

Hypertherm[®]

Command THC[®]

X-Y Lifter Encoder Replacement

Kit # 128726



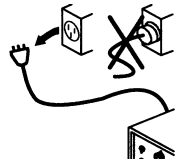
Field Service Bulletin
(P/N 810180)

Revision 0 – March, 2002

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Hanover, NH USA
www.hypertherm.com

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		<p>WARNING ELECTRIC SHOCK CAN KILL</p>
		<p>Disconnect electrical power before performing any maintenance. All work must be performed by a qualified technician. See <i>Section 1</i> of the Operator Manual for more safety precautions.</p>

Introduction

Purpose

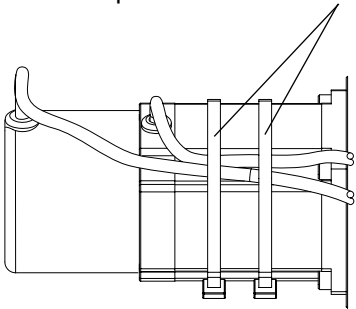
The encoder model used on the Command THC X-Y lifter has been changed. This document describes the steps necessary for replacing the encoder. The new encoder is standard on lifters beginning with serial number 1000. If the new encoder is being installed on a lifter with a serial number of 1000 or greater the supplied bracket will not be needed.

Kit # 128726 Contents

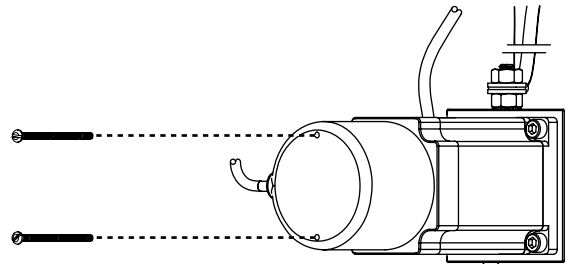
Part Number	Description	Qty
129774	Encoder	1
027946	Bracket	1
004973	Tool: Terminal Insertion/Extraction	1
075402	Hex Head Screw: 4-40 x 1/4"	2
075438	Pan Head Screw: 4-40 x 3/16"	2

Remove Old Encoder

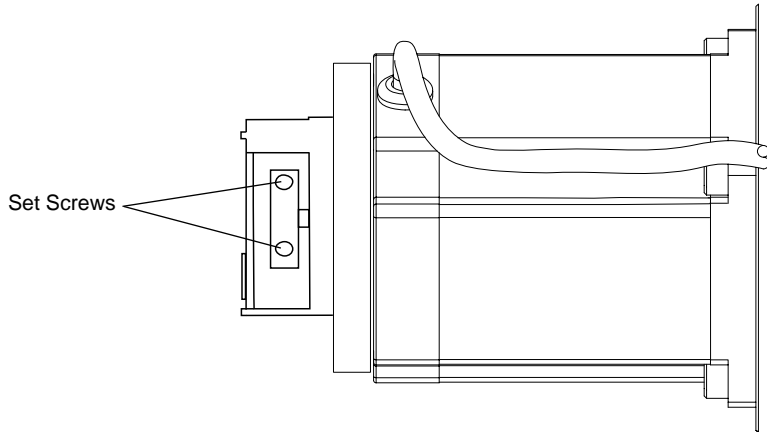
1 – Disconnect all power and cut tie-wraps.



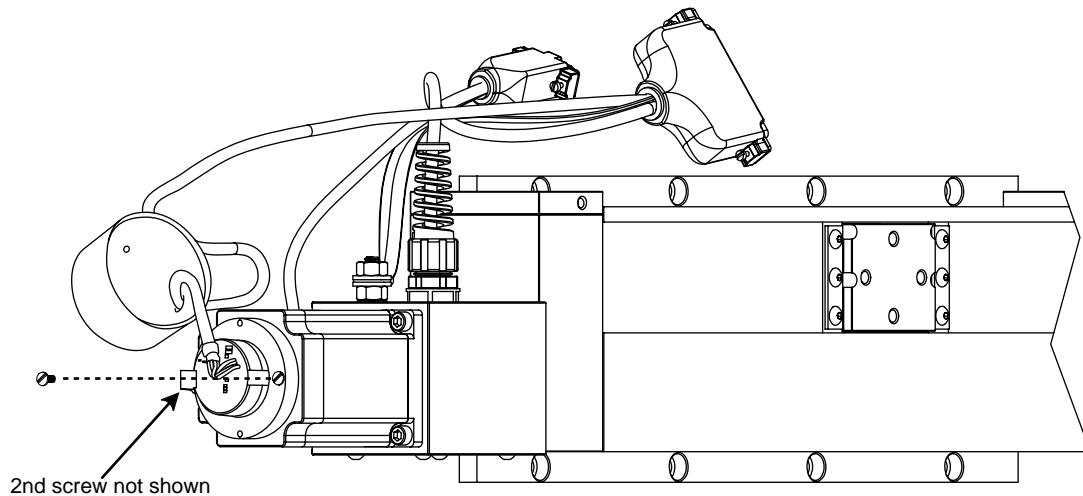
2 – Remove screws (2) from encoder cover.



3 – Loosen set-screws (2) using a 1/16" allen wrench.



4 – Remove screws (2) that attach encoder to motor.

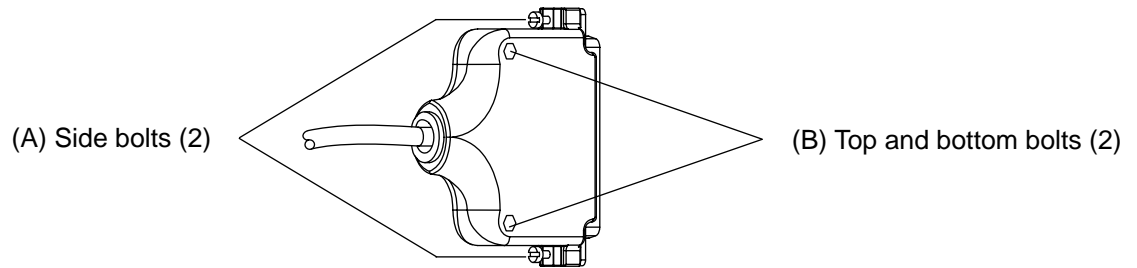


Removing Existing Encoder Wire Connections

1 – Remove cover from connector.

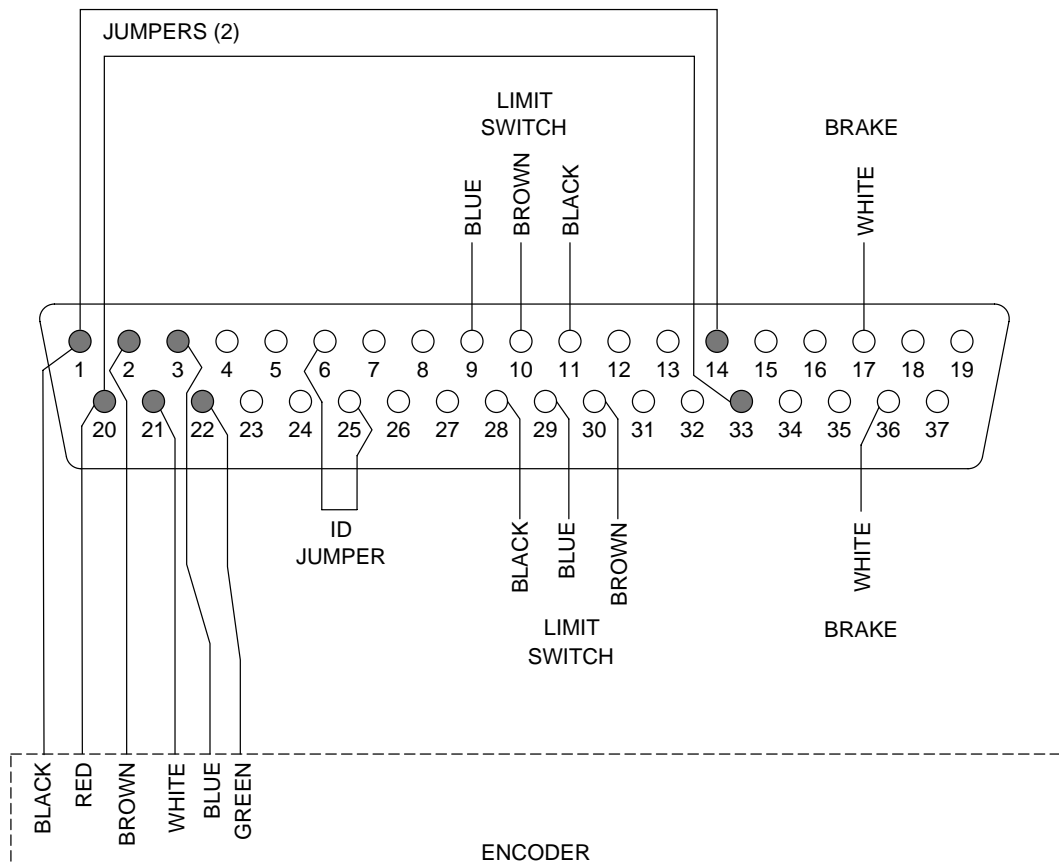
A – Loosen bolts (2) on sides of connector.

B – Carefully remove the nuts and bolts (2) from the top and bottom of connector cover. Save for reassembly.



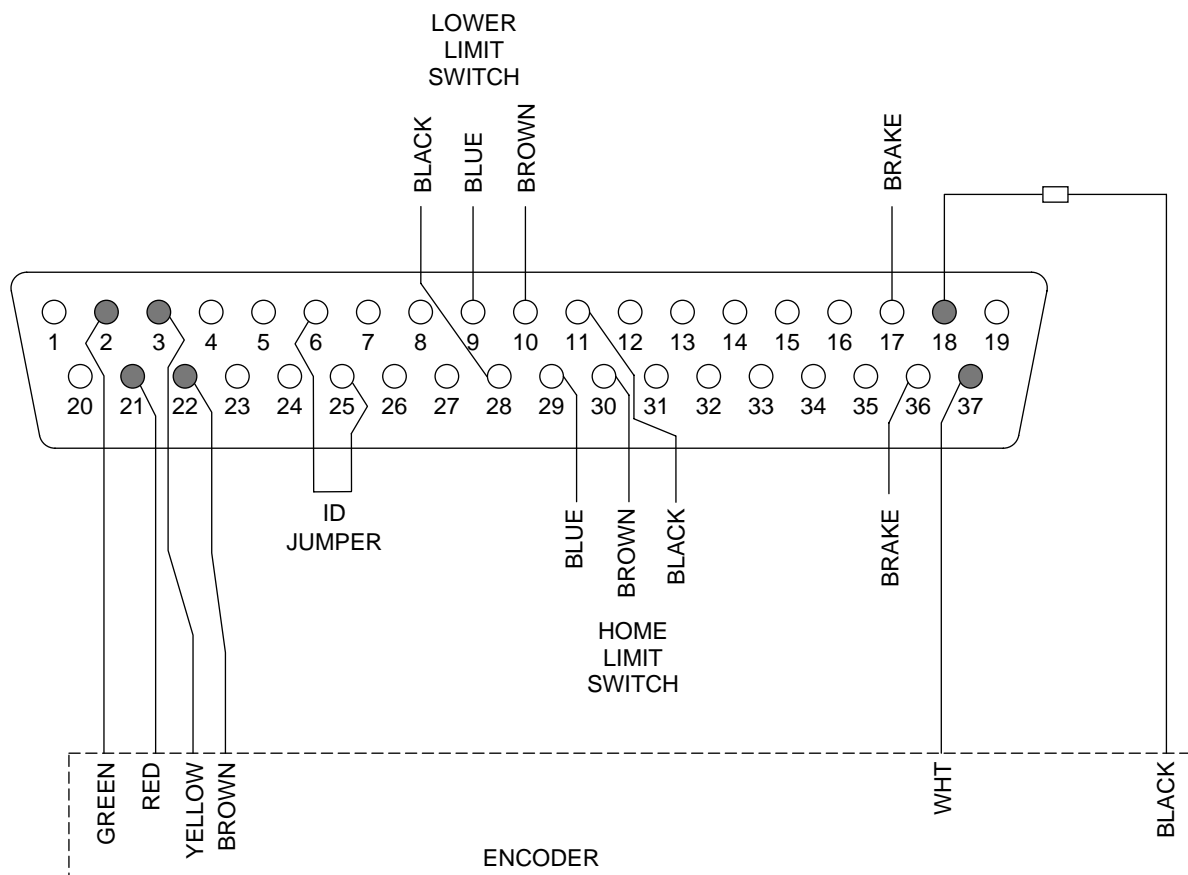
Note: Use Insertion/Extraction tool provided in kit for all wire connections. For detailed instructions on using the tool refer to manufacturer instructions at the end of this document.

2 – Carefully remove wires from positions 1, 2, 3, 14, 20, 21, 22 and 33. Shown in gray below. The terminals on the wire ends need to be removed without damaging the connector so the terminals for the new encoder can be inserted.



New Encoder Wire Connections

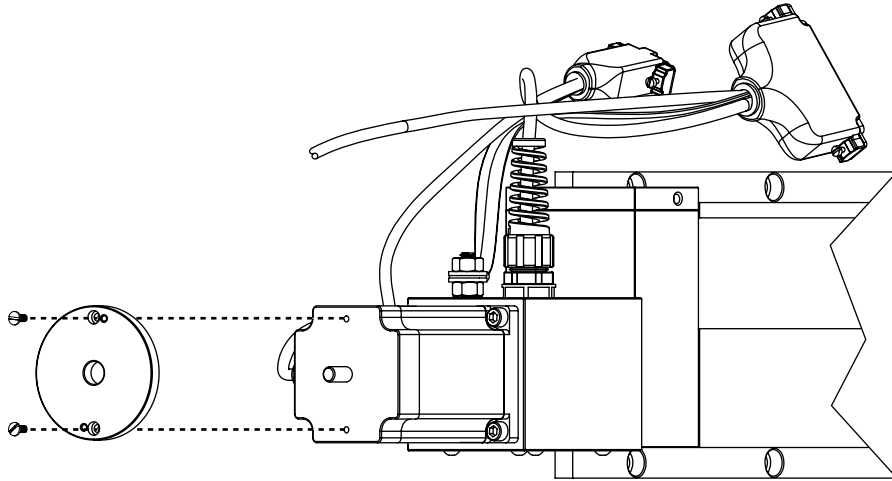
- 1 – Install wires from new encoder cable as shown below. Connection positions shown in gray. make sure to pull encoder cable through rubber strain relief on connector.
- 2 – Make sure the silver, uninsulated ground wire is soldered to the grounding strap.
- 3 – Reassemble connector cover.



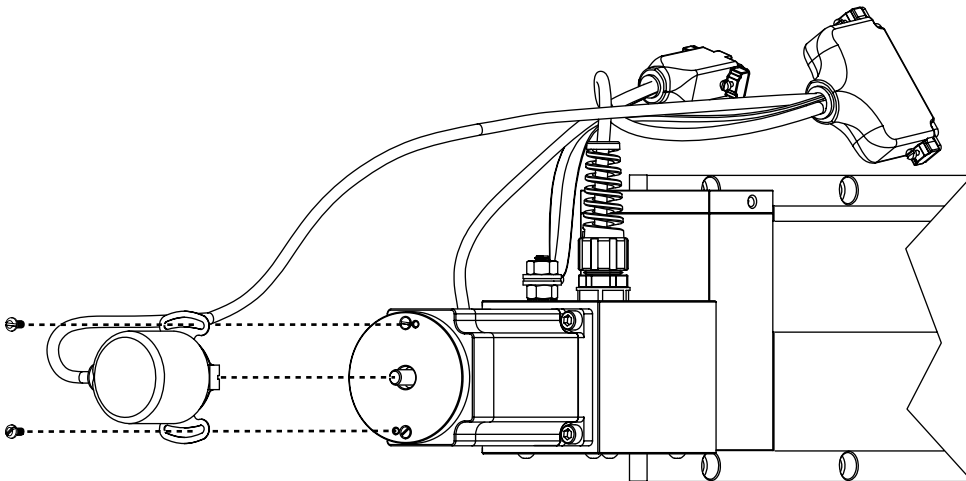
New Encoder Installation

Note: Use bracket included in kit if installing a new encoder onto the old style motor. Shaft length on old style motor is 3/4" (19mm). Shaft length on new style motor is 1/2" (13mm). If using new motor skip to step 2.

- 1 – Install bracket using screws (2) provided (P/N 075402). Screws go through countersunk holes in bracket. Use a removable thread-locking compound such as Loctite on all screws. See figure below.



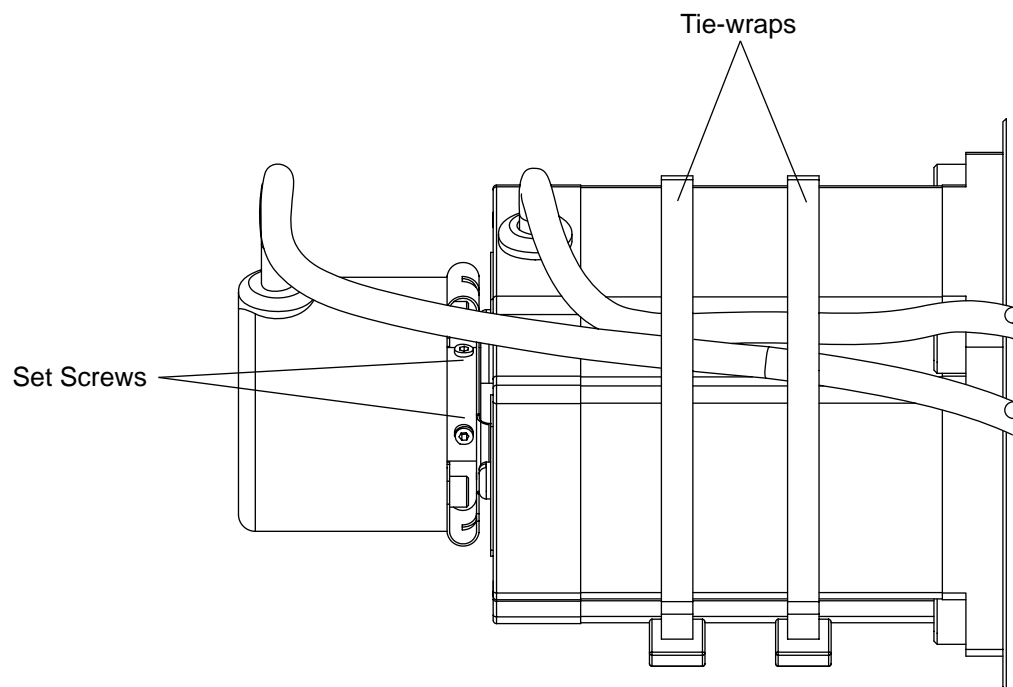
- 2 – Install new encoder using the screws (2) provided (P/N 075438). See figure below (shown with bracket).

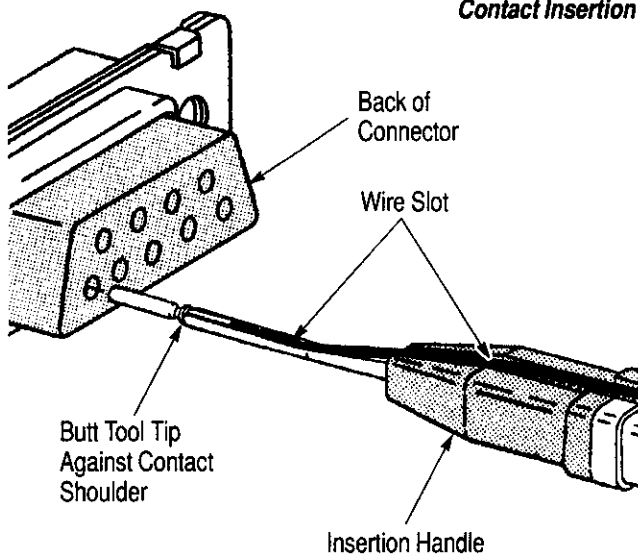


Command THC X-Y LIFTER ENCODER REPLACEMENT

3 – Tighten encoder set-screws (2) using a .05" allen wrench. Secure encoder and motor wires as shown.

4 – Reconnect lifter to system.





Contact Insertion

The tool number and contact size are stamped on the white half, and the "AMP" marking is molded on the other half (red or green). See Figure 3.

3. INSERTION/EXTRACTION PROCEDURES

3.1. Inserting Contacts (Figure 1)

1. Position tool handle between thumb and finger tips of one hand, then lace wire over wire slot and under thumb.
2. Position forefinger under tool tip and, while applying light pressure on the wire, slide your thumb over the wire until the tip spreads and the wire seats in the tip.
3. Reposition tool between thumb and finger tips.

DANGER

It is important that you hold the tool between your thumb and finger tips to prevent the possibility of injury. Do not hold tool with unused tip (end) toward or against palm of your hand.

4. Slide tool tip over contact wire barrel until it butts against contact shoulder.
5. Align contact with back of cavity and push the contact straight in until bottomed.
6. Remove the tool, then pull back *lightly* on the wire to be sure the contact is locked in the cavity.

TOOL NUMBER	HANDLE COLOR		CONTACT SIZE	AWG SIZE
	INSRN	EXTR		
91067-1	Green	White	22	22-28
91067-2	Red	White	20 DM & 20 DF	20-24

Figure 1

1. INTRODUCTION

This instruction sheet covers AMP* Insertion/Extraction Tools 91067-1 and 91067-2. These tools are designed for the Type XVII contacts, sizes 22 and 20, used in AMPLIMITE* High Density (HD) Connectors. Read this material thoroughly before using the tools.

Insertion/Extraction Tool 91067-3, previously listed on this instruction sheet, has been superseded by Insertion/Extraction Tool 91285-1. For information on this tool, refer to AMP Instruction Sheet 408-9404.

NOTE

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

Reasons for reissue are provided in Section 5, REVISION SUMMARY.

2. DESCRIPTION

Each tool handle consists of two color-coded halves. The white half features a metal extraction tip, and the other half (red or green) features a metal insertion tip. See Figure 1.

3.2. Extracting Contacts (Figure 2)

1. Align wire of contact to be removed with wire slot of tool, then grip tool handle between thumb and finger tips of one hand.
2. Position forefinger under tip of tool and, while applying light pressure on the wire, slide your thumb over the wire until the tip spreads and the wire is seated in tool tip.
3. Reposition tool handle between thumb and finger tips.

DANGER

It is important that you hold the tool between your thumb and finger tips to prevent the possibility of injury. Do not hold tool with unused tip (end) toward or against palm of your hand.

4. Slide tool tip along the wire and straight into the cavity until it is bottomed.
5. Hold the wire *securely* against the tool handle serrations and pull back *lightly* to extract the contact.

If the contact does not come out easily, reseal the tip in the cavity and repeat Step 5.

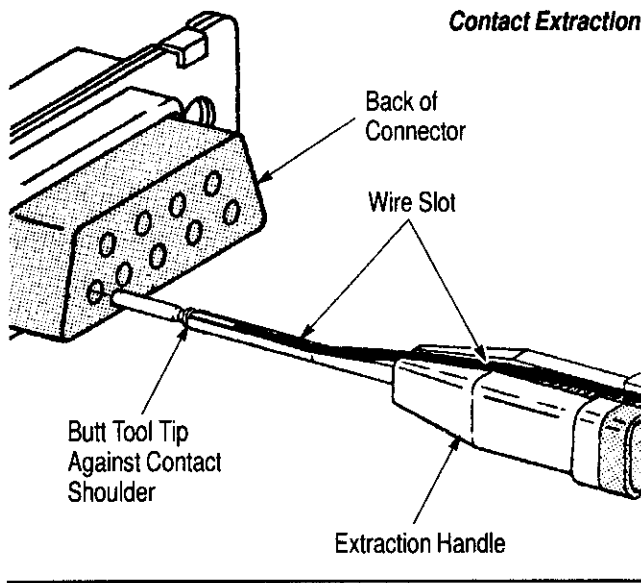


Figure 2

4. MAINTENANCE AND INSPECTION

To ensure proper operation, the tool should conform to the dimensions in Figure 3. It is recommended that

the tool be inspected immediately on its arrival and at regularly scheduled intervals. The tool is not repairable and should be replaced when worn or damaged. It is recommended that the tool be stored in a clean, dry place and cleaned with a soft, lint-free cloth.

Additional tools can be purchased from:

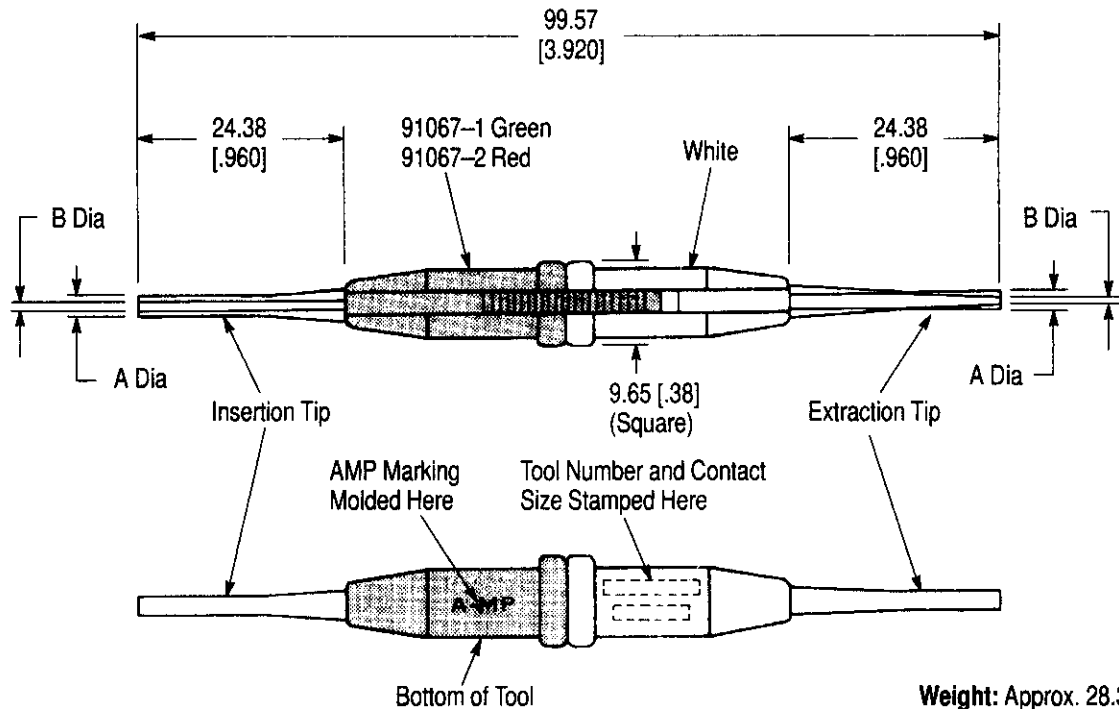
CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P.O. BOX 3608
HARRISBURG, PA 17105-3608

5. REVISION SUMMARY

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

Per EC 0990-0470-97:

- Removed superseded tool 91067-3 and all information relating to that tool and added superseded statement to Section 1.
- Added metric dimensions to Figure 3.



Weight: Approx. 28.3 g [1 oz.]

TOOL NUMBER	DIM.		HANDLE COLOR		PRODUCT DESIGNED FOR	AWG SIZE
	A	B	INSRN	EXTR		
91067-1	1.65 [.065]	0.89 [.035]	Green	White	AMPLIMITE Contacts Size 22	22 - 28
91067-2	2.16 [.085]	1.65 [.065]	Red	White	AMPLIMITE Contacts Size 20 DM and 20 DF (With Insul Max of 1.73 [.068])	20 - 24

Figure 3