Pratt & Whitney GTF™ Engines
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 NOx 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

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### Pratt & Whitney GTF™ Engine Family - technology features

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- info@mtu.de
- [www.mtu.de](http://www.mtu.de)

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<table>
<thead>
<tr>
<th>Pratt &amp; Whitney GTF™ Engine Family</th>
<th>PW1200G</th>
<th>PW1500G</th>
<th>PW1100G-JM</th>
<th>PW1400G-JM</th>
<th>PW1700G</th>
<th>PW1900G</th>
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</thead>
<tbody>
<tr>
<td>Thrust (lbf.)</td>
<td>15,0-17,0 k</td>
<td>19,0-25,0 k</td>
<td>24,0-33,0 k</td>
<td>28,0-31,0 k</td>
<td>14,0-17,0 k</td>
<td>19,0-23,0 k</td>
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<tr>
<td>Fuel Burn (vs. current engines)</td>
<td>-12-16 %</td>
<td>-12-16 %</td>
<td>-16 %</td>
<td>-16 %</td>
<td>-12-16 %</td>
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<tr>
<td>Noise (vs. stage 4)</td>
<td>-15 dB</td>
<td>-20 dB</td>
<td>-20 dB</td>
<td>-20 dB</td>
<td>-15-20 dB</td>
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<tr>
<td>Emission-CO2 reduction per a/c (tonnes annually)</td>
<td>-2,700</td>
<td>-3,000</td>
<td>-3,600</td>
<td>-3,600</td>
<td>-2,700-3,000</td>
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<tr>
<td>Emissions-NOx (margin to CAEP 6)</td>
<td>-40 %</td>
<td>-50 %</td>
<td>-50 %</td>
<td>-50 %</td>
<td>-50 %</td>
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<tr>
<td>Fan diameter (inches)</td>
<td>56</td>
<td>73</td>
<td>81</td>
<td>81</td>
<td>56/73</td>
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<tr>
<td>Stage count</td>
<td>1-G-2-8-2-3</td>
<td>1-G-3-8-2-3</td>
<td>1-G-3-8-2-3</td>
<td>1-G-3-8-2-3</td>
<td>1-G-2-8-2-3</td>
<td>1-G-3-8-2-3</td>
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<tr>
<td>Applications</td>
<td>MRJ</td>
<td>A220</td>
<td>A320neo</td>
<td>MC-21</td>
<td>E-Jets E2</td>
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<tr>
<td>Entry into service</td>
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<td>2016</td>
<td>2016</td>
<td>2021</td>
<td>2018-2021</td>
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