FEDERAL AVIATION AGENCY

TYPE CERTIFICATE DATA SHEET NO. E6CE

Engines of models described herein conforming with this data sheet (which is part of type certificate NO. E6CE) and other approved data on file with the Federal Aviation Agency, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder	Continental Aviation and Engineering Corporation 12700 Kercheval Avenue Detroit, Michigan 48215
Model	TS325-1 (T65-T-1)
Type	Turboshaft Engine free turbine type with Single-stage axial compressor plus a single-stage radial flow compressor, Single annular combustion chamber, Two-stage gas generator turbine, Single-stage power turbine
Ratings (see Notes 1 and 3)	
Maximum continuous at sea level, s. hp.	250
gas generator rpm	55,250
output shaft rpm	6,017
measured gas temperature	1160°F (627°C)
Takeoff (5 min.) at sea level, s. hp.	310
Gas generator rpm	57,500
output shaft rpm	6,017
measured gas temperature	1260°F (682°C)
30 min. power at sea level, s. hp.	310
gas generator rpm	57,500
output shaft rpm	6,017
measured gas temperature	1260°F (682°C)
Output shaft	Internal spline
Fuel control	
Gas generator	Bendix DP-G1
Power turbine governor	Bendix AL-P1
Pneumatic accumulator	See Note 12
Fuel pump and filter	Adel P/N 709712
Fuel (see Note 9)	
Normal	MIL-J-5624, JP-4 and JP-5
Emergency	Aviation gasoline (4.6 ml./gal. tetraethyllead max.)
Oil	MIL-L-7808 ESSO Turbo 15 PENOLA Turbo 15

Principal Dimensions	
Length, in.	39.17
Width, in.	17.9
Height, in.	19.85
Weight (dry lb.	136 (see Note 6)
Center of Gravity	
Aft. of front mount, in.	7.80
Below compressor centerline, in.	1.5
Right of compressor centerline (view from front), in.	1.7
Ignition System	
Dual ignition coil	Bendix TGLN 10-358125-1
Igniters (2)	Champion FHE-157-4
Gas Temperature Measurement	Thermocouple harness with 6 thermocouples locates at the power turbine inlet

Certification basis CAR 13 effective June 15, 1956, as amended by 13-1, 13-2, and 13-3.
Type Certificate No. E6CE issued April 30, 1964
Date of application for Type Certificate December 4, 1961.

Production basis Pending

NOTE 1. Maximum permissible temperatures

Power turbine inlet temperatures

Takeoff and 30 min. power	1270°F (688°C)
Maximum continuous power	1185°F (640°C)
Transient	
Below ground idle	- Temperature may exceed 1700°F for 2 sec. but shall at no time exceed 1750°F
Above ground idle	- Temperature may exceed 1270°F for 2 sec. but shall at no time exceed 1550°F

Oil inlet temperature - 65°F (-54°C) to 215°F (102°C)

NOTE 2. Fuel and oil pressure limits

Fuel pump inlet, minimum at fuel connection to the engine. Not less than 10.7 p.s.i.a. at sea level and 9.1 p.s.i.a. at 6,000 feet and above altitude. Maximum pressure 50 p.s.i.g.

Oil pump outlet, 45 p.s.i.g. plus or minus 10 p.s.i.g. at 53,950 rpm or above (gas generator speed).

NOTE 3. The specification sea level static ratings are based on the following conditions and test equipment:

Compressor inlet air, 59°F and 29.92 in.Hg. absolute, dry
No compressor air bleed
No inlet air distortion with inlet bell attached.
No accessory loading.
Exhaust duct shown on installation dwg. 704951
Measured gas temperature as indicated by engine thermocouple harness.

NOTE 4. The following accessory drives are provided:

Drive	Gear Ratio (to Turbine)	Torque - in-lb. Max. Engine Speed Continuous	Static	Direction of Rotation	Max. Overhung Moment in-lb.
	Gas Generator Driven				
Starter generator	0.2069	75	600	Clockwise	125
Tachometer	0.0730	7	50	Counter-Clockwise	15
Spare pad	0.0690	17	75		25
	Power Turbine Driven				
Tachometer	0.1077	7	50	Clockwise	15
Auxiliary power takeoff	0.1543	2700*	5000	Clockwise	250

*See Note 5.

NOTE 5. Output Drive
The engine has an output drive spline as defined by AND 20006, XVI-B. The continuous torque rating available with no load on the auxiliary power takeoff shall be 2700 in.-lb. With the output shaft loaded, the sum of the output drive torque and auxiliary power takeoff torque shall not exceed 2700 in-lb. The direction of rotation of this drive is clockwise as viewed from the exhaust end of the engine looking forward.

NOTE 6. Engine Weight
The weight of the engine includes the following standard equipment, as shown on CAE Installation dwg. no. 704951.

- Fuel control
- Engine fuel pump
- Ignition system (less power source)
- Lines and fittings
- Oil filter
- Engine oil pump

NOTE 7. Anti-icing System
The inlet of this engine is provided with a manually actuated anti-icing system. An ice detector is not furnished with the engine.

NOTE 8. Compressor Air Bleed Limitations
The maximum permissible external air bleed shall be three (3) percent of the total airflow.

NOTE 9. Fuel
MIL-J-5624, Grade JP-5 fuel may be used interchangeably with Grade JP-4 without fuel control adjustment or fuel tank drainage before refueling. Emergency use of aviation gasoline is limited to a maximum of 6 hours during any overhaul period. Phillips PFA-55MB (MIL-1-27686) anti-icing additive is approved for use in JP-4 fuel in amounts not to exceed 0.1% by volume.

NOTE 10. Maximum Torque
The maximum allowable torque as measured by the engine torquemeter is 270 ft.-lb. at the takeoff and 30 min. power ratings; and 225 ft.-lb. at the maximum continuous power rating.

NOTE 11. Engine Speeds
Maximum gas generator speed is 100% for sustained periods and 103% for momentary transients. 100% gas generator speed is defined as 57,500 rpm.

Maximum power turbine speed is 105% for sustained periods and 115% for momentary transients. 100% power turbine speed is defined as 39,000 rpm.

NOTE 12. A pneumatic accumulator attached to the reduction gear box oil scavenge line may be selected from sizes supplied by the engine manufacturer for compatibility with the rotor system of the particular model helicopter in which the engine is to be installed.

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