

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E8CE
Revision 21
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

June 1, 1984

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 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

Teledyne Continental Motors
P.O. Box 90
Mobile, Alabama 36601

	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)	434	424	434	- -	421	434
(without oil cooler)						
Weight (turbo, dry), lb.	—	25	—	25	24.5	—

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

"—" indicates "does not apply."

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Type - 6HOA
 Rating, ICAO or ARDC
 standard atmosphere
 Max. continuous hp,
 RPM, in. Hg.
 At critical alt. of
 At sea level pressure
 altitude
 Takeoff (5 min) hp
 RPM, in. Hg.
 Fuel (min. grade aviation
 gasoline)
 Lubricating oil, engine
 Lubricating oil, turbo
 Bore and stroke, in.
 Displacement, cu. inc.
 Compression ratio
 Weight (basic engine, dry)
 (without oil cooler)
 Weight (turbo, dry), lb.

Model				
TSIO-520-J, -JB	TSIO-520-K, -KB	TSIO-520-L, -LB	TSIO-520-N, -NB	TSIO-520-M, -R
310 2700 36 20000	285 2700 33 16000	310 2700 38.0 22000	310 2700 38.0 20000	285 2600 35 17000
310 2700 36	285 2700 33	310 2700 38.0	310 2700 38.0	285 2600 35
310 2700 36	285 2700 33	310 2700 38.0	310 2700 38.0	310 2700 36.5
100 or 100LL	- -	- -	- -	- -
See NOTE 11	- -	- -	- -	- -
See NOTE 11	- -	- -	- -	- -
5.25 X 4.00	- -	- -	- -	- -
520	- -	- -	- -	- -
7.5:1	- -	- -	- -	- -
430	420	416	430	436
34	34	39.75	34	25

Type - 6HOA
 Rating, ICAO or ARDC
 standard atmosphere
 Max. continuous hp,
 RPM, in. Hg.
 At critical alt. of
 At sea level pressure
 altitude
 Takeoff (5 min) hp
 RPM, in. Hg.
 Fuel (min. grade aviation
 gasoline)
 Lubricating oil, engine
 Lubricating oil, turbo
 Bore and stroke, in.
 Displacement, cu. inc.
 Compression ratio
 Weight (basic engine, dry)
 (without oil cooler)
 Weight (turbo, dry), lb.

Model				
TSIO-520-P	TSIO-520-T	TSIO-520-U, -UB	TSIO-520-VB	TSIO-520-WB
285 2600 35.5 17000	310 2700 37.5 7500	300 2700 36 20500	325 2700 40.5 12000	325-2700 39.5 13000
285 2600 35.5	310 2700 39.5	300 2700 36	325 2700 40.5	325 2700 39.5
310 2700 36.5	310 2700 39.5	300 2700 36	325 2700 40.5	325 2700 39.5
100 or 100LL	- -	- -	- -	- -
See NOTE 11	- -	- -	- -	- -
See NOTE 11	- -	- -	- -	- -
5.25 x 4.00	- -	- -	- -	- -
520	- -	- -	- -	- -
7.5:1	- -	- -	- -	- -
436	475.5	422.5	423	416
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,	250 2400 32.5	- -	285 2600 34.5	310 2600 38	325 2700 37
RPM, in. Hg.	15000	- -	18000	18000	21000
At critical alt. of					
At sea level pressure	250 2400 32.5	- -	285 2600 34.5	310 2600 38	325 2700 37
altitude					
Takeoff (5 min) hp	250 2400 32.5	- -	310 2700 35.5	310 2600 38	325 2700 37
RPM, in. Hg.					
Fuel (min. grade aviation	100 or 100LL	- -	- -	- -	- -
gasoline)					
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	11.29	12.20	12.29	12.42	12.20	11.29
case, in.						
Below crankshaft	.54	1.00	.54	1.22	1.00	.54
centerline in.						
Beside crankshaft centerline	.24	.12	.24	.12	- -	.24
toward 1-3-5 side, in.						
CG location (turbo)	See CMC Dwg. 632887	See CMC Dwg. 632704	See CMC Dwg. 633142	See CMC Dwg. 632402	See CMC Dwg. 632704	See CMC 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	CMC Injector (Eq. #6049)	TCM Injector B 634794A2 BB634794A	TCM Injector C 635456A3 H 637749A4	TCM Injector D 635968A2 DB635968A	TCM Injector E 634998A2 EB634998A	TCM Injector 637750A3
Ignition, dual magnetos	See NOTE 10	- -	- -	- -	- -	- -
Timing, °BTC	20	- -	- -	- -	- -	22
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 CMC Dwg. 635936	See CMC Dwg. 635630	See CMC Dwg. 640327	See CMC Dwg. 635936	See TMC 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	TCM Injector J 636134A5 JB636134A	TCM Injector K 637736A4 KB637736A5	Bendix RSA-7DA1 L 640792A9 LB640792A11	TCM Injector N 636134A4 NB636134A	TCM Injector M 637749A5 R 637749A3
Ignition, dual magnetos	See NOTE 10	- -	- -	- -	- -
Timing, °BTC	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 TMC Dwg. 642072-C (See NOTE 17b.)	See TMC Dwg. 642516	See TMC Dwg. 642636	See TMC Dwg. 642595	See TMC Dwg. 640327
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	TCM Injector 637749A5	TCM Injector 639713	TCM Injector 642703	TCM Injector 642702	Bendix RSA-7DA1
Ignition, dual magnetos	See NOTE 10	- -	- -	- -	- -
Timing, °BTC	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 centerline toward 1-3-5 side, in.	.344	- -	5.41	.365	5.41
CG location (turbo)	See TMC Dwg. 643886	See TMC Dwg. 643887	See TMC Dwg. 643975	See TCM 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	TCM Injector 640103A19	TCM Injector 640103A20	TCM Injector 637749	TCM Injector 642904-A5	TCM Injector 637749-A31
Ignition, dual magnetos	See NOTE 10	- -	- -	- -	- -
Timing, °BTC	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	C	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) 55 (wet)
Starter, -A,-C,-H,-G,-M,-P,-R,-T,-AF, -AE,-CE	CC	32:1	200	400	60
-B,-BB,-D,-DB,-E,-EB,-J,-JB,-K, -KB,-L, -LB, -N, -NB, -U, -UB, -VB, -WB,-BE	CC	48:1	200	400	60
TCM 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.

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

NOTE 4. The following spark plugs are approved for use on these engines:

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.

NOTE 8.(cont'd) (c) An exhaust system meeting the requirements of one of the following TCM outline drawings:

TCM No. 632887 for -A
 TCM No. 632969 for -B, -E, -J, -K, -N, -BB, -EB, -JB, -KB, -NB, -VB
 TCM No. 633142 for -C, -G, -H, -M, -R
 TCM No. 633295 for -D, -DB
 TCM No. 642082 for -L, -LB, -WB
 TCM No. 642072-C for -P (see note 17c)
 TCM No. 642558 for -T
 TCM No. 642390 for -U, -UB
 TCM No. 643887 for LTSIO-520-AE
 TCM No. 643886 for TSIO-520-AE
 TCM No. 643975 for -AF
 TCM No. 646463 for -BE
 TCM 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 S6RN-201 and S6RN-205	None
One ea. Bendix Scintilla S6RN-1201 and S6RN-1205	+1 lb.
Two Bendix Scintilla S6RN-25	+2 lb.
Two Slick Electro Model 662 or 680	+2 lb.
Two Bendix Scintilla Model 1225 eligible on -D	+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. Oils meeting Continental Specification MHS 24B are eligible for use in these engines. 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 TCM 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 turbosupercharger Model TEO-659 utilizing TCM 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 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 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 TCM exhaust outline Drawing 642072-D.
- C.G. location (turbo) - See TCM Drawing 642072-D.
- The exhaust system utilizing Cessna P/N 295001-0202 turbocharger must meet the requirements of TCM Drawing 642072-D.
- The exhaust system utilizing Cessna P/N C295001-0501 turbocharger must meet the requirements of TCM Drawings 643886 for the TSIO-520-AE or 643887 for the LTSIO-520-AE.
- The exhaust system must meet requirements of TCM Drawing 646713. The turbocharger, controller and wastegate, must comply to TCM 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 TCM exhaust system 646463. Compliance with FAR 23.909(c) effective with Amendment 23-7 has been shown.

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