

PREVOST

**BULLETIN
DE
GARANTIE**

Bg05-10

ENREGISTRÉ - REGISTERED
ISO 9001 & ISO 14001



DATE : Juillet 2005	SECTION : 01 - Moteur
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SUJET : MODIFICATION DE LA COMMANDE DU FREIN MOTEUR « JACOBS » SUR VÉHICULES MULTIPLEX	

APPLICATION

Modèle	VIN		
Autocar H3-41, H3-45 Année modèle: 2004 - 2005	2PCH3349041014933	2PCH3349651010208	2PCH3349251010254
	2PCH3349041014995	2PCH3349451010210	2PCH3349451010255
	2PCH3349X51010020	2PCH3349651010211	2PCH3349651010256
	2PCH3349451010109	2PCH3349851010212	2PCH3349851010257
	2PCH3349251010142	2PCH3349151010214	2PCH3349X51010258
	2PCH3349951010168	2PCH3349351010215	2PCH3349151010259
	2PCH3349051010169	2PCH3349551010216	2PCH3349851010260
	2PCH3349951010171	2PCH3349951010218	2PCH3349X51010261
	2PCH3349051010172	2PCH3349051010219	2PCH3349351010263
	2PCH3349451010174	2PCH3349751010220	2PCH3349551010264
	2PCH3341551010176	2PCH3349951010221	2PCH3349951010266
	2PCH3349X51010177	2PCH3349051010222	2PCH3349051010267
	2PCH3349151010178	2PCH3349251010223	2PCH3349451010269
	2PCH3349351010179	2PCH3349451010224	2PCH3349051010270
	2PCH3349X51010180	2PCH3349651010225	2PCH3349251010271
	2PCH3341951010181	2PCH3349X51010227	2PCH3349651010273
	2PCH3349351010182	2PCH3349151010228	2PCH3349851010274
	2PCH3349751010184	2PCH3349351010229	2PCH3349151010276
	2PCH3349951010185	2PCH3349151010231	2PCH3349351010277
	2PCH3349051010186	2PCH3349351010232	2PCH3341451010279
2PCH3349251010187	2PCH3349551010233	2PCH3341251010281	

	2PCH3341151010188	2PCH3349751010234	2PCH3349751010282
	2PCH3349251010190	2PCH3349051010236	2PCH3349051010284
	2PCH3349451010191	2PCH3349251010237	2PCH3349251010285
	2PCH3349651010192	2PCH3349651010239	2PCH3349651010287
	2PCH3349X51010194	2PCH3349251010240	2PCH3349851010288
	2PCH3349151010195	2PCH3349451010241	2PCH3349661010291
	2PCH3349351010196	2PCH3349651010242	2PCH3349861010292
	2PCH3349551010197	2PCH3349851010243	2PCH3349161010294
	2PCH3349751010198	2PCH3349151010245	2PCH3349561010296
	2PCH3349151010200	2PCH3349351010246	2PCH3349761010297
	2PCH3349351010201	2PCH3349551010247	2PCH3349961010298
	2PCH3349551010202	2PCH3349751010248	2PCH3349361010300
	2PCH3349751010203	2PCH3349951010249	2PCH3349561010301
	2PCH3349951010204	2PCH3349551010250	2PCH3349961010303
	2PCH3349251010206	2PCH3349751010251	2PCH3349061010304
	2PCH3349451010207	2PCH3349951010252	2PCH3349461010306

Ce bulletin n'est pas nécessairement applicable à tous les véhicules ci-haut mentionnés, certains peuvent avoir été modifiés avant la livraison. Les propriétaires de véhicules visés par ce bulletin seront avisés par une lettre indiquant le numéro d'identification de chaque véhicule concerné.

DESCRIPTION

Actuellement, votre véhicule est configuré de façon à ce que lors de l'utilisation du frein moteur « Jacobs », la position 1 de l'interrupteur du tableau de bord correspond à 33% de la capacité et la position 2 active le frein moteur à pleine capacité. Cette configuration doit être modifiée de façon à ce que la position 1 corresponde à 66% de la capacité de frein moteur. Pour ce faire, suivre la procédure qui suit.

MARCHE À SUIVRE

AVERTISSEMENT

Stationner le véhicule de façon sécuritaire, appliquer le frein de stationnement, arrêter le moteur, placer l'(es) interrupteur(s) principal(aux) à la position ARRÊT (OFF) avant de travailler sur le véhicule.

1. Dans le compartiment moteur, localiser l'ECM du coté droit du moteur.
2. Sur l'ECM, localiser le connecteur du câblage véhicule. Enlever les deux écrous fixant le couvercle au module électronique, desserrer la vis de fixation (figure 1) puis débrancher le connecteur du module.

Les figures se rapportant aux étapes qui suivent se trouvent dans la feuille d'instruction TYCO annexée à ce bulletin.

3. Séparer le couvercle et le logement des contacts (plug assembly) en insérant un tournevis dans les ouvertures du couvercle et en appuyant légèrement vers le bas (voir figure 5).

4. Déverrouiller les contacts en retirant le bloc de verrouillage (plug spacer) à l'aide d'un petit crochet (hooked tool) (voir figure 6).
5. Retirer le contact du circuit 979 de la cavité 39. Pour ce faire, insérer un petit tournevis de 1.4mm dans la cavité du contact et soulever la patte de retenue (retention finger) qui verrouille le contact (voir figure 7). Tirer délicatement sur le fil jusqu'à ce que le contact se libère du logement.
6. En procédant de la même façon, retirer le contact du circuit 583 de la cavité 51.
7. Réinsérer le contact du circuit 979 dans la cavité 51 et le contact du circuit 583 dans la cavité 39. Pour ce faire, insérer le contact dans la cavité approprié aussi loin que possible. Puis, tirer légèrement sur le fil afin de vérifier que la patte de retenue retient bien le contact (voir figure 2).
8. Remettre en place le bloc de verrouillage (plug spacer) afin de verrouiller les pattes de retenue. Presser les languettes de verrouillage (preset latch) vers l'intérieur et pousser le bloc de verrouillage jusqu'à ce qu'il soit complètement inséré dans le logement des contacts (figure 3).
9. Réassembler le connecteur puis réinstaller sur le module électronique. Serrer fermement la vis de fixation.

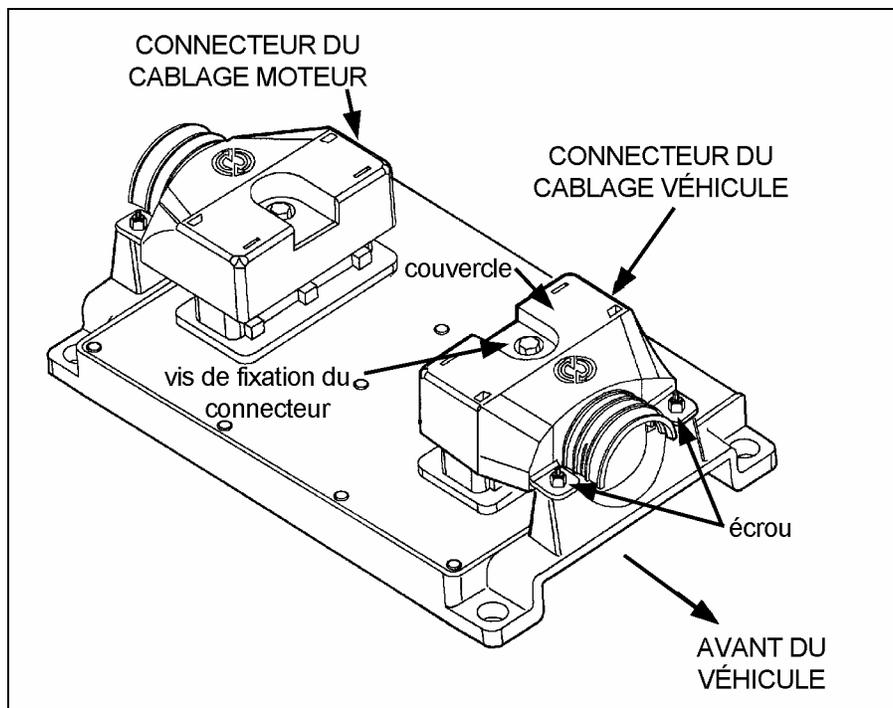


FIGURE 1 : ECM

GARANTIE

Cette modification est couverte par la garantie normale de Prévost Car. Nous vous rembourserons les pièces et une demi-heure (0,5) de main-d'œuvre sur réception d'un formulaire A.F.A. dûment complété sur lequel vous devez mentionner «Bulletin de Garantie 05-10».

NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirement for application of the 68-Position Heavy Duty Hybrid Connector. This connector is used on engine control modules and consist of sixty 1 mm contacts and eight 1.6 mm contacts. It is a vertical-mount wire-to-board connector system which mounts to the exterior of modules.

NOTE

Refer to Application Specifications 114-6071 and 114-13045 for all termination and application information for the contacts which are used in the 68-Position Heavy Duty Hybrid Connector.

When corresponding with Tyco Electronics personnel, use the terminology provided in this specification to facilitate your inquiry for information. Basic terms and features of components are provided in Figure 1.

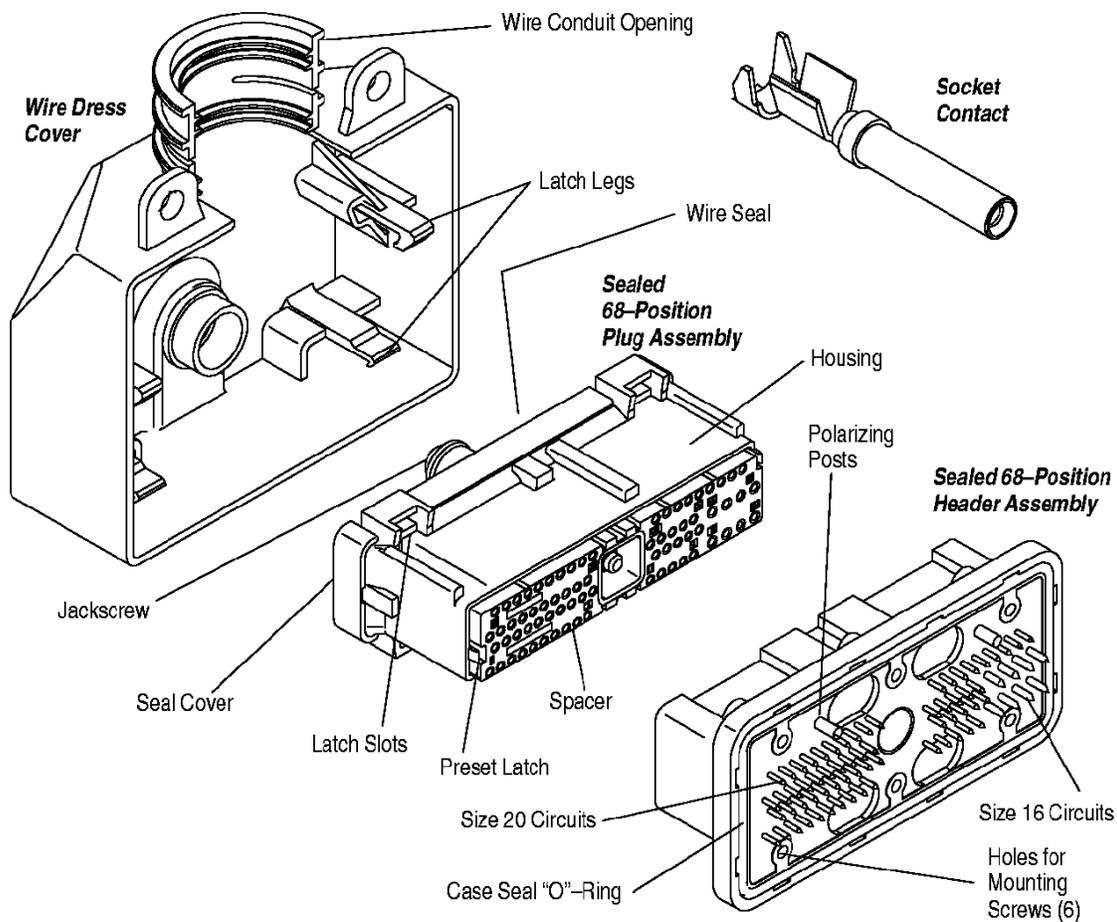


Figure 1

2. REFERENCE MATERIALS**2.1. Revision Summary**

Per EC 0990-1179-01

- Initial release of application specification

2.2. Customer Assistance

Reference Base Part Number 776315 and Product Code A243 are representative numbers that identify the 68-Position Heavy Duty Hybrid Connector product line. These numbers are used in the customer service network to access tooling and product application information. This service is provided by your local Tyco Electronics Representative (Field Sales Engineer, Field Application Engineer, etc.) or, after purchase, by calling the Tooling Assistance Center number at the bottom of page 1.

2.3. Drawings

Customer Drawings for each product part number are available from the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by Tyco Electronics.

2.4. Specifications

Product Specification 108-1945 provides product performance requirements and test information. Application Specifications 114-6071 and 114-13045 provide information for termination and requirements of the contacts used in this connector assembly.

2.5. Manuals

Manual 402-40 is available upon request and can be used as a guide in soldering. This manual provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is included in the manual as a guide for information on soldering problems.

2.6. Instructional Material

The following list includes available instruction sheets (408-series) that provide information for the handling of this product line.

<u>Document Number</u>	<u>Document Title</u>
408-3295	Preparing Reel of Contacts for Application Tooling
408-6927	Design Recommendations for Printed Circuit (PC) Board Support Fixture
408-7424	Checking Terminal Crimp Height Gaging Die Closure
408-9816	Handling Of Reeled Products

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the connectors.

B. Reel Storage

When using reeled contacts, store coil wound reels horizontally and traverse wound reels vertically.

C. Shelf Life

The contacts and connectors should remain in the shipping containers until ready for use to prevent deformation to the product. The contacts and connectors should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.

D. Storage Temperature

Maximum storage temperature should not exceed 150° C [302° F].

E. Chemical Exposure

Do not store contacts near any chemicals listed below, as stress corrosion cracking in the contacts may occur.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur	Nitrites	Tartrates

NOTE

Where the above environmental conditions exist, phosphor-bronze contacts are recommended if available.

3.2. Exposure Limitations

The operating temperature range of this connector assembly is -40° to 125° C [-40° to 257° F].

3.3. Special Considerations

Size 16 circuits (8 larger circuits) will seal properly with 14 AWG GXL, 16 AWG GXL, and 14 AWG Teflon wire, with wire insulation (OD) between 2.5 and 3.18 mm. Size 20 circuits (60 smaller circuits) will seal properly with 18 AWG GXL and 16 AWG Teflon wire, with wire insulation (OD) between 2 and 2.5 mm.

3.4. Strain Relief Arrangement

CAUTION

Care should be taken when attaching the wire dress cover as not to bend or crush any wires. Make sure that the wires are not bent or angled coming through the wire seal. Doing so may cause the wires to open the wire seal holes too much and form leak paths. The wires should be bent after exiting the wire cover, in order to fit all the wires comfortably underneath the wire dress cover.

3.5. Contact Termination

Terminate the contacts in according to the specific tooling instructional material and crimp requirements provided in Application Specifications 114-6071 and 114-13045.

3.6. Plug Assembly Procedures

CAUTION

Seal cover and wire seal must not be removed or altered in any way.

CAUTION

The back of the connector must be completely sealed. Those cavities that are not used must have individual seal plugs. Use seal plug 776363-1 for size 16 holes, and seal plug 776364-1 for size 20 holes. See Figure 2.

NOTE

Contact retention fingers will not engage if contact assemblies are inserted into plug housing cavity while the plug spacer (TPA) is in the closed position.

Check to be sure the plug spacer is in the *open*, or as-shipped position. See Figure 2. Proceed as follows:

1. To insert a terminated contact, push it straight into the appropriate circuit cavity as far as it will go. See Figure 2.
2. Pull back on the contact wire with a force of 8.9 to 13.3 N [2 to 3 lbs] to be sure the retention finger is holding the contact.

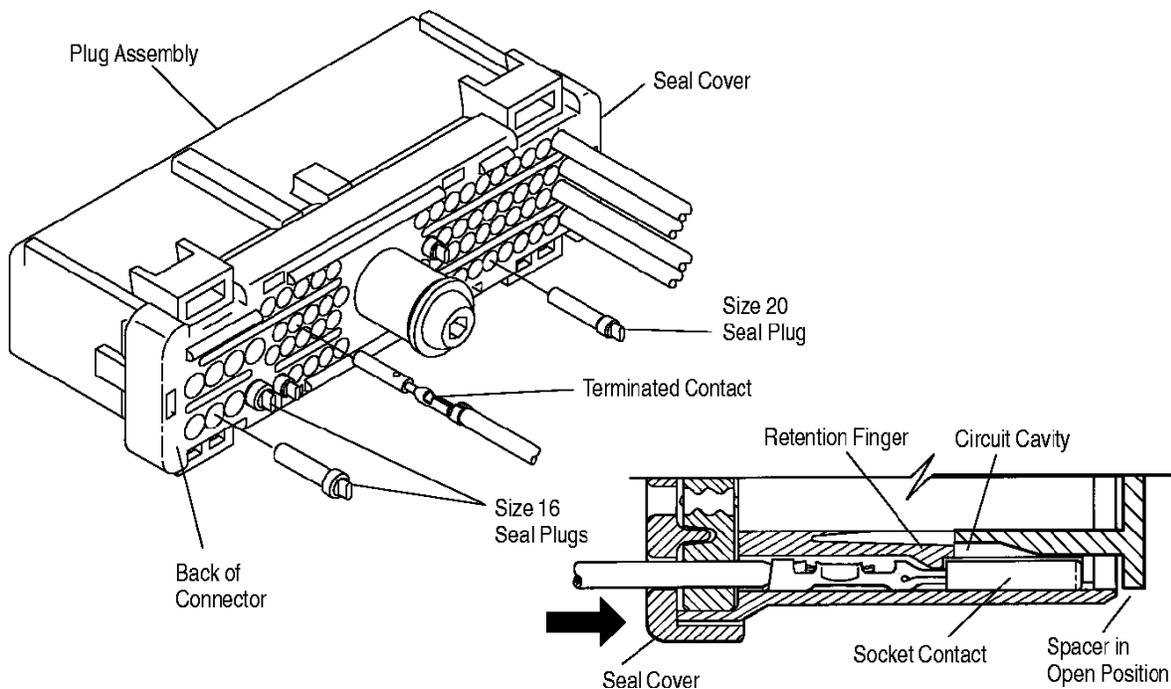


Figure 2

• Trademark of E. I. DuPont de Nemours and Company Corporation

3. After all required contacts have been inserted, the spacer must be closed to its *locked* position. Release the locking latches by squeezing them inward and slide the spacer forward until it is flush with the housing plug assembly. See Figure 3.

NOTE The spacer should seat with a force of 56 N [12.5 lbs]. If the spacer does not seat, verify that all contacts are fully inserted.

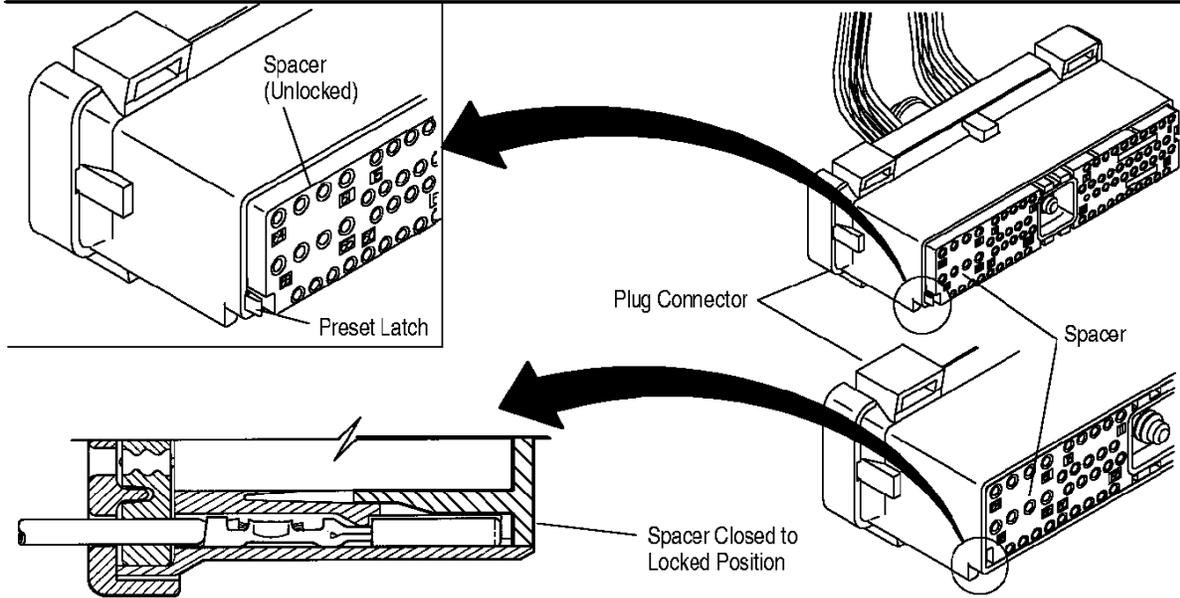


Figure 3

4. Assemble the wire dress cover and dress wires as shown in Figure 4.

5. Bolt the wire dress cover to the electronics module using customer supplied hardware. See Paragraph 3.15.

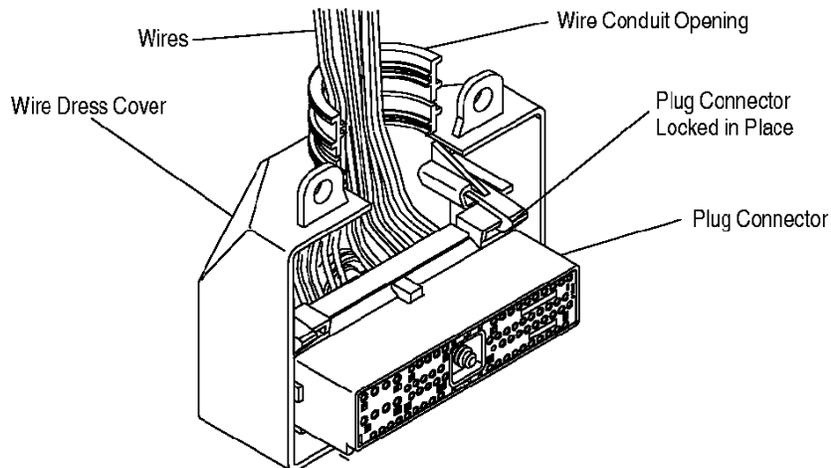


Figure 4

3.7. Plug Disassembly Procedures

Refer to Figure 5 and proceed as follows:

1. To remove the wire dress cover, loosen the two bolts holding the wire dress cover to the electronics module.

2. Cut the wire tie around the conduit, and release the four latch legs going into the plug assembly. See Figure 5.

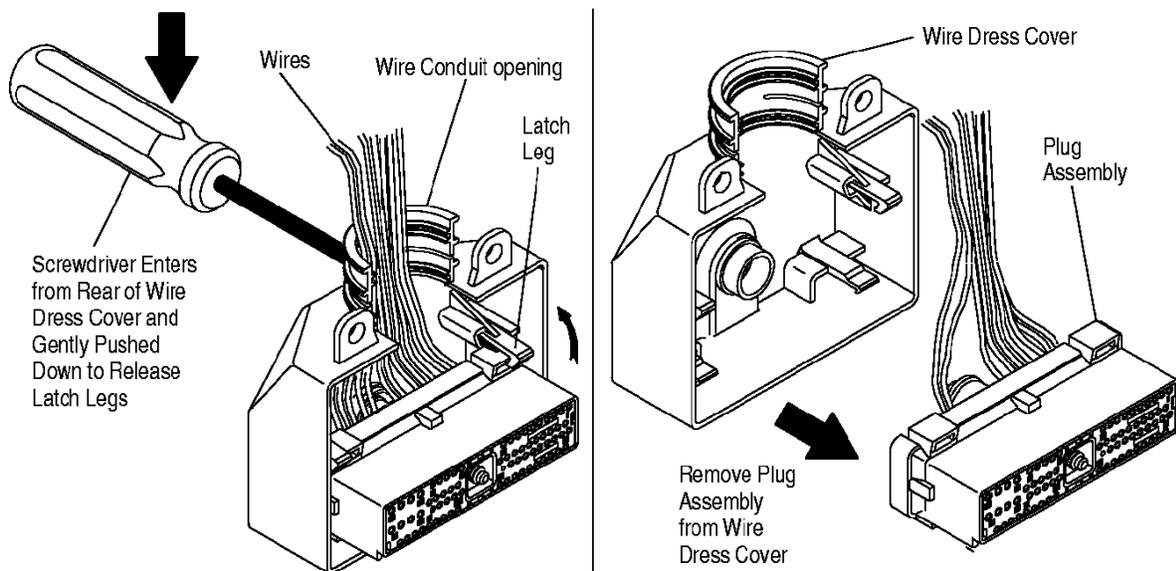


Figure 5

3. To remove the plug spacer, insert any hooked tool into the opening around the jackscrew. Rotate the tool to catch the underneath the spacer. Pull spacer straight out from the plug housing. See Figure 6.

CAUTION

Do not pry against the wall of the plug housing, as damage to the connector sealing system could occur.

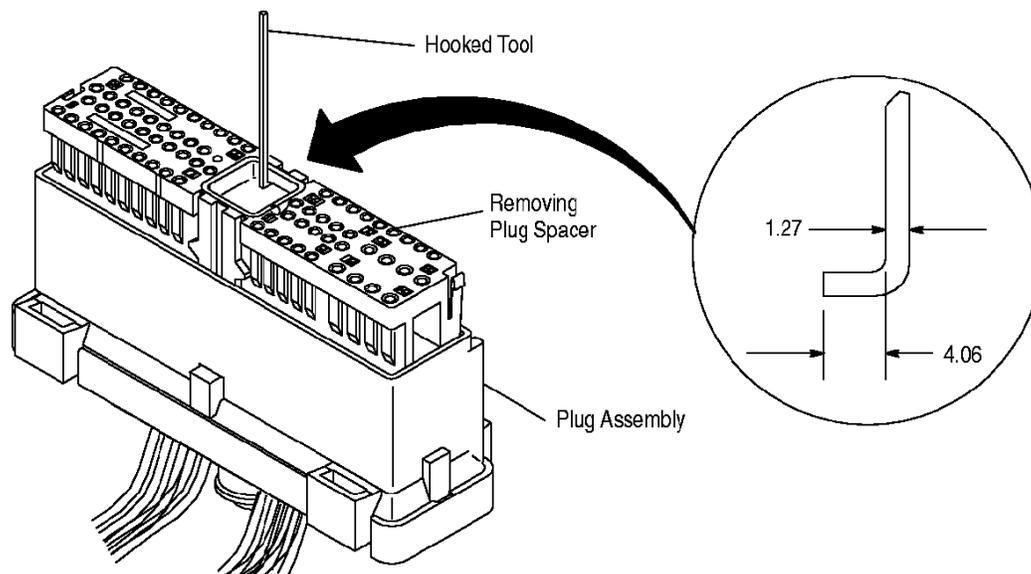


Figure 6

4. Insert a 1.4 mm screwdriver into the contact cavity and deflect the retention finger holding the contact. Gently pull the wire until the contact is free from the housing. Repeat this procedure for the remaining number of contacts to be removed as shown in Figure 7.

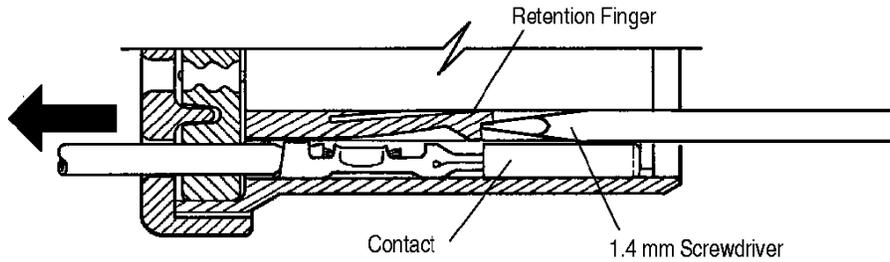


Figure 7

3.8. Printed Circuit Boards

A. Thickness

The header assembly has been designed to accommodate a pc board thickness of 2 mm thick. Contact the Product Information Center or the Tooling Assistance Center at the number listed at the bottom of page 1 for suitability of other board thicknesses.

B. Tolerance

The maximum bow of the pc board shall be 0.03 over the length of the header assembly.

C. Layout

The mounting and contact holes in the pc board must be precisely located to ensure proper placement and optimum performance of the header assembly. The “X” and “Y” symbols on the pc board layout represent customer established datums. They are the origin for the basic dimension (XXX and YYY datum), the point from which ALL hole positions must be located. Design the pc board using the dimensions provided in Figure 8.

NOTE: PC board layout is for reference only.

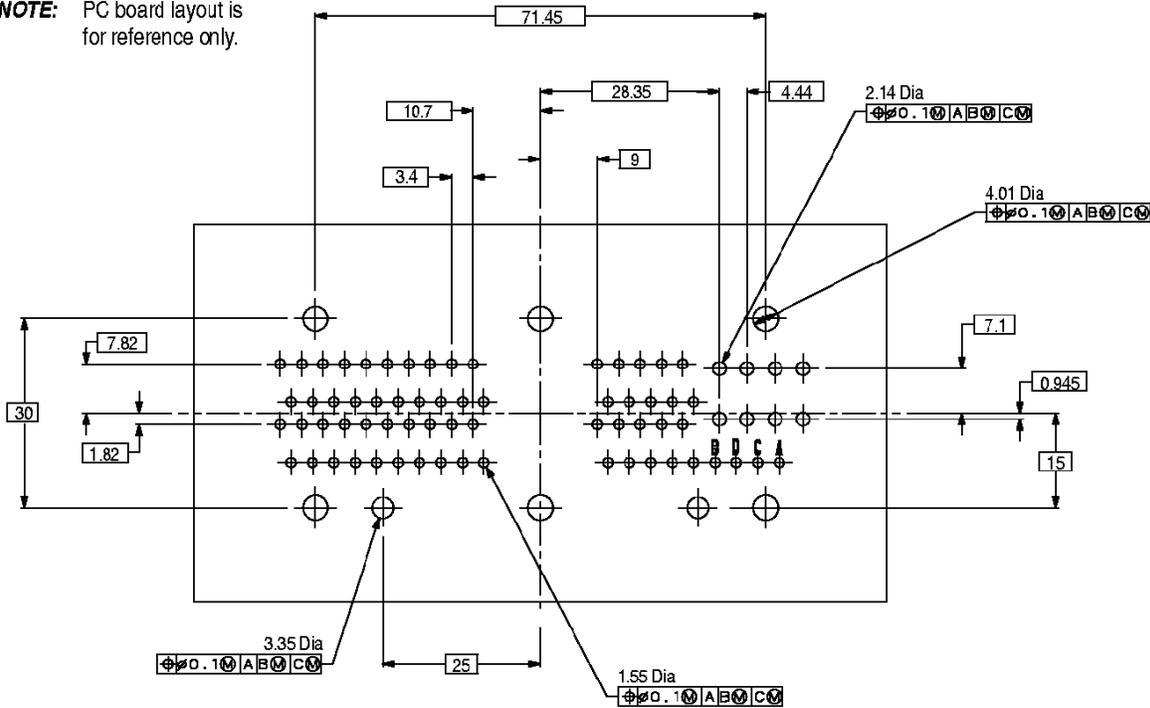


Figure 8

3.9. Contact Holes

The holes in the pc board for all contacts must be prepared as specified in Figure 9.

NOTE: The drilled hole diameter must be sized so that the diameter of the finished hole after plating meets the dimensions as shown.

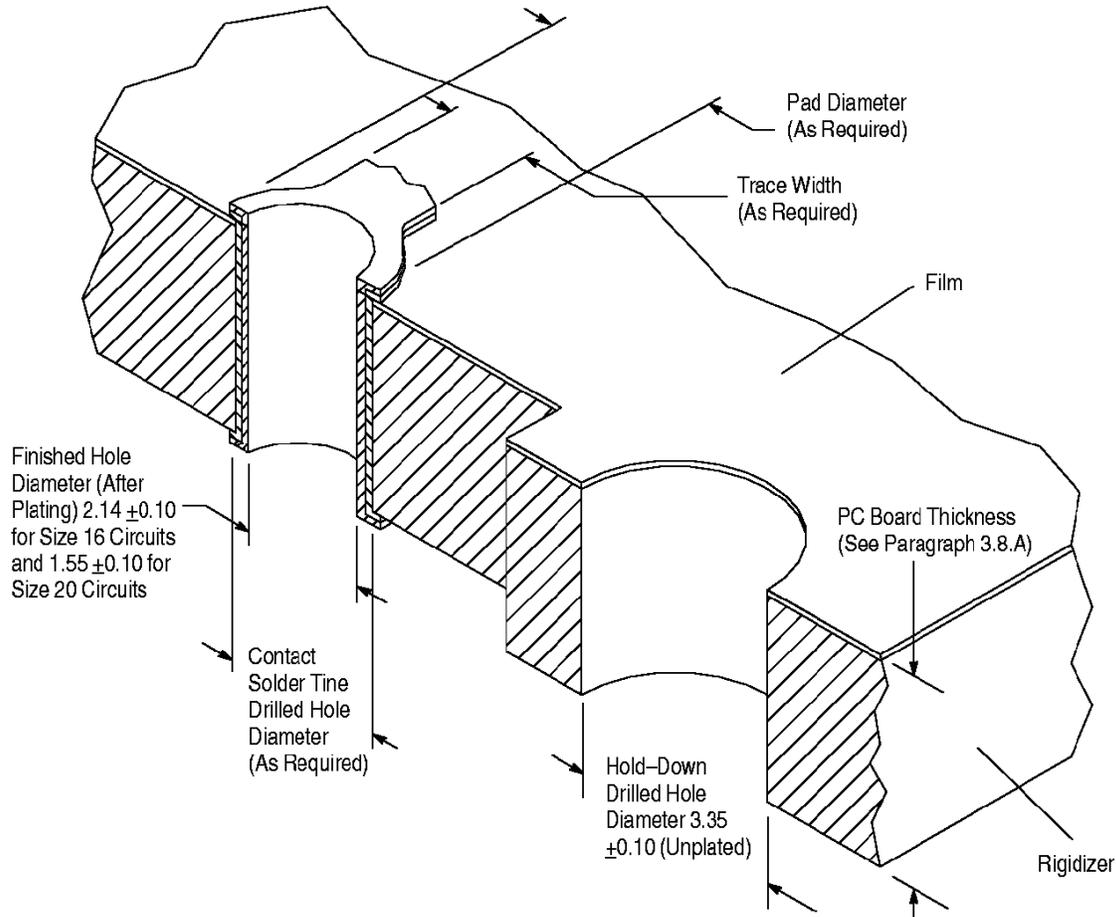


Figure 9

3.10. Header Assembly Application

This connector is for a vertical, surface mount application with pc boards. The header housing has a case seal for sealing against electronic module housings.

3.11. Header Assembly Placement

NOTE

Make sure that the case seal o-ring is properly placed inside the groove on the bottom side of the header assembly before mating to the rigidizer. The seal should not be bunched up or popping out of its retention features.

1. The header assembly contains two plastic posts on the underside which are meant to polarize the header through the rigidizer and pc board.
2. All six mounting screws must be torqued through the rigidizer plate into the header assembly. The torque shall be $2.25 \pm .22 \text{ N}\cdot\text{m}$ [$20 \pm 2 \text{ in}\cdot\text{lbs}$].
3. Check for proper placement of the header interface seal, which sits inside the header pocket. This seal should be flush against the bottom of the pocket. See Figure 10.

CAUTION

The interface seal and case seal must be in place to use the connector. Removing either seal will result in module failures.

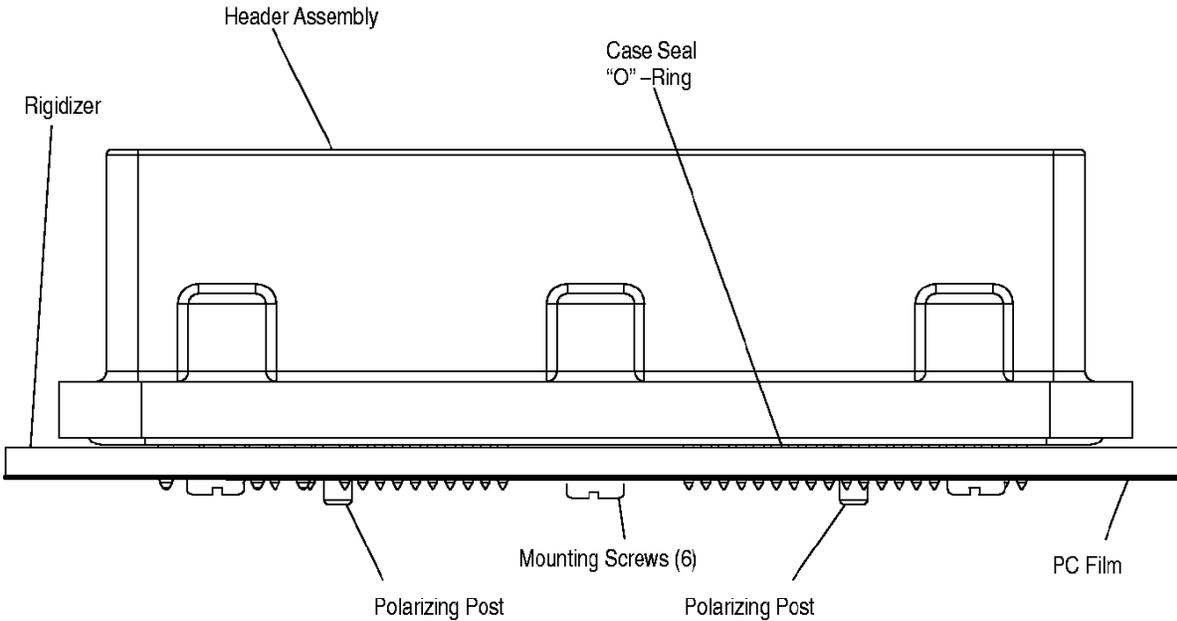


Figure 10

3.12. Soldering Header Assembly

The 68-Position Heavy Duty Hybrid Connector Header Assembly may be soldered to the pc board with an infrared reflow process, provided the temperature and exposure time is within the ranges specified in Figure 11. Tyco Electronics recommends the use of SN60 or SN62 solder for the connectors. Refer to Paragraph 2.5 for documentation material that is available for establishing soldering guidelines.

SOLDERING PROCESS	TEMPERATURE		TIME (At Max Temperature)
	CELSIUS	FAHRENHEIT	
Infrared Reflow Soldering	225	437	30 Seconds

Figure 11

A. Flux Selection

The connector solder tines must be fluxed prior to soldering with a mildly activated rosin base flux. Selection of the proper flux will depend on the type of pc board and other components mounted to the board.

B. Reflow Parameters

Due to the many variables involved with the reflow process (e.g., component density, orientation, etc.), Tyco Electronics recommends that the user conduct trial runs under actual manufacturing conditions to ensure product and process compatibility.

C. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. For a list of common cleaning solvents that will not affect the connectors or assemblies for the times and temperatures provided without any adverse effects on the connector assembly, refer to Figure 12.

DANGER

Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Trichloroethylene and Methylene Chloride can be used with no harmful affect to the connectors; however Tyco Electronics does not recommend them because of the harmful occupational and environmental effects. Both are carcinogenic (cancer-causing) and Trichloroethylene is harmful to earth ozone layer.

NOTE If you have a particular solvent that is not listed, contact the Tooling Assistance Center or Product Information number at the bottom of page 1.

CLEANER		TIME (Minutes)	TEMPERATURES (Maximum)	
NAME	TYPE		CELSIUS	FAHRENHEIT
Alpha 2110 ■	Aqueous	1	132	270
Bioact EC-7 ◆	Solvent	5	100	212
Butyl Carbitol ●	Solvent	1	Room Ambience	
Isopropyl Alcohol	Solvent	5	100	212
Kester 5778 ❖	Aqueous	5	100	212
Kester 5779 ❖	Aqueous	5	100	212
Loncoterge 520 ●	Aqueous	5	100	212
Loncoterge 530 ●	Aqueous	5	100	212
Terpene Solvent	Solvent	5	100	212

■ Product of Fry's Metals, Inc. ◆ Product of Petroferm, Inc. ● Product of Union Carbide Corp. ❖ Product of Litton Systems, Inc.

Figure 12

D. Drying

CAUTION Excessive temperatures may cause housing degradation. Do NOT solder the header assembly with the plug connector or wire dress cover attached to it.

The header assembly can withstand a temperature of -40 to 225°C [-40 to 437°F]. Values may vary with different automatic cleaning equipment (see equipment manufacturer's recommendations).

E. Checking Installed Connector

All solder joints should conform to those specified in Workmanship Specification 101-21. The mounting screws must be torqued to 2.25 ±0.22 N•m [20 ± 2 in-lbs]. The housing wall should be almost flush against the rigidizer. See Figure 13.

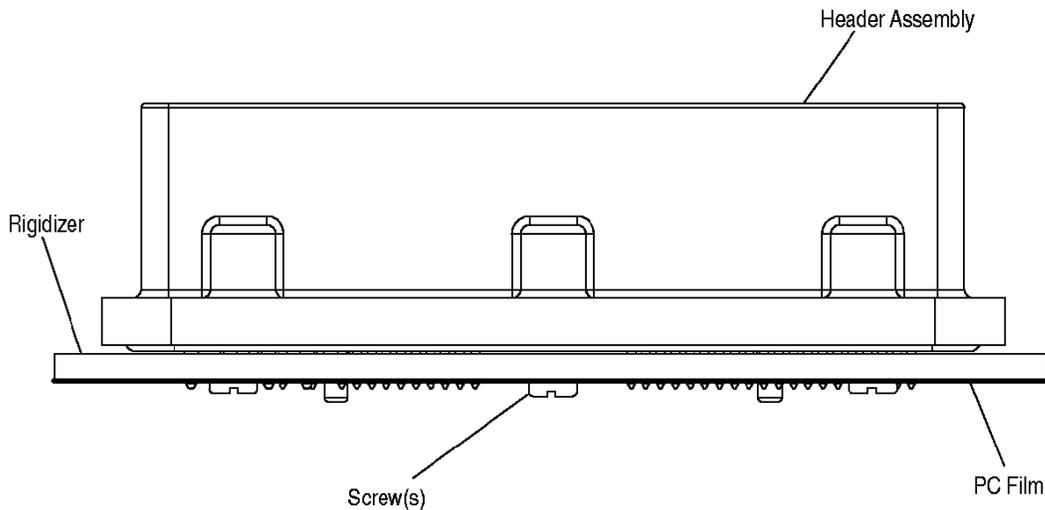


Figure 13

3.13. Polarization and Keying Features

The header assembly has key slots on the sides of the pocket which will accept corresponding keying protrusions from the plug assembly. There are four different possible keying arrangements. See Figure 14.

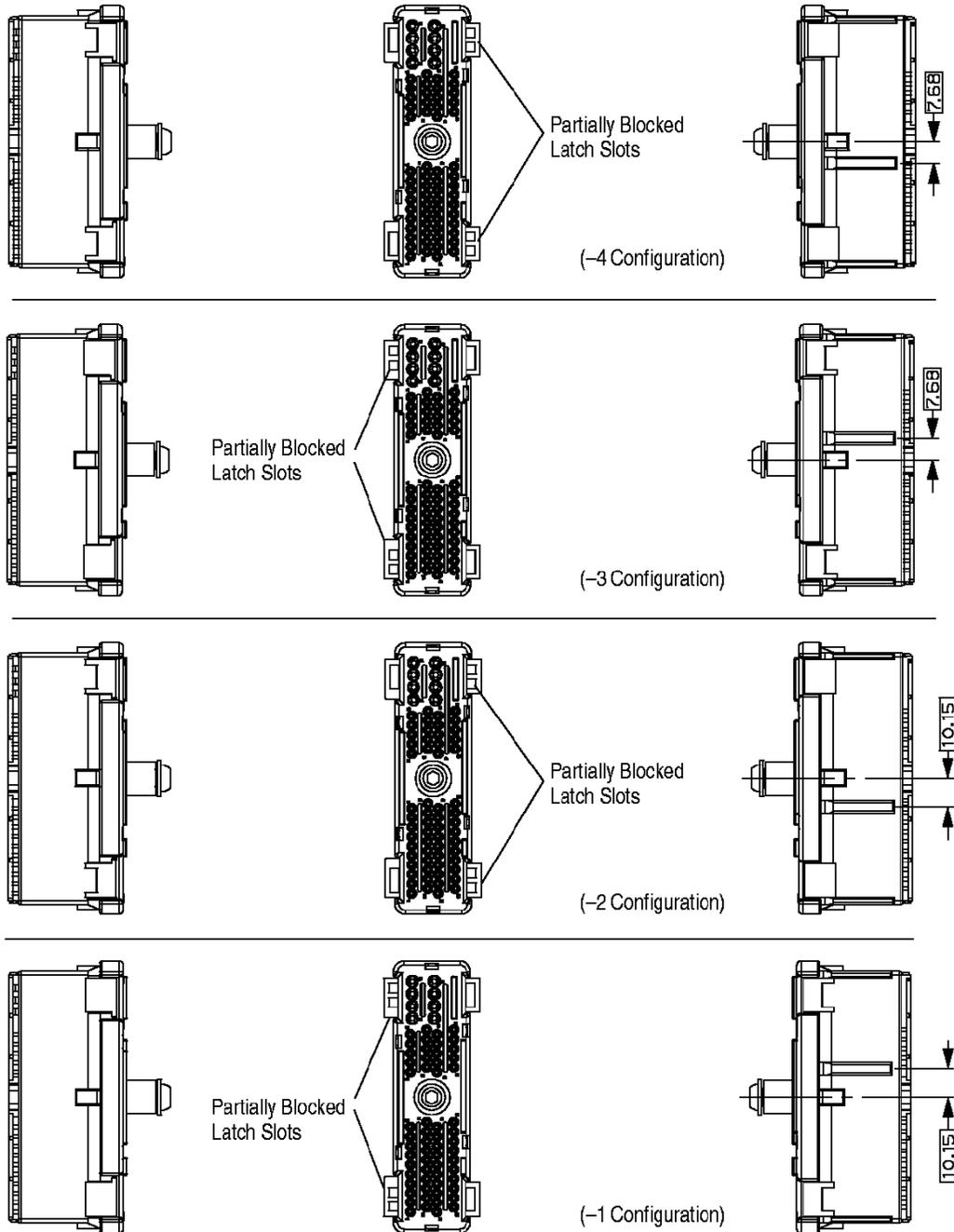


Figure 14

The plug assembly has polarized latch holes for mating with the wire dress cover. Two of the latch slots will be partially blocked, allowing the wire dress cover to only be mated in one direction. See Figure 15.

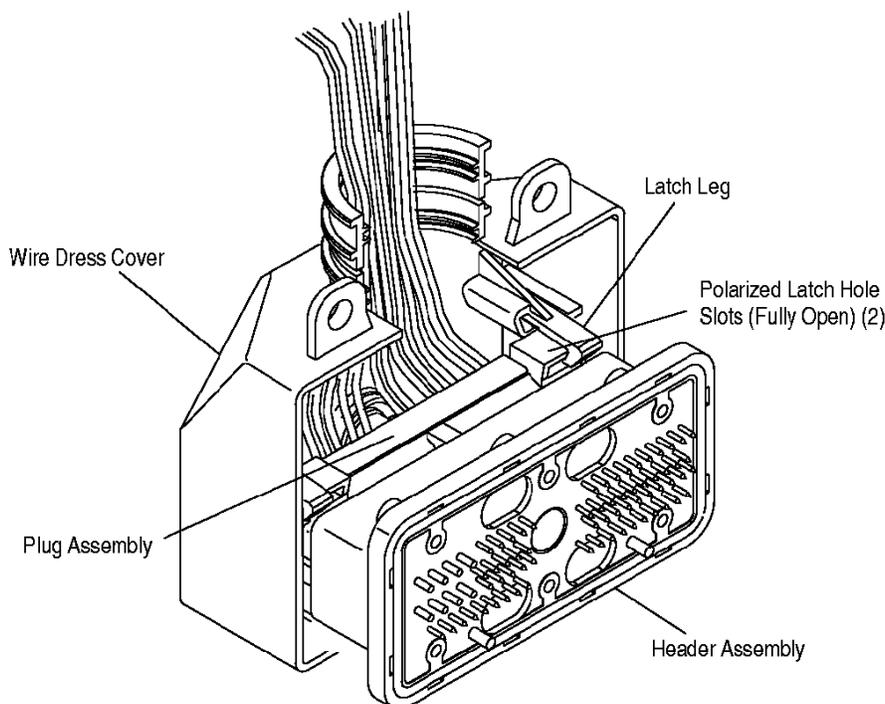


Figure 15

3.14. Mounting Hardware

Six customer supplied No. 6-19 screws are required to mount the header assembly to the rigidizer. Also, to mount the wire dress cover to the electronic module, two customer supplied screws are required. These screws must have a shaft of <7.0 mm diameter, and a head flange diameter > 9.0 mm.

3.15. Reading Voltage During Service

CAUTION Do NOT pierce wire insulation to take voltage readings.

It has been common practice in electrical troubleshooting to probe wires by piercing the insulation with a sharp point. This practice must be strongly discouraged when dealing with the 68-Position Heavy Duty Hybrid Connector System, or any other sealed connector system. The resulting pinholes in the insulation will allow moisture to invade the system by traveling along the wire strands. This nullifies the effectiveness of the connector seals and may result in system failure.

3.16. Repair/Replacement

Damaged crimped contacts or housings must be removed, discarded, and replaced with new components. Damaged pc board connectors must be removed from the pc board by standard desoldering methods and replaced.

CAUTION If a damaged contact is apparent before the the contacts are inserted into the housing, cut the wire in back of the contact and reterminate the wire end. If contacts or housing are damaged after insertion, the wire must be cut directly in back of the housing and reterminated with new contacts and housing.

4. QUALIFICATIONS

The 68-Position Heavy Duty Hybrid Connector is not required to be Listed or Recognized by Underwriters Laboratories Inc. (UL), or Certified by the Canadian Standards Association (CSA).

5. TOOLING

No specific application tooling is required for the application of the 68-Position Heavy Duty Hybrid Connector. Information for crimp termination tooling for the contacts is available in Application Specifications 114-6071 and 114-13045.

6. VISUAL AID

Figure 16 shows a typical application of 68-Position Heavy Duty Hybrid Connector. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

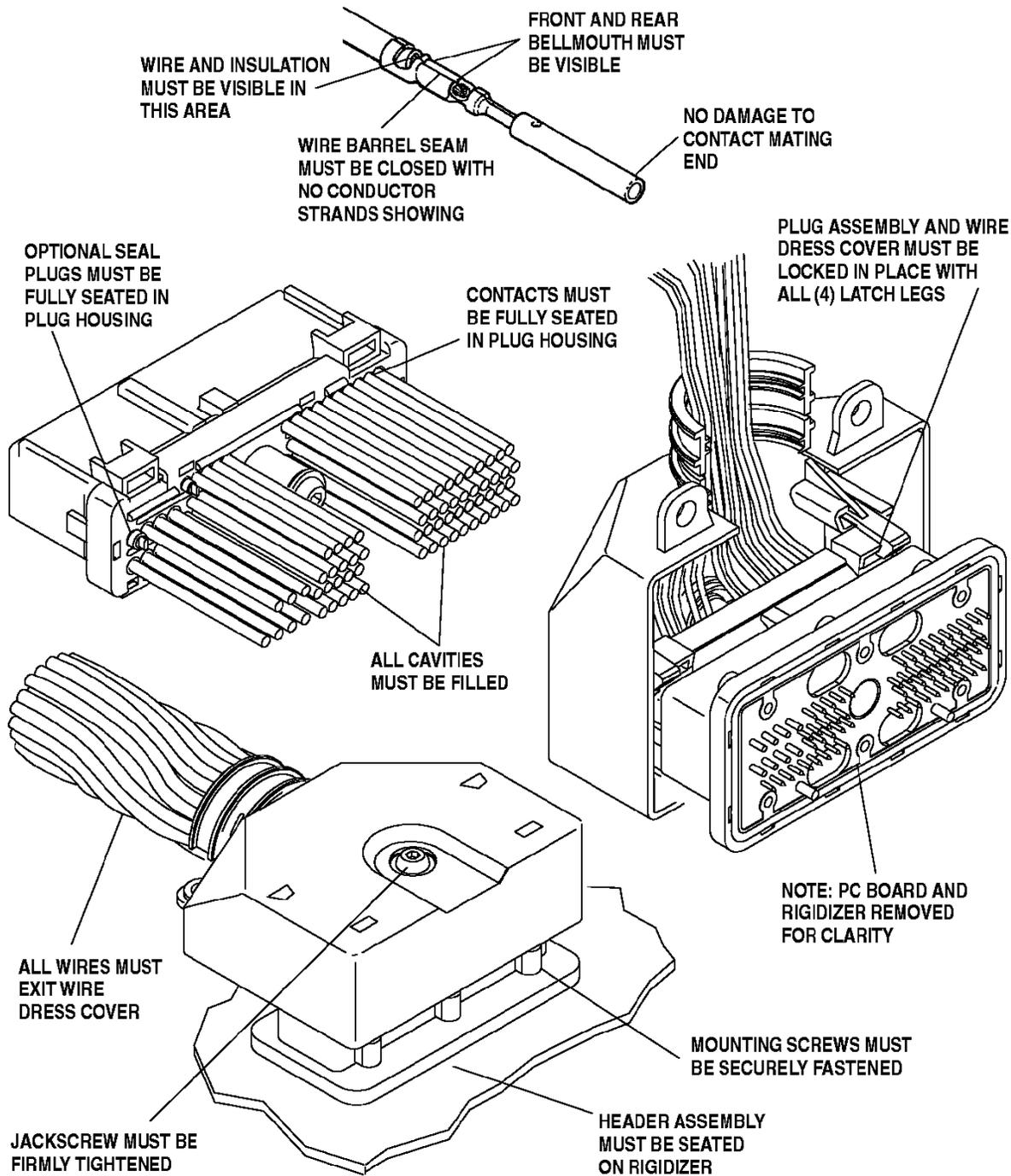


FIGURE 16. VISUAL AID