

# SERVICE INFORMATION LETTER

**Subject:** Loss of Electrical Continuity on Wencor Plug Assembly

1. Planning

a. Effectivity

Wencor P/N	Next Higher Assembly	NHA Description	ATA	Aircraft Application
1171-56WE	1U1171-X	Body Gear Steering Actuator	32-50-01	B747-100 & 100F B747-200 & 200F B747-300 & 300F B747-400 & 400F B747SP & SR

b. Reason:

Loss of electrical continuity at the Plug Assembly connector due to wire breakage from over-crimping during manufacturing.



**Figure 1:** Wencor Plug Assembly PN 1171-56WE



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### c. Background

The Plug Assembly is installed within the NHA actuator body housing connecting the Switch Assemblies to the Receptacle as shown below in Figure 2.

A single customer discovered that there was a loss of electrical continuity between a connector pin and the corresponding wire during the bench testing of the NHA actuator. This problem was subsequently discovered on two other/additional Wencor Plug Assemblies.

Upon examination of the discrepant parts, a broken wire was found at the crimp connection between the wire and pin. The cause of the broken wire appears to be random over-crimping during manufacturing of the PMA Plug Assembly. Over-crimping caused a weakening of the wire at the crimp location, reducing the wire's tensile strength.

Every Plug Assembly produced by Wencor is tested for continuity during the manufacturing process and all the Plug Assemblies passed this test; however, as the leads were bent during installation to fit the Plug Assembly into the NHA actuator housing, tension on the crimp connection caused the wire to break.

### d. Safety

The likely effect of this problem would prevent the NHA actuator from passing the test requirements defined in the OEM CMM and therefore prevent the NHA actuator from being put into service.

In the unlikely event of a Plug Assembly failing in service, the aircraft currently incorporates a redundant Plug Assembly in the NHA Body Gear Steering Actuator. However, if both Plug Assemblies fail in service the effect would only be noticed by reduced aircraft Body Gear turning control on the ground during low speed taxi or towing because the NHA Body Gear Steering Actuator would not function properly and prevent turning of the body gear wheels. Body gear steering is hydraulically centered and deactivated on ground speeds above 20 knots. The Plug Assembly does not affect the nose gear steering.



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## 2. Recommendations

Any end user of the Wencor Plug Assembly that has already installed the PMA part and passed the NHA test requirements as defined in the OEM CMM may remain in service without any change in aircraft safety. However, any operator that discovers a failed Wencor Plug Assembly should return it to Wencor for replacement per the Wencor warranty agreement.

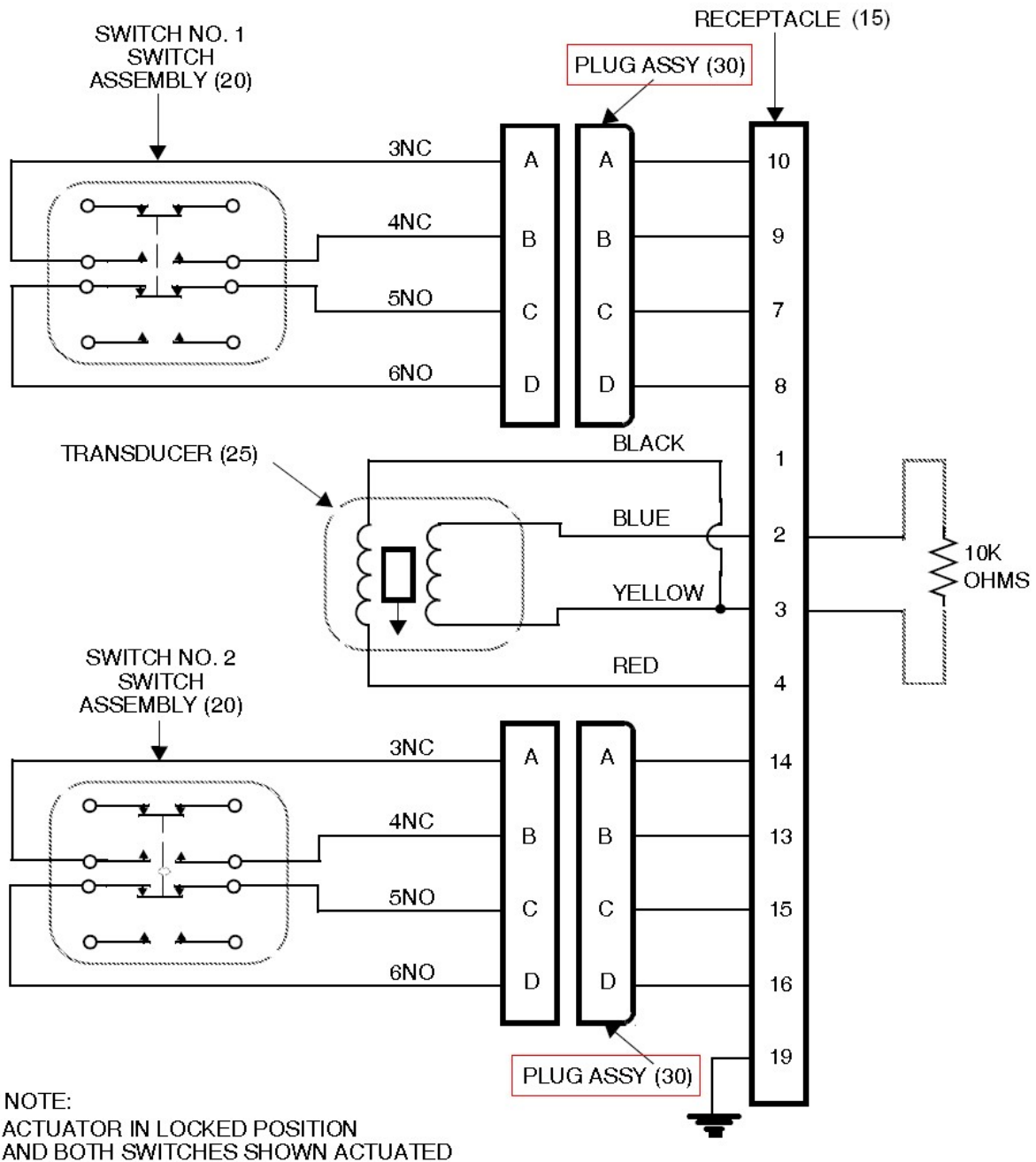
End users who have Wencor Plug Assemblies in their stock which have not yet been installed may, at their discretion, return the PMA part for a replacement of a Plug Assembly which has been manufactured using a more controlled crimping process to prevent over-crimping.

## 3. Compliance

There is no required time frame for compliance with this SIL.

## 4. Material

Wencor Plug Assemblies that require replacement as a result of this Service Information Letter will be covered free of charge under the Wencor material warranty. If there are any questions regarding this Service Information Letter, please contact the applicable Wencor sales representative by calling 801-489-2000 or email: [sales@wencor.com](mailto:sales@wencor.com). For technical questions please contact Jon Bies at [jbies@wencor.com](mailto:jbies@wencor.com).



**Figure 2: NHA Actuator Electrical Schematic**