

## ASSEMBLY INSTRUCTIONS FOR AMPHENOL® 97E (ENVIRONMENTAL) CONNECTORS

The following instructions should be used for assembling standard 97-310XE and 97-410XE type connectors. See back of this sheet for assembly instructions for 97E connectors with jacketed cable (290 deviation).

### AMPHENOL® STANDARD 97E ASSEMBLY INSTRUCTIONS

1. Reference 97-310XE-XX-XX or 97-410XE-XX-XX connector for identification and orientation of parts. There should be three kits included in this package as follows:
  - 1 insert assembly kit
  - 1 shell kit
  - 1 backshell kit
2. Open shell kit bag and remove adapter. Set it aside as it will not be used in this assembly.
3. Open other bags and identify parts.
4. If making a 97-3106E or 97-4106E straight plug, place main joint sealing gasket on the plug shell body. See Figure I.
5. Place insert assembly into shell kit and put snap ring into place.
6. Cut cables to desired length. One wire is used for each individual contact.
7. Slide the backshell strain relief housing, compression sleeve and grommet onto the wires. Reference Figure II.
8. Strip cable to desired dimension. For 97-410XE assemblies, reference Amphenol Document L-1268 (Installation Instructions for insertion, removal and crimping of contacts). Terminate contacts to wires.
9. Slide grommet up to back of insert. Slide nylon compression sleeve up to back of grommet. Now slide backshell strain relief housing up to back of connector and thread on connector. The strain relief housing should be torqued per Table I below. To aid in assembly, a thin coat of Texaco® Premium\* RB grease may be applied to the outer diameter of the grommet and sleeve.

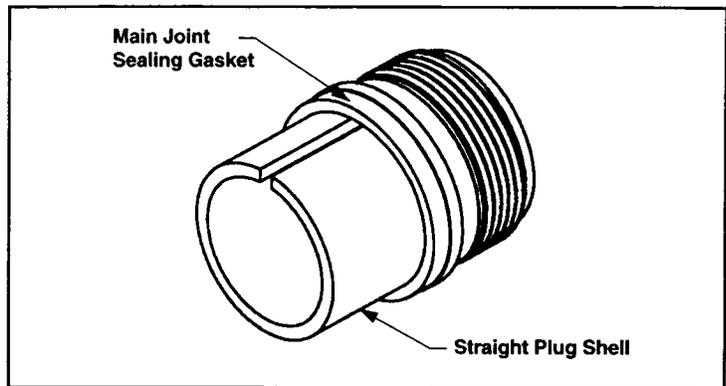
**Table I: Torque Values**

Connector Size	Torque (in. - lbs.)	Connector Size	Torque (in. - lbs.)
10SL	26-32	18	70-75
12	34-40	20	80-85
12S	34-40	22	90-95
14	46-50	24	100-110
14S	46-50	28	120-130
16	55-60	32	150-160
16S	55-60	36	170-180

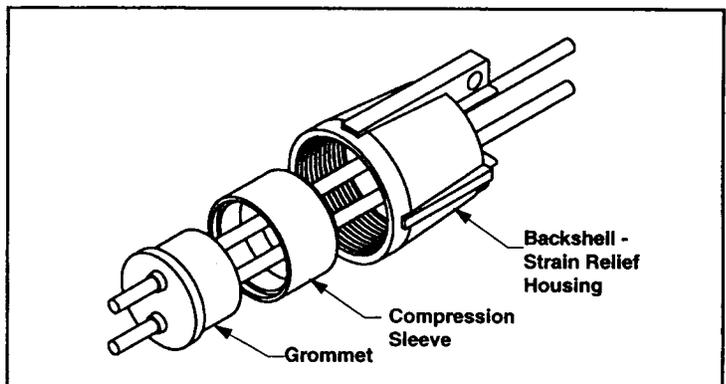
NOTE: Above torque values are based on thread strength. In some cases it may be necessary to torque the nut after the assembly has set for 24 hours to insure complete grommet compression.

10. Install clamp bars as shown in Figure III. Make sure that the screw first goes through unthreaded side of clamp bar, then through the hole in strain relief housing, then through the threaded side of other clamp bar.
11. Repeat steps 5 – 10 for other end of cable if using another 97-310XE or 97-410XE assembly.

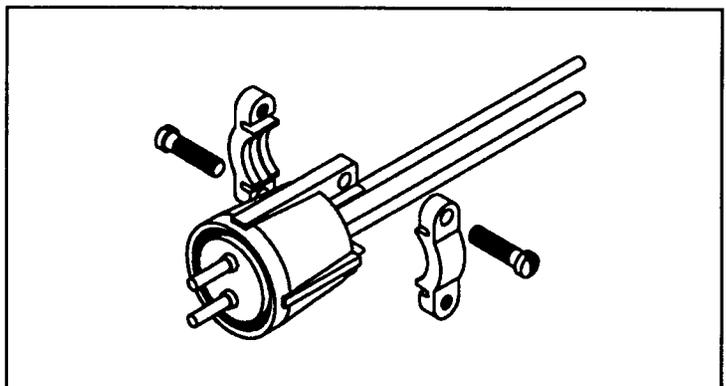
\* or equivalent grease



**Figure I: Straight Plug Assembled with Main Joint Sealing Gasket**



**Figure II: Assembly of Grommet, Compression Sleeve and Backshell**



**Figure III: Installing Clamp Bars to Assembled Connector**

## ASSEMBLY INSTRUCTIONS FOR AMPHENOL® 97E (ENVIRONMENTAL) CONNECTORS, CONT.

The following instructions should be used for assembling 97E connectors with jacketed cable (290 deviation).

### AMPHENOL® 97E WITH JACKETED CABLE (290 DEVIATION) ASSEMBLY INSTRUCTIONS

1. Reference 97-310XE-XX-XX(290) or 97-410XE-XX-XX(290) connector for identification and orientation of parts.  
There should be three kits included in this package as follows:
  - 1 insert assembly kit
  - 1 shell kit
  - 1 backshell kit
2. Open shell kit bag and remove adapter. Open backshell kit and find sealing gasket. Place sealing gasket into adapter as shown in Figure IV. Thread adapter onto back of connector.
3. Open other bags and identify parts.
4. If making a 97-3106E or 97-4106E straight plug, place main joint sealing gasket on the plug shell body. See Figure V.
5. Place insert assembly into shell kit and put snap ring into place.
6. Cut cable to desired length.
7. Slide the backshell strain relief housing, compression sleeve and sealing gland onto the cable. Reference Figure VI.
8. Strip cable back approximately 1 inch. Insure stripping dimension does not exceed 1.25 inches or the sealing gland may not function properly.  
For 97-410XE assemblies, reference Amphenol Document L-1268 (Installation Instructions for insertion, removal and crimping of contacts). Terminate contacts to wires.
9. Slide sealing gland up to back of backshell. Slide compression sleeve up to back of sealing gland. Now slide backshell strain relief housing up to back of adapter and thread on adapter. The strain relief housing should be torqued per Table I on front of this sheet. To aid in assembly, a thin coat of Texaco® Premium\* RB grease may be applied to the outer diameter of the gland.
10. Install clamp bars as shown in Figure VII. Make sure that the screw first goes through unthreaded side of clamp bar, then through the hole in strain relief housing, then through the threaded side of other clamp bar.
11. Repeat steps 5 - 10 for other end of cable if using another 97-310XE or 97-410XE assembly.

\* or equivalent grease

For more information on 97E Series connectors contact Amphenol at the following address:  
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Amphenol Aerospace  
40-60 Delaware Ave.,  
Sidney, NY 13838-1395  
Phone: 607-563-5011  
Fax: 607-563-5351

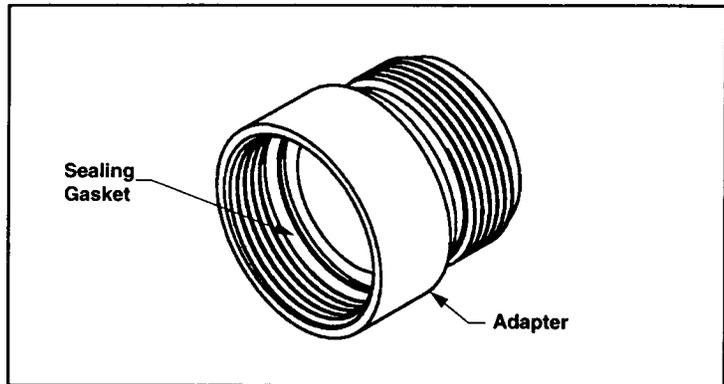


Figure IV: Adapter Assembled with Sealing Gasket

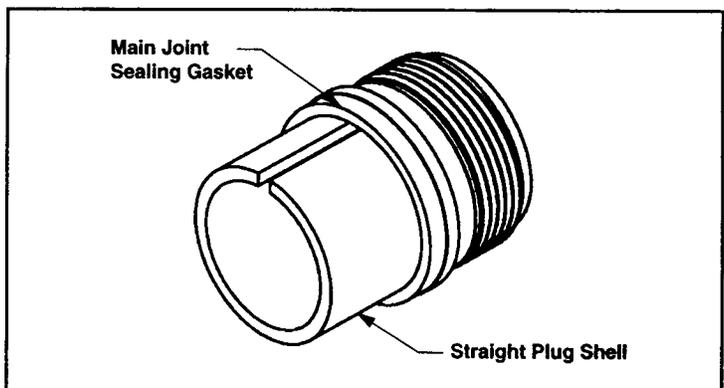


Figure V: Straight Plug Assembled with Main Joint Sealing Gasket

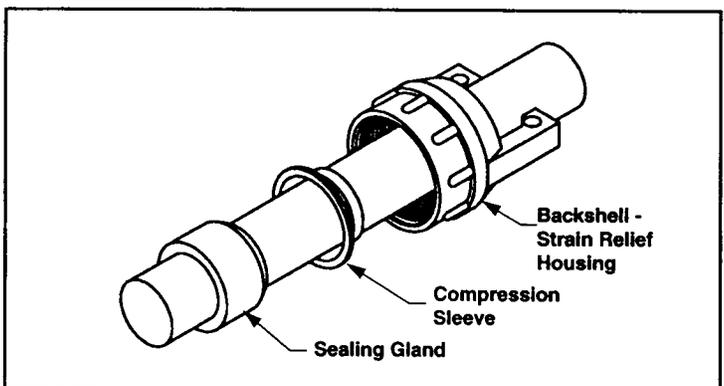


Figure VI: Assembly of Sealing Gland, Compression Sleeve and Backshell

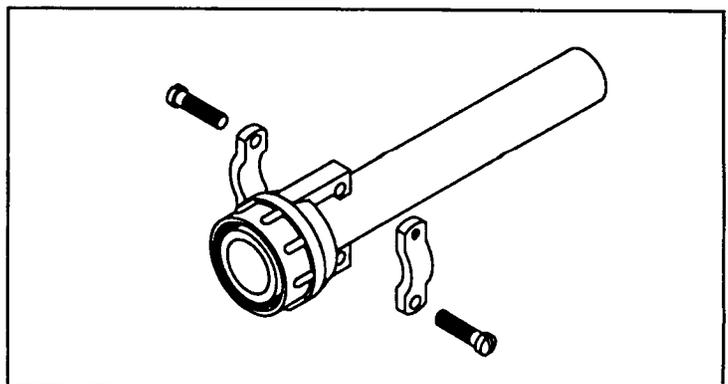


Figure VII: Installing Clamp Bars to Assembled Connector