# ELECTRICAL POWER-STATIC INVERTER - LOCKWASHER ADDITION TO BRIDGE ASSEMBLY

## I PLANNING INFORMATION

A. Effectivity- Static Inverter, Part Number 1-111-0102-0714, (Boeing P/N S282T004-8), Mod Level "-" thru "A"; Part Number 1-002-0102-0714, (Boeing S282T004-7), Model 1C1000-1B, Mod Level "-" thru "C"; and Part Number 1-002-0102-1000, (BOEING S282T004-10), Model 1C1000-1C, Mod Level "-".

B. Reason- Engineering Quality Analysis (EQA) conducted by Boeing Commercial Airplane Company on a model 1C1000-1B static inverter has determined that a potential condition exists in which the screw connections at points E40 and E19 on the Bridge Control Logic Assembly may loosen. This loosening can lead to damage or failure of capacitor C50. The addition of one lockwasher at each point E40 and E19 on the Bridge Control Logic Assembly will provide a positive locking connection which is less likely to loosen.

C. Description- Installation of the two lockwashers will require removal of inverter covers, some disassembly of the inverter and installation of the washers.

D. Approval- This Service Bulletin has been reviewed by the Federal Aviation Administration (FAA) and the modifications herein comply with the Federal Aviation Regulations (FAR) and are FAA approved for installation on BOEING aircraft.

E. Manpower- The estimated manpower required to accomplish this task is 20 minutes.

F. Material-Cost and Availability — Operators who intend to do this change at their facility may obtain the parts shown in paragraph III A by ordering Kit No. 1-001-6301-0002, as shown below. The data shows the date when the parts are available.

| Part Number | Qty | Unit Price | Name | Date Available |
|---|---|---|---|---|
| 1-001-3201-0101 | 2 | N/C | Washer, Split/Lock, #4-40, Stainless Steel | 1 Dec 1995 |
| 1-001-0205-0013 | 1 | N/C | Cable Tie | 1 Dec 1995 |

1. The parts will be available November 1, 1995 through November 1, 1996. Send parts requests to Product Support Department at the address below. Please refer to Kit number 1-001-6301-0002 and this service bulletin number.

   Avionic Instruments Inc.
   1414 Randolph Ave
   Avenel, NJ 07001 USA
   FAX: 908-382-4996

G. Tooling- NONE

H. Weight and-Balance — Net weight change ±.01 lbs.

| | | |
|---|---|---|
| I. | Electrical-Load Data | Not Affected |
| J. | Software-Accomplishment Summary | Not Applicable |
| K. | Reference- | None |
| L. | Other-Publications Affected | Component Maintenance Manual, ATA No. 24-20-27<br>1-001-4902-0017 will be revised to include this service bulletin. |

## II ACCOMPLISHMENT INSTRUCTIONS

**CAUTION: DISCONNECT INPUT POWER PRIOR TO HANDLING OR REMOVAL OF THE COVER OF THE STATIC INVERTER TO PREVENT ELECTRICAL SHOCK.**

Addition of the two lockwashers requires the installer to gain access to the Bridge Control Logic PCB Assembly shown in Figure 3.

**Instructions for Part Numbers 1-111-0102-0714 (Boeing S282T004-8) and 1-002-0102-0714 (Boeing S282T004-7) Static Inverters:**

1. Remove four screws, item 55 and 55A securing front top cover, item 50, on figure 1.
2. Remove eight screws from the front and side panels securing front top cover; two of item 10A and six of item 60 on figure 1.
3. Carefully pry off front top cover, item 50 on figure 1.
4. Remove four (4) screws, item 70 securing rear top cover, item 65, on figure 1.
5. Remove six screws from the rear and side panels securing rear top cover; two of item 205 and four of item 75 on figure 1.
6. Carefully pry off rear top cover, item 65 on figure 1.
7. Remove seven screws, item 105 securing rear bottom cover, item 95, on figure 1
8. Remove six screws from the rear and side panels securing rear bottom cover; four of item 100 and two of item 45 on figure 1.
9. Carefully pry off rear bottom cover, item 95 on figure 1.
10. Remove three screws from wire connections; one item 30, one item 30A and one item 155 on figure 1.
11. Remove two screws from wire connections; item 115 and item 135 on figure 1.

12. Cut cable tie, item 200, securing wires on figure 1.

13. Using figure 2, locate the six forward screws, item 15, securing side plates items 20 and 10.

14. Carefully separate rear section of the inverter, rotating assembly downward to lay flat.

15. Using figure 3, locate position of screws at E40 and E19.

16. Remove screw item 110 , at position E40.

17. Add lockwasher, p/n 1-001-3201-0101 and replace screw item 110 , at position E40. Tighten using # 1 Phillips head screwdriver and a torque of 88 to 96 oz-in.

18. Remove screw item 120 , at position E19

19. Add lockwasher, p/n 1-001-3201-0101 and replace screw item 120 , at position E19. Tighten using # 1 Phillips head screwdriver and a torque of 88 to 96 oz-in.

20. Carefully reassemble the rear section of the inverter, rotating assembly upward.

21. Using figure 2, locate side plate item 20. Install item 20 using the three forward screws, item 15.

22 Using figure 2, locate side plate item 10. Install item 10 using the three forward screws, item 15.

23. Install cable tie, item 200, securing wires on figure 1.

24. Replace two screws from wire connections; item 115 and item 135 on figure 1.

25. Replace three screws from wire connections; one item 30, one item 30A and one item 155 on figure 1.

26. Carefully replace rear bottom cover, item 95 on figure 1.

27. Replace six screws from the rear and side panels securing rear bottom cover; four of item 100 and two of item 45 on figure 1.

28. Replace seven screws, item 105, securing rear bottom cover, item 95, on figure 1

29. Carefully replace rear top cover, item 65 on figure 1.

30. Replace six screws from the rear and side panels securing rear top cover; two of item 205 and four of item 75 on figure 1.

31. Replace four screws, item 70, securing rear top cover, item 65, on figure 1.

32. Carefully replace front top cover, item 50 on figure 1.

33. Replace eight screws from the front and side panels securing front top cover; two of item 10A and six of item 60 on figure 1.

34. Replace four screws, item 55 and 55A securing front top cover, item 50, on figure 1.

35. Re-identify the Mod Level of the Static Inverter as follows:

    (a)- Use the "X" metal stamp to stamp over the existing mod level.

    (b)- Use the "B" metal stamp to reidentify the MOD LEVEL by stamping a "B" in the silver area next to the existing letter for S282T004-8 static inverters or use the "D" metal stamp to reidentify the MOD LEVEL by stamping a "D" in the silver area next to the existing letter for S282T004-7 static inverters. (See figure 5).

36. Perform function test defined in Addendum 1 to verify inverter performance.

37. Return inverter to stock or installation upon successful completion of functional test.

38. Should the inverter fail the functional test, test and troubleshoot unit or return to Avionic Instruments Inc. for repair.

**Instructions for Part Number 1-001-0102-1000 (Boeing S282T004-10) Static Inverter:**

1. Remove 10 screws, item 10, securing the rear panel, item 5 on figure 4.

2. Carefully remove the rear panel, item 5 on figure 4.

3. Remove eight screws, item 60, securing the heatsink, item 55, to the bridge assembly, item 260, and the flyback assembly, item 220 on figure 4.

4. Carefully remove the heatsink, item 55 on figure 4.

5. Remove eight screws, item 70, securing the heatsink, item 65, to the bridge assembly, item 260, and the flyback assembly, item 220 on figure 4.

6. Carefully remove the heatsink, item 65 on figure 4.

7. Remove 10 screws, item 50, on the front panel, item 100 on figure 4.

8. Remove 10 screws, item 45 on figure 4.

9. Remove 10 screws, item 35 on figure 4.

10. Remove 10 screws, item 40 on figure 4.

11. Carefully remove the top cover, item 30 on figure 4.

12. Remove screw item 185, screw item 190, screw item 195, screw item 245, and screw item 250 on figure 4.

13. Remove the two rear screws, item 80, securing the LPS/Bridge Logic Subass'y to the bottom panel, item 75 on figure 4.

14. Carefully tilt the LPS/Bridge Logic Subass'y back.

15. Using figure 3, locate position of screws at E40 and E19.

16. Remove screw item 110 , at position E40.

17. Add lockwasher, p/n 1-001-3201-0101 and replace screw item 110 , at position E40. Tighten using # 1 Phillips head screwdriver and a torque of 88 to 96 oz-in.

18. Remove screw item 120 , at position E19

19. Add lockwasher, p/n 1-001-3201-0101 and replace screw item 120 , at position E19. Tighten using # 1 Phillips head screwdriver and a torque of 88 to 96 oz-in.

20. Carefully reassemble the rear section of the inverter, rotating assembly upward.

21. Replace the two rear screws, item 80, securing the LPS/Bridge Logic Subass'y to the bottom panel, item 75 on figure 4.

22. Replace screw item 185, screw item 190, screw item 195, screw item 245, and screw item 250 on figure 4.

23. Carefully install the top cover, item 30 removed in step 11.

24. Replace the 10 screws, item 40 on figure 4.

25. Replace the 10 screws, item 35 on figure 4.

26. Replace the 10 screws, item 45 on figure 4.

27. Replace the 10 screws, item 50, on the front panel, item 100 on figure 4.

28. Carefully replace the heatsink, item 65 on figure 4.

29. Replace the eight screws, item 70, securing the heatsink, item 65, to the bridge assembly, item 260, and the flyback assembly, item 220 on figure 4.

30. Carefully replace the heatsink, item 55 on figure 4.

31. Replace the eight screws, item 60, securing the heatsink, item 55, to the bridge assembly, item 260, and the flyback assembly, item 220 on figure 4.

32. Carefully replace the heatsink, item 55 on figure 4.

33. Carefully replace the rear panel, item 5 on figure 4.

34. Replace the 10 screws, item 10, securing the rear panel, item 5 on figure 4.

35. Identify the Mod Level of the Static Inverter as follows:

    (a)- Use the "X" metal stamp to stamp over the existing mod level.

    (b)- Use the "A" metal stamp to identify the MOD LEVEL by stamping an "A" in the silver area next to the existing "-" for S282T004-10 static inverters. (See figure 5).

36. Perform function test defined in Addendum 1 to verify inverter performance.

37. Return inverter to stock or installation upon successful completion of functional test.

38. Should the inverter fail the functional test, test and troubleshoot unit or return to Avionic Instruments Inc. for repair.

## III MATERIAL INFORMATION

A. Parts Required Per Component-To get the parts listed below, refer to paragraph I.F., Material Cost and Availability.

NOTE: One kit (P/N 1-001-6301-0002) consisting of the components listed below is required for each static inverter. Cable tie not required for 1C1000-1C.

| Part Number | Qty | Unit List Cost | Key Word | Instruction |
|---|---|---|---|---|
| 1-001-3201-0101 | 2 | N/C | Washer, Split/Lock, #4-40, Stainless Steel | Install |
| 1-001-0205-0013 | 1 | N/C | Cable Tie | Install |

In addition, the following commercially available items will be required to complete installation:

| Description | Qty |
|---|---|
| 3/32" Metal Stamps, Letters "A","D","X","B" | 1 each |
| Loctite Threadlocker #242 Thread-Locking Compound (or equivalent) | A/R |