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WELDING FIXTURE FOR 'ASSEMBLY DOOR PANEL INNER' FOR THE NEXT-MOTIVE PROJECT

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Abstract

The BIW welding fixtures are necessary for holding and locating purposes, to allow efficient welding of automobile parts or panel. A properly designed fixture is essential for conveniently increasing the rate of production of identical automobile parts, using a single setup, which facilitates automation of work, reducing the labor cost. The objective of this work is to design the welding fixture for Assembly door panel inner. In this door inner is the parent component, on which, Hinge Reinforcement, Reinforcement door latch, Reinforcement door inner, Window winder, etc. are weld as the child components. Before designing the welding fixture, the problem statements of an application are firstly analyzed by verifying the different feasibility options, using AutoCAD, and are known as Welding Fixture Concept (WFC). The 'Welding Fixture Concept' involves six no. of sheets or schematics have helped to develop the welding fixture for BIW component or panels. The modeling of the welding fixture has been performed using the CAD tool 'TopSolid-2006. The modeling of various units, such as Locating unit, Rest unit, Clamp unit, Rest & Clamp unit, and Rest, Clamp & Locating units are developed using 23 groups or subassemblies which perform the function of resting, locating and clamping of parent and child panel. The designed fixture assembly has been put in regular industrial use, for the building of an automobile project 'NEXT-MOTIVE' (a mini truck vehicle having 01 tone loading capacity), manufactured and marketed by the Conex Avio Auto Pvt. Ltd. Pune.

Keywords : BIW Welding Fixture, Welding Fixture Concept, Welding Fixture Modeling