



TYPE-CERTIFICATE DATA SHEET

No. IM.E.250

for Engine

T5313 and T5317 series engines

Type Certificate Holder

Ozark Aeroworks, LLC
3300 S. Golden Ave. (S. Farm Rd. 135)
Springfield, Missouri 65807
USA

For Models:

T5313B

T5317A

T5317A-1

T5317B



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I. General

1. Type / Models

T5313B, T5317A, T5317A-1, T5317B

2. Type Certificate Holder

Ozark Aeroworks, LLC
3300 S. Golden Ave. (S. Farm Rd. 135)
Springfield, Missouri 65807
USA

3. Manufacturer

Textron Lycoming (previously: Avco Lycoming Engine Group), Stratford Division,
Stratford, Connecticut 06497, USA

Avco Lycoming, Charleston Plant, Charleston, South Carolina 29411, USA

4. Date of Application

Application had been made to individual European National Aviation Authorities (NAA) before 28 September 2003.

5. EASA Type Certification Date

T5313B	T53017A	T5317A-1	T5317B	
02 May 1985	11 April 1973	15 Nov. 1996	09 Oct. 1995	

EASA Type Certification for the T5309 and T5311 series engines is granted, in accordance with article 2 paragraph 3 (a) (i) of EU Commission Regulation EC 1702/2003, based on NAA approvals prior to 28 September 2003 in several EU Member States. T5313B, T5317A-1 and T5317B were certified by LBA Germany (TC/TCDS 7027).

EASA TC and TCDS EASA.IM.E.250 replaces all TC and TCDS previously issued in the EASA countries for the for the T5313 and T5317 series engines.



II. Certification Basis

1. State of Design Authority Certification Basis

See FAA TCDS E17EA

2. EASA Certification Basis

2.1. Airworthiness Standards

T5313B T5317A	CAR 13, as amended by 13-1, 13-2 and 13-3
T5317A-1 T5317B	14 CFR Part 33, Amendment 5

2.2. Special Conditions (SC)

None

2.3. Equivalent Safety Findings (ESF)

None

2.4. Deviations

None

2.5. Environmental Protection

CS-34.1, Fuel Venting

III. Technical Characteristics

1. Type Design Definition

As defined by the applicable parts list.

2. Description

Axial - centrifugal flow, free turbine turboshaft. Five stage axial and single stage centrifugal compressor. External annular vaporizing combustion chamber. Two stage gas producer turbine. Two stage power turbine..

3. Equipment

Engine equipment is specified by the Engine Equipment List part number as referenced in the Type Design Definition.



4. Dimensions

	Nominal Length mm (inch)	Nominal Diameter mm (inch)	
All models	1209 (47.6)	622 (24.5)	

5. Dry Weight

	Weight ⁽¹⁾ kg (lb.)
T5313B	247 (544)
T5317A	247 (545)
T5317A-1	245 (541)
T5317B	248 (547)

- (1) The engine weight includes essential engine accessories but excludes starter, two tachometer generators, oil tank and oil cooler.

6. Ratings

	Maximum Continuous kW (hp)	Optimum output shaft rpm (at max. cont. power)	Take off (5 minutes) kW (hp)	Optimum output shaft rpm (at take off power)
T5313B	932 (1250)	6040	1044 (1400)	6300
T5317A	1007 (1350)	6210	1119 (1500)	6450
T5317A-1	1007 (1350)	6230	1119 (1500)	6462
T5317B	1007 (1350)	6229	1119 (1500)	6461

Note: Engine ratings are based on calibrated stand performance under the following conditions:

- Static sea level standard conditions of 15°C (59°F) and 1013 mbar (29.92 in. Hg.)
- No inlet duct losses, no loading of the accessory drives and minimum permissible bleed air flow.
- Exhaust configuration as defined by Ozark Aeroworks, LLC drawing 1-000-031-01.

7. Control System

The T5313 and T5317 series engines are controlled by a hydromechanical fuel control system.

8. Fluids (Fuel, Oil, Coolant, Additives)

Fuels: MIL-DTL-5624: Grades JP-4 and JP-5.
MIL-DTL-83133: Grade JP-8.
ASTM D1655: Jet A, Jet A-1.
ASTM D6615: Jet B.

See Ozark Aeroworks, LLC Maintenance Manual 330.2 for equivalent fuels and additives as well as for oils.



9. Aircraft Accessory Drives

Drive	AND Type	No. Required	Gear Ratio	Maximum Torque Nm (in.-lb.)		Static Nm (in.-lb.)
				Continuous	Short time ⁽¹⁾	
Gas producer tachometer	20005 XV-B Modified	1	0.1670	0.8 (7)	----	5.65 (50)
Starter-generator	20002 XII-D Modified	1	0.2833	28.2 (250)	36.2 (320) ⁽³⁾	181 (1600) ⁽²⁾
Power takeoff	20002 XII-D Modified	1	0.5397	17 (150)	25.4 (225)	90.4 (800) ⁽⁴⁾
Power turbine tachometer	20005 XV-B Modified	1	0.1993	0.8 (7)	---	5.65 (50)

Rotation of all drives: clockwise

⁽¹⁾ Maximum permissible torque for 5-minute periods, recurring at not less than 4-hour intervals.

⁽²⁾ Maximum permissible torque during starts is 146 Nm (1296 in.-lb.).

⁽³⁾ Generator torque in excess of 36.2 Nm (320 in.-lb.) is permissible up to a maximum of 70.6 Nm (625 in.-lb.) for a period of not more than 15 seconds.

⁽⁴⁾ 76.8 Nm (680 in.-lb.) on power take off pad when starter is installed.

The customer accessory horsepower extraction limits are presented in the Ozark Aeroworks, LLC Manual of FAA Approved Data.

10. Maximum Permissible Air Bleed Extraction

For maximum permissible air bleed extraction see the following figures in the Ozark Aeroworks, LLC Manual of FAA Approved Data: Model T5313B - Figure 8.1, Model T5317A - Figure 6.1, Model T5317A-1 - Figure 3.1, Model T5317B - Figure 3.1.

IV. Operating Limitation

1. Temperature Limits

1.1 Exhaust Gas Temperature (EGT) Limits:

Maximum permissible exhaust gas temperature varies with ambient temperature as shown in the Ozark Aeroworks, LLC Manual of FAA Approved Data. The exhaust gas temperature is measured by twelve thermocouples located in the exhaust diffuser of the engine.

1.2 Oil Temperature Limits:

Oil inlet temp: 93°C (200°F)
Oil outlet temperature: 149°C (300°F) for T5313B, T5317A
135°C (275°F) for T5317A-1, T5317B

1.3 Fuel Control Temperature Limits:

Fuel control ambient temperature: 121°C (250°F)



1.4 Other Temperature Limits:

Ignition unit surface temperature:	121°C (250°F)
Igniter solenoid valve surface temperature:	149°C (300°F)
Air bleed control ambient temperature:	149°C (300°F)
Thermocouple harness airframe interface connector:	177°C (350°F)

2. Speed Limits

Maximum permissible gas producer speeds:	Take off (T5315B):	25650 rpm
	Take off (T5317 models):	26400 rpm
	Maximum continuous (T5313B):	24900 rpm
	Maximum continuous (T5317 models):	25400 rpm
Maximum power turbine speed at all conditions including take off:		21300 rpm
Nominal power turbine operating speed:		21190 rpm

3. Maximum Permissible Torque Limits (Nm)

Power turbine output shaft torque limits:	Take off (T5313B):	1593 Nm (1175 ft.-lb.)
	Take-off (T5317 models):	1695 Nm (1250 ft.-lb.)
	Maximum continuous (T5313B):	1505 Nm (1110 ft.-lb.)
	Maximum continuous (T5317 models):	1573 Nm (1160 ft.-lb.)

4. Pressure Limits

4.1 Fuel Pressure

Maximum pressure:	345 kPa gauge (50 psig)
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4.2 Oil Pressure Limits

Ground idle, minimum:	69 kPa (10 psi)
Operating range:	138...689 kPa (20...100 psi)
Take off and max. continuous, minimum:	552 kPa (80 psi)

5. Installation Assumptions:

The installation assumptions are quoted in the applicable Installation Manual.

6. Time Limited Dispatch (TLD)

N/A



7. ETOPS Capability

The T5313 and T5317 series engines are not approved for ETOPS capability in accordance with CS-E 1040.

V. Operating and Service Instructions

Manuals:

All models: Operating Instructions Manual No. 330.1

T5313B: Installation Instructions 94-1519.14.5

T5317A: Installation Instructions 94-1519.14.15

T5317A-1: Installation Instructions 21-12573

T5317B: Installation Instructions 21-12062, 21-12440

Instructions for Continued Airworthiness:

All models: Maintenance Manual: No. 330.2

Overhaul Manual: No. 330.3

Repair Manual: No. 72-09-30

Service Bulletins: Series No. T53/T5313/T5317

VI. Notes

Note 1: The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in Ozark Aeroworks, LLC Service Bulletin No. T5313/17-0020 »Rotating Component Service – Life Limit«.

Note 2: These engines meet the FAA requirements for operation in icing conditions provided a minimum gas producer speed is maintained in accordance with the following figures in the Ozark Aeroworks, LLC Manual of FAA Approved Data: Model T5313B - Figure 8.5, Model T5317A - Figure 6.5, Model T5317A-1 - Figure 3.4, Model T5317B - Figure 3.4.

Note 3: These engines meet FAA requirements for adequate turbine disc integrity and rotor blade containment and do not require airframe mounted armoring. An airframe provided switch is required to test the overspeed governor prior to flight. Models T5313B and T5317A-1 do not require an electronic power turbine overspeed system. Models T5317A and T5317B do not require an electronic power turbine overspeed system when installed in aircraft with main rotor transmissions limited to 1044 kW (1400 shp) maximum.

Note 4: These engines have not been tested to evaluate the effects of bird and ice ball ingestion. The bird and ice ball ingestion characteristics of the airframe air inlet and engine combination are to be evaluated prior to the approval of the engine installation.

Note 5: The engines may use JP-4 and JP-5 kerosene type fuels separately or mixed in any proportion. No fuel control adjustment is required when switching fuel types. Phillips PFA-55MB anti-icing additive at a concentration not in excess of 0.15% by volume is approved for use in fuels for these engines.

Note 6: FAA Airworthiness Directive Number 74-22-07, Amendment 39-1997, effective October 31, 1974, required all T5313A engines be converted to T5313B engines within 100 hours.



SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

Not Applicable

II. Type Certificate Holder Record

Since 06 May 2022: Ozark Aeroworks, LLC

Previous Type Certificate Holders:
From 14 Dec. 1999 to 06 May 2022: Honeywell International Inc.

From 31 Jan. 1995 to 14 Dec. 1999: AlliedSignal

Until 31 Jan. 1995: Textron Lycoming (previously: Avco Lycoming Engine Group)

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	01 June 2023	Initial Issue.	01 June 2023

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