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| U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E-202 | TCDS NUMBER E-202 REVISION: 4* DATE: 3/10/94 AVCO LYCOMING MODELS: R-680E1 R-680E2 R-680E3 R-680E3A (R-680-9) R-680E3B (R-680-13) |
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Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E-202) 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.

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| TYPE CERTIFICATE (TC) HOLDER | Textron Lycoming, Williamsport Plant Subsidiary of Textron, Inc. Williamsport, Pennsylvania |
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| I. MODELS | R-680 | E1 | E2 | E3, E3A, E3B |
|--|-------|--|---------------|---------------|
| TYPE | | 9RA | -- | -- |
| RATINGS | | | | |
| Maximum, Continuous, hp, rpm, sea level pressure altitude | | 275-2200-S.L. | 265-2200-S.L. | 285-2200-S.L. |
| Take-off (5 min.), hp, rpm, at full throttle | | 290-2300 | 280-2300 | 300-2300 |
| FUEL (Min. octane aviation gasoline) | | 80 | 73 | 87 |
| BORE & STROKE, (in.) | | 4-5/8x4-1/2 | -- | -- |
| DISPLACEMENT (cubic in.) | | 680.4 | -- | -- |
| COMPRESSION RATIO | | 6.2:1 | 5.5:1 | 7.0:1 |
| WEIGHT (dry), lbs. | | 526 | -- | 525, 535, 565 |
| C.G. LOCATION (dry) (in.) | | | | |
| Forward of mounting surface | | 4.8 | -- | 4.8, 5.6, 5.6 |
| Below crankshaft C.L. | | .3 | -- | .3, .6, .6 |
| CRANKSHAFT GEARING | | None | -- | -- |
| PROPELLER SHAFT, SAE No. | | 20 | -- | -- |
| SUPERCHARGING RATIO | | 1:1 | -- | -- |
| CARBURETION | | Stromberg NAR-7A carburetor with 2-1/16 in. venturi | -- | -- |
| IGNITION, DUAL | | Scintilla types SC-A2, DRN, or DF Magneto | -- | -- |
| IGNITION TIMING (°B.T.C.) | | 34(F), 30(R) | -- | -- |

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LEGEND: "--" INDICATES "SAME AS PRECEDING MODEL"

"---" INDICATES "DOES NOT APPLY"

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ARE BLACK-LINED IN THE LEFT MARGIN.

SPARK PLUGS

| | | |
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| Champion M3-1, -S, C26, -S; RC 26-S, C27, -S; Auto Lite 18-A1, SH-2K, SH-2M; Aero A-1A; BG4B2, -S, RB485S, 706S, 706SR | -- | Champion M2, -S; C26, -S; RC26-S; C27, -S; Auto Lite SH-2K, SH-2M; ACSS87; Bendix 7AS; BG3B2, -S; SS453, 417, -S; RB485S, 706S, 706SR |
| 1, 4, 7 | -- | 1, 2, 3, 4, 5, 6, 7 |
| Type Certificate No. 202 | | |
| Production Certificate No. 3 | | |

NOTES

CERTIFICATION BASIS

PRODUCTION BASIS

NOTES

- NOTE 1. Maximum permissible cylinder head, barrel and oil inlet temperature 525°F, 300°F, and 200°F, respectively.
- NOTE 2. Model R-680-E3A has the same rating as and is essentially identical to model R-680-E3 and is equivalent to military model R-680-9. It incorporates optional accessory drives of the AN type and Breeze type radio shielding.
- NOTE 3. Model R-680-E3B has the same rating as and is essentially identical to model R-680-E3A and is equivalent to military model R-680-13. This model incorporates all accessory drives (AN type) as standard equipment, and all magnesium parts have been replaced by aluminum parts.
- NOTE 4. The accessories eligible for use on the various engine models, the weights of which are not included in the engine weights listed above, are:

| <u>Accessories</u> | <u>Weight</u> (lbs. approx.) | <u>Engine Models</u> | | |
|---|---------------------------------|----------------------|------------|------------|
| | | <u>E1, 2, 3</u> | <u>E3A</u> | <u>E3B</u> |
| *Governor-Ham. Std. Hydro. const. speed prop. | 4 | Yes Yes | Yes | Yes |
| Generator-Eclipse Model G-1 | 15 | | | Yes |
| Generator-Eclipse Type 310 Model 5 | 15 | | | |
| Generator-Eclipse Type 309 Model 17 | | | Yes | |
| Starter-Eclipse Type F-141 | 24 | Yes | Yes | Yes |
| Starter-Eclipse Type 424 | 24 | | | Yes |
| Fuel Pump - Pesco Type R-400-BC | 2 | Yes | Yes | |
| Fuel Pump - Pesco Model R-400-BMB | 2 | | | Yes |
| Vacuum Pump Pesco Type B-6, Model 194-D | 3 | | | Yes |
| Vacuum Pump Pesco Type B-2A Model 194 | 3 | Yes | Yes | |

*These engine models also eligible for optional use of two-position hydraulically controllable propeller when the control valve is substituted for the constant speed governor and drive.

NOTE 5. When military engines are installed in certificated aircraft the corresponding certificated engine designation and Type Certificate No. 202 should be included on the engine designation plate.

NOTE 6. Models R-680E3, E3A, and E3B are eligible for use with 80 octane fuel at the following reduced ratings:

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| Maximum Continuous Hp, rpm, In. Hg., altitude: | 245-2200-24.0-5300 245-2200-25.5-S.L. |
| Take-off (5 minutes) hp, rpm, In. Hg., altitude: | 255-2300-24.0-5100 255-2300-25.5-S.L. |

NOTE 7. Approval of models R680-E, -E2, -E3 expired November 2, 1950. No engines of these models manufactured after May 1, 1946, and with serial numbers above 2115 are eligible for use in certificated aircraft.

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