

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E8CE
Revision 23
CONTINENTAL

TSIO-520-A, -B, -C, -D,
-E, -G, -H, -J,
-K, -L, -M, -N,
-P, -R, -BB, -DB,
-DB, -EB, -JB,
-KB, -LB, -NB,
-T, -U, -UB, -VB,
-WB, -AE, -AF

LTSIO-520-AE
TSIO-520-BE, -CE

July 16, 2013

TYPE CERTIFICATE DATA SHEET NO. E8CE

Engines of models described herein conforming with this data sheet (which is part of Type Certificate No. E8CE) 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 where indicated 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 Continental Motors, Inc.
P.O. Box 90
Mobile, Alabama 36601

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

	Model					
	TSIO-520-A	TSIO-520-B, -BB	TSIO-520-C, -H	TSIO-520-D, -DB	TSIO-520-E, -EB	TSIO-520-G
Type - 6HOA						
Rating, ICAO or ARDC standard atmosphere						
Max. continuous hp, RPM, in. Hg.	255 2700 33	285 2700 32	265 2700 32.5	285 2700 32.5	300 2700 34.5	285 2600 35
At critical alt. of	19000	16000	19000	16000	16000	17000
At sea level pressure altitude	285 2700 33	285 2700 32	285 2700 32.5	285 2700 32.5	300 2700 34.5	285 2600 35
Takeoff (5 min) hp RPM, in. Hg.	285 2700 33	285 2700 32	285 2700 32.5	285 2700 32.5	300 2700 34.5	300 2700 35
Fuel (min. grade aviation gasoline)	100 or 100LL	- -	- -	- -	- -	- -
Lubricating oil, engine	See Note 11	- -	- -	- -	- -	- -
Lubricating oil, turbo	—	See Note 11	—	See Note 11	- -	—
Bore and stroke, in.	5.25 x 4.00	- -	- -	- -	- -	- -
Displacement, cu. inc.	520	- -	- -	- -	- -	- -
Compression ratio	7.5:1	- -	- -	- -	- -	- -
Weight (basic engine, dry) (without oil cooler)	434	424	434	- -	421	434
Weight (turbo, dry), lb.	—	25	—	25	24.5	—

"- -" indicates "same as previous model."

"—" indicates "does not apply."

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	Model				
	TSIO-520-J, -JB	TSIO-520-K, -KB	TSIO-520-L, -LB	TSIO-520-N, -NB	TSIO-520-M, -R
Type - 6HOA					
Rating, ICAO or ARDC standard atmosphere					
Max. continuous hp, RPM, in. Hg.	310 2700 36	285 2700 33	310 2700 38.0	310 2700 38.0	285 2600 35
At critical alt. of	20000	16000	22000	20000	17000
At sea level pressure altitude	310 2700 36	285 2700 33	310 2700 38.0	310 2700 38.0	285 2600 35
Takeoff (5 min) hp RPM, in. Hg.	310 2700 36	285 2700 33	310 2700 38.0	310 2700 38.0	310 2700 36.5
Fuel (min. grade aviation gasoline)	100 or 100LL	--	--	--	--
Lubricating oil, engine	See Note 11	--	--	--	--
Lubricating oil, turbo	See Note 11	--	--	--	--
Bore and stroke, in.	5.25 X 4.00	--	--	--	--
Displacement, cu. inc.	520	--	--	--	--
Compression ratio	7.5:1	--	--	--	--
Weight (basic engine, dry) (without oil cooler)	430	420	416	430	436
Weight (turbo, dry), lb.	34	34	39.75	34	25

	Model				
	TSIO-520-P	TSIO-520-T	TSIO-520-U, -UB	TSIO-520-VB	TSIO-520-WB
Type - 6HOA					
Rating, ICAO or ARDC standard atmosphere					
Max. continuous hp, RPM, in. Hg.	285 2600 35.5	310 2700 37.5	300 2700 36	325 2700 40.5	325-2700 39.5
At critical alt. of	17000	7500	20500	12000	13000
At sea level pressure altitude	285 2600 35.5	310 2700 39.5	300 2700 36	325 2700 40.5	325 2700 39.5
Takeoff (5 min) hp RPM, in. Hg.	310 2700 36.5	310 2700 39.5	300 2700 36	325 2700 40.5	325 2700 39.5
Fuel (min. grade aviation gasoline)	100 or 100LL	--	--	--	--
Lubricating oil, engine	See Note 11	--	--	--	--
Lubricating oil, turbo	See Note 11	--	--	--	--
Bore and stroke, in.	5.25 x 4.00	--	--	--	--
Displacement, cu. inc.	520	--	--	--	--
Compression ratio	7.5:1	--	--	--	--
Weight (basic engine, dry) (without oil cooler)	436	475.5	422.5	423	416
Weight (turbo, dry), lb.	34	17	26	25	39.75

"- -" indicates "same as previous model."

"—" indicates "does not apply."

	Model				
	TSIO-520-AE	LTSIO-520-AE	TSIO-520-AF	TSIO-520-BE	TSIO-520-CE
Type - 6HOA					
Rating, ICAO or ARDC standard atmosphere					
Max. continuous hp, RPM, in. Hg.	250 2400 32.5	- -	285 2600 34.5	310 2600 38	325 2700 37
At critical alt. of	15000	- -	18000	18000	21000
At sea level pressure altitude	250 2400 32.5	- -	285 2600 34.5	310 2600 38	325 2700 37
Takeoff (5 min) hp RPM, in. Hg.	250 2400 32.5	- -	310 2700 35.5	310 2600 38	325 2700 37
Fuel (min. grade aviation gasoline)	100 or 100LL	- -	- -	- -	- -
Lubricating oil, engine	See Note 11	- -	- -	- -	- -
Lubricating oil, turbo	See Note 11	- -	- -	- -	- -
Bore and stroke, in.	5.25 x 4.00	- -	- -	- -	- -
Displacement, cu. inc.	520	- -	- -	- -	- -
Compression ratio	8.5:1	- -	7.5:1	- -	- -
Weight (basic engine, dry) (without oil cooler)	379.6	- -	436	565.5	527
Weight (turbo, dry), lb.		- -	34	14.05 lb. each	33.50

	Model					
	TSIO-520-A	TSIO-520-B, -BB	TSIO-520-C, -H	TSIO-520-D, -DB	TSIO-520-E, -EB	TSIO-520-G
CG location (basic engine) Fwd. of rear face accessory case, in.	11.29	12.20	12.29	12.42	12.20	11.29
Below crankshaft centerline in.	.54	1.00	.54	1.22	1.00	.54
Beside crankshaft centerline toward 1-3-5 side, in.	.24	.12	.24	.12	- -	.24
CG location (turbo)	See CMI Dwg. 632887	See CMI Dwg. 632704	See CMI Dwg. 633142	See CMI Dwg. 632402	See CMI Dwg. 632704	See CMI Dwg. 633142
Propeller shaft	Special integral flange 4 7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. diameter circle					
Fuel injection	CMI Injection system or latest FAA approved (Eq. #6049)	CMI Injection system or latest FAA approved B 634794A2 BB 634794A	CMI Injection system or latest FAA approved C 635456A3 H 637749A4	CMI Injection system or latest FAA approved D 635968A2 DB 635968A	CMI Injection system or latest FAA approved E 634998A2 EB 634998A	CMI Injection system or latest FAA approved 637750A3
Ignition, dual magnetos Timing, °BTC	See Note 10 20	- -	- -	- -	- -	- -
Spark plugs	See Note 4	- -	- -	- -	- -	- -
Oil sump capacity, qt., total	12; 8 usable at 15° noseup and 5° nosedown attitudes	12; 6 usable at 23° noseup and 17° nosedown attitudes	12; 8 usable at 15° noseup and 5° nosedown attitudes for -C; 10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown	12; 8 usable at 18° noseup and 12° nosedown attitudes	12; 7.5 usable at 20° noseup and 6.5 usable at 14.5° nose-down attitudes	12; 8 usable at 15° noseup and 5° nose-down attitudes
Applicable Notes:	1,2,3,4,5,6,7,8, 10,11	1 thru 11, 15, 16	1,2,3,4,5,6,7,8, 10,11	1 thru 11, 15, 16	1 thru 11, 15, 16	1 thru 11

"- -" indicates "same as previous model."

"—" indicates "does not apply."

	Model				
	TSIO-520-J,-JB	TSIO-520-K, -KB	TSIO-520-L, -LB	TSIO-520-N, -NB	TSIO-520-M, -R
CG location (basic engine) Fwd. of rear face accessory case, in.	12.20	- -	8.93	12.20	11.29
Below crankshaft centerline in.	1.00	- -	.899	1.00	.54
Beside crankshaft center- line toward 1-3-5 side, in.	.12	.12	.654	.12	.24
CG location (turbo)	See CMI Dwg. 635936	See CMI Dwg. 635630	See CMI Dwg. 640327	See CMI Dwg. 635936	See CMI Dwg. 637749
Propeller shaft	Special integral flange 4 7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. diameter circle	- -	- -	- -	- -
Fuel injection	CMI Injection system or latest FAA approved J 636134A5 JB 636134A	CMI Injection system or latest FAA approved K 637736A4 KB 637736A5	CMI Injection system or latest FAA approved L 640792A9 LB 640792A11	CMI Injection system or latest FAA approved N 636134A4 NB 636134A	CMI Injection system or latest FAA approved M 637749A5 R 637749A3
Ignition, dual magnetos Timing, °BTC	See NOTE 10 20	- -	- -	- -	- - 22
Spark plugs	See NOTE 4	- -	- -	- -	- -
Oil sump capacity, qt.,	12; 7 usable at 20° noseup and 6.5 usable at 14.5° nosedown attitudes	- -	12; 6.1 usable at 26° noseup and 13.5° nosedown attitudes	12; 7.5 usable at 20° noseup and 6.5 usable at 14.5° nosedown attitudes	12; 8 usable at 15° noseup and 8 usable at 5° nosedown attitudes for -M; 10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown for -R
Applicable Notes:	1 thru 11, 15, 16	1,2,3,4,5,6,7,8, 10, 11,12,15,16	1,3,4,5,6,7,8,10, 11,12, 15,16	1 thru 11, 15, 16	1 thru 11

	Model				
	TSIO-520-P	TSIO-520-T	TSIO-520-U, -UB	TSIO-520-VB	TSIO-520-WB
CG location (basic engine) Fwd. of rear face accessory case, in.	11.29	12.40	10.75	12.43	8.93
Below crankshaft centerline in.	.54	2.70	2.01	.58	.899
Beside crankshaft centerline toward 1-3-5 side, in.	.24	.83	.05 to 2-4-6 side	.28	.654
CG location (turbo)	See CMI Dwg. 642072-C (See NOTE 17b.)	See CMI Dwg. 642516	See CMI Dwg. 642636	See CMI Dwg. 642595	See CMI Dwg. 640327
Fuel injection	CMI Injection system 637749A5 or latest FAA approved	CMI Injector 639713	CMI Injector 642703	CMI Injector 642702	Bendix RSA-7DA1
Ignition, dual magnetos Timing, °BTC	See Note 10 22	- - 22	- - 22	- - 20	- - 20

	Model (cont'd)				
	TSIO-520-P	TSIO-520-T	TSIO-520-U, -UB	TSIO-520-VB	TSIO-520-WB
Spark plugs	See Note 4	- -	- -	- -	- -
Oil sump capacity, qt.,	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown	12; 7 usable at 20° noseup and 6 usable at 10° nosedown	12; 8.5 usable at 18° noseup and 8.0 usable at 12° nosedown	12; 7.5 usable at 20° noseup and 6.5 usable at 14.5° nosedown	12; 6.1 usable at 26° noseup and at 13.5 nosedown
Applicable Notes:	1 thru 11,17	1,2,3,4,5,6,8(b), 8(c),10,11	1,2,3,4,5,6,7,8,10, 11,15,16	1,2,3,4,5,6,7,8,9, 10,11,14,15,16	1,2,3,4,5,6,7,8, 10, 11, 15, 16

	Model				
	TSIO-520-AE	LTSIO-520-AE	TSIO-520-AF	TSIO-520-BE	TSIO-520-CE
CG location (basic engine) Fwd. of rear face accessory case, in.	11.972	- -	11.83	11.41	11.83
Below crankshaft centerline in.	.458	- -	2.42	1.056	2.42
Beside crankshaft centerlin toward 1-3-5 side, in.	.344	- -	5.41	.365	5.41
CG location (turbo)	See CMI Dwg. 643886	See CMI Dwg. 643887	See CMI Dwg. 643975	See CMI Dwg. 646 618	See Drawing 646 706
Propeller shaft	Special integral flange 4 7/8 in. O.D. with six 1/2 in. bolt holes in 4 in. diameter circle	- -	- -	- -	- -
Fuel injection	CMI Injector 640103A19	CMI Injector 640103A20	CMI Injector 637749	CMI Injector 642904-A5	CMI Injector 637749-A31
Ignition, dual magnetos Timing, °BTC	See Note 10 20	- -	- - 22	- - 24	- - 20
Spark plugs	See Note 4	- -	- -	See Note 4	- -
Oil sump capacity, qt.,	8; 4 usable at 30° noseup and at 20° nosedown	- -	10; 7.8 usable at 20° noseup and 6.7 usable at 10° nosedown	8; 5 usable at 16° noseup; 4.5 usable at 10° nosedown attitude	10; 7.8 usable at 20° noseup; 6.7 usable at 10° nosedown
Applicable Notes:	1,2,3,4,5,6,7,8, 10, 11,17(d)	- -	1,2,3,4,5,6,7,8, 9, 10,11	1 thru 11,15,16,18	1 thru 8,10,11,17

"- -" indicates "same as previous model."

"—" indicates "does not apply."

Certification basis

CAR 13 effective June 15, 1956, as amended by 13-1 through 13-6.

Application for Type Certificate dated July 10, 1964.

Type Certificate No. E8CE issued November 13, 1964, for -A and -B; -C added May 7, 1965; -D added November 19, 1965; -E added March 28, 1966; -H added October 22, 1968; -G added November 4, 1968; -J added July 11, 1969; -K added May 10, 1971; -L added February 1, 1974; -N added October 21, 1975; -M added June 11, 1976; -P added June 11, 1976; -R added June 11, 1976; -BB, -DB, -EB, -JB, -LB, -NB added May 4, 1978; -T added May 22, 1978, -U, -UB, added June 21, 1978; -VB added August 10, 1978; -WB added November 21, 1978; -KB added November 30, 1978; -AE added August 3, 1981; -AF added October 27, 1981; -BE added August 5, 1983; -CE added June 1, 1984. (-L, -LB, -N, -NB, -M, -P, -R, -T, -U, -UB, -VB, -WB, -AE, -AF, -BE, -CE power rating selected in accordance with FAR 33.8).

Production basis

Production Certificate No. 7 (except Models -L and -N) and No. 508.

Note 1. Maximum permissible temperatures:
 Cylinder head bayonet, thermocouple 460°F
 Cylinder barrel (fillet thermocouple) 310°F (except Models -T, -U, -UB, -WB, -AE, -BE, -CE)
 Oil inlet 240°F
 Exhaust gas turbocharger inlet temperature (T.I.T.) 1650°F maximum; (peak temperature allowed for 60 seconds to determine exhaust gas temperature during peak cruise lean setting).
 "BE" Exh. Gas Inlet (T.I.T.) 1750°F maximum (peak temperature allowed for 30 seconds 1850°F)
 CE (T.I.T.) limit is 1750°F continuous

Note 2.	Fuel pressure limits	-A,-B,-C,-D,-E,-G,-H,-J,-K, -N,-M,-P,-R,-BB,-DB,-EB, -JB,-NB,-T,-U,-UB, -VB,-KB,-AE,-AF,-CE	-L, -LB, -WB	-BE
	Inlet to injection pump, min. max.	-minus 2 p.s.i.g. -plus 6 p.s.i.g.	-minus 3.0 p.s.i.g. -plus 6.0 p.s.i.g.	-minus 2.5 p.s.i.g. -plus 6.0 p.s.i.g.
	Outlet to vapor return line	-3.5 p.s.i.g. max.	N.A.	-3.5 p.s.i.g. max.
	Oil pressure limits, 2-4-6	-normal 30 - 60 p.s.i.g. -idle 10 p.s.i.g. min. -max. (cold oil) 100 p.s.i.g.	- - - - - -	- - - - - -
	Turbocharger oil inlet	-normal 30 - 60 p.s.i.g. -idle 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	
Governor	C	1.0:1	29	825	50
Tachometer	CC	.5:1	7	50	25
Optional (2) Left and Right	C	1.5:1	**100	800	40
Generator ***Belt-driven, -A,-C,-H,-G,-M,-P, -R, -T, -AE, -AF, -CE	CC	2:1	125	800	100
Gear-driven, -B, -BB, -D, -DB, -E, -EB, -J, -JB, -K, -KB, -L, -LB, -N, -NB, -U, -UB, -VB, -WB, -BE	CC	3:1	150	800	150
Oil cooler, -A,-C,-H,-G,-M,-P,-R,-T,-AF, -B, -BB, -D, -DB, -E, -EB, -K, -KB, -J,-JB,-L,-LB,-UB,-VB,-WB,-AE,-BE -N, -NB, U	—	—	—	—	65 (wet) 45 (wet)
Starter,-A,-C,-H,-G,-M,-P,-R,-T,-AF, -AE,-CE -B,-BB,-D,-DB,-E,-EB,-J,-JB,-K, -KB,-L,-LB,-N,-NB,-U,-UB,-VB, -WB,-BE	CC	32:1	200	400	60
	CC	48:1	200	400	60

CMI P/N 627841, 627842
 629176 or 634433 eligible

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

**AND 20000 drive eligible at 160 in.-lb. continuous torque load provided the other drive does not exceed 100 in.-lb. continuous torque load.

The TSIO-520-T includes one part no. 641479 magneto drive gear and is eligible at 180 in. lbs. continuous torque load, provided the other part no. 629076 magneto drive gear does not exceed 80 in. lbs. continuous torque load.

***CMI alternator 642057 eligible. Alternator compatibility with aircraft must be accomplished by installer.

Note 4. The following spark plugs and/or those listed in CMI Service Information Letter SIL03-2 are approved on this engine

AC	273, 283, 283IR, 293
Champion	RHB32E, RHB32N, RHB32P, RHB32W, RHB33E, RHB32S
Auto Lite	SL 350
Red Seal	LJ 360
Smith Industries, Ltd.	RSH 35-8R

Note 5. The Model TSIO-520-B is similar to the TSIO-520-A except for crankcase design, alternator and oil cooler location, fuel injection system and accessory gear drive train. The -B is also equipped with an AiResearch TE0659 turbocharger.

The Model TSIO-520-C is similar to the TSIO-520-A except for different diameter balance tube and minor induction system changes.

The Model TSIO-520-D is similar to the TSIO-520-B except for induction system design and location of turbocharger.

The Model TSIO-520-E is similar to the TSIO-520-B except for rating and strengthened internal components.

The Model TSIO-520-H is identical to the TSIO-520-C except for oil sump shape and oil pickup.

The Model TSIO-520-G is similar to TSIO-520-H except for increased rating and strengthened crankshaft.

The Model TSIO-520-J is similar to TSIO-510-E except for rating induction air intercooling and provisions for cabin pressurization bleed air.

The Model TSIO-520-K is similar to the TSIO-520-J except for reduced rating, deletion of induction air intercooler and calibration for a single point waste gate controller.

The Model TSIO-520-L is similar to the TSIO-520-J except for a redesigned induction system, engine mounted turbocharger with integral wastegate provisions for engine driven freon compressor and Bendix fuel injection system.

The Model TSIO-520-N is similar to the TSIO-520-J except for revised rating.

The Model TSIO-520-M is similar to the TSIO-520-G except for revised rating.

The Model TSIO-520-P is similar to the TSIO-520-M except for the oil sump and suction tube and a revised rating.

The Model TSIO-520-R is similar to the TSIO-520-M except for the oil sump and suction tube.

The Model TSIO-520-BB is similar to the TSIO-520-B except for modified crankshaft.

The Model TSIO-520-DB is similar to the TSIO-520-D except for modified crankshaft.

The Model TSIO-520-EB is similar to the TSIO-520-E except for modified crankshaft.

The Model TSIO-520-JB is similar to the TSIO-520-J except for modified crankshaft.

The Model TSIO-520-LB is similar to the TSIO-520-L except for modified crankshaft.

Note 5.(cont'd) The Model TSIO-520-KB is similar to the TSIO-520-K except for modified crankshaft.

The Model TSIO-520-T is similar to the IO-520-D except for the equipment necessary for turbocharging and the compression ratio reduction to 7.5:1.

The Model TSIO-520-NB is similar to the TSIO-520-N except for modified crankshaft.

The Models TSIO-520-U, -UB are similar to the TSIO-520-D, -DB, except for rating, engine mounted turbo, turbo control system, integral cabin heater and complete exhaust system with tailpipe. The Model TSIO-520-VB is similar to the TSIO-520-EB except for rating and induction system design. The Model TSIO-520-WB is similar to the TSIO-520-LB except for rating.

The Models L/TSIG-520-AE are similar to the TSIO-520M except for rating, compression ratio, turbocharger and exhaust system. The Model TSIO-520-AF is similar to the TSIO-520P except for revision of manifold pressure ratings.

The Model TSIO-520-BE is similar to the TSIO-520-VE except for dual turbochargers, dual aftercoolers, 2 stage fuel pump, top mounted induction system, provisions for engine driven freon compressor and front mounted, belt driven alternator.

The Model TSIO-520-CE is similar to the TSIO-520-AF except for rating, modified crankshaft, engine mounts, controller, turbocharger, exhaust system, and has provisions for intercooler.

Note 6. The Models TSIO-520-A, -B, -C, -D, -E, -H, -G, -J, -K, -L, -M, -N, -P, -R, -T, -U, -UB, -BB, -DB, -EB, -JB, -KB, -LB, -NB, -VB, -WB, -AF, -BE, and -CE incorporate crankshaft with two sixth, one fourth and one fifth order dampers.

The Models L/TSIO-520-AE have one-sixth and one-fifth order dampers.

Note 7. Maximum exhaust back pressure:

2 in. Hg above ambient at turbocharger exhaust outlet flange.

43.5 in. Hg abs. at S.L. within 3 in. below each cylinder exhaust flange on the TSIO-520-P with turbocharger Cessna P/N C295001-0201C.

40.7 in. Hg abs. at S.L. within 3 in. below each cylinder exhaust flange on the TSIO-520-P with turbocharger Cessna P/N C295001-0202.

39.0 in. Hg abs. at S.L. within 3 in. below each cylinder exhaust flange on the TSIO-520-AF.

Note 8. Required equipment:

(a) Unless otherwise substantiated by the installer, an oil separator having a capacity of one pint minimum and capable of separating an air flow of 2 c.f.u. and an oil flow of 15 lb/min. at an oil temperature of 240°F shall be installed in the supercharger oil return line.

(b) Model TSIO-520-A, -C, -G, -H, -M, -P, -R, -AE, -AF and -CE.

A full-flow 20 micron oil filter incorporating a bypass valve set to open at 12 - 16 p.s.i.g. Maximum clean element pressure drop shall not exceed 6 p.s.i.g. at a flow of 70 lb/min. using SAE 50 oil at 240°F. Oil pump housing is eligible for direct mounting of oil filter equipment having a maximum weight of 6 lb. and a maximum overhang moment of 25 in.-lb.

(c) An exhaust system meeting the requirements of one of the following CMI outline drawings:

CMI No. 632887 for -A

CMI No. 632969 for -B, -E, -J, -K, -N, -BB, -EB, -JB, -KB, -NB, -VB

CMI No. 633142 for -C, -G, -H, -M, -R

CMI No. 633295 for -D, -DB

CMI No. 642082 for -L, -LB, -WB

CMI No. 642072-C for -P (see Note 17c)

CMI No. 642558 for -T

CMI No. 642390 for -U, -UB

CMI No. 643887 for LTSIO-520-AE

CMI No. 643886 for TSIO-520-AE

CMI No. 643975 for -AF
 CMI No. 646463 for -BE
 CMI No. 646713 for -CE

- Note 9. A means of controlling maximum turbocharger discharge pressure, engine manifold pressure and proper placarding shall be provided to limit manifold pressure on the TSIO-520-B, -BB, -E, -EB, -J, -JB, -K, -KB, -N, -NB, -VB, -AF, and BE, as outlined below:

Max. Allowable Manifold Pressure (in. Hg.)					
Altitude (Ft.)	-B, -BB	-E, -EB	-J, -JB	-K, -KB	-N, -NB
16,000	32.0	34.5	- -	33	- -
18,000	30.7	31.8	- -	30	- -
20,000	29.0	29.5	36	28	38.0
22,000	26.4	27.3	33.5	- -	35.2
23,000	- -	- -	- -	24.5	- -
24,000	24.3	25.1	31.0	- -	32.3
26,000	22.3	23.0	29.0	21.5	29.8
28,000	20.2	22.0	26.5	- -	27.4
29,000	- -	- -	- -	19.0	- -
30,000	18.5	19.0	24.0	- -	25.0
32,000	- -	- -	21.5	- -	- -

Max. Allowable Manifold Pressure (in. Hg.)				
Altitude (Ft.)	VB	BE		AF
12,000	40.5	38.0	Up to 24,000'	34.5
14,000	38.5	38.0	" "	34.5
16,000	38.5	38.0	" "	34.5
18,000	33.4	38.0	" "	34.5
20,000	30.8	38.0	" "	32.5
22,000	28.6	38.0	" "	30.5
24,000	26.8	38.0	" "	29.5 @ 23,000 ft.
26,000	24.8	36.0	Above 24,000'	—
28,000	23.0	36.0	" "	—
30,000	20.8	36.0	" "	—

- Note 10. The following magnetos equipped with an appropriate harness are eligible on these engines at the indicated weight change:

	<u>Weight Change</u>
One ea. Bendix/Scintilla/TCM/CMI S6RN-201 and S6RN-205	None
One ea. Bendix/Scintilla/TCM/CMI S6RSC-201 and S6RSC-205	None
One ea. Bendix/Scintilla/TCM/CMI S6RN-1201 and S6RN-1205	+1 lb.
Two Bendix/Scintilla/TCM/CMI S6RN-25	+2 lb.
Two TCM/CMI S6RSC-25	+1 lb.
Two TCM/CMI S6RSC-25P	+1lb
Two Slick Electro Model 662 or 680	+2 lb.
Two Bendix/Scintilla/TCM/CMI Model 1225	+1 lb.
Two Slick Electro Model 6210 or two Model 6220 pressurized magnetos with appropriate pressurization system and appropriate ignition harness.	-3 lb.
Two Slick Electro Model 6214 eligible on LTSIO-520-AE or two Model 6224 pressurized magnetos with appropriate pressurization system and ignition harness.	-3 lb.

- Note 11. Lubricating oils qualified under SAE-J1899 or J1966 are considered qualified under CMI Spec MHS-24. See Manufacturer's Service Instructions for detailed instructions.

- Note 12. Those engines which are designated with a suffix letter "B" (i.e., TSIO-520-LB) are interchangeable with those engines of the same model letter without the suffix letter (i.e., TSIO-520-L). Those engines which are designated without the suffix letter (i.e., TSIO-520-L) are non-interchangeable with those engines which are designated with the suffix letter "B" (i.e., TSIO-520-LB).

- Note 13. The TSIO-520-T is equipped with engine mounted AiResearch turbosupercharger Model TA0401 utilizing CMI exhaust system 642558. Compliance with FAR 23.909(c) effective with Amendment 23-7 has been shown.
- Note 14. The TSIO-520-VB maximum allowable manifold pressure is based upon an exhaust gas back pressure of 39.1 in. Hg. at maximum continuous power and speed, measured at turbocharger turbine entrance.
- The TSIO-520-U and -UB are equipped with engine-mounted AiResearch turbosuper-charger Model TEO-659 utilizing CMI exhaust system 642390. Compliance with FAR 23.909(c) effective with Amendment 23-7 has been shown.
- Note 15. Teledyne Crittenden Alternator P/N 642056 and drive coupling P/N 642362 or latest FAA approved equipment are eligible for use with applicable engine models. Alternator compatibility with aircraft must be accomplished by installer.
- Note 16. Teledyne Crittenden Alternator P/N 642055 and drive coupling P/N 642362 or latest FAA approved equipment are are eligible for use with applicable engine models. Alternator compatibility with aircraft must be accomplished by installer.
- Note 17.
- The TSIO-520-P utilizing AiResearch turbocharger THO8A69, Cessna P/N C295001-0202, see CMI exhaust outline Drawing 642072-D.
 - C.G. location (turbo) - See CMI Drawing 642072-D.
 - The exhaust system utilizing Cessna P/N 295001-0202 turbocharger must meet the requirements of CMI Drawing 642072-D.
 - The exhaust system utilizing Cessna P/N C295001-0501 turbocharger must meet the requirements of CMI Drawings 643886 for the TSIO-520-AE or 643887 for the LTSIO-520-AE.
 - The exhaust system must meet requirements of CMI Drawing 646713. The turbocharger, controller and wastegate, must comply to CMI Drawings 646714, 646715 and 646716 respectively. The intercooler must conform to performance specified in Model Specification for TSIO-520-CE engine.
- Note 18. The TSIO-520-BE is equipped with two engine-mounted AiResearch Turbosuperchargers Model T3603 utilizing CMI exhaust system 646463. Compliance with FAR 23.909(c) effective with Amendment 23-7 has been shown.
- Note 19. Engine model numbers may include a suffix to define minor specification changes and/or accessory packages. Example: TSIO-520-C(10).

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