ROSTEC HAS ASSEMBLED THE HEART OF THE GIANT PD-35 AIRCRAFT ENGINE

News / Manufacturer

Rostec United Engine Corporation has completed the assembly of the PD-35 ultra-high thrust engine gas generator for wide-body long-haul passenger airliners. The prototype, manufactured by UEC-Aviadvigatel, has already been installed on the test bench, and the first results show a reliable operation of the various units and systems.

The PD-35 is the largest in a brand new range of Russian aircraft engines. For instance, the diameter of its fan is more than three meters. A new gas generator will become the basis for creating engines of a thrust range from 24 to 38 tons. The gas generator, which is called the "heart" of an aircraft engine, consists of a high-pressure compressor, a combustion chamber and a high-pressure turbine – the part that drives the power plant.

The PD-35 project has been implemented by the Rostec United Engine Corporation since 2017. Gas turbine engines in the 35-ton thrust class have never been produced in Russia before. The development of the propulsion system is based on the scientific and technological advancement achieved during the development of the PD-14 engine. Work is also underway to master 18 new "critical" technologies: new materials, coatings, new design solutions and technologies are currently being created.

In order to refine the design and technological solutions for the high thrust engines, as well as to demonstrate the new technologies ready for implementation in the design of new engines, work is ongoing to create a demonstration gas generator and a technology demonstration engine.

"The development of the PD-35 engine for wide-body aircraft has passed an important milestone - the assembly of the first demonstrator engine. This work has been underway for the last year and a half; specialists from a number of Rostec State Corporation enterprises, in close cooperation, have been preparing the framework for the start of testing and manufacturing of various components of the product. Now, the demonstrator engine is undergoing tests, its components show reliable operation and the low-gas mode has been ensured," said Vladimir Artyakov, First Deputy CEO of Rostec State Corporation.

The next stage of tests will take place at the Baranov Central Institute of Aviation Motors, named after P.I. Baranov, where a specialized test bench is already under construction. Here, the operation of a demonstration gas generator with pressurized heated air supplied to the inlet will be tested, simulating the operating conditions of the gas generator as part of the engine.

"At the moment, the gas generator is being tested under standard atmospheric conditions in accordance with the approved program. The tests should confirm the fundamental operability of the gas generator design.

In addition, test results will allow us to evaluate the parameters of the units defined by the technical requirement specifications," said Alexander Inozemtsev, Managing Director-General Designer of UEC-Aviadvigatel.

The PD-35 gas generator-based high thrust engines are capable of powering wide-body long-haul airliners.

11 OCTOBER 2021

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