U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE SHEET E17EA	TCDS NUMBER E17EA REVISION: 8 DATE: JULY 19, 1996 ALLIEDSIGNAL MODELS: T5313B T5317A T5317A-1 T5317B

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E17EA) 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: AlliedSignal
111 South 34th Street
Phoenix, AZ 85072-2181

I. MODELS	**T5313B**	**T5317A**	**T5317A-1**	**T5317B**
TYPE	Axial - centrifugal flow, free turbine turboshaft. Five stage axial and single stage centrifugal compressor. External annular atomizing combustion chamber. Two stage gas producer turbine. Two stage power turbine.			
RATINGS				
Maximum continuous at sea level hp.	1250	1350	1350	1350
Optimum output shaft r.p.m.	6040	6210	6230	6229
Takeoff (5 min.) at sea level hp.	1400	1500	1500	1500
Optimum output shaft r.p.m.	6300	6450	6462	6461
FUEL CONTROL	Chandler Evans Model TA-2S with Integral dual element pump.	- -	Chandler Evans Model TA-7 with Integral dual element pump.	- -
FUEL (See NOTE 12)	MIL-T-5624, Grades JP-4 and JP-5 or equivalent as specified in Textron Lycoming Maintenance Manual 330.2.	- -	- -	- -
OIL	MIL-L-7808 or MIL-L-23699	- -	- -	- -

*

LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" INDICATES "DOES NOT APPLY"

NOTICE: SIGNIFICANT CHANGES ARE BLACK-LINED IN THE LEFT BORDER.

I. MODELS (Continued)	T5313B	T5317A	T5317A-1	T5317B
PRINCIPAL DIMENSIONS				
Length, in. nominal	47.602	- -	- -	- -
Maximum diameter, in.	24.50	- -	- -	- -
Weight (DRY), lb. (includes essential engine accessories but excludes starter, two tachometer generators, oil tank and oil cooler)	549	550	541	552
C.G. LOCATION (DRY WEIGHT)				
Aft of front mount pad centerline, in.	14.38	- -	- -	- -
Below engine horizontal centerline, in.	.76	- -	- -	- -
IGNITION SYSTEM (28 VOLTS D.C.)	Bendix Type TGLN2125 or GLA Type 42416 with spark splitter coil and two shunted surface gap igniter plugs	- -	- -	- -
IGNITER PLUGS	AC5611304	- -	- -	- -

CERTIFICATION BASIS

Regulations & Amendments	Model	Date of Application	Date Type Certificate E17EA Issued/Amended
CAR 13, effective June 15, 1956 as amended by 13-1 thru 13-3	T5313A	07/01/64	04/22/68
	T5313B	10/01/69	12/24/69
	T5317A	11/29/71	04/11/73
	T5313A	Canceled	08/01/85
	T5317A-1 06/24/92	05/21/93	
	T5317B	03/12/92	

PRODUCTION BASIS Production Certificate No. 110, (Stratford, Connecticut)

NOTES

NOTE 1. Maximum power turbine speed is 21,300 r.p.m. at all conditions including takeoff.

NOTE 2. Power turbine output shaft torque limits:

	T5313B	T5317A	T5317A-1	T5317B
Takeoff	1175 ft. lb.	1250 ft. lb.	- -	- -
Maximum continuous	1110 ft. lb.	1160 ft. lb.	- -	- -

NOTE 3. Maximum permissible gas producer speeds are:

	T5313B	T5317A	T5317A-1	T5317B
Takeoff	25,650 r.p.m.	26,400 r.p.m.	- -	- -
Maximum continuous	24,900 r.p.m.	25,400 r.p.m.	- -	- -

NOTE 4. Maximum permissible temperatures:

For models T5313B, T5317A, and T5317A-1, maximum permissible exhaust gas temperature varies with ambient temperature as shown in the AlliedSignal Manual of FAA Approved Data. The exhaust gas temperature is measured by twelve thermocouples located in the exhaust diffuser of the engine.

For Model T5317B maximum permissible measured gas temperature is 1585^{o}F for the takeoff power condition and 1508^{o}F for the maximum continuous power condition. The gas temperature is measured by twelve thermocouples located between the gas producer turbine and power turbine stages.

	T5313B	T5317A	T5317A-1	T5317B
Oil inlet temp.	200^{o}F	- -	- -	- -
Oil outlet temp.	300^{o}F	- -	275^{o}F	- -
Ignition unit surface temp.	250^{o}F	- -	- -	- -
Fuel control ambient temp.	250^{o}F	- -	- -	- -
Igniter solenoid valve surface temp.	300^{o}F	- -	- -	- -
Air bleed control ambient temp.	300^{o}F	- -	- -	- -
Thermocouple harness airframe interface connector	350^{o}F	- -	- -	- -

NOTE 5. Fuel and oil pressure limits:

		T5313B	T5317A	T5317A-1	T5317B
Fuel:	0 to 50 p.s.i.g.	- -	- -	- -	- -
Oil:	Ground idle	10 p.s.i. min.	- -	- -	- -
	Operating range	20 to 100 p.s.i.	- -	- -	- -
	Takeoff & max. continuous	80 p.s.i. min.	- -	- -	- -

NOTE 6. Accessory drive provisions:

Drive	AND Type	Number Required	Gear Ratio	Maximum Torque (in.-lb.) Continuous	Short Time (1)	Static	Rotation
Gas producer tachometer	20005 XV-B Modified	1	.1670	7	- -	50	C
Starter-Generator	20002 XII-D Modified	1	.2833	250	320(3)	1600(2)	C
Power takeoff	20002 XII-D Modified	1	.5397	150	225	800(4)	C
Power turbine tachometer	20005 XV-B Modified	1	.1993	7	- -	50	C

C - Clockwise

(1) Maximum permissible torque 5-minute periods, recurring at not less than 4-hour intervals.
(2) Maximum permissible torque during starts is 1296 in.-lb.
(3) Generator torque in excess of 320 in.-lb. is permissible up to a maximum of 625 in.-lb. for a period of not more than 15 seconds.
(4) 680 in.-lb. on power takeoff pad when starter is installed.

The customer accessory horsepower extraction limits are presented in the AlliedSignal Manual of FAA Approved Data.

NOTE 7. Engine ratings are based on calibrated stand performance under the following conditions:

Static sea level standard conditions of 59^{O}F and 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 AlliedSignal drawing 1-000-031-01.

NOTE 8. For maximum permissible air bleed extraction see the following figures in the AlliedSignal 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.

NOTE 9. 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 AlliedSignal 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 10. 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 1,400 shp maximum.

NOTE 11. 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 12. 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 13. 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.

Model T5317A is similar to Model T5313B except for the incorporation of improved combustor and turbine parts and improved cooling of the gas producer nozzles and rotors. Model T5317A-1 is similar to model T5317A except for incorporation of a unique power turbine governor and bleed band actuator. Model T5317B is similar to Model T5317A except for use of an interturbine (MGT) gas temperature measurement system.

NOTE 14. Certain engine parts are life limited. These limits are listed in FAA approved AlliedSignal Service Bulletin No. 0020

----END----