

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

121 Revision 1 Jacobs L-4 Military R-755-9 January 2, 2002

TYPE CERTIFICATE DATA SHEET NO. 121

Engine models described herein conforming with this data sheet (which is part of Type Certificate No. 121), 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 provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder Air Repair, Inc.
920 Airport Service Road
Cleveland, Mississippi 38732

Type Certificate Holder Record: Air Repair, Inc. assumed ownership of this type certificate from Jacobs Service Company, 4305 Saturn Way, Chandler, Arizona 85334 on January 2, 2002.

Model	L-4	L-4M, -4MA, -4MA7	L-4MB
Type	7RA Direct Drive	----	----
Rating:			
Maximum Continuous, hp, rpm, at S.L. pressure altitude	225-2000-S.L.	----	----
Take-off (5 minutes), hp, rpm at full throttle	245-2200	----	----
Fuel (minimum octane aviation gasoline)	73	----	----
Bore and stroke, in.	5.25 x 5.00	----	----
Displacement, cu. in.	757	----	----
Compression ratio	5.35:1	----	----
Weight (dry), lbs.	505	507	520
Propeller shaft, SAE No.	20	----	----
Carburetion	Stromberg NA-R7A carburetor with 2-1/16 in. venturi	----	----
Ignition, dual	Bosch AFV or Scintilla WL7A battery ignition units	Scintilla MN7-DF, VNM7-DF, MN7-DF5, or VMN7-DF5 magnetos	Combination Scintilla MN7-DF5, or VMN7-DF5 magnetos and Scintilla WL7A or Bosch AFV battery ignition unit
Ignition timing, degrees BTC	30	----	----
Spark Plugs	BG-4B2(s), 174(S), SS54, SS485, Bendix 9ES2, 437J Champion M3-1S, C-27S	----	----
NOTES	1,4,6,7	1,2,3,4,6,7	1,4,5,6,7

Certification basis Type Certificate No. 121

Production basis None. The manufacturer no longer holds a production certificate for engines under this type certificate; therefore, each engine produced subsequent to February 20, 1957, is subject to a detailed inspection for workmanship and conformity with the approved data by a FAA representative. In addition, the engines must have a satisfactory run-in including at least 5 hours at rated power and speed. Upon satisfactory completion of the above, the representative shall tag the engine with Tag Form ACA-186.

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- NOTE 1. Maximum permissible cylinder head, barrel, and oil inlet temperature, 550° F., 325° F., and 200° F., respectively
- NOTE 2. The approval of model L-4MA expired December 9, 1942. No engine of this model manufactured after that date or with serial numbers above 661 are eligible for use in certificated aircraft. This model is similar to model L-4M except that it incorporates autogyro rotor drive gears which entails a weight increase of 3 lbs.
- NOTE 3. Model L-MA7, similar to the L-4M engine, is eligible at eight (dry) 506 lbs. This model engine incorporates autogyro rotor drive gears, a 2-piece main crankcase and other minor modifications.
- NOTE 4. Eligible with aluminum rear and front crankcases and main bearing plate replacing the magnesium parts with a possible weight increase of 11 lbs. Engine dry weights listed above include starter drive, generator drive, one pump drive, and the following:

Accessory drive unit - pump drive (L-4MB only)	3 lbs.
Radio shield ignition (standard equipment on later engines)	10 lbs.
Automatic valve gear lubrication (standard equipment for engines above No. 4571, included all R-755-9 models)	7 lbs.
Propeller oil transfer sleeve (standard equipment for engines above No. 4571, including No. 4571, including all R-755-9 models)	3 lbs.
Generator and control (15 amp.) (L-4MB only)	17 lbs.

- NOTE 5. Military engines, model R-755-9, otherwise identical to the L-4MB engine, incorporate AN type spark plug elbows and special carburetor control level arms. The designations L-4MB and T.C. No. 121 should be included at the first opportunity on the designation plate of these military engines when installed in certificated aircraft.
- NOTE 6. The following accessories are eligible for use on the specified engine models at the indicated additional or substitute weights:

Optional Accessories	Weight (lbs.)	Engine Models			
		L-4	L-4M	L-4MA7	L-4MB
Governor – Hamilton Standard hydraulic propeller governor model 1A4 (including drives)	5	Yes	----		----
Hydraulic pump – Pesco model 320F	2	Yes			----
Fuel pump					
-Pesco model M-400A	2	Yes			----
-Pesco model B-400BLY (4 stud pad) or Romec model RD-4140	2		Yes	----	----
-Pesco type R-400-BLH or Romec type C-16 (3 stud pad)	2	Yes	----	----	----
Vacuum pump – Pesco B-2A (Model 194-C or 194-B) or Romec Type B-2A (Model RD2112)	4	Yes	----	----	----
Generator					
- Eclipse type D (25 amp, 12 volt) and control	26	Yes	----	----	----
- Eclipse type LV-180 (15 amp) and control	17	Yes	----	----	----
- Bosch type GEG (6 amp) and control	12	Yes	----	----	----
- Leece-Neville (25 amp, 24 volt) and control	27	Yes	----	----	----
Starter – Eclipse Series E-80, Type 397	19	Yes	----	----	----
Accessory drive unit including					
-3 pump drives	6	Yes			----
-2 pump drives	5	Yes			----
-1 pump drive	3	Yes			Std.
Propeller hub (fixed pitch)	15	Yes	----	----	----

*The L-4, L-4M, and L-4MB models are eligible for optional use of 2-position hydraulically controllable propeller when the control valve is used in lieu of the constant speed governor.

NOTE 7. The following accessory drive provisions are available:

Maximum Torque Inch-
Pounds

Drive	Drive of Rotation	Drive Ratio	Continuous	Static	Maximum Overhang Moment Inch-Pounds
Starter	CCL	1.5: 1	----	5500	100
Generator	CCL	1.4: 1	50	300	110
Fuel pump (rear crankshaft)	CL	1: 1	20	150	----
Tachometer	CCL	.5: 1	----	----	----
*Vacuum pump	CCL	1: 1 or .875: 1	30	200	----
*Propeller governor	CCL	1: 1	30	200	----
*Hydraulic pump	CCL	1: 1 or .875: 1	30	200	----
*Fuel pump	CCL	1. 1	30	200	----

All directions of rotation are given facing engine drive flange.

*Accessories marked with an asterisk are mounted on accessory drive unit.

The total continuous torque taken off all the drives on the accessory drive unit should not exceed 70 inch-pounds.

Overhang moment for drive pads not listed is not critical provided accessory weights listed in NOTE 6 are not exceeded.

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