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|---|---|---------------------------|-------------|
| DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET NO. E1GL | E1GL Rolls-Royce Corporation Revision 21 9 June 2003 | | |
| | 250-C28 | 250-C30M | 250-C40B |
| | 250-C28B | 250-C30P | 250-C47B |
| | 250-C28C | 250-C30R (T703-AD-700) | 250-C47M |
| | 250-C30 | 250-C30R/1 (T703-AD-700B) | 250-C30R/3 |
| | 250-C30G | 250-C30S | 250-C30R/3M |
| | 250-C30G/2 | 250-C30U | |

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E1GL) 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 FAA approved manufacturer's manuals and other FAA approved instructions.

Type Certificate Holder Rolls-Royce Corporation
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| Model | 250-C28 | 250-C28B | 250-C28C | 250-C30 250-C30S | 250-C30P |
|-------------------------|--|----------------|----------------|---------------------|----------------|
| Type | Free turbine turboshaft with single stage centrifugal flow compressor, 2-stage gas producer turbine, 2-stage power turbine and single combustion chamber with pre-chamber. | | | | |
| Shaft ratio | 5.55:1 | -- | -- | 5.09:1 | -- |
| Ratings (see NOTE 4): | | | | | |
| Maximum continuous: | | | | | |
| SHP at sea level | 478 | 500 | -- | 650 | 600 |
| Gas producer rpm (est.) | 50193 | 50280 | 50135 | 50340 | 49310 |
| Output shaft rpm | 6016 | -- | -- | -- | -- |
| Measured rated gas temp | 1392°F (756°C) | 1370°F (743°C) | 1359°F (737°C) | 1368°F (742°C) | 1295°F (701°C) |
| Takeoff, 5 minute: | | | | | |
| SHP at sea level | 500 | -- | -- | 650 | -- |
| Gas producer rpm | 51005 | 50280 | 50135 | 50340 | 50330 |
| Output shaft rpm | 6016 | -- | -- | -- | -- |
| Measured rated gas temp | 1430°F (777°C) | 1370°F (743°C) | 1359°F (737°C) | 1368°F (742°C) | 1337°F (725°C) |
| 30 minute OEI: | | | | | |
| SHP at sea level | 500 | -- | -- | 650 | -- |
| Gas producer rpm | 51005 | 50280 | 50135 | 50340 | -- |
| Output shaft rpm | 6016 | -- | -- | -- | -- |
| Measured rated gas temp | 1430°F (777°C) | 1370°F (743°C) | 1359°F (737°C) | 1368°F (742°C) | -- |
| 2½ minute OEI: | | | | | |
| SHP at sea level | -- | 550 | -- | 700 | -- |
| Gas producer rpm | -- | 51435 | 51165 | 51550 | -- |
| Output shaft rpm | -- | 6016 | -- | -- | -- |
| Measured rated gas temp | -- | 1425°F (774°C) | 1410°F (766°C) | 1424°F (773°C) | -- |
| Output shaft | Internal spline | -- | -- | -- | -- |

“-” indicates same as preceding model
“—” indicates not applicable

| | | | | | | | | | | | | | | |
|----------|----|---|---|---|----|----|----|---|----|----|----|----|----|----|
| Page No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | 21 | 7 | 7 | 7 | 20 | 20 | 20 | 7 | 20 | 20 | 21 | 20 | 21 | 20 |

| Model (cont) | 250-C28 | 250-C28B | 250-C28C | 250-C30 250-C30S | 250-C30P |
|---|--|--|----------|--|--------------------------------|
| Control system: | | | | | |
| Gas producer fuel control | Honeywell DP-T1 | Honeywell DP-T3 | -- | Honeywell DP-V1 | -- |
| Power turbine governor | Honeywell AL-AC1 | -- | -- | Honeywell AL-AD1 | -- |
| Pneumatic accumulators and check valves or orifices | See NOTE 11 | -- | -- | -- | -- |
| Electronic power turbine overspeed control system: | | | | | |
| Power turbine overspeed control | P/N 6893463 | P/Ns 23001750, 23001777, 23004822 | -- | P/Ns 23001751, 23001768, 23004821 | P/N 23004821 |
| Power turbine overspeed solenoid valve | Valcor V5000-1250 or V5000-173 | -- | -- | Valcor V5000-1310 or V5000-171 | -- |
| Power turbine speed pick-up | P/N 6894602 | P/Ns 6898865, 6898868, 6899144 | -- | P/Ns 6898872, 6899145 | P/Ns 6898865, 6898868, 6899144 |
| Gas producer turbine speed pick up | — | — | — | P/N 6898540 | — |
| Fuel pump | Single element fuel pump, Sundstrand Model 5000950 Series or TRW Model 388100 Series | -- | -- | Single element fuel pump with jet inducer, Sundstrand Model 5004506 or TRW Model 394400; and a 10 micron fuel filter | Same as -C28 |
| Fuel | MIL-T-5624, Grade JP-4 or JP-5; Aviation Turbine Fuels ASTM D1655, Jet A or A-1, or Jet B, MIL-T-83133, Grade JP-8; (For other fuel and limitations, see NOTE 10.) | | | | |
| Lubricating oil | MIL-L-23699 and subsequent revisions | MIL-L-7808G or MIL-L-23699 and subsequent revisions | | | |
| Ignition system (See NOTE 12) | | | | | |
| Exciter | Low tension capacitor discharge exciter. Simmonds Precision P/N 45754 or 49522 or Honeywell P/N 10-387150-1. | | | | |
| Igniter | Shunted surface gap spark igniter, Champion P/N CH34078 or AC P/N 8990157. | Shunted surface gap spark igniter, Champion P/N CH34187 or AC P/N 8990304 or Auburn P/N 0270769. | | | |

| Model (cont) | 250-C28 | 250-C28B | 250-C28C | 250-C30 250-C30S | 250-C30P |
|--|-------------|-------------|--------------|---------------------|----------|
| Principal dimensions: | | | | | |
| Length overall, in. | 43.000 | 48.782 | 43.351 | 43.198 | -- |
| Width, in. | 21.940 | 25.776 | 21.996 | -- | -- |
| Height, in. | 25.130 | 25.480 | -- | -- | 25.130 |
| C.G. location, aft of side mount pad, centerline, in. | 5.73 | 4.99 | 5.59 | 5.70 | -- |
| C.G. location, above side mount pad, centerline, in. | 3.23 | 3.31 | 3.22 | 3.28 | -- |
| C.G. location, left or rights side of engine centerline looking forward, in. | 0.02 (left) | 0.03 (left) | 0.04 (right) | 0.00 | -- |
| Weight (dry), lb. Includes basic engine, fuel pump, ignition, fuel, control systems and supervisory electronic fuel control, if applicable. | 219 | 238 | 236 | 253.75 252.75 | 247.75 |

| Model | 250-C30M | 250-C30R | 250-C30G | 250-C30U | 250-C30G/2 |
|--------------------------|--|----------------|----------------|----------------|----------------|
| Type | Free turbine turboshaft with single stage centrifugal flow compressor, 2-stage gas producer turbine, 2-stage power turbine and single combustion chamber with pre-chamber. | | | | |
| Shaft ratio | 5.09:1 | -- | 3.22:1 | 5.09:1 | 3.22:1 |
| Ratings (see NOTE 4): | | | | | |
| Maximum continuous: | | | | | |
| SHP at sea level | 600 | -- | 650 | 600 | 557 |
| Gas producer rpm (est.) | 49235 | 49310 | 50340 | 49245 | 49104 |
| Output shaft rpm | 6016 | -- | 9518 | 6016 | 9545 |
| Measured rated gas temp | 1320°F (716°C) | 1295°F (702°C) | 1368°F (742°C) | 1295°F (702°C) | 1251°F (677°C) |
| Takeoff, 5 minute: | | | | | |
| SHP at sea level | 650 | -- | -- | -- | -- |
| Gas producer rpm | 50110 | | 50340 | 50100 | 50791 |
| Output shaft rpm | 6016 | | 9518 | 6016 | 9545 |
| Measured rated gas temp | 1368°F (742°C) | | 1368°F (742°C) | 1337°F (725°C) | 1352°F (733°C) |
| Intermediate, 30 minute: | | | | | |
| SHP at sea level | -- | 650 | -- | -- | -- |
| Gas producer rpm | | 50330 | | | |
| Output shaft rpm | | 6016 | | | |
| Measured rated gas temp | | 1337°F (725°C) | | | |
| Continuous OEI: | | | | | |
| SHP at sea level | -- | -- | -- | -- | 650 |
| Gas producer rpm | | | | | 50791 |
| Output shaft rpm | | | | | 9545 |
| Measured rated gas temp | | | | | 1352°F (733°C) |

| Model (cont) | 250-C30M | 250-C30R | 250-C30G | 250-C30U | 250-C30G/2 |
|---|--|---|-----------------------------------|--|----------------|
| 30 minute OEI: | — | — | | — | |
| SHP at sea level | | | 650 | | 650 |
| Gas producer rpm | | | 50340 | | 50791 |
| Output shaft rpm | | | 9518 | | 9545 |
| Measured rated gas temp | | | 1368°F (742°C) | | 1352°F (733°C) |
| 2½ minute OEI: | — | — | | — | |
| SHP at sea level | | | 700 | | 700 |
| Gas producer rpm | | | 51550 | | 51661 |
| Output shaft rpm | | | 9518 | | 9545 |
| Measured rated gas temp | | | 1424°F (773°C) | | 1411°F (766°C) |
| Output shaft | Internal spline | -- | -- | -- | Flanged Drive |
| Control system: | | Rolls-Royce digital supervisory electronic control P/N 23009178 | | Rolls-Royce digital supervisory electronic control P/N 23051062 | |
| Gas producer fuel control | Honeywell DP-VI | Honeywell DP-V3 | Honeywell DP-VI | Same as -C30R | Same as -C30G |
| Power turbine governor | Honeywell AL-AD1 | — | Honeywell AL-AD1 | — | Same as -C30G |
| Pneumatic accumulators and check valves or orifices | See NOTE 11 | — | See NOTE 11 | — | Same as -C30G |
| Electronic power turbine overspeed control system: | | | | | |
| Power turbine overspeed control | P/N 23004821 | — | P/Ns 23001751, 23001768, 23004821 | — | P/N 23054053 |
| Power turbine overspeed solenoid valve | Valcor V5000-1310 or V5000-171 | -- | -- | -- | -- |
| Power turbine speed pick-up | P/Ns 6898872, 6899145 | P/N 23007500 | Same as -C30S | Same as -C30R | Same as -C30G |
| Gas producer turbine speed pick up | P/N 6898540 | P/N 23003100 | Same as -C30S | Same as -C30R | Same as -C30G |
| Fuel pump | Single element fuel pump with jet inducer, Sundstrand Model 5004506 or TRW Model 394400; and a 10 micron fuel filter | Single element fuel pump with jet inducer TRW Model 394400; and a 10 micron fuel filter | Same as -C30S | Same as -C30R | Same as -C30G |
| Fuel | MIL-T-5624, Grade JP-4 or JP-5; Aviation Turbine Fuels ASTM D1655, Jet A or A-1, or Jet B, MIL-T-83133, Grade JP-8; (for other fuel and limitations, see Note 10.) | | | | |
| Lubricating oil | MIL-L-7808G or MIL-L-23699 and subsequent revisions | | | | |

| Model (cont) | 250-C30M | 250-C30R | 250-C30G | 250-C30U | 250-C30G/2 |
|---|---|----------|----------|----------|--------------|
| Ignition system (see NOTE 12.) | Low tension capacitor discharge exciter, Simmonds Precision P/N 43754 or 49522 or Honeywell P/N 10-387150-1 or 10-614950-1 Shunted surface gap spark igniter, Champion P/N CH34187 or AC P/N 8990304 or Auburn P/N 0270769. | | | | |
| Principal dimensions: | | | | | |
| Length overall, in. | 43.198 | -- | -- | -- | -- |
| Width, in. | 21.996 | -- | -- | -- | -- |
| Height, in. | 25.715 | 25.992 | 25.480 | 25.105 | 25.715 |
| C.G. Location, aft of side mount pad, centerline, in. | 5.70 | -- | 5.89 | -- | 5.43 |
| C.G. Location, above side mount pad, centerline, in. | 3.28 | -- | 3.33 | -- | 2.63 |
| C.G. Location, left or right side of engine centerline looking forward, in. | 0.08 (right) | 0.00 | -- | -- | 0.13 (right) |
| Weight (dry), lb. Includes basic engine, fuel pump, ignition, fuel control systems and supervisory electronic fuel control, if applicable. | 251.75 | 255.75 | 254.75 | 252.75 | 261.75 |

| Model | 250-C30R/1 | 250-C40B | 250-C47B | 250-C47M | 250-C30R/3 250-C30R/3M |
|--------------------------|--|----------------|----------------|----------------|----------------------------------|
| Type | Free turbine turboshaft with single stage centrifugal flow compressor, 2-stage gas producer turbine, 2-stage power turbine and single combustion chamber with pre-chamber. | | | | |
| Shaft ratio | 5.09:1 | 3.22:1 | 5.09:1 | -- | -- |
| Ratings (see NOTE 4): | | | | | |
| Maximum continuous: | | | | | |
| SHP at sea level | 600 | 613 | 600 | -- | -- |
| Gas producer rpm (est) | 48710 | 48488 | 48258 | 48348 | 48348 48348 |
| Output shaft rpm | 6016 | 9598 | 6317 | 6016 | -- |
| Measured rated gas temp | 1250°F (677°C) | 1263°F (684°C) | 1253°F (678°C) | -- | 1230°F (666°C) 1253°F (678°C) |
| Takeoff, 5 minute: | | | | | |
| SHP at sea level | — | 715 | 650 | -- | — |
| Gas producer rpm | | 49791 | 48863 | 48965 | |
| Output shaft rpm | | 9598 | 6317 | 6016 | |
| Measured rated gas temp | | 1356°F (736°C) | 1296°F (702°C) | 1298°F (703°C) | |
| Intermediate, 30 minute: | | | | | |
| SHP at sea level | 650 | | | | 650 |
| Gas producer rpm | 49378 | | | | 48965 |
| Output shaft rpm | 6016 | | | | 6016 |
| Measured rated gas temp | 1289°F (698°C) | | | | 1270°F (688°C) 1298°F (703°C) |

| Model (cont) | 250-C30R/1 | 250-C40B | 250-C47B | 250-C47M | 250-C30R/3 250-C30R/3M |
|---|---|---|-----------------|----------|---------------------------|
| Continuous OEI: | — | | — | — | — |
| SHP at sea level | | 715 | | | |
| Gas producer rpm | | 49791 | | | |
| Output shaft rpm | | 9598 | | | |
| Measured rated gas temp | | 1356°F (736°C) | | | |
| 30 minute OEI: | — | | — | — | — |
| SHP at sea level | | 715 | | | |
| Gas producer rpm | | 49791 | | | |
| Output shaft rpm | | 9598 | | | |
| Measured rated gas temp | | 1356°F (736°C) | | | |
| 2 minute OEI: | — | | — | — | — |
| SHP at sea level | | 770 | | | |
| Gas producer rpm | | 50553 | | | |
| Output shaft rpm | | 9598 | | | |
| Measured rated gas temp | | 1400°F (760°C) | | | |
| 30 second OEI: | — | | — | — | — |
| SHP at sea level | | 820 | | | |
| Gas producer rpm | | 51323 | | | |
| Output shaft rpm | | 9598 | | | |
| Measured rated gas temp | | 1447°F (786°C) | | | |
| Output shaft | Internal spline | Flanged drive | Internal spline | -- | -- |
| Control system: | Same as -C30R | Chandler Evans FADEC system including an Electronic Control Unit (ECU) and Hydromechanical Unit (HMU) | | | |
| Gas producer fuel control | Same as -C30R | — | — | — | — |
| Power turbine governor | — | — | — | — | — |
| Pneumatic accumulators and check valves or orifices | — | — | — | — | — |
| Electronic power turbine overspeed control system | Same as -C30R | Integral to FADEC system | | | |
| Power turbine overspeed control | — | — | — | — | — |
| Power turbine overspeed solenoid valve | Same as -C30R | — | — | — | — |
| Power turbine speed pick-up | Same as -C30R | — | — | — | — |
| Gas producer turbine speed pick up | Same as -C30R | — | — | — | — |
| Fuel pump | Same as -C30R | Two-stage suction system, integral to HMU | | | |
| Fuel | Same as -C30R | Same as -C30G/2 | Same as -C30P | -- | -- |
| Lubricating oil | MIL-L-7808G or MIL-L-23699 and subsequent revisions | | | | |
| Ignition system (See NOTE 12) | Same as -C30R | TRW solid state, high energy exciter unit. Shunted surface gap spark igniter, Champion P/N CH34187 or AC P/N 8990304 or Auburn P/N 0270769. | | | |

| Model (cont) | 250-C30R/1 | 250-C40B | 250-C47B | 250-C47M | 250-C30R/3 250-C30R/3M |
|---|------------|--------------|--|----------|---|
| Principal dimensions: | | | | | |
| Length overall, in. | 43.198 | -- | -- | -- | -- |
| Width, in. | 21.996 | -- | -- | -- | -- |
| Height, in. | 25.105 | 25.715 | 25.130 | 25.715 | -- |
| C.G. location, aft of side mount pad, centerline, in. | 5.85 | 5.44 | 5.86 | -- | -- |
| C.G. location, above side mount pad, centerline, in. | 3.06 | 2.46 | 2.95 | -- | -- |
| C.G. location, left or right side of engine centerline looking forward, in. | 0.00 | 0.14 (right) | 0.13 (right) | -- | -- |
| Weight (dry), lb. Includes basic engine, fuel pump, ignition, fuel control systems and supervisory electronic fuel control, if applicable. | 256.75 | 280 | 275.75 (does not include inter-ECU harness) | -- | 274 278 (includes CIT sensor and engine & accy harnesses) |

Certification Basis:

Part 33 of the Federal Aviation Regulations effective February 1, 1965 and Amendments 33-2, 33-3, 33-4 and Exemption No. 2087B from FAR 33.69, Regulatory Docket No. 13294 issued February 24, 1975 and amended December 10, 1991, (Docket No. 26072). Application for Type Certificate dated October 2, 1973. Type Certificate No. E1GL for 250-C28 issued April 28, 1976. Models 250-C28B and 250-C28C added February 28, 1978. Model 250-C30 added March 28, 1978. Model 250-C30P added September 15, 1981. Model 250-C30S added June 15, 1982. Model 250-C30M added January 7, 1983. Models 250-C30L and 250-C30R added July 15, 1983. Model 250-C30L deleted March 17, 2000. Model 250-C30G added March 2, 1989. Model 250-C30U added August 28, 1989. Model 250-C30G/2 added March 4, 1992. Model 250-C30R/1 added March 31, 1994. Model 250-C47B added January 19, 1996. Model 250-C40B added February 22, 1996. The certification basis for the model 250-C40B includes Special Conditions SC-95-04-NE dated November 16, 1995 and the Equivalent Level of Safety (ELOS) finding identified in Memorandum to ANE-110 from ACE-115C, dated July 28, 2000, approving a modified gas generator test speed parameter for 33.7 and 33.87 compliance and ELOS finding 8040-8-1-001 dated May 11, 2001, approving gas generator test speeds for 33.87 compliance. Model 250-C47M added May 14, 1997. Model 250-C30R/3 added June 10, 1997. Model 250-C30R/3M added 24 September 2001. See NOTE 17 for additional Certification Basis details.

Production Basis:

Production Certificate No. 310

NOTE 1. Maximum allowable temperatures:

| Model | 250-C28 | 250-C28B | 250-C28C | 250-C30 250-C30S | 250-C30P |
|--|--|--|----------|---|---|
| Measured gas temp: | | | | | |
| 2½ minute OEI | — | 1490°F (810°C) | -- | 1518°F (826°C) | — |
| 30 minute OEI | 1450°F (788°C) | 1455°F (791°C) | -- | 1468°F (798°C) | — |
| Takeoff, 5 minute | 1450°F (788°C) | 1455°F (791°C) | -- | 1414°F (768°C) | -- |
| Maximum continuous | 1430°F (777°C) | 1455°F (791°C) | -- | 1414°F (768°C) | 1320°F (716°C) |
| Maximum transient | 1475°F (802°C) to 1600°F (871°C) (not to exceed 6 seconds) | 1490°F (810°C) to 1600°F (871°C) (not to exceed 6 seconds) | -- | 1518°F (826°C) to 1662°F (906°C) (not to exceed 12 seconds) | 1414°F (768°C) to 1600°F (871°C) (not to exceed 12 seconds) |
| Starting (not to exceed 10 seconds) | 1475°F (802°C) to 1700°F (927°C) | 1490°F (810°C) to 1700°F (927°C) | -- | 1518°F (826°C) to 1700°F (927°C) | -- |

| Model (cont'd) | 250-C28 | 250-C28B | 250-C28C | 250-C30 250-C30S | 250-C30P |
|---|-----------------------------------|----------|----------|---------------------|----------|
| Starting (momentary peak of one second maximum) | 1700°F (927°C) | -- | -- | -- | -- |
| Oil inlet temperature | -65°F (-54°C) to 225°F (107°C) | -- | -- | -- | -- |

| Model | 250-C30M | 250-C30R | 250-C30G | 250-C30U | 250-C30G/2 |
|---|---|---|---|---|---|
| Measured gas temp: | | | | | |
| 2½ minute OEI | — | — | 1518°F (826°C) | — | 1518°F (826°C) |
| 30 minute OEI | — | — | 1468°F (798°C) | — | 1468°F (798°C) |
| Continuous OEI | — | — | — | — | 1414°F (768°C) |
| Takeoff, 5 minute | 1414°F (768°C) | — | 1414°F (768°C) | 1445°F (785°C) | 1414°F (768°C) |
| Intermediate, 30 minute | — | 1445°F (785°C) | — | — | — |
| Maximum continuous | 1320°F (716°C) | 1320°F (716°C) | 1414°F (768°C) | 1320°F (716°C) | -- |
| Maximum transient | 1414°F (768°C) to 1600°F (871°C) (not to exceed 12 seconds) | 1445°F (785°C) to 1600°F (871°C) (not to exceed 12 seconds) | 1518°F (826°C) to 1662°F (906°C) (not to exceed 12 seconds) | 1445°F (785°C) to 1600°F (871°C) (not to exceed 12 seconds) | 1518°F (826°C) to 1662°F (906°C) (not to exceed 12 seconds) |
| Starting (not to exceed 10 seconds) | 1518°F (826°C) to 1700°F (927°C) | 1445°F (785°C) to 1700°F (927°C) | 1518°F (826°C) to 1700°F (927°C) | 1445°F (785°C) to 1700°F (927°C) | 1518°F (826°C) to 1700°F (927°C) |
| Starting (momentary peak of one second maximum) | 1700°F (927°C) | -- | -- | -- | -- |
| Oil inlet temperature | -65°F (-54°C) to 225°F (107°C) | -- | -- | -- | -- |

| Model | 250-C30R/1 | 250-C40B | 250-C47B | 250-C47M | 250-C30R/3 250-C30R/3M |
|---|---|---|---|----------|---|
| Measured gas temp: | | | | | |
| 30 second OEI | — | 1600°F (871°C) | — | — | — |
| 2 minute OEI | — | 1521°F (827°C) | — | — | — |
| 30 minute OEI | — | 1468°F (798°C) | — | — | — |
| Intermediate, 30 minute | 1445°F (785°C) | — | — | — | 1475°F (802°C) |
| Continuous OEI | — | 1435°F (779°C) | — | — | — |
| Takeoff, 5 minute | — | 1435°F (779°C) | 1435°F (779°C) | -- | — |
| Maximum continuous | 1320°F (716°C) | 1340°F (727°C) | 1340°F (727°C) | -- | 1320°F (716°C) |
| Maximum transient | 1445°F (785°C) to 1600°F (871°C) (not to exceed 12 seconds) | 1468°F (798°C) to 1662°F (906°C) (not to exceed 12 seconds) | 1435°F (779°C) to 1662°F (906°C) (not to exceed 12 seconds) | -- | 1475°F (801°C) to 1662°F (906°C) (not to exceed 12 seconds) |
| Starting (not to exceed 10 seconds) | 1445°F (785°C) to 1700°F (927°C) | 1550°F (843°C) to 1700°F (927°C) | -- | -- | -- |
| Starting (momentary peak of one second maximum) | 1700°F (927°C) | -- | -- | -- | -- |
| Oil inlet temperature | -65°F (-54°C) to 225°F (107°C) | -- | -- | -- | -- |

NOTE 2. Fuel inlet and oil pressure limits

(a) Fuel inlet pressure (applicable to MIL-T-5624 and ASTM D1655 Jet A or A-1, or MIL-T-83833 JP-8 fuels):

| | Minimum pressure at fuel inlet connection to the engine | | | | | Maximum fuel inlet pressure |
|--|--|-------------------------|-------------------------|-------------------------|------------------------|---|
| | Sea level | 6000 ft | 10000 ft | 15000 ft | 20000 ft | |
| 250-C28, -C28B, -C28C, -C30P | Ambient minus 9 in Hg | Ambient minus 5.5 in Hg | Ambient minus 3.5 in Hg | Ambient minus 1.0 in Hg | Ambient plus 1.5 in Hg | 25 psig |
| 250-C30, -C30G, -C30G/2, -C30M, -C30R, -C30R/1, -C30S, -C30U | No lower than atmospheric or tank pressure, whichever is higher, minus either: 1. 4.0 psig using ASTM D1655, Jet A, A-1 or equivalent at -20°F to 130°F, or 2. A pressure which varies linearly from 4.0 psig at sea level to 2.24 psig at 15,000 ft and a constant 2.24 psig to 20,000 ft using Jet B at -20°F to 110°F. The minimum pressure for satisfactory fuel pump ejector performance is 1 psig at 15,000 ft and 3 psig at 20,000 ft measured at the after-filter port. | | | | | 25 psig with a vapor-to-liquid ratio (V/L) not greater than 0.30. |
| 250-C40B, -C47B, -C47M, -C30R/3, -C30R/3M | Minimum allowable fuel inlet pressure varies as a function of fuel type, fuel temperature and altitude. Tables, curves and methods for determining the minimum fuel pressure are included in the following Installation Design Manuals: 250-C40B refer to CSP24001 250-C47B refer to CSP24002 250-C47M refer to CSP24003 250-C30R/3 refer to CSP24005 250-C30R/3M refer to CSP24007 | | | | | 25 psig |

No fuel inlet depression allowed with MIL-G-5572 fuel.

(b) Operating oil gauge pressures:

| | Operating oil gauge pressure (psig) | | | | | | Minimum oil pump inlet pressure |
|---|--|--|--|--|--|--|---------------------------------|
| | 47,884 rpm (94%) gas generator speed and above | 40,234 rpm (79.0%) gas generator speed to 47,884 rpm | Below 40,234 rpm (79.0%) gas generator speed | 47,940 rpm (94%) gas generator speed and above | 40,290 rpm (79.0%) gas generator speed to 47,940 rpm | Below 40,290 rpm (79.0%) gas generator speed | |
| 250-C28 Series | 115 – 130 | 90 – 130 | 50 – 130 | — | — | — | 5 in Hg absolute |
| 250-C30 Series, 250-C40B and 250-C47 Series | — | — | — | 115 to 130 | 90 to 130 | 50 to 130 | 5 in Hg absolute |

NOTE 3. The following accessory drive mounting provisions are available:

250-C28 Series

| | Direction of rotation * | Speed ratio to turbine | Max torque (in-lb) | | Max overhung moment (in-lb) |
|---------------------------------|-------------------------|------------------------|--------------------|--------|-----------------------------|
| | | | Continuous | Static | |
| Driven by gas producer turbine: | | | | | |
| Tachometer | CC | 0.0825 | 7 | 50 | 4 |
| Starter-generator | C | 0.2351 | 550** | 1100 | 150 |
| Driven by power turbine: | | | | | |
| Tachometer | CC | 0.1257 | 7 | 50 | 4 |
| Power take-off | C | 0.180 | 5868*** | 10000 | 100 |
| Spare | C | 0.3600 | 79 | 395 | 150 |

* C - Clockwise viewing drive pad

CC - Counterclockwise

** The maximum generator load is 12 horsepower.

*** The sum of the torques extracted in any combination from the front and rear power output drives shall not exceed the torque values specified in NOTE 7. The value given in the above table represents the 2½ minute limited maximum total torque.

250-C30 Series, 250-C40B and 250-C47 Series

| | Direction of rotation * | Speed ratio to turbine | Max torque (in-lb) | | Max overhung moment (in-lb) |
|--|-------------------------|------------------------|--------------------|--------|-----------------------------|
| | | | Continuous | Static | |
| Driven by gas producer turbine: | | | | | |
| Tachometer | CC | 0.0825 | 7 | 50 | 4 |
| Starter-generator | C | 0.2351 | 550** | 1100 | 150 |
| Spare | CC | 0.2351 | 550**** | 1100 | 150 |
| Driven by power turbine: | | | | | |
| Tachometer | CC | 0.1370 | 7 | 50 | 4 |
| Tachometer (250-C30G, -C30G/2 and -C40B only) | CC | 0.2168 | 4 | 32 | 4 |
| Power take-off | C | 0.1963 | 7524*** | 10000 | 100 |
| Power take-off (250-C30G only) | C | 0.3105 | 4765*** | 6321 | 100 |
| Power take-off (250-C30G/2 only): | | | | | |
| Front drive (2½ minute OEI limit maximum) | CC | 0.3105 | 4846***** | 6443 | 380 |
| Rear drive | C | 0.3105 | 330***** | 330 | 10 |
| Power take-off (250-C40B only): | | | | | |
| Front drive (30 second OEI limit maximum) | CC | 0.3105 | 5544***** | 6443 | 380 |
| Front drive (30 minute OEI limit maximum) | CC | 0.3105 | 5184***** | 6443 | 380 |
| Rear drive | C | 0.3105 | 330***** | 330 | 10 |
| Power take-off (250-C30R/3M and -C47M only): | | | | | |
| Front drive | CC | 0.1963 | 7524***** | 10000 | 100 |
| Rear drive | C | 0.1963 | 7524***** | 10000 | 100 |
| Spare (250-C30P, -C30R, -C30R/1, -C30R/3 and -C30R/3M) | C | 0.3925 | 79 | 395 | 150 |

* C - Clockwise viewing drive pad CC - Counterclockwise

** The maximum generator load is 12 horsepower.

*** The sum of the torques extracted in any combination from the front and rear power output drives shall not exceed the torque values specified in NOTE 7. The value given in the above table represents the 2½ minute OEI limited maximum total torque applicable to Models 250-C30, -C30S and -C30G.

**** The maximum accessory load is 6 horsepower.

***** The sum of the torques extracted in any combination from the front and rear power output drives shall not exceed the torque values specified in NOTE 7.

NOTE 4. The engine ratings, unless otherwise specified, are based on static sea level standard conditions. Compressor inlet air (dry) 59°F, 29.92 in Hg. Compressor inlet bell attached (250-C28, -C28C, -C30, -C40 and -C47 Series) to provide suitable air approach conditions. No external accessory loads and no bleed air offtake.

Measured rated gas temperature is indicated by the average of the 4 gas temperature thermocouples.

NOTE 5.

| | |
|-------------|--|
| 250-C28 | Basic Model |
| 250-C28B | Similar to C28 except compressor and turbine changes which result in an increased power rating and the addition of an inlet particle separator. |
| 250-C28C | Identical to C28B except without particle separator |
| 250-C30 | Similar to C28C except compressor and turbine changes which result in an increased power rating. |
| 250-C30P | Similar to C30 but with no 2½ or 30 min OEI ratings. |
| 250-C30S | Similar to C30 except compressor production changes which result in 5 percent new or overhaul performance margin. |
| 250-C30M | Similar to C30 but with no 2½ or 30 min OEI ratings and adapted for torque tube mounting. |
| 250-C30R | Similar to C30P but with inducer fuel pump and filter. |
| 250-C30G | Similar to C30S but with 9518 rpm power takeoff shaft speed. |
| 250-C30U | Similar to C30R but with 5 min. takeoff rating and reduced life limits on certain critical parts. |
| 250-C30G/2 | Similar to C30G but with 9545 rpm power takeoff shaft speed at 100% power turbine speed of 30737 rpm; continuous OEI rating added; flanged power takeoff drive system used in place of spline drive system. |
| 250-C30R/1 | Similar to C30R but with 7% increased engine airflow due to increased impeller blade height. Inducer bleed port is double the C30R capacity. Also, a compressor bleed valve is utilized. |
| 250-C40B | Similar to C30G/2 but with 9598 rpm output shaft speed at 100% power turbine speed of 30,908 rpm, no 2½ min. OEI rating, but 30 sec OEI and 2 min OEI ratings added and single channel Full Authority Digital Electronic Control (FADEC) system with manual backup and C30R/1 flow path changes. |
| 250-C47B | Similar to C30P but with 6317 rpm output shaft speed at 100% power turbine speed of 32,183 rpm and C30R/1 flow path changes. Single channel FADEC system with manual backup similar to the 250-C40B. |
| 250-C47M | Similar to C47B but with 6016 rpm output shaft speed at 100% power turbine speed of 30,650 rpm |
| 250-C30R/3 | Similar to C47M, but with Intermediate Power Rating. The military Intermediate Rating on the engine is used in the military applications and is equivalent to the FAA Takeoff Rating with the exception of the time limit, which is 30 minutes for the Intermediate Rating. |
| 250-C30R/3M | Similar to C30R/3 but with an acceleration bleed valve and accumulator. Declared flight envelope increased to 20000 ft. |

There may be a number of variants of a given engine Model (distinguished by different part numbers) which incorporate minor modifications to tailor the engine for particular airframe applications.

NOTE 6. The ejector tube assembly for the Model 250-C28B is airframe mounted.

NOTE 7. The maximum allowable torque as measured by the torquemeter for below standard inlet air temperature and/or ram conditions are as follows:

| | Maximum torque (lb-ft) | | | | | | | | | |
|---|------------------------|---------------|---------------|------------------------------|-----------------------------|------------------------------|---|------------------------|------------------------|------------------------|
| | For 2 sec | For 10 sec | For 16 sec | At 30 sec OEI power | At 2 min OEI power | At 2½ min OEI power | At 30 min OEI/ Interm power | At Con OEI power | At Takeoff power | At Max con power |
| 250-C28 | — | 480 | — | — | — | — | 463 | — | 463 | 417 |
| 250-C28B | — | 499 | — | — | — | 489 | 463 | — | 463 | 463 |
| 250-C28C | — | 612 | — | — | — | 489 | 463 | — | 463 | 463 |
| 250-C30, -C30S | — | — | 877 | — | — | 627 | 590 | — | 590 | 590 |
| 250-C30P, -C30M, -C30U, -C47B, -C47M | 686 | 637 | — | — | — | — | — | — | 590 | 524 |
| 250-C30R, -C30R/1, -C30R/3, -C30R/3M | 686 | 637 | — | — | — | — | 590 | — | 590 | 524 |
| 250-C30G | — | — | 521 | — | — | 398 | 373 | — | 373 | 373 |
| 250-C30G/2 | — | — | 521 | — | — | 404 | 393 | 372 | 372 | 307 |
| 250-C40B | — | — | 521 | 462 | 444 | — | 432 | 409 | 409 | 338 |

NOTE 8. Maximum and minimum turbine rotor speeds

| | Output shaft speed | | | | Gas producer speed | |
|---|--|--|------------------------------|-------------------|------------------------------|-------------------|
| | Max transient (up to 15 sec) | Maximum sustained | Min transient (up to 15 sec) | Minimum sustained | Max transient (up to 10 sec) | Maximum sustained |
| 250-C28, -C28B, -C28C: 100% output shaft speed = 6016 rpm 100% gas producer speed = 50940 rpm | Varies linearly from 115% at autorotation to 105% at takeoff | Varies linearly from 113% at autorotation to 103% at takeoff | — | — | 105% | 104% |
| 250-C30, -C30M, -C30P, -C30S, -C30R, -C30R/1, -C30R/3, -C30R/3M, -C30U, -C47M: 100% output shaft speed = 6016 rpm 100% gas producer speed = 51000 rpm | 126.6% (7616 rpm) | 107.1% (6443 rpm) | 70.1% (4220 rpm) | 90.0% (5414 rpm) | 106% | 105% |
| 250-C30G: 100% output shaft speed = 9518 rpm 100% gas producer speed = 51000 rpm | 126.6% (12049 rpm) | 107.1% (10194 rpm) | 70.1% (6677 rpm) | 89.7% (8540 rpm) | 106% | 105% |
| 250-C30G/2: 100% output shaft speed = 9545 rpm 100% gas producer speed = 51000 rpm | 126.2% (12049 rpm) | 106.8% (10194 rpm) | 70.0% (6681 rpm) | 89.5% (8542 rpm) | 106% | 105% |
| 250-C40B: 100% output shaft speed = 9598 rpm 100% gas producer speed = 51000 rpm | 125.5% (12049 rpm) | 106.3% (10203 rpm) | 69.6% (6680 rpm) | 89.0% (8542 rpm) | 106% | 105% |
| 250-C47B: 100% output shaft speed = 6317 rpm 100% gas producer speed = 51000 rpm | 120.6% (7616 rpm) | 102.1% (6449 rpm) | 66.8% (4220 rpm) | 85.4% (5397 rpm) | 106% | 105% |

NOTE 9. External air bleed may not exceed 4.5 percent for the Models 250-C28, 250-C30, 250-C40 and 250-C47 Series and 4.0 percent for the Models 250-C28B and 250-C28C.

NOTE 10. For the Model 250-C28 Series and 250-C30P, emergency use of aviation gasoline MIL-G-5572, all grades, is limited to the amount of fuel required to operate the engine for not over 6 hours during any overhaul period. Emergency use of aviation gasoline is permitted in Models 250-C30, -C30S, -C30M, -C30R, -C30G, -C30U and -C30G/2 and -C30R/1 for a maximum of 6 hours during any overhaul period provided aircraft boost pumps are available and turned on. Emergency use of aviation gasoline is permitted in Model 250-C40B, -C47B, -C47M, -C30R/3 and -C30R/3M for a maximum of 6 hours during any overhaul period. For all models a mixture consisting of 1/3 by volume of aviation gasoline MIL-G-5572, grade 80/87 and 2/3 by volume MIL-T-5624, grade JP-5, or aviation turbine fuels ASTM D1655, Jet A or A-1, may be used for unrestricted periods of time. A mixture consisting of 1/3 by volume of aviation gasoline MIL-G-5572, grade 100/130 with a maximum of 2.0 ml./gal. lead content and 2/3 by volume of MIL-T-5624, grade JP-5, or aviation turbine fuels ASTM D1655, Jet A or A-1, may be used for not over 300 hours during any overhaul period. It is not necessary to purge the unused fuel from the system before refueling with different type fuels. No fuel control adjustment is required when switching these type fuels.

- NOTE 10 (cont) Fuels containing Tri-Cresyl-Phosphate additives shall not be used. Anti-icing additives conforming to MIL-I-27686 are approved for use in fuels in amounts not to exceed 0.15 percent by volume. Shell anti-static additive is approved for use at a concentration that will not exceed fuel conductivity of 300 pico-Ohms per meter. The 250-C28, 250-C30, 250-C40 and 250-C47 Series engines are approved for use with C.I.S. Specification fuels and Romanian fuel in accordance with Commercial Service Letter 2102/3105/5050/6050. The 250-C28, 250-C30, 250-C40 and 250-C47 Series engines are approved for use with fuel meeting Chinese specification GB6537-94 RP-3.
- NOTE 11. Pneumatic accumulator(s), double check valve(s) or other attenuating devices can be incorporated for compatibility with the rotor system of the particular model rotorcraft in which the engine is to be installed, except for electronically controlled Model 250-C30R, -C30U, -C30R/1, -C40B, -C47B, -C47M, -C30R/3 and -C30R/3M.
- NOTE 12. Model 250-C30, -C30S and -C30G engines are equipped with dual ignition. The remaining models have a single ignition system. A dual ignition kit is available for the Model 250-C28B and -C28C engines. Exemption No. 2087B (from FAR 33.69), dated December 10, 1991, permits the type certification of the engines on this type certificate data sheet with single ignition for use in all rotorcraft, regardless of whether the rotorcraft is certificated under Part 6 or Part 7 of the CAR, or Part 27 or Part 29 of the FAR and regardless of whether the rotorcraft is designated as Category A or Category B.
- NOTE 13. Life limits established for critical rotating components are published in the corresponding Rolls-Royce Operation and Maintenance Manual. Distributor Information Letters (DIL) 190 and 202 establish acceptable crack limits suitable for return to service of first stage and second stage turbine wheels, respectively, in time continued (repair) engines.
- NOTE 14. Engines produced under this type certificate are approved for operation with unprotected inlets having been tested in accordance with Group I and Group II Foreign Objects Ingestion criteria of FAA Advisory Circular AC 33-1B.
- NOTE 15. A press-to-test indicator lamp for the N2 overspeed control system is an installation requirement. The Models 250-C30R, -C30U and -C30R/1 require a second press-to-test indicator for the digital overspeed control.
- NOTE 16. A magnetic oil drain plug (chip detector) indicator lamp is an installation requirement.
- NOTE 17. Model 250-C30, -C30S, -C30G, -C30G/2, -C40B, -C47B, -C47M, -C30R/3 and -C30R/3M engines comply with the following sections of FAR 33-6: 33.17(b), 33.67(a), (b) 33.68(a), (b) and 33.71(a), (b) except that oil strainers are not incorporated ahead of each scavenge pump. In addition, Model 250-C30G/2 and -C40B engines comply with the following sections of FAR 33-12 related to the Continuous OEI rating: 33.7 and 33.87. Model 250-C40B, -C47B, -C47M, -C30R/3 and -C30R/3M engines comply with section 33.28 of FAR 33-15 as related to the Full Authority Digital Electronic Control (FADEC) system. Model 250-C40B, -C47B, -C47M, -C30R/3 and -C30R/3M engines comply with the applicable sections of 33.27, 33.75, 33.89 and 33.91 of FAR 33-15.
- NOTE 18. Compliance with Rolls-Royce Alert Commercial Engine Bulletin CEB-A-73-3018 (Disarm N2 Electronic Overspeed Control System) and any subsequent FAA approved revisions are an installation requirement for the Model 250-C30M and -C30P engines.

- NOTE 19. Fuel control maximum fuel flow stop settings

| | Maximum fuel flow stop setting (pph) | Available maximum fuel flow stop setting for field use (pph) |
|---|--------------------------------------|--|
| 250-C28 | 375 | — |
| 250-C28B, -C28C | 360 | 293 |
| 250-C30 Series | 440 | 353, 313 and 284 |
| 250-C40B, -C47B, -C47M, -C30R/3, -C30R/3M | 500 | — |

- NOTE 20. All Model 250-C30 Series engines incorporate an overspeed #1 wheel internal energy absorbing ring, either by initial production or by retrofit.
- NOTE 21. Applicable to the Model 250-C40B and -C47M engines: Operational use of the on-line software loader in the field is prohibited.

Applicable to the Model 250-C47B engine: Operational use of the on-line loader in the field is approved for Software Version 5.201 or later FAA approved Software Version per applicable FAA approved Commercial Engine Bulletin.

Applicable to the 250-C30R/3 engine: Operational use of the on-line loader in the field is approved for Software Version 7.102 or later FAA approved Software Version per applicable FAA approved Commercial Engine Bulletin.

Applicable to the 250-C30R/3M engine: Operational use of the on-line loader in the field is approved for Software Version 8.00 or later FAA approved Software Version per applicable FAA approved Commercial Engine Bulletin.

NOTE 22. Applicable to the 250-C30R/3M engine. The engine ECU incorporates an N2 overspeed system with a trip point of 124% which exceeds the main rotor speed limit of the application aircraft. Therefore, the decision to install and operate the 250-C30R/3M in this application is the responsibility of the installation authority.

.... END....