



AL-31F

The AL-31F aircraft engine is a modular two-shaft turbofan engine consisting of the following main parts: a gas generator (comprising low- and high-pressure compressors and turbines), an annular combustor, an afterburner and a nozzle, an accessory gear box and a control system.

The compressor portion includes a 4-stage low-pressure module (with adjustable air flow) and a 9-stage high-pressure module.

The engine uses a two-stage (HP and LP) turbine with adjustable radial clearance due to thermal expansion.

It employs an annular combustor and a supersonic variable-area nozzle. The AL-31FP version incorporates a thrust vectoring nozzle.

Modernization of the engine included the installation of a FADEC-type digital control system, which provides improved acceleration capability and efficiency (an analog hydro-mechanical system was used previously).

The modular design of the engine, together with the original design solutions, ensures its easy operation and the replacement of damaged components and parts in the field.

The engine provides a high stall margin and can be used over a wide range of flight altitudes and speeds, operates under deep air intake surge conditions, including in spin flight, and also provides a unique maneuverability of the aircraft (performance of the Tailslide, Cobra and other maneuvers).

The AL-31F is installed on the Su-27 fighters and its versions, Su-33 shipborne fighters, Su-30MKK, Su-30MK2 multirole two-seat fighters and Su-34 front-line bombers.

The AL-31FN with a bottom-mounted accessory gear box is used to power single-engine fighters (Chinese J-10A fighters).

The AL-31FP version with thrust vector control is installed on Su-30MKI-type aircraft.

Main characteristics:

- Full afterburner thrust, kgf: 12 500
- Min specific fuel consumption, kg/(kgf·h): 0,67
- Length, mm: 4945
- Inlet diameter, mm: 905



- Dry weight, kg: 1,520(+2%)

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