



JET ENGINE JUMO 004

1. Specifications

Number of the combustion chambers: 6

Fuel: kerosene

Rate of air flow: 19,5 kg/s

Compression: 3,5:1

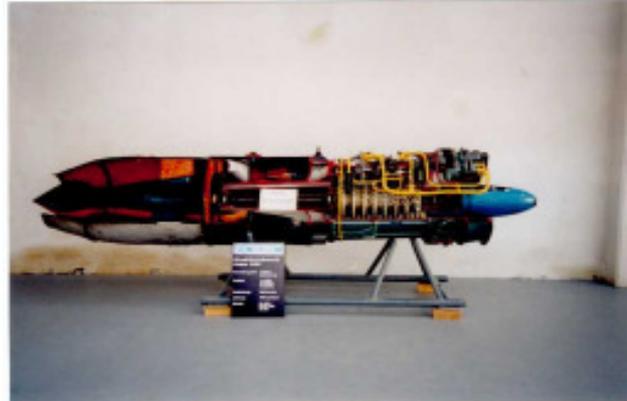
Thrust: 900 kp

Max. rotational speed: 8700 u/min

Weight: 750 kg

Diameter: 800 mm

Length: 3800 mm



2. Engine characteristic:

Operating cycle: air intake – compression – combustion – gas expansion – exhaust thrust

- The "Riedel-starter" is a small two-stroke engine situated inside the intake cone fairing which could be started electrically or manually.
- The eight-level axle-compressor consists of a rotor with runner blades and a stator with fixed guiding blades.
- The compressed air is mixed with fuel and the mixture is ignited in the so called combustion chambers (6) at approximately 2.000°C.
- The hot gases produced by the combustion are mixed with feed air and cooled down in order not to damage the turbine blades.
- The turbine is driven by the thrust of the hot exhaust gases producing a rotation that serves to built up the compression in the axial compressor.
- The nozzle needle regulates the passing amounts of exhaust gases automatically by changing the ring shaped exhaust pipe.

3. Further information

- In the beginning, the Jumo A variant was developed (object of exhibition) but was found too expensive to be produced in large numbers, because of the huge amount of valuable materials not available in large quantity during the war.
- The first 004 jet engine was successfully run for the first time on October 11th 1940 in Dessau. After several modifications the predicted layout thrust of 600 kp was achieved on August 6th 1941. Roughly a year later two Jumo A-engines were tested in the 12 min. maiden flight of the Me 262 in Leipheim.
- The B-variant (900 kp) was produced at a large scale 6010 Jumo 004 B1 and B units left the production lines in the years 1944/45. With the B-variant considerable material savings were achieved which partly affected the durability of th turbine blades. Material unyieldingness often caused cracks and blade damage. 4752 jet engine units were delivered to the aircraft factories, 1258 unit were ready for shipment, 506 engines were under repair. One jet engine require 700 manhours in large scale production. It was produced in seven factories distributed all over the "Reich", among them Dessau.