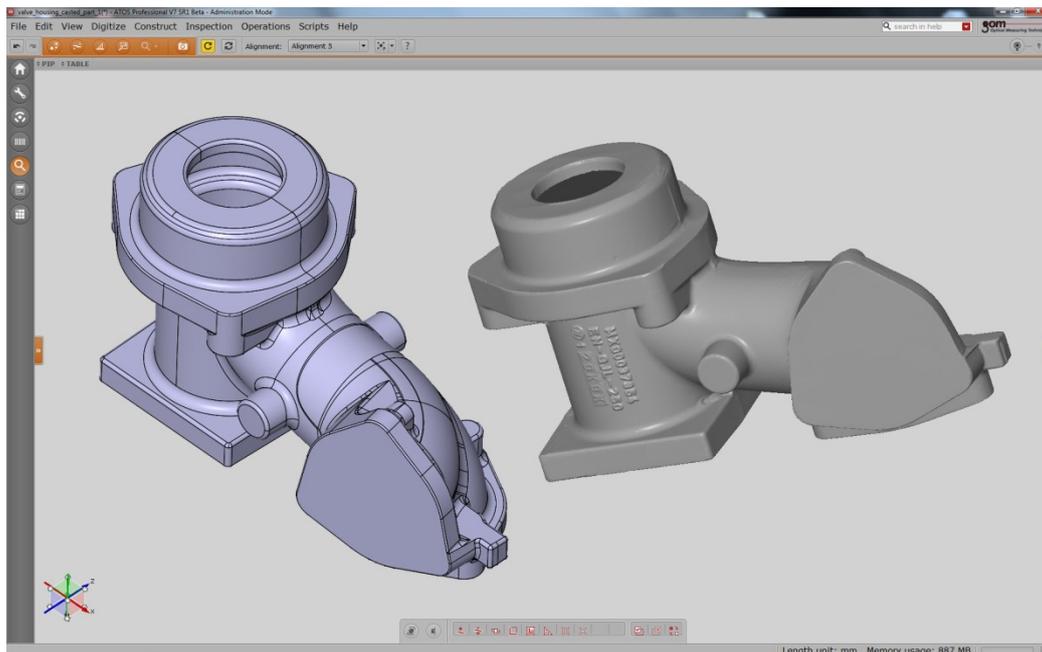
Our 3D measurement technology is recognised globally as the leading and most accurate technology on the market. We take pride in mastering the tools and presenting the benefits to our customers.



## Reverse Engineering

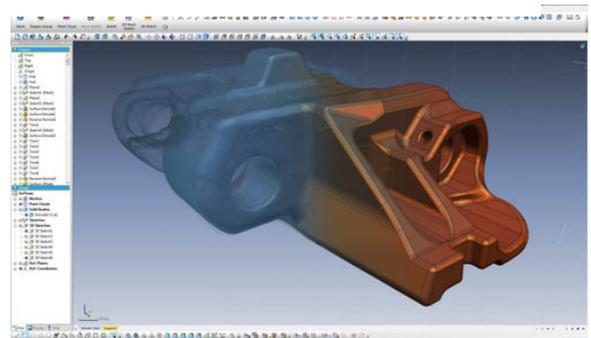
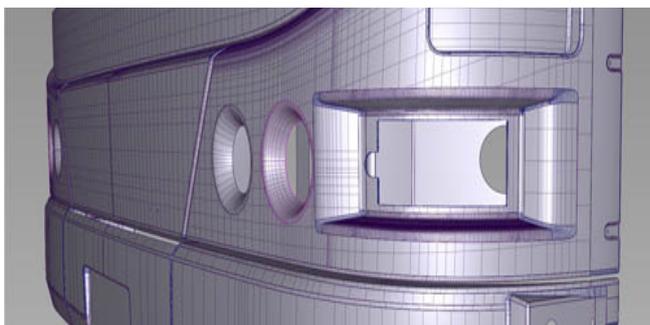
Reverse engineering involves generating 3D CAD data for a part or a tool when none exists, or information describing the part is not current. Perhaps changes need to be made to an existing design of an extremely complex freeform shape or a new part needs to be produced to mate with an existing one. Reverse engineering provides the means to achieve these ends in a timely and cost effective manner. We are able to:

- Create CAD models from the 3D scanned mesh (exactly as per part or re-engineered with modifications)
- Create a complete polygon model for 3D printing and rapid prototyping



**Our Reverse Engineering capabilities are recognised locally and internationally as world class.**

Scan-Xpress has for more than a decade utilized the latest in specialist RE software available. Our engineers have been responsible for the successful delivery of literally hundreds of projects. A consultative approach ensures delivery expectations are clearly established and timelines are met. Final CAD models may be exported as IGES, STEP or Parasolid formats.



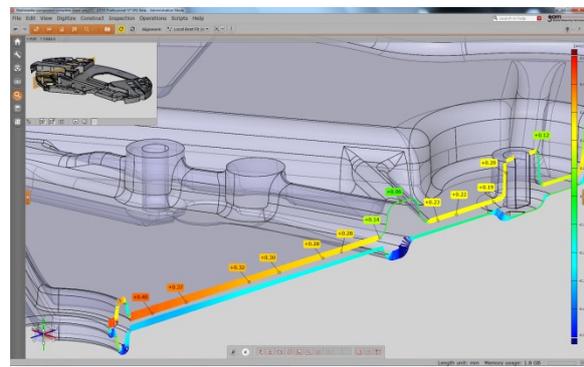
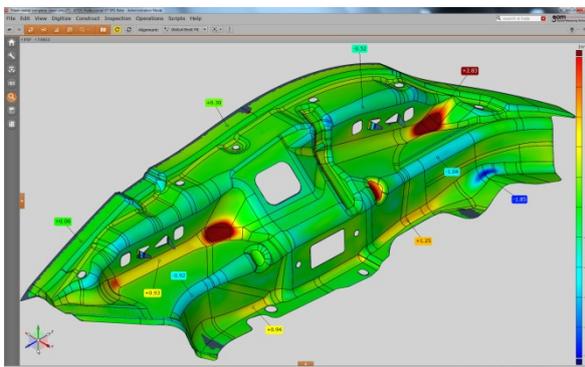
### Optical and Touch Probe Inspection

The use of optical inspection is growing dramatically due to the comparable accuracies and significant benefits over traditional methods of tactile probing using fixed or portable Coordinate Measurement Systems (known as CMM's). Optical measurement offers complete product or tool descriptions enabling a better understanding of tendencies and the earlier identification of problems.

Information illustrating surface deviations, 3D point displacement, GD&T's, tooling deterioration and manufacturing impurities or defects is instantly visually interpreted and numerically quantified in reports that are tailored to clients' needs. As an example the measurement of precision tools producing such items as turbine blades for the power generation industry can easily be captured and compared to CAD or other parts. This enables production tooling to be verified or revised.



Evaluation tools for an extensive analysis of parts and components
Import of point clouds: ATOS, STL, ASCII, ...
Polygon mesh generation: smoothing, thinning, hole filling, ...
CAD Import: CATIA V4, CATIA V5, PRO/E, Unigraphics, IGES, STEP, JT-Open, Parasolid, ...
Measurement plan import: ASCII, CSV, FTA, ...
Multiple alignments within one project: automatic pre-alignment, RPS, 3-2-1, plane-line-point, best-fit, hierarchical, ...
CAD comparison: surface, sections, points, ...
CAD-based primitive generation: lines, planes, circles, cylinders, cones, ...
2D section-based analysis
Inspection functions: dimensions, virtual calipers, angles, diameters, ...
GD&T analysis based on ISO 1101 and ASME Y14.5 standards
Reporting: first article inspection, tables (e.g. VDA), free definable report templates, ...
GOM Inspect: Free 3D viewer



Sometimes Optical Inspection is not possible due to line of site restrictions or perhaps only a few discrete points are needed to be captured quickly in order to check the dimensions of prismatic shapes. In these cases touch probing is the solution. A hand held probe, optically tracked, touching a few key surface points can instantaneously provide data that in real time can be compared to CAD files or GD&T (Geometric Dimensions and Tolerances) information provided by the customer.



Our Inspection technologies enable the rapid acquisition of the most complex of forms and provide immediate feedback as to their integrity.

## **Design and Engineering Consultation**

The team at Scan-Xpress include qualified and experienced engineers and industrial designers that can see your ideas through to fruition. With a focus on quality of outcomes, Scan-Xpress considers manufacturing, function, mechanical aspects as well as aesthetics in producing innovative solutions and successful products. With experience in sheet metal, metal castings, plastic injection moulding, FRP and CNC machining to name a few, Scan-Xpress assists clients through the product design cycle.

### **Design and Engineering Services include:**

- ❖ Market Analysis, Competitor Analysis & Benchmarking
- ❖ Product Styling & Concept Sketches
- ❖ Mock-up Models and Automotive Clay Sculpting
- ❖ Patent Drawings
- ❖ 3D Visualisations & Photorealistic Renderings
- ❖ Parametric Solid CAD Modelling
- ❖ A Class Surface Modelling
- ❖ Rapid Prototyping including SLA SLS & FDM
- ❖ Prototype Fabrication and Testing
- ❖ FEA and CFD Analysis
- ❖ Tooling and Production Drawings

