



J79

Reheated Turbojet



J79 – technology features

The J79 turbojet engine was developed by General Electric, U.S.A.

Development of the J79 began in 1952, and the first flights were made with this engine in 1955. It was with the J79 that speeds of Mach 2 and over were first flown anywhere in the world.

The J79 is installed in the following aircraft:
 McDonnell/Douglas F-4 Phantom (2x)
 Lockheed F-104 Starfighter (1x)
 Rockwell Int. RA-5C Vigilante (2x)
 General Dynamics B-58 Hustler (4x)
 IAI Kfir (1x)

Various versions of the engine were built under license in a total of six countries including Germany. MTU now provides technical and logistic support for 339ea. active engines in Germany.

J79-MTU-11A

From 1960 to 1965, MTU München built 627 engines of this type and supplied additionally 601 parts kits to production partners who had established assembly lines of their own.

J79-MTU-J1K

The J79-MTU-J1K version was developed by MTU Aero Engines under a modification programme to improve the reliability and economy of the engine. The modification programme lasted from 1971 to 1973. The main modifications to the J79-11A engine were:

- New turbine nozzle, stage 1
- New material for turbine rotor blades, stage 1
- New afterburner assembly, with modified exhaust nozzle
- New afterburner fuel system

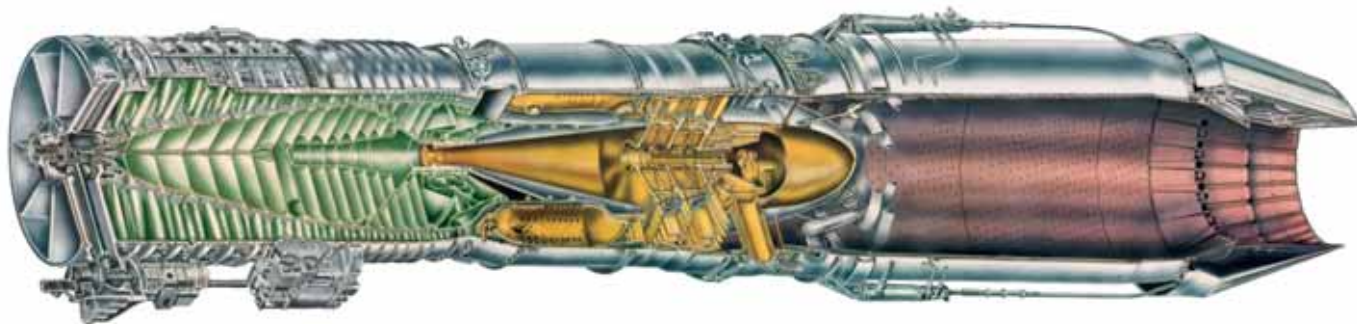
J79-MTU-17A

In 1972 MTU obtained the license to build the -17A engine to power the F-4F Phantom II. 687 engines were built until 1975.

Description and leading particulars

(J79-MTU-11A, -J1K, -17A)

The J79 is a single-spool reheated turbojet engine. The axial-flow, 17-stage compressor is driven by a three-stage turbine. The inlet guide vanes and the first six stages of compressor stator vanes are variable. The annular combustion chamber comprises ten flame tubes. The exhaust nozzle has a convergent-divergent cross section and is variable over the entire operating range from idle through combat to maximum reheat.



Sectional view of single-spool reheated Turbojet J79-17A



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	J79-MTU-11A	-J1K	-17A
	Starfighter	Starfighter	Phantom
Max. thrust, reheated	70.3 kN	70.9 kN	79.6 kN
Max. thrust, dry	44.5 kN	46.5 kN	52.8 kN
Air mass flow	73.5 kg/s	74.4 kg/s	77.0 kg/s
Specific fuel consumption	55.8 g/kN s	58.6 g/kN s	55.8 g/kN s
Pressure ratio	12.2:1	12.4:1	13.5:1
Turbine entry temperature	1,197 K	1,227 K	1,265 K
Length	5,282 mm	5,301 mm	5,301 mm
Max. diameter	981 mm	992 mm	992 mm
Weight	1,615 kg	1,685 kg	1,724 kg