



**Aluminum forgings for the F-35 Lightning II STOVL
(Short Takeoff and Vertical Landing)**

Alcoa Forged and Cast Products, a division of Alcoa Power and Propulsion, forges six aluminum bulkheads for installation on the STOVL version of the F-35. The Alcoa unit also forges several parts used as structural components within the wings on the jet.

Alcoa Forged and Cast Products uses multi-segment dies on its 50,000-ton press to forge Al7085-T7452, a proprietary aluminum alloy developed by the Alcoa Technical Center. The combination of production and metallurgical advancements produces monolithic forgings at a substantial weight savings than attainable with other bulkhead designs.

The F-35 Lightning II is a stealth (radar-evading), supersonic multi-role fighter designed to meet the United States and allied governments' requirement for a new generation of transformational weapons. The Joint Strike Fighter program is the largest aerospace defense program in U.S. history.

The single-engine F-35 will be manufactured in three versions: a conventional-takeoff-and-landing (CTOL) version for the U.S. Air Force, an aircraft-carrier version (CV) for the U.S. Navy, and a short-takeoff/vertical landing (STOVL) version for the U.S. Marine Corps, the U.S. Air Force and the U.K. Royal Air Force and Royal Navy.

Affordability is the cornerstone of the F-35 program. It is achieved in large part through a very high level of common parts and systems across the three versions of the aircraft.

Alcoa Power and Propulsion, a major business unit of Alcoa Inc. (NYSE: AA), is a global leader in airfoil and structural investment castings, forged structural parts, and forged aircraft wheels. Serving the aerospace, defense, energy and industrial markets, its products are primarily used in jet engines and industrial gas turbines. With 29 production facilities, Alcoa Power and Propulsion employs more than 11,000 people worldwide.



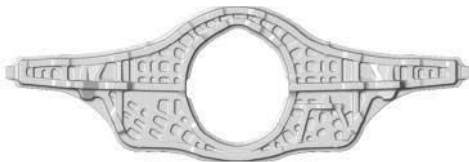
STOVL 425 bulkhead, 10.7 x 6.7 ft



STOVL 450 bulkhead, 18 x 6.5 ft



STOVL 472 bulkhead, 19.5 x 6.5 x ft



STOVL 496 bulkhead, 19.6 x 6.5 ft



STOVL 518 bulkhead, 15.7 x 3.8 ft



STOVL 556 bulkhead, 11.4 x 6.2 ft



Aluminum forgings for the F-35 Lightning II CV (Carrier Variant)

Alcoa Forged and Cast Products, a division of Alcoa Power and Propulsion, forges four aluminum bulkheads for installation on the CV version of the F-35.

Alcoa Forged and Cast Products uses multi-segment dies on its 50,000-ton press to forge AI7085-T7452, a proprietary aluminum alloy developed by the Alcoa Technical Center. The combination of production and metallurgical advancements delivers monolithic forgings at a substantial weight savings than attainable with other bulkhead designs.

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CV 425 bulkhead, 10.7 x 6.7 ft



CV 450 bulkhead, 18 x 6.5 ft



CV 472 bulkhead, 19.5 x 6.5 ft



CV 518 bulkhead, 15.7 x 3.8 ft

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Aluminum forgings for the F-35 Lightning II CTOL (Conventional Takeoff and Landing)

Alcoa Forged and Cast Products, a division of Alcoa Power and Propulsion, forges five aluminum bulkheads for installation on the CTOL version of the F-35. The Alcoa unit also forges several parts used as structural components within the wings on the jet.

Alcoa Forged and Cast Products uses multi-segment dies on its 50,000-ton press to forge Al7085-T7452, a proprietary aluminum alloy developed by the Alcoa Technical Center. The combination of production and metallurgical advancements delivers monolithic forgings at a substantial weight savings than attainable with other bulkhead designs.

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The single-engine F-35 will be manufactured in three versions: a conventional-takeoff-and-landing (CTOL) version for the U.S. Air Force, an aircraft carrier version (CV) for the U.S. Navy, and a short-takeoff/vertical landing (STOVL) version for the U.S. Marine Corps, the U.S. Air Force and the U.K. Royal Air Force and Royal Navy.

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CTOL 425 bulkhead, 10.7 x 6.7 ft



CTOL 450 bulkhead, 18 x 6.5 ft



CTOL 472 bulkhead, 19.5 x 6.5 ft



CTOL 518 bulkhead, 15.7 x 3.8 ft



CTOL 556 bulkhead, 11.4 x 6.2 ft

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**Alcoa Power
and Propulsion**

**Alcoa Forged and Cast Products
Cleveland, Ohio**

**Alcoa Aluminum Forgings
on F-35 Lightning II Aircraft**

