

CRIMPING HEAD	PNEUMATIC TOOL
314268-1 Rev C or Lower*	314281-1, 314590-1 and -2, 314700-1
314268-1 Rev D or Higher	314281-1 and -2, 314590-1, -2, and -3, 314700-1 and -2

*Crimping heads can be changed to a Rev D by adding shims (refer to Section 7).

□ Supersedes Crimping Head 314268-2, Rev C

Figure 1

1. INTRODUCTION

AMP* "1210" Pneumatic Crimping Head 314268-1, Rev [] (shown in Figure 1) is designed to crimp PIDG* and PLASTI-GRIP* terminals and splices listed in Figure 2 onto solid or stranded copper wire sizes 12 through 10 AWG. The crimping head is used with "1210" Pneumatic Tooling Assemblies listed in Figure 1. Read these, and any referenced instructions, thoroughly before proceeding.

NOTE

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

This instruction sheet provides recommended procedures for insulation crimp adjustments, wire preparation, crimp head installation, crimping procedures, and maintenance and inspection. Setup and operation procedures for the pneumatic tooling assemblies are available in instruction sheet packaged with the tool. Details on product specifications and part numbers are available in Catalog 82042.

Reasons for reissue of this instruction sheet are provided in Section 9, REVISION SUMMARY.

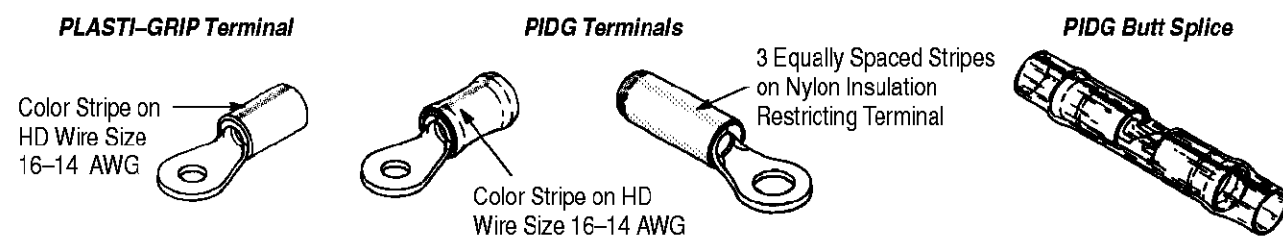
2. DESCRIPTION (Figure 1)

There are various revision levels (Rev) of the crimping head. The link on the crimping head identifies the part number, revision level, and date code. See Figure 1. The crimping heads are identical except for the shims which are available in Rev D or higher. The shims are used in the heads to obtain the necessary clearance for installation in the pneumatic tools listed in Figure 1. Crimping heads with Rev C or lower can be changed to Rev D.

NOTE

For more information, contact the Tooling Assistance Center at the number at the bottom of this page.

These crimping heads have integral jaws which close in an arc-like motion. After an operator locates product between the crimping jaws and inserts the stripped wire, the tool is activated to crimp the product to the wire.



PRODUCT		DOT CODE (After Crimping)	WIRE		WIRE STRIP LENGTH (mm [in.])	
TYPE	INSULATION COLOR CODE		SIZE RANGE (AWG)	INSUL DIA RANGE (mm [in.])	TERMINAL	SPLICE
PIDG Terminal and Splice and PLASTI-GRIP Terminal	Yellow	1 Dot	12-10	—	7.95-8.74 [.313-.344]	8.74-9.53 [.344-.375]
	Yellow with Black Stripe		16-14	—		
PIDG Nylon Insulating Restricting Terminal	Yellow with Yellow Stripe		12	2.41-5.08 [.095-.200]	9.53-10.31 [.375-.375]	—
	Yellow with Brown Stripe		10	3.02-5.08 [.119-.200]		

Figure 2

3. HEAD INSTALLATION AND REMOVAL

NOTE

These crimping heads are coated with a preservative to prevent rust and corrosion. Wipe this preservative from the head, particularly from the crimping surfaces.

3.1. Head Selection

The crimping heads are color coded to match the terminal or splice insulation color (refer to Figure 2). Observe the embossed dot code on the insulation of finished crimps to ensure that the correct terminal or splice and tool combination was used.

3.2. Installation

DANGER

To avoid personal injury, ALWAYS DISCONNECT tool from air supply BEFORE installing head.

1. Remove quick pins from tool holder. Refer to Figure 1.
2. Insert crimping head into tool holder. Refer to Figure 1.

NOTE

When installing crimping heads with Rev D or higher into Pneumatic Tools 314281-2, 314590-3, or 314700-2, the insulation crimp adjustment pins must face the relief feature on the tool holder. See Figure 1. The relief feature allows access for insulation crimp adjustments. Refer to Section 5, INSULATION CRIMP ADJUSTMENT.

3. After crimp head is properly aligned, insert and tighten quick pins provided with the pneumatic tooling assembly.

4. Connect tool to an adequate air supply between 620 and 690 kPa [90 and 100 psi]. For specific information on air line requirements and air hose installation, refer to the instructions packaged with the applicable tooling assembly.

3.3. Removal

DANGER

To avoid personal injury, ALWAYS DISCONNECT tool from air supply BEFORE removing head.

Remove quick pins from crimping head; then remove crimping head from tool holder.

4. CRIMPING PROCEDURES

DANGER

Certain precautions should be taken by the operator to avoid personal injury or damage to the pneumatic tool. Refer to the instructions packaged with the pneumatic tool for operation procedures and safety precautions.

NOTE

When using crimping heads with Rev D or higher, an insulation crimp adjustment is required. Refer to Section 5, INSULATION CRIMP ADJUSTMENT.

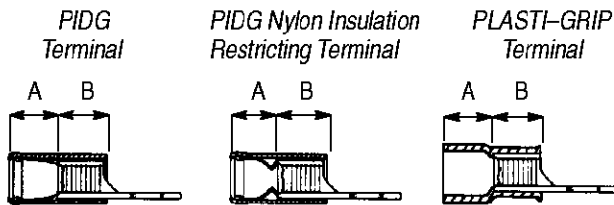
DANGER

To avoid personal injury, exercise caution while holding terminals or splices near crimping jaws.

4.1. Crimping Terminals

1. Strip wire to dimensions shown in Figure 2. DO NOT nick wire strand or use wires with nicked or missing conductor strands.
2. Open crimping jaws by squeezing rollers together simultaneously; then position terminal between crimping jaws as shown in Figure 3. The terminal is properly positioned when the tongue of the terminal is under the locator and the wire barrel is against the locator.
3. After terminal is properly positioned in crimping jaws, release rollers to allow crimping jaws to spring shut, holding terminal in place.
4. Insert stripped wire into terminal until the end of the conductor butts against the locator; then activate the tool to complete the crimp. Open crimping jaws by squeezing the rollers together simultaneously; then remove crimped terminal.
5. Refer to Section 5 for crimp inspection.

Crimping Terminals



"A" Equals Insulation Barrel
"B" Equals Wire Barrel

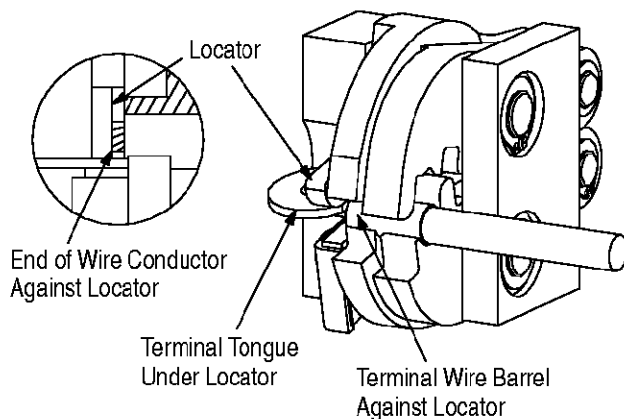
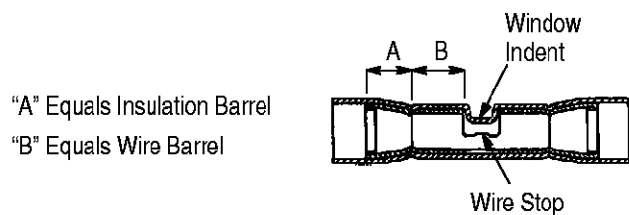


Figure 3

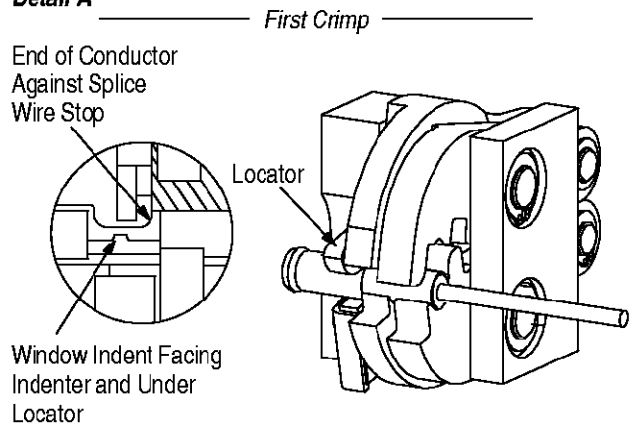
4.2. Crimping Butt Splices

1. Strip wire to dimensions shown in Figure 2. DO NOT nick wire strand or use wires with nicked or missing conductor strands.
2. Open crimping jaws by squeezing rollers together simultaneously. Position splice between crimping jaws so that the window indent slides under the locator of crimp head. See Figure 4, Detail A.
3. Insert stripped wire into wire barrel of splice until the end of the conductor is against the splice wire stop. See Figure 4, Detail A.

Crimping Butt Splices



Detail A



Detail B

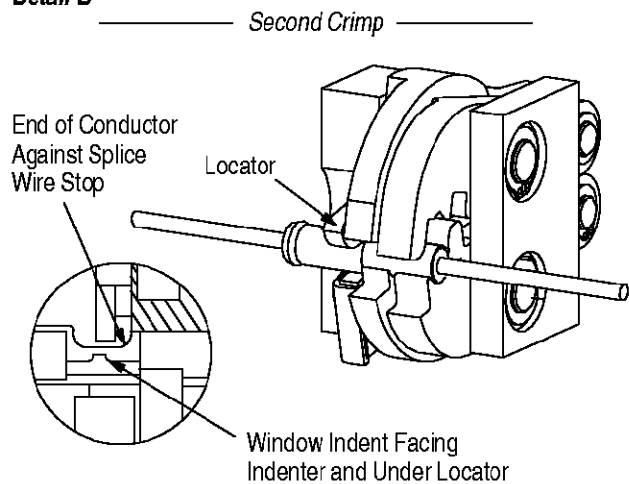


Figure 4

4. Activate tool to complete the crimp. Open crimping jaws by squeezing rollers together simultaneously; then remove crimped splice.

5. To crimp the other half of the butt splice, position uncrimped half in the crimping jaws and repeat Steps 1 through 4. If the splice cannot be turned, rotate the crimping head. See Figure 4, Detail B.

6. Refer to Section 4 for crimp inspection.

5. INSULATION CRIMP ADJUSTMENT

The crimping head insulation crimp adjustment pins have three positions: 1—tight; 2—medium; and 3—loose. To determine the proper setting, test crimp a contact using the setting which approximates the wire insulation size. If the crimped insulation barrel is too tight or too loose, change the setting accordingly as follows:

1. Insert insulation adjustment pins in Position 3. Refer to Figure 5.

NOTE

ALWAYS place both crimp adjustment pins in the same position.

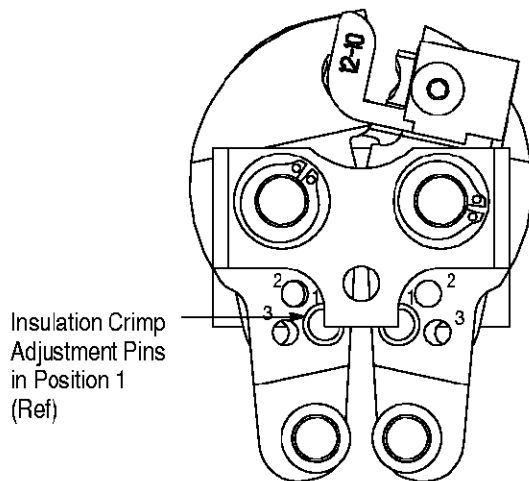


Figure 5

2. Place terminal or splice in crimping jaws as described in Section 4.

3. For PIDG terminals and splices:

NOTE

PIDG terminals and splices contain a wire insulation "grip."

- Insert *unstripped* wire into *only* the insulation barrel of the terminal or splice.
- Crimp the terminal or splice as described in Section 4.
- Remove terminal or splice from the crimping jaws. Bend wire forward and then backward.

The insulation barrel should retain its grip on the wire. If the wire pulls out, reposition the insulation crimp adjustment pins to the next tighter position (Position 2), and repeat crimp procedure.

For PLASTI-GRIP terminals:

NOTE

PLASTI-GRIP terminals contain a wire insulation "support" only.

- Crimp the terminal as described in Section 4.
- Remove the terminal from the crimping jaws and visually inspect the insulation barrel crimp. The insulation barrel crimp should be in contact with and should support the wire insulation. If not, place the adjustment pins in the next tighter position (Position 2), and repeat the crimp procedure.

4. Repeat adjustment as necessary until desired insulation hold is obtained. DO NOT use a tighter setting than required.

6. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 6. Use only terminals or splices that meet the conditions shown in the "ACCEPT" column. "REJECT" terminations can be avoided through careful use of instructions in Section 4, and by performing regular head maintenance, as described in Section 7.

7. MAINTENANCE AND INSPECTION

It is recommended that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations.

ANGER

To avoid personal injury, disconnect air supply from pneumatic tool before performing any maintenance or inspection procedures.

7.1. Daily Maintenance

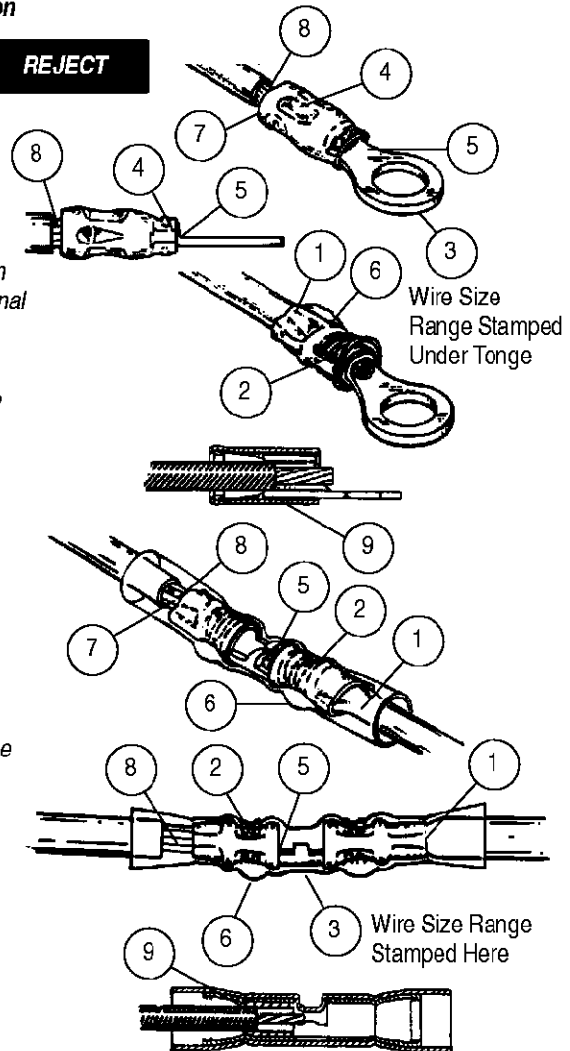
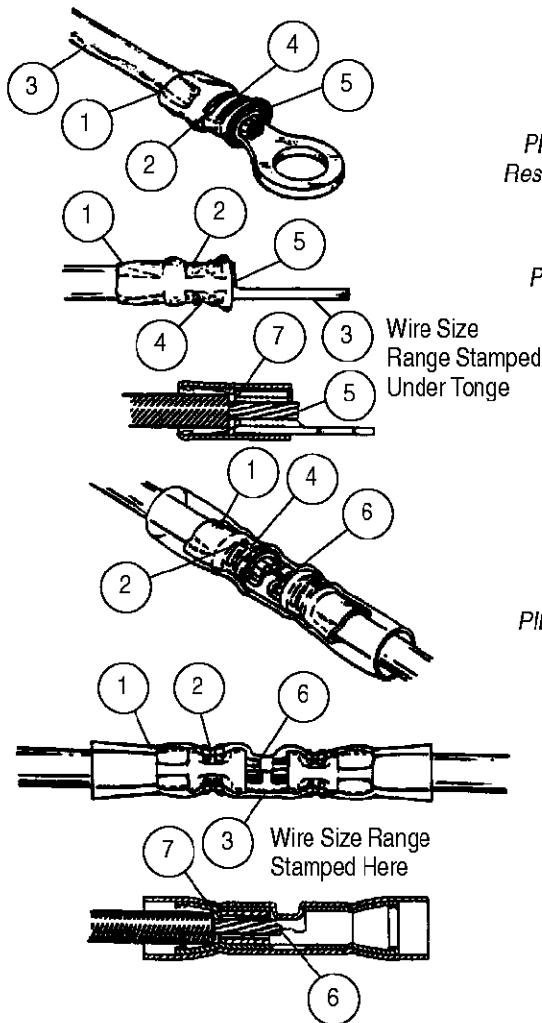
It is recommended that each operator be responsible for the following steps of daily maintenance:

- Remove dust, moisture, and other contaminants with a clean, soft brush, or a lint-free cloth. Do NOT use objects that could damage the head.
- Make sure that all pins, rings and other components are in place and secure.
- Make certain all surfaces are protected with a thin coat of any good SAE 20 motor oil. Do NOT oil excessively.
- When the head is not in use, store it in a clean dry, area.

Crimp Inspection

ACCEPT

REJECT



- 1 Insulation barrel is in firm contact with wire insulation.
- 2 Correct color code, dot code, and tool combination.
- 3 Wire size is within wire range stamped on terminal or splice.
- 4 Crimp centered on wire barrel.
- 5 End of conductor is flush with, or extends beyond end of wire barrel. If conductor is not against wire stop, conductor must at least be flush with, or extend slightly beyond wire barrel.
- 6 Wire insulation does not enter wire barrel.

- 1 Wire insulation extruded (insulation crimp too tight on terminal). See Section 5.
- 2 Wrong dot code and color code combination. See Figure 2.
- 3 Wire size is not within wire size range stamped on terminal or splice.
- 4 Crimp not centered on wire barrel (terminal was not butted against locator during crimp). See Figure 3.
- 5 End of conductor is not flush with or extended beyond end of wire barrel (check for correct strip length).
- 6 Excessive flash or extruded insulation (wrong tool, terminal, or splice combination used, or damaged dies). See Figure 2.
- 7 Nicked or missing conductor strands.
- 8 Wire not fully inserted or wrong strip length used.
- 9 Wire insulation entered wire barrel. Check for correct wire size or strip length.

Figure 6

7.2. Lubrication

Lubricate all pins, pivot points, and bearing surfaces with a high quality grease. It is recommended using Molykote[‡] paste, which is a commercially available lubricant. Lubricate according to the following schedule:

- Head used in daily production—lubricate daily
- Head used daily (occasional)—lubricate weekly
- Head used weekly—lubricate monthly

Wipe excess grease from crimping head, particularly from jaw closure areas. Grease transferred from jaw closure area onto certain terminations may affect the electrical characteristics of an application.

7.3. Periodic Inspection

Regular inspections should be performed by quality-control personnel. A record of scheduled inspections should remain with the crimping heads or be supplied to supervisory personnel responsible for the crimping heads. Though recommendations call for at least one inspection a month, the frequency should be based on amount of use, working conditions, operator training and skill, and your established company policies which should include the following:

A. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the crimping heads in a suitable commercial degreaser that will not affect paint or plastic.
2. Make certain all components are in place. If replacements are necessary, refer to Section 8.
3. Check all bearing surfaces for wear. Replace worn parts.
4. Inspect crimp area for flattened, chipped, or broken areas. Replace worn or damaged parts. See Figure 7.

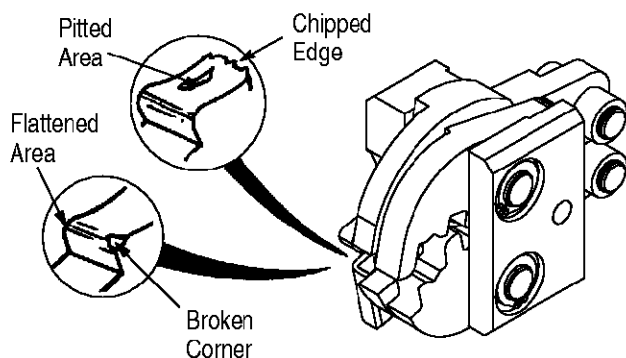


Figure 7

[‡]Trademark of Dow Corning Corporation

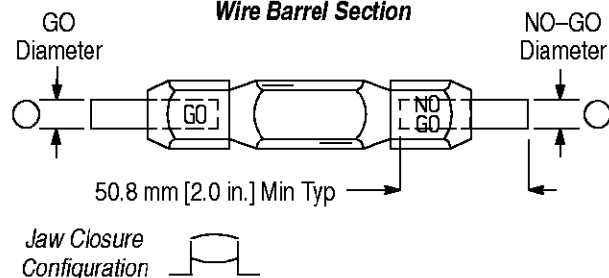
B. Gaging the Crimping Chamber

This inspection requires the use of plug gages conforming to the dimensions shown in Figure 8.

⚠ DANGER

Disconnect air supply and remove crimping head from tool.

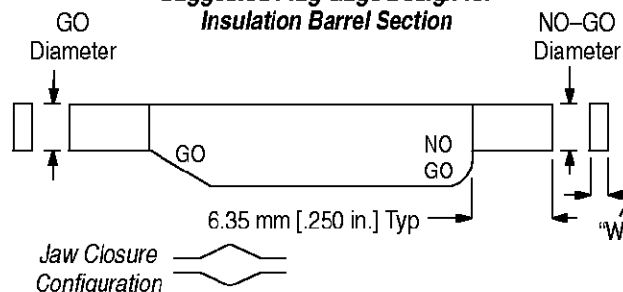
Suggested Plug Gage Design for Wire Barrel Section



GAGE ELEMENT DIAMETER (mm [in.])

GO	NO-GO
4.293-4.300 [.1690-.1693]	4.442-4.445 [.1749-.1750]

Suggested Plug Gage Design for Insulation Barrel Section



GAGE ELEMENT DIAMETER (mm [in.])

GO	NO-GO	W (Width) (Max) (mm [in.])
1.829-1.836 [.0720-.0723]	2.334-2.337 [.0919-.0920]	4.75 [.187]

Figure 8

Proceed as follows:

1. Remove oil and dirt from the bottom of the jaw surfaces and surfaces of the plug gages.
2. Close the jaws until they are bottomed, but not under pressure.
3. Align the appropriate GO element with wire barrel section of the crimping chamber. Push element straight into crimping chamber without using force. The GO element must pass completely through the crimping chamber as shown in Figure 9, Detail A.
4. Align the NO-GO element and insert it into the crimping chamber. The element may start entry,

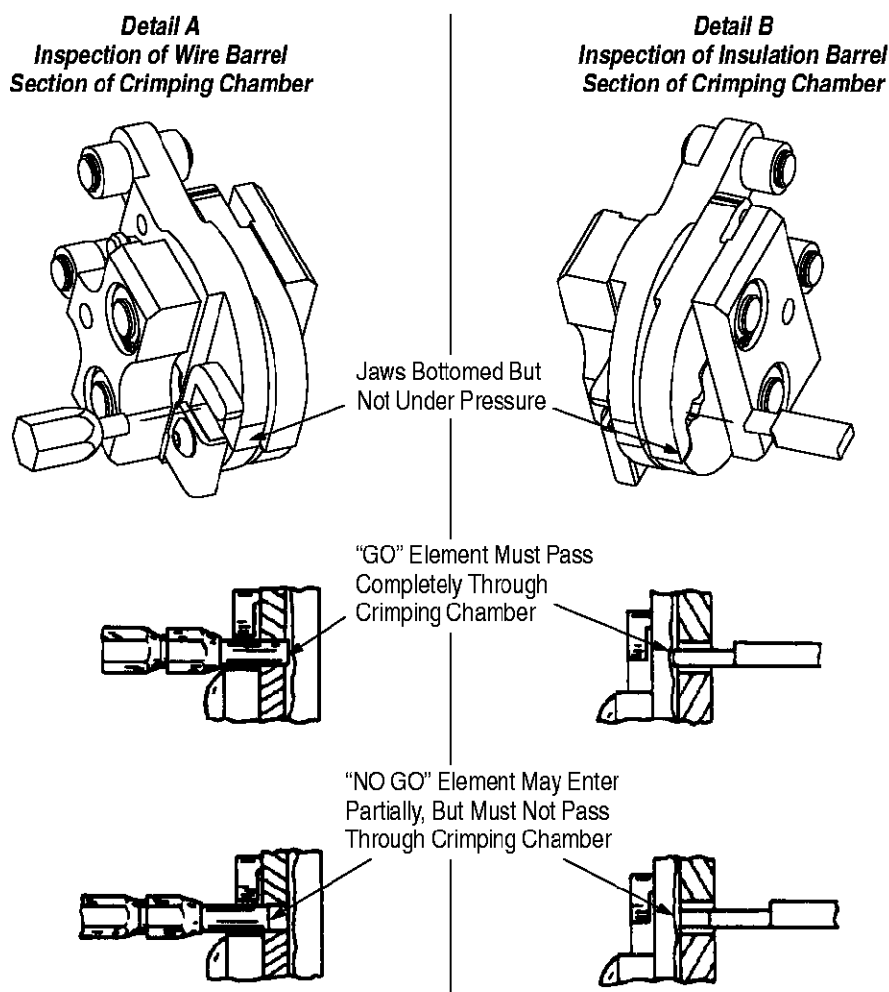


Figure 9

but it must not pass completely through the crimping chamber as shown in Figure 9, Detail B.

5. Repeat these steps for the insulation barrel section of the crimping chamber using the appropriate plug gage.

If the crimping chambers conform to the gage inspection, the head may be considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil. If the crimping chambers do NOT conform to the gage inspection, refer to Section 8 for information on obtaining further evaluation and repair.

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

8. REPLACEMENT AND REPAIR

Customer-replaceable parts are listed in Figure 10. A complete inventory should be stocked and controlled to prevent lost time when replacement of

parts is necessary. Parts other than those listed should be replaced by Tyco to ensure quality and reliability. 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:

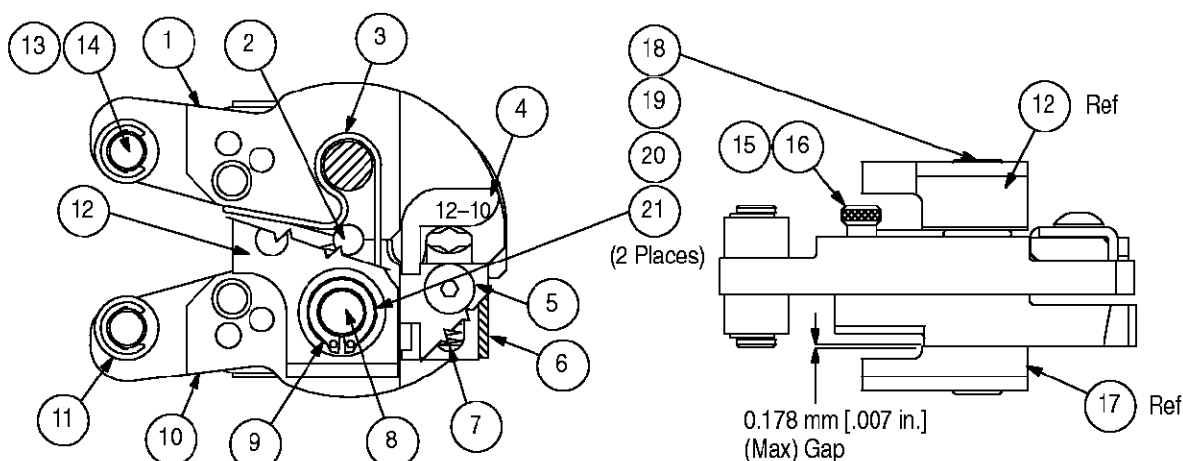
CUSTOMER SERVICE (038-035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

For customer repair service, please contact a representative at 1-800-526-5136.

9. REVISION SUMMARY

Revisions to this instruction sheet per EC 0990-0731-99 include:

- Update document to corporate requirements
- Replaced customer repair address with phone number
- Changed title of document



Note: Crimping Head 314268-1, Rev D Shown

REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER HEAD
1	314556-1	INDENTER	1
2	302014	PIN, Pivot	1
3	314253-1 ●	SPRING	1
4	303251	LOCATOR	1
5	6-306105-9	SCREW, 8-32 × .38 in.	1
6	303252	HOUSING, Stop	1
7	304373	SPRING, Compression	1
8	6-23629-0	PIN, Straight, Grooved .3125 in. Dia	2
9	1-21048-0	RING, Retaining	4
10	314557-1	ANVIL	1
11	314479-2 ●	ROLLER	4
12	314254-1	LINK	1
13	3-23620-3 ●	PIN, Straight, Grooved .2550 in. Dia	2
14	21045-6 ●	RING, Retaining	4
15	302016	RING	2
16	314255-1	PIN, Adjustment	2
17	314259-1	LINK	1
18	301185-6 □	SHIM, 0.20-mm [.008-in.] Thick	As Required
19	301185-7 □	SHIM, 0.25-mm [.010-in.] Thick	As Required
20	301185-8 □	SHIM, 0.30-mm [.012-in.] Thick	As Required
21	301185-9 □	SHIM, 0.38-mm [.015-in.] Thick	As Required
Not Shown	314559-1	ANVIL, Insulation	1
Not Shown	314558-1	INDENTER, Insulation	1

● Recommended customer spares

□ For Crimping Head 314268-1, Rev D

Figure 10