

Reverse Engineering & Indigenisation of Mechanical Spares

CAPABILITY SHEET · UNWORN DATUMS · MATING PARTS · MATERIAL IDENTIFIED · ENGINEERED TO ORDER

THE ONE IDEA

PRINCIPLE	A worn part is evidence of the design, not the design. Copying it copies its wear, so the work is to recover what the part was.
WHY IT MATTERS	Wear removes material from the surfaces that did the work. A copy of a worn part is undersized with no allowance left, and a copy in the wrong material is a shape with unknown properties.

THE METHOD

MEASURE	Coordinate measurement and scanning on unworn datums, across several samples, with the mating parts measured too, because the fit they make fixes the tolerance.
IDENTIFY	Composition by spectrometry, hardness through the section, and microstructure to show the heat treatment and any surface treatment.
RECONSTRUCT	A drawing with nominal size, tolerance, fit, material and process, and a written record of the reasoning behind each choice.
PROVE	A prototype inspected against the drawing, tested on its function, then fitted in the parent assembly in a fitment trial on the customer's own approval route.

CONFIGURATIONS

SINGLE SPARE	One part taken from sample to drawing, prototype, function test and fitment trial.
ASSEMBLY	An assembly recovered part by part, with the fits between the parts as important as the parts, and proved as a whole.
SPARES PROGRAMME	Many spares for the same equipment under one method and one recording standard.

STANDARDS & SCOPE

STANDARDS	ISO 286-1 for limits and fits and ISO 1101 for geometrical tolerancing are the public references this class is worked against, alongside the customer's own quality assurance route. Design ownership and permissions belong to the customer.
SCOPE BOUNDARY	This is the general method for recovering a mechanical spare when no drawing exists. It is not indigenisation to the customer's own drawing set, not an approval route for aircraft components, and not a service for electronic or software items.
STATUS	Neometrix engineers reverse engineering and indigenisation of mechanical spares to order, and no delivered indigenised spare is claimed.

DEFENCE PROGRAMMES DESK

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