

1. INTRODUCTION

This instruction sheet provides instructions on product application; and maintenance and inspection procedures for AMP-TAPEMATIC crimping dies. AMP-TAPEMATIC crimping dies 69930, 69931, 69932, 69954, 69955, and 69956 are used in the AMP-TAPETRONIC* machine 69875; dies 68240-1, 68241-1, and 68242-1 are also used in the AMP-TAPETRONIC machine 69875, or the Model "K" AMP-O-ELECTRIC* 565435-5, or the G-Terminating Machine 354500-1.

These dies are used to crimp:

- SOLISTRAND* terminals and butt splices on solid or stranded copper wire sizes 22 thru 10.
- Uninsulated STRATO-THERM* terminals and butt splices (with wire insulation support) on solid or stranded copper wire sizes 22 thru 10.
- Uninsulated STRATO-THERM terminals and butt splices (without wire insulation support) on solid or stranded copper wire sizes 22 thru 10.

Dies are coated with preservative to prevent rust and corrosion. Wipe preservative from dies, particularly from crimping surfaces.

Die insertion and removal and crimping instructions are provided in the manual packaged with the terminating machine. Section 2, INSTRUCTIONS, provides personal safety and wire preparation information. Section 3, CRIMP INSPECTION, features terminal and splice crimp inspection procedures which will enable you to establish and maintain a die certification program.

For further instructions relative to the machines, tooling adjustment, tape loading, etc., refer to the instructions packaged with the machines.

NOTE



Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures and illustrations are for reference only and are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 5, REVISION SUMMARY.

2. INSTRUCTIONS

DANGER



Avoid personal injury. Always disconnect machine from power supply when performing adjustments, die installation or removal, and machine maintenance. Always keep guards and covers in place during normal machine operation.

For wire preparation, select the correct wire strip length from Figure 1. Do NOT use wires with nicked or missing conductor strands.

Refer to machine manual for crimp instructions.

3. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 2. Use only the terminals and splices that meet the conditions shown in the "ACCEPT" column.

"REJECT" terminals and splices can be avoided through careful use of instructions provided in the machine manual and by performing regular die maintenance as instructed in Section 4, MAINTENANCE/INSPECTION PROCEDURE, of this instruction sheet.

4. MAINTENANCE/INSPECTION PROCEDURE

It is recommended that a maintenance/inspection program be performed periodically to ensure dependable and uniform terminations. Dies should be inspected at least once a month. Frequency of inspection may be adjusted to suit your requirements through experience. Frequency of inspection is depend upon:

1. The care, amount of use, and handling of the dies.
2. The degree of operator skill.
3. The presence of abnormal amounts of dust and dirt.
4. Your own established standards.

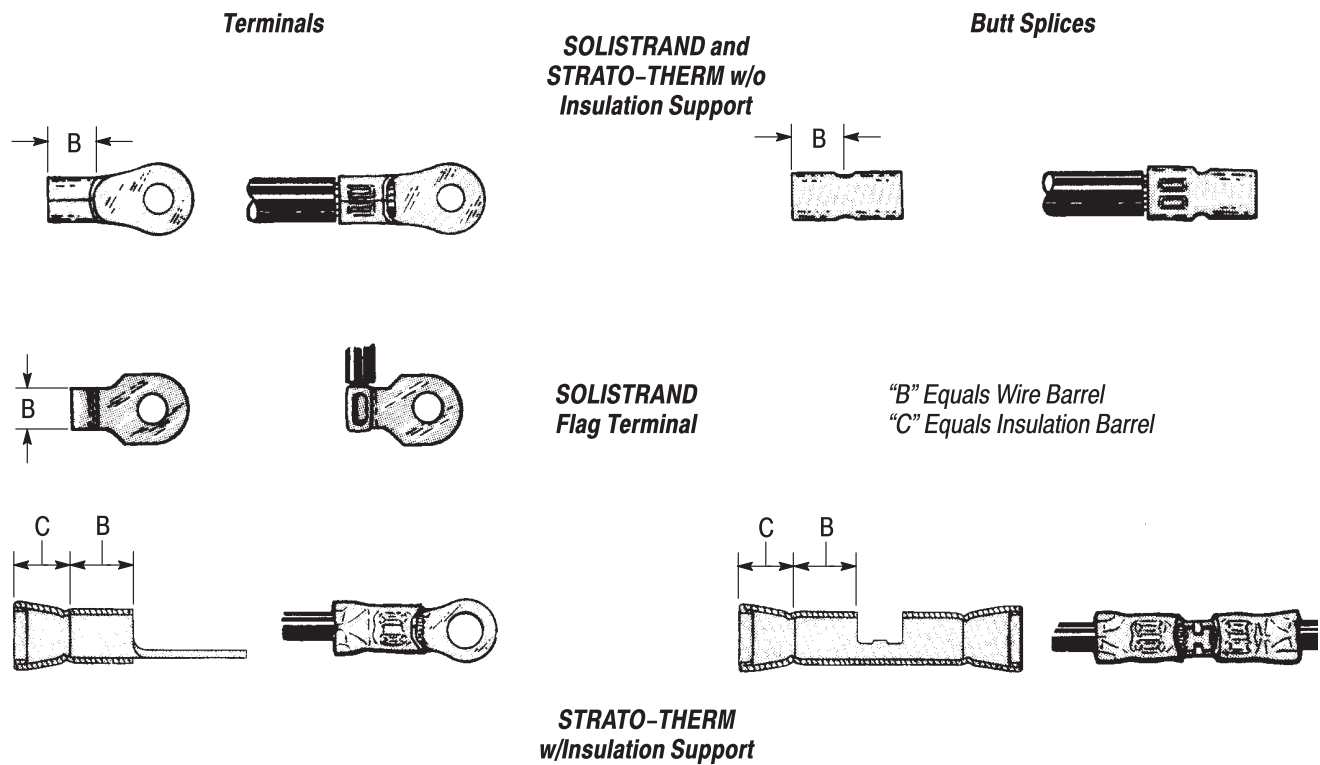
Since there is a possibility of die damage in shipment, new dies should be inspected in accordance with Section 4 when received in your plant.

4.1. Cleaning

Do NOT allow deposits of dirt, grease, and foreign matter to accumulate on the die closure surfaces and on the bottoming surfaces of the dies. These deposits may prevent the dies from bottoming fully and may also cause excessive wear in the die closure surfaces, thereby affecting the quality of the crimp. The dies should be wiped clean frequently with a clean cloth.

4.2. Visual Inspection

Visually inspect the die closure surfaces for chipped or pitted conditions. Although dies may gage within permissible limits, worn or damaged die closure surfaces are objectionable and can affect the quality of the crimp. Examples of possible damaged die surfaces are shown in Figure 3.



| PRODUCT DESCRIPTION | WIRE SIZE RANGE, AWG | DIE NUMBER | MACHINE NUMBER | WIRE STRIP LENGTH (Add 1.59 mm [.062 in.] to strip length when using probe in 69875 machine) | | | |
|--|----------------------|------------|---------------------------|---|-------------|-------------|-------------|
| | | | | TERMINALS | | SPICES | |
| | | | | MIN. | MAX. | MIN. | MAX. |
| SOLISTRAND Terminals and Splices● | 22-16 | 68240-1 | 69875, 354500-1, 565435-5 | 4.37 [.172] | 5.16 [.203] | 6.35 [.250] | 7.14 [.281] |
| | 16-14 | 68241-1 | | | | | |
| | 12-10 | 68242-1 | | 6.35 [.250] | 7.14 [.281] | | |
| Uninsulated STRATO-THERM Terminals and Splices● (Insulation Support) | 22-16 | 69930 | 69875 | 5.16 [.203] | 5.94 [.234] | 5.16 [.203] | 5.94 [.234] |
| | 16-14 | 69931 | | | | | |
| | 12-10 | 69932 | | 8.74 [.344] | 9.52 [.375] | 8.74 [.344] | 9.52 [.375] |
| Uninsulated STRATO-THERM Terminals and Splices● (Non-Insulation Support) | 22-16 | 69954 | 69875 | 4.37 [.172] | 5.16 [.203] | 6.35 [.250] | 7.14 [.281] |
| | 16-14 | 69955 | | | | | |
| | 12-10 | 69956 | | 6.35 [.250] | 7.14 [.281] | | |

●Crimped by foot switch control only in machine 69875.

Figure 1

4.3. Die Closure Inspection

Every die set is inspected for proper die closure dimensions before packaging. An inspection should be performed periodically to inspect the die closure for excessive wear.

Die closure inspection is accomplished using GO NO-GO plug gages. Tyco Electronics neither manufactures nor sells plug gages. A suggested plug gage design and the GO NO-GO dimensions of the plug gage elements are listed in Figures 4 and 5.

The following procedure is recommended for inspecting the die closure.

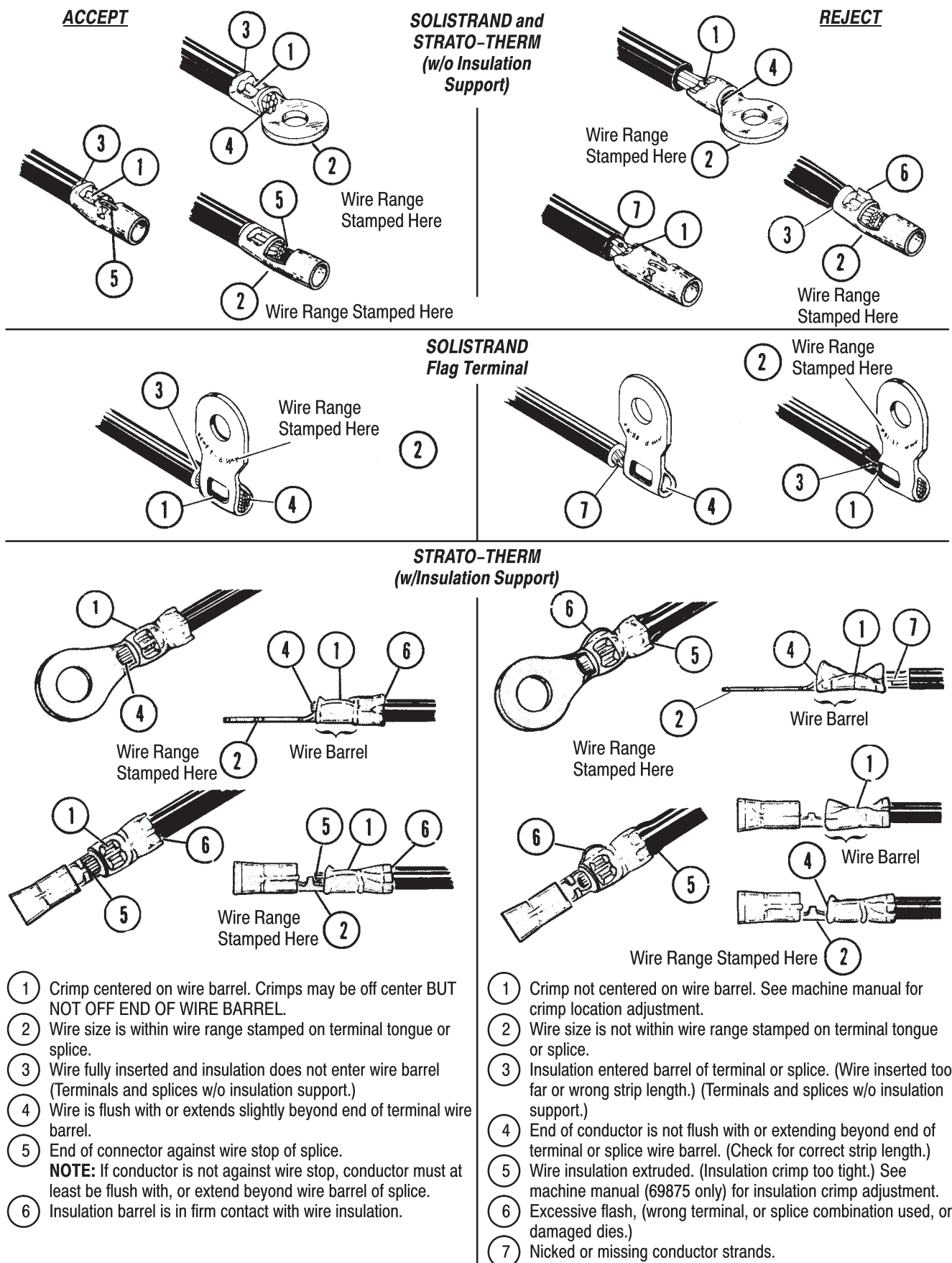


Figure 2

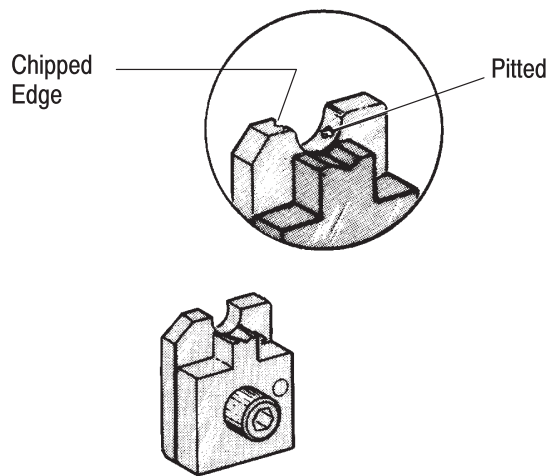
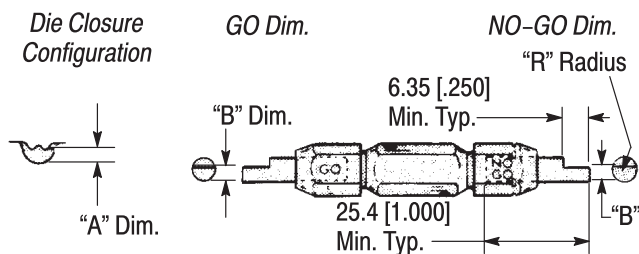


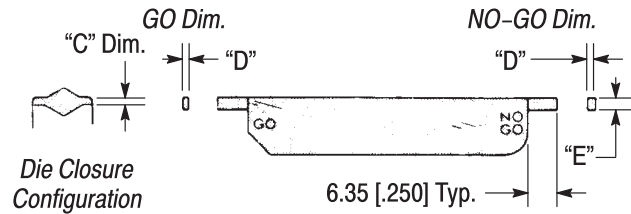
Figure 3

Suggested Plug Gage Design – Wire Barrel Crimp

| DIE SET | DIE CLOSURE DIM'S "A"† | | GAGE ELEMENT‡ DIM'S "B" | | "R" RADIUS (MAX) |
|---------|------------------------|------------------|------------------------------|------------------------------|------------------|
| | GO | NO-GO | GO | NO-GO | |
| 68240-1 | 1.168 [.0460] | 1.321 [.0520] | 1.168-1.176 [.0460-.0463] | 1.318-1.321 [.0519-.0520] | 1.575 [.0620] |
| 68241-1 | 1.372 [.0540] | 1.524 [.0600] | 1.372-1.379 [.0540-.0543] | 1.521-1.524 [.0599-.0600] | 1.981 [.0780] |
| 68242-1 | 1.930 [.0760] | 2.083 [.0820] | 1.930-1.938 [.0760-.0763] | 2.080-2.083 [.0819-.0820] | 2.769 [.1090] |
| 69930 | 1.499 [.0590] | 1.651 [.0650] | 1.499-1.506 [.0590-.0593] | 1.648-1.651 [.0649-.0650] | 1.880 [.0740] |
| 69931 | 1.905 [.0750] | 2.057 [.0810] | 1.905-1.913 [.0750-.0753] | 2.055-2.057 [.0809-.0810] | 2.184 [.0860] |
| 69932 | 2.311 [.0910] | 2.464 [.0970] | 2.311-2.319 [.0910-.0913] | 2.461-2.464 [.0969-.0970] | 2.997 [.1180] |
| 69954 | 1.295 [.0510] | 1.448 [.0570] | 1.295-1.303 [.0510-.0513] | 1.445-1.448 [.0569-.0570] | 1.575 [.0620] |
| 69955 | 1.499 [.0590] | 1.651 [.0650] | 1.499-1.506 [.0590-.0593] | 1.648-1.651 [.0649-.0650] | 1.981 [.0780] |
| 69956 | 2.108 [.0830] | 2.261 [.0890] | 2.108-2.116 [.0830-.0833] | 2.258-2.261 [.0889-.0890] | 2.769 [.1090] |

†Die closure dimensions apply when wire barrel dies are bottomed but not under pressure. ‡Material – Tool Steel

Figure 4

Suggested Plug Gage Design – Insulation Crimp

| DIE SET | DIE CLOSURE DIM'S "C" (Dies set at "gage" dim. See Figure 6B.) | | GAGE ELEMENT‡ DIMENSION "D" | | "E" DIM |
|---------|--|------------------|------------------------------|------------------------------|----------------|
| | GO | NO-GO | GO | NO-GO | |
| 69930 | 0.762 [.0300] | 1.27 [.0500] | 0.762-0.770 [.0300-.0303] | 1.267-1.27 [.0499-.0500] | 4.06 [.160] |
| 69931 | 0.762 [.0300] | 1.27 [.0500] | 0.762-.0770 [.0300-.0303] | 1.267-1.27 [.0499-.0500] | 4.83 [.190] |
| 69932 | 1.321 [.0520] | 1.829 [.0720] | 1.321-1.328 [.0520-.0523] | 1.826-1.829 [.0719-.0720] | 7.87 [.310] |

‡Material – Tool Steel

Figure 5

A. Wire Barrel Crimp Die Closure

1. Clean oil or dirt from the die closure surfaces, bottoming surfaces, and plug gage elements.
2. Assemble dies so that wire barrel dies are bottomed but not under pressure.
3. With wire barrel dies bottomed, inspect the wire barrel crimp die closure using the proper plug gage. Hold gage in straight alignment with the die closure and carefully insert, without forcing, the GO element. See Figure 6A. The GO element must pass completely through the wire barrel crimp die closure.
4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the wire barrel crimp die closure. See Figure 6A.

B. Insulation Crimp Die Closure

1. With wire barrel dies bottomed and not under pressure, set insulation crimp dies at "gage" dimension shown in Figure 6B.
2. Inspect the insulation crimp die closure using the proper plug gage in the same manner as steps (c) and (d) in paragraph 4.3.A. See Figure 6B

If both the wire barrel and insulation crimp die closures meet the GO NO-GO gage conditions, the dies may be considered dimensionally correct.

If you find that the crimp die closures do not conform with the GO NO-GO gage conditions, contact your local Tyco Electronics Representative.

4.4. Replacement Parts

Customer-replaceable parts are listed in Figure 7. A complete inventory should 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 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

5. REVISION SUMMARY

This paragraph is reserved for a revision summary of changes and additions made to this document. The following changes were made for this revision.

- Updated document to corporate requirements
- New format

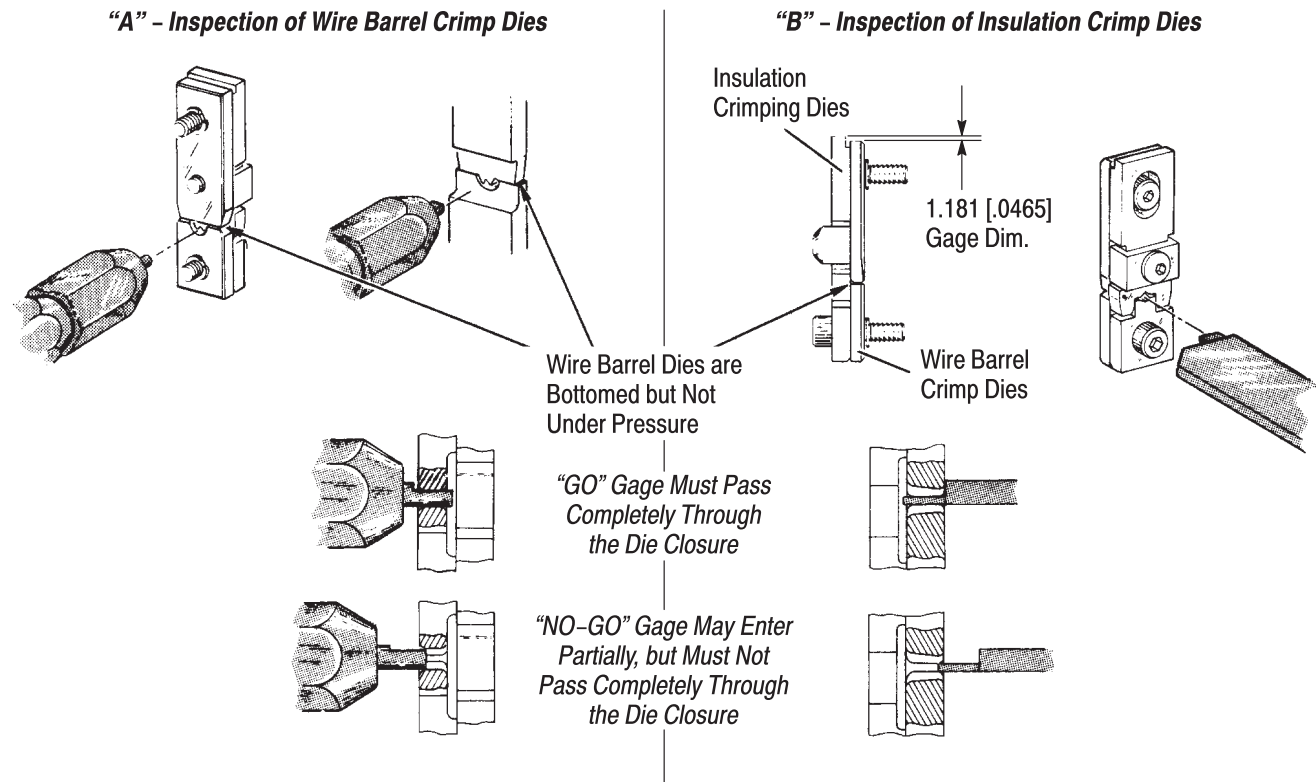
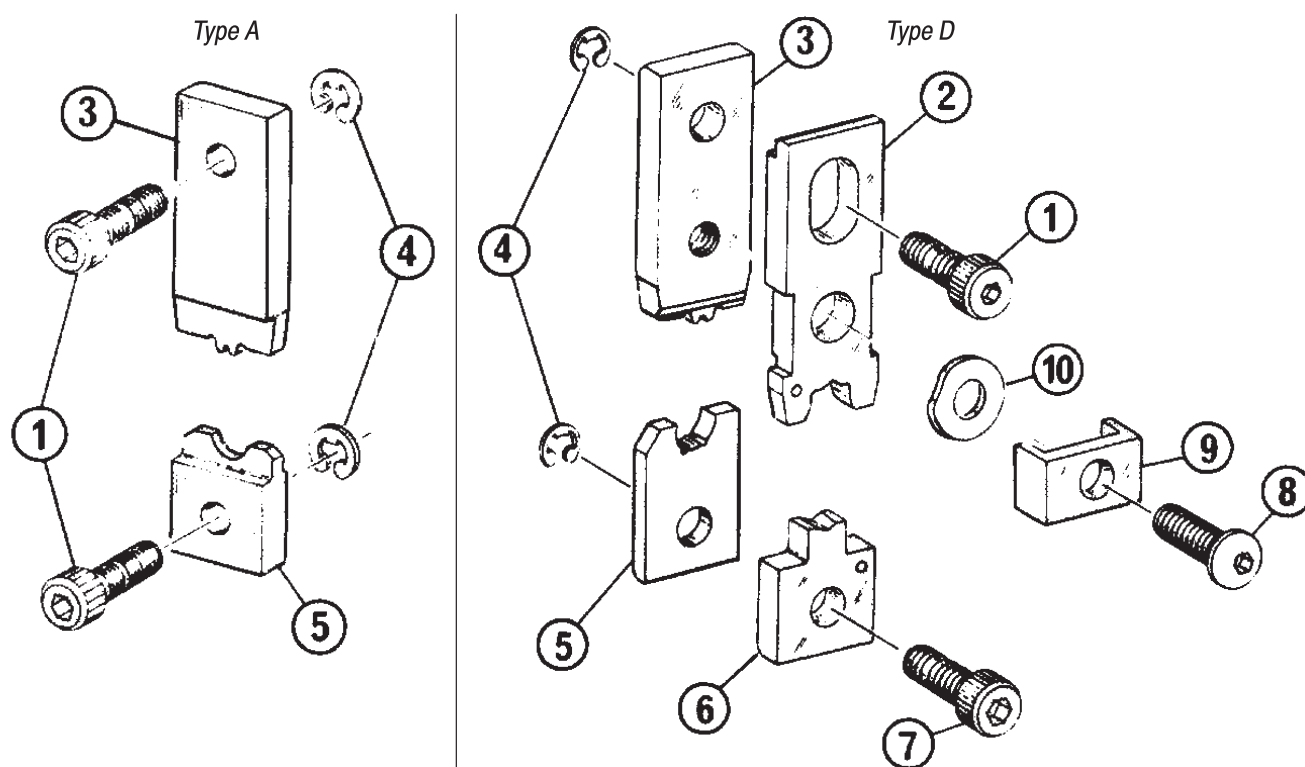


Figure 6



| DIE SETS | | ITEM NUMBER | | | | | | | | | |
|----------|------|-------------|------------|------------|-------------------|------------|----------|-----------|-----------|------------|---------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| PART NO. | TYPE | SCREW | MOVING DIE | MOVING DIE | RET. RING 2 REQ'D | STA. DIE | STA. DIE | SCREW | SCREW | SADDLE | CURVED WASHER |
| 68240-1 | A | 1-59781-3 | --- | 308209-1 | 1-21046-3 | 308210-1 | --- | 1-59781-3 | --- | --- | --- |
| 68241-1 | A | 1-59781-3 | --- | 308209-2 | 1-21046-3 | 308210-2 | --- | 1-59781-3 | --- | --- | --- |
| 68242-1 | A | 1-59781-3 | --- | 308209-3 | 1-21046-3 | 308210-7 | --- | 1-59781-3 | --- | --- | --- |
| 69930 | D | 1-59781-7 | 310676-6 | 307236-5 | 1-21046-3 | 307235-5 | 310677-7 | 59781-9 | 3-59577-1 | 307275-9 | 24088-8 |
| 69931 | D | 2-59781-8 | 310676-2 | 307236-4 | 1-21046-3 | 307235-4 | 310677-6 | 59781-9 | 3-59577-1 | 307275-9 | 24088-8 |
| 69932 | D | 1-59781-3 | 310676-7 | 307236-6 | 1-21046-3 | 307235-6 | 310677-8 | 59781-9 | 3-59577-3 | 1-307275-0 | 24088-8 |
| 69954 | A | 1-59781-3 | --- | 1-307161-7 | 1-21046-3 | 307160-8 | --- | 1-59781-3 | --- | --- | --- |
| 69955 | A | 1-59781-3 | --- | 1-307161-8 | 1-21046-3 | 307160-9 | --- | 1-59781-3 | --- | --- | --- |
| 69956 | A | 1-59781-3 | --- | 1-307161-9 | 1-21046-3 | 1-307160-0 | --- | 1-59781-3 | --- | --- | --- |

Figure 7