Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00090EN) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations, provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

TYPE CERTIFICATE (TC) HOLDER: Pratt & Whitney
400 Main Street
East Hartford, CT 06118

TYPE CERTIFICATE HOLDER RECORD: Pratt & Whitney Canada Corporation Transferred TC E00090EN to Pratt & Whitney on December 6, 2016

## TYPE

High bypass ratio, axial-airflow, dual-spool, turbofan engine controlled by a Full Authority Digital Electronic Control (FADEC). The low pressure spool consists of a three-stage low pressure turbine that directly drives a three-stage low pressure compressor, and a single stage high bypass ratio fan through a fan drive gear speed reduction system. The high pressure compressor has eight axial stages driven by a two-stage cooled high pressure turbine.

### MODELS:

- PW1519G
- PW1521G, PW1521G-3, PW1521GA
- PW1524G, PW1524G-3
- PW1525G, PW1525G-3

### RATINGS

#### SEA LEVEL STATIC THRUST (lb.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Takeoff (5 minutes) (See NOTE 2)</th>
<th>Maximum Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW1519G</td>
<td>19,775</td>
<td>18,685</td>
</tr>
<tr>
<td>PW1521G, PW1521G-3, PW1521GA</td>
<td>21,970</td>
<td>20,760</td>
</tr>
<tr>
<td>PW1524G, PW1524G-3</td>
<td>24,400</td>
<td>23,050</td>
</tr>
</tbody>
</table>

#### FLAT RATING AMBIENT TEMPERATURE

<table>
<thead>
<tr>
<th>Model</th>
<th>Takeoff</th>
<th>Maximum Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW1519G</td>
<td>30°C / 86°F</td>
<td>25°C / 77°F</td>
</tr>
<tr>
<td>PW1521G, PW1521G-3, PW1521GA</td>
<td>30°C / 86°F</td>
<td>25°C / 77°F</td>
</tr>
<tr>
<td>PW1524G, PW1524G-3</td>
<td>30°C / 86°F</td>
<td>25°C / 77°F</td>
</tr>
</tbody>
</table>

#### Data Storage Unit PN (Ratings Plug)

- PW1519G: 5325208 or 5327258
- PW1521G, PW1521G-3, PW1521GA: 5325206 or 5327259 (PW1521G), 5325207 or 5327261 (PW1521G-3), 5325781 or 5327264 (PW1521GA)
- PW1524G, PW1524G-3: 5325209 or 5327257 (PW1524G), 5325212 or 5327262 (PW1524G-3)
- PW1525G, PW1525G-3: 5325211 or 5327260 (PW1525G), 5325205 or 5327263 (PW1525G-3)

**NOTE:** Significant changes are black-lined in the left margin.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RATINGS (See NOTE 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEA LEVEL STATIC THRUST (lb.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Takeoff (5 minutes) (See NOTE 2)</td>
<td>20,860</td>
<td>23,815</td>
<td>22,550 (PW1921G)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>23,815 (PW1923G-A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>23,815 (PW1923G)</td>
</tr>
<tr>
<td>Maximum Takeoff (5 minutes) (See NOTE 2)</td>
<td>22,550</td>
<td>23,815</td>
<td>24,110</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>20,305</td>
<td>20,305</td>
<td>21,805</td>
</tr>
<tr>
<td>FLAT RATING AMBIENT TEMPERATURE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Takeoff</td>
<td>30°C / 86°F</td>
<td>35°C / 95°F</td>
<td>30°C / 86°F (PW1921G)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30°C / 86°F (PW1923G-A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35°C / 95°F (PW1923G)</td>
</tr>
<tr>
<td>Maximum Takeoff</td>
<td>30°C / 86°F</td>
<td>35°C / 95°F</td>
<td>33°C / 92°F (PW1921G)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34°C / 93°F (PW1923G)</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>25°C / 77°F</td>
<td>25°C / 77°F</td>
<td>25°C / 77°F</td>
</tr>
<tr>
<td>Data Storage Unit PN (Ratings Plug)</td>
<td>5327459 or 5327587</td>
<td>5327453 or 5327578</td>
<td>5322353 or 5327583 (PW1921G)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5328019 (PW1923G-A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5322354 or 5327584 (PW1923G)</td>
</tr>
<tr>
<td>COMPONENTS/CONFIGURATION</td>
<td>For PW1500G information regarding components and engine configuration, refer to: Installation Drawing 5310001</td>
<td></td>
<td>For PW1900G information regarding components and engine configuration, refer to: Installation Drawing 5350001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINCIPAL DIMENSIONS (Room temperature)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length (flange to flange, in.)</td>
<td>119.9</td>
<td>--</td>
</tr>
<tr>
<td>Length (fan spinner face to aft flange, in.)</td>
<td>125.4</td>
<td>--</td>
</tr>
<tr>
<td>Nominal diameter (fan case, in.)</td>
<td>79.0</td>
<td>--</td>
</tr>
<tr>
<td>Maximum radial projection (in.) (at drain mast)</td>
<td>45.7</td>
<td>--</td>
</tr>
<tr>
<td>CENTER OF GRAVITY (in.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axial engine station, relative to A-flange:</td>
<td>58.5</td>
<td>--</td>
</tr>
<tr>
<td>Vertical, relative to engine centerline:</td>
<td>-0.5</td>
<td>--</td>
</tr>
<tr>
<td>Lateral, relative to centerline:</td>
<td>-1.0</td>
<td>--</td>
</tr>
<tr>
<td>WEIGHT (DRY)</td>
<td>4,800</td>
<td>--</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>----</td>
</tr>
<tr>
<td>Basic engine (lbs.) with P&amp;W supplied Standard Equipment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FUEL**
- Service Bulletin PW1000G-A-73-00-0001-00B-930A-D defines the fuels requirements and provides a listing of approved fuels and fuel additives for use in the PW1900G series turbofan engine.

**LUBRICATING OILS**

**CERTIFICATION BASIS**
- 14 CFR, Part 33, effective February 1, 1965, as amended by 33-1 through 33-34 with the following Equivalent level of safety findings:
  - 33.78(a)(1), Rain and hail Ingestion, documented in ELOS Memorandum No. TC3047EN-E-P-5-R1
  - 33.201(c) and (e), Design and Test requirements for Early ETOPS eligibility, documented in ELOS Memorandum No. TC3047EN-E-P-11

The following models comply with 14 CFR part 34, amendment 5A, effective October 23, 2013. See NOTE 11 for detailed summary of the certification basis for fuel venting and exhaust emissions:


**TYPE CERTIFICATE NUMBER E00090EN**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APPLICATION</th>
<th>ISSUED/AMENDED</th>
<th>DELETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW1519G</td>
<td>February 3, 2013</td>
<td>January 22, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1521G</td>
<td>February 8, 2010</td>
<td>January 22, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1524G</td>
<td>December 12, 2013</td>
<td>January 22, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1525G</td>
<td>September 14, 2016</td>
<td>October 31, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1521G-3</td>
<td>September 14, 2016</td>
<td>October 31, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1524G-3</td>
<td>September 14, 2016</td>
<td>October 31, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1525G-3</td>
<td>September 14, 2016</td>
<td>October 31, 2016</td>
<td></td>
</tr>
<tr>
<td>PW1919G</td>
<td>November 9, 2016</td>
<td>April 28, 2017</td>
<td></td>
</tr>
<tr>
<td>PW1921G</td>
<td>November 9, 2016</td>
<td>April 28, 2017</td>
<td></td>
</tr>
<tr>
<td>PW1922G</td>
<td>November 9, 2016</td>
<td>April 28, 2017</td>
<td></td>
</tr>
<tr>
<td>PW1923G</td>
<td>November 9, 2016</td>
<td>April 28, 2017</td>
<td></td>
</tr>
<tr>
<td>PW1521GA</td>
<td>May 3, 2017</td>
<td>January 29, 2018</td>
<td></td>
</tr>
<tr>
<td>PW1923G-A</td>
<td>June 6, 2018</td>
<td>November 27, 2018</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION BASIS**

(All Models)
- PW1500G Engine Serial Numbers P735922-P735942 are produced by Pratt & Whitney Canada Corp. under Transport Canada Certificate of Management Approval 4-58.
- PW1500G Engine Serial Numbers P735943 and up will be produced by Pratt & Whitney under Production Certificate 02.
- PW1900G Engine Serial Numbers P783014 and up will be produced by Pratt & Whitney under Production Certificate 02.
NOTES

NOTE 1. ENGINE RATINGS (all models):
Engine ratings are based on calibrated test stand performance under the following conditions:
1. Sea level static, standard pressure (14.696 psia), up to the flat rating ambient temperature °F
2. No customer bleed or customer horsepower extraction
3. Ideal inlet, 100% ram recovery
4. Production aircraft flight cowling
5. Production instrumentation
6. Fuel lower heating value of 18,400 BTU/lb.

NOTE 2. TEMPERATURES (all models):
Maximum permissible Indicated Turbine Temperatures (ITT) are as follows:

- Takeoff (5 minutes)*: 1,054 degC / 1,929 degF
- Maximum Continuous: 1,017 degC / 1,863 degF

*The normal and maximum 5 minute takeoff rating may be extended to 10 minutes for engine out contingency.

Indicated Turbine Temperatures (ITT)
at start-up: 1,054 degC / 1,929 degF

Oil outlet temperature (all models):

PW1500G:
Minimum oil temperature at idle, before takeoff power operation: 48 degC / 118 degF
Minimum oil temperature for ground operation: 21 degC / 70 degF.

PW1900G:
Minimum oil temperature at idle, before takeoff power operation: 49 degC / 120 degF
Minimum oil temperature for ground operation: 21 degC / 70 degF.

Fuel Temperatures: See Installation and Operating Manual, PWA-8828
Component Temperatures: See Installation and Operating Manual, PWA-8828

PW1900G:
Fuel Temperatures: See Installation and Operating Manual, PWA-10649
Component Temperatures: See Installation and Operating Manual, PWA-10649

NOTE 3. PRESSURES (all models):
Fuel pressure limits: Fuel pressure at the engine fuel pump inlet during operation shall be maintained at not less than 5.0 psi above the true vapor pressure of the fuel but not greater than 100 psi above the absolute ambient pressure with a vapor/liquid ratio of zero. The maximum allowable pressure at the fuel pump inlet after shutdown is 120 psig.

Oil pressure limits:

Maximum: 235 psig cold high MOP limit for MOT < 49 degC / 120 degF
Otherwise, 175 psig.

Oil supply pressure is measured relative to main lube pressure.
Temporary interruption associated with negative “g” operation is limited to 7 seconds maximum. Normal oil pressure will be restored rapidly once the negative “g” effect has been eliminated.
NOTE 4.  ACCESSORY DRIVE PROVISIONS:

<table>
<thead>
<tr>
<th>PW1500G ACCESSORY DRIVES</th>
<th>Drive Pad</th>
<th>Rotation</th>
<th>Speed Ratio to N2</th>
<th>Torque (lb.-in.)</th>
<th>Overhung Moment (lb.-in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydraulic Pump</td>
<td>CW</td>
<td>0.1835 : 1</td>
<td>810</td>
<td>1650</td>
</tr>
<tr>
<td></td>
<td>Variable Frequency Generator (VFG)</td>
<td>CW</td>
<td>0. 8595: 1</td>
<td>560 *</td>
<td>1620 *</td>
</tr>
</tbody>
</table>

CW = Clockwise (facing the drive pad)

* Maximum allowable continuous torque values are at any engine speed unless otherwise specified provided no destructive forces resulting from accessory torsional vibration are present.

Maximum allowable continuous overhung bending moments of accessories about drive face are as shown provided no destructive forces resulting from vibration are present.

<table>
<thead>
<tr>
<th>PW1900G ACCESSORY DRIVES</th>
<th>Drive Pad</th>
<th>Rotation</th>
<th>Speed Ratio to N2</th>
<th>Torque (lb.-in.)</th>
<th>Overhung Moment (lb.-in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydraulic Pump</td>
<td>CW</td>
<td>0.1835 : 1</td>
<td>420</td>
<td>1400</td>
</tr>
<tr>
<td></td>
<td>Integrated Drive Generator (IDG)</td>
<td>CW</td>
<td>0. 8595: 1</td>
<td>280</td>
<td>1120</td>
</tr>
</tbody>
</table>

CW = Clockwise (facing the drive pad)

* Maximum allowable continuous torque values are at any engine speed unless otherwise specified provided no destructive forces resulting from accessory torsional vibration are present.

Maximum allowable continuous overhung bending moments of accessories about drive face are as shown provided no destructive forces resulting from vibration are present.

NOTE 5.  MODEL DESCRIPTION:
The PW1500G engine series consist of the following engine models:

PW1519G  Bombardier CS100 reduced thrust model
PW1521G  Bombardier CS100 reduced thrust model
PW1521GA Bombardier CS100 reduced climb thrust model
PW1524G  Bombardier CS100 basic model
PW1525G  Bombardier CS100 alternate climb thrust model
PW1521G-3 Bombardier CS-300 reduced thrust model
PW1524G-3 Bombardier CS-300 basic model
PW1525G-3 Bombardier CS-300 alternate climb thrust model

The PW1900G engine series consist of the following engine models:

PW1919G  Embraer E190-E2 model
PW1921G  Embraer E195-E2 model
PW1922G  Embraer E190-E2 model
PW1923G  Embraer E195-E2 model
PW1923G-A Embraer E195-E2 model

NOTE 6.  TYPICAL AIRCRAFT ACCESSORIES, COMPONENTS, OR SYSTEM ASSEMBLIES, WITH AIRCRAFT LEVEL REQUIREMENTS, PROVIDED AS PART OF ENGINE TYPE DESIGN:
Not Applicable

NOTE 7.  AIRCRAFT ACCESSORIES, COMPONENTS, OR SYSTEM ASSEMBLIES INSTALLED ON THE ENGINE BUT ARE NOT PROVIDED AS PART OF ENGINE TYPE DESIGN:
Not Applicable

NOTE 8.  SPECIAL ANTI-ICING OR DE-ICING REQUIREMENTS:
Not Applicable
ENGINE MOUNT SYSTEM PROVISIONS:
PW1500G Engine mount system provisions are specified in Installation Drawing 5310001 and Mount and Maneuver Load Drawing, 5310003.

PW1900G Engine mount system provisions are specified in Installation Drawing 5350001 and Mount and Maneuver Load Drawing, 5350003.

POWER BOOST, INJECTION OR AUGMENTATION SYSTEMS:
Not Applicable

SPECIAL INSTALLATION REQUIREMENTS:

ETOPS:
The PW1519G, PW1521G, PW1521GA, PW1524G, PW1525G, PW1521G-3, PW1524G-3, and PW1525G-3 engine models have complied with the requirements of §§ 33.4 (A33.3(c)), 33.71(c)(4) and 33.201, except for the requirements of 33.201(c) and (e) which were met by an equivalent level of safety, and are therefore eligible for installation on Extended Operations (ETOPS) and Early ETOPS approved airplanes. The demonstrated diversion time is 180 minutes at MCT plus 15 minutes at hold power. Note that ETOPS eligibility does not constitute airplane or operational level approvals necessary to conduct ETOPS flights.

The PW1900G Engine models are not eligible for Extended Twin Engine Operations, (ETOPS) Operation.

Time Limited Dispatch:
The PW1500G and PW1900G Engine Series are certified with Time Limited Dispatch. Criteria pertaining to the engine control systems’ dispatch and maintenance requirements for the PW1500G engine models installed on the Bombardier C Series Aircraft are specified in their Airworthiness Limitations Manuals PN 5305816 and PWA-11078 “PW1500G / Time Limited Dispatch Fault Message / Dispatch Category Cross-Reference Report” Criteria pertaining to the engine control systems’ dispatch and maintenance requirements for the PW1900G engine models installed on the Embraer E190/E195 Aircraft are specified in their Airworthiness Limitations Manual 5321709 and PWA-10710 “PW1900G Degraded Dispatch Maintenance Message / Dispatch Category Cross-Reference”. FADEC System faults fall into four categories as follows: A) No Dispatch, B) Short Term Dispatch, C) Long Term Dispatch, or D) Fix at Operators Discretion. Details on the short and long term dispatch intervals are provided in the Airworthiness Limitations Manual (See NOTE 15).

Thrust Reverser:
The thrust reverser is not part of the engine type design and is certified as part of the aircraft. Information for installation of a thrust reverser is contained in the Installation and Operating Manual (See NOTE 15).

Exhaust Emissions And Fuel Venting:

Fuel Venting Emission Standards: 14 CFR §§ 34.10(a) and 34.11; in addition, 40 CFR §§ 87.10(a) and 87.11.

Smoke Number (SN) Emission Standards: 14 CFR § 34.21(a)(2); in addition, 40 CFR § 87.23(c)(1).

Carbon Monoxide (CO) Emission Standards: 14 CFR § 34.21(d)(1)(i) in addition, 40 CFR § 87.23(c)(3).

Hydrocarbons (HC) Emission Standards: 14 CFR § 34.21(d)(1)(i); in addition, 40 CFR § 87.23(c)(1).

Oxides of Nitrogen (NOx) Emission Standards: 14 CFR § 34.21(d)(1)(i); in addition, 40 CFR § 87.23(c)(3).

In addition to the FAA’s finding of compliance based on the certification requirements defined in this TCDS, the engine manufacturer has declared that the ICAO emissions standards identified in Annex 16, Volume II, Third Edition, Part III, Chapter 2, Section 2.2.2 for SN, Section 2.3.2 for CO and HC, Section 2.3.2.e. for NOx (also known as CAEP/8), and Part II Chapter 2 for fuel venting have also been demonstrated.

Electromagnetic Protection:
Lightning protection requirements and electromagnetic interference emitted by the electronic engine control system, including cables, are specified in the Installation and Operating Manual (See NOTE 15).

MANUFACTURER’S SERVICE BULLETINS OR OTHER INSTRUCTIONS COVERING MATTERS OF INTEREST:
Not Applicable
NOTE 13. SPECIAL OPERATING PROCEDURES:
The minimum N1 certified for in-flight operation in icing conditions is 1,991 rpm. The Electronic Engine Control will prevent rotor speeds below this value while in flight.

Requirements and limitations for ground operation in icing conditions are specified in the Installation and Operating Manual (See NOTE 15).

NOTE 14. SPECIAL REPAIR OR OVERHAUL LIMITATIONS:
Not Applicable

NOTE 15. APPLICABLE INSTALLATION, MAINTENANCE & OVERHAUL MANUALS:
PW1500G:
The following manuals have been approved under the requirements of 14 CFR § 33.5:
1) Installation and Operating Manual, PWA-8828
2) Engine Maintenance Manual (EMM), PN 5305818
3) Engine Manual (EM), PN 5305815
4) Cleaning, Inspection, Repair Manual (CIR), PN 5305817
5) Fault Isolation Procedures Manual (FIM), PN 5319822
6) Standard Practices Manual (SPM), PN 585005
7) Special Procedures - Fan Drive Gear System (FDGS) Manual, PN 5317957
8) Special Procedures - High Pressure Compressor (HPC) Module, PN 5317961
9) Special Procedures - High Pressure Turbine (HPT) Module, PN 5317960
10) Special Procedures - High Pressure Turbine (HPT) Core, PN 5324688
11) Special Procedures - High Pressure Turbine (HPT) Nut, PN 5324694
12) Component Maintenance Manuals (CMM)

PW1900G:
The following manuals have been approved under the requirements of 14 CFR § 33.5:
1) Installation and Operating Manual, PWA-10649
2) Engine Maintenance Manual (EMM), PN 5321705
3) Engine Manual (EM), PN 5321708
4) Cleaning, Inspection, Repair Manual (CIR), PN 5321706
5) Fault Isolation Procedures Manual (FIM), PN 5324697
6) Standard Practices Manual (SPM), PN 585005
7) Special Procedures - Fan Drive Gear System (FDGS) Manual, PN 5321702
8) Special Procedures - High Pressure Compressor (HPC) Module, PN 5321703
9) Special Procedures - High Pressure Turbine (HPT) Module, PN 5321704
10) Special Procedures - High Pressure Turbine (HPT) Core, PN 5324689
11) Special Procedures - High Pressure Turbine (HPT) Nut, PN 5324695
12) Component Maintenance Manuals (CMM)

NOTE 16. IMPORT REQUIREMENTS:
To be considered eligible for installation on United States (U.S.) registered aircraft, each engine to be exported to the U.S. shall be accompanied by a certificate of airworthiness for export or by a certifying statement, endorsed by the exporting cognizant civil airworthiness authority and containing the following language:
1. This engine conforms to its Type Certificate Number E00090EN and is in a condition for safe operation.
2. This engine has been subjected by the manufacturer to a final operational check and is in a proper state of airworthiness.

Reference 14 CFR Section 21.500, which provides for the airworthiness acceptance of aircraft engines manufactured outside of the U.S. and for which a U.S. type certificate has been issued. Additional guidance is contained in FAA Advisory Circular 21-23, “Airworthiness Certification of Civil Aircraft, Engine, Propellers and Related Products Imported into the United States.”

NOTE 17. LIFE LIMITED PART INFORMATION:
PW1500G life limits for critical components and mandatory inspection requirements are specified in the PW1500G Airworthiness Limitation Manual PN 5305816.

PW1900G life limits for critical components and mandatory inspection requirements are specified in the PW1900G Airworthiness Limitation Manual PN 5321709.
NOTE 18. MILITARY MODEL INFORMATION:
Not Applicable

NOTE 19. ROTOR SPEEDS:
Maximum permissible Low Pressure Rotor (N1): 10,600 rpm

Minimum Low Pressure Rotor (N1),
Flight Idle: 1,991 rpm
Ground Idle: 1,574 rpm
(See Note 13)

Maximum permissible High Pressure Rotor (N2): 24,470 rpm

Minimum High Pressure Rotor (N2),
Ground Idle: 13,264 rpm
Flight Idle: 13,264 rpm

Power setting, power checks, and control of engine thrust output in all operations are based on Low Rotor Speed (N1). Fan Speed, (NFAN) is directly proportional to Low Rotor Speed (N1) by a gear ratio of 1: 3.0625.

NOTE 20. OUTPUT/PROPELLER SHAFT TORQUE LIMITS:
Not Applicable.

NOTE 21. MAXIMUM PERMISSIBLE COMPRESSOR AIR BLEEDS:

NOTE 22. ROTOR DISK INTEGRITY AND ROTOR BLADE CONTAINMENT (where special requirements apply):
Not Applicable.

---END---