

Fig. 1

## 1. INTRODUCTION

This instruction sheet (IS) covers operation and maintenance of the AMP Manual Pistol Grip Tool 91230-1 shown in Figure 1. It is designed to terminate the AMPLIMITE ★ HDE-20 Connectors listed in Figure 2.

Read this material thoroughly before starting.

**NOTE** All dimensions on this sheet are in inches.

## 2. DESCRIPTION (Figure 1)

The tool terminates wires using the AMP Insulation Displacement Technique. This is a method of inserting unstripped wire into slotted contact beams and forming a reliable electrical connection between the conductors and contact.

Features of the tool, and their functions, are as follows:

**Handle** — nylon plastic molding which retains trigger and head mechanisms.

**Head** — serves as a guide and supports the connector during termination. It is marked with an arrow to

indicate direction of connector movement through the head.

**Feed Finger** — automatically positions the connector after each termination.

**Locator** — aligns connector for wire insertion and retains connector during termination.

**Locator Cover** — insures proper clearance between head and connector.

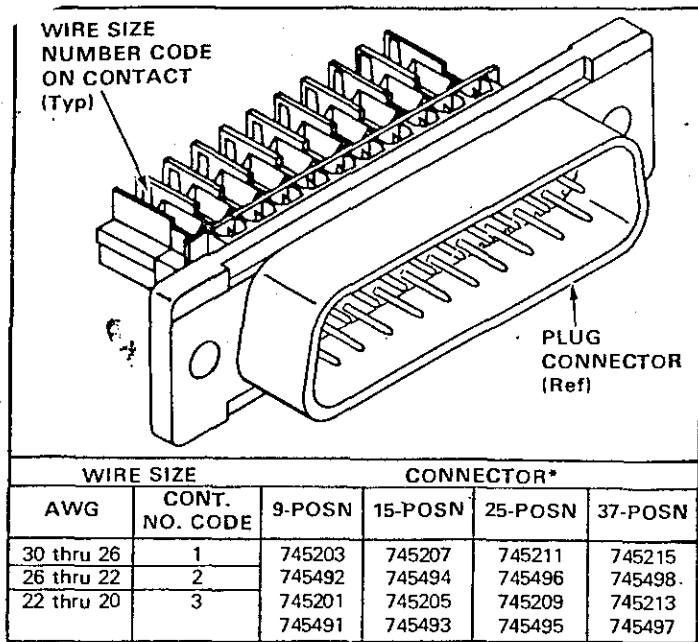
**Wire Stuffer** — inserts wire into slotted contact beams and closes wraparound insulation support simultaneously.

**Wire Slot** — wire entry guide which will accept all wire sizes with a maximum insulation diameter of .050 in.

**CERTI-CRIMP ★ Ratchet** — ensures proper insertion depth of the wire.

## 3. TERMINATION PROCEDURE

Determine the wire size you are using; then refer to Figure 2 and select a connector with number-coded contacts corresponding to the wire size.



\* THE FIRST TWO NUMBERS IN EACH COLUMN ARE PLUG CONNECTOR BASE NUMBERS, AND THE SECOND TWO ARE RECEPTACLE CONNECTOR BASE NUMBERS.

Fig. 2

Proceed as follows:

1. Insert the connector into the left side of the head, as indicated in Figure 3.
2. Center the contact cavity to be terminated with the wire insert slot.

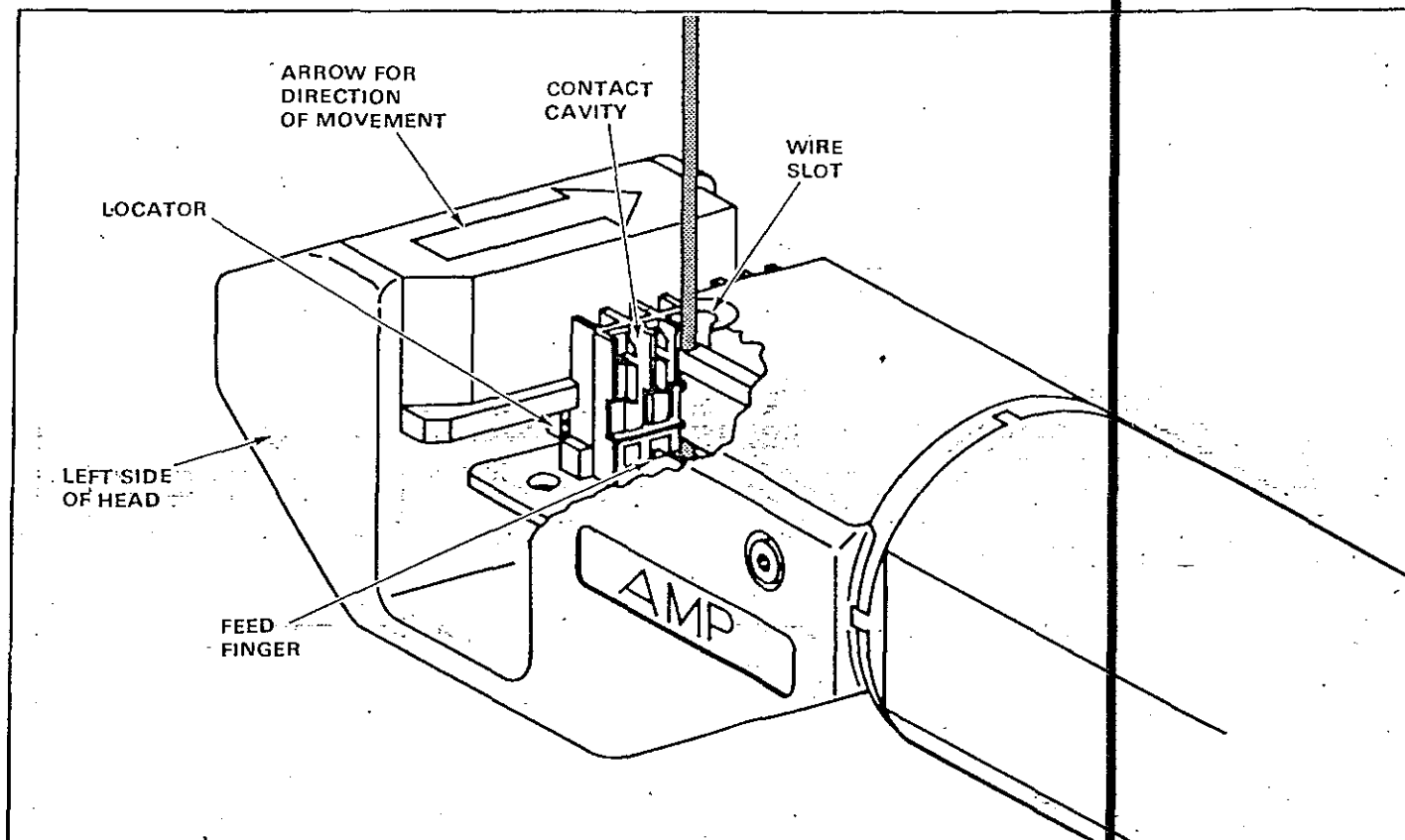


Fig. 3

3. Insert an unstripped wire into the wire slot until it bottoms on the wire stop.
4. Squeeze the tool trigger until the ratche releases — then allow the trigger to snap open freely.
5. Repeat Steps 3 and 4 until all wires are terminated, then pull the connector out of the terminating head.
6. To terminate the other side, reverse the connector and insert it into the terminating head according to Steps 1 and 2.
7. Repeat Steps 3, 4 and 5.
8. Inspect terminations according to Paragraph 5, INSPECTION.

#### 4. TOOL ADJUSTMENT

The tool is pre-adjusted for the median contact cavity wall width of a single connector size. Acceptable tolerance from one connector size to another may cause connectors to be too snug or too loose in the termination area and result in damage to the contact cavity walls. See Figure 4. If this should happen re-adjust the tool as follows:

1. Using a 3/32-in. hex wrench, loosen the two screws securing the locator cover.
2. Start a connector into the left side of the tool and align the first contact cavity with the wire stuffer.

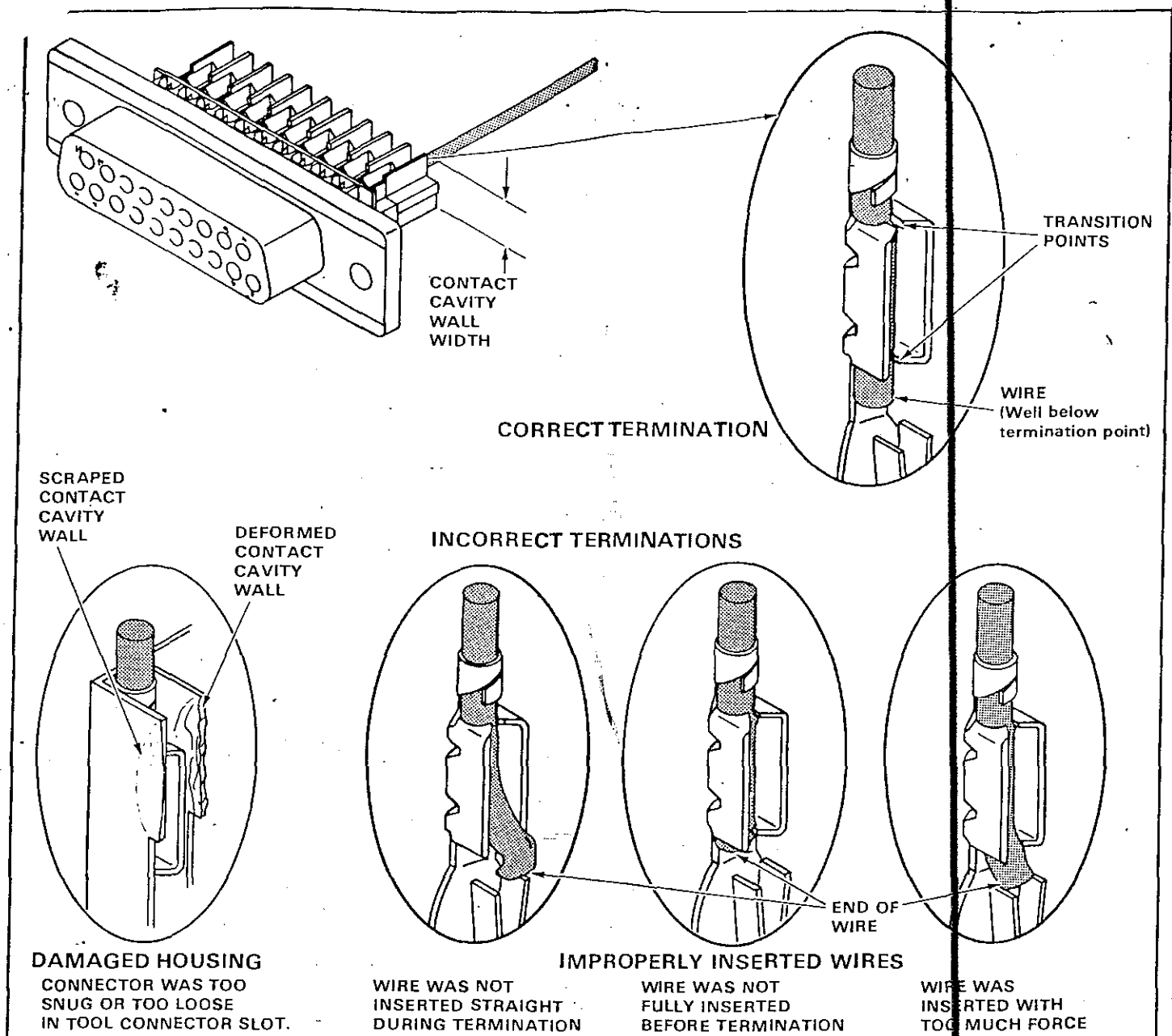


Fig. 4

3. Position the locator cover against the connector. Make sure it is neither too tight (causing drag) nor too loose (allowing excessive side-to-side movement).
4. Hold the locator cover in position and tighten the two screws.
5. Terminate the connector and check to be sure of proper termination.

#### 5. INSPECTION (Figure 4)

Figure 4 shows a properly terminated contact, as well as several other enlarged views of improperly terminated contacts, with a notation of the error that caused the fault.

Inspect each termination as follows:

1. Make sure the conductor is below the transition of the lead-in on the contact slot.
2. Make sure that the insulation extends beyond the front contact slot.
3. Make sure that the contact wire channel is not deformed. If damage is apparent, replace the contacts in accordance with AMP Instruction Sheet -IS 6621- packaged with the connector.
4. Make sure that the wraparound insulation barrel is closed over the conductor.

NOTE

*It is NOT necessary for the insulation barrel to be wrapped tightly around the insulation. The primary purpose of the insulation barrel is to prevent the conductor from being pulled from the wire slots of the contact.*

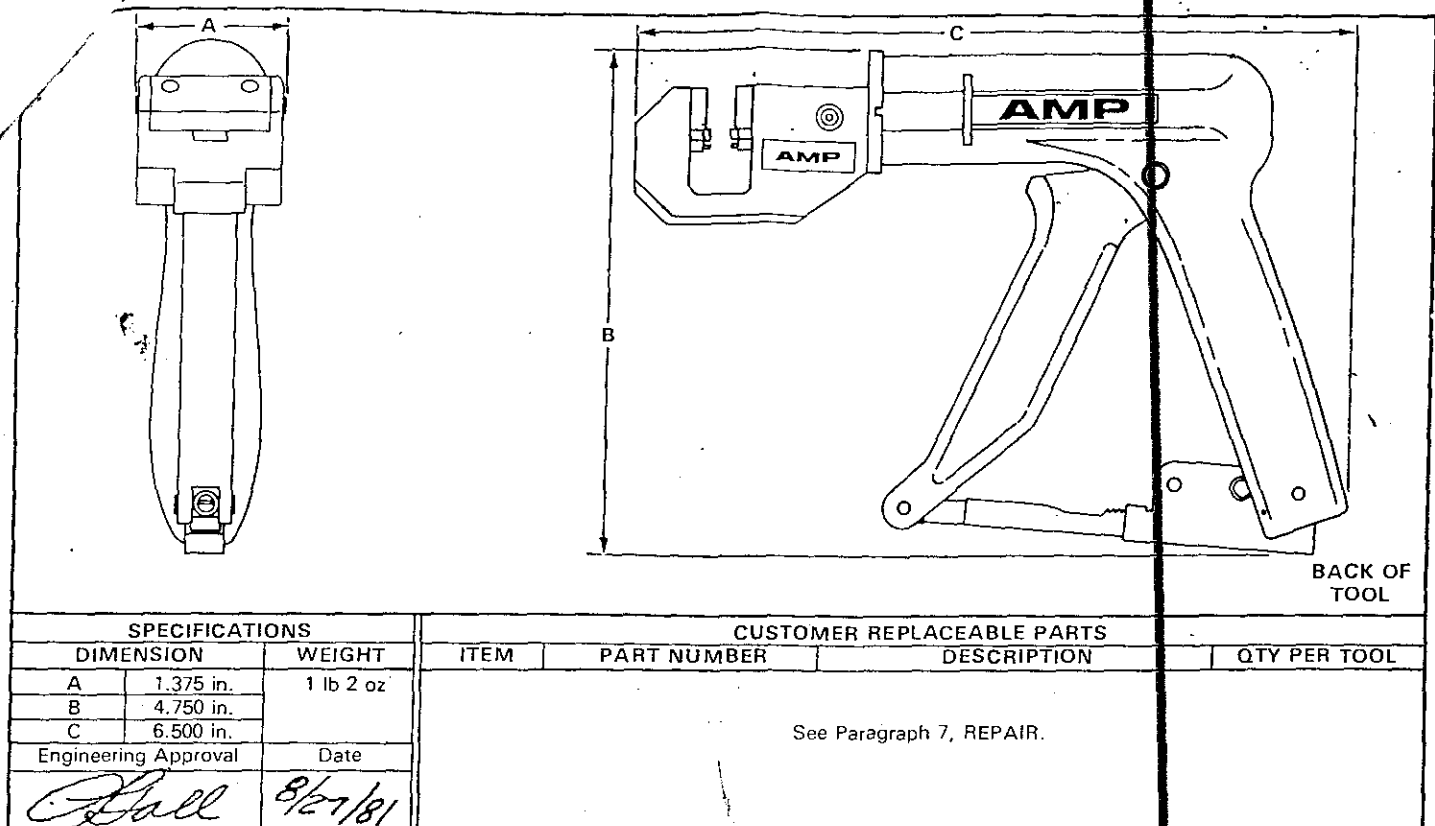


Fig. 5

5. Make sure the contact cavity wall has NOT been deformed or scraped.

For additional inspection procedures, see AMP Application Specification 114-40002.

## 6. TOOL CERTIFICATION (Figure 5)

The procedures described in the following text have been established to assure quality and reliability of AMP terminating tools. A brief check should be made daily, and a more detailed inspection should be scheduled by your Quality Control Group.

### A. Operator Maintenance

Each operator should be aware of and responsible for the following:

1. Remove dust, moisture, and other contaminants with a clean brush, or soft, lint-free cloth. Do not use objects that could damage the tool.
2. Make sure all components are in place and properly secured. (If not, return the tool to your Supervisor.)
3. Squeeze and release the trigger to be sure the mechanism inside the body moves freely and does not bind.

### B. Quality Control Maintenance

Regular inspections should be performed by your Quality Control personnel with a record of quality control inspections remaining with the personnel

responsible for the tool. We recommend one inspection a month; however, operator training and skill, amount of use, ambient working conditions, and your company's established standards are all factors in establishing inspection frequency.

These inspections should be done in the following sequence:

1. Remove any accumulated film with a suitable cleaning agent that will not affect polycarbonate plastic material.
2. Make sure all components are in place and tightly secured.
3. Make a few test terminations and inspect the termination in accordance with Paragraph 5, INSPECTION.
4. Check for chipped, cracked, worn, or broken areas. If damage is evident, repair is necessary. See paragraph 7, REPAIR.

## 7. REPAIR

There are no customer replaceable parts. When repair is necessary, return the tool with a written description of the problem and your return address to:

AMP Incorporated  
Customer Repair  
State Route 750  
Weyers Cave, VA 24486

The damaged tool will be evaluated and repaired by qualified personnel at a minimal charge to you.