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The PMA Advantage:
Your Questions, Answered

What is Parts Manufacturer Approval (PMA)?

A PMA is a combined design and production approval granted by the Federal Aviation Administration (FAA) to manufacturers to produce replacement or modification parts for Type Certificated (TC) aircraft. This approval allows manufacturers to create alternative parts for use on certified aircraft that meet or exceed the required standards for overall safety, performance, and reliability of original equipment manufacturer (OEM) parts.

The approval of a PMA part enables companies, like Chromalloy, to design, produce, and sell FAA-approved parts for TC products as a cost-effective market alternative.[1]

Why Are PMAs Essential to the Aviation Industry?

PMA parts provide price competition with respect to OEM parts and allow airlines and operators to have greater control in the parts market, thus helping to stabilize and predict maintenance scheduling. PMA parts expand the supply chain and allow for a more robust engine MRO ecosystem which benefits both aircraft operators and OEMs.

Why Do Airlines Choose PMA parts?

Airlines and operators alike may choose PMA parts for many reasons, including based on safety, value, and options.

- Safety: PMA parts have a history of being both safe and effective. PMA parts are equivalent to OEM parts and meet airworthiness standards and reliability requirements via a rigorous FAA certification process.[2]
- Value: In certain cases, PMA parts may provide immediate cost savings and may enhance competition and leverage with OEMs.[3]
- Options: As of April 2025, a total of 1,360,594 PMA parts have been approved by the FAA. PMA parts supplement the supply chain and enhance availability of parts.

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[1] FAA Order 8110.42. PMA Approval Procedures, Paragraph 3-9(c).

[2] FAA Order 8110.42. PMA Approval Procedures, Paragraph 3-9(c).

[3] https://www.iata.org/contentassets/73c297ab685a4190b83cb1359ef2dfc5/day02_1030-1100_faa-pma-parts-and-der-repairs_chromalloy.pdf

[4] https://drs.faa.gov/browse/PMA/doctypeDetails

Are PMA parts safe?

PMA parts must meet the same standards of airworthiness and functionality as the OEM parts they are replacing and have no more technical risks than the equivalent part provided by the OEM.[5] PMA parts go through a rigorous reverse engineering and approval process that ensures they meet the same or higher safety, performance, and quality standards as compared to OEM parts. This approval process is overseen by the FAA.

The Modification and Replacement Parts Association (MARPA) found that 286 of 287 airworthiness directives (ADs) for turbine engines were generated by problems stemming from OEM-manufactured parts. Only three ADs were generally associated with PMA parts. Two of these three PMA parts, however, were clones of OEM designs that exhibited the same design problem as the OEM part and were included on the ADs issued for those OEM parts.[6] To date, Chromalloy maintains FAA approval on over 60 Gas Path PMA parts, which have safely flown over six billion part flight hours with no ADs.[7]

In fact, an FAA Repair, Alteration and Fabrication (RAF)[8] study, that was last completed in August 2008, stated the team did not find substantive evidence of failures or unsafe conditions arising from non-TC/PC holder (non-OEM) developed data. The general population of PMA parts and non-TC/PC holder repairs, alterations have increased substantively in past years particularly in the commercial aviation sector yet the occurrence of service difficulties and airworthiness directives on such parts for design or compliance shortfalls have not increased proportionally.[9]

Can PMA parts and OEM parts be used together?

Yes. PMA parts are designed and manufactured to be equivalent to OEM parts in form, fit, function, and integrity.[10] PMA parts can be installed and mixed with OEM parts without compatibility issues. PMA parts and OEM parts are approved under the same regulatory requirements and can be used together.

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[5]14 CFR part 21, subpart K § 21.303 Application, para. (b).

[6]Doll, David and Clara Greceanu, The Airline Guide to PMA (Oct. 28, 2024), https://www.pmaparts.org/pdf/AirlineGuideToPMA.pdf

[7]https://www.chromalloy.com/chromalloy-secures-faa-approval-of-cfm56-lpt-vane-up-change-pma/

[9]https://www.pmaparts.org/gvt/raftreport.pdf

[10]FAA Order 8110.42D section 2.8(d)

[11]14CFR Part 21

Does the use of PMA parts impact the residual value of an engine?

Engine value is generally a function of remaining engine hours/cycle and Life Limited Parts (LLP) life. A fully restored engine with similar remaining hours/cycles and similar LLP life may have a similar market value regardless of whether they contain PMA parts.

Do airlines need to track or account for PMA parts distinctly from OEM parts?

Generally, airlines and operators who own their engines do not need to track or separately account for their use of PMA parts as distinct from OEM parts. Tracking may be required for leased engines due to certain restrictions included in the lease, but individual agreements may vary and should be consulted. Tracking requirements may be a barrier to the use of PMA parts, especially if the operator has a leased or mixed fleet.

Will the use of PMA parts void the warranty of an engine?

The International Air Transport Association (IATA) Code of Conduct allows the use of PMA parts in certain engines on a non-discriminatory basis and does not in itself render the warranty void.[12] In fact, the use of non-OEM parts or repairs may be entirely irrelevant in certain warranty administrator's evaluation of any warranty claim unless the condition was specifically caused by a non-OEM part or repair. Operators, aircraft owners, and lessors often have the freedom to choose between OEM solutions and non-OEM solutions.

[12]ATA Code of Conduct CFM Conduct Policies

https://www.iata.org/contentassets/bf8ca67c8bcd4358b3d004b0d6d0916f/cfm-conduct-policies-and-implementation-measures.pdf

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