

# Type Approval Data Sheet

**Number:** E-4  
**Issue No.:** 1  
**Approval Date:**  
**Issue Date:** July 12, 1954

This Data Sheet which is part of Type Approval Certificate No. E-4 Issue 1 prescribes the conditions and limitations under which the product(s) for which the Type Approval Certificate was granted meet(s) the standards of airworthiness required pursuant to the Air Regulations.

**Type Approval Holder:**

Canadian Pratt & Whitney Aircraft Co., Ltd.  
 Longueuil, Quebec  
 Canada

**Models**

CANADIAN PRATT & WHITNEY  
 WASP S3H 1-G  
 WASP S1H 1-G

Engines of the models described herein conforming with this specification and approved data on file with the Department of Transport, are rated as airworthy for use in certificated aircraft in accordance with pertinent aircraft specifications and the manufacturer's installation, operation, repair and overhaul instructions.

1. MODEL	Wasp S3H 1-G	Wasp S1H 1-G
Type	9 cylinder, radial air cooled	-
Rating (Impeller ratio)	10:1	12:1
Maximum continuous hp, rpm, in. Hg., at: critical altitude (ft.) sea level	550 - 2200 - 32.5 - 5000 550 - 2200 - 33.5 - S.L.	550 - 2200 - 33.0-8000 550 - 2200 - 35.0-S.L.
Take-off (5 minutes) hp, rpm, in. Hg.	600 - 2250 - 36.0	600 - 2250 - 36.5

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Fuel (Minimum grade aviation gasoline)	80/ 87	-	-
Bore and stroke, in.	5.75 x 5.75	-	-
Displacement, cu. in.	1344	-	-
Compression ratio	6:1	-	-
Weight (dry), lbs.	967	-	-
Propeller shaft spline, SAE No.	40	-	-
Carburetion	Stromberg Float Type NA-Y9E1	-	-
Ignition, dual	Scintilla SB9RN-4 Magnetos	-	-
Propeller Shaft Drive	3:2 reduction gearing	-	-
Notes	1, 2, 3	-	-
NOTE 1.	Maximum permissible cylinder head, barrel and oil inlet temperatures are 500°F, 335°F and 185°F, respectively.		
NOTE 2.	Incorporates 4 1/ 2 order dynamic dampers.		

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NOTE 3. The following accessory drives are provided.

Nominal Use	TORQUE AND MOMENT LIMITATION TABLE						Estimated Moments Lb-In.
	<u>Estimated Torque Pound-Inches</u>			Speed Static	Ratio	Rotation	
	<u>Continuous Driving</u>	<u>Overload</u>					
STARTER	-	-		10000	1.000:1	CCW	180
GENERATOR	140	210 a		620	2.000:1	CW	160
FUEL PUMP	25	-		450	1.000:1	CCW	10
TACHOMETER (R & L)	1.5 1.5	- -		50 50	.500:1 .500:1	RH-CW LH-CCW	10 10
FLUID POWER PUMP (VACUUM)	20	100 e		300	1.500:1	CW	25
AUX. ACCESS. (R & L)	100	-		450	1.000:1	CCW	10
PROP. SHAFT NO. 40					.667:1	b	c, d

SPEED RATIO REFERS TO CRANKSHAFT SPEED.  
DIRECTION OF SHAFT ROTATION, FACING ENGINE PAD; CW - CLOCKWISE, CCW - COUNTERCLOCKWISE.

MAXIMUM ALLOWABLE CONTINUOUS TORQUE VALUES ARE AT ANY ENGINE SPEED UNLESS OTHERWISE NOTED, PROVIDED NO DESTRUCTIVE FORCES RESULTING FROM ACCESSORY TORSIONAL VIBRATION ARE PRESENT.

MAXIMUM ALLOWABLE BENDING MOMENT OF ACCESSORY ABOUT THE DRIVE PAD FACE PROVIDED NO DESTRUCTIVE FORCES RESULTING FROM ACCESSORY VIBRATION ARE PRESENT.

- a. MAXIMUM ALLOWABLE FOR 5 MINUTE DURATION RECURRING NOT OFTENER THAN 10 HOUR INTERVALS.
- b. CLOCKWISE WHEN VIEWED FROM THE ANTI-PROPELLER END.



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- c. ~~MAXIMUM ALLOWABLE GYROSCOPIC BENDING MOMENT 230,000 LB-IN.~~
- d. MAXIMUM ALLOWABLE CONTINUOUS BENDING MOMENT 45,000 LB-IN.
- e. TORQUE OVERLOAD NOT TO EXCEED 3 SECONDS DURATION RECURRING NOT OFTENER THAN 3 MINUTE INTERVALS OR 30 SECONDS DURATION RECURRING NOT OFTENER THAN 30 MINUTE INTERVALS.

(H.S. Rees),  
Chief Aeronautical Engineer,  
Department of Transport.