



Pratt & Whitney GTF™ Engines



Pratt & Whitney GTF™ Engine Family – technology features

The Pratt & Whitney GTF™ Engine Family is the next generation of commercial jet engines that offers double-digit improvements in fuel consumption, up to 75 percent reduction in noise footprint and up to 50 percent reduction in nitrogen oxide emissions. It uses an advanced gear system allowing the engine's fan to operate at a speed different from that of the low-pressure compressor and turbine. As a result, the fan pressure ratios are lower and the bypass ratios much higher and all components can achieve their respective optimum speeds, which greatly boosts overall efficiency.

MTU Aero Engines, Germany's leading engine manufacturer, contributes the high-speed low-pressure turbine to the GTF, one of its key components. Moreover, Pratt & Whitney and MTU have collaborated to design a new high-pressure compressor. MTU is responsible for the forward four stages and Pratt & Whitney for stages five to eight. Depending on the application, MTU's stake in the GTF engine varies between 15 and 18 percent.

Key features:

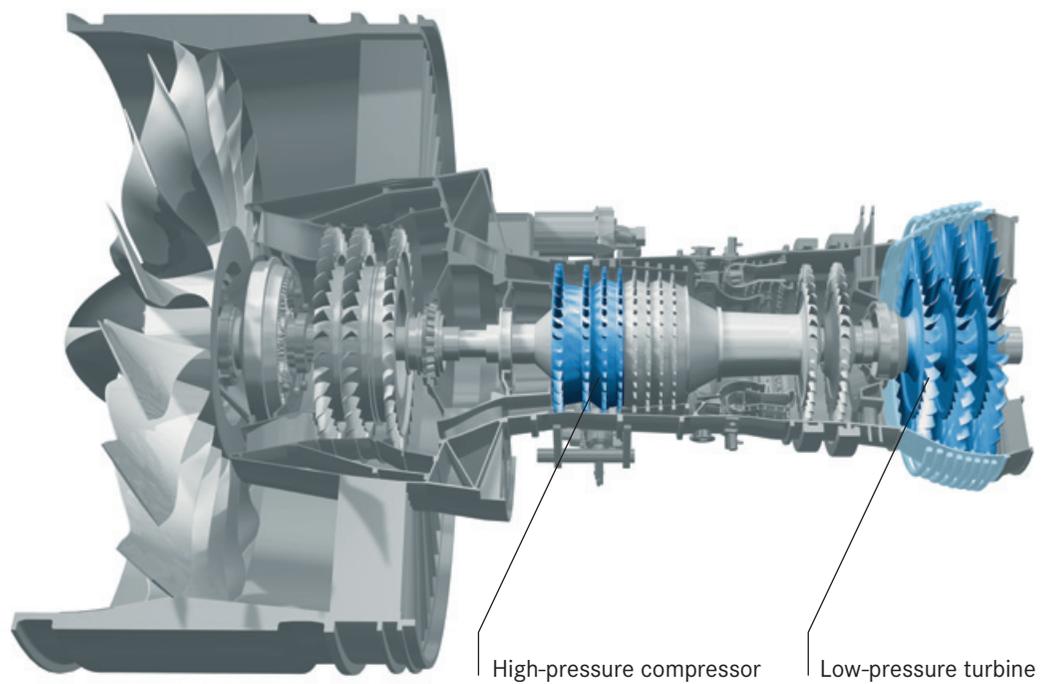
- 14 k to 33 k thrust range (initial product focus)
- Up to 16 percent reduction in fuel burn over current engines for single-aisle aircraft
- Up to 75 percent reduction in noise footprint
- Up to 50 percent reduction in NO_x emissions over 2009 standard (CAEP 6)

Engine Models:

- PW1200G
- PW1500G
- PW1100G-JM
- PW1400G-JM
- PW1700G
- PW1900G

Aircraft powered by the Pratt & Whitney GTF™ Engine Family:

- Mitsubishi Regional Jet MRJ
- Airbus A220
- Airbus A320neo
- Irkut MC-21
- Embraer E-Jets E2



Pratt & Whitney GTF™ Engine Family Product Specifications	PW1200G	PW1500G	PW1100G-JM	PW1400G-JM	PW1700G PW1900G
Thrust (lbf.)	15,0-17,0 k	19,0-25,0 k	24,0-33,0 k	28,0-31,0 k	14,0-17,0 k 19,0-23,0 k
Fuel Burn (vs. current engines)	-12-16 %	-12-16 %	-16 %	-16 %	-12-16 %
Noise (vs. stage 4)	-15 dB	-20 dB	-20 dB	-20 dB	-15-20 dB
Emission-CO ₂ reduction per a/c (tonnes annually)	-2,700	-3,000	-3,600	-3,600	-2,700-3,000
Emissions-NO _x (margin to CAEP 6)	-40 %	-50 %	-50 %	-50 %	-50 %
Fan diameter (inches)	56	73	81	81	56/73
Stage count	1-G-2-8-2-3	1-G-3-8-2-3	1-G-3-8-2-3	1-G-3-8-2-3	1-G-2-8-2-3 1-G-3-8-2-3
Applications	MRJ	A220	A320neo	MC-21	E-Jets E2
Entry into service	2020	2016	2016	2021	2018-2021



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