A-31021

WOW, IN AIRCRAFT CALIBRATION

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Revision Record

Rev	Date	Description	Pages	Appvl/Date
I/R	08-07-15	Initial Release	All	

Pre-test Preparation

Before this procedure can be performed the 6650 floats and all the associated systems must be installed and operational on the Kodiak 100 aircraft, the center mid-floor panel must be removed to allow access to the WOW box assembly. The calibration can be done without lifting the plane by the wings to simulate in-flight conditions but accuracy and reliability are greatly improved by being able to simulate in-flight loads on the left mid strut.

Equipment Required

1. Digital Multi Meter (DMM) capable of reading 0.001 volts DC
2. Aerocet Calibration harness with switch
3. Small Jewelers screwdriver (.055 slotted)

Test Procedure

1. Remove WOW box from mounting bracket in floor of aircraft
2. Remove 4 screws and cover form WOW box
3. Connect WOW box to aircraft harness
4. Connect Aerocet Calibration harness to the J1 test header on the WOW PCB (ensure that pin 1 of harness plug is in pin 1 of the header)
5. Connect Calibration Harness to DMM and set DMM to read “DC Volts” with a display resolution of at least 3 decimal places
6. Begin calibration with plane on the ground
7. Temporarily disable the stall warning by pulling the STALL circuit breaker
8. Turn on aircraft “Master Power Switch”
9. Turn on aircraft “Avionics Switch”
10. Set Calibration harness switch to position “A”
11. Adjust R24 on WOW PCB so that DMM is reading 2.700 VDC
12. If the plane can be lifted off the ground by the wings so that the weight of the floats are hanging from the fuselage, lift the plane and measure the position “A” voltage and record it (this voltage should be about 0.3 volts lower than the reading on the ground)
13. Calculate the mean voltage between the two measured voltages.
14. Set Calibration switch to position “B”
15. Adjust R6 on WOW PCB so the meter reads 2.550. If the calculated mean voltage between the first two measurements can be calculated, adjust R6 so the meter reads that voltage. It should be near 2.550 volts.
16. Reset the stall warning breaker to enable the stall warning again.
17. With the plane off the ground, hanging from the wings, the audible stall warning should sound and the Flight HOBBS should be on and counting time.
18. With the weight of the plane on the floats, the audible stall warning should be silent and the Flight HOBBS should be off and not counting time.
19. Turn off Aircraft Master Power and Avionics Switches
20. Unplug Calibration harness from PCB, replace cover and screws on WOW box
21. Install WOW box into the aircraft floor bay mounting bracket
22. Recheck function of audible stall warning and Flight HOBBS

End of Procedure

Calibration Harness with Switch

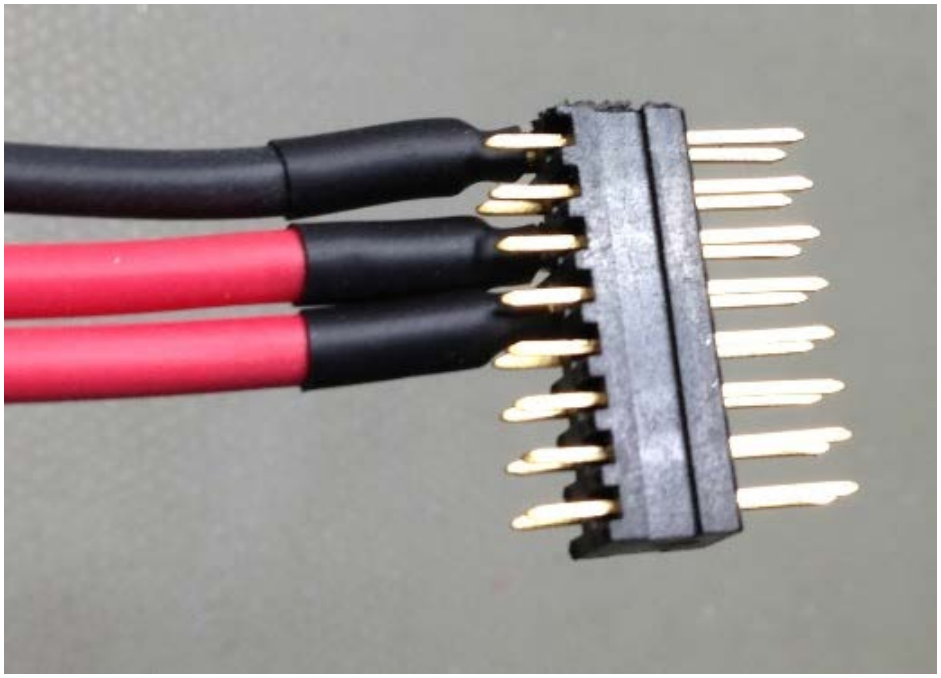
The following pictures show an example of a harness constructed to assist in the calibration process.

Prepare test leads with the male banana plugs on either end (schematic BOM item 1 & 2) as follows:

1. Cut one red wire to 12” with banana plug on one end.
2. Cut two red wires to 12”
3. Cut one black wire to 24” with black banana plug on one end
4. Strip all cut ends .15”
5. Set aside the remaining parts of the test leads for the next harness

Solder three 12” long red wires to switch. Center wire has banana plug on other end. Two outer wires have no connector. Place adhesive lined heat shrink tubing over terminals as shown.

Place a label on switch housing to identify switch position for test procedure. (A is on other side of switch) This example shows sharpie marking on white heat shrink. Note that when switch is placed in the A position, the center wire is connected to the near wire in this view. When switch is placed in the B position, the center wire is connected to the far wire in this view.

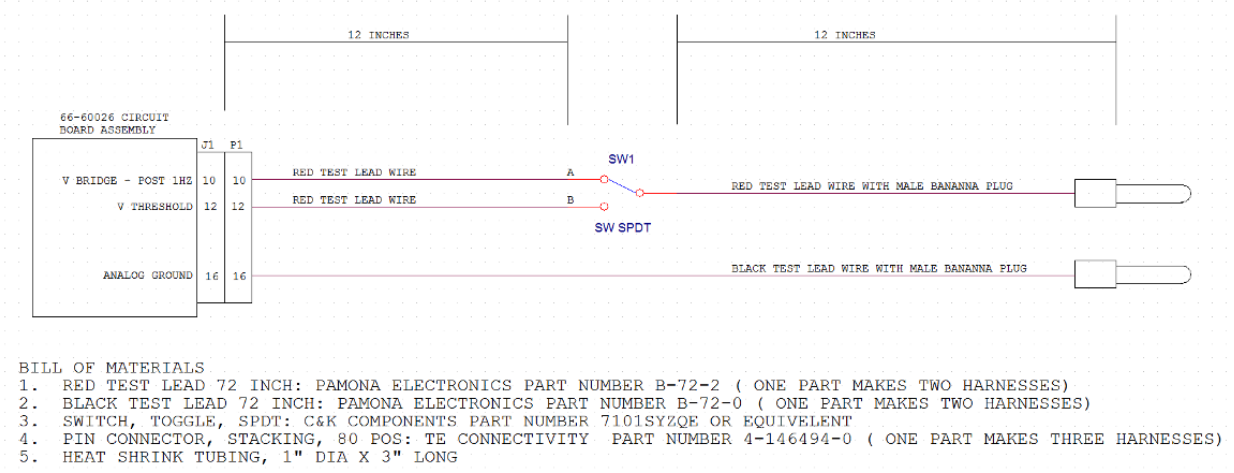


Cut terminal strip (Item 4 in the schematic BOM) down to 16 positions. (Terminal strip shown is different than that it the BOM but the function is the same). Lap solder two red wires to terminals per the schematic and place heat shrink over the solder joint. Wire A is connected to pin 10. Wire B is connected to pin 12. Lap solder black wire to terminal per the schematic and place heat shrink over the solder joint. Note that pin 1 is the lower near pin in this view. Pin 2 is the lower back pin in this view. The black wire is soldered to pin 16.

After soldering wires to connector strip, use hot melt glue to fill in around the wires and unused pins to insulate the terminals and to build up structure for the adhesive lined black heat shrink tubing to form to. Place adhesive lined black heat shrink tubing over the body of the connector

and wires to create a strain relief for the plug and wires. Label pin 1 with a silver or white sharpie.

Use tie-wraps or lacing to dress up and manage the wires as shown. The male banana plugs are on the end of black and red wires going out of the lower edge of the picture.



BILL OF MATERIALS
1. RED TEST LEAD 72 INCH: PAMONA ELECTRONICS PART NUMBER B-72-2 (ONE PART MAKES TWO HARNESSES)
2. BLACK TEST LEAD 72 INCH: PAMONA ELECTRONICS PART NUMBER B-72-0 (ONE PART MAKES TWO HARNESSES)
3. SWITCH, TOGGLE, SPDT: C&K COMPONENTS PART NUMBER 7101SYZQE OR EQUIVELENT
4. PIN CONNECTOR, STACKING, 80 POS: TE CONNECTIVITY PART NUMBER 4-146494-0 (ONE PART MAKES THREE HARNESSES)
5. HEAT SHRINK TUBING, 1" DIA X 3" LONG

Wire harness schematic.