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APPLICATION AND MAINTENANCE FOR AMP* CRIMPING DIE ASSEMBLIES FOR SOLISTRAND* STANDARD TERMINALS AND SPLICES

IS 9787

RELEASED
5-13-92

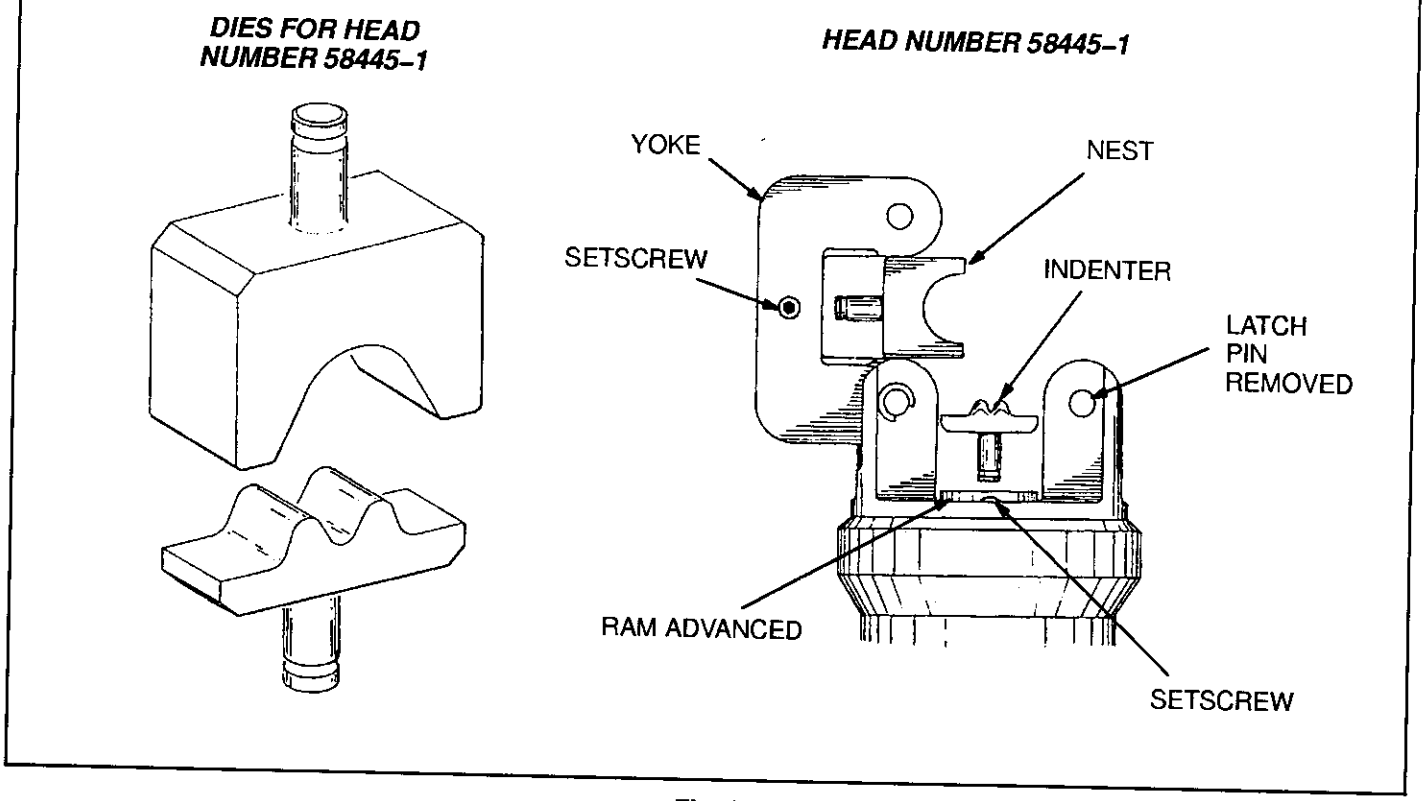

Fig. 1

75-200B

1. INTRODUCTION

This Instruction Sheet (IS) supersedes IS 1598 and provides instruction on application and a maintenance and inspection procedure for dies used to crimp SOLISTRAND standard terminals, butt splices, and parallel splices. These dies are used to crimp product on solid or stranded copper wire sizes 250-600 MCM■. The dies are used in Hydraulic Head 58445-1. See Figure 1. Read these instructions and all applicable references before inserting any die assemblies and crimping any terminals. See Figure 2.

NOTE

All dimensions on this document are in metric units [with U. S. customary units in brackets].

2. DESCRIPTION

Each die assembly consists of a nest and indenter which are retained in the crimping tool by setscrews or by internal retainers. The nest is positioned in the yoke of the crimping head and the indenter is positioned in the ram of the tool in all applications.

3. DIE INSTALLATION AND REMOVAL

Refer to Figure 2 and determine the correct die nest and indenter with the wire size to be used in the crimping head.

DANGER

AVOID PERSONAL INJURY. Exercise extreme caution when using power unit. Avoid depressing foot switch or trigger control when installing or removing die assemblies.

— *Die Insertion*

1. Remove latch pin on head of crimping head and open yoke.
2. Loosen setscrew in yoke of crimping head.
3. Insert nest into yoke as shown in Figure 1. Tighten setscrew.
4. Activate power unit to advance ram until setscrew is visible.
5. Loosen setscrew in ram and insert indenter into ram; tighten setscrew.
6. Return ram to the down position.
7. Close yoke and insert latch pin.

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■MCM=Thousand Circular Mils

FOR CRIMPING HEAD 58445-1					
NOMINAL WIRE SIZE		DIES	TYPICAL PRODUCT		
mm^2 CIRCULAR MIL AREA RANGE (MCM)	WIRE SIZE MARKING• (MCM)		TERMINALS	BUTT SPLICE	PARALLEL SPLICE
117-152 [231-300]	250-300	48816	322254	322279	322275
152-192 [300-380]	300-350	48817	322259	322280	322276
192-242 [380-478]	400	48818	324202	322281	322277
242-304 [478-600]	500-600	48819	322270	322282	322278

•Stamped on product

Fig. 2

CAUTION *Ensure that latch pin is fully inserted or damage may occur to yoke, dies, or latch pin.*

— *Die Removal*

1. Remove latch pin and open yoke.
2. Loosen setscrew in yoke and remove nest.
3. Raise ram to full up position.
4. Loosen setscrew in ram and remove indenter.

4. WIRE STRIPPING AND CRIMPING PROCEDURE

DANGER *AVOID PERSONAL INJURY. When operating power unit, exercise caution while holding terminals, splices or wire near crimping area.*

— *Wire Stripping*

Strip wire to dimensions listed in Figure 3. Do NOT nick or cut wire strands.

— *Crimping Procedure*

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

2. Center terminal or splice in nest as shown in Figure 4. For best results, when brazed seam on terminal or splice is visible, position seam toward indenter.

3. Activate power unit so that ram advances and holds terminal or splice in place. Do NOT deform terminal or splice wire barrel.

4. Insert stripped wire into **terminal or parallel splice** until end of conductor is flush with or extended slightly beyond end of wire barrel.

5. Insert stripped wire into **butt splice** until end of conductor butts against splice wire stop.

6. Activate power unit to complete the crimp.

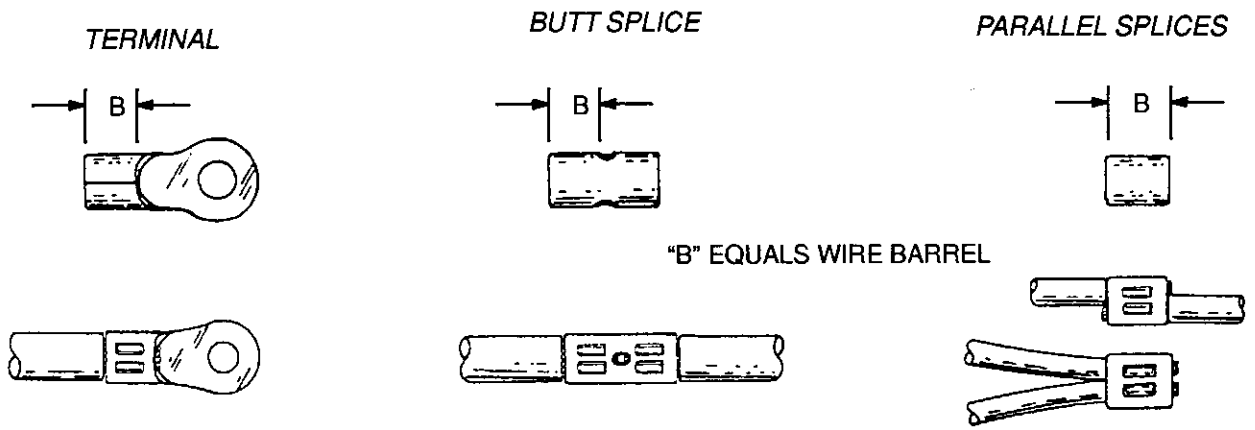
NOTE *If terminal sticks in die after crimping, grasp wire close to crimp and apply a rocking motion to remove from die.*

7. Refer to Paragraph 5.1, Crimp Inspection, for crimp inspection procedure for standard terminals, butt splices, and parallel splices.

5. MAINTENANCE/INSPECTION

DANGER *Disconnect power supply before performing maintenance, adjustments, inspections, and repairs.*

These instructions have been approved by AMP Design, Production, and Quality Control Engineers to provide documented maintenance and inspection procedures in accordance with AMP Corporate Policy No. 3-3. Through AMP Test Laboratories and the inspection of production assembly, the procedures described herein have been established to ensure quality and reliability of AMP crimping die assemblies. Customer-replaceable parts are listed in Figure 9. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary.



NOMINAL WIRE SIZE		DIES	STRIP LENGTHS (mm [in.])	
mm² CIRCULAR MIL AREA RANGE (MCM)	WIRE SIZE MARKING• (MCM)		MINIMUM	MAXIMUM
117–152 [231–300]	250–300	48816	26.193 [1–1/32]	27.781 [1–3/32]
152–192 [300–380]	300–350	48817	27.781 [1–1/32]	29.369 [1–3/32]
192–242 [380–478]	400	48818	30.956 [1–7/32]	32.544 [1–9/32]
242–304 [478–600]	500–600	48819	35.322 [1–25/64]	36.909 [1–29/64]

•Stamped on product

Fig. 3

67-271, 67-272

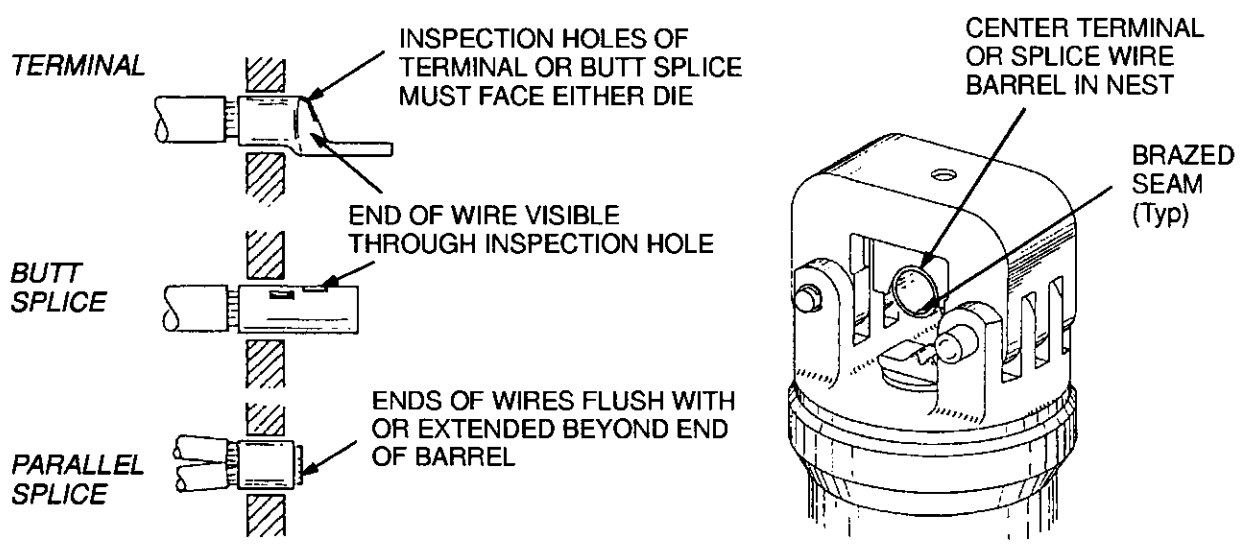


Fig. 4

75-201A

5.1. Crimp Inspection (Figure 5)

NOTE

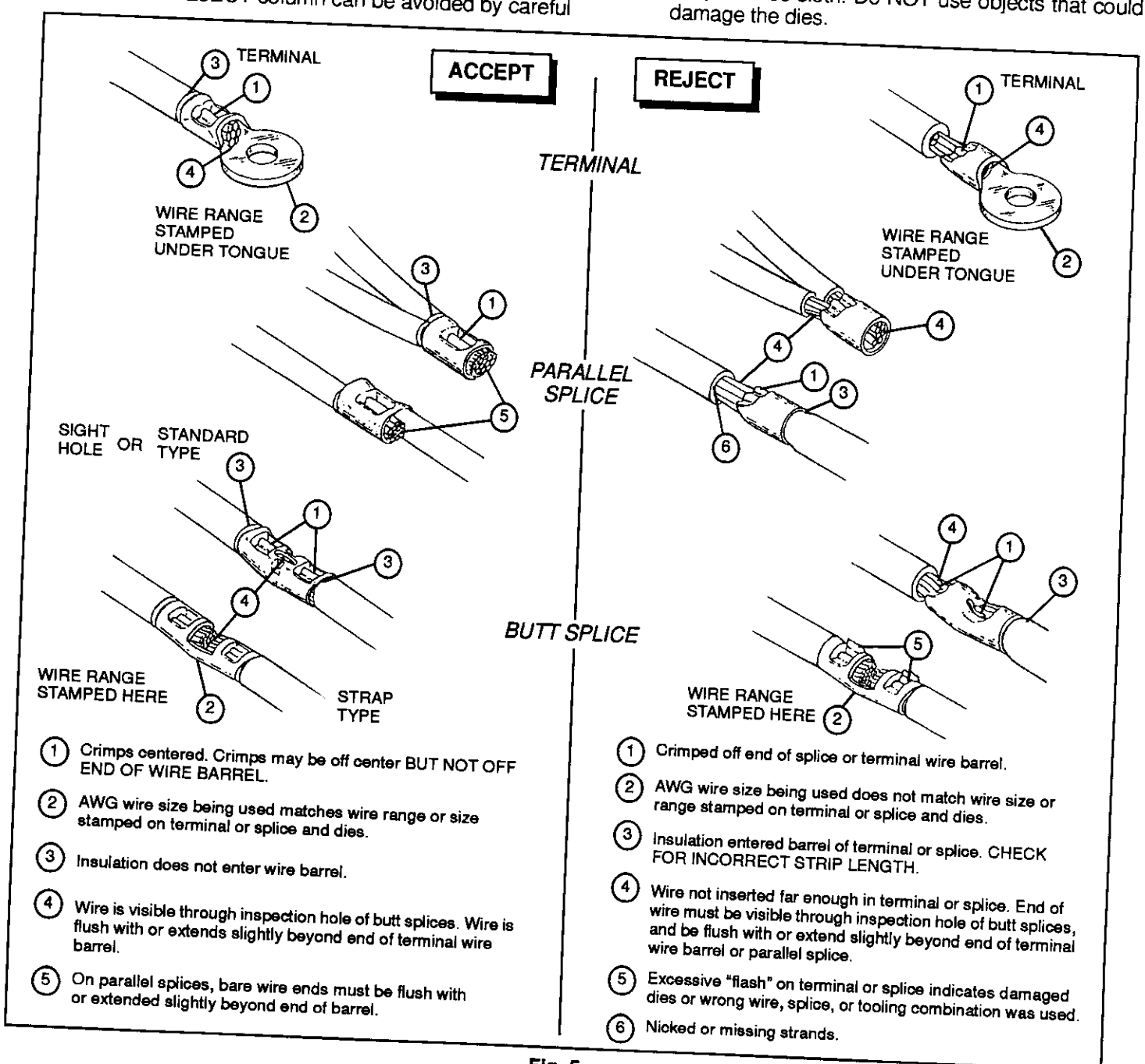
The accompanying procedure is included as an aid to the tool operator ONLY. It is not intended to serve as a quality control procedure for qualifying finished crimps on SOLISTRAND terminals or splices.

Inspect crimped terminals or splices by checking the features described in Figure 5. 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 Paragraphs 5.2 and 5.3.

5.2. 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.



ACCEPT

1. Crimps centered. Crimps may be off center BUT NOT OFF END OF WIRE BARREL.
2. AWG wire size being used matches wire range or size stamped on terminal or splice and dies.
3. Insulation does not enter wire barrel.
4. Wire is visible through inspection hole of butt splices. Wire is flush with or extends slightly beyond end of terminal wire barrel.
5. On parallel splices, bare wire ends must be flush with or extended slightly beyond end of barrel.

REJECT

1. Crimped off end of splice or terminal wire barrel.
2. AWG wire size being used does not match wire size or range stamped on terminal or splice and dies.
3. Insulation entered barrel of terminal or splice. CHECK FOR INCORRECT STRIP LENGTH.
4. Wire not inserted far enough in terminal or splice. End of wire must be visible through inspection hole of butt splices, and be flush with or extend slightly beyond end of terminal wire barrel or parallel splice.
5. Excessive "flash" on terminal or splice indicates damaged dies or wrong wire, splice, or tooling combination was used.
6. Nicked or missing strands.

Fig. 5

92-56A

2. If dies are coated with oil or preservative, wipe 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 No. 20 motor oil, and mate and store them in a clean, dry area.

5.3. Periodic Inspection

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the dies or be made available to supervisory 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 (Figure 6)

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

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.

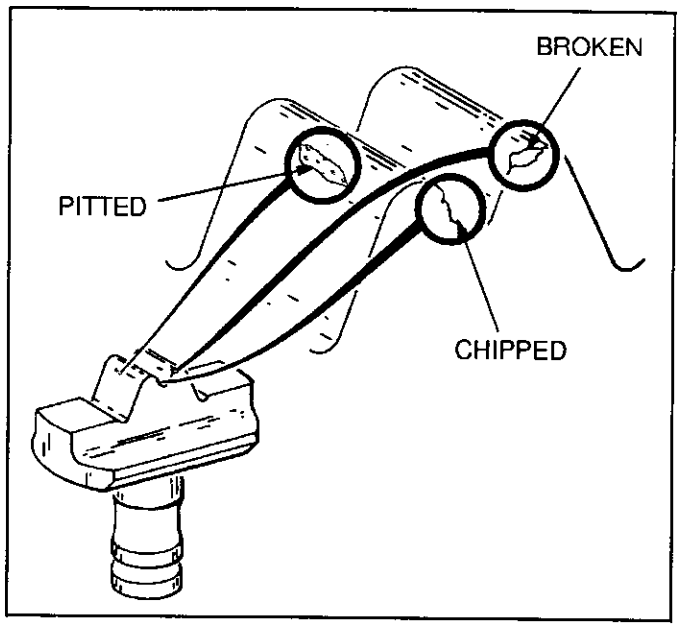
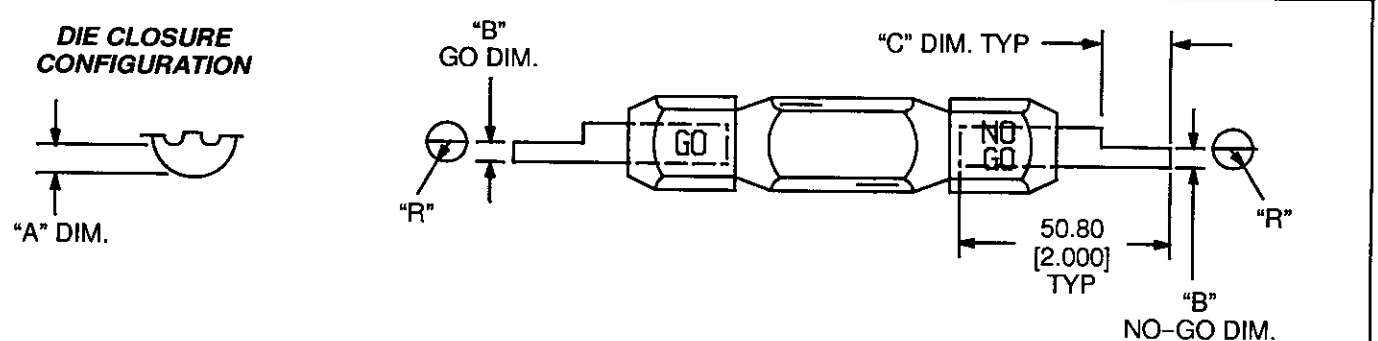


Fig. 6 75-202

B. Gaging the Crimping Chamber (Figures 7 and 8)

This inspection requires the use of a plug gage conforming to the dimensions in Figure 7. AMP does not manufacture or market these gages.

SUGGESTED PLUG GAGE DESIGN



HEAD NUMBER	DIE NUMBER	DIE CLOSURE DIMENSION "A"		GAGE ELEMENT DIMENSIONS "B"		"C" DIMENSION	RADIUS "R"
		GO	NO-GO	GO	NO-GO		
58445-1 (IS 9598) Place dies at "Gage Dimension" shown in Fig. 8	48816	9.398 [.3700]	9.550 [.3760]	9.398-9.405 [.3700-.3703]	9.548-9.550 [.3749-.3760]	19.05 [.750]	12.70 [.500]
	48817	10.236 [.4030]	10.388 [.4090]	10.236-10.244 [.4030-.4033]	10.386-10.388 [.4089-.4090]		13.87 [.546]
	48818	11.455 [.4510]	11.607 [.4570]	11.455-11.463 [.4510-.4513]	11.605-11.607 [.4569-.4570]	25.40 [1.000]	15.88 [.625]
	48819	13.055 [.5140]	13.208 [.5200]	13.055-13.063 [.5140-.5143]	13.205-13.208 [.5199-.5200]		18.24 [.718]

Fig. 7 200-001E

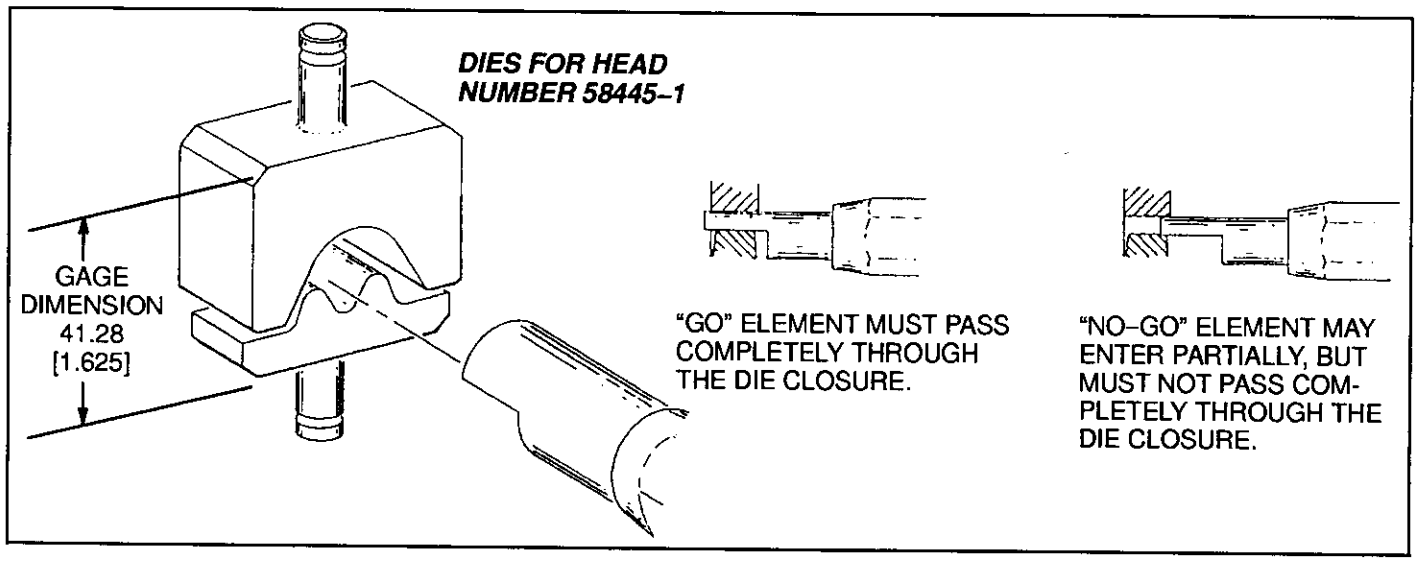


Fig. 8 75-203C

Proceed as follows:

1. Assemble and position dies to meet the "gage dimension" indicated in Figures 7 and 8.

2. 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.

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, they must be replaced. For additional information regarding the use of a plug gage, refer to AMP Instruction Sheet IS 7424.

6. REPLACEMENT PARTS

When replacement of a die assembly becomes necessary, contact your local AMP representative or:

CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P. O. BOX 3608
HARRISBURG, PA 17105-3608

NOMINAL WIRE SIZE MCM	DIE SET	ITEM	PART NUMBER	DESCRIPTION
250-300	48816	1	48744	NEST
		2	48740	INDENTER
300-350	48817	1	48745	NEST
		2	48741	INDENTER
400	48818	1	48746	NEST
		2	48742	INDENTER
500-600	48819	1	48747	NEST
		2	48743	INDENTER

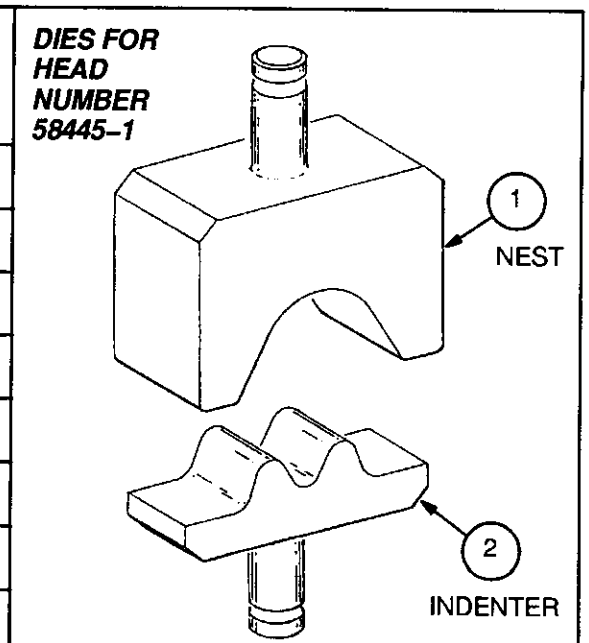


Fig. 9 75-200B