

The engine weight shown herein is that of the power section and all components coded "E" in the Engine Parts List. The total engine weight, including the weight of items coded "A" in the Engine Parts List, is included on the engine installation drawing for each specific aircraft configuration.

Fuel	<p>Fuels conforming to the following Garrett Specifications:</p> <p>EMS 53111 (Jet A type) EMS 53112 (Jet A-1 and JP-8 type) EMS 53113 (Jet B and JP-4 types) EMS 53116 (JP-5 type)</p> <p>Fuel Additives SOHIO Biobar JF biocide additive is approved for use in the fuel at a concentration not to exceed 20 ppm of elemental boron.</p> <p>Shell ASA-3 anti-static additive, in amounts to bring fuel up to 300 conductivity units is permissible except that in no event shall the additive exceed 1 ppm.</p> <p>MIL-I-27686 "D" or "E" inhibitor, icing, fuel system is approved for use in the fuel in amounts up to 0.15 percent by volume.</p>
Oil	Oil must conform to Garrett Specification EMS 53110, Type II (MIL-L-23699). The ATF3-6 engine has a self-contained oil system and does not require an aircraft installed oil tank.
Certification basis	FAR 33 dated April 3, 1967, and Amendments 33-1 through 33-8, and Exemption No. 2566 dated June 8, 1978, which provided an exemption to FAR's 33.27 and 33.88. Date of application for type certificate was October 28, 1974. Type Certificate No. E7WE issued May 15, 1981, for the ATF3-6 and March 8, 1982, for the ATF3-6A.
Production basis	Production Certificate No. 413 issued March 4, 1965.

NOTE 1. Maximum permissible engine rotor speeds are:

	<u>Continuous</u>	<u>30-second Transient</u>	<u>5-Second Transient</u>
	RPM (percent)	RPM (percent)	RPM (percent)
Fan rotor (N ₁) (-6A)	10,700 (100.0)	10,700 (100.0)	10,700 (100.0)
Fan rotor (N ₁) (-6)	10,400 (100.0)	10,400 (100.0)	10,400 (100.0)
Low pressure rotor (N ₂)	17,200 (100.0)	17,286 (100.5)	17,544 (102.0)
High pressure rotor (N ₃)	36,900 (100.0)	37,269 (101.0)	38,008 (103.0)

Maximum permissible three-hour engine windmilling speeds (rpm) are:

		<u>-6</u>	<u>-6A</u>
Fan rotor (N ₁) (-6)	2835	(27.3%)	(26.5%)
Low pressure rotor (N ₂)	1516	(8.8%)	(8.8%)
High pressure rotor (N ₃)	4768	(12.9%)	(12.9%)

NOTE 2. Maximum permissible temperatures:

Interstage Turbine Temperature (ITT):

Takeoff (5 minute)	1850°F (1010°C)
Takeoff (5 second transient)	1868°F (1020°C)
Maximum continuous	1778°F (970°C)
Starting	1850°F (1010°C)
Starting (5 second transient)	1868°F (1020°C)

NOTE 2. (cont'd)

Oil temperature °F (°C)		
Takeoff (maximum)	360	(182)
Takeoff (minimum)	122	(50)
Continuous operation (maximum)	360	(182)
Continuous operation (minimum)	122	(50)
Starting (minimum)	-40	(-40)
Transient (3 minutes)	370	(188)
Engine fuel inlet temperature °F °C)		
Maximum (refer to IM-2800)	135	(57)
Minimum (refer to IM-2800)	65	(-54)

Engine external components, maximum temperature (limiting temperature of specific components are as specified in the Engine Installation Manual IM-2800, Section 12.)

NOTE 3. Pressure Limits (psig):

Oil Pressure	
Takeoff, climb, flight idle and cruise	55 to 83
Ground idle	30 to 83
Transient (3 minutes maximum)	90 (maximum) (Refer to IM-2800)
Fuel Pressure	
Maximum	50
Minimum	5 psi above true vapor pressure

Note: An 8-mesh or finer screen must be provided upstream of the engine fuel inlet.

NOTE 4. Maximum fuel vapor/liquid ration is 0.45. (Refer to IM-2800.)

NOTE 5. Engine ratings are based on calibrated test stand performance under the following conditions:

- (a) No load on accessory drives.
- (b) No compressor or fan bleed airflow.
- (c) Bellmouth inlet conforming to Garrett Drawing SKP22514, included in the drawing section, with inlet ram recovery of 100 percent.
- (d) Fan duct and exhaust nozzle conforming to Garrett Drawing 3001120, included in the drawing section. Nominal physical exhaust nozzle throat area is 405 square inches.
- (e) No anti-icing airflow.
- (f) 0.2 percent cooling air extracted from the fan discharge bypass flow to maintain specified component temperatures in Zone II (tailcone). (Refer to IM-2800.)
- (g) Interstage Turbine Gas Temperature (ITT) and rotor speed limits not exceeded.
- (h) Test stand data corrected to reflect any deviation from U.S. Standard Atmosphere of 59°F and 29.92 in.Hg. sea level, static conditions.
- (i) At sea level static conditions below 46°F the ATF3-6 engine has a flat rated maximum continuous thrust of 5440 lbs. and above 46°F is rated at a constant ITT of 1778°F.
- (j) At sea level static conditions below 71°F the ATF3-6 engine has a flat rated takeoff thrust of 5440 lbs. and above 71°F is rated at a constant ITT of 1850°F.
- (k) At sea level static conditions below 46°F the ATF3-6A engine has a flat rated maximum continuous thrust of 5440 lbs. and above 46°F is rated at a constant ITT of 1778°F.
- (l) At sea level static conditions below 70°F the ATF3-6A engine has a flat rated takeoff thrust of 5440 lbs. and above 70°F is rated at a constant ITT of 1850°F.

NOTE: Refer to Installation Manual, IM-2800, Section 14, for uninstalled takeoff, and maximum continuous, and maximum climb power setting curves.

NOTE 6. Maximum engine oil consumption rate is 0.07 gallon per hour measured over a 10-hour period.

NOTE 7.

Accessory Drive	AS Standard Drive		Rotation Direction (facing drive pad) Drive to Rotor Ratio with N ₃ at 36,900	Maximum Torque (lb.-in.)			Accessory Weights Pounds Maximum
	Type (1 each)	AS Mating Flange		T _c	T _o	T _s	
Aircraft Accessory D1	468-A6C-1, Rev B (modified)	471	CW 0.340	335	500	1690	60
Starter Generator D2	468-A6C-1, Rev B (modified)	471	CW 0.207	500	750	2530	65
Hydraulic Pump D3	961, Rev. A (modified)	962-1P	CCW 0.214	250	375	1650	12
Hydraulic Pump D4	961, Rev A (modified)	962-1P	CCW 0.166	320	480	1622	40

CW = Clockwise
 CCW = Counter Clockwise
 T_c = Continuous Torque
 T_o = Torque Overload
 T_s = Static Torque

Refer to IM-2800, Section 9, Figure 9-1 for total accessory shaft horsepower available for extraction from accessory drives.

Pads D3 and D4 are modified for 0.343 inch groove depth and 0.264 inch minimum groove width.

A speed reducing gearbox suitable for mounting on the Permanent Magnet Generator (PMG) is available as an option. With this gearbox installed on Pad D1, the accessory drive pad is identified as D4.

The estimated torsional spring constant for the starter-generator drive is 126,000 lb-in per radian.

Maximum windmilling accessory power extraction and aerodynamic drag are provided in Section 9 of IM-2800.

- NOTE 8. A total bleed airflow equal to a maximum of 8.5 percent of the engine core airflow may be extracted from the four bleed ports, provided not more than 5 percent of the gas generator airflow is extracted from the high-pressure bleed ports.
- NOTE 9. These engines meet FAA requirements for operation in icing conditions within the envelope defined in FAR 25, Appendix C, in effect on the date on which the original engine type certificate was issued.
- NOTE 10. Certain engine parts are life-limited. These limits are listed in the FAA-approved Garrett Service Bulletin ATF3-72-6001.
- NOTE 11. Power setting, power checks and control of engine thrust output in all operations is based on Garrett engine charts which refer to fan rotor speed (N1) and are contained in Section 14 of the Installation Manual, IM-2800. Speed sensors are included in the engine assembly for this purpose.
- NOTE 12. These engines are certified for use with an electronic/hydraulic fuel control. The electronic computer is essential for takeoff operations and must be installed in accordance with instructions provided in Section 12 of IM-2800.
- NOTE 13. Variations in engine configuration, installation components, and derated thrust are identified by a suffix in the basic model number on the engine nameplate, i.e., ATF3-6-XX, and an Engine Parts List number. These variations are influenced by aircraft design considerations. In the Engine Parts List, those items coded "E" are basic engine items and are controlled by FAR 33. Items coded "A" have been demonstrated as compatible with the basic engine during engine certification testing. However, the operation, functioning and performance of these in a specific aircraft installation must be demonstrated during aircraft certification. Subsequent design associated with these factors is the responsibility of the aircraft manufacturer.

- NOTE 14. Maximum allowable steady-state engine air inlet distortion limits for stall-free operation are provided in Section 8 of IM-2800.
- NOTE 15. Time for first overhaul: These engines are of modular construction, as described in IM-2800. Inspection intervals for each of these modules is provided in FAA-approved Garrett Service Bulletin ATF3-72-6002.
- NOTE 16. These engines are in compliance with the fuel venting emission requirements of Special Federal Aviation Regulations No. 27, Section 15(a)(3).
- NOTE 17. For additional authorized operation and installation detailed information, see FAA-approved sections of the Engine Installation Manual, IM-2800.

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