

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E00069EN	TCDS NUMBER: E00069EN REVISION: Revision 3 DATE: March 27, 2007 MODELS: TAE 125-01, TAE 125-02-99, TAE 125-02-114
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Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00069EN 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 Thielert Aircraft Engines GmbH
 Platanenstrasse 14
 D-09350 Lichtenstein
 Germany

I. MODELS	TAE 125-01	TAE 125-02-99	TAE 125-02-114
TYPE	The TAE 125 engine is a liquid-cooled 4 cylinder, 4 stroke in-line diesel cycle engine with Double Overhead Camshaft. It is equipped with common rail high pressure direct injection, turbocharger, and gearbox with reduction ratio of 1:1.689, propeller governor and FADEC, including propeller pitch control.		
RATINGS (US Standard Atmosphere at Sea Level Pressure Altitude), HP(KW)			
Takeoff	132.8 (99) at 3900 rpm	132.8 (99) at 3900 rpm	152.6 (114) at 3900 rpm
Max. Continuous			
Max Recommended Cruising	95 (71) at 3400rpm	95 (71) at 3400rpm	95 (71) at 3400rpm
Max. Best Economy Cruising			
FUEL (Also see Operation & Maintenance Manual)	Jet Fuel: Jet A-1, Jet, Jet Fuel No.3, JP-8 and JP-8+100 (See NOTE 17)		
OIL (See NOTE 4)	See Operation & Maintenance Manual for approved oils		
OIL SUMP CAPACITY, Gallon (liters)			
Maximum level	1.59 (6.0)	1.59 (6.0)	1.59 (6.0)
Minimum level	1.19 (4.5)	1.19 (4.5)	1.19 (4.5)
Total (in addition to the volume in the hosing and oil cooler)	1.59 (6.0)	1.59 (6.0)	1.59 (6.0)
PRINCIPAL DIMENSIONS			
Length, in (mm)	32.12 (816)	32.12 (816)	32.12 (816)
Width, in (mm)	31.24 (788)	31.24 (788)	31.24 (788)
Height, in (mm)	25.03 (636)	25.03 (636)	25.03 (636)
CENTER OF GRAVITY	Refer to Installation Manual IM 02-01.	Refer to Installation Manual IM-02-02	Refer to Installation Manual IM-02-02

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LEGEND: "- ." INDICATES "SAME AS PRECEDING MODEL"
 "----" NOT APPLICABLE

NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT CHANGES, IF ANY ARE BLACK.LINED IN THE LEFT

MARGIN

I. MODELS (Continued)	TAE 125-01	TAE 125-02-99	TAE 125-02-114
WEIGHT (dry)	134 kg	134 kg	
DISPLACEMENT	1,689 cm ³	1,991 cm ³	
BORE	80.00mm	83.00mm	
STROKE	84.00 mm	92.00 mm	
COMPRESSION RATIO	18:1		
PROPELLER ROTATION	CCW		
GEAR REDUCTION (crankshaft to propeller)	1.689:1		
CONTROL SYSTEM (See NOTE 12-14)	Full Authority Digital Engine Control (FADEC)		
FLUIDS (FUEL/OIL/ADDITIVES):	See Operation & Maintenance Manual for approved fluids		

CERTIFICATION BASIS

FAR 21.29 and FAR 33 effective February 1, 1965, and Amendments 33-1 through Amendment 33-20.

The aviation authority for Germany, Luftfahrt-Bundesamt, originally type certificated this engine under its type certificate Number 4631. The type certificate was transferred to EASA under EASA type certificate E.055 on March 24, 2006. The European Aviation Safety Agency (EASA) began oversight of this product on behalf of Germany. The FAA validated this product under U.S. Type Certificate Number E00069EN.

Model	Date of Application	Date Type Certificate Issued/Revised
TAE125-01	April 17, 2001	October 14, 2004
TAE125-02-99	September 18, 2006	October 25, 2006
TAE125-02-114	January 17, 2007	March 27, 2007

IMPORT REQUIREMENTS

To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States with Luftfahrt-Bundesamt (LBA) or EASA airworthiness approval shall have a Joint Aviation Authorities (JAA) or EASA Form 1, Authorized Release Certificate. The JAA or EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E00069EN, is in a condition for safe operation and has undergone a final operational check.

NOTES

II. AIRWORTHINESS LIMITATIONS	TAE 125-01	TAE 125-02-99	TAE 125-02-114
NOTE 1: Engine permissible maximum crankshaft speed	4220 rpm		
NOTE 2: Temperature Limitations, deg F(C)			
Min opening up Oil Temperature	122 (50)		
Max Oil Temperature	284 (140)		
Min ambient temperature for starting	-26 (-32)		
Min opening up Cooling Fluid Temperature	140 (60)		

Max Cooling Fluid Temperature	221 (105)	
Max Gearbox Temperature	248 (120)	
NOTE 3: Altitude	1. Maximum altitude, ft (m): 18500 2. Critical altitude, ft (m): 6000	
NOTE 4: Fuel and Oil Pressure Limits, PSI (kPa)		
Min Fuel Pressure	2.9 (20)	
Max Oil Pressure	94.3 (650)	
Min Oil Pressure	33.4 (230)	
Minimum Oil Pressure at Idle	14.5 (100)	
NOTE 5:	Dispatch Limitations: All engine systems and equipment must be functional prior to aircraft take-off. Any detected engine system or equipment failure must be corrected before next flight.	
NOTE 6:	The TAE 125-01 and TAE125-02-99 and TAE125-02-114 engine are Life-Limited. Whole engine must be removed from service in accordance with the Airworthiness Limitations Section, Chapter 5 of the Maintenance manual.	
NOTE 7: Induction System		
Max manifold air temperature, deg F (C)	176 (80)	
Max manifold pressure Psi (kPa)	32.6 (225)	
Max turbine inlet temperature, deg F (C)	1652 (900)	
Max turbocharger speed, rpm	145000	
NOTE 8:	Overhaul of the core engine is not permitted. See Overhaul Manual for the accessory/parts permitted for overhaul.	
NOTE 9:	The Instructions for Continued Airworthiness contained in the Operation & Maintenance Manual have been accepted by the FAA. (see Note 21)	
NOTE 10:	Any repair other than those covered by the Instructions for Continued Airworthiness or DER approved repairs in accordance with FAR Part 183 must be approved by the Engine Certification Office.	
NOTE 11:	The engine is approved for installation in FAR 23 Normal and Utility aircraft categories only.	
NOTE 12:	The software of the ECU has been validated according to DO 178 B, level C.	
FADEC P/N	02-7610-55001	05-7610-K000101
Software P/N	TAE -125- m2.7 or later approved standard	
Software Mapping	Refer to Service Bulletin (SB) TM TAE 000-0007 for approved software P/N	
NOTE 13:	The electronic control unit must not be installed in a dedicated fire zone. The installation conditions are defined in the Installation Manual.	
NOTE 14:	Specific engine control mapping software must be installed for each application specified in Service Bulletin TM TAE 000-0007. Also refer to Installation Manual for appropriate installation.	

III. INFORMATION		
NOTE 15:	Engine model numbers may include suffixes in parentheses to define installation specific configuration changes. Refers to SB TM TAE 000-0007 and Installation Manual.	
NOTE 16:	There are no provisions for customer/aircraft furnished equipment. All accessories are part of the engine type design	
NOTE 17:	Diesel fuel has not been approved as an alternative fuel in the US	
NOTE 18:	Electrical Equipment: Refer to Installation Manual.	

NOTE 19:	Refer to Installation Manual for approved oil specification.		
NOTE 20:	Refer to Installation Manual for approved fuel and additive specification.		
NOTE 21: Engine Manual:		TAE125-01	TAE125-02-99 & TAE125-02-114
	Installation Manual	IM-02-01	IM-02-02
	Operation & Maintenance Manual	OM-02-01 (US Version)	OM-02-02 (US Version)
	Overhaul Manual	OHM-02-01	OHM-02-02
NOTE 22:	<p>Service Information:</p> <p>Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA). Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.</p> <ul style="list-style-type: none"> • Service bulletins, • Structural repair manuals, • Vendor manuals, • Aircraft flight manuals, and • Overhaul and maintenance manuals. <p>These approvals pertain to the type design only.</p>		
NOTE 23:	The operating/starting envelope is provided in the Installation Manual.		
NOTE 24:	EMI/Lightning: The engine control system has been tested according to DO 160 D for lightning protection and magnetic interference. The demonstrated levels are provided in the Installation Manual.		
NOTE 25:	Sales name of the variant TAE125-01 : CENTURION 1.7 TAE125-02-99 : CENTURION 2.0 TAE125-02-114: CENTURION 2.0 S		
---THE END---			