

FEDERAL AVIATION ADMINISTRATION

E-129  
 Revision 8  
 Pratt & Whitney  
 Wasp S1H1  
 S1H1-G  
 S1H2  
 S1H4  
 S1H5-G (See Note 11)  
 S3H2  
 R-1340-61  
 February 1, 1974

AIRCRAFT ENGINE SPECIFICATION No. E-129

Engines of models described herein conforming with this specification and approved data on file with the Federal Aviation Administration meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft specifications and applicable portions of the Civil Air Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Manufacturer Pratt & Whitney Aircraft  
 Division of United Aircraft Corporation  
 East Hartford, Connecticut

Model	Wasp	S1H1, S1H2	S1H4	S1H1-G	R-1340-61	S3H2
Type	9RA	Direct drive	--	3.2 reduction gearing	--	Direct drive
Rating (Impeller gear ratio)		12:1	--	--	--	10:1
Maximum continuous hp, rpm, in.Hg., at:						
Critical altitude (ft.)		550-2200-33.0-8000	--	--	--	550-2200-32.5-5000
Sea level, pressure altitude		550-2200-35.0-S.L.	--	--	--	550-2200-34.0-S.L.
Takeoff (five minutes), hp, rpm, in.Hg.		660-2250-36.5 (See NOTE 10)	--	--	--	600-2250-36.0
Fuel (Minimum grade av. gas)		80/87	--	--	--	--
Lubricating oils		See P&WA Service Bulletin No. 1183	--	--	--	--
Bore and stroke, in.		5.75 X 5.75	--	--	--	--
Displacement, cu. in.		1344	--	--	--	--
Compression ratio		6:1	--	--	--	--
Weight (dry), lbs.		865, 868	879	930	950	878
Propeller shaft, SAE No.		40	--	--	--	--
Carburetion		Stromberg NA-Y9E1 carburetor	--	--	--	--
Ignition, dual	Scintilla SB9-RN-4 magnetos	--	--	--	Scintilla SB9R	--
Ignition timing, °BTC		25	--	--	--	--
Spark plugs		See P&WA Service Bulletin No. 1175	--	--	--	--
NOTES		1, 2, 3, 4, 5, 6, 7, 10	1, 2, 3, 5, 7	1, 2, 3, 4, 6, 10	1, 2, 3, 6	1, 2, 3, 5, 7

"--" indicates "same as preceding model."

"\_" indicates "does not apply."

NOTE 1. Maximum permissible temperatures are as follows:

<u>Cylinder Head (Well type thermocouple)</u>	<u>Cylinder Barrel</u>	<u>Oil Inlet</u>
500°F	335°F	200°F

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NOTE 2: Fuel and oil pressure limits:

Fuel pressure (psi) 3-6  
Except R-1340-61, 3-5

Oil pressure (psi) 70-90

NOTE 3. The following accessory drives are provided:

	Direction of Rotation (Clockwise or Counter-clockwise)	Speed Ratio (Times crank- shaft speed)	Maximum Torque (in.-lb.)		**Maximum overhang (in.-lb.)
			Continuous	Static	
Starter	CC	1.0	2300	10000	180
Generator	C	1.5	100	300	183
Generator (opt) (Except R-1340-61)	C	2.0	140	500	183
Fuel Pump	CC	1.0	150	450	10
Aux. Accessory	CC	1.0	*150	450	10
Tachometer R.H.	C	.5	15	45	10
L.H.	CC				
Governor	C	1.144	60	250	--
Vacuum Pump	C	1.5	*100	300	10

\*Maximum combined drive load of Vacuum Pump must not exceed 150 in. lb.

\*\*Maximum allowable accessory moments in inch pounds, provided no destructive accessory drive or mounting pad forces resulting from accessory vibration are present.  
Early Wasp Engines incorporate tongue and groove fuel and vacuum pump drives. All later engines have spline type drives.

NOTE 4. Eligible with an automatic power and mixture control with the NA-Y9C carburetor at a weight increase of 12 lbs.

NOTE 5. Incorporates both 9th and 4-1/2 order dynamic dampers.

NOTE 6. Eligible with rear crankcase section fabricated from aluminum alloy instead of magnesium alloy at a weight increase of 13 lbs.

NOTE 7. The S1H2, S3H2 and S1H4 engines are approved for helicopter application and operation. The S1H2 and S3H2 differ principally from the S1H1 in having a modified lubrication system and a new carburetor adapter. These modifications were made in order to enable these engines to operate properly when mounted at an upward angle of 45° from the horizontal position. The S1H4 engine is the same as the S1H2 engine except that it incorporates the oil scavenging provisions of the R-1340-55 engine and a carburetor elbow to permit operation in a vertical attitude. R-1340-61 is the same as S1H1-G except for dry weight.

NOTE 8. Deleted April 16, 1959.

NOTE 9. Deleted February 1, 1974.

NOTE 10. (a) Ratings are based upon the best power mixture strength and 400°F cylinder head temperature.  
(b) A takeoff manifold pressure at 38.0" Hg. may be used with grade 91/96 fuel for S1H1 and S1H1-G engines.

NOTE 11. The approval for Models S1H2-G and S1H5-G has expired. None of these engines were manufactured.

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