

**Die Assembly 69669-1 (Ref)**

Figure 1

### 1. INTRODUCTION

AMP\* Die Assemblies 69669-1, 69669-2, 69726, 69727, 220026-1, 220088-1, 220217-1, 220217-2, and 220217-3 are designed for use in Hand Crimping Tool 69710-1 or Pneumatic Tool 69365. Each die assembly, when installed in the tool, will crimp BNC and TNC Dual Crimp RF Connectors onto various sizes of RG/U cable.

These instructions provide specific information regarding the die assemblies. Refer to the Instruction Sheet 408-2095, packaged with the hand tool, or Customer Manual 409-1983, packaged with the pneumatic tool, for information regarding general performance of the tool. For product part number information, refer to Catalog 82074.

**NOTE**

*Dimensions on this sheet are in metric units [with U.S. customary units in brackets]. Figures are not drawn to scale.*

Reasons for reissue are provided in Section 6, REVISION SUMMARY.

### 2. DESCRIPTION

Each die assembly consists of an indenter (stationary die) and an anvil (moving die). The indenter has chamfered corners and the anvil has square corners.

When mated, the dies form two crimping chambers: the center contact crimping chamber and the braid and insulation crimping chamber. Each die is held in the tool by a single die holding screw. See Figure 1.

### 3. CRIMPING PROCEDURE

Install the dies according to the instructions packaged with the tool. Prepare and assemble the cable and connector according to the instructions packaged with the connector, then proceed as follows.

#### 3.1. Center Contact (Figure 2)

1. Insert the center contact into the *back* of the center contact crimping chamber. Position the contact so that it is bottomed in the anvil (moving die).
2. Hold the contact in place and actuate the tool through a complete cycle according to the instructions packaged with the tool.
3. Allow the tool to open fully and remove the crimped center contact.

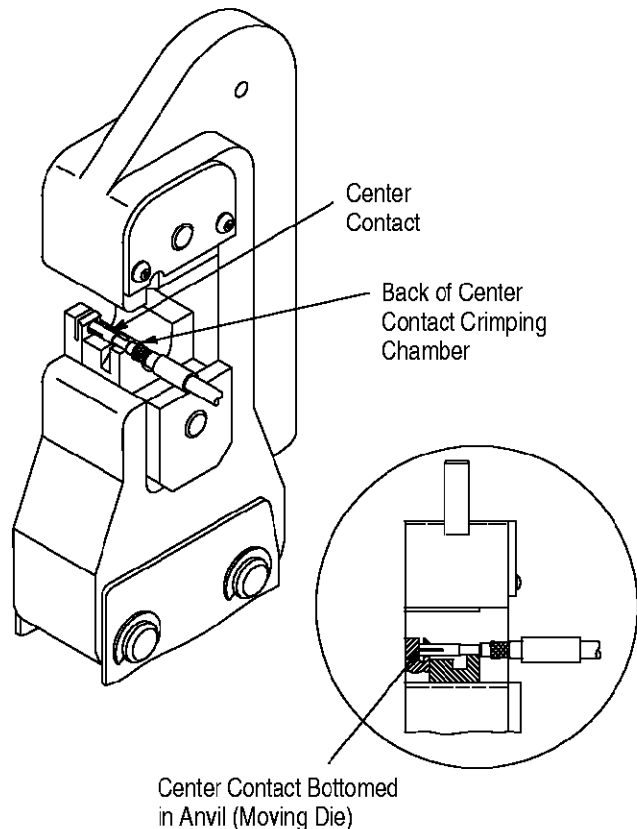


Figure 2

### 3.2. Braid and Insulation (Figure 3)

**NOTE**

*Die Assemblies 220026-1 and 220217-3 are not designed to crimp the braid ferrule over the cable insulation.*

1. Assemble the braid ferrule according to the instructions packaged with the connector.
2. Place braid ferrule in the braid and insulation crimping chamber on the indenter (stationary die) so that the cable extends from the *back* of the die. Make sure that the shoulder of the connector body butts against the edge of the die.
3. Hold the ferrule in place and actuate the tool through a complete cycle according to the instructions packaged with the tool.
4. Allow the tool to open fully and remove the crimped connector.

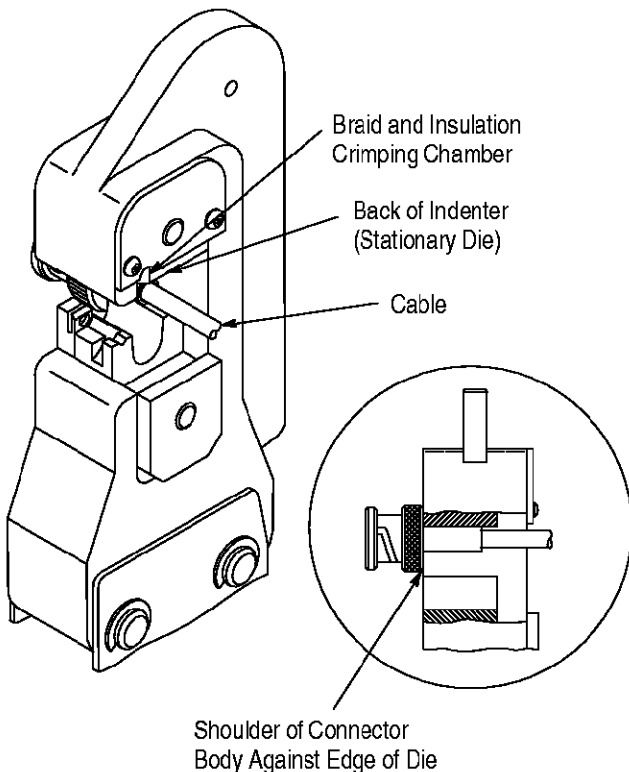


Figure 3

## 4. MAINTENANCE AND INSPECTION

### 4.1. Daily Maintenance

1. Remove dust, moisture, and other contaminants with a clean brush, or a soft, lint-free cloth. Do not use objects that could damage the dies.
2. Make sure that dies are properly aligned and that die holding screws are in place and secured.

3. Make certain that all surfaces are protected with a thin coat of any good SAE 20 motor oil. Do not oil excessively.

4. When dies are not in use, store in a clean, dry area.

### 4.2. Visual Inspection

Regular inspections should be performed with a record of inspections remaining with the dies and supervisory personnel responsible for them. It is recommended one inspection per month; however, amount of use, working conditions, operator training and skill, and established company standards should determine frequency of inspection. The inspection should be performed in the following sequence:

1. Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser that will not affect paint or plastic material.
2. Make sure all die holding screws are in place and secured.
3. Check all bearing surfaces for wear. Replace worn components.
4. Inspect the crimping chambers for flattened, chipped, cracked, worn, or broken areas. If damage is evident, the dies must be repaired before returning them to service. See Section 5, REPLACEMENT AND REPAIR.

### 4.3. Periodic Inspection

#### A. Gaging the Crimping Chamber

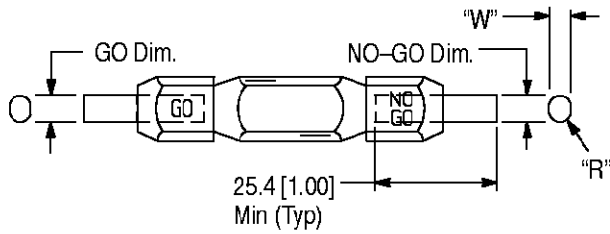
This inspection requires the use of plug gages conforming to the dimensions provided in Figures 4 through 7. Tyco does not manufacture or market these gages. Proceed as follows:

1. Remove traces of oil or dirt from the crimping chamber and plug gage.
2. Actuate the tool, according to the instructions packaged with the tool, until it is evident that the dies have bottomed; then hold in this position. Do NOT force beyond initial contact.
3. With dies bottomed, check the die closure using the proper plug gage. Hold gage in straight alignment with the crimping chamber and carefully try to insert, without forcing, the GO element. The GO element must pass completely through the die closure. Refer to Figure 8.
4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the length of the die closure. Refer to Figure 8.

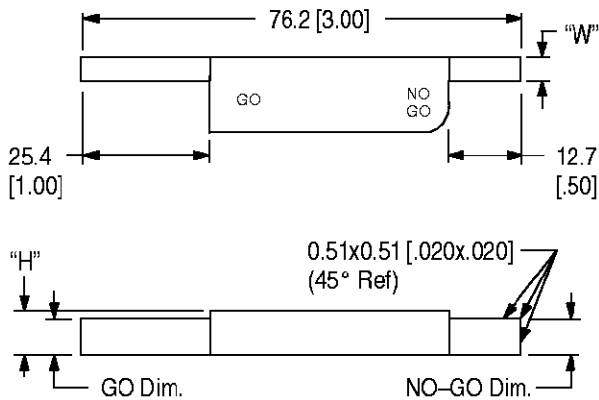
If the crimping chambers conform to the gage inspection, the die assembly may be considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, the die assembly must be returned for further evaluation and repair. Refer to Section 5, REPLACEMENT AND REPAIR.

For additional information regarding the use of plug gages, refer to 408-7424.

**Suggested Plug Gage Design for Center Contact Crimping Chamber**



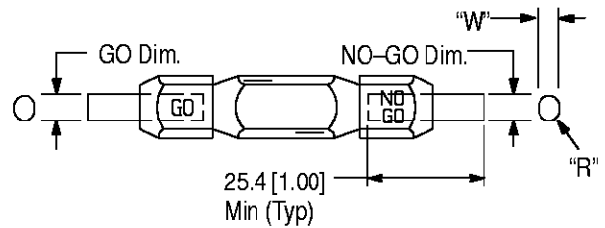
| DIE ASSEMBLY | GAGE ELEMENT DIMENSION       |                              | "W" WIDTH (Max)  | "R" RADIUS (Max) |
|--------------|------------------------------|------------------------------|------------------|------------------|
|              | GO                           | NO-GO                        |                  |                  |
| 69726        | 1.905-1.913<br>[.0750-.0753] | 2.004-2.007<br>[.0789-.0790] | 1.727<br>[.0680] | 0.864<br>[.0340] |



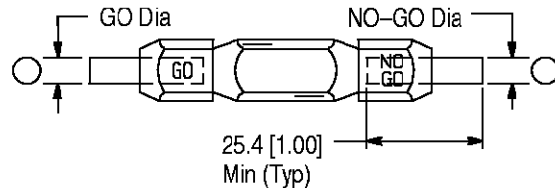
| DIE ASSEMBLY | GAGE ELEMENT DIMENSION       |                              | "W" WIDTH (Typ)  | "H" WIDTH        |
|--------------|------------------------------|------------------------------|------------------|------------------|
|              | GO                           | NO-GO                        |                  |                  |
| 220217-1     | 1.232-1.240<br>[.0485-.0488] | 1.344-1.346<br>[.0529-.0530] | 1.143<br>[.0450] | 3.048<br>[.1200] |
| 220217-2     | 1.041-1.049<br>[.0410-.0413] | 1.166-1.168<br>[.0459-.0460] | 0.953<br>[.0375] |                  |
| 220217-3     | 1.041-1.049<br>[.0410-.0413] | 1.293-1.295<br>[.0509-.0510] | 0.953<br>[.0375] |                  |

Figure 4

**Suggested Plug Gage Design for Braid and Insulation Crimping Chamber**



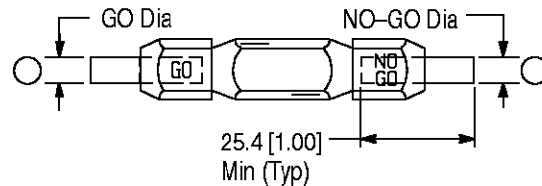
| DIE ASSEMBLY | GAGE ELEMENT DIMENSION       |                              | "W" WIDTH (Max)  | "R" RADIUS (Max) |
|--------------|------------------------------|------------------------------|------------------|------------------|
|              | GO                           | NO-GO                        |                  |                  |
| 69726        | 5.461-5.486<br>[.2150-.2153] | 5.611-5.613<br>[.2209-.2210] | 5.334<br>[.2100] | 2.667<br>[.1050] |
| 69727        |                              |                              |                  |                  |
| 69669-1      | 6.426-6.434<br>[.2530-.2533] | 6.576-6.579<br>[.2589-.2590] | 6.299<br>[.2480] | 3.150<br>[.1240] |
| 69669-2      | 4.242-4.249<br>[.1670-.1673] | 4.392-4.394<br>[.1729-.1730] | 4.166<br>[.1640] | 2.083<br>[.0820] |
| 220088-1     | 8.306-8.313<br>[.3270-.3273] | 8.456-8.458<br>[.3329-.3330] | 8.179<br>[.3220] | 4.089<br>[.1610] |



| DIE ASSEMBLY | GAGE ELEMENT DIAMETER        |                              |
|--------------|------------------------------|------------------------------|
|              | GO                           | NO-GO                        |
| 220217-1     | 5.182-5.189<br>[.2040-.2043] | 5.331-5.334<br>[.2099-.2100] |
| 220217-2     | 6.020-6.027<br>[.2370-.2373] | 6.170-6.172<br>[.2429-.2430] |

Figure 5

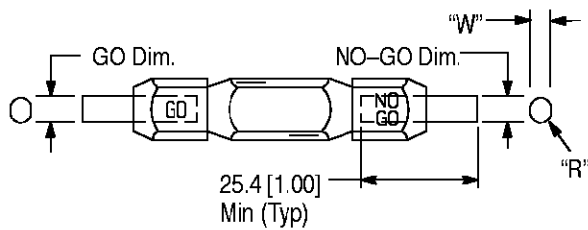
**Suggested Plug Gage Design for Insulation Crimping Chamber**



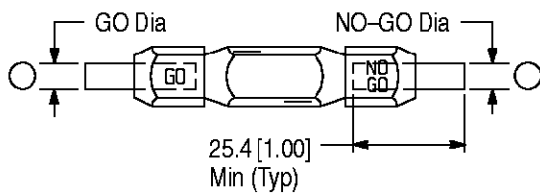
| DIE ASSEMBLY | GAGE ELEMENT DIAMETER        |                              |
|--------------|------------------------------|------------------------------|
|              | GO                           | NO-GO                        |
| 220026-1     | 2.540-2.548<br>[.1000-.1003] | 2.791-2.794<br>[.1099-.1100] |
| 220217-3     |                              |                              |

Figure 6

**Suggested Plug Gage Design for Braid Crimping Chamber**



| DIE ASSEMBLY | GAGE ELEMENT DIMENSION       |                              | "W" WIDTH (Max)  | "R" RADIUS (Max) |
|--------------|------------------------------|------------------------------|------------------|------------------|
|              | GO                           | NO-GO                        |                  |                  |
| 220026-1     | 4.242-4.249<br>[.1670-.1673] | 4.392-4.394<br>[.1729-.1730] | 4.114<br>[.1620] | 2.057<br>[.0810] |



| DIE ASSEMBLY | GAGE ELEMENT DIAMETER        |                              |
|--------------|------------------------------|------------------------------|
|              | GO                           | NO-GO                        |
| 220217-3     | 4.242-4.249<br>[.1670-.1673] | 4.392-4.394<br>[.1729-.1730] |

Figure 7

**B. Center Contact Crimp Height**

This inspection requires the use of a modified micrometer with a modified anvil. It is recommended the Crimp Height Comparator RS-1019-5LP which can be purchased from:

Shearer Industrial Supply Co. 20 North Penn Street York, PA 17401-1014 or VALCO 1410 Stonewood Drive Bethlehem, PA 18017-3527

For round crimps (Figure 9), proceed as follows:

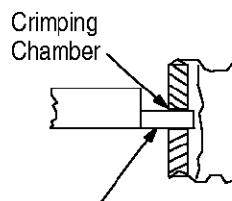
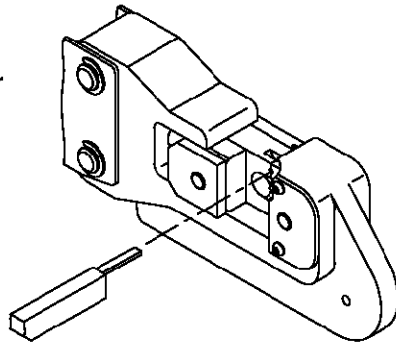
1. Select a center contact and *maximum* size wire for the crimping chamber.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp center contact accordingly.
3. Using a crimp height comparator, measure the crimp height as shown in Figure 9. If the crimp height conforms to that dimension, the die assembly is considered dimensionally correct. If not, the die assembly must be returned for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

For square crimps (Figure 10), proceed as follows:

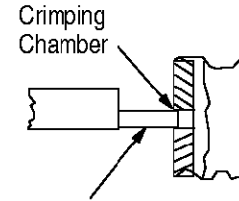
Inspection of the center contact crimp configuration is determined by measuring a crimped slug. The recommended material for this slug is a solid copper commercial wire size 14 AWG.

1. Remove traces of oil or dirt from the wire slug to be crimped.

**Inspection of Center Contact Crimping Chamber**

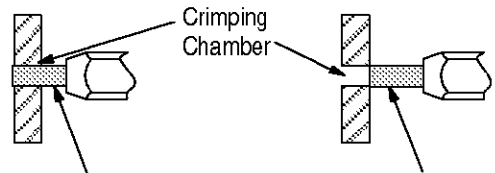
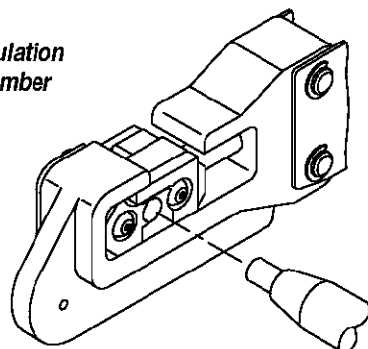


GO Element Must Pass Completely Through the Crimping Chamber.



NO-GO Element May Enter Partially, But Must Not Pass Completely Through the Crimping Chamber.

**Inspection of Braid and Insulation Crimping Chamber**



GO Element Must Pass Completely Through the Crimping Chamber.

NO-GO Element May Enter Partially, But Must Not Pass Completely Through the Crimping Chamber.

Figure 8

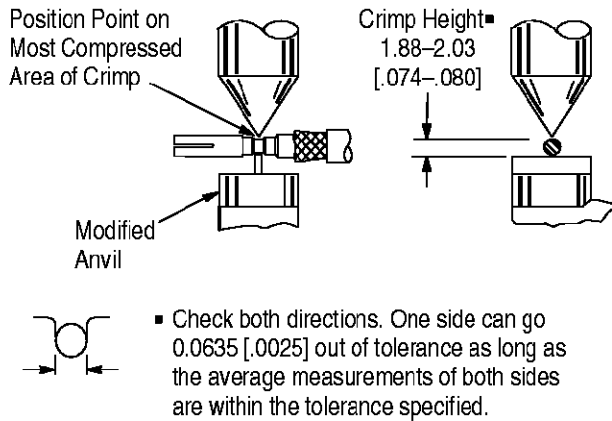


Figure 9

- Place slug in center contact crimping chamber on the stationary die.
- Actuate the tool through a complete cycle according to the instructions packaged with the tool.
- Remove slug from dies and measure the slug according to Figure 10. If the height conforms to that dimension, the die assembly is considered dimensionally correct. If not, the die assembly must be returned for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

For additional information concerning the use of the crimp height comparator, refer to 408-7424.

**5. REPLACEMENT AND REPAIR**

Customer-replaceable parts are listed in Figure 11. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your

representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

CUSTOMER SERVICE (38-35)  
TYCO ELECTRONICS CORPORATION  
P.O. BOX 3608  
HARRISBURG, PA 17105-3608

Dies may also be returned for evaluation and repair. For die assembly repair service, contact a representative at 1-800-526-5136.

**6. REVISION SUMMARY**

Revisions to this document include:

Per EC 0990-0058-00:

- Updated document to corporate requirements
- Changed repair service information in Section 5

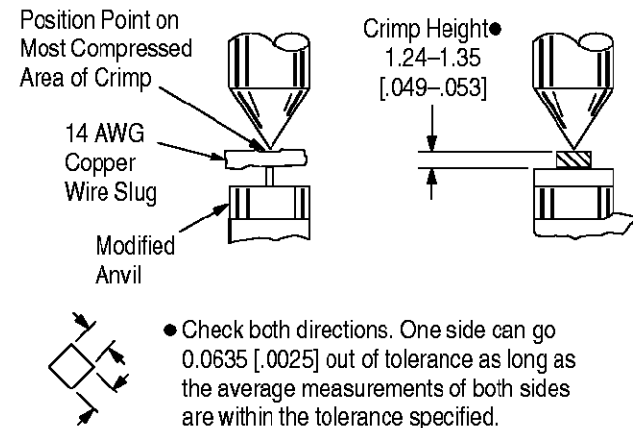
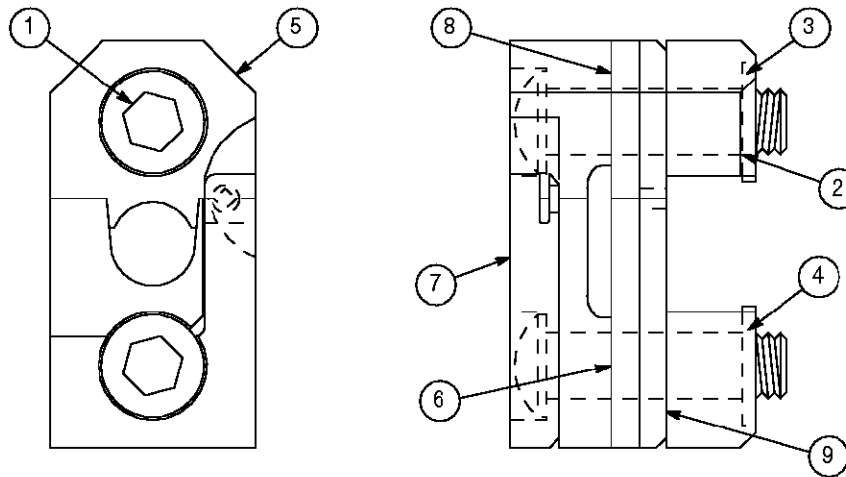


Figure 10



**REPLACEMENT PARTS**

| ITEM | PART NUMBER FOR DIE ASSEMBLIES<br>69669-1, 69669-2, 69726, 69727,<br>220026-1, 220088-1, 220217-1, 220217-2, 220217-3 | DESCRIPTION     | QTY PER ASSEMBLY |
|------|---|-----------------|------------------|
| 1    | 306592-1  | SCREW, Special  | 2                |
| 2    | 1-21046-3   | RING, Retaining | 2                |
| 3    | 8-305832-7  | SPACER, Upper   | 1                |
| 4    | 8-305832-8  | SPACER, Lower   | 1                |

| ITEM | PART NUMBER FOR DIE ASSEMBLY |          |          |          | DESCRIPTION     | QTY PER ASSEMBLY |
|------|------------------------------|----------|----------|----------|-----------------|------------------|
|      | 69669-1                      | 69669-2  | 69726    | 69727    |                 |                  |
| 5    | 306618-2                     | 306618-3 | 306507-1 | 306507-1 | ANVIL, Braid    | 1                |
| 6    | 306617-2                     | 306617-3 | 306799   | 306508-1 | INDENTER, Braid | 1                |
| 7    | 308663-2                     | 308663-2 | 308663-1 | 308663-1 | LOCATOR         | 1                |

| ITEM | PART NUMBER FOR DIE ASSEMBLY |          |          |          |          | DESCRIPTION          | QTY PER ASSEMBLY |
|------|------------------------------|----------|----------|----------|----------|----------------------|------------------|
|      | 220026-1                     | 220088-1 | 220217-1 | 220217-2 | 220217-3 |                      |                  |
| 5    | 307178-1                     | 306618-5 | 306618-6 | 306618-7 | 307178-1 | ANVIL, Braid         | 1                |
| 6    | 307179-1                     | 306617-5 | 306617-6 | 306617-7 | 307179-1 | INDENTER, Braid      | 1                |
| 7    | 308663-2                     | 308663-2 | 311237-1 | 311237-1 | 311237-1 | LOCATOR              | 1                |
| 8    | 307180-1                     | —        | —        | —        | 307180-2 | ANVIL, Insulation    | 1                |
| 9    | 307181-1                     | —        | —        | —        | 307181-2 | INDENTER, Insulation | 1                |

Figure 11