

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 [$\pm .005$] 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 requirements for application of MQS Socket Connectors designed to be used in automotive interiors for wire harness applications. The socket connector features a housing with 2 rows of contact cavities having in-row and row-to-row centerline spacing of 2.54 mm [.100 in.]. Circuit positions are marked on the wire end and mating face of the socket connector. These socket connectors accept Micro Quadlock socket contacts and mate with Micro Quadlock pin headers.

NOTE



Application requirements for the socket contacts are covered in Application Specification 114-18021.

Each secondary lock (one per row of contact cavities) is a cover that rotates on a “living” hinge. The secondary lock must be in the pre-lock OPEN position before the contacts can be inserted into the contact cavities. When the contact is inserted, the locking lance of the contact deflects into the contact removal window, locking the contact into place. After all contacts are inserted, the secondary lock is closed to ensure that the contacts are fully seated and to provide additional contact retention. Each secondary lock features locking latches that engage locking tabs to ensure that the secondary lock is in the CLOSED position. The socket connector is shipped with the secondary locks in the OPEN position.

NOTE



If a socket connector is received with the secondary lock(s) in the CLOSED position, it is NOT defective. The secondary locks can be open or closed; however, they must be open before any contacts can be inserted.

The socket connector is designed with features for polarization, keying, and positive mating. When mating the connectors, the socket connector mating latch engages the locking tabs of the pin header and prevents the connectors from separating. The anti-overstress beam protects the mating latch from accidentally breaking from the socket connector. Each contact cavity has a test probe accept point for circuit testing. The contacts can be removed from the socket connector via the contact removal window.

When corresponding with Tyco Electronics 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.

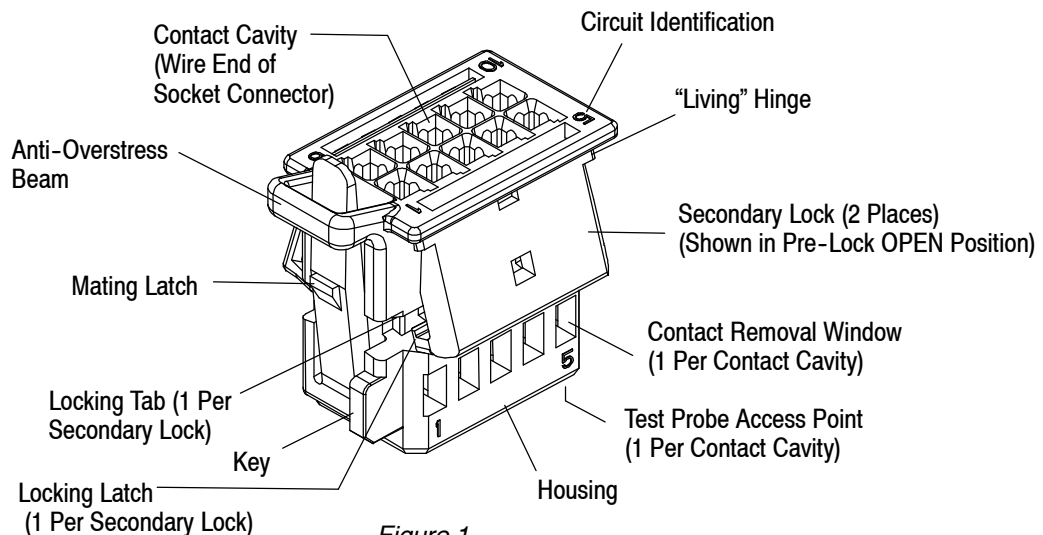


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- New logo and format

2.2. Customer Assistance

Reference Product Base Part Number 1488973 and Product Code 0537 are representative of MGS Socket Connectors. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local Tyco Electronics Representative or, after purchase, by calling Product Information at the number 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 114-18021 provides product description and application requirements for the socket contacts accepted by the socket connectors.

Product Specification 108-18030 provides product performance and test information for the Micro Quadlock system.

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 socket connector material.

B. Shelf Life

The socket connectors should remain in the shipping containers until ready for use to prevent deformation. The socket connectors 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 socket connectors near any chemical listed below as they may cause stress corrosion cracking.

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

3.3. Polarization and Keying

The contact cavities are polarized to prevent the contacts from being inserted upside-down.

The socket connectors are keyed to mate only with identically keyed pin headers.

3.4. Contact Crimp

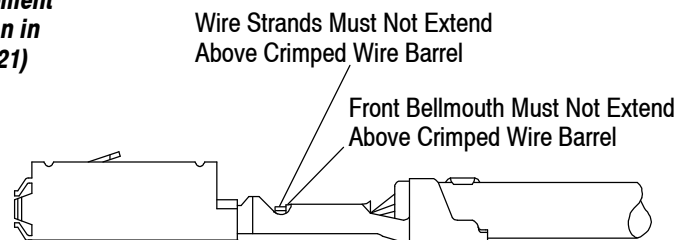
In addition to the requirements given in Application Specification 114-18021, each contact must meet the requirement shown in Figure 2, Detail A.

3.5. Contact Insertion

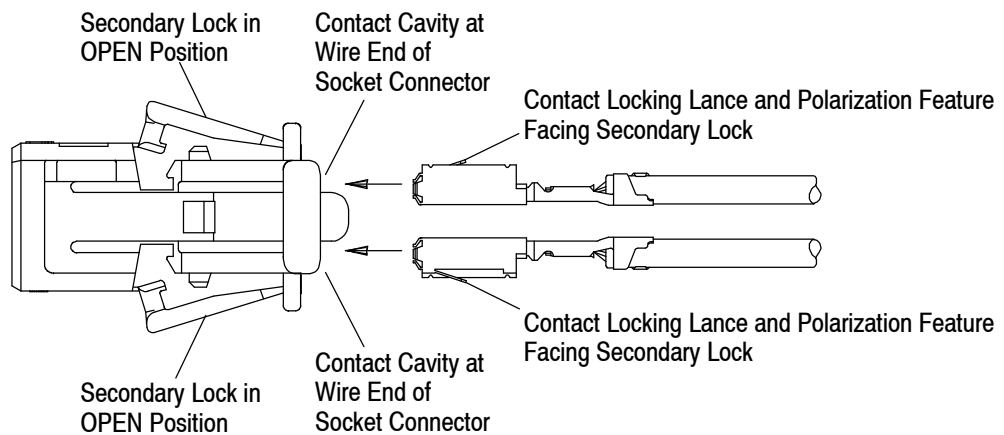
The secondary lock (for the corresponding contact cavities) must be in the OPEN position before any contacts can be inserted into those contact cavities. The contact must be aligned with the contact cavity at the wire end of the socket connector and oriented so that the locking lance is facing the secondary lock (for the corresponding contact cavities). See Figure 2, Detail B.

Each contact must be inserted into a contact cavity until the locking lance engages the contact cavity (there should be an audible click which indicates that the contact has been fully inserted). The secondary lock (for the corresponding contact cavities) must be rotated to the CLOSED position. The secondary lock is in the CLOSED position when the locking latches are fully secure to the locking tabs. The secondary lock will not close unless all contacts (for that secondary lock) are fully inserted. See Figure 2, Detail C.

**Detail A — Contact Crimp Requirement
(In Addition to Requirements Given in
Application Specification 114-18021)**



Detail B — Inserting Contacts



Detail C — Closing Secondary Locks

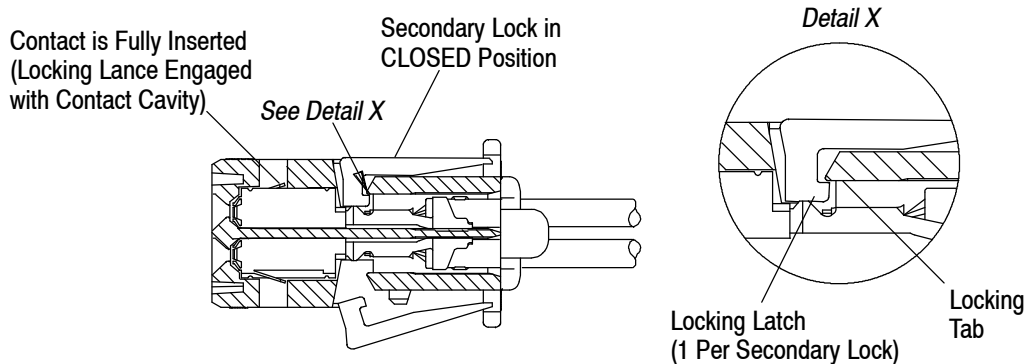


Figure 2

3.6. Circuit Testing

Test probe windows located at each contact cavity at the mating face of the socket connector accommodate test probes for circuit testing. Individual test probes, or equivalent, must have a diameter of 0.64 ± 0.05 mm [$.025 \pm .002$ in.] with a minimum pin length of 1.5 mm [.060 in.]. The force exerted by the probe should be no more than 10 N [2.25 lb] per contact cavity. Test probe location layout is shown in Figure 3.



Pointed or sharp instruments MUST NOT be used for probing; otherwise, damage to the socket connector could result. To avoid system failure, the wire insulation MUST NOT be pierced.

Note: Not to Scale

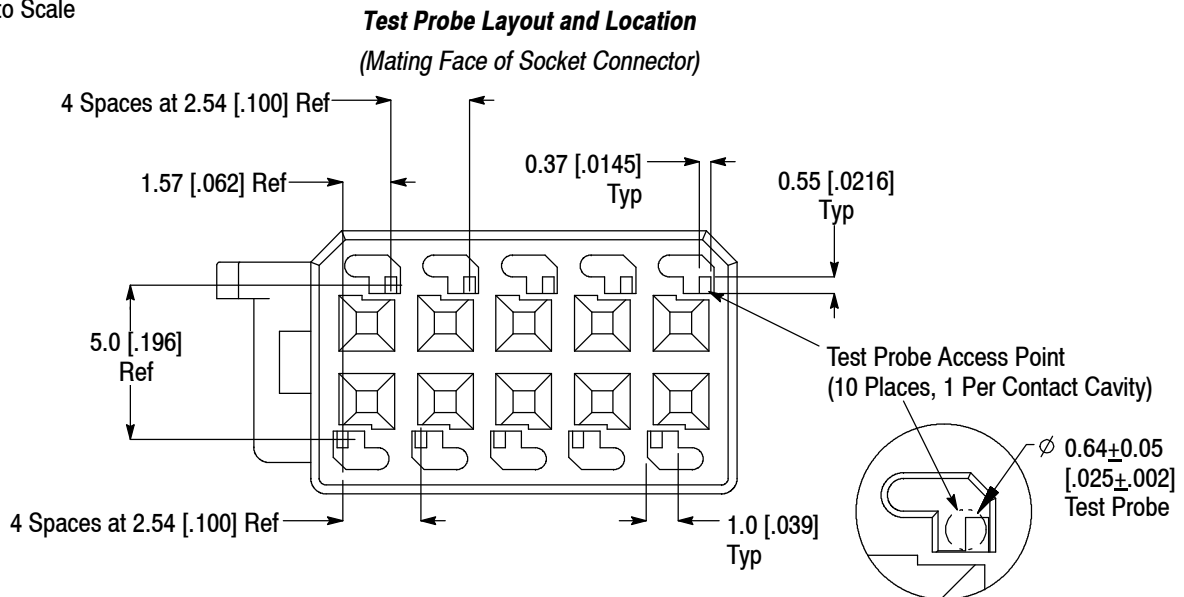


Figure 3

3.7. Contact Removal

The secondary lock (for the corresponding contact cavities) must be in the OPEN position before any contacts can be removed from those contact cavities. The locking latches must be released from the locking tabs to open the secondary lock (a suitable tool described in Section 5 must be used). The secondary lock must not be rotated beyond the limit given in Figure 4, Detail A.



If the secondary lock is rotated past the limit given, the secondary lock will break from the socket connector, and the socket connector must not be used.

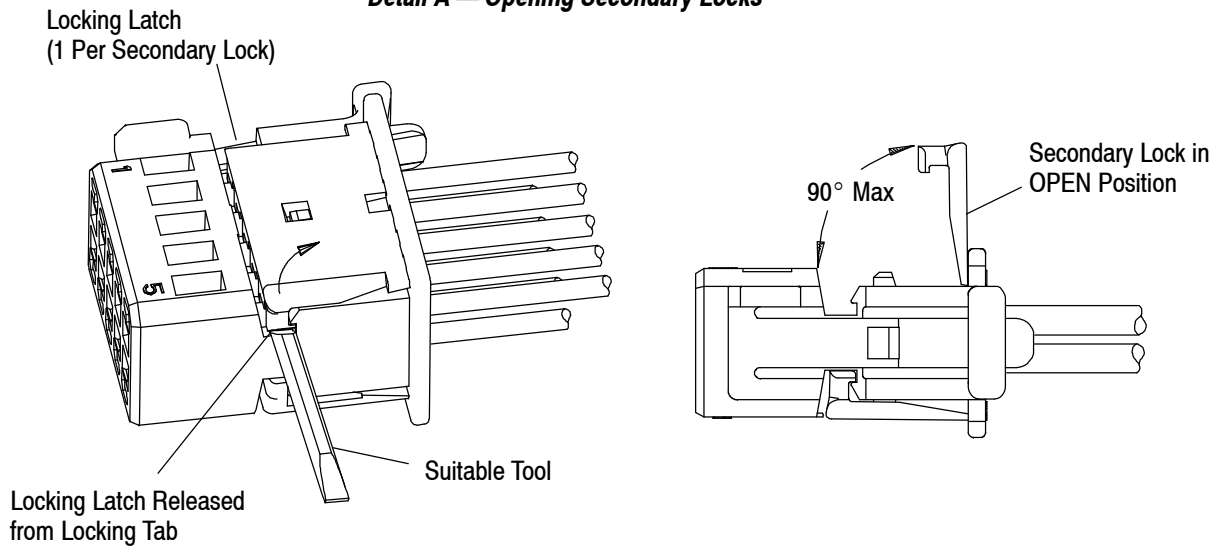


Care must be taken not to damage the locking features with the tool.

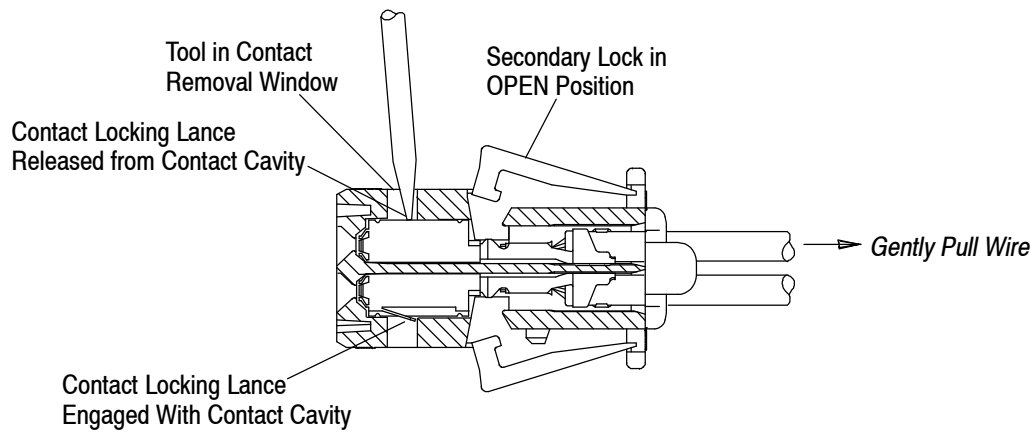
The locking lance of the contact must be released from the contact cavity before the contact can be removed from the socket connector. A suitable tool (described in Section 5) must be inserted into the corresponding contact removal window to release the contact locking lance, and the wire must be pulled *gently* to remove the contact from the socket connector. See Figure 4, Detail B.

Typically, during extraction, the locking lance of the contact catches on the locking tab of the connector. At this point, the tool must be inserted into the secondary lock window to release the locking lance before continuing to pull the wire to remove the contact. See Figure 4, Detail B.

Detail A — Opening Secondary Locks



Detail B — Removing Contact



Typically, Locking Lance Must Be Released from Locking Tab of Connector

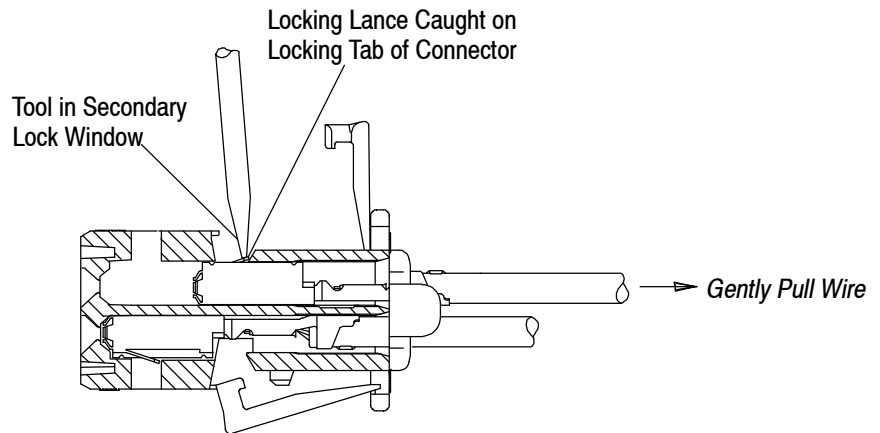


Figure 4

3.8. Repair



These socket connectors are non-repairable. Damaged or defective socket connectors MUST NOT be used. A contact MUST NOT be re-used by removing the wire.

4. QUALIFICATION

MQS socket connectors do not require agency approval.

5. TOOLING

The extraction tool or a flat-blade screwdriver with a tip having a maximum width of 1.5 mm [.059 in.] is required to open the secondary lock of the socket connector and to remove the contacts from the socket connector by releasing the contact locking lance from the housing without overstressing the contact. Refer to Figure 5.

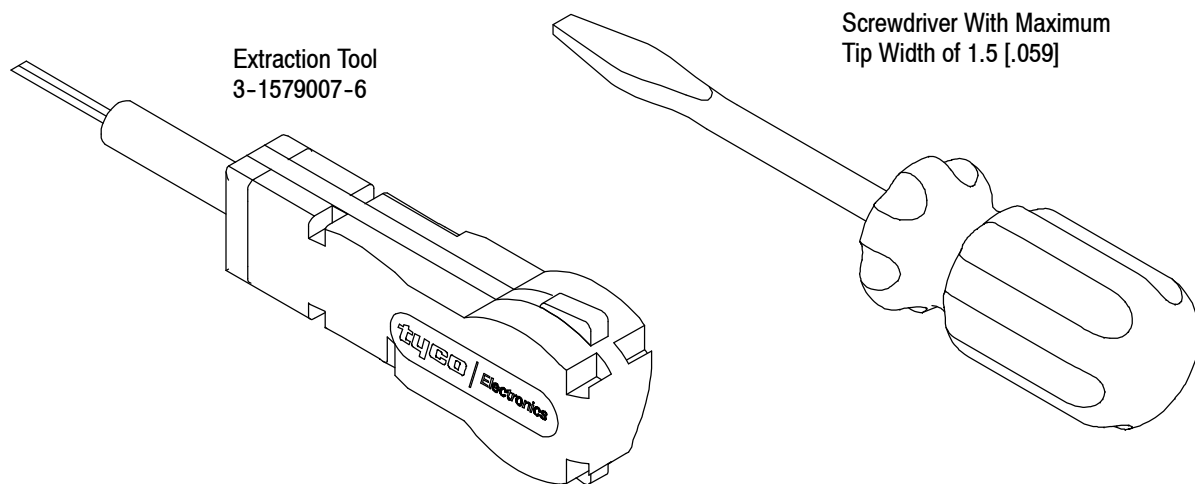


Figure 5

6. VISUAL AID

Figure 6 shows a typical application of MQS Socket Connectors. 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.

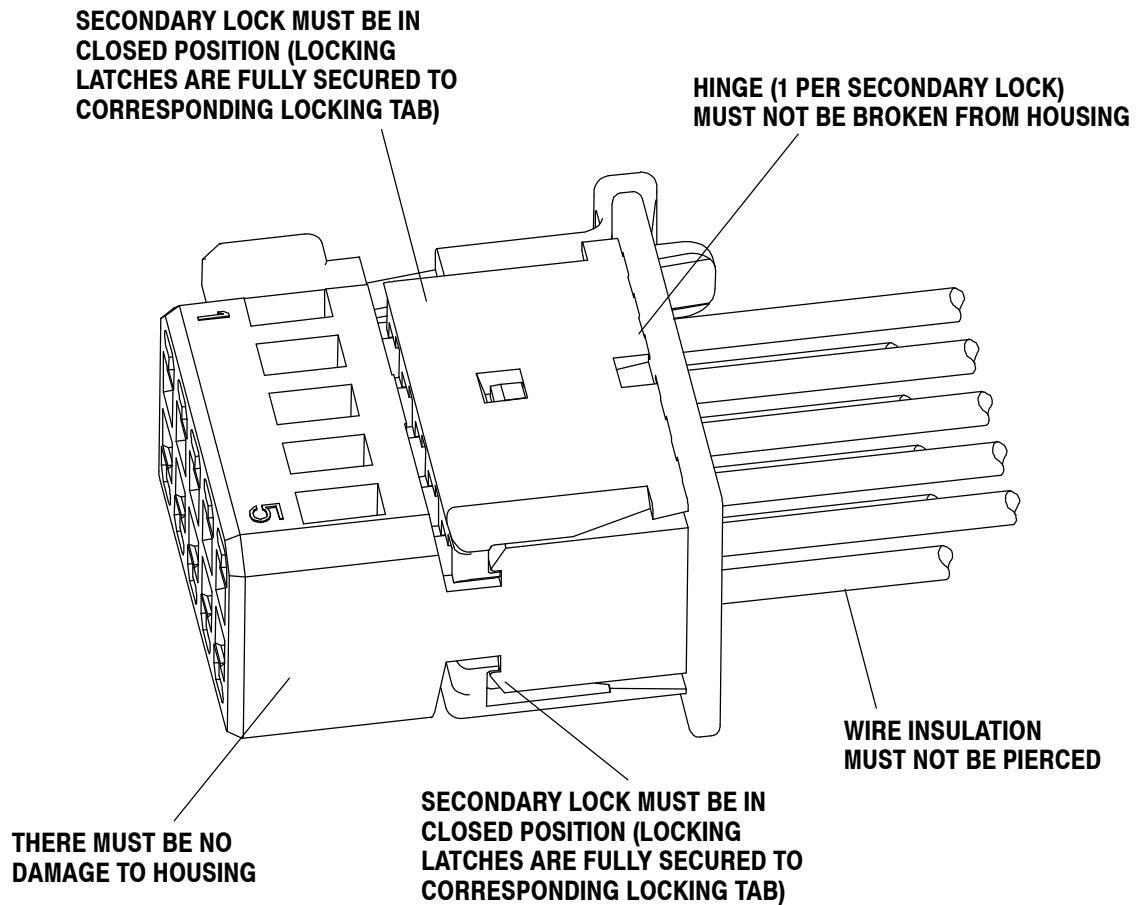


FIGURE 6. VISUAL AID