



**Jos van Genugten, founder
Prewar Workshop**

**"Thanks to the new
cylinder head, the
engine runs like a
charm again."**

Jos van Genugten, car restorer and founder of Prewar Workshop, is enthusiastic about the 1928 Alvis 12/50 FWD: "This is a very special car, it is the first production car with front-wheel drive! Only 140 units were built, of which 35 are still known. After nearly 90 years of intensive use and various repairs, the Alvis cylinder head was due for replacement. Because there was no way to get another cylinder head, Coenradie made a perfect 3D CAD model by means of Reverse Engineering. This model was then used to create new casting molds with 3D sand printing. The newly casted cylinder head fits perfectly on the original engine block. The engine now runs like a charm again!"

background photo: Marc Vorgers

B d g Z ~ c [d p V i t c ~ W d j i Prewar Workshop: <http://prewarworkshop.com/>





Coenradie creates a brand new cylinder head of a 90 year old model

The first step was to make a 3D scan of the original, damaged cylinder head with the structured light scanner. In order to obtain a complete 3D mesh of the cylinder head, we captured the geometry of the internal channels using silicone casts. With the 3D mesh as a reference, we started the reverse engineering in our CAD system Siemens NX. The 'design intent' (the original design idea) had to be reflected in the new design as much as possible. Some improvements have been made at the request of the customer. As a check, a comparison was made several times between the CAD model and the 3D scan during the design process. After completing the 3D-CAD model, we made drawings for casting and machining. Due to the small series, a company specialized in 3D sand printing has cast a number of cylinder heads based on our CAD models and drawings. Finally, the new cylinder head was scanned and compared again with the 3D-CAD model to track down any deviations between the two.

Core advantages of our Reverse Engineering

Perfect result - With our working method you don't just get a copy of the original, but a product with a sleek result. Rounded off dimensions, smooth surfaces and optimal fits are a guarantee for a perfect result.

Optimization - The 3D model is modeled in CAD software (Siemens NX). This enables us to make product improvements or variations very easily.

Design intent - During reverse engineering, the original design idea is always taken into account.

Provide Missing Information - Coenradie Metrology can reconstruct missing information from your product, such as 3D CAD models and drawings, using Reverse Engineering. We can also assist you if a product is no longer available or if you want to analyze a competitor's product.

No burden, no hassle - If desired, we can take care of the new part's production process. Because of our expertise and extensive network of partners and suppliers, nothing is impossible.

Get in touch with us, call +31 (0)499 - 577 202 and ask for Ruud Steijvers

