

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

E-252  
Revision 34

CONTINENTAL  
C90-8F, -8FJ  
C90-12F, -12FH, -12FJ, -12FP  
C90-14F, -14FH, -14FJ, -16F  
O-200-A, O-200-B, O-200-C,  
O-200-D, O-200-X

June 27, 2013

TYPE CERTIFICATE DATA SHEET NO. E-252

Engine of models described herein conforming with this data sheet (which is a part of type certificate No. 252) 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 Civil Air Regulations and Federal Aviation Regulations provided they are installed, operated and maintained as prescribed by the approved manufacturer's manuals and other acceptable instructions.

Type Certificate Holder                      Continental Motors, Inc.  
2039 Broad Street  
Mobile, Alabama 36601

Type Certificate Holder Record            Teledyne Continental Motors  
Ownership & name change as of April 19, 2011 (Continental Motors, Inc.)

Model	C90-8F	C90-12F, -14F, -16F	O-200-A, -B, -C
Type	4HOA	---	---
Rating, standard atmosphere			
Max. continuous hp., r.p.m., at sea level pressure altitude	90-2475	---	100-2750
Takeoff hp., 5 min., r.p.m., full throttle, at sea level pressure alt	95-2625	---	100-2750
Fuel (min. grade aviation gasoline)	80/87	---	---
Lubricating oil, ambient air temp.	Oil Grade		
Below 40° F.	SAE 20	---	---
Above 40° F.	SAE 40	---	---
Bore and stroke, in.	4.062 x 3.875	---	---
Displacement, cu. in.	201	---	---
Compression ratio	7:1	---	---
Weight (dry), lb.	184	188	190
C.G. location (with accessories)			
Fwd. of rear face of mounting lugs, in.	6.2	4.6	---
Below crankshaft center line, in.	1.5	1.3	1.2
Propeller shaft, SAE No.	1 Flange	---	---
Carburetion (see NOTE 4 for injectors)	Marvel-Schebler MA-3SPA (CMI/TCM P/N 627367, 629175, 637101 or 637835) Bendix-Stromberg NA-S3A1 (CMI/TCM P/N 530625, 530726, 531126, 530846, 531157)	---	Marvel-Schebler MA-3SPA  (CMI/TCM P/N 627143, 640416 or 633028)

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Model	C90-8F	C90-12F, -14F, -16F	O-200-A, -B, -C
Timing, °BTC	26 Top, 28 Bottom	---	24 Top, 24 Bottom
Spark plugs	See NOTE 6	---	---
Oil sump capacity, qt.	5 or 6	---	---
NOTES	1 through 7	1, 2, 3, 4, 6, 7	1, 2, 3, 4, 6, 7

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

Model	O-200-D	O-200-X
Type	4HOA	4HOA
Rating, standard atmosphere		
Max. continuous hp., r.p.m., at sea level pressure altitude	100-2750	100-2750
Takeoff hp., 5 min., r.p.m., full throttle, at sea level pressure alt	100-2750	100-2750
Fuel (min. grade aviation gasoline)	100/100LL, RH100/130	100/100LL, RH100/130
Lubricating oil, ambient air temp.	Oil Grade	Oil Grade
Below 40° F.	SAE 30	SAE 30
Above 40° F.	SAE 50	SAE 50
Bore and stroke, in.	4.062 x 3.875	4.062 x 3.875
Displacement, cu. in.	201	201
Compression ratio	8.5:1	8.5:1
Weight (dry), lb.	176.5	176.5
C.G. location (with accessories)		
Fwd. of rear face of rear acc. case	6.2	6.2
Below crankshaft center line, in.	0.96	0.96
Beside crankshaft centerline toward 1-3 side	0.06	0.06
Propeller shaft, SAE No.	CMI/Cessna	CMI/Cessna
Carburetion (see NOTE 4 for injectors)	---	---
Ignition	Slick Electro 4301 (both sides) or 1 ea. CMI/TCM S4LSC-200 and S4LSC204 or 1 ea. CMI/TCM S4LSC- 200 and S4LSC204T or CMI/TCM S4LSC-21 (both sides)	---
Timing, °BTC	24° ± 1°	24° ± 1°
Spark plugs	See NOTE 6	See NOTE 6
Oil sump capacity, qt.	5	5
NOTES	1, 2, 3, 4, 6, 7	1, 2, 3, 4, 6, 7

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

Certification Basis           Part 13 of the Civil Air Regulations.  
Type Certificate No. 252 (All models except O-200-D, -X)

Part 33 of the Federal Air Regulations through Amendment 24 effective November 5, 2007  
Type Certificate No. 252, Model O-200-D added October 10, 2008  
Model O-200-X added March 19, 2010

Production Basis           Production Certificate No. 7  
Production Certificate No. 508 (All models except C90-16F)

NOTE 1.	Maximum permissible temperatures:		
	<u>C90 Series</u>	<u>O-200-A, -B, -C</u>	<u>O-200-D, -X</u>
Cylinder head	525° F.	525° F.	480° F.
Cylinder barrel	275° F.	290° F.	N/A
Oil inlet	225° F.	225° F. (Straight mineral)	240° F.

240° F. (Detergent meeting MHS-24, See NOTE 6)

NOTE 2.

Carburetor fuel inlet pressure limits:

	<u>Minimum</u>	<u>Maximum</u>
MA-3SPA, TCM P/N 627143, 633028, 637101, 637835, 640416	5 In. Fuel Head	6 PSIG
MA-3SPA, TCM P/N 627367, 629175	6 In. Fuel Head	6 PSIG
MA-3SPA, TCM P/N 530625, 530726, 530846, 531126, 531157	6 In. Fuel Head	6 PSIG

Carburetor Air Intake Assembly, CMI/TCM A40793, used with MA-3SPA, Marvel-Schebler Carb., (Precision), (Volare Carburetors LLC)

Carburetor Air Intake Assembly, CMI/TCM A40522, used with NA-53A1, Stromberg Carburetor.

Carburetor Air Intake Assembly, CMI/TCM 657555, used with MA-3SPA, Marvel-Schebler Carb., (Precision), (Volare Carburetors LLC)

	<u>C90 Series</u>	<u>O-200 Series</u>
Oil pressure limits:	30 to 60 p.s.i.g.	30 to 60 p.s.i.g. Minimum idling with hot oil 10 p.s.i.g.

NOTE 3.

The following accessory drive or mounting provisions are available.

Accessory	Direction of Rotation*	Speed Ratio to Crankshaft	Max. Torque (in.-lb.)		Maximum Overhang Moment (in.-lb.)
			Continuous	Static	
****Tachometer	C	0.500:1	7	50	25
Generator/Alternator	CC	2.035:1	60	600	100
Starter	C	35.7:1			
** Vacuum Pump	CC	1.0:1	100	800	25
*** Fuel Pump (diaphragm)		0.500:1			

Accessories previously listed in NOTE 3 are satisfactory for continued use with C90 Series engines.

\* C - Clockwise viewing drive pad; CC - Counterclockwise.

\*\* C90-16F and O-200 -A, -B, -C engines only.

\*\*\* TCM Eq. 5809 incorporating TCM P/N 40585 pump approved as part of type design of the O-200-A, -B, -C engines. AC fuel pump, TCM P/N 631391, available as optional equipment on C90-16F.

\*\*\*\* Does not apply to O-200-D, -X engines

NOTE 4.

The C90-8F is identical to the C90-12F model except that the accessory section does not incorporate provisions for generator and starter drives.

The C90-14 models incorporate Lord type engine mounts which are not interchangeable with C90-12 models due to different machining of the engine mounting lugs on the engine crankcase.

The C90-16F is similar to the C90-12F except that vacuum pump drive provisions have been added. The Model O-200-B is similar to the O-200-A except for special crankshaft and crankcase providing for thrust application toward the engine only.

The Model O-200-C is similar to the O-200-A except for incorporation of provisions to supply oil pressure to a controllable pitch propeller through the crankshaft from an external boss on the crankcase.

The Model O-200-D is similar to the O-200-A except for special crankshaft flange, overall engine weight reduction, oil sump assembly, and higher compression pistons. The O-200-D does not have provisions for a vacuum pump or the diaphragm fuel pump

The Model O-200-X is similar to the O-200-D except for engine dataplate identification.

Those C90 Series models listed in the heading of this data sheet, suffixed by letters H, J and P, differ from the basic model designation as follows:

"H" denotes a special SAE No. 1 flange crankshaft and special crankcase for the installation of a hydraulically operated controllable pitch propeller requiring oil supply through the crankshaft.

"J" denotes incorporation of Model B-46 Ex-Cell-O fuel injector, P/N 530499, or American Bosch Model PSC-4A-95A2, P/N 534505, at a weight increase of 4 lb. over the corresponding carburetor equipped engine.

"P" denotes pusher installation incorporating special crankshaft and thrust bearing. Oil sump gauge rods will be marked as per installer's requirements.

NOTE 5. Bendix-Stromberg NAS-3A1 carburetor, P/N 530726, eligible only on Piper PA-11 airplanes equipped with Piper mufflers.

NOTE 6. Detergent oil meeting Continental Specification MHS-24 required when using 240° F oil inlet limits except during break-in period. Follow manufacturer's instructions for break-in or when changing oil types. Marking or placards prescribing use of Continental Specification MHS-24 oil only shall be installed on or near the oil filler on installations using 240 ° F oil inlet temperatures. Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under CMI Spec MHS-24

NOTE 7. The following spark plugs and/or those listed in CMI Service Information Letter SIL03-2 are approved on this engine:

C90-8F, -12F, -14F, -16F

AC	HSR83IR, SR83IR, HSR83P, SR83P, A88, HS88, HSR88, S88, S88D, HSR88, SR88, SR88D, HSR93, SR93
Auto Lite	18A1, BR4, BR4S, BR4SB, SH15, H15, SH15R, SH20A, SH150, SH200A
BG	RB485S, 706, 706R, 706S, 706SR, 919SR5, RB955S
Champion	C26, C26S, C27, C27S, RC27S, REM38P, REM38W, RHM38P, RHM38W, REM40E, RHM40E, ED41N, D41N, EM41E, EM41N, HM41E, M41E, M41N, EM42E, M42E
Red Seal	SA190, SE190, SJ190, SE230, SJ230

O-200-A, -B, -C, -D, -X

AC	HSR83IR, SR83IR, HSR83P, SR83P, A88, HS88, HSR88, S88, S88D, SR88, SR88D, HSR93, SR93
Auto Lite	18A1, SH15, H15, SH15R, SH20A, SH150, SH200A, PH26
BG	RB485S, 706, 706S, 919SR5, RB955S
Champion	C27, C27S, RC27S, REM37BY, REM38P, REM38W, RHM38P, RHM38W, REM40E, RHM40E, ED41N, D41N, EM41E, EM41N, HM41E, M41E, M41N, EM42E, M42E
Red Seal	SA190, SE190, SJ190 SE230, SJ230

NOTE 8. Engine model numbers may include a suffix to define minor specification changes and/or accessory packages. Example: O-200-A(10).

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