Design and Development of Enhanced Fuel Tank Service Kit for Aircraft

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This project aims to address the issues associated with the existing aircraft fuel tank service kit, including its weight, susceptibility to corrosion, and heavy labor intensity. To improve the performance of the service kit, new materials and fabrication techniques have been utilized, along with flow simulation to optimize its design. The use of alternative materials has allowed for the development of a more durable service kit that is less susceptible to corrosion, reducing maintenance costs and increasing the kit's longevity. In addition, the use of flow simulation has enabled the development of a more efficient fuel tank service kit, which reduces labor intensity and improves the overall efficiency of the maintenance process. The project has undergone a series of experiments to test the performance of the new service kit. These experiments have included material selection and fatigue tests, as well as structural analysis and simulation using SolidWorks. Through these experiments, the team has been able to optimize the design of the service kit, ensuring that it meets the requirements of the aircraft industry while also providing enhanced durability and efficiency. The benefits of this project are numerous. The use of alternative materials and fabrication techniques has resulted in a more durable and corrosion-resistant service kit, reducing maintenance costs and increasing the longevity of the kit. Additionally, the use of flow simulation has allowed for the development of a more efficient service kit, reducing labor intensity and improving the overall efficiency of the maintenance process. This, in turn, can lead to reduced downtime for aircraft and increased productivity for maintenance crews.

Awards Won:

Fourth Award of $500

Patent and Trademark Office Society: Second Award of $500