

Figure 1

1. INTRODUCTION

Tyco Electronics Crimping Die Assemblies 47378-1, 48756-1, and 48757-1 are designed to be used with Tyco Electronics Crimping Heads. The heads are used in Tyco Electronics electric hydraulic pumps, foot or hand pumps, or battery-powered pumps. The die assemblies crimp AMPLI-BOND* Terminals and PLASTI-GRIP* Terminals onto wire sizes 1/0 or 2/0 AWG with an insulation diameter of 17.37-18.72 mm [.684-.737 in.].

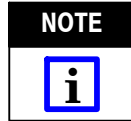
This instruction sheet describes crimping procedures, insulation crimp adjustments, and maintenance and inspection. For information on tool setup and operation, refer to the instructions packaged with the crimping head, power unit, or hydraulic pump:

8,200 PSI Tooling

408-2453	Crimping Head 69066
408-9535	Crimping Head 58422-1
409-1950	Hydraulic Power Unit 69120-1, -2
409-5860	Hydraulic Hand Pump 314979-1

10,000 PSI Tooling

408-8914	Crimping Head 1752787-1
408-8956	Crimping Head 1752877-1
409-10060	Battery-Operated Hydraulic Pump 1804111-1
409-10081	Hydraulic Power Unit 1804700-1, -2



Measurements are in millimeters [with inches in brackets].

Reasons for reissue are provided in Section 7, REVISION SUMMARY.

2. DESCRIPTION

The die assembly consists of two stationary dies and two moving dies. The moving dies feature a spring-loaded locator mounted on a block which aids in positioning the terminal in the dies. Each die contains a pin-key which is used for insulation crimp adjustment. When mated, the dies form crimping chambers which crimp the terminal wire barrel and insulation barrel simultaneously. Each die is held in the crimping head by a single setscrew. See Figure 1.

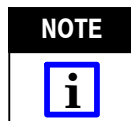
The dies are color coded to match the terminal insulation color. Observe the embossed wire size that appears on both sides of the wire barrel of finished crimps to ensure that it agrees with the wire size stamped on the terminal tongue.

3. CRIMPING PROCEDURE



To avoid personal injury, ALWAYS keep fingers clear of crimping dies when operating the power unit.

1. Refer to Figure 2 and select the appropriate die assembly for the wire size and terminal being used.

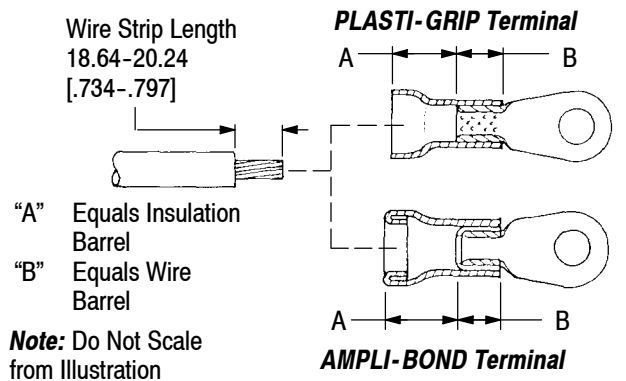


When a tight insulation support is required for PLASTI-GRIP terminals, use the standard expansion type die assembly.

2. Install the die assembly according to the instructions packaged with the crimping head.
3. Strip the wire according to the dimensions provided in Figure 2. DO NOT nick the wire strands or use wires with nicked or missing conductor strands.
4. With the yoke on the crimping head open, place the terminal in the moving dies. Make sure the bottom of the terminal tongue faces the stationary

dies and the terminal wire barrel rests against the locator. See Figure 3.

5. Insert the stripped wire into the terminal wire barrel. The end of the wire must be flush with, or extend beyond, the edge of the wire barrel.



WIRE		DIE ASSEMBLY		COLOR CODE
SIZE (AWG)	INSUL DIA (Max)	PART NO.	TYPE	
1/0	16.05 [.632]	48756-1	Standard Expansion	Blue
	17.37 [.684]	47378-1	Large Expansion	
2/0	17.37 [.684]	48757-1	Standard Expansion	Yellow

Figure 2

6. Close the crimping head yoke and insert the latch pin.

CAUTION *To avoid damage to the yoke, latch pin, or die assembly, make sure that the latch pin is fully inserted.*

7. Hold terminal in position and activate power unit to complete the crimp. Open the crimping head yoke and remove the crimped terminal from the dies.

NOTE *If the terminal sticks in the dies after crimping, use a rocking motion on the terminal to release it from the die.*

8. Check the termination to ensure the terminal retains a grip on the wire. If an adjustment to the insulation crimp is necessary, refer to Section 4, INSULATION CRIMP ADJUSTMENT. Refer to Figure 4 for a properly crimped terminal.

4. INSULATION CRIMP ADJUSTMENT

The insulation barrel crimping dies have three positions: 1—Tight; 2—Medium; and 3—Loose.

1. Loosen the socket head cap screws on the stationary die, then push the pin-key all the way in for the loose position.

2. Hold the stationary insulation crimping die against the pin-key to prevent the pin-key from popping back out. Tighten the socket head cap screws. Similarly, adjust the moving insulation crimping die.

NOTE *Always adjust both pin-keys in the same position.*

3. Crimp a terminal to the wire, as described in Section 3, CRIMPING PROCEDURE.

4. Remove the terminal from the crimping dies and bend the wire back and forth once. The terminal should retain its grip or support on the wire. If the insulation crimp does not grip or support the wire insulation, position the pin-keys in the next tighter position and repeat the crimping procedure.

NOTE *AMPLI-BOND terminals contain a wire insulation “grip” and PLASTI-GRIP terminals contain a wire insulation “support.”*

5. Repeat Steps 1 through 4 until the desired insulation grip, or support, is obtained. DO NOT use a tighter setting than is required.

5. MAINTENANCE AND INSPECTION

Tyco Electronics recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. The die assembly should be inspected once a month. Frequency of inspection should be adjusted to suit your requirements through experience.

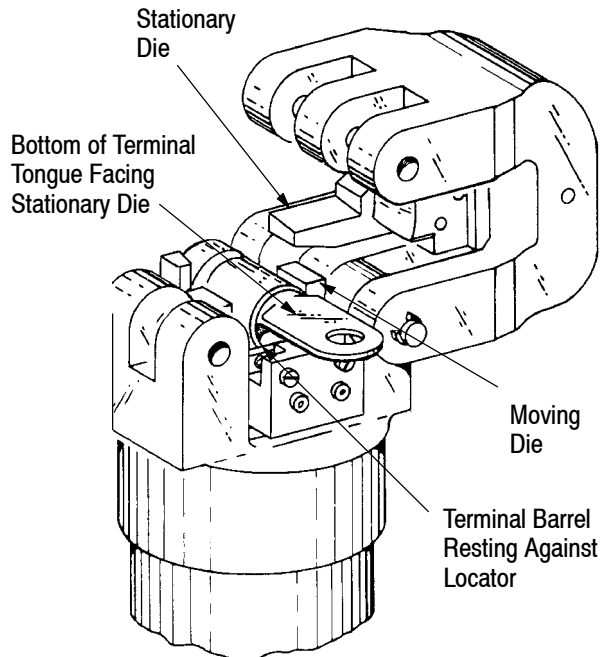
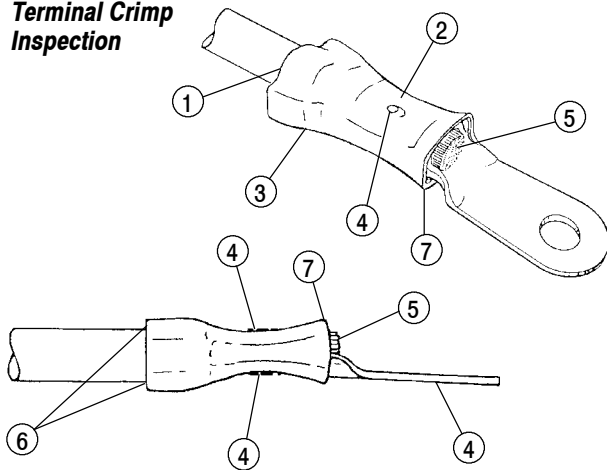


Figure 3

Terminal Crimp Inspection

- ① Wire must be fully inserted.
- ② Crimp centered on wire barrel.
- ③ Correct color code and die combination must be used (terminal insulation color matches color code on dies).
- ④ Wire size used must be the same as the wire size embossed on terminal insulation and stamped on terminal tongue.
- ⑤ End of wire conductor is flush with, or extends beyond, end of terminal wire barrel.
- ⑥ Insulation barrel must contact wire insulation (AMPLI-BOND terminals contain wire insulation “grip” and PLASTI-GRIP terminals contain wire insulation “support”). Refer to Section 4.
- ⑦ Bellmouth must be visible.

Figure 4

Frequency of inspection depends on:

1. The care, amount of use, and handling of the die assembly.
2. The type and size of the product crimped.
3. The degree of operator skill.
4. The presence of abnormal amounts of dust and dirt.
5. Your own established standards.

Each die assembly is thoroughly inspected before packaging. Since there is the possibility of damage during shipment, the die assembly should be inspected immediately upon arrival at your facility in accordance with Paragraph 5.3, Gaging the Crimping Chamber, and Figure 6.

5.1. Cleaning

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 certain the dies are protected with a THIN coat of any good SAE 20 motor oil. Do NOT oil excessively.
3. When the dies are not in use, mate and store them in a clean, dry area.

5.2. Visual Inspection

1. Check all bearing surfaces for wear. If parts are missing or defective, replace them by referring to Figure 6.
2. Inspect the crimp area for flattened, chipped, or broken areas. Although the crimping chamber may gage within permissible limits, worn or damaged die closure surfaces are objectionable and will affect the quality of the crimp.

5.3. Gaging the Wire Barrel Crimping Chamber

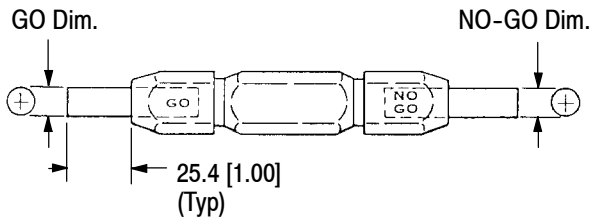
This inspection requires the use of plug gages conforming to the dimensions shown in Figure 5. Tyco Electronics does not manufacture or market these gages.

1. Remove die assembly from crimping head. Refer to the instructions packaged with the crimping head.
2. Remove the socket head cap screws and the locator block from the moving die.
3. Remove oil and dirt from crimping surfaces and plug gage elements.
4. Mate the dies until they are bottomed, but not under pressure.
5. Using the suggested plug gage design, as shown in Figure 5, align the GO element with the wire barrel crimping chamber. Push the element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber, as shown in Figure 5.
6. Align the NO-GO element and try to insert it into the same crimping chamber. The element may start entry, but will not pass completely through the crimping chamber. See Figure 5.

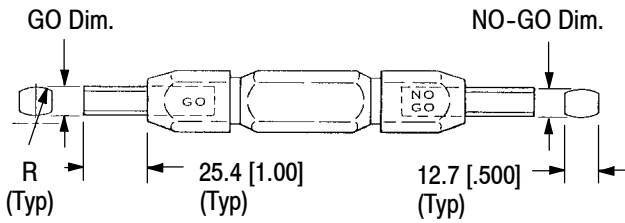
If the crimping chamber conforms to the gage inspection, the die assembly is considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil. If the crimping chamber does not conform to the plug gage dimensions, the dies must be repaired before returning them to service (refer to Section 6, REPLACEMENT AND REPAIR).

For additional information concerning the use of the plug gage, refer to Instruction Sheet 408-7424.

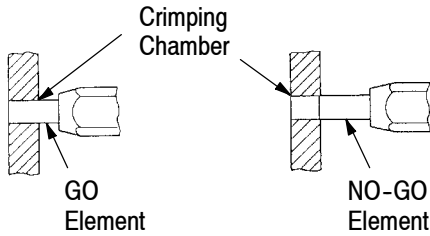
Suggested Plug Gage Design for Wire Barrel Crimp



DIE ASSEMBLY	GAGE ELEMENT DIMENSIONS	
	GO	NO-GO
47378-1	10.185-10.193 [.4010-.4013]	10.335-10.338 [.4069-.4070]



DIE ASSEMBLY	GAGE ELEMENT DIMENSIONS		
	GO	NO-GO	RADIUS "R"
48756-1	10.185-10.193 [.4010-.4013]	10.335-10.338 [.4069-.4070]	13.00 [.512]
48757-1	11.354-11.361 [.4470-.4473]	11.504-11.506 [.4529-.4530]	14.73 [.580]



GO Gage Element Must Pass Completely Through the Crimping Chamber.

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

Figure 5

6. REPLACEMENT AND REPAIR

The parts listed in Figure 6 are customer-replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your Tyco Electronics Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

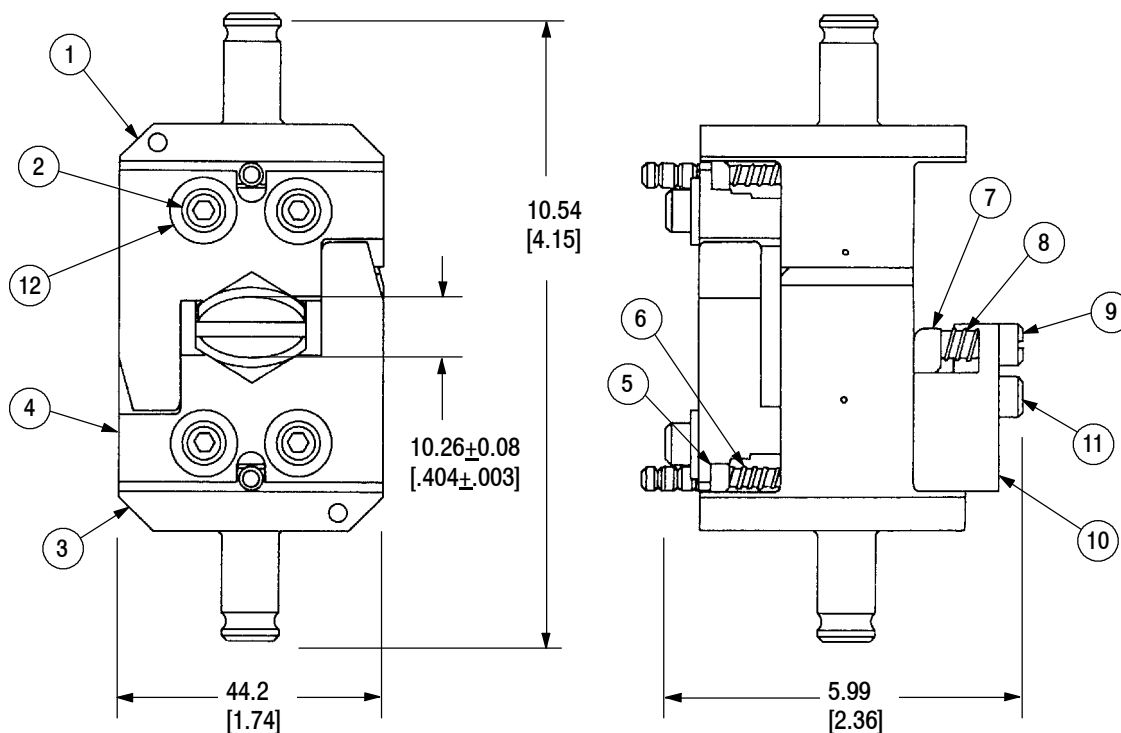
CUSTOMER SERVICE (38-35)
 TYCO ELECTRONICS CORPORATION
 P.O. BOX 3608
 HARRISBURG, PA 17105-3608

For repair service, please contact a Tyco Electronics Representative at 1-800-526-5136.

7. REVISION SUMMARY

Since the previous release of this sheet, the following changes were made:

- Updated document to corporate requirements
- Added new text to Section 1
- Added new documents to Section 1
- New logo and format



Weight: 964 g [2 lb, 2 oz]

CUSTOMER REPLACEABLE PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER DIE ASSEMBLY
1	307809-5 307809-6■	ANVIL	1
2	1-23030-6	SCREW, Skt Hd Cap, Sflkg, Patch Type	4
3	307810-5 307810-6■	INDENTER	1
4	45859-1 48882 ▲	INSERT, Insulation	2
5	313291-1 313291-2■	ASSEMBLY, Pin-Key	2
6	2-22279-1	SPRING, Compression	2
7	313338-1	LOCATOR	1
8	7-59683-0	SPRING, Compression	2
9	1-22353-0	SCREW, Shldr, Slot Hd, 8-32	2
10	307333-2	BLOCK, Locator	1
11	3-21000-1	SCREW, Skt Hd Cap	2
12	306098-2	WASHER, Flat	4

- For Die Assembly 48757-1 only.
- ▲ For Die Assembly 48756-1 only.

Figure 6