18-Position Sealed Header Assembly and Printed Circuit (PC) Board Module Case

NOTE

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ±0.13 [±.005] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of 18-position sealed header assembly and pc board module case for wire-to-printed circuit (pc) board applications used in the automotive industry. This right-angle header assembly consists of an inner header assembly and outer header assembly. The module case is used for environmental sealing of the pc board at the location of the header assembly. The header assembly has three 6-position receptacles, which accept same-position 0.64-mm [.025-in.] plug assemblies. The assembled header assembly and module case is referred to as the module. The plug assemblies are shown on Drawing 1473847.

NOTE

The plug assembly that mates with the header assembly accepts 0.64-mm [.025-in.] contacts. Application requirements for these contacts are covered in Application Specification 114-5278.

The inner header assembly is pre-loaded with contacts having a centerline spacing of 2.54 mm [.100 in.]. A seal (set inside the rim of the outer header assembly) provides a tight joint between the outer header assembly and the module case. The locking latches of the outer header assembly and the locking fasteners of the module case secure the components together. The alignment bosses and fixturing holes are designed to be used by the application tooling to properly position the header assembly onto the pc board. The module case is designed to be mounted onto a bracket using the bracket latch.

Further assurance of proper mating is provided by keys. The mating plug assembly will only mate with the header assembly if the ID symbols match the ID symbols (on the pockets) of the header assembly.

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

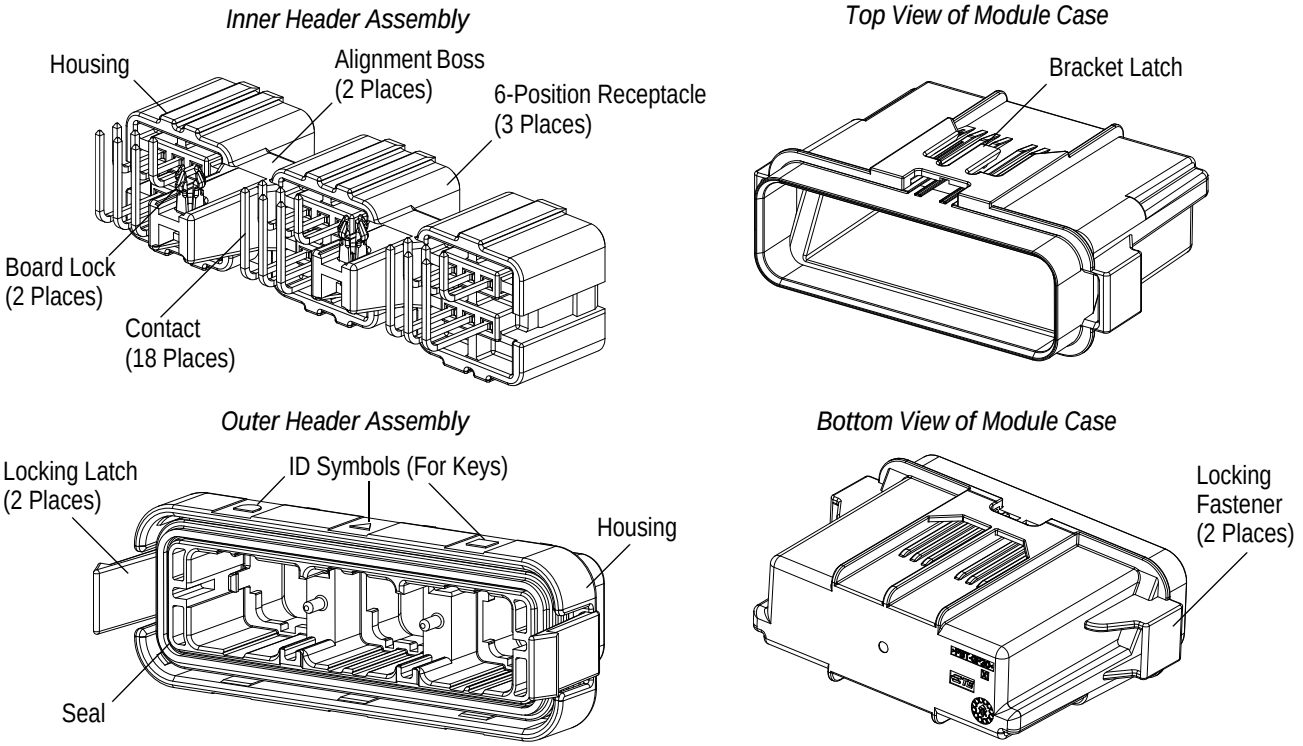

Figure 1

TOOLING ASSISTANCE CENTER 1-800-722-1111
PRODUCT INFORMATION 1-800-522-6752

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Replaced illustration of bottom view of module case in Figure 1 and illustrations in Figure 4
- Changed cover to module case and housing assembly to header assembly
- Added Paragraph 3.4 and reference for Figure 2
- Modified text in Section 1 and added text to Paragraph 3.9
- Removed extra line for board locks in Figure 5

2.2. Customer Assistance

Reference Product Base Part Numbers 2138146, 2138144, and 2138113 and Product Code A444 are representative of 18-position sealed header assembly and pc board module case. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, call PRODUCT INFORMATION at the number at the bottom of page 1.

2.4. Specifications

Application Specification 114-5278 provides product description and application requirements for 0.64-mm [.025-in.] contacts (accepted by 0.64-mm [.025-in.] plug assembly).

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Storage

A. Ultraviolet Light

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

B. Shelf Life

Product should remain in the shipping containers until ready for use to prevent deformation to the contacts. Product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

C. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the contacts.

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

3.3. PC Board

A. Material and Thickness

The pc board material should conform to International Electrotechnical Commission (IEC) 61249-2-7, “Materials for Printed Boards and Other Interconnecting Structures-Part 2-7: Reinforced Base Materials Clad and Unclad-Epoxide Woven E-Glass Laminated Sheet of Defined Flammability (Vertical Burning Test), Copper-Clad.” For other pc board materials, suitability must be confirmed by testing.

The pc board thickness shall be 1.60 mm [.063 in.].

B. Hole Dimension

The pc board holes for the receptacle contacts must be plated through. Plating is not necessary for the holes for the board locks. The plating type and thickness and drilled hole diameter and finished hole size are given on Drawing 2138146-1.

3.4. Attaching Inner Header Assembly to PC Board

The inner header assembly must be attached to the pc board by pressing the top surface of alignment bosses until the board locks are through the holes in the pc board. See Figure 2.

CAUTION

Receptacles should be handled only by the housing to avoid deformation, contamination, or damage to the contacts.

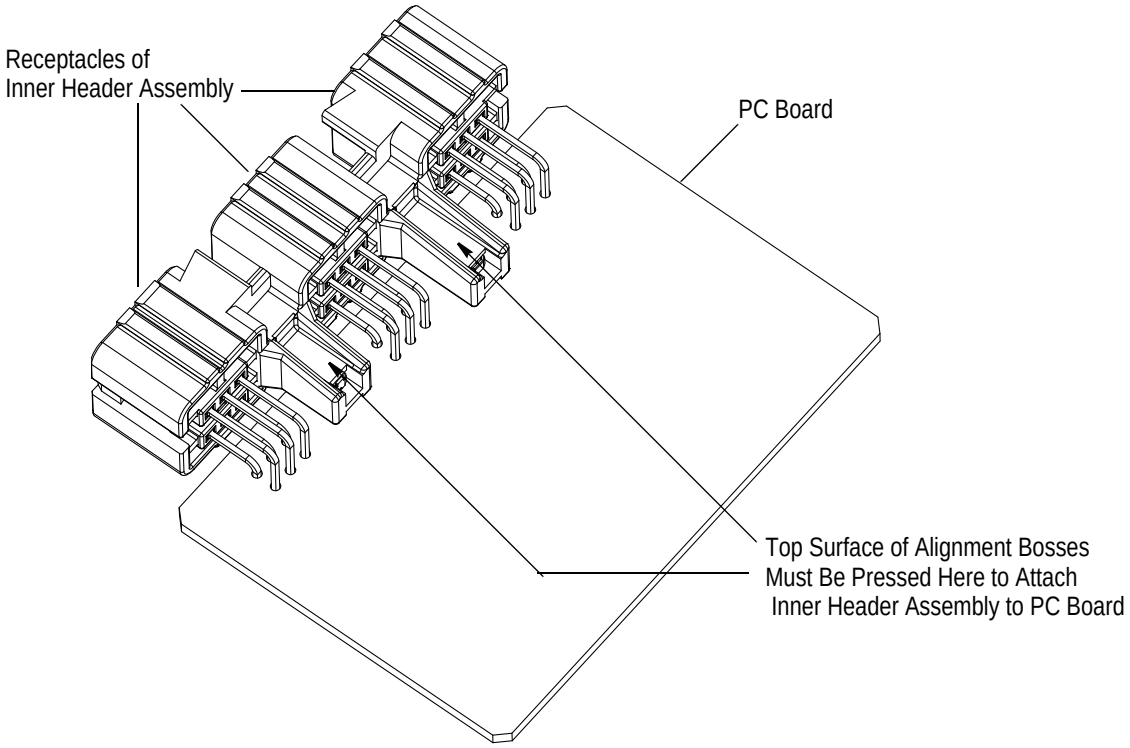

Figure 2

3.5. Inner Header Assembly and Outer Header Assembly

The inner header assembly and outer header assembly must be properly aligned before they are pressed together. This will ensure that the components are not damaged in any way. See Figure 3.

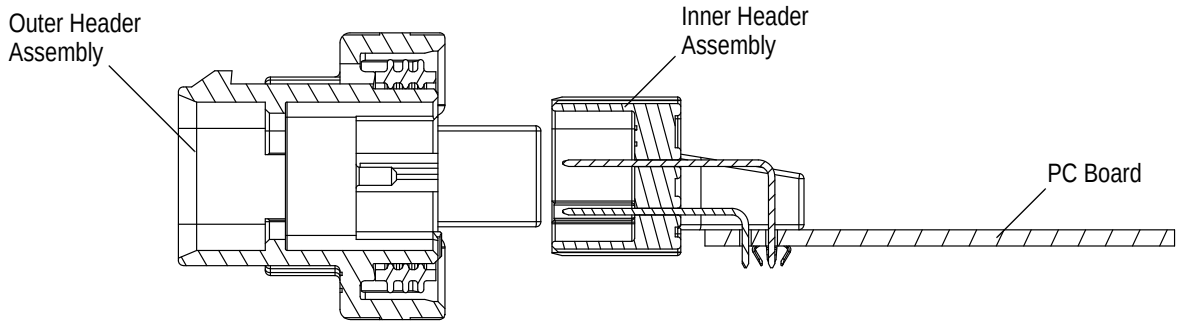

Figure 3

3.6. Module Case

CAUTION

The header assembly should be handled only by the housing to avoid deformation, contamination, or damage to the contacts.

A. Registration

Care must be taken to properly align the header assembly to the module case before installing the module case onto the header assembly. See Figure 4.

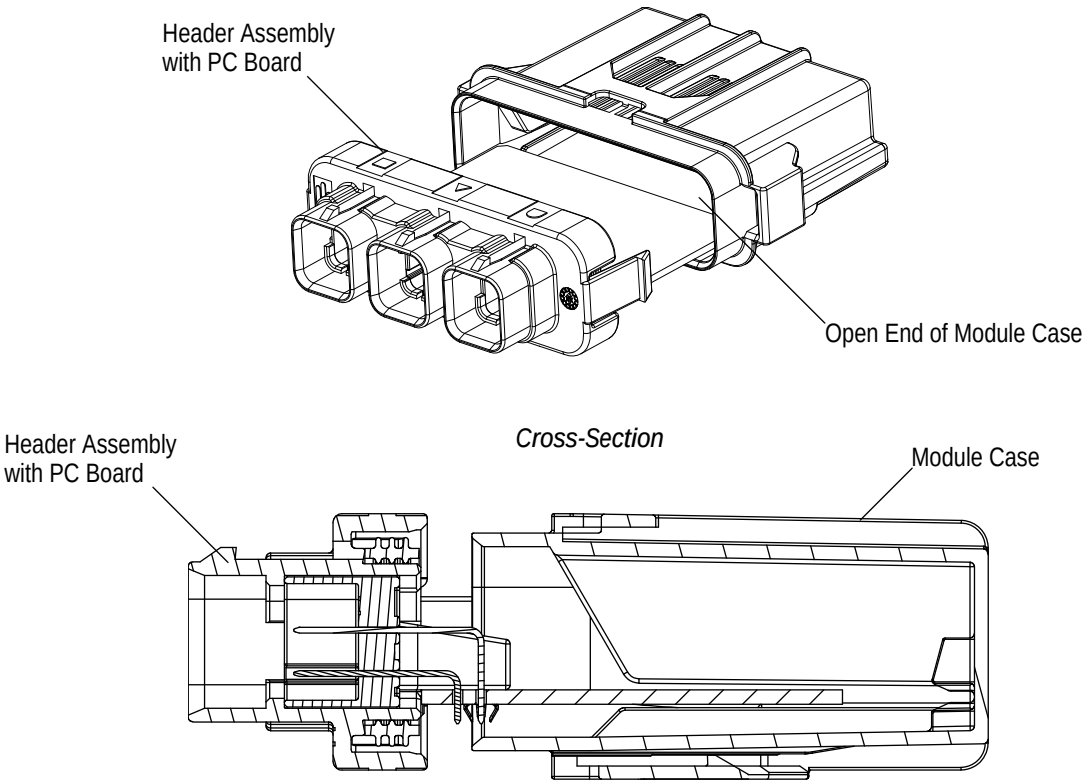

Figure 4

B. Seating

The pc board (with the header assembly) must be inserted straight into the open end of the module case until the header assembly locking latches are fully latched onto the module case locking fasteners (there should be an audible “click”). The force required to install the header assembly with the pc board onto the module case is a maximum of 225 N [50 lb-force].

CAUTION

The seal of the header assembly must be in place before assembling the module case onto header assembly with the pc board. It is possible that, during disassembly, the seal could pull away from the header assembly.

3.7. Mounting

The module case must be properly aligned with the bracket prior to mounting, then slid straight onto the bracket.

NOTE

These requirements assume that the bracket has been specifically designed for this module case.

3.8. Checking Installed Module

The following requirements must apply when checking the installed module:

— all contacts are through the holes in the pc board with a protrusion within the dimension given in Figure 5

— the inner header assembly is properly aligned and securely assembled to the outer header assembly

— the outer header assembly seal is in place so that there is a tight joint between the header assembly and module case

— the module case locking fasteners are fully engaged with the outer header assembly locking latches

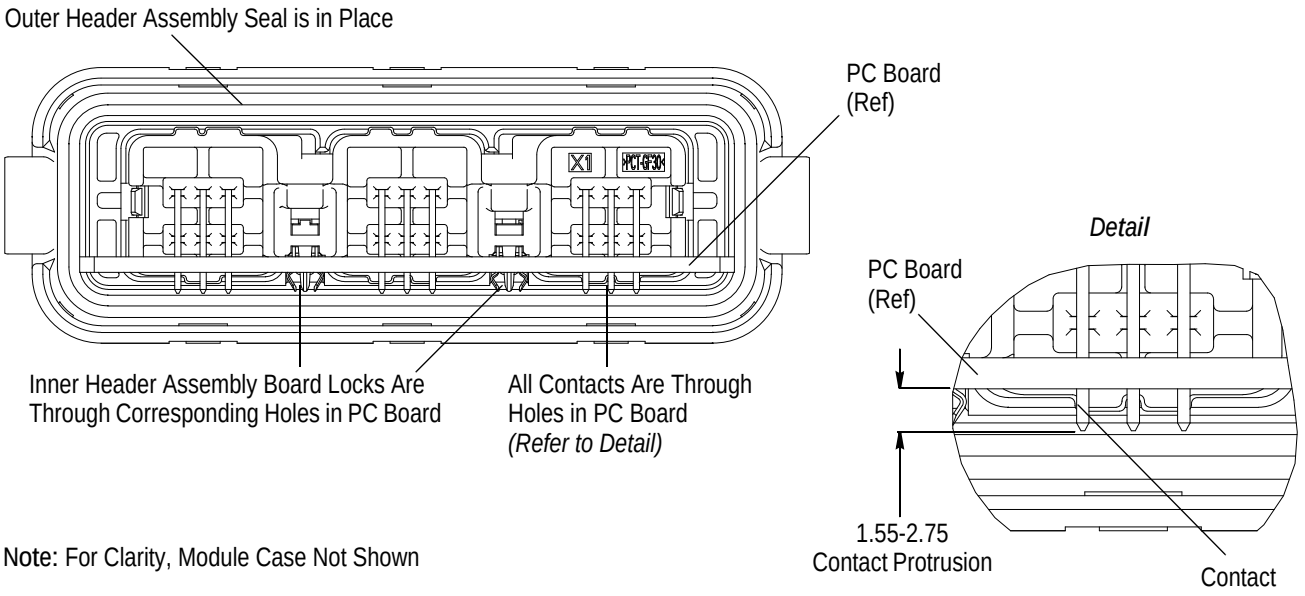

Figure 5

3.9. Wire Dress

The wires must be dressed using an appropriate bend radius.

CAUTION

Using excessively sharp bend radius on the wires may compromise the effectiveness of the plug assembly seals.

3.10. Repair

The inner header assembly, outer header assembly, and module case are not repairable. Damaged or defective components must not be used.

4. QUALIFICATION

No outside agency approval was defined at the time of publication of this document.

5. TOOLING

Application tooling (which includes a pc board support) specifically designed for this header assembly must be used to seat the receptacles onto the pc board. For design information, call PRODUCT INFORMATION at the number at the bottom of page 1.

No tooling is required to install the module case onto the header assembly.

6. VISUAL AID

The illustration below shows a typical application of 18-position sealed header assembly and pc board module case. 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.

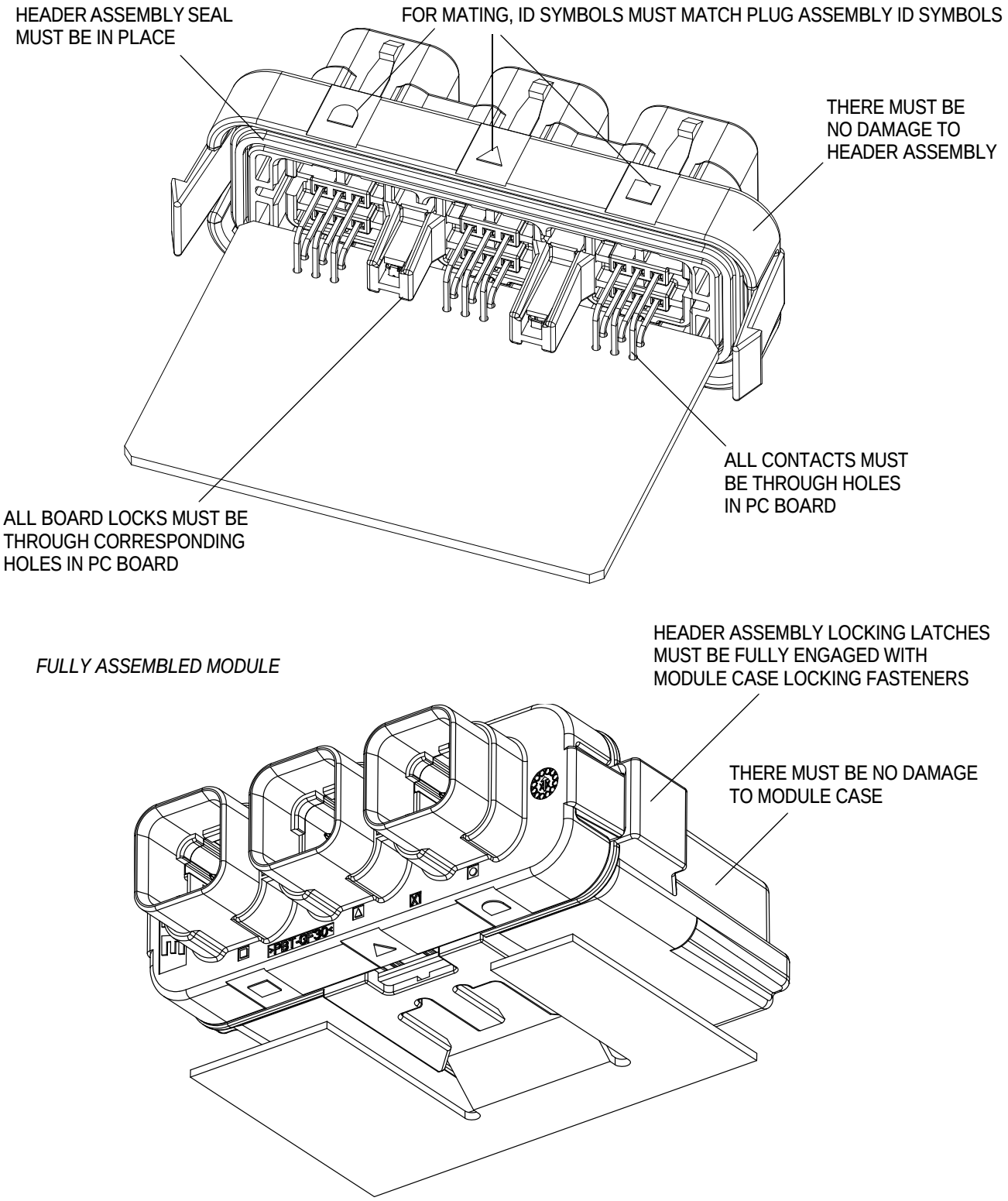

FIGURE 6. VISUAL AID