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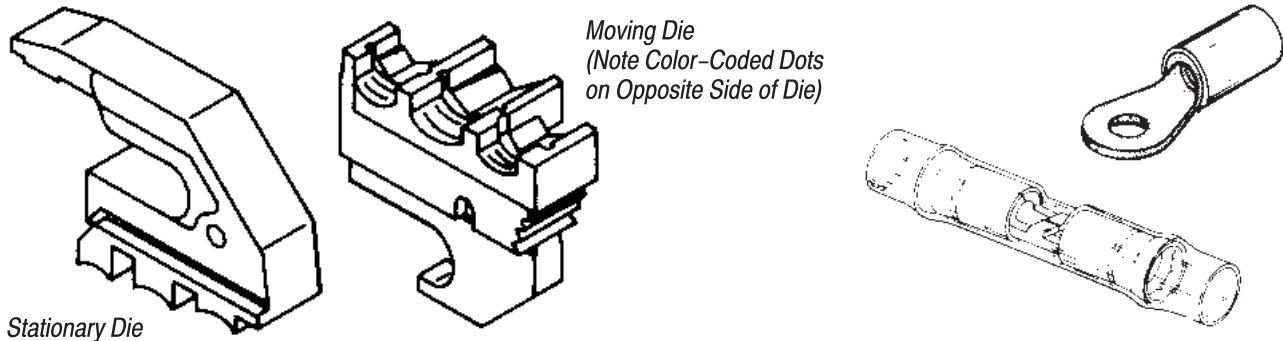
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**Crimping Dies 169404**

**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.




SIZE (AWG)	WIRE			STRIP LENGTH				PRODUCT
	INSULATION			TERMINAL		SPLICE		
	DIA (Max)	COLOR	DOT CODE	Min	Max	Min	Max	
22-16	3.56 [.140]	Red	1	5.16 [.203]	5.94 [.234]	6.35 [.250]	7.14 [.281]	PIDG* Terminals and Splices; PLASTI-GRIP* Terminals
16-14	4.32 [.170]	Blue	2	5.16 [.203]	5.94 [.234]	6.35 [.250]	7.14 [.281]	
20-16 HD	4.32 [.170]	Blue	2	5.16 [.203]	5.94 [.234]	6.35 [.250]	7.14 [.281]	
12-10	6.35 [.250]	Yellow	1	7.92 [.312]	8.74 [.344]	8.74 [.344]	9.52 [.375]	
16-14 HD	6.35 [.250]	Yellow W/Black Stripe	1	7.92 [.312]	8.74 [.344]	8.74 [.344]	9.52 [.375]	
22	0.97-2.79 [.038-.110]	Red W/Green Stripe	1	6.35 [.250]	7.14 [.281]	---	---	PIDG Insulation- Restricting Terminals
20	1.17-2.79 [.046-.110]	Red W/Red Stripe	1	6.35 [.250]	7.14 [.281]	---	---	
18	1.42-2.79 [.056-.110]	Red W/White Stripe	1	6.35 [.250]	7.14 [.281]	---	---	
16	1.60-3.30 [.063-.130]	Blue W/Blue Stripe	2	6.35 [.250]	7.14 [.281]	---	---	
14	1.98-3.30 [.078-.130]	Blue W/Green Stripe	2	6.35 [.250]	7.14 [.281]	---	---	
12	2.41-5.08 [.095-.200]	Yellow W/Brown Stripe	1	9.52 [.375]	10.31 [.406]	---	---	
10	3.02-5.08 [.119-.200]	Yellow W/Yellow Stripe	1	9.52 [.375]	10.31 [.406]	---	---	

Figure 1


**1. INTRODUCTION**

Crimping Dies 169404, used in Hand Crimping Tool 169400, are designed to crimp PIDG and PLASTI-GRIP terminals, and PIDG "window" splices.

**NOTE**  The terminals and splices listed in the table in Figure 1 and crimped with dies 169404 in Hand Tool 169400 will meet the requirements of Underwriters Laboratories, Inc. (UL) 46A specifications.

the tool (Instruction Sheet 408-6764) for information concerning dies installation, crimp adjustments, crimping procedures, and general information.

See Section 6, REVISION SUMMARY, for revision information.

**NOTE**  All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for reference only and are not drawn to scale.

Read this instruction sheet for specific information concerning the dies, applicable terminals, and wire specifications. Read the instructions packaged with

**2. DESCRIPTION**

Each die assembly consists of a stationary die and a moving die. Each die assembly is also divided into

three separate crimping closures that are color-coded to match the color-coded terminal/splice for a given wire range.

Note that Figure 1 indicates the number of dots that will appear embossed on the crimped terminal or splice. Observe the dot code on the finished crimp to ensure that correct terminal/splice and die-closure combination was used.

2. Place terminal (or splice) in dies as shown in Figure 2 or Figure 3.
3. Close tool handles until terminal or splice is held firmly in place.
4. Insert properly stripped wire into terminal (or splice) wire barrel "B" as shown in Figure 2 or Figure 3.
5. Complete crimp by closing handles until ratchet releases handles. Handles will open automatically and crimped item may be removed.
6. To crimp other half of splice, remove it and reposition uncrimped half in dies as shown in Figure 3. Follow same procedure used to crimp first half of splice. (If splice cannot be turned, turn tool around.)
7. Inspect crimped terminal/splice. Check that appropriate crimp code dot(s) appears on crimped area of wire barrel. See Figure 1.

Typical PIDG and PLASTI-GRIP Terminals  
(Ring or Spade Receptacles)

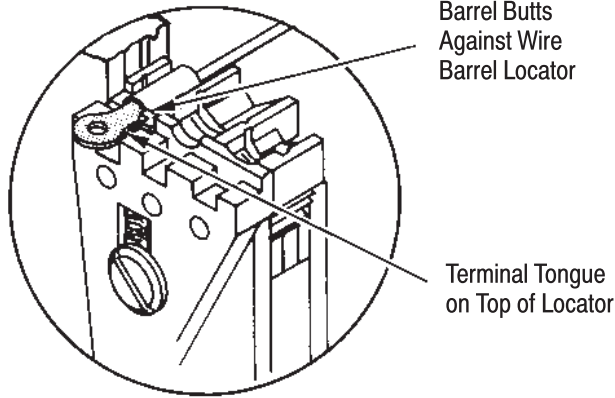
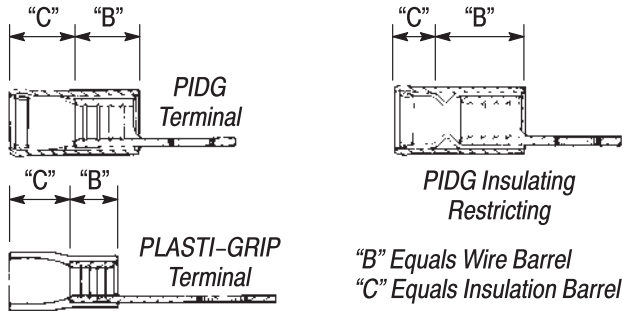


Figure 2

**3. CRIMPING PROCEDURE**

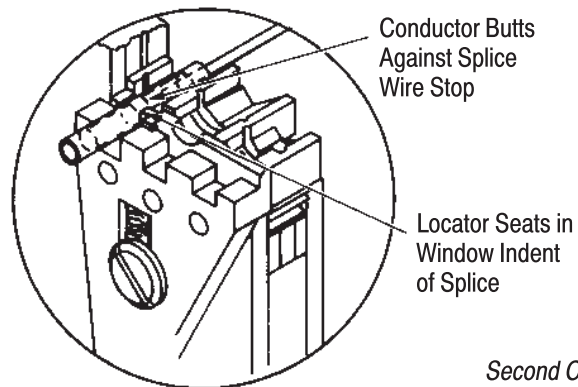
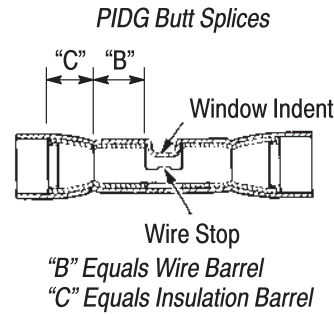
Determine your application requirements. Then, using the table in Figure 1, make your selection according to the following instructions:

*Wire Size and Insulation Diameter* – Make certain the wire and insulation are within the specified range.

*Wire Type and Strip Length* – Using stranded wire, strip it to the length shown. Do NOT crimp wire that has cut or nicked strands.

Crimp terminal (or splice) as follows:

1. If necessary, install the dies according to the instructions packaged with the tool.



First Crimp

Second Crimp

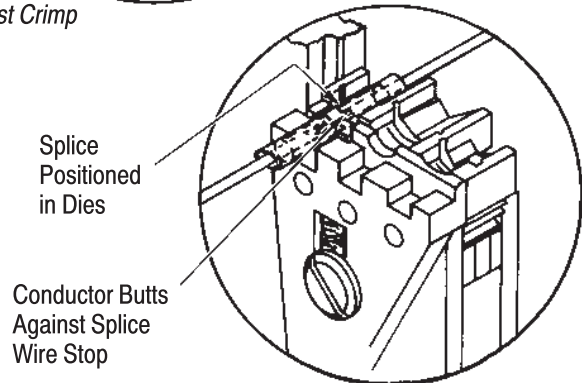


Figure 3

**4. DAILY MAINTENANCE**

Remove all foreign particles with a clean, soft brush or clean, soft, lint-free cloth. If foreign matter cannot be removed easily, or if the proper replacement parts are not available, return the dies to your supervisor.

Make certain the dies are protected with a thin coat of any good SAE No. 20 motor oil. **DO NOT OIL EXCESSIVELY.** When the dies are not in use, store them in a clean, dry area.

**5. MAINTENANCE AND INSPECTION**

**5.1. Die Certification**

These instructions have been approved by Tyco Electronics Design, Production, and Quality Control Engineers to provide documented maintenance and inspection procedures. Through Tyco Electronics test laboratories and the inspection of production assembly, the procedures described herein have been established to ensure the quality and reliability of the crimping dies.

**5.2. Inspection Procedures**

**A. Daily Maintenance**

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

- 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.
- Make certain the dies are protected with a THIN coat of any good No. 20 motor oil. **DO NOT OIL EXCESSIVELY.**
- When the dies are not in use, mate and store them in a clean, dry area.

**B. Periodic Inspection**

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the dies and/or be supplied to supervisory personnel responsible for the dies. Though recommendations call for at least one inspection a month, the inspection frequency should be based on the amount of use, ambient working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

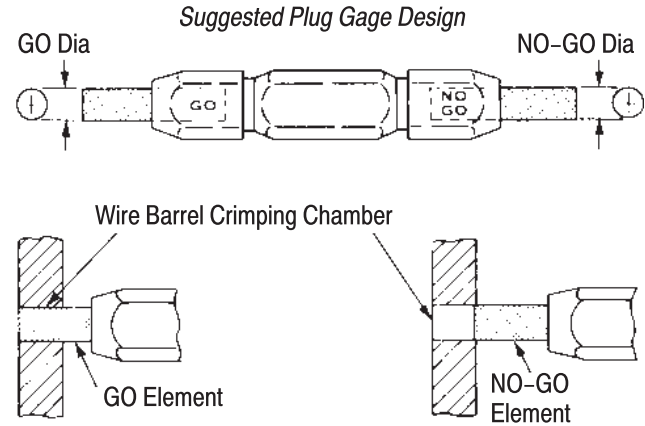
**(a) Visual Inspection**

1. Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser that will not affect paint or plastic material.
2. Check all bearing surfaces for wear.

3. Inspect the crimp area for flattened, chipped, cracked, worn, or broken areas. If damage is evident, the dies must be replaced.

**(b) Gaging the Crimping Chamber**

This inspection requires the use of a GO NO-GO Gage conforming to the diameters in Figure 4. Tyco Electronics does not manufacture or market these gages.



WIRE SIZE (AWG)	GAGE DIMENSION	
	GO (Dia)	NO-GO (Dia)
22-16	2.67 [.105]	2.82 [.111]
16-14	3.02 [.119]	3.18 [.125]
12-10	4.29 [.169]	4.44 [.175]

Figure 4

Select die crimping chamber according to wire size and proceed as follows:

1. Mate the dies until it is evident that they have bottomed.
2. Align the GO element with the wire barrel crimping chamber. Push element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber as shown in Figure 4.
3. Now 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 as shown in Figure 4.

If the crimping chamber conforms to the gage inspection, the dies are considered dimensionally correct and should be lubricated with a THIN coat of SAE No. 20 motor oil. If not, the dies must be replaced.

**6. REVISION SUMMARY**

- Updated document to corporate requirements
- New format

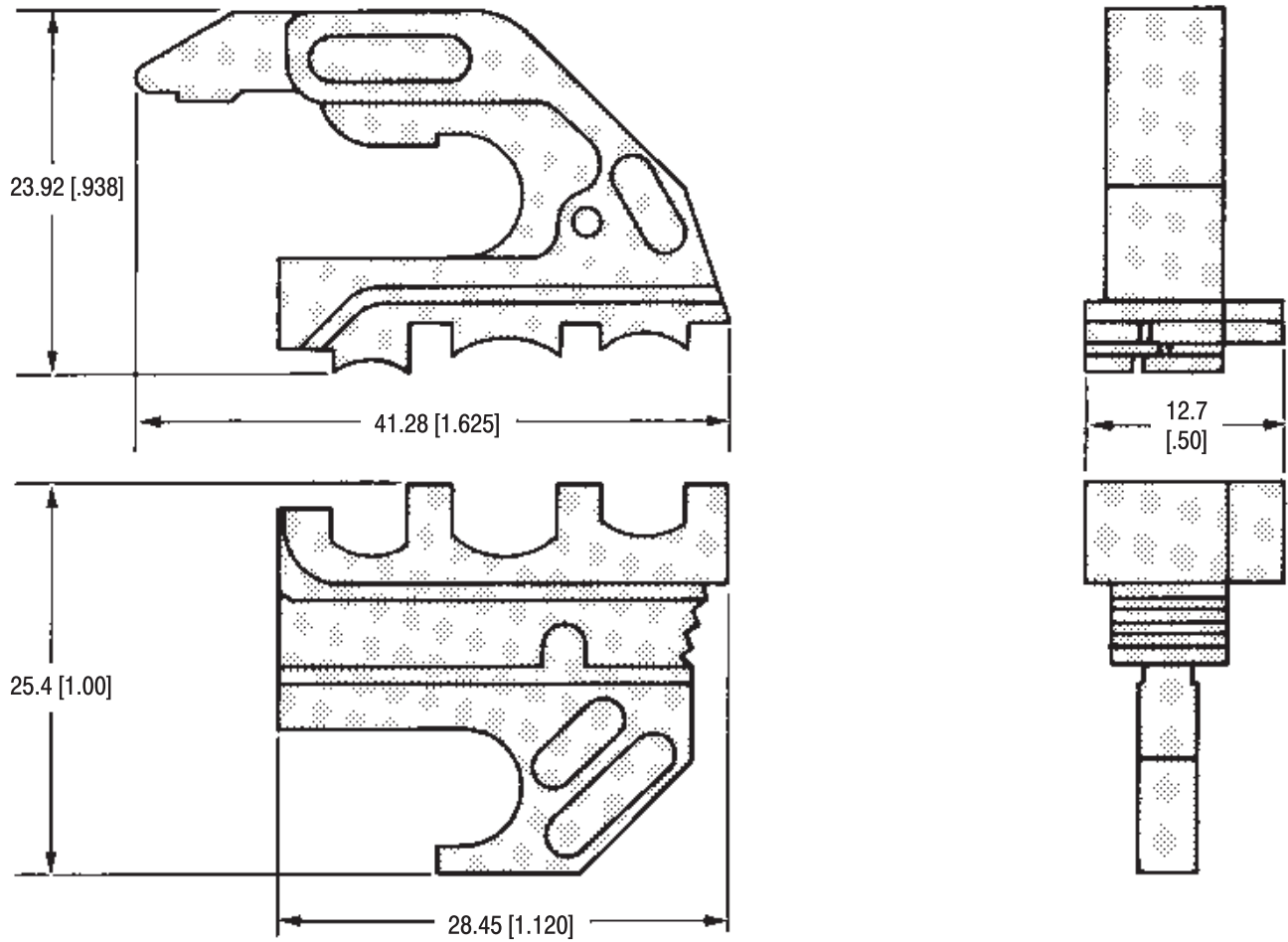


Figure 5