

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E43NE	TCDS NUMBER E43NE REVISION: 2* DATE: March 23, 2007 WYTWORNIA SPRZETU KOMUNIKACYJNEGO "PZL-RZESZOW" - SPOLKA AKCYJNA MODELS: PZL-10W
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Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E43NE) 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: WYTWORNIA SPRZETU KOMUNIKACYJNEGO (WSK) "PZL-RZESZOW" - SPOLKA AKCYJNA (SA)
 ul. Hetmanska 120
 35-078 Rzeszow, Poland

I. MODELS	PZL-10W				
TYPE	Twin spool (free turbine) turboshaft engine with a six stage axial compressor, single stage centrifugal compressor, annular combustion chamber with centrifugal fuel nozzles, two stage axial turbine for gas generator, single stage axial free power turbine, and direct drive output for the PZL W-3 Sokol multi-engine helicopter application.				
RATINGS (NOTE 1, 2, 3)					
Shaft horsepower (hp)					
Maximum continuous	780				
Takeoff (5 min.)	900				
30 min. OEI	1,000				
Takeoff (2.5 min. OEI)	1,150				
	NOTE: OEI = one engine inoperative				
FUEL TYPE	Refer to section 2 of approved installation manual or section 3 of approved overhaul manual.				
OIL TYPE	Refer to section 2 of approved installation manual or section 3 of approved overhaul manual.				
ENGINE CONTROL SYSTEM	Fuel Metering Pump: KTEHS "PZL-Hydral" Wroclaw ALRP-5 Power Turbine Speed Governor: KTEHS "PZL-Hydral" Wroclaw ALRT-2A Air Bleed Control Valve: KTEHS "PZL-Hydral" Wroclaw ALUP-1 Electronic Limiter Unit: KTEHS "PZL-Hydral" Wroclaw ALAE-2				
IGNITION SYSTEM	Ignitor KNV-22 (KHB-22) Ignition Plug SE-23 (S3-23)				

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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 (cont.)	PZL-10W				
PRINCIPAL DIMENSIONS (in) LENGTH: WIDTH (left variant): WIDTH (right variant): HEIGHT (maximum envelope):	73.819±0.394 29.134±0.394 30.118±0.394 23.425±0.394				
WEIGHT (lb) Dry	310.62±6.21				
NOTE: Dry weight includes only the equipment needed to run the engine without residual fluid.					
CENTER OF GRAVITY (in) From mount in aft direction From engine axis in left direction (left variant) From engine axis in left direction (right variant)	2.441±0.080 0.197±0.040 0.040±0.040				
MAXIMUM PERMISSIBLE ENGINE OPERATING SPEEDS (RPM) Gas generator Takeoff (2.5 min OEI) 30 min. OEI Takeoff (5 min.) Maximum continuous Transient Free Turbine Nominal speed Transient (15 sec. max.)	32,100 30,900 30,550 29,330 32,100 23,615 25,190				
NOTE: 100% gas generator speed = 31,486 RPM 100% free turbine speed = 22,490 RPM					
MAXIMUM PERMISSIBLE TEMPERATURES (°C/°F) Gas generator turbine exhaust (T4) Takeoff (2.5 min. OEI) 30 min. OEI Takeoff (5 min.) Maximum continuous Starting	770/1418 735/1355 725/1337 670/1238 680/1256				
ENGINE OIL TEMPERATURE/PRESSURE LIMITS AND QUANTITY	Refer to section 2 of Installation Manual				
ENGINE FUEL TEMPERATURE/PRESSURE LIMITS	Refer to section 2 of Installation Manual				
AMBIENT TEMPERATURE RANGE (°C/°F) During flight (up to 6,000m/19,685 ft) Ground starting (up to 4,000 m/13,123 ft)	-50/-58 to 50/122 -30/-22 to 50/122				

I. MODELS (cont.)	PZL-10W				
MAXIMUM PERMISSIBLE AIR BLEEDS (kg/sec/lb/sec) (NOTE 4) For cabin ventilation For inlet dust separator Total for aircraft use ROTOR DIRECTION OF ROTATION Gas Generator Rotor Free Turbine Rotor	NOTE: If ambient temperature drops below minimum during ground starting, the engine should be warmed-up in accordance with Operating Instructions. 0.07/0.154 0.04/0.088 0.11/0.243 CCW CW				
ACCESSORY DRIVE PROVISIONS	NOTE: CW = Clockwise, CCW = Counter-clockwise				
	Refer to Installation Manual				

CERTIFICATION BASIS

FAR Part 33, effective February 1, 1965, as amended by 33-1 to 33-13, inclusive.

Type Certificate E43NE issued/revised

MODEL	DATE OF APPLICATION	DATE TC ISSUED OR REVISED
PZL-10W	05/27/91	05/28/93
Reissued to WSK "PZL-RZESZOW" SA 12/21/94		

The General Inspectorate of Civil Aviation of Poland originally type certificated this engine. The FAA validated this product under U.S. Type Certificate Number E43NE. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Poland.

IMPORT REQUIREMENTS

To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States with the General Inspectorate of Civil Aviation of Poland 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 E43NE, is in a condition for safe operation and has undergone a final operational check.

Additional guidance is contained in FAA Advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engine, Propellers, and Related Products, imported into the United States.

NOTES

- NOTE 1. The engine ratings are based on dry sea level static ICAO standard atmospheric conditions. No power extraction for helicopter accessories, no airbled for inlet particle dust separator, and no airbled for aircraft use and engine icing protection system.
- NOTE 2. The takeoff (2.5 min. OEI) rating is maintained up to 1,000 m/3,280 ft altitude ISA0 + 15øC/59øF when the inlet particle dust separator is inoperative. The 30 min. OEI rating is maintained up to 1,000 m/3,280 ft altitude ISA0, and up to 330 m/1,082 ft ISA0 altitude + 15øC/59øF when the inlet particle dust separator is inoperative.
- NOTE 3. The takeoff (5 min.) and maximum continuous ratings at sea level are maintained for an ambient temperature range of -50øC/-58øF to 30øC/86øF at a minimum sea level atmospheric pressure of 97.3 KPa/14.11 psi, and from sea level to 2,000 m/6,561 ft ISA0 altitude conditions.
- NOTE 4. Continuous air bleed for cabin ventilation is permissible for ratings from idle to maximum continuous at an ambient air temperature not exceeding 45øC/113øF, and for the takeoff (5 min.) rating at an ambient air temperature not exceeding 15øC/59øF. Air bleed for inlet particle dust separator is permissible for ratings from idle to takeoff (5 min.) at an ambient air temperature not exceeding 45øC/113øF.
- NOTE 5. The engine must be operated with the approved (or equivalent) inlet particle dust separator (Part Number 30.68.120.00.10/20).
- NOTE 6. The engine operating time between overhauls is 750 hours or 1,125 cycles.
- NOTE 7. Until issuance of General Inspectorate of Civil Aviation (GICA) - approved Maintenance Manual, life limits for critical rotating components are published in "PZL-Rzeszow" Doc. No. 19.0.366.
- NOTE 8. The PZL-10W engine meets the requirements of FAR 33.65 for surge free operation, when the intake system conforms with the approved inlet particle dust separator (Part Number 30.68.120.00.10/20).
- NOTE 9. The PZL-10W engine meets the requirements of FAR 33.68 for operation in icing conditions as defined in FAR 25, Appendix C, when the intake system conforms with the approved inlet particle dust separator (Part Number 30.68.120.00.10/20).
- NOTE 10. The PZL-10W engine meets the requirements of FAR 33.77 for bird ingestion requirements when the intake system conforms with the approved inlet particle dust separator (Part Number 30.68.120.00.10/20).
- NOTE 11. The engine is not equipped with its own oil tank and related installation hardware. Aircraft installations equipped with this engine model must include an oil tank that meets the requirements of FAR 29 and/or FAR 33.
- NOTE 12. Prior to issue of GICA - approved Overhaul Manuals, engine overhauls are not permitted. Engines may be returned to "PZL-Rzeszow" for re-manufacture to new production standard.
- Prior to issue of GICA - approved maintenance manual, this engine may not be operated in an aircraft under a Certificate of Airworthiness and must be maintained using temporary maintenance instructions.
- NOTE 13. The ALAE-2 electronic limiter meets the high intensity radiated field requirements as outlined in RTCA/DO-160B. A peak electric field strength of 1 volt/meter (category z). For installation requirements, refer to Installation Manual.
- NOTE 14. The ALAE-2 electronic limiter and UPM-100 torque meter conforms to the requirements of RTCA/DO-160C Category L. For installation requirements, refer to Installation Manual.

NOTE 15.

SERVICE INFORMATION:

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or, for approvals made before September 28, 2003 by the General Inspectorate of Civil Aviation of Poland. Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

These approvals pertain to the type design only.

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