U. S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E00072EN	TCDS NUMBER E00072EN Revision: 1 ENGINE ALLIANCE MODELS: GP7200 Series: GP7270 GP7277 March 7, 2008

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00072EN) 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: Engine Alliance
411 Silver Lane
East Hartford, CT 06118

TYPE	Axial-airflow, dual-spool, turbofan engine, single stage fan, five-stage low-pressure compressor, nine-stage high-pressure compressor, single annular combustor, two-stage high-pressure turbine, six-stage low-pressure turbine.

MODELS:	**GP7270**		**GP7277**
RATINGS (See NOTE 1)	GP7270	GP7270E	GP7277
SEA LEVEL STATIC THRUST (lb.)			
Maximum Continuous	73,470	--	73,850
Takeoff (5 minutes) (See NOTE 2)	74,735	--	80,290
FLAT RATING AMBIENT TEMPERATURE			
Maximum Continuous	25°C / 77°F	- -	- -
Takeoff	30°C / 86°F	36°C / 97°F	30°C / 86°F
Electronic Engine Control Rating Plug (Part Number)	2122M76P11	2122M76P05	2122M76P29

COMPONENTS/CONFIGURATION	For information regarding components and engine configuration, refer to the approved parts list: GP7270 P/N GP7270G01 GP7277 P/N GP7277G01 P/N 5700600 defines both engine model assemblies.

LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" NOT APPLICABLE
NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT CHANGES ARE BLACK-LINED IN THE LEFT MARGIN.

MODELS: (cont.)	GP7270	GP7277
PRINCIPAL DIMENSIONS (Room temperature) Length (flange to flange, in.) Length (fan spinner face to aft flange, in.) Nominal diameter (fan case, in.) Maximum radial projection (in.) (at drain mast) CENTER OF GRAVITY (in.) Axial engine station: relative to A-flange Vertical, relative to engine centerline: Lateral, relative to centerline:	 185.782 ± 0.099 193.722 123.740 77.901 213.500 ± 1.0 -0.600 ± 0.5 0.190 ± 0.5	 - - - - - - - - - - - - - -
WEIGHT * (DRY) Basic engine (lbs) * The engine dry weight is defined as the dry weight of the basic engine with EA supplied engine build-up (EBU) components. The EBU includes: hydraulic filter and pressure switch, intermediate pressure check valve, fan inlet temperature sensor, and inlet anti-icing valve and ducts. The following buyer furnished equipment (BFE) are not part of the basic engine weight: variable frequency generator, two (2) hydraulic pumps, one high pressure valve, pressure regulating valve, nacelle inlet cowl, fan cowls and associated hardware, thrust reverser assembly including activation system, attachment hardware and associated electrical harnesses, aft pylon fairing and attachment hardware, forward engine mount, rear engine mount, and attachment hardware (thrust links).	14,798	- -
FUEL	Engine Alliance Service Bulletin EA-GP7-73-1 defines the fuels requirements and provides a listing of approved fuels and fuel additives for use in the GP7200 series turbofan engine.	
LUBRICATING OILS	Engine Alliance Service Bulletin EA-GP7-79-1 provides a listing of approved turbine oils for use in the GP7200 series turbofan engine.	

CERTIFICATION BASIS	1. 14 CFR, Part 33, effective February 1, 1965, as amended by 33-1 through 33-20 with the following equivalent level of safety (ELOS) findings: • 33.27, Rotor Integrity, par. (c), ELOS No. 8040-ELOS-05-NE-04 • 33.77, Foreign Object Ingestion-Ice, par. (c) and (e), ELOS No. 8040-ELOS-05-NE-05 • 33.78, Rain and Hail Ingestion, par. (a)(1), ELOS No. 8040- ELOS-05-NE-06 2. 14 CFR, Part 34, effective September 10, 1990, as amended by 34-1 through 34-3. In addition, 40 CFR Part 87, effective December 19, 2005.

MODEL	APPLICATION	ISSUED/AMENDED	DELETED
GP7270	02/05/2003	12/29/2005	---
GP7277	02/05/2003	12/29/2005	---

PRODUCTION BASIS (All Models)	Production Certificate No. 2 for engines produced by Pratt & Whitney (P&W) Production Certificate No. 108 for engines produced by General Electric Aircraft Engines (GEAE). The Engine Alliance (EA) is a partnership between GEAE and P&W. With respect to the benefits of type certification for production, GEAE and P&W function as licensees of EA.

NOTES

NOTE 1: Nameplate thrust values are defined at sea level static, standard pressure (14.696 psia), up to the flat rating ambient temperature, with 100% inlet recovery, no fan or compressor customer bleed, no horsepower extraction from BFE, and the production flight exhaust ((fan duct assembly comprised of left half, P/N 40113476-987G01, and right half, P/N 40113476-987G02) and primary nozzle (P/N L12192)).

The nameplate ratings were derived using engine performance cycle simulations JV3.14.32.A and JV3.14.32.B for the maximum continuous and takeoff thrust ratings, respectively.

NOTE 2: The normal 5 minute takeoff rating may be extended to 10 minutes for engine out contingency.

NOTE 3. TEMPERATURES	**GP7270**	**GP7277**
Maximum permissible Turbine Exhaust Gas Temperatures (EGT) * are as follows:		
Takeoff (5 minutes) (See NOTE 2)	1002°C / 1836°F	- -
Maximum Continuous	970°C / 1778°F	- -
* Measured by two sets of four dual-element thermocouple probes installed at the leading edge of the low pressure turbine stage 2 vanes.		
Turbine Exhaust Gas Temperatures at start-up,		
Ground	745°C / 1373°F	- -
Flight	865°C / 1589°F	- -
Oil outlet temperature:		
Continuous operation	163°C / 325°F	- -
Transient operation (limited to 20 minutes)	177°C / 350°F	- -
Minimum oil temperature at idle, before takeoff power operation:	50°C / 122°F	- -
Fuel Temperatures (All Models)	See Installation and Operating Manual, EA-0126	

NOTE 4. ROTOR SPEEDS	**GP7270**	**GP7277**
Maximum permissible Low Pressure Rotor (N1)	2,738 rpm	- -
Minimum Low Pressure Rotor (N1),		
Ground Idle	450 rpm	- -
Flight Idle (See Note 10)	620 rpm	- -
Maximum permissible High Pressure Rotor (N2)	13,060 rpm	- -
Minimum High Pressure Rotor (N2),		
Ground Idle	6,974 rpm	- -
Flight Idle	7,279 rpm	- -
Power setting, power checks, and control of engine thrust output are based on N1.		

NOTE 5. PRESSURES

Fuel pressure limits	Fuel pressure at the engine fuel pump inlet during operation shall be maintained at greater than or equal to 5 psi above the true vapor pressure of the fuel, but less than or equal to 100 psi above absolute ambient pressure, with a vapor/liquid ratio of zero. The maximum allowable pressure at the fuel pump inlet after shutdown is 100 psig.		
Oil pressure limits	N2 Speed (rpm)	Minimum Oil Pressure (psig)	
	6,620 10,500 13,060	25 62 101.8	
	Oil supply pressure is measured relative to sump/vent pressure. Temporary interruption associated with negative “g” operation is limited to 15 seconds maximum. Normal oil pressure will be restored rapidly once the negative "g" effect has been eliminated.		

NOTE 6. ACCESSORY DRIVE PROVISIONS

Drive Pad	Rotation	Speed Ratio to N2	Torque (lb.-in.)			Overhung Moment (lb.-in.)
			Continuous	Overload	Static	
Hydraulic Pump #1	CCW	0.3034 : 1	2,615	3,190 **	8,497	450
Hydraulic Pump #2	CCW	0.3116 : 1	2,615	3,190 **	8,497	450
Variable Frequency Generator (VFG)	CCW	1.6171 : 1	*	*	8,860	1,220
Air Turbine Starter	CCW	0.935 : 1	---	---	18,600	307

CCW = Counterclockwise (facing the drive pad)

***** Maximum VFG allowable continuous torque values are equivalent to 249 horsepower at any engine speed at or above sea level ground idle.

****** The engine-driven hydraulic pump overload is based on 5 minutes of operation at 4-hour intervals.

The following VFG overload conditions can be accommodated:

Horsepower	Duration Time	Recurring Time
319	5 minutes	Once / 1000 hours
319	5 seconds	Once / hour
402	5 seconds	Once / 1000 hours

NOTE 7. MAXIMUM PERMISSIBLE AIR BLEEDS

Corrected Fan Speed	High Pressure Compressor Bleed Location (percent of core engine airflow)		
	Stage 4	Stage 7	Stage 9
At or below 740 rpm	5.8%	1.2%	13.1%
740 rpm to 2,319 rpm	5.8%	*	13.1%
At or above 2,319 rpm	5.8%	0.54%	6.8%

* Linear transition between 740 rpm and 2,319 rpm

NOTE 8: The maximum permissible engine inlet pressure distortion is specified in the Installation and Operating Manual, EA-0126.

NOTE 9: During ground operations in icing conditions with an outside air temperature of +37.4°F / +3.0°C or less, periodic engine run-ups must be performed to shed ice from the spinner, fan blades, and low-pressure compressor stators. Run-ups must be to a minimum of 60 percent N1 at intervals not to exceed 30 minutes (and must include taxi-in, ground hold, and taxi-out time). See EA GP7200 Operating Instructions Manual, P/N 5702515.

NOTE 10	The minimum N1 certified for in-flight operation in icing conditions is 620 rpm.

NOTE 11	Life limits for critical components and mandatory inspection requirements are specified in the Airworthiness Limitation Section of GP7200 Series Engine Turbofan Engine Manual (P/N 5700147).

NOTE 12	The GP7200 series turbofan engine is certified to operate with certain faults present in the control system based on 14 CFR Part 33 and appropriate engine control system reliability requirements. The time limited dispatch configurations for the engine control system are defined in EA report GEK 112848. The allowable time limited dispatch intervals are provided in the Airworthiness Limitation Section of the GP7200 Engine Manual (P/N 5700147).

NOTE 13	Overhaul of the GP7270 and GP7277 engine and its components is only authorized when done in accordance with procedures approved by the Type Certificate holder or Manuals accepted by the FAA.

NOTE 14	Engine Instructions for Continued Airworthiness (ICA's) have been reviewed and accepted by the FAA Engine Certification Office.. The following Manuals are approved or accepted for GP7200 series engines: Installation and Operating Manual EA-0126 Operating Instructions P/N 5702515 Engine Manual P/N 5700147 Clean, Inspect, & Repair Manual P/N 5700309 Standard Practices Manual P/N 5700139
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