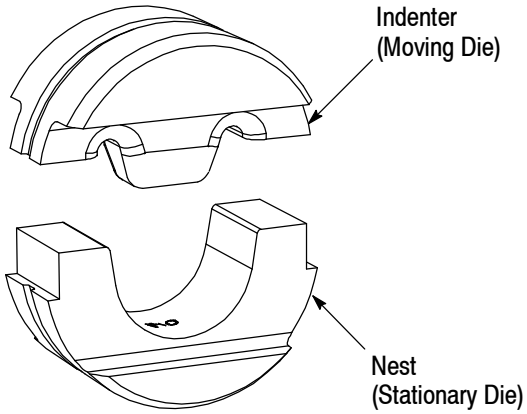
Crimping Dies for Heavy-Duty Seamless Straight Ring Tongue Terminals and Butt Splices

ORIGINAL INSTRUCTIONS

PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended-use, production operations is available.



NOMINAL WIRE SIZE (AWG)	CRIMPING DIE		USED IN
	INDENTER	NEST	
8	1901657-1	1-1490413-4	Hydraulic Crimping Head 1490747-1, 1901820-1, or 1901821-1 or Hydraulic Hand Crimping Tool 1490748-1 or 1490749-1
6	1901657-2	1-1490413-5	
4	1901657-2	1-1490413-6	
2	1901657-2	1-1490413-7	
1	1901657-2	1-1490413-7	
1/0	1901657-3	1-1490413-8	
2/0	1901657-3	1-1490413-9	
3/0	1901657-3	2-1490413-0	
4/0	1901657-3	2-1490413-1	

Figure 1

1. INTRODUCTION

This instruction sheet provides application instructions, maintenance, and inspection procedures for the crimping dies listed in Figure 1. These dies are used to crimp heavy-duty seamless straight ring tongue terminals and butt splices onto solid or stranded copper wire also listed in Figure 1.

Refer to Catalog 1308674 for information and part numbers for the terminals and splices.

The dies are designed to be installed in a hydraulic crimping head or hydraulic hand crimping tool. Available heads and tools are listed in Figure 1.

NOTE

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

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

2. DESCRIPTION

Each die consists of a nest and an indenter (available separately) which are retained in the crimping head or crimping tool by retainer pins. The nest is positioned in the yoke and the indenter is positioned in the ram.

3. DIE INSTALLATION AND REMOVAL

Refer to Figure 1 and determine the correct dies, wire size, crimping head, and hydraulic hand tool to use.

CAUTION

Never operate the head or tool with the dies removed.

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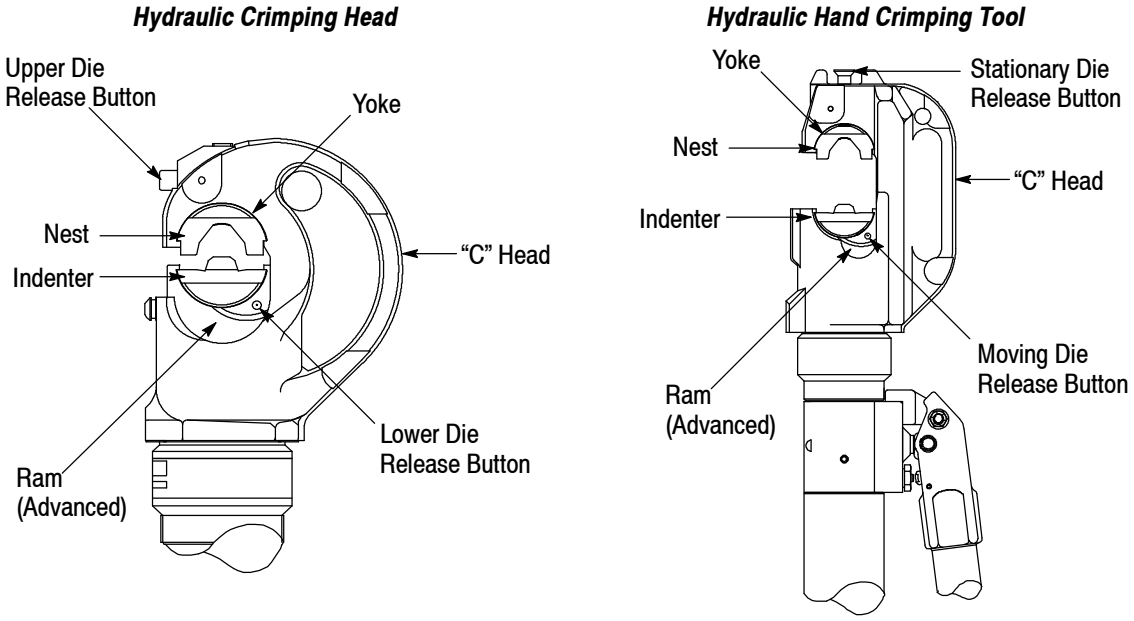


Figure 2

DANGER

To avoid personal injury, make sure to exercise extreme caution when using the head or tool. Avoid depressing the footswitch or trigger control when installing or removing the dies.

3.1. Die Installation

1. Depress the upper die release button (head) or stationary die release button (tool) located on the "C"-head. See Figure 2.

2. Slide the nest into place in the "C"-head. See Figure 2.

3. Release the button, and rock the nest back and forth until the nest snaps into position.

4. Activate the head or tool according to the instructions included with the head or tool until the lower die release button (head) or moving die release button (tool) located in the ram is exposed. Depress the button.

5. Slide the indenter into position in the ram. See Figure 2.

6. Release the button, and rock the indenter back and forth until the indenter snaps into position.

7. Return ram to the down position.

3.2. Die Removal

1. Depress the upper die release button (head) or stationary die release button (tool) located on the "C"-head, and slide the nest out. See Figure 2.

2. Activate the head or tool according to the instructions included with the head or tool until the lower die release button (head) or stationary die release button (tool) located in the ram is exposed.

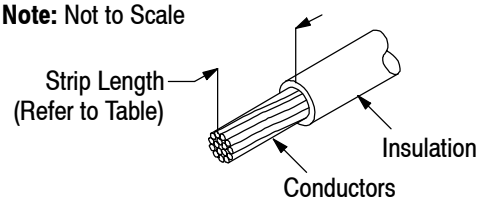
3. Depress the button, and slide the indenter out of the ram.

4. CRIMPING PROCEDURE

1. Ensure that the wire range or size stamped on the terminal or splice corresponds with the wire size being used and the wire range or size marked on the nest and indenter.

2. Strip the wire to the dimension given in Figure 3. DO NOT nick or cut the wire strands.

Note: Not to Scale



NOMINAL WIRE SIZE (AWG)	STRIP LENGTH
8	11.43 [.450]
6	12.06 [.475]
4	13.34 [.525]
2	14.60 [.575]
1	15.87 [.625]
1/0	17.46 [.688]
2/0	
3/0	19.05 [.750]
4/0	20.64 [.812]

Figure 3

3. Insert the stripped wire into the wire barrel of the terminal or splice making sure that the end of the wire is visible through the sight hole.

4. Center the terminal or splice in the nest as shown in Figure 4.

DANGER

To avoid personal injury, make sure to exercise caution when holding terminals, splices, or wire near the crimping area.

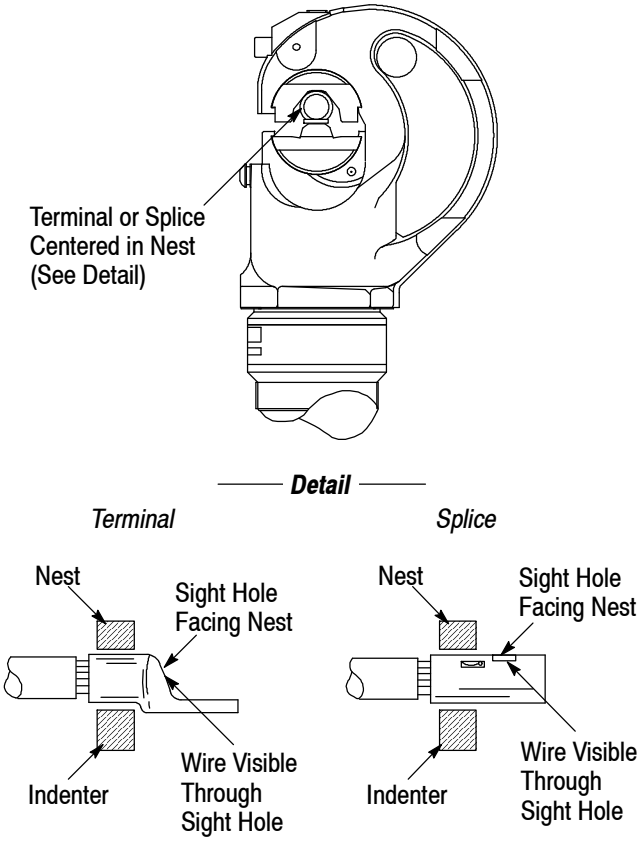


Figure 4

5. Activate the head or tool according to the instructions included with the head or tool so that ram advances and holds the terminal or splice in place. DO NOT deform the wire barrel.

6. For terminals, insert the stripped wire into the wire barrel until the end of the conductor is visible in the sight hole. For butt splices, insert a stripped wire into the wire barrel until the end of the conductor is visible in the sight hole.

7. Activate the head or tool to crimp the wire barrel.

NOTE

If the terminal or splice sticks in the die after crimping, grasp the wire close to the crimp and apply a rocking motion to remove it from the die.

8. For splices, insert a stripped wire into the uncrimped wire barrel until the end of the conductor is visible in the sight hole.

9. Inspect the crimp according to Figure 5. This is included as an aid to the tool operator ONLY. It is not intended to serve as a quality control inspection for qualifying finished crimps on these terminals and splices. Use only terminals or splices that meet the conditions shown in the ACCEPT column. Terminals and splices displaying the features shown in the REJECT column can be avoided by careful use of these instructions and by performing the maintenance and inspection procedures described in Section 5.

CAUTION

Damaged terminals or splices should not be used. If a damage is evident, the terminal or splice should be cut from the wire and replaced with a new one. DO NOT re-terminate terminals or splices.

5. MAINTENANCE AND INSPECTION

DANGER

To avoid personal injury, DISCONNECT THE POWER SUPPLY before performing maintenance, adjustments, inspection, or repair.

5.1. Daily Maintenance

It is recommended that each operator of the dies be made aware of, and responsible for, the following steps of daily maintenance:

1. Remove dust, moisture, and other contaminants from the dies with a clean brush, or a clean, soft, lint-free cloth. DO NOT use objects that could damage the dies.

2. If dies are coated with oil or preservative, wipe them clean—particularly in the crimping areas—before placing them in use.

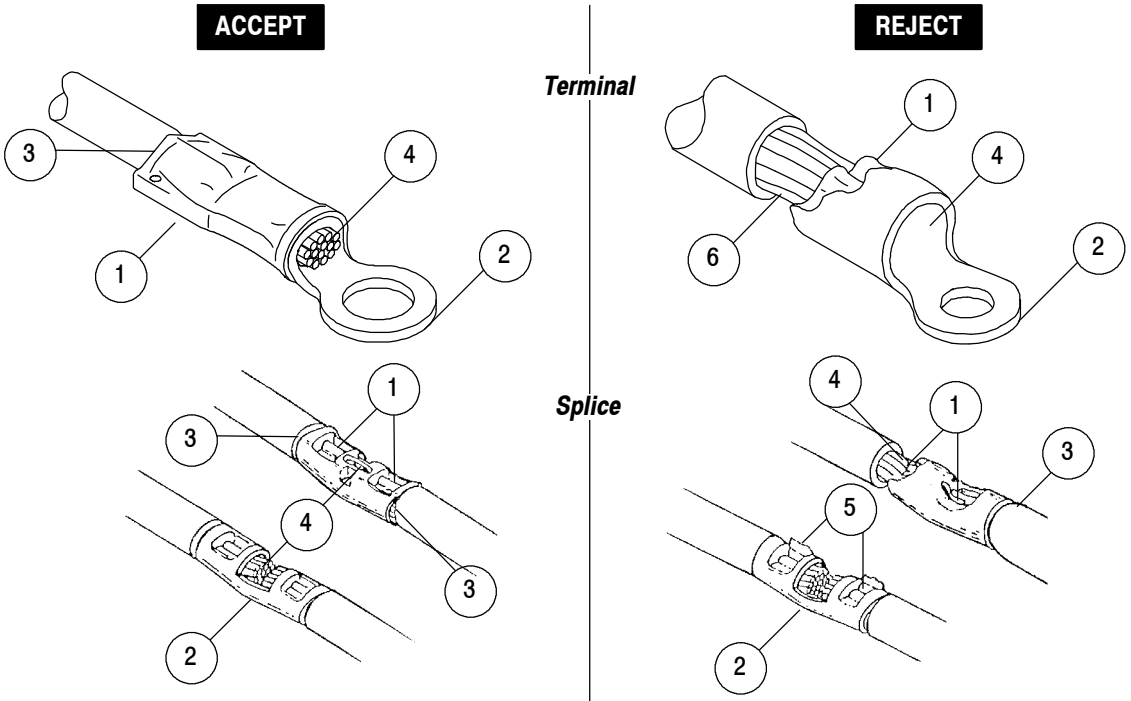
3. When dies are not in use, make certain all surfaces are protected with a THIN coat of any good SAE 20 motor oil, then mate and store them in a clean, dry area.

5.2. Periodic Inspection

Periodic inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the dies or be made available to personnel responsible for the dies. Though recommendations call for at least a monthly inspection, the inspection frequency should be based upon the amount of use, working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence.

A. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the dies in a suitable degreaser that will not affect paint or plastic.



ACCEPT	REJECT
1 Crimp is centered on wire barrel. Crimp may be off center but not off end of wire barrel.	1 Crimp is off end of wire barrel.
2 Wire size being used matches the wire range or size stamped on terminal or splice and dies.	2 Wire size being used does not match the wire range or size stamped on terminal or splice and dies.
3 Wire insulation does not enter wire barrel.	3 Wire insulation enters wire barrel. Check that the strip length is correct.
4 End of wire is visible through sight hole of terminal or splice.	4 End of wire is not visible through sight hole of terminal or splice. Wire was not inserted far enough.
	5 Excessive “flash” on terminal or splice. This indicates damaged dies or wrong wire size, splice, or tooling combination was used.
	5 Nicked or missing strands.

Figure 5

2. Check all surfaces for wear. Inspect the crimp area for flattened, chipped, cracked, worn, or broken areas. If damage is evident, the die must be replaced. Refer to Figure 6.

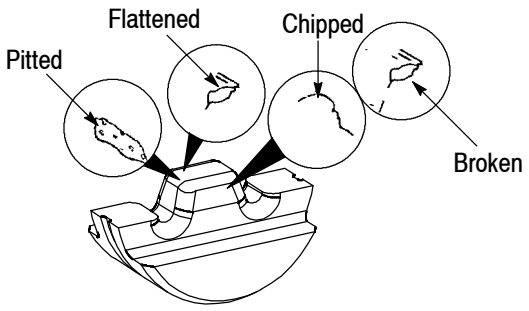


Figure 6

B. Gaging the Crimping Chamber

This inspection requires the use of a plug gage conforming to the dimensions in Figure 7. Refer to Figure 7, and gage the crimping chamber as follows:

1. Mate the dies until it is evident that they have bottomed. Hold the dies in this position.

2. Align the GO element with the wire barrel crimping chamber. Push the element straight into the the crimping chamber without using force. The GO element must pass completely through the crimping chamber.

3. Align the NO-GO element and try to insert it straight into the same crimping chamber. The NO-GO element may start entry but must not pass completely through.

If the crimping chamber conforms to the gage inspection, the dies are considered dimensionally correct. If not, the dies must be replaced. For additional information regarding the use of a plug gage, refer to Instruction Sheet 408-7424.

6. REPLACEMENT

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

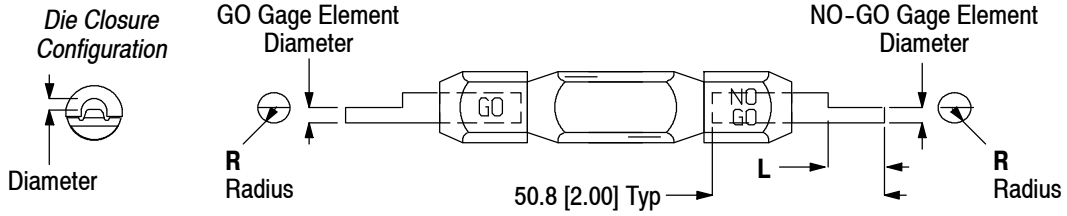
CUSTOMER SERVICE (038-035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

7. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Corrected dimensions in table in Figure 7

Suggested Plug Gage Design



DIE		DIE CLOSURE DIAMETER		GAGE ELEMENT DIAMETER		DIMENSION	
NEST	INDENTER	GO	NO-GO	GO	NO-GO	L (Typ)	R
1-1490413-4	1901657-1	2.54 [.1000]	2.692 [.1060]	2.54-2.548 [.1000-.1003]	2.689-2.692 [.1059-.1060]	7.92 [.312]	3.18 [.125]
1-1490413-5	1901657-2	3.911 [.1540]	4.115 [.1620]	3.911-3.919 [.1540-.1543]	4.112-4.115 [.1619-.1620]	11.09 [.437]	4.34 [.171]
1-1490413-6	1901657-2	4.699 [.1850]	4.902 [.1930]	4.699-4.706 [.1850-.1853]	4.899-4.902 [.1929-.1930]	11.09 [.437]	5.54 [.218]
1-1490413-7	1901657-2	5.410 [.2130]	5.613 [.2210]	5.410-5.418 [.2130-.2133]	5.610-5.613 [.2209-.2210]	11.09 [.437]	6.35 [.250]
1-1490413-8	1901657-3	6.172 [.2430]	6.375 [.2510]	6.172-6.179 [.2430-.2433]	6.372-6.375 [.2509-.2510]	11.09 [.437]	7.52 [.296]
1-1490413-9	1901657-3	6.959 [.2740]	7.163 [.2820]	6.959-6.967 [.2740-.2743]	7.160-7.163 [.2819-.2820]	14.27 [.562]	8.33 [.328]
2-1490413-0	1901657-3	7.832 [.3080]	8.026 [.3160]	7.832-7.830 [.3080-.3083]	8.023-8.026 [.3159-.3160]	14.27 [.562]	3.525 [.375]
2-1490413-1	1901657-3	8.788 [.3460]	8.991 [.3540]	8.788-8.796 [.3460-.3463]	8.989-8.991 [.3539-.3540]	14.27 [.562]	10.693 [.421]

Inspection of Crimping Chamber

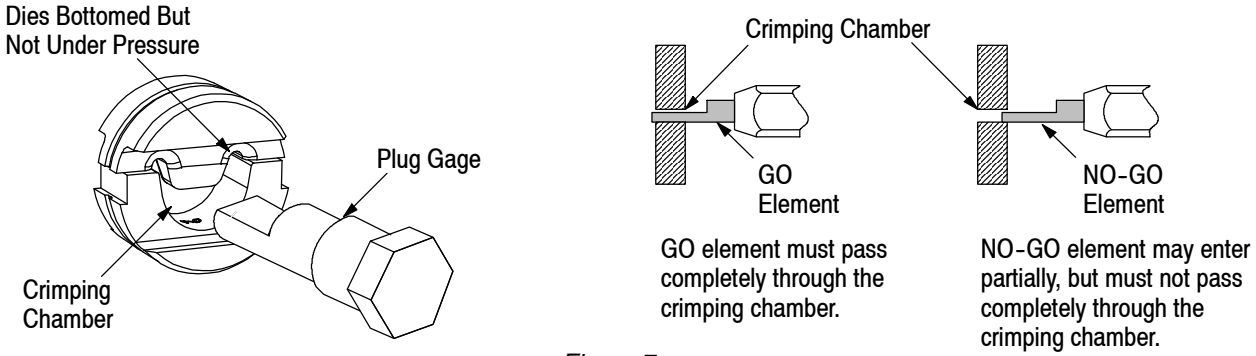


Figure 7

OCEAN CHIPS
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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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