Non-destructive measurement of CDP coatings inside hollow car body parts

In the automotive industry, the anti-rust warranty has become an important hallmark of car quality. Particularly in hard-to-reach areas such as the cross beams and pillars of the steel car body, specified tolerances for CDP coating thicknesses must be ensured, because in these areas, corrosion can proceed long undetected.

Modern car bodies are usually protected from rust with a primer coat applied by cathodic dip painting (CDP). Until now, it was not feasible to measure the coating thickness inside the hollow parts without destroying the entire car body. Common practice has been to dismantle random car bodies for spot-checking of these hidden areas. This approach carries a very high cost and makes systematic, real-time quality control more or less impossible.

For exactly this purpose, FISCHER has developed the V3FGA06H “cavity probe” which, due to its design, can be inserted into almost any opening in cross beams or pillars for accurate and non-destructive measurement of the CDP coating thickness – on the inside.

Figure.1: DUALSCOPE® FMP100 and cavity probe V3FGA06H for measurement of CDP coatings on car bodies

The magnetic inductive probe with its wear resistant tip has been optimised for all typical CDP coatings thinner than 25 µm (including Zn). It has a specially curved, slim shape and fits through small openings in the car body to measure the thickness of lacquer coatings in heretofore inaccessible areas. Its small, flexible, attached head with three-point support guarantees precise positioning and repeatable measurements even inside the cross beams and on curved surfaces.

Figure.2: Insertion of the V3FGA06H probe into a hollow car body part to measure the CDP coating on the inside

The V3FGA06H probe works with FISCHER’s FMP series instruments, which are equipped with a USB port that makes it convenient to transfer measurement results to a computer for evaluation, recording and storage using FISCHER DataCenter software. A combination of the DUALSCOPE® FMP100 gauge and FISCHER DataCenter IP (Inspection Plan) allows the user to create inspection plans on a PC and transfer them back to the instrument, providing visually aided guidance though a defined measurement task.

With the cavity probe V3FGA06H and easy-to-operate FMP instruments from FISCHER the thickness of CDP coatings in difficult to access cavities such as inside door sills, brackets or reinforced parts can be measured quickly, accurately and, above all, without dismantling. Your local FISCHER representative will be happy to answer any questions you may have.