

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E-235
Revision 3
WARNER ENGINE COMPANY

WARNER SUPER SCARAB
SERIES 185, 185J (R-550-1),
185K

September 27, 2000

TYPE CERTIFICATE DATA SHEET NO. E-235

Engine of models described herein conforming with this data sheet (which is a part of type certificate No. E-235) 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 Holder Warner Engine Company, LLC.
P.O. Box 9
Palmer Lake, Colorado 80133

This TC was transferred from Duncan and Company, PO Box 21, Palmer Lake, Colorado 80133 to Warner Engine Company September 27, 2000.

This TC was transferred from George Olson Company, 969 Stonewall Road, Lexington, Kentucky 40504-3127 to Duncan and Company, PO Box 21, Palmer Lake, Colorado 80133 October 20, 1998.

This TC was transferred to George Olson Company on May 4, 1995.

Models - Super Scarab	185, 185J, 185K
Type	7RA - Direct drive
Rating,:	
Maximum continuous, hp., r.p.m at S.L. pressure altitude	185-2175
Take-off (5 minutes), hp, r.p.m., full throttle	200-2475
Fuel (minimum octane aviation gasoline)	73
Bore and stroke, in.	4.875 x 4.250
Displacement, cu. in.	550
Compression ratio	6.2:1
Weight (dry), lbs.	344, 341, 351
C.G. location (dry)	
Forward of mounting lug face , in.	5.1, 4.9, 5.1
Propeller shaft, SAE No.	20
Carburetor	
Model	Holley 419 carburetor
Setting	A-2450-B
Ignition, dual	
Model	Scintilla VMN7DF magnetos
Timing, degrees BTC	28.5
Spark plugs	Champion C-26, S, C-27, S; Auto-Lite 18-A-1, SH-2K; Firestone MA-3, -S

Certification Basis Type Certificate No. 235

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NOTES:

NOTE 1. Maximum permissible cylinder head, barrel and oil inlet temperatures 525 degrees F., 300 degrees F., and 200 degrees F., respectively.

NOTE 2. The following accessory provisions and typical engine accessories are eligible at the indicated weight increases:

<u>Starter</u>	<u>Weight (lbs)</u>
Eclipse type 397, model 20, style B (direct cranking electric) (old designation E-80, model 3935R)	18
Eclipse type 396, model 2, style A (direct cranking electric) (old designation Y-150)	18
<u>Generator</u>	
Eclipse type 309, model 1, style A, 15V25A	22
<u>Fuel Pump</u>	
Titan model 200, type L2X3-10 or -12 or M2X3-13 (anti-clock rotation - square drive for R-550-1 engines and all model 185 equipped with square drive shaft)	2
Titan model 200, type L2E3-13 (anti-clockwise rotation - spline drive - for R-550-3 engines and all model 185 equipped with splined drive shaft)	2
<u>Vacuum Pump</u>	
Pesco type B-6, P/N 3P-194D (old No. 194D)	4
Requires drive assembly Warner P/N 8190-1	1
<u>Miscellaneous</u>	
Auxiliary drives for pump, etc. (For L.H. auxiliary drive pad on all models, for R.H. auxiliary drive pad for models 185 and 185J. Engine serial No. prefixed with the letter "A" denotes inclusion of auxiliary drive gear).	1
Stud type (square flange) tachometer drive assembly No. 8575 or No. 8793 for L.H. auxiliary drive pad	1
Shielded ignition system	10
Provision for propeller governor drive or two-position control valve (Model 185K only)	No Change

NOTE 3: Model 185J is 1-5/16 in. shorter in overall length than models 185 and 185K due to the special crankshaft and front crankcase.

NOTE 4: Military model R-550-1, essentially identical to model 185J. includes additionally No. 8601 governor drive assembly (but no oil transfer to crankshaft), No. 8575 square flange tachometer drive assembly, and shielded ignition assembly. Military model R-550-3, essentially identical to model R-550-1, is equipped with No. 8814 governor drive assembly, No. 8793 square flange tachometer drive, a splined fuel pump and a 3.091 diameter 1-13/32 long extension on the thrust bearing cover. When used in certificated aircraft, the designation plate of military engine should be stamped with the corresponding certificated model designation and T.C.. No. If there is no room for this information on the existing plate, such information may be stamped on a plain metal plate and attached beneath the existing plate by at least two of the mounting screws.

NOTE 5: Serial number suffix "A" denotes that 3/8 in. cylinder base studs and 0 type cylinder base oil seals have been incorporated. Serial number suffix "L" denotes special crankshaft 1 in. longer than standard between thrust nut and spline to accommodate 6-1/4 in. length propeller hub. Serial number suffix "p" denotes cylinder bores chrome plated by Spartan Engineering Co.

NOTE 6: Approval expired 9/7/50. No engines of these models manufactured after this date are eligible for use in certificated aircraft.

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