CESSNA 28-VOLT VOLTAGE REGULATOR/ALTERNATOR FIELD TESTER

A Cessna Alternator Charging System Test Box Assembly (PN. 9870000-1) is available through the Cessna Service/Parts Center for use in isolating failures in the 28-volt Transistorized Voltage Regulator (C611002-0105) and 28-volt Solid-State Voltage Regulator (C611004-0101 and C611004-0102) and 28-volt Alternators used on Cessna aircraft. The Test Box Assembly is designed to provide field personnel with the capability of performing on-aircraft checks, to isolate malfunctioning alternator/regulator systems without engine(s) running.

NOTE

The 9870000-1 Cessna Alternator Charging System Test Box Assembly is available for use on all 337 Series thru Mid 1979, all 1978 152, 172, R172, 177, 177RG, 180, 182, R182 and 185 Series Models, all 1968 & on 28-volt, 60-amp 188 Series, all late 1970 thru 1978 28-volt U206 Series, all 1974 thru 1978 28-volt 207 Series and all 1972 thru 1978 28-volt 60-amp 210 & P210 Series Models.

REGULATOR/ALTERNATOR ISOLATION TESTS

The Test Box Assembly will detect the following faults:

1. No aircraft battery power to the regulator.
2. A shorted regulator (overvoltage condition).
3. An open regulator (no alternator output).
4. A shorted alternator field winding or wiring.
5. An open alternator field winding or wiring.

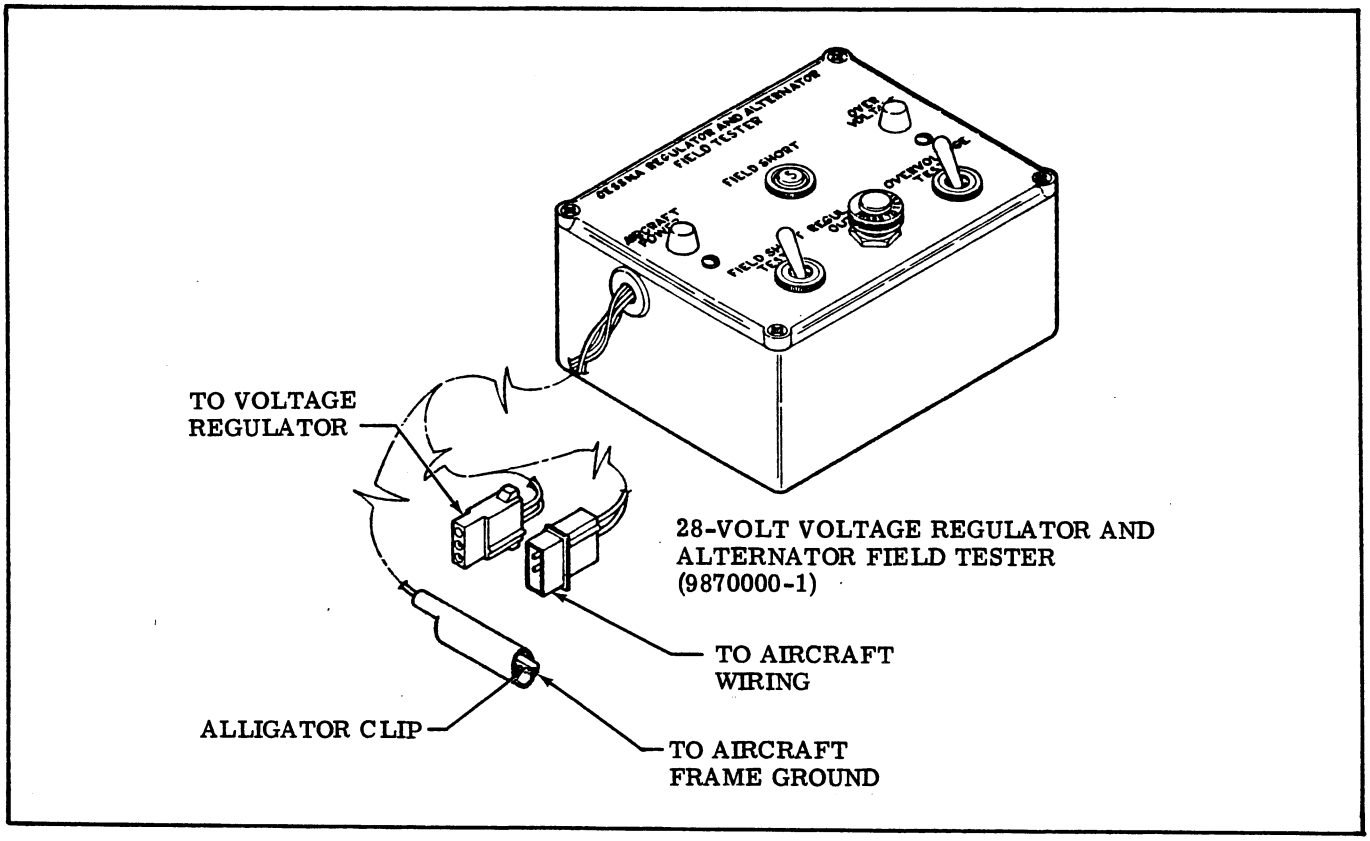


FIGURE 23

TEST SET-UP PROCEDURES

1. Open the connection between the voltage regulator and aircraft wiring as shown in Figure 23. Hook-up Voltage Regulator/Alternator Field Tester to voltage regulator and aircraft connector, connect ground lead (alligator clip) to aircraft frame.

2. Place ALT and BAT (Master Switch) to ON (AVIONICS POWER SWITCH should be OFF):

ACTION	RESULTS
a. AIRCRAFT POWER and REGULATOR OUTPUT lights come ON.	Regulator OK - Not Open. Alternator Field OK - Not Open. Power Check OK - Go to Step 4.
b. AIRCRAFT POWER light comes ON REGULATOR OUTPUT light stays OFF.	Regulator Field - Open or Alternator Winding - Open or Aircraft Wiring - Open. Go to Step 3.
c. AIRCRAFT POWER and REGULATOR OUTPUT lights stay OFF.	No power to Regulator - Check Master ALT, BAT Switch, ALT Reg. Breaker, Overvoltage Sensor and Aircraft Wiring. Correct and go back to Step 2.

3. If REGULATOR OUTPUT Light is OFF in 2b above depress REGULATOR OUTPUT Light:

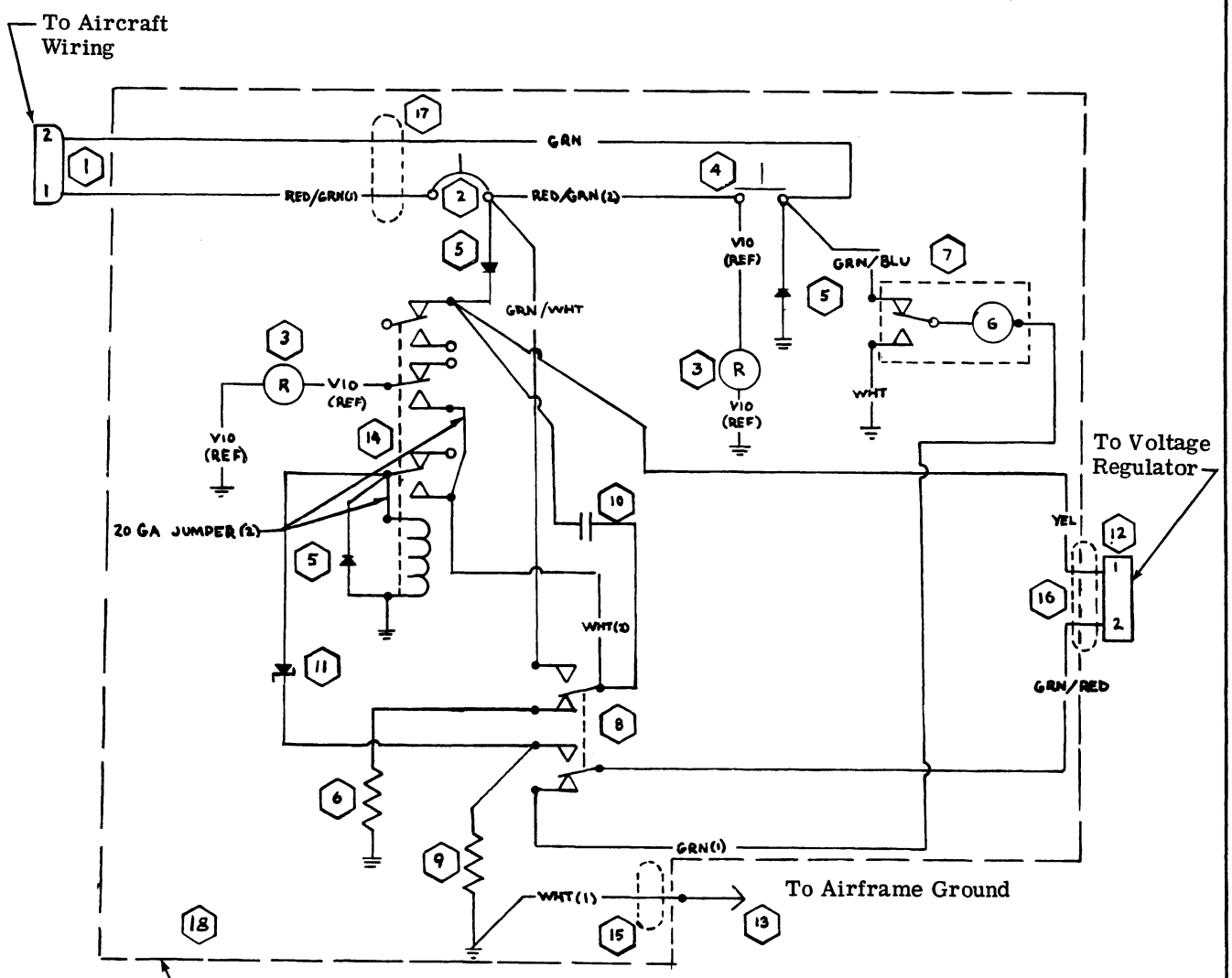
ACTION	RESULTS
a. REGULATOR OUTPUT lamp LIGHTS.	Alternator Field Wiring or Aircraft Wiring - Open Check and Correct. Go back to Step 2.
b. REGULATOR OUTPUT light stays OFF.	Regulator is Open - Replace. Go back to Step 2.

4. Operate and hold FIELD SHORT TEST Switch:

ACTION	RESULTS
a. REGULATOR OUTPUT light goes OUT. AIRCRAFT POWER light stays ON.	Alternator Field OK. (Not Shorted) Go to Step 5.
b. REGULATOR OUTPUT light and AIRCRAFT POWER lights go OUT and FIELD SHORT Breaker OPENS.	Alternator Field/Wiring Shorted - Check (Also reset aircraft ALT Breaker if necessary). Correct and Go back to Step 4. **WARNING** Do not replace regulator until this short is cleared.

5. Operate and hold OVERVOLTAGE TEST Switch:

ACTION	RESULTS
a. REGULATOR OUTPUT light goes OUT OVER-VOLTAGE light stays OFF.	Regulator OK (Not Shorted) End of test.
b. REGULATOR OUTPUT light goes OUT OVERVOLTAGE light comes ON (Light stays on until test switch is released).	Regulator Shorted - Replace and go back to Step 2. **WARNING** Do not replace Regulator if Alternator Field Short is present.



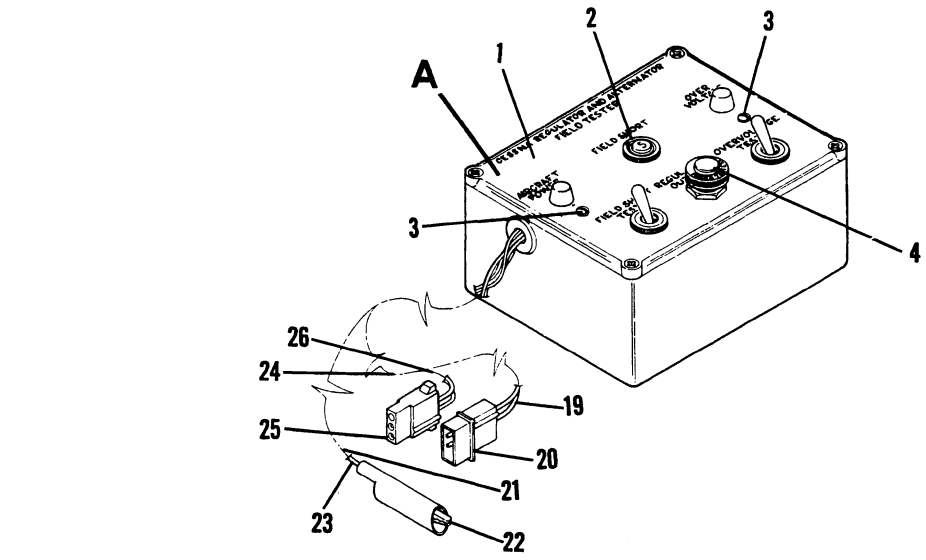
28- VOLT VOLTAGE REGULATOR AND ALTERNATOR FIELD TESTER
(9870000-1)

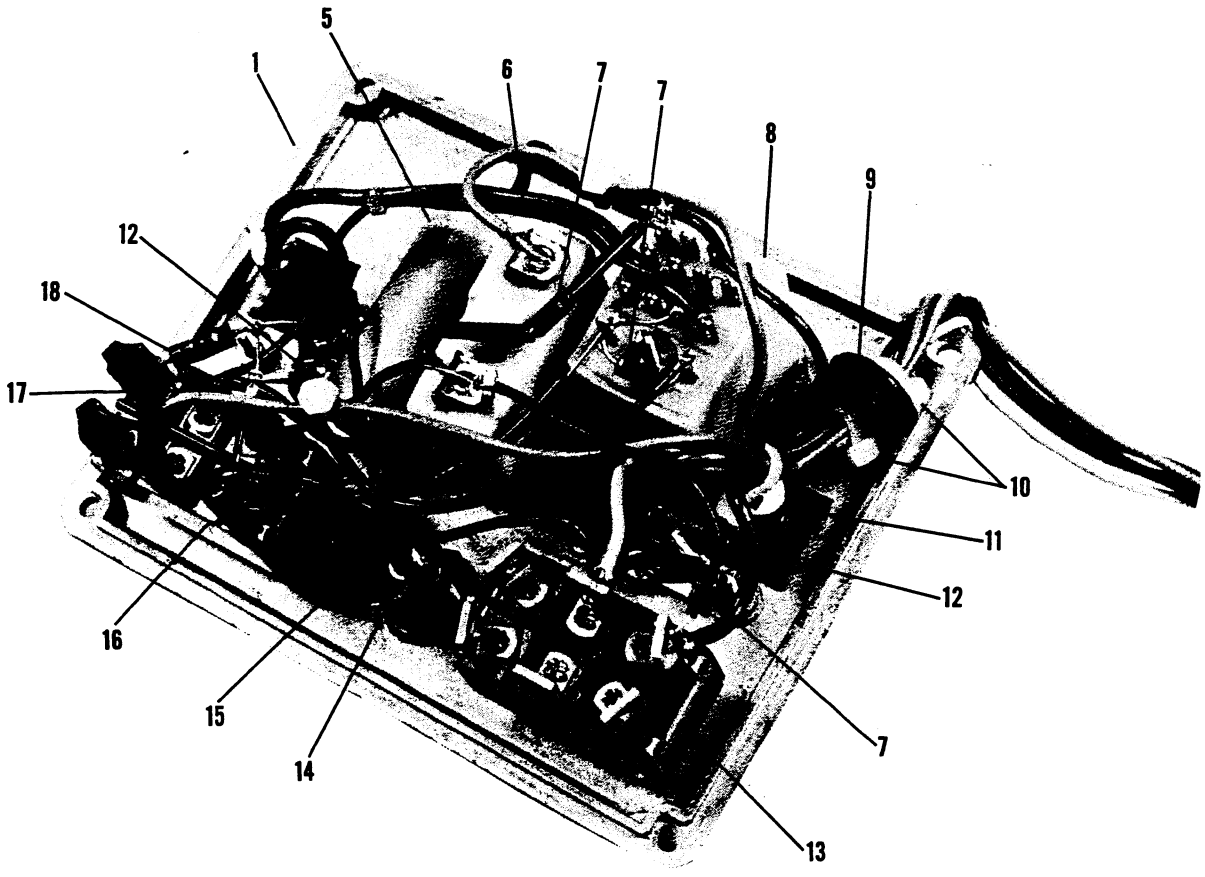
1. S1638-2 Connector
2. S1360-5L Circuit Breaker
3. S2135-2 Lamp
4. ST-42F Switch
5. IN4004 Diode
6. S2000A27EJ Resistor
7. MS25041-7 Lamp
8. ST-52R Switch
9. S2000A1KJ Resistor
10. TVA 1315 Capacitor
11. IN4110 Diode
12. S1638-1 Connector
13. 300 Alligator Clip
14. S1813-1 Relay
15. Cable Assy.
16. Cable Assy.
17. Cable Assy.
18. CU-234 Bud Box

NOTE

All wiring is made from 20-GA wire.

FIGURE 24





Detail **A**

FIGURE 25

FIGURE AND INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
25 -	9870000-1 *	CESSNA ALTERNATOR CHARGING SYSTEM TEST BOX ASSEMBLY	1	A
- 1	9870000-2	COVER ASSEMBLY	1	
- 2	S2122-1	NUT	1	
- 3	AN520-6R6	SCREW	2	
	AN540B6	NUT	2	
- 4	MS25237-327	LAMP	1	
- 5	TVA1315	CAPACITOR SPR	1	
- 6	S1360-5L	CIRCUIT BREAKER	1	
- 7	IN4004	DIODE MSPD	3	
- 8	S1813-1	RELAY	1	
- 9	S1291-5	GROMMET	1	
-10	S2209-1	TIE	AR	
-11	S2135-2	LIGHT ASSEMBLY S2519-2 IS ALTERNATE	2	
-12	1414-6	TERMINAL SHHI	2	
-13	ST42F	SWITCH JBT	1	
-14	MS25041-6	LIGHT	1	
-15	IN4110	DIODE MSPD	1	
-16	ST52R	SWITCH JBT	1	
-17	S2000A102J	RESISTOR	1	
-18	S2000A270J	RESISTOR	1	
-19	9870000-7	CABLE ASSEMBLY NOT AVAILABLE FOR SPARES	REF	
-20	S1638-2	CAP	1	
	S292-6	SLEEVING BULK ITEM	AR	
-21	9870000-5	CABLE ASSEMBLY NOT AVAILABLE FOR SPARES	REF	
-22	300	ALLIGATOR CLIP SHHI	1	
-23	S292-1	SLEEVING BULK ITEM	AR	
-24	9870000-6	CABLE ASSEMBLY NOT AVAILABLE FOR SPARES	REF	
-25	S1638-1	PLUG	1	
-26	S292-6	SLEEVING BULK ITEM	AR	
		NOTE *THE BOX THAT HOUSES THE 9870000-2 COVER ASSEMBLY IS A CU-234 BUD BOX AND IS ONLY SUPPLIED WITH THE COMPLETE ASSEMBLY BDR		
		A---337 SERIAL 337-0001 & ON F337 SERIAL F33700001 & ON T337 SERIAL 337-0526 THRU 33701398 FT337 SERIAL F33700001 THRU F33700045 T337 SERIAL 33701816 & ON T337 SERIAL P3370001 THRU P3370292 FT337 SERIAL FP3370001 THRU FP3370022 P337 SERIAL P3370293 & ON FP337 SERIAL FP3370023 & ON 152 SERIAL 15279406 THRU 15282031 A152 SERIAL A1520735 THRU A15200808 F152 SERIAL F15201449 THRU F15201528 FA152 SERIAL FA1520337 THRU FA1520346 172 SERIAL 17269310 THRU 17271034 F172 SERIAL F17201640 THRU F17201749 R172 SERIAL R1722725 THRU R1722929 FR172 SERIAL FR17200621 THRU FR17200630 177 SERIAL 17702673 THRU 17702752 177RG SERIAL 177RG1267 THRU 177RG1366 188 SERIAL 188-0318 & ON 180 SERIAL 18052906 THRU 18052000 182 SERIAL 18266046 THRU 18266590 F182 SERIAL F18200065 THRU F18200094 R182 SERIAL R18200001 THRU R18200583 FR182 SERIAL FR18200001 THRU FR18200025 185 SERIAL 18503459 THRU 18503683 U206 SERIAL U20601573 THRU U20604649 TU206 SERIAL U20601573 THRU U20604649 207 SERIAL 20700228 THRU 20700479 T207 SERIAL 20700228 THRU 20700479 210 SERIAL 21059503 THRU 21062953 T210 SERIAL 21059503 THRU 21062953 P210 SERIAL P21000001 THRU P21000150		