

# case study

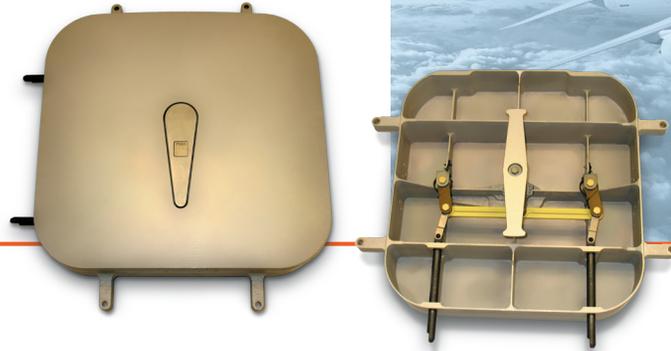
# crew escape hatch & handle

installation eligibility

787

part description

Boeing 787 WP 39 Crew Escape Door



**the problem**

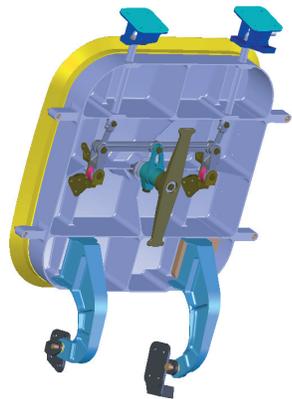
The customer was developing a state-of-the-art crew escape door for the Boeing 787. The escape hatch, an inward opening plug-type pressure-only door constructed from monolithic high speed machined aluminum with discrete stops, is intended as an emergency exit for the flight crew and is accessed from both inside and outside the airplane. The door is also often used to ventilate the flight deck while on the ground. It was a new design, and the company was looking for a highly experienced handle and latch mechanism manufacturer that could play a proactive part in developing a system from initial concept.

**the solution**

Hartwell worked with the customer's engineers, looking for performance and weight improvements during the design-to-prototype phase. The resulting flush-handle and latch mechanism assemblies met or exceeded all the initial design and weight requirements. Utilizing a unique linkage mechanism, the crew escape door inner door handle rotates separately from the outer handle. When opening from the outside the inner handle is slaved to the outer handle and rotates along. The inner handle then releases the door liner cover. Structural deflections do not cause mechanisms to unlock or otherwise induce opening actions; it is biased in the latched position.

**the benefits**

The resulting handle latch mechanism meets or exceeds all the initial design and weight requirements. Although the design ensures no possible unintended release, it is exceptionally easy to operate and can be used during turnarounds for additional ventilation. The mechanism was designed using 3D-CAD modeling and in-house rapid prototyping to validate the design. Shipments of final assemblies began at the end of second quarter, 2007.



**for more information**

For more information on this product and other examples of Solutioneering at work, contact Hartwell Corporation at 1.714.993.4200.

*Solutioneering at work*

