

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET NO. E4CE	Rolls-Royce Corporation (formerly Allison Engine Company) Revision 39		
	11 June 2001		
	250-C10 (T63-A-5)	250-C20	250-C20R
	250-C10B (T63-A-5A)	250-C20B	250-C20R/1
	250-C10D (T63-A-700)	250-C20C (T63-A-720)	250-C20R/2
	250-C18	250-C20F	250-C20R/4
	250-C18A	250-C20J	250-C20W
	250-C18B	250-C20S	
	250-C18C	225-C10	
	250-C19	225-C10A	

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E4CE) 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.

Type Certificate Holder: Rolls-Royce Corporation
P.O. Box 420
Indianapolis, Indiana 46206-0420

Model	250-C10	250-C10B 250-C10D 250-C18 250-C18A 250-C19	250-C18B 250-C18C	250-C20	250-C20B	250-C20C
Type	Free turbine turboshaft with axial centrifugal compressor, 2-stage gas producer turbine & 2-stage power turbine, single combustion chamber					
Shaft ratio	5.83:1	--	--	5.53:1	--	--
Ratings (see Note 3)						
Max continuous shp at sea level	212	270	--	385	420	370
Gas producer rpm (est.)	47350	49760	--	51490	53000	51200
Output shaft rpm	6000	--	--	6016	--	--
Measured gas temp	1165°F (630°C)	1280°F (693°C)	--	1430°F (777°C)	1490°F (810°C)	1360°F (738°C)
Takeoff (5 min) shp at sea level	250	317	--	400	420	--
Gas producer rpm (est.)	48950	51600	--	52000	53000	--
Output shaft rpm	6000	--	--	6016	--	--
Measured gas temp	1240°F (671°C)	1380°F (749°C)	--	1460°F (793°C)	1490°F (810°C)	--
Takeoff (5 min, augmented) shp at sea level, 95°F ambient temp	—	—	310	—	420	—
Output shaft rpm	—	—	6000	—	6016	—
Measured gas temp (see Note 14)	—	—	1380°F (749°C)	—	1490°F (810°C)	—
30 minute shp at sea level	250	317	--	400	420	—
Gas producer rpm (est.)	48950	51600	--	52000	53000	—
Output shaft rpm	6000	--	--	6016	--	—
Measured gas temp	1240°F (671°C)	1380°F (749°C)	--	1460°F (793°C)	1490°F (810°C)	—

"--" indicates same as preceding model

"—" indicates not applicable

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Model (cont)	250-C10	250-C10B 250-C10D 250-C18 250-C18A 250-C19	250-C18B 250-C18C	250-C20	250-C20B	250-C20C
Output shaft	Internal spline	--	--	--	--	--
Control system						
Bendix gas producer fuel control	DP-D3	--	--	DP-N1 or DP-N2	DP-N2	--
Bendix power turbine governor	AL-L2	AL-L2 or AL-L3	--	AL-AA1	--	--
Chandler Evans fuel control system	—	—	—	MC-40	--	—
Bendix ambient temp compensator	TS-D3	—	—	—	—	—
Bendix pneumatic accumulator (see Note 10)	--	--	--	--	--	--
Fuel pump and filter	Pesco Model 023835	Sundstrand Models 024918 or 5002395 except 250-C10D or TRW Model 386500 except 250-C10D or Pesco Model 024731				Sundstrand Models 024918 or 5002395 or TRW Model 386500
Fuel	MIL-T-5624, Grade JP-4 or JP-5; Aviation Turbine Fuels per ASTM D-1655, Jet A or A-1 (or Rolls-Royce Corp. Spec. EMS-64) or Jet B; MIL-T-83133, Grade JP-8; JP-1 or Diesel #1 fuel conforming to ASTM D-1655, Jet A; Arctic Diesel Fuel DF-A (W-F-800B) conforming to ASTM D-1655, Jet A or Jet A-1; (for other fuel and limitations, see Note 9)					
Lubricating oil	MIL-L-7808F or MIL-L-23699 and subsequent revisions	--	--	--	--	--
Principal dimensions						
Length overall, in.	40.478	40.4	--	40.81	--	--
Width, in.	19.006	19.0	--	19.01	--	--
Height, in.	22.5	22.5	--	23.20	--	--
C.G. location, aft of side mount pad centerline, in.	5.23	5.08	--	5.48	--	--
C.G. location, above pad centerline, in. (*below)	0.2	--	--	0.88	--	--
C.G. location, right of engine centerline (*left)	0	--	--	--	--	--
Weight (dry), lbs. Includes basic engine, fuel pump and filter, ignition and fuel control system.	136	138.7 139 141 141 144	141.2	158	--	--
With #1 turbine wheel internal energy absorbing ring.	—	—	—	—	161	--

Model (cont)	250-C10	250-C10B 250-C10D 250-C18 250-C18A 250-C19	250-C18B 250-C18C	250-C20	250-C20B	250-C20C
Ignition system (see Note 12)						
Exciter	Capacitor discharge low tension exciter type. Scintilla Div., Bendix Corp. TCN or Simmonds Precision (GLA)	Capacitor discharge low tension exciter type. Simmonds Precision (GLA) P/N 41820, P/N 43754 or P/N 49522. Bendix-Scintilla P/N 10-369950-2, P/N 10-374440-1 or P/N 10-387150-1.				
Igniter	Champion P/N FHE 161	Champion P/N FHE 161 or P/N CH 34168. AC P/N 5611588 (Type YB 63-1) or P/N 5611071 (Type YB 63). Auburn P/N 0270486.				
Auto Reignition Control (Optional - see Note 15)	—	P/N 6877138 (-C18)	P/N 6877138 (-C18B)	P/N 23050521	P/Ns 23050521 or 23050522	—
Compressor bleed valve	—	Holley A45411 or A45413A or Rolls-Royce P/N 6874979	--	Rolls-Royce P/Ns 6875120 or 6889815 or 6896348 or 6894115	--	--

Model	250-C20F	250-C20J	250-C20S	250-C20R 250-C20R/1 250-C20R/2 250-C20R/4	225-C10 225-C10A	250-C20W
Type	Free turbine turboshaft with axial centrifugal compressor, 2-stage gas producer turbine & 2-stage power turbine, single combustion chamber					
Shaft ratio	5.53:1	--	--	--	--	--
Ratings (see Note 3)						
Max continuous shp at sea level	420	--	--	450	350	420
Gas producer rpm (est.)	51790	53000	--	50537	49985	51790
Output shaft rpm	6016	--	--	--	--	--
Measured gas temp	1490°F (810°C)	--	--	1423°F (773°C)	1324°F (718°C)	1490°F (810°C)
Takeoff (5 min) shp at sea level	420	--	--	450	350	420
Gas producer rpm (est.)	51790	53000	--	50537	49985	51790
Output shaft rpm	6016	--	--	--	--	--
Measured gas temp	1490°F (810°C)	--	--	1423°F (773°C)	1324°F (718°C)	1490°F (810°C)
Takeoff (5 min, augmented) shp at sea level, 95°F ambient temp	420	--	--	—	—	—
Output shaft rpm	6016	--	--	—	—	—
Measured gas temp (see Note 14)	1490°F (810°C)	--	--	—	—	—

Model (cont)	250-C20F	250-C20J	250-C20S	250-C20R 250-C20R/1 250-C20R/2 250-C20R/4	225-C10 225-C10A	250-C20W
30 minute OEI shp at sea level	420	--	—	450	350	420
Gas producer rpm(est.)	51790	53000	—	50537	49985	51790
Output shaft rpm	6016	--	—	6016	6016	--
Measured gas temp	1490°F (810°C)	--	—	1490°F (810°C)	1324°F (718°C)	1490°F (810°C)
Output shaft	Internal spline	--	--	--	--	--
Control system						
Bendix gas producer fuel control	DP-N2	--	DP-P2	DP-N2	--	--
Bendix power turbine governor	AL-AA1	--	--	--	--	--
Chandler Evan fuel control system	—	—	—	—	—	—
Bendix ambient temp compensator	—	—	—	—	—	—
Bendix pneumatic accumulator (see Note 10)	--	--	—	--	--	--
Fuel pump and filter	Sundstrand Models 024918 or 5002395 or TRW Model 386500	--	--	Sundstrand Models 024918 or 5001294 or TRW Model 386500, except 250-C20R/2 P/N 23053265 engine which incorporates CECO Model MFP 262	Sundstrand Models 024918 or 5002395 or TRW Model 386500	--
Fuel	MIL-T-5624, Grade JP-4 or JP-5; Aviation Turbine Fuels per ASTM D-1655, Jet A or A-1 (or Rolls-Royce Corp. Spec. EMS-64) or Jet B; MIL-T-83133, Grade JP-8; JP-1 or Diesel #1 fuel conforming to ASTM D-1655, Jet A; Arctic Diesel Fuel DF-A (W-F-800B) conforming to ASTM D-1655, Jet A or Jet A-1; (for other fuel and limitations, see Note 9)					
Lubricating oil	MIL-L-7808F or MIL-L-23699 and subsequent revisions	--	--	--	--	--
Principal dimensions						
Length overall, in.	40.81	--	40.756	40.856	40.81	40.756
Width, in.	19.01	--	18.784	20.76	19.01	18.784
Height, in.	23.20	--	22.596	23.196	23.20	22.596
C.G. location, aft of side mount pad centerline, in.	5.07	5.14	5.10	4.88 4.72 4.66 4.66	5.48	5.31
C.G. location, above pad centerline, in. (*below)	0.63	--	0.71*	0.60 0.75 0.75 0.75	0.88	0.77*

Model (cont)	250-C20F	250-C20J	250-C20S	250-C20R 250-C20R/1 250-C20R/2 250-C20R/4	225-C10 225-C10A	250-C20W
C.G. location, right of engine centerline, in. (*left)	0.03	0.04	0.09*	0.05 0.01 0.18 0.18	0.01	0.08*
Weight (dry), lbs. Includes basic engine, fuel pump and filter, ignition and fuel control system.	158	--	159	—	—	—
With #1 turbine wheel internal energy absorbing ring.	161	--	162	173 173 169 169	161	162
Ignition system (see Note 12)						
Exciter	Capacitor discharge low tension exciter type. Simmonds Precision (GLA) P/N 41820, P/N 43754 or P/N 49522. Bendix-Scintilla P/N 10-369950-2, P/N 10-374440-1 or P/N 10-387150-1.					
Igniter	Champion P/N FHE 161 or P/N CH 34168. AC P/N 5611588 (Type YB 63-1) or P/N 5611071 (Type YB 63). Auburn P/N 0270486.					
Auto Reignition Control (Optional - see Note 15)	—	P/N 23050521 or P/N 23050522	—	P/N 23052372 (-C20R/2, -C20R/4) or P/N 23052373 (-C20R/2)	—	—
Compressor bleed valve	Rolls-Royce P/Ns 6875120 or 6889815 or 6896348 or 6894115	--	--	Rolls-Royce P/Ns 23039173 or 23038951	Rolls-Royce P/N 23007879	Rolls-Royce P/N 23036665

Certification basis Part 13 of the Civil Air Regulations effective June 15, 1956, as amended by 13-1, 13-2 and 13-3, and Exemption No. 219A from CAR 13.211, Regulatory Docket 1337 issued August 6, 1962, and amended May 12, 1980. Application for Type Certificate dated September 15, 1961. Type Certificate No. E4CE issued December 19, 1962, for Model 250-C10; Models 250-C10B, 250-C18 and 250-C18A added September 9, 1965; Models 250-C18B and 250-C18C added September 25, 1967; Model 250-C19 added April 29, 1968; Model 250-C10D added November 15, 1968; Model 250-C20 added April 22, 1970; Model 250-C20B added February 28, 1974; Model 250-C20C added June 9, 1976; Model 250-C20F added March 2, 1979; Model 250-C20J added September 15, 1981; Model 250-C20S added December 30, 1983; Model 250-C20R/1 added September 12, 1986; Model 250-C20R/2 added March 5, 1987; Models 225-C10 and 225-C10A added March 20, 1987; Model 250-C20R added September 29, 1989; Model 250-C20R/4 added December 5, 1989; Model 250-C20W added April 20, 1990.

Production basis Production Certificate No. 310

NOTE 1 - Maximum allowable temperatures

	Measured gas temperature – °F (°C)				Oil inlet temp – °F (°C)	
	Takeoff and 30-min (OEL) power	Max continuous	Max transient	Starting ⁽⁵⁾	MIL-L-7808F	MIL-L-23699
250-C10	1360 (738)	1280 (693)	1360 (738) to 1550 (843) ⁽¹⁾	1360 (738) to 1700 (927) ⁽³⁾	–65 (–54) to 200 (93)	–40 (–40) to 225 (107)
250-C10B, -C10D, -C18, -C18A, -C18B, -C18C, -C19	1380 (749)	1280 (693)	1380 (749) to 1550 (843) ⁽¹⁾	1380 (749) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
250-C20	1460 (793)	1430 (777)	1460 (793) to 1550 (843) ⁽¹⁾	1460 (793) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
250-C20B, -C20F, -C20J, -C20W	1490 (810)	1490 (810)	1490 (810) to 1550 (843) ⁽¹⁾ 1490 (810) to 1650 (899) ⁽²⁾	1490 (810) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
250-C20C	1490 (810)	1360 (738)	1460 (793) to 1550 (843) ⁽¹⁾	1490 (810) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
250-C20S	1490 (810)	1490 (810)	1490 (810) to 1550 (843) ⁽¹⁾	1490 (810) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
250-C20R, -C20R/1, -C20R/2, -C20R/4	1490 (810)	1490 (810)	1490 (810) to 1650 (899) ⁽¹⁾⁽²⁾	1490 (810) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)
225-C10, -C10A	1400 (760)	1400 (760)	1400 (760) to 1550 (843) ⁽¹⁾	1400 (760) to 1700 (927) ⁽⁴⁾	–65 (–54) to 225 (107)	–40 (–40) to 225 (107)

(1) Not to exceed six seconds.

(2) From six seconds not to exceed a maximum of 12 seconds. Maximum of three occurrences per life of each turbine wheel.

(3) Six seconds maximum.

(4) Ten seconds maximum.

(5) The maximum allowable temperature during starting, 1700°F (927°C), is limited for all engine models to a momentary peak of one second maximum.

NOTE 2. Fuel inlet pressure limits applicable to MIL-T-5624 and ASTM-D1655 Jet A or A-1 fuels

	Minimum fuel inlet pressure						Maximum fuel inlet pressure
	Sea level	6000 ft	10000 ft	15000 ft	20000 ft	25000 ft	
250-C10, -C10B, -C10D	Ambient minus 7 in Hg	Ambient minus 5.5 in Hg	—	—	—	—	25 psig
250-C18, -C18A, -C18B, -C18C, -C19, -C20, -C20B, -C20C, -C20F, -C20J, -C20S, -C20R, -C20R/1, -C20R/2, -C20R/4, -C20W 225-C10, -C10A	Ambient minus 9 in Hg	Ambient minus 5.5 in Hg	Ambient minus 3.3 in Hg	Ambient minus 0.8 in Hg	Ambient plus 1.5 in Hg	Ambient plus 3.0 in Hg	25 psig

(1) No fuel inlet depression permitted with MIL-G-5572 fuel.

(2) Fuel pressure requirement is different for Model 250-C20R/2 P/N 23053265 engine (P/N 23053267 Installation Assembly). See Installation Design Manual

NOTE 2 (cont) Oil pressure limits

	Operating oil gauge pressure (psig)					
	49586 rpm (97.0%) gas producer turbine speed and above	39874 rpm (78.0%) gas producer turbine speed to 49586 rpm (97.0%)	Below 39874 rpm (78.0%) gas producer turbine speed	40011 rpm (78.5%) gas producer turbine speed to 48014 rpm (94.2%)	48014 rpm (94.2%) gas producer turbine speed and above	Below 40011 rpm (78.5%) gas producer turbine speed
250-C10, -C10B, -C10D, -C18, -C18A, -C18B, -C18C, -C19	110 – 130	90 – 130	50 – 130	—	—	—
250-C20, -C20B, -C20C, -C20F, -C20J, -C20S, -C20W, 225-C10, -C10A	—	—	—	90 – 130	115 – 130	50 – 130
250-C20R, -C20R/1, -C20R/2, -C20R/4	—	—	—	90 – 130	120 – 130	50 – 130

(1) Minimum pump inlet pressure is 5 in Hg absolute for 250-C20 Series and 225-C10 and -C10A.

(2) For 250-C20R, -C20R/1, -C20R/2 and -C20R/4 models, 10% aeration by volume is permitted in oil from a primed pump.

Accordingly, the lower oil pressure limit may decline at the rate of 2 psig per 1000 feet at altitudes above 5000 feet, to a maximum reduction of 20 psig.

NOTE 3. 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 to provide suitable air approach conditions. No external accessory load and no air bleed. Measured rated gas temperature as indicated by average of the 4 gas temperature thermocouples. Certain models are intended for military uses only. The power ratings for these models have been redesignated by the military, but are equivalent to the ratings listed herein.

NOTE 4. The following accessory drive or mounting provisions are available:

	*Direction of rotation	Speed ratio to turbine	Maximum torque (in-lb)		Maximum overhang moment (in-lb)
			Continuous	Static	
Driven by gas producer turbine					
Spare (except optional on -C20B, -C20F, J, 225-C10, A; none on -C20R & -C20R/1,2,4, -C20W)	C	0.0728	35 (-C20 Series) 17 (all other models)	75	25 30 (-C20B,F,J,S, 225-C10 & -C10A)
Tachometer	CC	0.0824	7	50	4
Starter-generator	C	0.2361	**	350 (-C10) 550 (all other models)	94
Driven by power turbine					
Power takeoff-rear (-C10)	C	0.1714	525	8000	100
Power takeoff-rear (-C20 Series)	C	0.1807	***4416 (-C20) ***4608 (-C20B, C,F,J,S & W) ***4800 (-C20R & -C20R/1,2 & 4)	8000	100
Power takeoff-rear (225-C10, -C10A)	C	0.1807	***3672	8000	100
Power takeoff-rear (all other models)	C	0.1807	***3516	8000	100
Tachometer	CC	0.1262 (-C20 Series) 0.1197 (all other models)	7	50	4

* C = Clockwise viewing drive pad, CC = Counterclockwise

** The maximum generator load is 150 amperes (9.3 hp)

*** The sum of the torque extracted in any combination from the front and rear power output drives shall not exceed the torque values specifies in Note 7. The values given in the above table represent the 30 minute limited maximum total torque (Maximum Continuous for -C20S).

- NOTE 5. External air bleed may not exceed 3 percent for the 250-C10 and 4.5 percent for all other models.
- NOTE 6. Engine equipment, which is aircraft mounted, includes the ambient temperature compensator for the 250-C10 only; two water injection nozzles for the 250-C18B, 250-C18C, 250-C20B (Optional), 250-C20F (Optional), 250-C20J (Optional), 250-C20S (Optional); and the electronic power turbine overspeed (N2) protection system for the Model 250-C20R & C20R/1.
- 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 3 sec	For 10 sec	For 16 sec	At takeoff power	At 30-min (OEI) power	At max continuous power
250-C10, -C10B, -C10D	300	250	—	240	240	204
250-C18, -C18A, -C18B, -C18C, -C19	—	320	—	293	293	249
250-C20	—	393	—	367	367	336
250-C20B, -C20C, -C20F, -C20J, -C20W	—	—	430	384	384	384
250-C20S	—	393	430	384	384	384
250-C20R, -C20R/1, -C20R/2, -C20R/4	—	—	490	400	400	400
225-C10, -C10A	—	323	—	306	306	306

- NOTE 8. Maximum turbine rotor speeds

	Power turbine (output) speed		Gas producer speed	
	Max transient (up to 15 sec)	Maximum sustained	Max transient (up to 15 sec)	Maximum sustained
250-C10: 100% power turbine speed = 6000 rpm 100% gas producer speed = 51120 rpm	Varies linearly from 110% at idle to 105% at takeoff	Varies linearly from 108% at idle to 103% at takeoff	103%	102%
250-C10B, -C18, -C18A, -C18B, -C18C, -C19: 100% power turbine speed = 6000 rpm 100% gas producer speed = 51120 rpm	Varies linearly from 110% at idle to 105% at takeoff	Varies linearly from 108% at idle to 103% at takeoff	105%	104%
250-C10D: 100% power turbine speed = 6000 rpm 100% gas producer speed = 51120 rpm	Varies linearly from 114% at idle to 105% at takeoff	Varies linearly from 108% at idle to 103% at takeoff	105%	104%
250-C20, -C20B, -C20C, -C20F, -C20J, -C20R, -C20R/1, -C20R/2, -C20R/4, -C20W, 225-C10, -C10A: 100% power turbine speed = 6016 rpm 100% gas producer speed = 50970 rpm	Varies linearly from 113% at idle to 105% at takeoff	Varies linearly from 108% at idle to 103% at takeoff	106%	105%
250-C20S: 100% power turbine speed = 6016 rpm 100% gas producer speed = 50970 rpm	110%	105%	106%	105%

- NOTE 9. Emergency use of aviation gasoline MIL-G-5572, grade 115/145 and lower, is limited to the amount of fuel required to operate the engine for not over 6 hours during any overhaul period except that a mixture consisting of 1/3 by volume of aviation gasoline MIL-G-5572, grade 80/87, and 2/3 by volume of MIL-T-5624, grade JP-5, or aviation turbine fuels ASTM-D1655 Jet A or A-1 or Rolls-Royce Corp. Spec. EMS-64 may be used for unrestricted periods of time. Fuels containing Tri-Cresyl-Phosphate additives shall not be used. A mixture consisting of 1/3 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 or Rolls-Royce Corp. spec. EMS-64 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 fuel types. 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-C18, 250-C20 and 250-C20R series engines are approved for use with C.I.S. Specification fuels and Romanian fuel in accordance with Commercial Service Letter 158/1154/4024. The 250-C10, -18, -19, & -20 series engines are approved for use with fuel meeting Chinese specification GB6537-94 RP-3.

- NOTE 10. A pneumatic accumulator(s) mounted on the engine fire shield must be selected from sizes supplied by the engine manufacturer for compatibility with the rotor system of the particular model helicopter in which the engine is to be installed, for Bendix systems. For the 250-C20R, P/N 23059597, the required pneumatic accumulators are supplied and installed for compatibility of the rotor system and the Bendix system for use on Tridair 206L series conversions (Twin). For the 250-C20R/2 P/N 23053265, the required pneumatic accumulators are supplied and installed for compatibility of the rotor system and the Bendix system for use on MDHC 500 Series helicopter.
- NOTE 11. Model 250-C10B is adapted for use in the Hughes Tool Company Model 369 (OH-6A) Helicopter. Model 250-C10D is similar to the 250-C10B and is adapted for use in the Bell Helicopter Company Model 206A-1 (OH-58A) helicopter.
- Model 250-C18 is similar to the 250-C10B and is adapted for use in Fairchild Hiller Model 1100 Helicopter and Bell Helicopter Company Models 206A and 206A-1 Helicopters.
- Model 250-C18A is similar to the 250-C18 and is adapted for use in the Hughes Tool Company Model 369H Helicopter.
- Models 250-C18B and 250-C18C are similar to Models 250-C18 and 250-C18A respectively, with provisions added for water-alcohol injection.
- Model 250-C19 is similar to Model 250-C18 except the exhaust is directed down.
- Model 250-C20 is similar to Model 250-C18 except the first stage compressor and turbine wheels are larger in diameter.
- Model 250-C18B and 250-C18C can be installed in lieu of Models 250-C18 and 250-C18A, respectively, and operated dry.
- Model 250-C20B is similar to Model 250-C20 except for increased performance. Provisions for water-alcohol injection are optional with the Model 250-C20B.
- Model 250-C20C is similar to Model 250-C20B but has not been certificated for water-alcohol injection and is adapted for military uses in the Bell Helicopter Company OH-58C Helicopter.
- Model 250-C20F is similar to Model 250-C20B except the gearbox housing incorporates a front mounting pad and is adapted for use in the Aerospatiale AS 355 Helicopter.
- Model 250-C20J is similar to Model 250-C20B except the gear-meshing frequency between the torquemeter gear and the power takeoff gear is changed from 5000 Hertz to 6000 Hertz with no change in output speed.
- Model 250-C20S is similar to the 250-C20B and is adapted for exhaust down turboprop application where the airframe installation provides the propeller reduction gearbox and propeller-power turbine governor. The engine provided power turbine governor acts as an overspeed governor in addition to the installation furnished propeller governing system. The gearbox is oriented so that the output centerline is above the engine centerline. In addition, the gearbox housing incorporates a front mounting pad.
- Model 250-C20R/1 is similar to the 250-C20B except for increased performance, a new compressor, and addition of an electronic power turbine (N2) overspeed protection system, and incorporates an on-speed #1 wheel internal energy absorbing ring.
- Model 250-C20R is similar to the 250-C20R/1 except the gearbox housing incorporates a front mounting pad and is adopted for use in the Aerospatiale AS 355 Helicopter.
- Model 250-C20R/2 is similar to the 250-C20R/1 except the electronic power turbine (N2) overspeed protection system is not included.
- Model 250-C20R/4 is similar to the 250-C20R/2 except the gear meshing frequency between the torquemeter gear and the power takeoff gear is changed from 5000 Hz to 6000 Hz with no change in output speed.
- Model 250-C20W is similar to the 225-C10A with the exception that the accessory gearbox spare accessory pad drive has been deleted. The 250-C20W performance rating is the same as the 250-C20F.
- Model 225-C10 is similar to the Model 250-C20B with reduced MGT and Power, and incorporates an on-speed #1 turbine wheel internal energy absorbing ring.
- Model 225-C10A is similar to the Model 225-C10 with the exhaust directed down. The gearbox output centerline is above the engine centerline.

NOTE 11 (cont) 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 12. All engines produced under this type certificate have single ignition systems. Exemption No. 219B (from CAR 13.211), 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. Prior to installation in certificated aircraft, any model 250 engine that has been in military service must be evaluated to ensure that it conforms to the FAA Approved Type Design, was manufactured under an approved production system, is eligible for installation on a U.S. type certificated aircraft, and is in condition for safe operation. Additionally, the following specific changes must be incorporated:

a. Model 250-C10B engines which have been in military service must have Rolls-Royce P/N 6844703-047137, 6851549 or other approved equivalent fuel line installed in place of non-fire resistant line, Rolls-Royce P/N 6844703-43137.

b. Model 250-C10B and 250-C10D engines which have been in military service must have the Bendix Model DP-D3 gas turbine fuel control checked and adjusted in accordance with Bendix Service Bulletin GT-44.

NOTE 14. Operation with water-alcohol injection is limited to ambient temperatures above 40°F. The augmented takeoff rating is based on a water-alcohol flow rate of 1.25 gpm delivered to the injection nozzles at a pressure differential of 50 psi across each nozzle. The water-alcohol solution, nozzle location and system installation must be in accordance with the FAA approved Installation Design Manual requirements.

NOTE 15. The optional Auto Reignition Control Kits are approved for use only with the Simmonds Precision (GLA) P/N 43754 or 49522 or Bendix P/N 10-387150-1 ignition excitors. The P/N 6877740 Kit, which has been discontinued but may still be in service, is adapted for use on the Bell Model 206A-1 helicopter. The P/N 6877138 Kit is adapted for use on the Bell Model 206A helicopter. The P/N 23050521 Kit is adapted for use with engine Models 250-C20, 250-C20B and 250-C20J on the Bell Model 206B helicopter or the Model 206B Jet Ranger III helicopter. The P/N 23050522 Kit is adapted for use with engine Models 250-C20B and 250-C20J on the Bell Model 206L helicopter. The P/N 23052372 Kit is adapted for use with engine Models 250-C20R/2 and 250-C20R/4 on the Bell Model 206B Jet Ranger III helicopter. The P/N 23052373 Kit is adapted for use with engine Model 250-C20R/2 on the Bell Model 206L helicopter

NOTE 16. Life limits established for critical rotating components are published in the corresponding Rolls-Royce Corp. 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. Cracks in these wheels are not allowed in overhauled engines.

NOTE 17. A magnetic oil drain plug (chip detector) indicator lamp is an installation requirement for 250-C20 series engines and 225-C10 series engines.

NOTE 18. Engines produced under this type certificate, except the Models 250-C20R and C20R/1,2,4, are approved for operation with unprotected inlets having been tested in accordance with Group I and Group II Foreign Object Ingestion Criteria of FAA Advisory Circular AC 33-1B. The models 250-C20R & C20R/1,2,4 are approved for operation with unprotected inlets having been tested in accordance with Foreign Object Ingestion Criteria of FAR 33-10, Section 33.77 with the exception that Advisory Circular 20-73 criteria of 60-second delay, instead of 2-minutes, was used in actuating the anti-icing system.

NOTE 19. A 3 to 25 micron absolute external scavenge oil filter is an installation requirement for the Model 250-C20R & C20R/1,2,4, Model 250-C20S, 250-C20W and 225-C10, -C10A engines.

NOTE 20. An optional on-speed #1 turbine wheel internal energy absorbing ring is available for retrofit of the Model 250-C20B, -C20F, -C20J, and -C20S engines.

NOTE 21. Revision 36 of this TCDS removes the references to military engine model designations. These engine models are not part of civil type certificate E4CE, and therefore are inappropriate for listing in this TCDS. However, most 250 series engines delivered to the U.S. military have been identified on the data plate with the corresponding civil model designation in addition to the military model designation. Such engines, even though delivered to the U.S. military, have either a FAR or CAR design approval and are included under the applicable type certificate. Nonetheless, the items listed in NOTE 13 of this TCDS must be addressed before these engines could be considered for installation in civil aircraft.

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