Slitting Tool 767527–1

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.

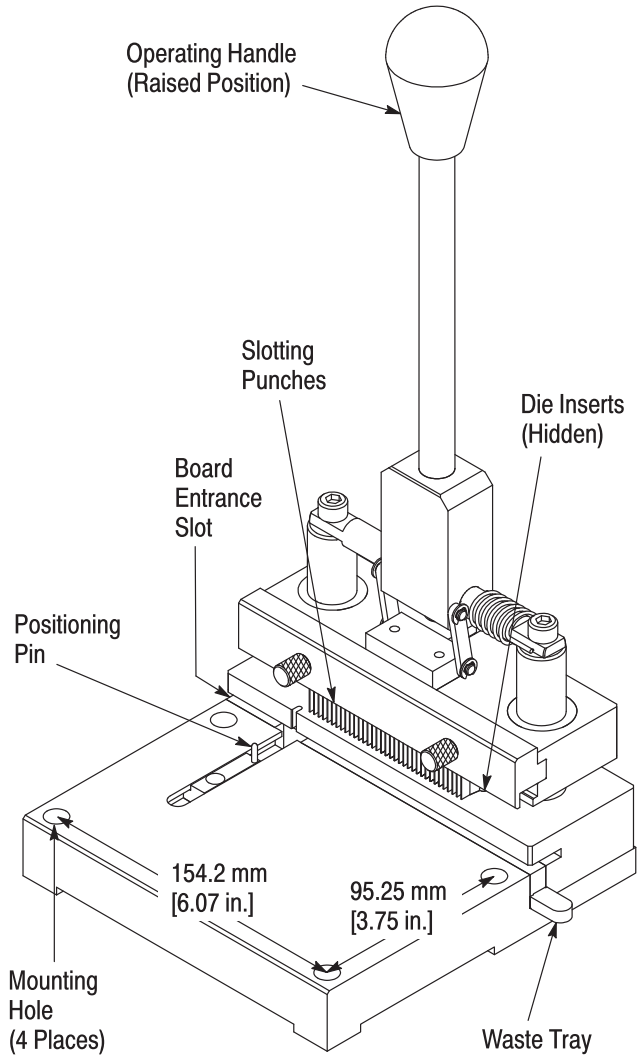


Figure 1

1. INTRODUCTION

Slitting Tool 767527–1 is a bench mounted tool used to prepare pc boards for mounting MICTOR* SMT (Surface Mount Technology) Right–Angle Plug and Receptacle Connectors. The tool cuts a slit in the center of each bus via (through hole) located at the edge of the pc board. Read these instructions thoroughly before operating the tool.

NOTE

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

Reason for revision is given in Section 7, REVISION SUMMARY.

2. DESCRIPTION (Figure 1)

The slitting tool consists of an operating handle, 35 slotting punches, seven die inserts, a board entrance slot, positioning pin, and waste tray. The slotting punches are specifically installed into the die inserts to correspond with the pc board bus vias. The pc board is placed onto the positioning pin to properly guide the board into the board entrance slot. When the operating handle is pulled forward, the slotting punches move down and cut slits into the board; the waste then falls into the waste tray. After the handle is raised, the pc board can be removed from the tool.

3. SETUP

3.1. Installing and Removing Slotting Punches

Determine the number of modules in the connector housing to be mounted onto the pc board. Five slotting punches must be installed for each module; for example, a connector with three modules would require 15 slotting punches, or three punch groups.

DANGER

Slotting punches are sharp. To avoid personal injury, handle punches with care.

1. Remove the two thumbscrews securing the support bar. Remove the support bar. Refer to Figure 2.

2. Starting at the side of the tool with the positioning pin, insert the punches, tip end first, straight into the slits in the stripper block. See Figure 2. Make sure to alternate the sequence of the punches so that a short tip edge faces outward, then a long tip edge faces outward. Use the series of yellow dots located on the base holder as a guide for placing the punch groups. When properly installed, the beveled corner (indicating the long tip) on the head of the punch alternating with the square corner (indicating a short tip) will be visible. Refer to Figure 2.

NOTE

Each punch can be turned as wearing occurs; however, the alternating sequence of the punches must be maintained.

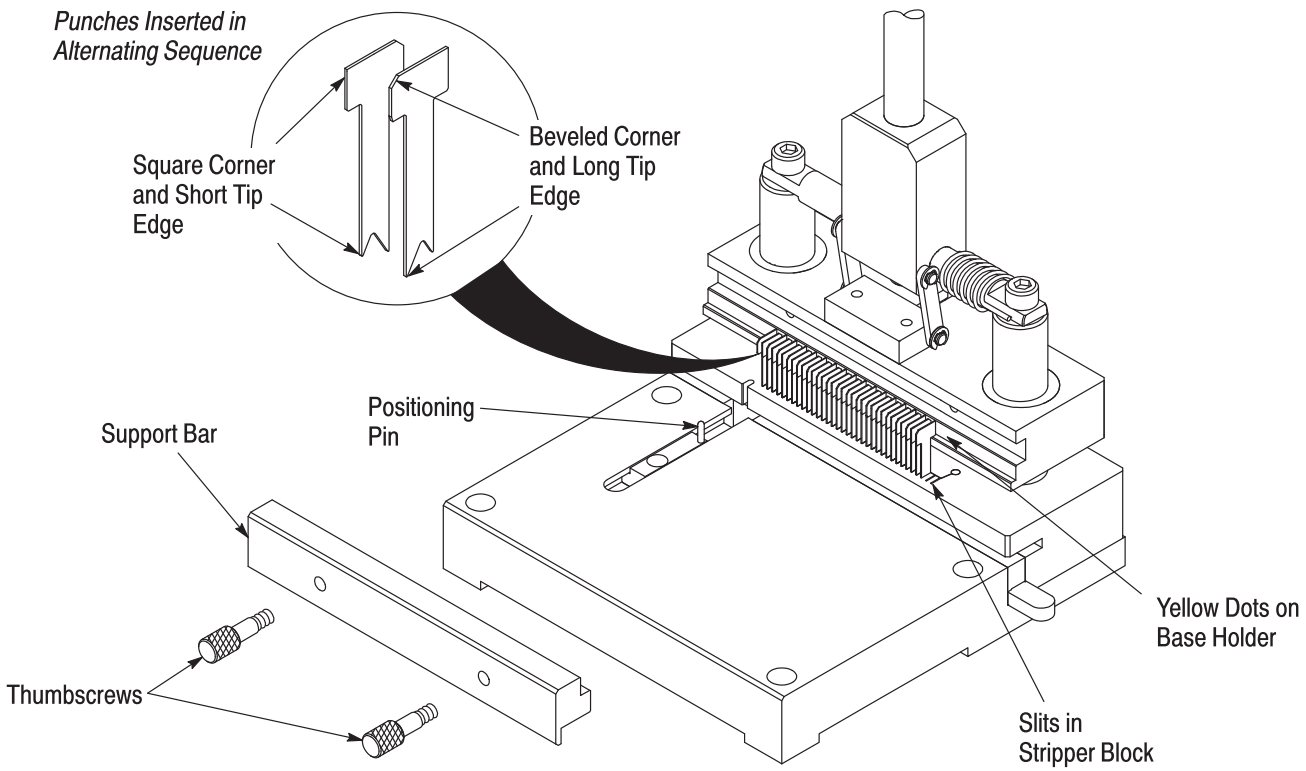


Figure 2

3. To remove the punches, grasp the head and lift straight up.

4. Re–assemble the support bar and secure with the thumbscrews.

NOTE

Do not tip tool without support bar assembled; otherwise, the slotting punches will fall out of the base holder.

5. Store unused slotting punches in the channel in the back of the base holder. See Figure 3. Using a $^{5}/_{32}$–in. hex wrench, remove the nylon tip setscrew from the channel. Orient the punch so that it faces the channel then slide the shaft of the punch into the channel with the head of the punch resting on the surface of the base holder. Secure the punches with the setscrew.

3.2. Installing and Removing Die Inserts

NOTE

Installing and removing die inserts is only required when setting up the tool for a pc board with a recessed area. For pc boards without a recessed area, die inserts can remain in place.

A. Installing Die Inserts

Determine the number of modules in the connector housing to be mounted onto the pc board. One die insert must be installed for each module. For example, a connector with three modules would require three die inserts.

1. Invert the tool and remove the button head cap screws that secure the lid to the bottom plate. Remove the lid. See Figure 4.

2. Slide the die insert into the board entrance slot until it butts against the inserts in place. Be sure to orient the insert with the slits facing outward and the chamfered edge facing down. See Figure 4.

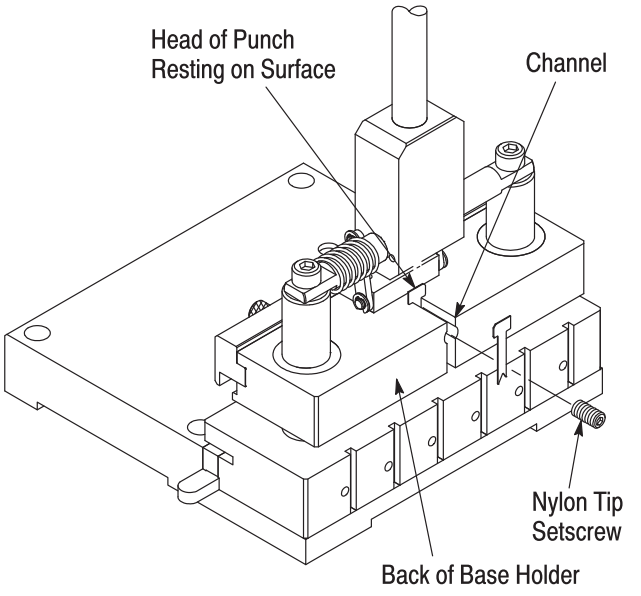
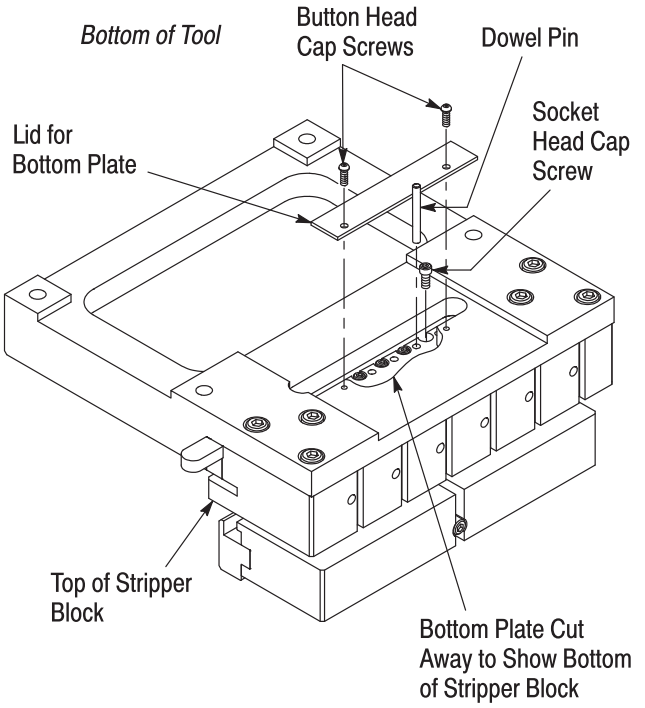


Figure 3

3. Slide the dowel pin into the corresponding hole in the bottom of the stripper block. To fully seat the pin, it may be necessary to tap it gently.

4. Insert the socket head cap screw into the screw hole next to the dowel pin. Tighten the screw.

5. After the die inserts have been inserted, place the pc board onto the tool according to Section 4, Step 2, and check to make sure that the die inserts are aligned to the recessed area of the pc board.



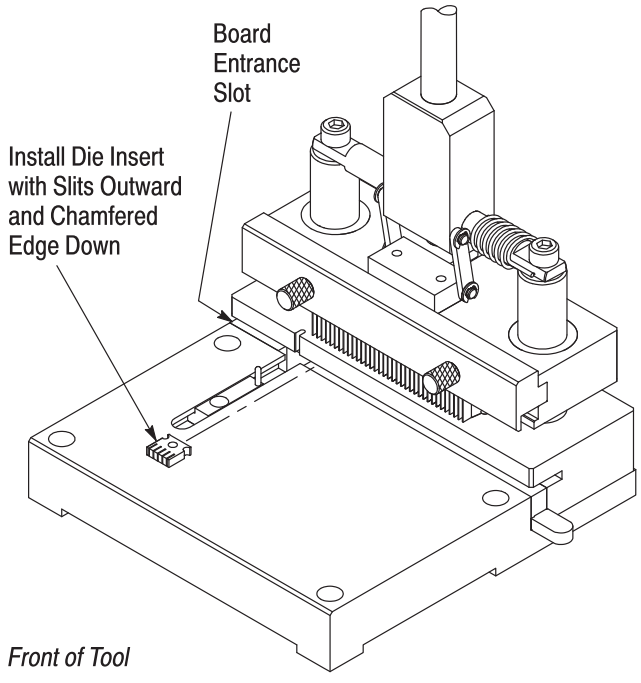


Figure 4

B. Removing Die Inserts

1. Remove the slotting punches from the die insert to be removed (refer to Paragraph 3.1). Make sure to secure the support bar.

2. Remove the button head cap screws that secure the lid to the bottom plate. Remove the lid (refer to Figure 4).

3. Using a $^{7}/_{64}$–in. hex wrench, remove the socket head cap screw securing the die insert. Refer to Figure 4.

4. Using needle nose pliers, grasp the corresponding dowel pin and pull it out. If the pin becomes difficult to pull, push it through the top of the stripper block.

5. Tip the tool forward and allow the die insert to slide out.

6. Store unused die inserts (with button head cap screws and dowel pins) on the back of the stripper block. Align the hole in the die insert with one of the holes in the stripper block and, using the button head cap screw, secure the die insert to the stripper block. Slide the dowel pin into the slot next to the hole. See Figure 5.

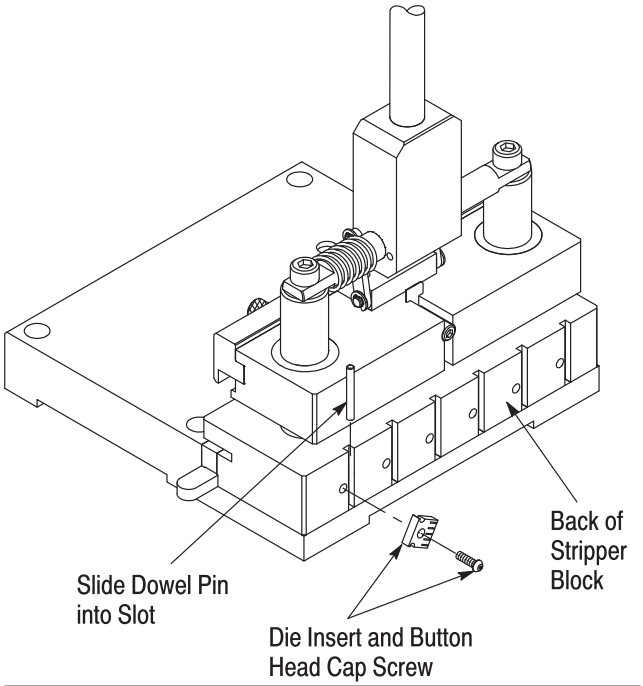


Figure 5

4. OPERATING PROCEDURE

DANGER

To avoid personal injury, ALWAYS wear safety glasses when operating the tool.

Secure the slitting tool to a work bench to ensure stability during operation. See Figure 1 for mounting hole dimensions.

CAUTION

Do NOT attempt to cycle the tool with more than the required number of slotting punches installed. Each punch MUST align with a pc board bus via; otherwise, damage to the punch will occur.

1. Move the operating handle to the raised position (see Figure 1).

2. Place the pc board onto the support plate with the No. 1 pin identifier tooling hole on the positioning pin. See Figure 6.

3. Holding both ends of the pc board, slide the board straight into the board entrance slot until it butts against the back of the entrance slot.

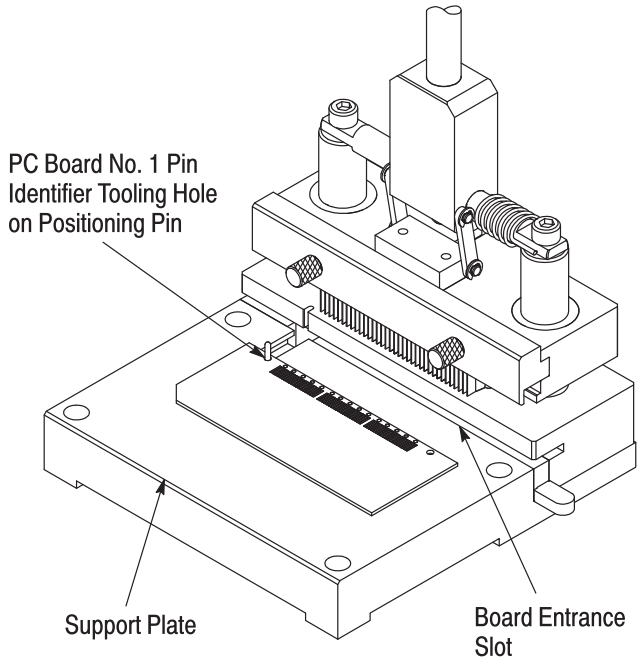


Figure 6

CAUTION

The area of the pc board that enters the entrance slot must be free of any applied components during the slitting procedure. This "keep out" area must be determined before slitting the pc board. See Figure 7.

4. Hold the pc board firmly in place and smoothly pull the handle forward. There will be a slight resistance as the punches pass through the board.

5. Move the handle to the raised position.

6. Slide the pc board straight out of the board entrance slot and remove the board from the support plate.

7. Refer to Figure 8 and inspect the pc board for the following:

- slits are straight and centered on the bus vias
- burrs formed on the pc board do not exceed 0.05 mm [.002 in.] in height from the surface of the pc board

NOTE

Burrs may indicate that the slotting punch is dull or broken and must be replaced. Refer to Section 6 for information on replacement parts.

NOTE

For detailed information about the connectors and inspection procedures for the connectors, refer to Application Specification 114–13088.

8. Periodically empty the waste tray located on the side of the support plate. The tray catches the slices removed from the pc board bus vias and slides in and out of the tool. See Figure 9.

5. MAINTENANCE AND INSPECTION

5.1. Maintenance

The slitting tool requires little maintenance other than to keep it clean. Remove debris and contaminants from the tooling with a clean, soft, lint–free cloth or a clean, soft brush. Do not use objects that could damage the tooling and do not use any solvents that could harm paint or plastic material. When not in use, store the tool in a clean, dry area.

Component "Keep Out" Area for Both Sides of PC Board
(Footprint for 114–Position Connector Shown)

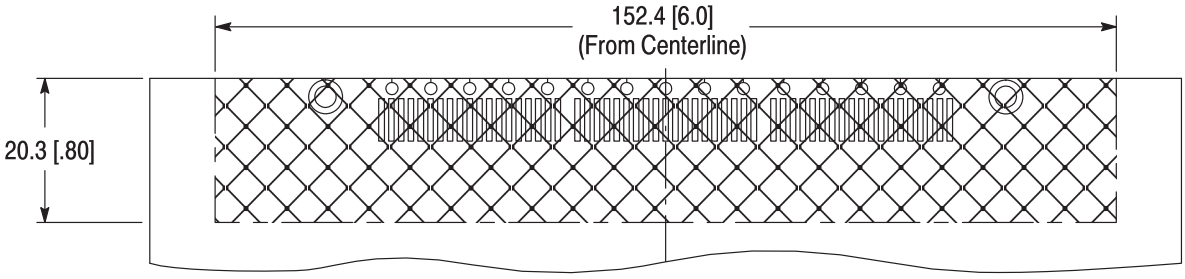


Figure 7

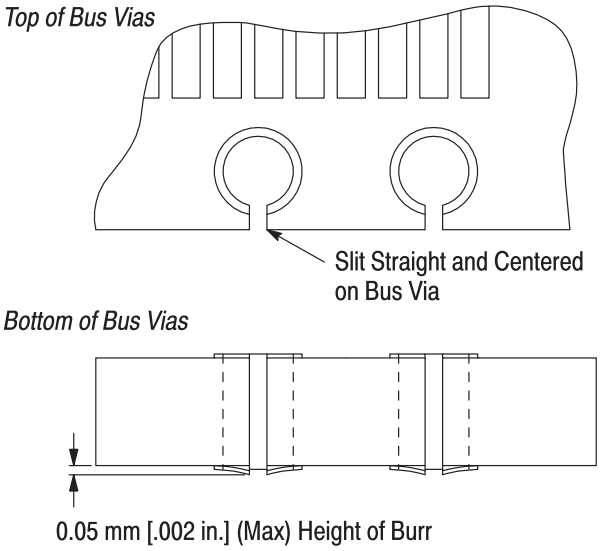


Figure 8

5.2. Inspection

The slitting tool should be inspected immediately upon arrival at your facility and at regularly–scheduled intervals thereafter to ensure that it has not been damaged. Examine the tool for any signs of damage or excessive wear during inspections. If replacement of parts is necessary, refer to Section 6.

6. REPLACEMENT AND REPAIR

Customer–replaceable parts are provided in Figure 10. A complete inventory should 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 717–986–7605 or write to:

CUSTOMER SERVICE (038–035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105–3608

For customer repair service, contact a Tyco Electronics Representative at 1–800–526–5136.

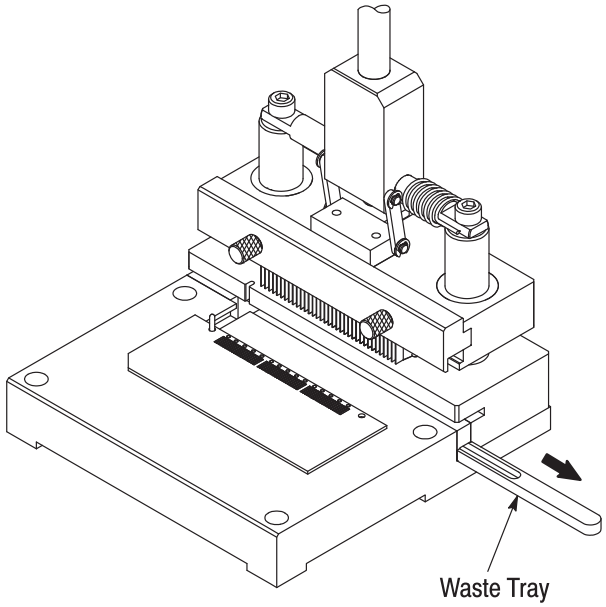
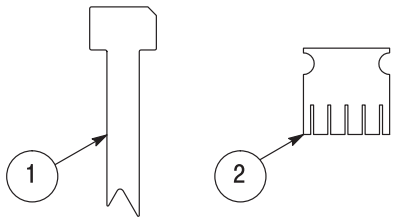


Figure 9

7. REVISION SUMMARY

The following changes have been made to this revision:

- Updated document to corporate requirements.



REPLACEMENT PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	767532–1	SLOTTING PUNCH	35
2	767530–1■	DIE INSERT	7

■Dowel pin and socket head cap screw (required for installation) are not included.

Figure 10