

# Instructions

**Tektronix**

**P6417 & P6418  
Logic Analyzer Probes**

**071-0567-01**

[www.tektronix.com](http://www.tektronix.com)



071056701

Copyright © Tektronix, Inc. All rights reserved.

Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supercedes that in all previously published material. Specifications and price change privileges reserved.

Tektronix, Inc., P.O. Box 500, Beaverton, OR 97077

TEKTRONIX and TEK are registered trademarks of Tektronix, Inc.

## WARRANTY

Tektronix warrants that the products that it manufactures and sells will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If a product proves defective during this warranty period, Tektronix, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, Customer must notify Tektronix of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by Tektronix, with shipping charges prepaid. Tektronix shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Tektronix service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Tektronix shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Tektronix representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non-Tektronix supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

**THIS WARRANTY IS GIVEN BY TEKTRONIX IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. TEKTRONIX AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TEKTRONIX' RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY. TEKTRONIX AND ITS VENDORS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER TEKTRONIX OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.**



# Table of Contents

|   |            |
|---|------------|
| <b>General Safety Summary</b> .....         | <b>iii</b> |
| <b>Preface</b> .....                        | <b>v</b>   |
| Related Documentation .....                 | v          |
| Contacting Tektronix .....                  | vi         |
| <b>Operating Basics</b> .....               | <b>1</b>   |
| Product Description .....                   | 1          |
| Attaching Probe Labels .....                | 1          |
| Connecting the Probes .....                 | 4          |
| <b>Reference</b> .....                      | <b>7</b>   |
| Probe Connectors .....                      | 7          |
| Loading and Equivalent Circuits .....       | 8          |
| Specifications .....                        | 9          |
| <b>Maintenance</b> .....                    | <b>11</b>  |
| Functional Check .....                      | 11         |
| Inspection and Cleaning .....               | 13         |
| P6418 Probe Service Procedures .....        | 13         |
| Replacing Podlets on the P6417 Probes ..... | 13         |
| Repackaging Instructions .....              | 21         |
| <b>Replaceable Parts</b> .....              | <b>23</b>  |
| Parts Ordering Information .....            | 23         |
| Using the Replaceable Parts List .....      | 23         |

## List of Figures

|   |           |
|---|-----------|
| <b>Figure 1: P6417 and P6418 logic analyzer probes</b> .....                            | <b>1</b>  |
| <b>Figure 2: Attaching probe labels</b> .....   | <b>3</b>  |
| <b>Figure 3: Connecting the logic analyzer probes</b> .....                             | <b>4</b>  |
| <b>Figure 4: Connecting the probes to the target system</b> .....                       | <b>6</b>  |
| <b>Figure 5: Probe footprints</b> .....   | <b>7</b>  |
| <b>Figure 6: Probe podlet clearance</b> .....   | <b>8</b>  |
| <b>Figure 7: Probe loading</b> .....  | <b>8</b>  |
| <b>Figure 8: Probe functional verification test setup</b> .....                         | <b>11</b> |
| <b>Figure 9: Activity Monitor</b> .....   | <b>13</b> |
| <b>Figure 10: Moving probe podlets</b> .....  | <b>14</b> |
| <b>Figure 11: Disassembling the probe cable</b> .....                                   | <b>15</b> |
| <b>Figure 12: Removing the faulty channel from the probe cable header housing</b> ..... | <b>16</b> |
| <b>Figure 13: Removing a podlet cable from the rubber comb</b> .....                    | <b>17</b> |
| <b>Figure 14: Replacing a podlet in the podlet holder</b> .....                         | <b>18</b> |
| <b>Figure 15: Installing the color-coded ring</b> .....                                 | <b>19</b> |
| <b>Figure 16: Installing the cable in the cable header housing</b> .....                | <b>20</b> |
| <b>Figure 17: P6417 and P6418 Probe accessories</b> .....                               | <b>24</b> |
| <b>Figure 18: P6417 Probe exploded view</b> .....                                       | <b>26</b> |
| <b>Figure 19: P6418 Probe exploded view</b> .....                                       | <b>27</b> |

## List of Tables

|  |           |
|--|-----------|
| <b>Table 1: Probe section and label combinations</b> .....     | <b>2</b>  |
| <b>Table 2: Electrical and mechanical specifications</b> ..... | <b>9</b>  |
| <b>Table 3: Environmental specifications</b> .....             | <b>10</b> |

# General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

*Only qualified personnel should perform service procedures.*

While using this product, you may need to access other parts of the system. Read the *General Safety Summary* in other system manuals for warnings and cautions related to operating the system.

**Connect and Disconnect Properly.** Connect the probe output to the measurement instrument before connecting the probe to the circuit under test. Disconnect the probe input and the probe ground from the circuit under test before disconnecting the probe from the measurement instrument.

**Ground the Product.** This product is indirectly grounded through the grounding conductor of the mainframe power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

**Observe All Terminal Ratings.** To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

**Avoid Exposed Circuitry.** Do not touch exposed connections and components when power is present.

**Do Not Operate With Suspected Failures.** If you suspect there is damage to this product, have it inspected by qualified service personnel.

**Do Not Operate in Wet/Damp Conditions.**

**Do Not Operate in an Explosive Atmosphere.**

**Keep Product Surfaces Clean and Dry.**

## Symbols and Terms



**Terms in this Manual.** These terms may appear in this manual:

---

**WARNING.** *Warning statements identify conditions or practices that could result in injury or loss of life.*

---



---

**CAUTION.** *Caution statements identify conditions or practices that could result in damage to this product or other property.*

---

**Terms on the Product.** These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

**Symbols on the Product.** The following symbols may appear on the product:



CAUTION  
Refer to Manual



# Preface

This document provides information on using and servicing the P6417 and P6418 Logic Analyzer probes.

## Related Documentation

In addition to these probe instructions, the following documentation is available for your TLA700 or TLA600 series logic analyzer:

- The *Tektronix Logic Analyzer Family User Manual* provides overall user information for the Tektronix logic analyzer family.
- The online help provides information about the TLA user interface and the TLA700 Programmatic Interface (TPI). To view the online help, select Help Topics from the Help menu.
- A series of instruction manuals for microprocessor support provide operating and service instructions for the individual microprocessor support packages that are available for use with the TLA logic analyzer.
- The *P6434 Mass Termination Probe Instructions* provides instructions for using the P6434 probes.
- The *TLA7QS Training Manual* provides training exercises to help you learn key features of the logic analyzer. The training manual is designed to be used with the TLA7QS training board.
- A series of service manuals that provide board-level service information for major components of the logic analyzer.

## Contacting Tektronix

|                          |   |
|--------------------------|---|
| <b>Phone</b>             | 1-800-833-9200*   |
| <b>Address</b>           | Tektronix, Inc.<br>Department or name (if known)<br>14200 SW Karl Braun Drive<br>P.O. Box 500<br>Beaverton, OR 97077<br>USA                               |
| <b>Web site</b>          | <a href="http://www.tektronix.com">www.tektronix.com</a>  |
| <b>Sales support</b>     | 1-800-833-9200, select option 1*  |
| <b>Service support</b>   | 1-800-833-9200, select option 2*  |
| <b>Technical support</b> | Email: <a href="mailto:techsupport@tektronix.com">techsupport@tektronix.com</a><br>1-800-833-9200, select option 3*<br>6:00 a.m. - 5:00 p.m. Pacific time |

---

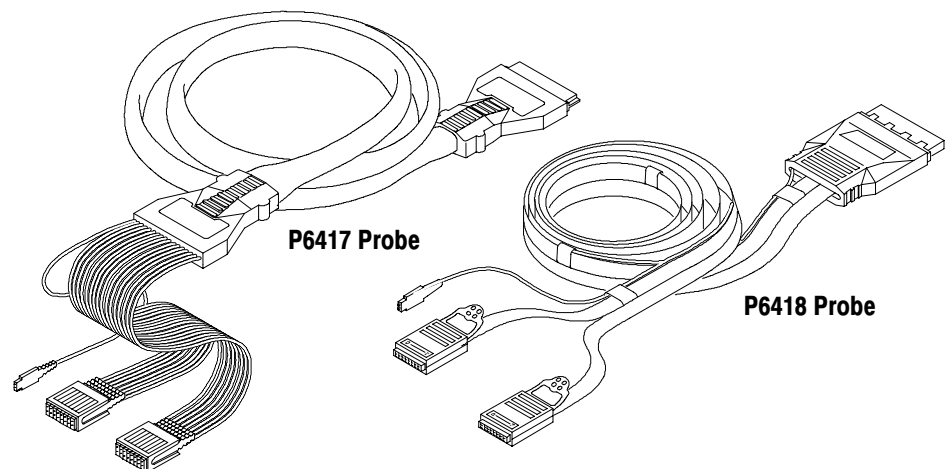
\* **This phone number is toll free in North America. After office hours, please leave a voice mail message. Outside North America, contact a Tektronix sales office or distributor; see the Tektronix web site for a list of offices.**

# Operating Basics

This section provides a brief description of the P6417 and P6418 logic analyzer probes, information on attaching and using color-coded probe labels, and information on connecting the probes from the logic analyzer to the target system.

## Product Description

The P6417 and P6418 logic analyzer probes connect a Tektronix TLA series logic analyzer to a target system. Each probe consists of 16 data channels and one clock/data channel. You can connect the probes to the target system through the podlet connectors or through the lead sets.



**Figure 1: P6417 and P6418 logic analyzer probes**

## Attaching Probe Labels

When you purchase the logic analyzer probes with the logic analyzer module, all labels are already attached. If you purchase the probe separate from the logic analyzer module, you should apply the color-coded labels as described in this section. The labels help you identify the probe connections at the logic analyzer end and at the target system end.

Table 1 lists the probe section and label color combinations. Refer to Table 1 and to Figure 2 when you attach the probe labels.

**Table 1: Probe section and label combinations**

| Probe section | Channels               | Label color | Probe section | Channels               | Label color |
|---------------|------------------------|-------------|---------------|------------------------|-------------|
| A3-A2         | CK:0, A3:7-0, A2:7-0   | Tan         | A1-A0         | CK:1, A1:7-0, A0:7-0   | Orange      |
| D3-D2         | QUAL:0, D3:7-0, D2:7-0 | Blue        | D1-D0         | CK:2, D1:7-0, D0:7-0   | Yellow      |
| C3-C2         | CK:3, C3:7-0, C2:7-0   | White       | C1-C0         | QUAL:1, C1:7-0, C0:7-0 | Gray        |
| E3-E2         | QUAL:3, E3:7-0, E2:7-0 | Green       | E1-E0         | QUAL:2, E1:7-0, E0:7-0 | Violet      |

**P6417 Labels**

Refer to Figure 2 and use the following steps to attach the probe labels:

1. Identify the module end of the probe cable.
2. From the sheet of labels, locate the color-coded label for the module end of the probe cable.

---

**NOTE.** When you install the labels on the P6417 probe, make sure that you select the correct label for module end of the probe. The labels that connect to both ends of the probe look similar, but differ in information content. Refer to Figure 2 to ensure you have selected the correct label.

---

3. Attach the matching colored label to the area on the other end of the probe cable.

**P6418 Labels**

Refer to Figure 2 and use the following steps to attach the probe labels:

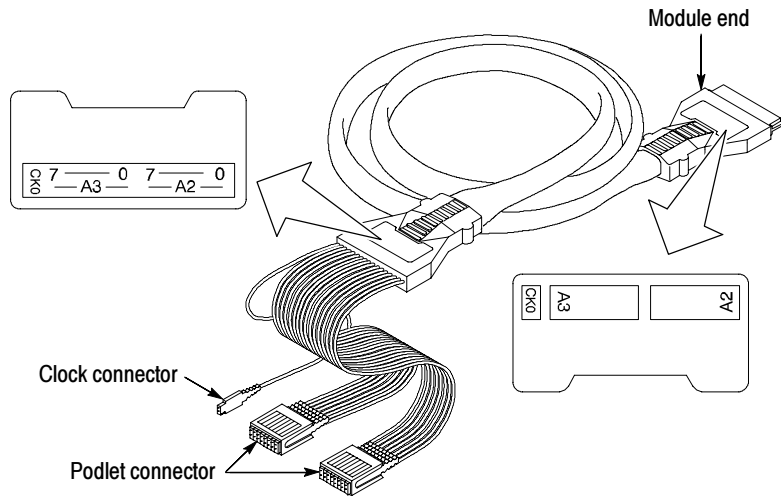
1. From the sheet of labels, locate the color-coded labels.
2. Install the correct label on the module end of the probe.
3. Locate the two labels for the podlet connectors, and attach a label on each connector of the probe.

---

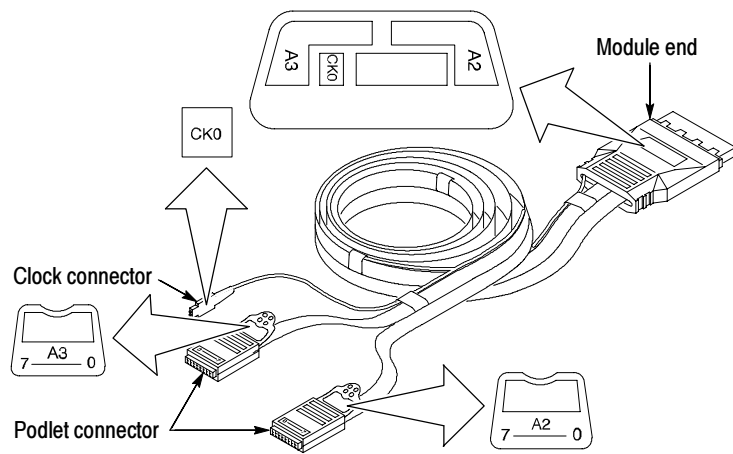
**NOTE.** Make sure that you attach the labels to the correct podlet connector. For example, make sure that the A3 section at the podlet connector aligns with the A3 section of the module end of the probe. The podlet connector adjacent to the clock podlet has the higher-numbered channel group (if necessary, lay the probe out on a flat surface so you can trace the channel groups from the module end of the probe to the podlet connector end).

---

4. Attach the matching colored label to clock connector.



**P6417 Probe**

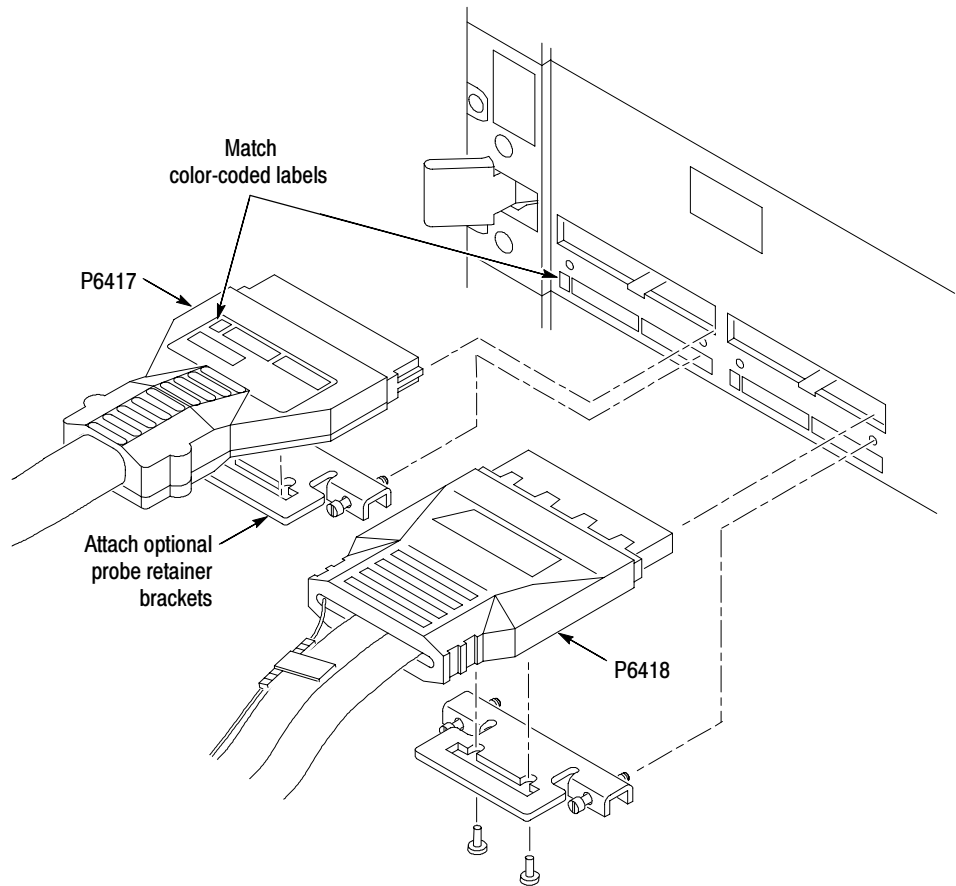


**P6418 Probe**

**Figure 2: Attaching probe labels**

## Connecting the Probes

Connect the logic analyzer probes and the optional retaining brackets as shown in Figure 3. The retaining brackets and hardware ship with the logic analyzer (note that the P6417 probe does not require screws to hold the retainer bracket).



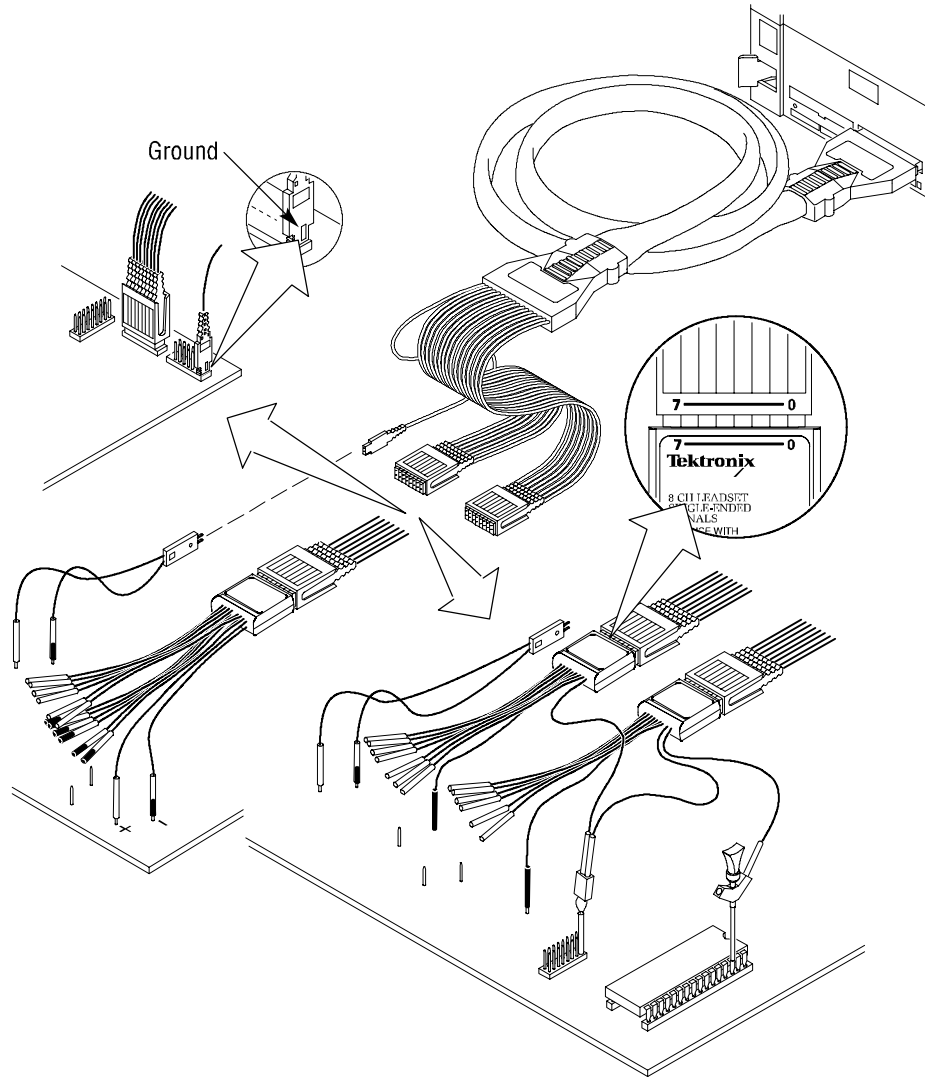
**Figure 3: Connecting the logic analyzer probes**

Refer to Figure 4 and connect the probe to the target system using one of the following methods:

- Connect the probes directly to square pins on the target system (refer to *Probe Connectors* on page 7 for information on probe dimensions).
- Connect the probes to the target system via the flying lead sets.
- Use the probe tip connectors with the flying lead sets for situations where you cannot connect to square pins directly.
- If you use the optional Reduced Bias Voltage lead sets, you can reduce the pull-up voltage that the probe delivers to the system under test. The pull-up voltage reduces from 2.2 volts to 1.1 volts at the same time the DC input resistance changes from 20 k $\Omega$  to 10 k $\Omega$ . These lead sets can also connect to 2 mm and 0.1-inch pin strips.

Note the location of the ground connections for the probe.

- The individual podlets have ground (GND) engraved on the podlet.
- Most podlet holder has ground engraved on one side of the holder and numbers on the other side. For newer podlet holders, the ground side is always opposite the side labeled 7----- 0 (the signal side).
- When you use the 8-channel lead sets, the ground lead is a single, black connector. Make sure you connect the ground side of the 8-channel lead set to the ground side of the 8-channel podlet holder.



**Figure 4: Connecting the probes to the target system**



# Reference

This section provides reference information and specifications for the P6417 and P6418 probes.

## Probe Connectors

Figure 5 shows the dimensions of the probe footprints for both the P6417 and P6418 probes.

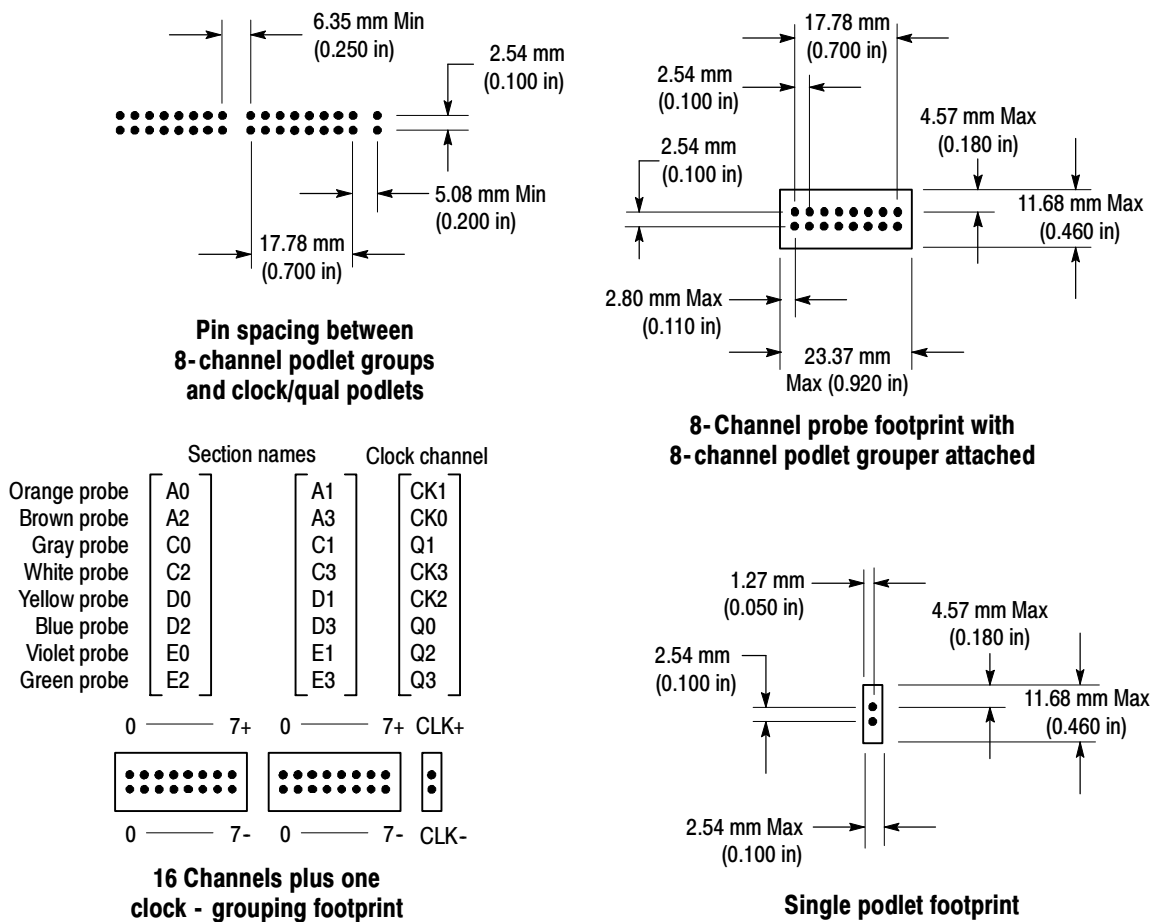


Figure 5: Probe footprints

Figure 6 shows the vertical clearance for the both probes.

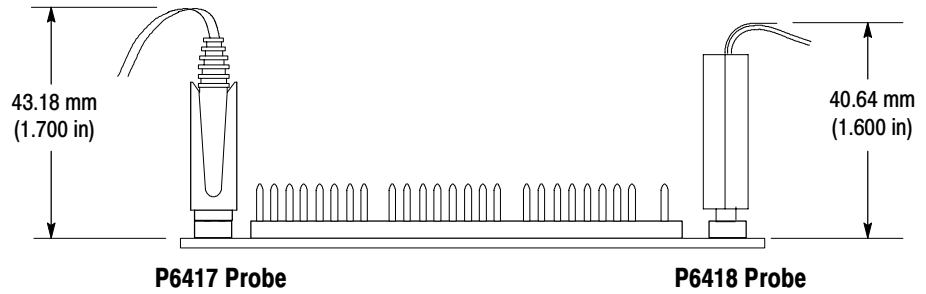


Figure 6: Probe podlet clearance

## Loading and Equivalent Circuits

Figure 7 shows the equivalent circuits for the purposes of estimating the loading of probes on the target system.

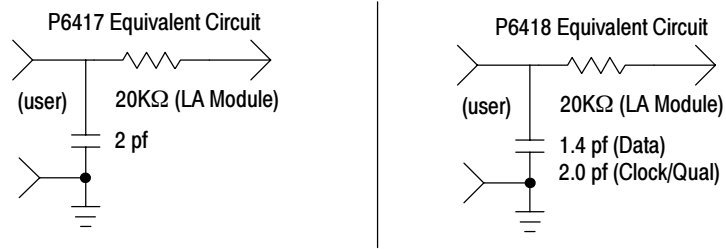


Figure 7: Probe loading

## Specifications

Table 2 lists the electrical and mechanical specifications for the P6417 and P6418 probes. The electrical specifications apply when the probe is connected between a compatible logic analyzer and a target system. All specifications apply to both types of probes unless otherwise indicated.

**Table 2: Electrical and mechanical specifications**

| Characteristic                                 | Description   |                |
|--|---|----------------|
| Threshold accuracy                             | $\pm 100$ mV  |                |
| Channel-to-channel-skew                        | $\leq 1$ ns   |                |
| Input resistance (probe and lead sets)         |   |                |
| Standard lead set                              | 20 K $\Omega$   |                |
| Reduced bias lead set                          | 10 K $\Omega$   |                |
| Input capacitance                              | <b>P6417</b>  | <b>P6418</b>   |
| Data   | 2.0 pF typical  | 1.4 pF typical |
| Clock/Qual                                     | 2.0 pF typical  | 2.0 pF typical |
| Minimum slew rate                              | 0.2 ns  |                |
| Maximum operating signal                       | 6.5 V <sub>P-P</sub><br>-3.5 V absolute input voltage minimum<br>6.5 V absolute input voltage maximum |                |
| Maximum nondestructive input signal to probe   | $\pm 15$ V  |                |
| Minimum input pulse width signal               | 2 ns  |                |
| Delay from probe tip to module input connector | 7.33 ns   |                |
| Probe length                                   | 1.8 m (6 ft)  |                |

Table 3 shows the environmental specifications for both probes. The probes are designed to meet Tektronix standard 062-2847-00 class 5.

**Table 3: Environmental specifications**

| <b>Characteristic</b>  | <b>Description</b>                   |
|------------------------|--------------------------------------|
| Temperature            |                                      |
| Maximum operating      | +50° C (+122° F)                     |
| Minimum operating      | 0° C (+32° F)                        |
| Non-operating          | -55° C to +75° C (-67° F to +167° F) |
| Humidity               | 10 to 95% relative humidity          |
| Altitude               |                                      |
| Operating              | 4.5 km (15,000 ft) maximum           |
| Non-operating          | 15 km (50,000 ft) maximum            |
| Electrostatic immunity | The probe is not static sensitive    |

# Maintenance

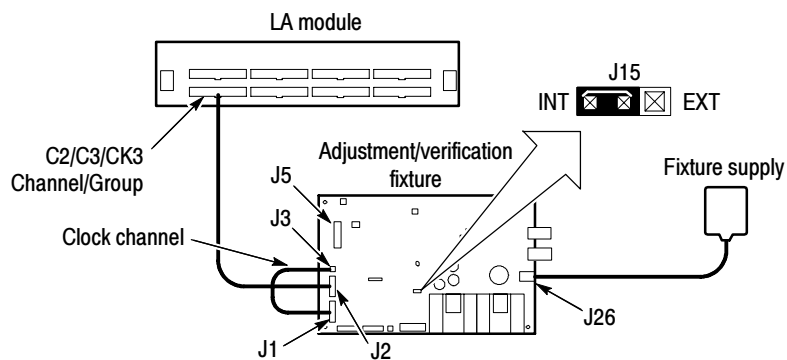
The P6417 and P6418 Probes do not require scheduled or periodic maintenance. Use the procedures listed under *Functional Check* to check the basic functionality of the probes.

To verify that the probes meet or exceed the performance requirements for published specifications with a compatible logic analyzer module, refer to the *Performance Verification Procedures* in the *TLA7Nx, TLA7Px, & TLA7Qx Logic Analyzer Service Manual*.

## Functional Check

The following procedure checks the basic operation of the probes by verifying that the probes recognize signal activity at the probe tips.

|                           |  |
|---------------------------|--|
| <b>Equipment required</b> | Adjustment/verification fixture and power supply (refer to <i>Replaceable Parts</i> for part number information) |
| <b>Prerequisites</b>      | P6417 or P6418 probe connected to LA Module<br>Test equipment connected as shown in Figure 8                     |

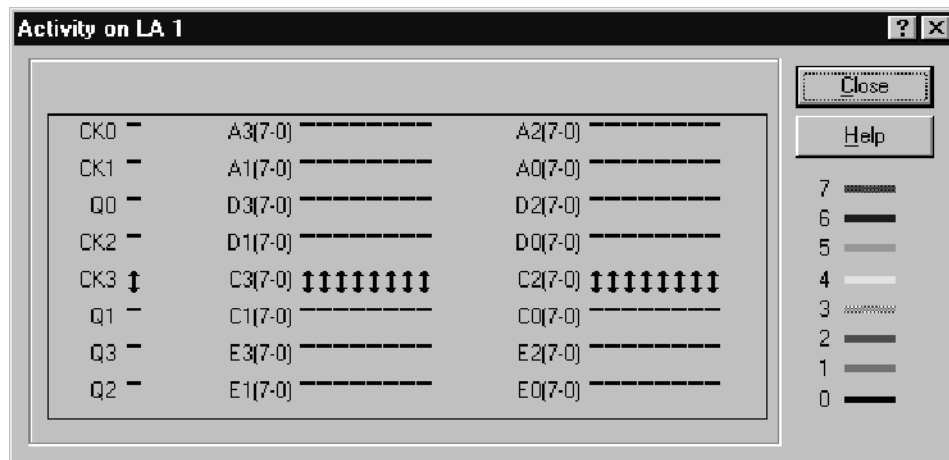


**Figure 8: Probe functional verification test setup**

Perform the following steps to complete the probe functional verification procedure:

1. Ensure that the jumper at J15 on the adjustment/verification fixture is in the INT position to select the internal 50.065 MHz clock.
2. Open the Setup window for the LA module which will be used to test the probes.
3. Click the Set Thresholds button to display the Probe Threshold dialog box.
4. Adjust the threshold level to 700 mV for all channels.
5. Connect the acquisition probe to be tested to the C3/C2 channel group on the LA module.
6. Refer to Figure 8 and connect the podlets of the acquisition probe to J1 and J2 on the adjustment/verification fixture. Ensure that you connect the ground side of the podlets to the ground side of the adjustment/verification fixture connectors.
7. Connect the single clock (CK n) or the qualifier (Q n) channel to one of the J3 CLK OUT connector pairs on the adjustment/verification fixture.
8. Return to the Setup window and click the Show Activity button to display the Activity Monitor.
9. Verify that the Activity Monitor shows activity on all probe channels connected to the test fixture.

Figure 9 shows an example of the Activity Monitor. Note the signal activity for clock CK3 and data channels for the C3(7-0) and C2(7-0) groups. Also note that there is no activity on the other groups because the probe podlets are not connected to a signal source (the channels are all high).



**Figure 9: Activity Monitor**

10. Disconnect the probe from the adjustment/verification fixture and LA module.
11. Repeat steps 5 through 10 for any remaining probes.
12. Close the Show Activity window.
13. Return the threshold levels to their former values in the Probe Threshold window.
14. This completes the probe functional verification procedure.

## Inspection and Cleaning

To maintain good electrical contact, keep the probes free of dirt, dust, and contaminants. Remove dirt and dust with a soft brush. For more extensive cleaning use only a damp cloth. Never use abrasive cleaners or organic solvents.

## P6418 Probe Service Procedures

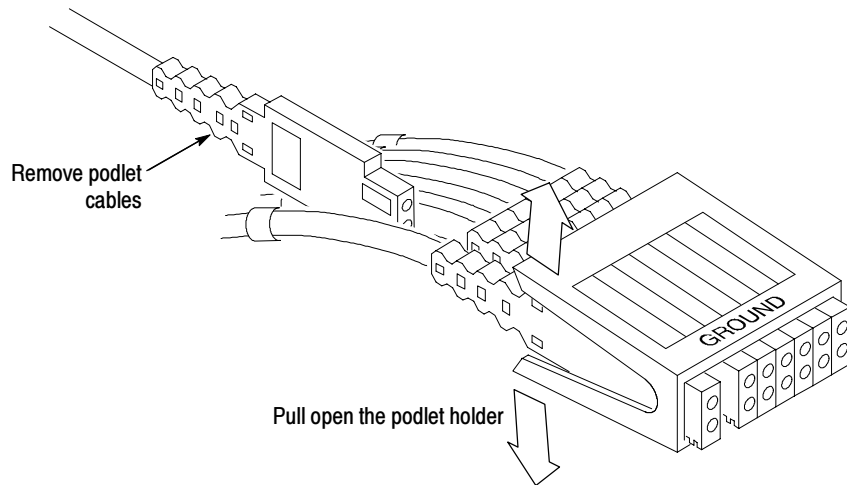
The P6418 probes contain no user-replaceable parts. If probe failures occur, replace the entire probe.

## Replacing Podlets on the P6417 Probes

You can reposition or replace the individual P6417 Probe podlets, depending on your application. Use the following procedures to move or replace the podlets.

### Moving P6417 Probe Podlets

Depending on your application, you can reposition probe podlets as shown in Figure 10. When moving podlets in the podlet holder keep the ground side of the podlets together.



**Figure 10: Moving probe podlets**

### Replacing Probe Podlets

The podlet replacement procedure consists of identifying the faulty podlet and replacing it with a new one. Refer to the *Replaceable Parts* section for information on ordering the podlet replacement kit.

**Equipment and Required Material.** You will need the following equipment and material:

- Replacement podlet
- Masking tape
- Small diagonal cutters
- Screwdriver with a #1 Phillips tip

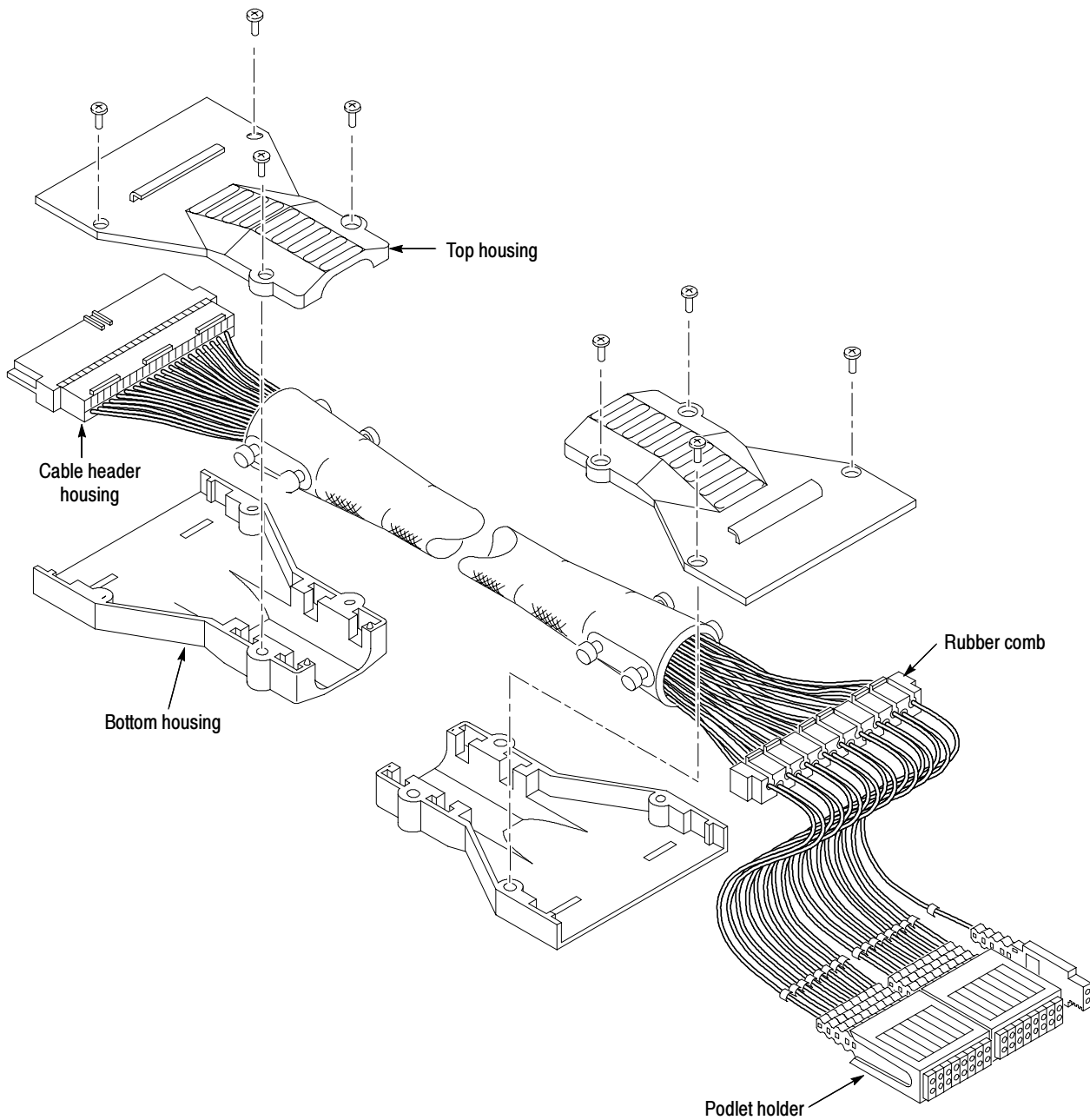
**Replacement Procedure.** Perform the following steps to replace a faulty probe podlet:

1. Identify and mark the faulty podlet.
2. Disconnect the probe from the logic analyzer and set the probe cable on a clean working surface.



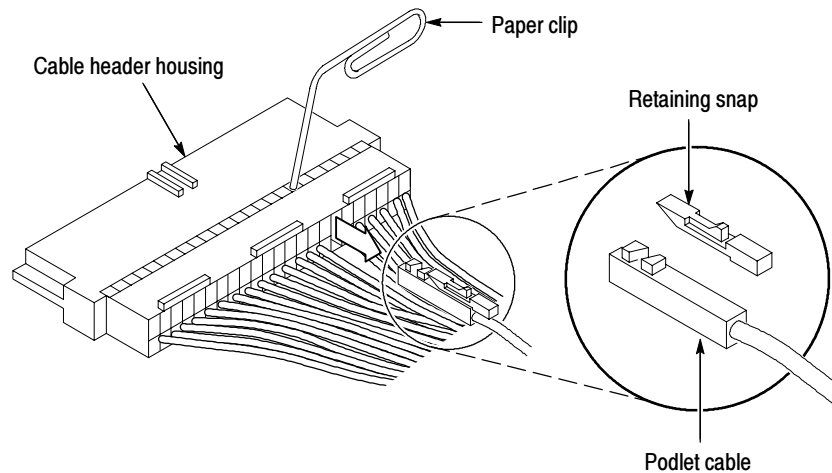
**NOTE.** If you need to replace more than one podlet, replace the podlets one at a time to avoid mixing them up.

3. Using the screwdriver with the #1 Phillips tip, remove the four screws on the probe housing on the module end of probe cable (see Figure 11).



**Figure 11: Disassembling the probe cable**

4. Remove the top and bottom probe housings and set them aside. Do not mix the probe connector-end housings with the podlet connector housings; the labels are different at each end of the probe.
5. Identify the faulty probe channel at the module end of the cable.
6. Refer to Figure 12 and use a small, pointed tool, such as a straightened paper clip or a mechanical pencil, to release the faulty cable from the cable header housing. Discard the small plastic retaining snap.



**Figure 12: Removing the faulty channel from the probe cable header housing**

7. Identify the faulty probe channel at the podlet end of the probe.

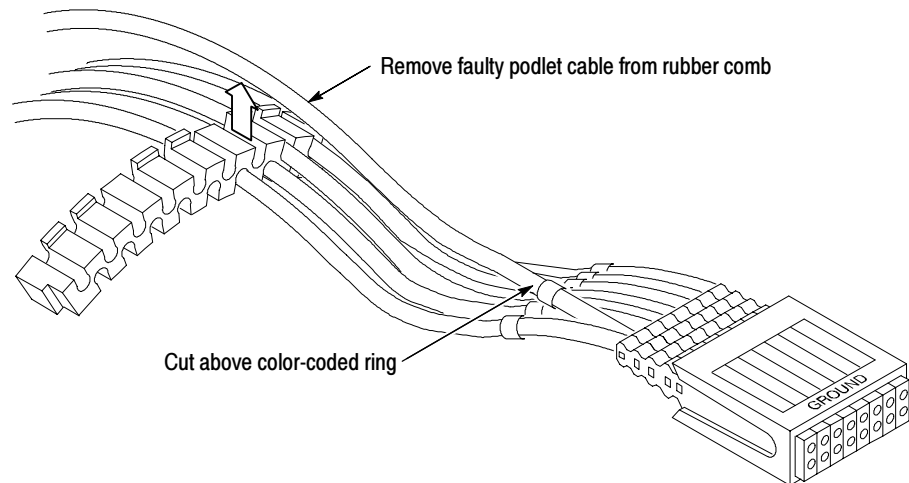


---

**CAUTION.** Be sure that you have identified the correct podlet cable before you cut the cable.

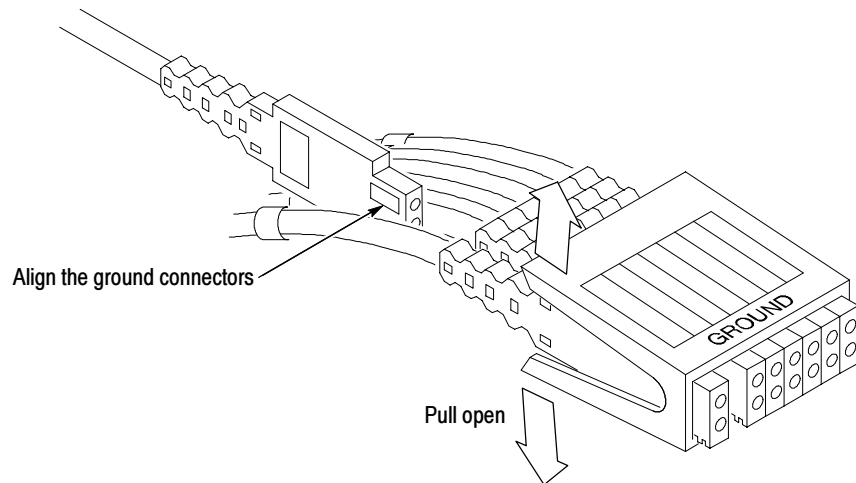
---

8. Cut the faulty podlet just above the color-coded ring.
9. Remove the color-coded ring and set it aside; you will need to install it on the replacement cable later in this procedure.
10. Refer to Figure 13 and bend the rubber comb to remove the faulty podlet cable from the comb.



**Figure 13: Removing a podlet cable from the rubber comb**

- 11.** Attach the module end of the replacement podlet cable to the cut end of the faulty podlet cable in the following manner:
  - a.** Lay the two cables in parallel with a four-inch (10 cm) to six-inch (15 cm) overlap.
  - b.** Wrap the overlapping portion of the two podlet cables tightly with masking tape to temporarily splice them together.
- 12.** Pull the faulty cable from the module end through the mesh sleeve so that the replacement cable is drawn through the mesh sleeve. Stop pulling when the replacement cable is located at the proper position in the cable wire bundle.
- 13.** Remove the faulty podlet cable from the podlet holder and replace it with the new cable as shown in Figure 14.



**Figure 14: Replacing a podlet in the podlet holder**

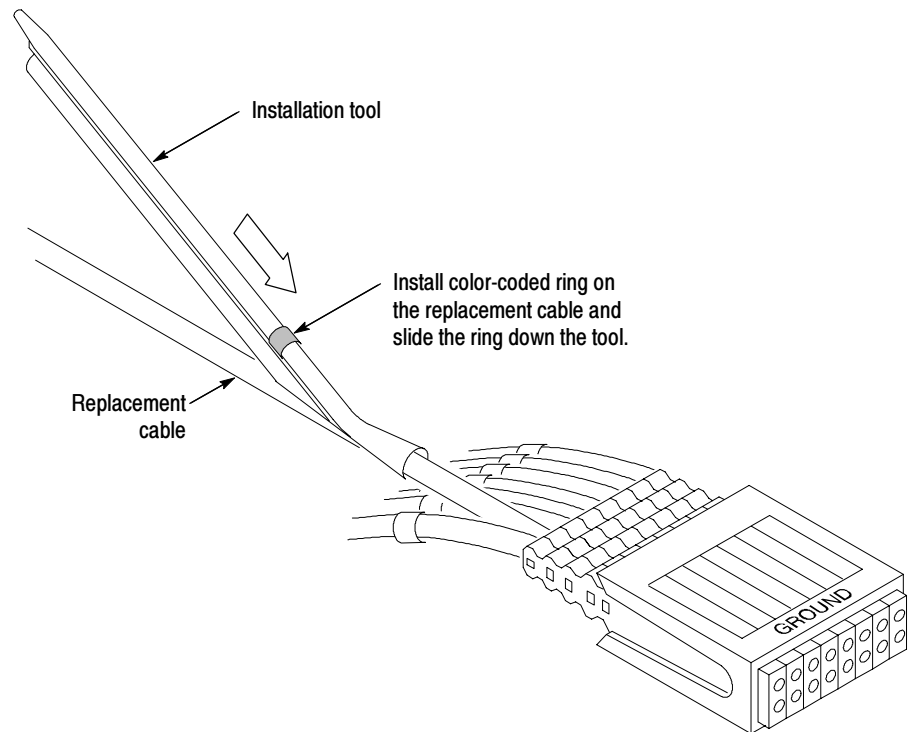
14. Take the color-coded ring that you removed in step 9 on page 16 and slide it onto the installation tool. (The installation tool is included in the podlet replacement kit.)



**CAUTION.** Do not damage the cable with the installation tool when installing the color-coded ring.

---

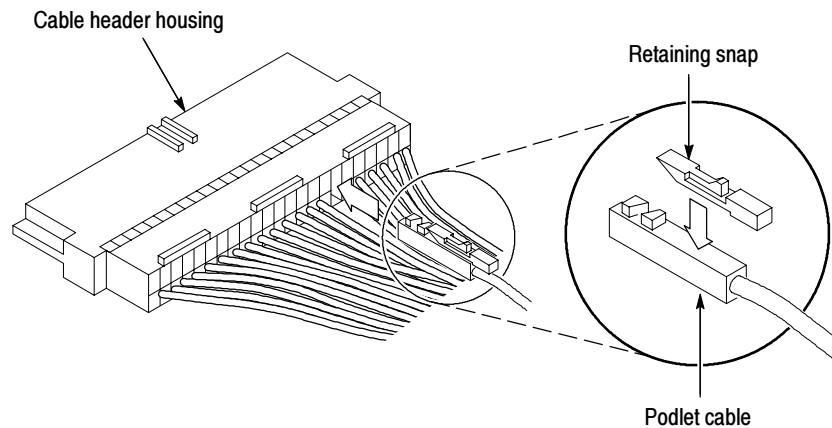
15. Refer to Figure 15 and place the installation tool over the replacement podlet cable as shown. Slide the color-coded ring down the installation tool onto the replacement cable. Position the ring so that it is in the same relative position as the other color-coded rings (approximately 0.5-inch from the podlet).



**Figure 15: Installing the color-coded ring**

- 16.** Push the new podlet cable into the rubber comb.
- 17.** Unwrap and remove the masking tape from the splice of the two cables and discard the faulty cable.
- 18.** Remove the protective 1x2 housing from the new podlet cable. Use the same procedure as in Step 6 on page 16 to remove the plastic retaining snap. Discard the retaining snap and the protective housing.

19. Insert the new podlet cable partially into the cable header housing. Place a new retaining snap (included with the kit) on the podlet cable as shown in Figure 16 and fully insert the cable and retaining snap into the cable header housing. Tug lightly on the podlet cable to ensure the retaining snap is in place.



**Figure 16: Installing the cable in the cable header housing**

20. Reinstall the top and bottom probe housings on the module end of the probe cable in the following manner (refer to Figure 11 on page 15, if necessary):
  - a. Line up the two tabs on the probe header with the two embedded slots in the bottom (deep) probe housing.

---

**NOTE.** *It may be necessary to push or pull the cables in the sleeve so that the probe header lines up properly with the slots in the bottom probe housing.*

---

- b. Place the two metallic guides on the probe sleeve in the slots in the bottom probe housing.
  - c. Line up the three tabs of the probe header with the three embedded slots in the top probe housing.
  - d. Install and tighten the four screws in the probe housing.
  - e. Smooth the sleeve by hand to ensure the sleeve fully covers the cables when replacing the probe housing over the comb.
21. Repeat step 20 to install the probe housing over the rubber comb on the podlet end of the probe cable.

## Repackaging Instructions

If at all possible, use the original packaging to ship or store the probes. If the original packaging is not available, use a corrugated cardboard shipping carton. Add cushioning material to prevent the probes from moving around in the shipping container.

Enclose the following information when shipping the probe to a Tektronix Service Center:

- The owner's address
- Name and phone number of a contact person
- Type of probe
- Reason for Returning
- A Complete description of the service required

Seal the shipping carton. Mark the address of the Tektronix Service Center and your own return address on the shipping carton in two prominent locations.





# Replaceable Parts

## Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order:

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.

## Using the Replaceable Parts List

This section contains a list of the mechanical and/or electrical components that are replaceable for your Tektronix product. Use this list to identify and order replacement parts. The following table describes each column in the parts list.

### Parts list column descriptions

| Column  | Column name           | Description   |
|---------|-----------------------|---|
| 1       | Figure & index number | Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.  |
| 2       | Tektronix part number | Use this part number when ordering replacement parts from Tektronix.  |
| 3 and 4 | Serial number         | Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entries indicates the part is good for all serial numbers. |
| 5       | Qty                   | This indicates the quantity of parts used.  |

**Parts list column descriptions**

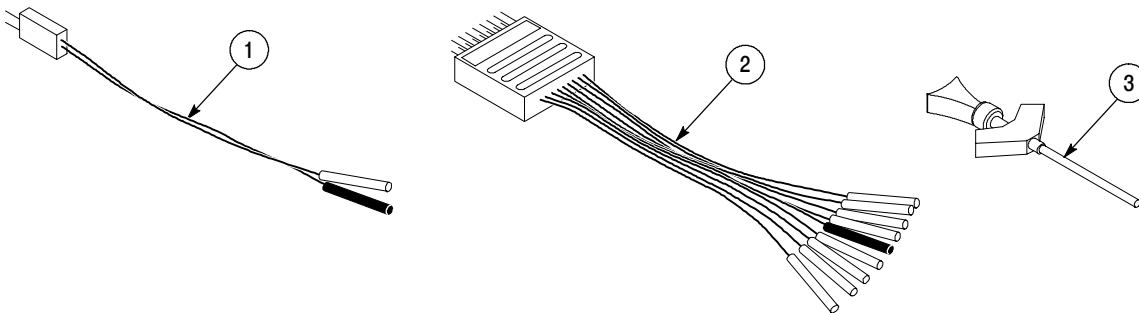
| Column | Column name        | Description  |
|--------|--------------------|--|
| 6      | Name & description | An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification. |
| 7      | Mfr. code          | This indicates the code of the actual manufacturer of the part.  |
| 8      | Mfr. part number   | This indicates the actual manufacturer's or vendor's part number.  |

**Abbreviations**      Abbreviations conform to American National Standard ANSI Y1.1-1972.

**Mfr. Code to Manufacturer Cross Index**      The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

**Manufacturers cross index**

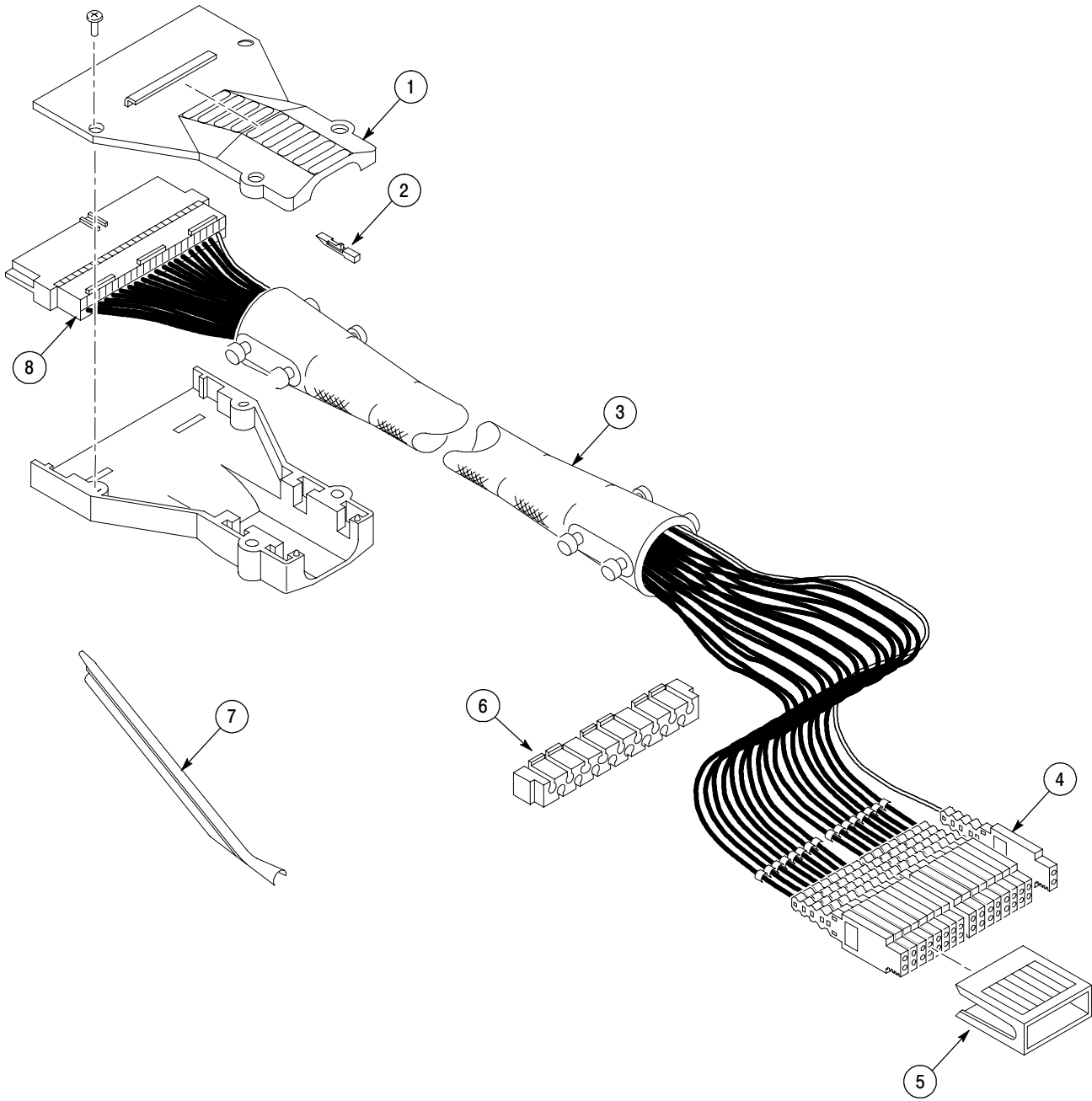
| Mfr. code | Manufacturer           | Address   | City, state, zip code          |
|-----------|------------------------|---|--------------------------------|
| 060D9     | TENSOLITE COMPANY      | PRECISION HARNESS AND ASSEMBLY<br>3000 COLUMBIA HOUSE BLVD, #120            | VANCOUVER, WA 98661            |
| 23633     | RICHEY ELECTRONICS INC | 7441 LINCOLN WAY  | GARDEN GROVE, CA 92641         |
| 53387     | 3M COMPANY             | 3M AUSTIN CENTER<br>INTERCONNECT SOLUTIONS DIVISION<br>6801 RIVERPLACE BLVD | AUSTIN, TX 78769-2963          |
| 0GV90     | GLOBTEK INC            | 186 VETERANS DRIVE  | NORTHVALE, NJ 07647-2303       |
| 0KB01     | STAUFFER SUPPLY CO     | 810 SE SHERMAN  | PORTLAND, OR 97214-4657        |
| TK0JL     | CHROMA ATE INC         | 43 WU-CHUAN ROAD<br>WU-KU INDUSTRIAL PARK                                   | WU-KU, TAIPEI HSIEN, TAIWAN CN |
| 80009     | TEKTRONIX INC          | 14150 SW KARL BRAUN DR<br>PO BOX 500  | BEAVERTON, OR 97077-0001       |



**Figure 17: P6417 and P6418 Probe accessories**

Replaceable parts list

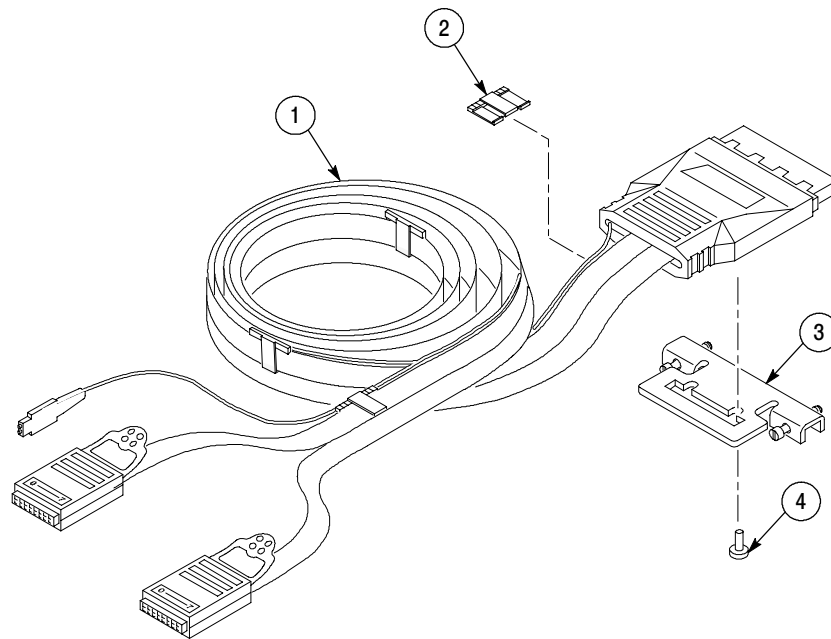
| Fig. & index number                                  | Tektronix part number | Serial no. effective | Serial no. discont'd | Qty | Name & description   | Mfr. code | Mfr. part number |
|--|-----------------------|----------------------|----------------------|-----|--|-----------|------------------|
| <b>P6417 STANDARD ACCESSORIES</b>                    |                       |                      |                      |     |  |           |                  |
| -  | 010-6417-10           |                      |                      | 1   | PROBE SET:17 CH PROBE  | 80009     | 010-6417-10      |
| -  | 071-0567-XX           |                      |                      | 1   | MANUAL,TECH:INSTRUCTIONS, P6417 & P6418  | 80009     | 071-0567-XX      |
| -  | 334-9239-00           |                      |                      | 1   | MARKER,IDENT:PROBE,METIS, EIGHT SETS OF TWO  | 80009     | 334-9239-00      |
| 17-1   | 196-3432-00           |                      |                      | 1   | CA ASSY,SP:DESCRETE,1 CH LEAD SET,SDI,2,22 AWG,5.0 L,1 X 2,0.278 MLG,PIN HSG X 131-1998-00,W | 53387     | 98-0300-7600-8   |
| -2   | 196-3431-XX           |                      |                      | 2   | CA ASSY,SP:DESCRETE,8 CH LEAD SET,SDI,16,22 AWG,5.0 L,2X8,MALE,0.278 MLG PIN HSG X 2X8,ULTR  | 53387     | 98-0300-7601-6   |
| -3   | 206-0364-XX           |                      |                      | 20  | TIP,PROBE:MICROCKT TEST,0.05 CTR   | 80009     | 206-0364-XX      |
| <b>P6418 STANDARD ACCESSORIES</b>                    |                       |                      |                      |     |  |           |                  |
| 19-1   | 010-6418-10           |                      |                      | 1   | PROBE SET:17 CH PROBE  | 80009     | 010-6418-10      |
| -  | 071-0567-XX           |                      |                      | 1   | MANUAL,TECH:INSTRUCTIONS, P6417 & P6418  | 80009     | 071-0567-XX      |
| -  | 334-9979-00           |                      |                      | 1   | MARKER,IDENT:PROBE,METIS, EIGHT SETS OF FOUR   | 80009     | 334-9979-00      |
| 17-1   | 196-3432-00           |                      |                      | 1   | CA ASSY,SP:DESCRETE,1 CH LEAD SET,SDI,2,22 AWG,5.0 L,1 X 2,0.278 MLG,PIN HSG X 131-1998-00,W | 53387     | 98-0300-7600-8   |
| -2   | 196-3431-XX           |                      |                      | 2   | CA ASSY,SP:DESCRETE,8 CH LEAD SET,SDI,16,22 AWG,5.0 L,2X8,MALE,0.278 MLG PIN HSG X 2X8,ULTR  | 53387     | 98-0300-7601-6   |
| -3   | 206-0364-XX           |                      |                      | 20  | TIP,PROBE:MICROCKT TEST,0.05 CTR   | 80009     | 206-0364-XX      |
| <b>PROBE ACCESSORIES KIT FOR P6417 (020-2198-XX)</b> |                       |                      |                      |     |  |           |                  |
| 17-1   | 196-3432-00           |                      |                      | 1   | CA ASSY,SP:DESCRETE,1 CH LEAD SET,SDI,2,22 AWG,5.0 L,1 X 2,0.278 MLG,PIN HSG X 131-1998-00,W | 53387     | 98-0300-7600-8   |
| -2   | 196-3431-XX           |                      |                      | 2   | CA ASSY,SP:DESCRETE,8 CH LEAD SET,SDI,16,22 AWG,5.0 L,2X8,MALE,0.278 MLG PIN HSG X 2X8,ULTR  | 53387     | 98-0300-7601-6   |
| -3   | 206-0364-XX           |                      |                      | 20  | TIP,PROBE:MICROCKT TEST,0.05 CTR   | 80009     | 206-0364-XX      |
| <b>34CH PROBE INTERFACE KIT (020-2199-XX)</b>        |                       |                      |                      |     |  |           |                  |
| 17-1   | 196-3432-00           |                      |                      | 1   | CA ASSY,SP:DESCRETE,1 CH LEAD SET,SDI,2,22 AWG,5.0 L,1 X 2,0.278 MLG,PIN HSG X 131-1998-00,W | 53387     | 98-0300-7600-8   |
| -2   | 196-3431-XX           |                      |                      | 2   | CA ASSY,SP:DESCRETE,8 CH LEAD SET,SDI,16,22 AWG,5.0 L,2X8,MALE,0.278 MLG PIN HSG X 2X8,ULTR  | 53387     | 98-0300-7601-6   |
| -  | 012-1377-00           |                      |                      | 1   | LEAD SET,ELEC:2,26 AWG,STRD,2.030 L,PKG OF 12  | 23633     | 66156            |
| -  | 012-1378-00           |                      |                      | 1   | LEAD SET,ELEC:4,22 AWG,STRD,2.33 L (PKG OF 4)  | 23633     | 66155            |
| <b>34CH PROBE INTERFACE KIT</b>                      |                       |                      |                      |     |  |           |                  |
| -  | 020-3000-XX           |                      |                      | 1   |  | 80009     | 020-3000-XX      |
| -  | 012-1412-00           |                      |                      | 4   | LEAD SET ASSY:LAPIKPV  | 23633     | 68654            |
| -  | 012-1426-00           |                      |                      | 1   | LEAD SET,ELEC:PKG OF 12,2 TO 1 SIGNAL/GROUND   | 23633     | 69025            |
| -  | 012-1427-00           |                      |                      | 1   | LEAD SET,ELEC:PKG OF 4,4 TO 1 SIGNAL/GROUND  | 23633     | 69026            |



**Figure 18: P6417 Probe exploded view**

**Replaceable parts list**

| Fig. & index number | Tektronix part number | Serial no. effective | Serial no. discont'd | Qty | Name & description                                | Mfr. code | Mfr. part number |
|---------------------|-----------------------|----------------------|----------------------|-----|---|-----------|------------------|
|                     |                       |                      |                      | 1   | <b>P6417 PODLET REPLACEMENT KIT (020-2200-XX)</b> |           |                  |
| 18-2                |                       |                      |                      | 10  | PODLET LATCHES                                    |           |                  |
| -4                  |                       |                      |                      | 1   | PODLET (INCLUDING CABLE)                          |           |                  |
| -5                  |                       |                      |                      | 2   | 8-CHANNEL PODLET HOLDERS                          |           |                  |
| -7                  |                       |                      |                      |     | INSTALLATION TOOL & PODLET COLOR-CODED BANDS      |           |                  |
|                     |                       |                      |                      | 1   | <b>P6417 PROBE REPAIR KIT (020-2196-XX)</b>       |           |                  |
| 18-1                |                       |                      |                      | 2   | PROBE CASE HALVES WITH SCREWS                     |           |                  |
| -3                  |                       |                      |                      | 1   | PROBE SLEEVE (CABLES NOT INCLUDED)                |           |                  |
| -5                  |                       |                      |                      | 2   | 8-CHANNEL PODLET HOLDERS                          |           |                  |
| -6                  |                       |                      |                      | 1   | PODLET CHANNEL COMB                               |           |                  |
| -7                  |                       |                      |                      |     | INSTALLATION TOOL & PODLET COLOR-CODED BANDS      |           |                  |
| -8                  |                       |                      |                      | 1   | 2X17 HEADER CONNECTOR                             |           |                  |



**Figure 19: P6418 Probe exploded view**

**Replaceable parts list**

| Fig. & index number                           | Tektronix part number | Serial no. effective | Serial no. discont'd | Qty | Name & description   | Mfr. code | Mfr. part number      |
|---|-----------------------|----------------------|----------------------|-----|--|-----------|-----------------------|
| <b>P6417 &amp; P6418 OPTIONAL ACCESSORIES</b> |                       |                      |                      |     |  |           |                       |
| -   | 071-0864-XX           |                      |                      | 1   | MANUAL,TECH:SERVICE,TLA7NX/TLA7PX/TLA7QX SERIES LOGIC ANALYZER MODULE  | 80009     | 071-0864-XX           |
| -   | 071-0728-XX           |                      |                      | 1   | MANUAL,TECH:SERVICE,TLA600 SERIES LOGIC ANALYZER MODULE  | 80009     | 071-0728-XX           |
| -   | 071-0863-XX           |                      |                      | 1   | MANUAL,TECH:USER,TLA700 SERIES LOGIC ANALYZER  | 80009     | 071-0863-XX           |
| -   | 020-2018-00           |                      |                      | 1   | ACCESSORY KIT:MINI PV HOUSING,15 HOUSING,VARIOUS SIZES   | 23633     | PER TEK DOCUMENTATION |
| -   | 671-3599-01           |                      |                      | 1   | ADJUSTMENT/VERIFICATION TEST FIXTURE (NOT SHOWN)   | 80009     | 671-3599-01           |
| -   | 119-4855-00           |                      |                      | 1   | POWER SUPPLY (US):18W,WALL MOUNT,120VAC 60HZ INPUT,12VDC 1.5A OUTPUT,UNREGULATED,183CM CABLE,STR C (NOT SHOWN) | 0GV90     | WD1E1500C12CP         |
| -   | 119-4856-00           |                      |                      | 1   | POWER SUPPLY (EC):18W,WALL MOUNT,220VAC 50HZ INPUT,12VDC 1.5A OUTPUT,UNREGULATED,183CM CABLE,STR C (NOT SHOWN) | 0GV90     | WD13E1500C12CP        |
| -   | 119-4859-00           |                      |                      | 1   | POWER SUPPLY (JP):18W,WALL MOUNT,100VAC 60HZ INPUT,12VDC 1.5A INPUT,UNREGULATED,183CM CABLE,STR CO (NOT SHOWN) | 0GV90     | WD49E1500C12CP        |
| 17-1  | 196-3478-00           |                      |                      | 1   | LEAD SET,ELEC:1 CHANNEL ASSY, REDUCED BIAS, P6417/18, 2MM ≤ SPACINGS   | 060D9     | 196-3478-00           |
| -2  | 196-3477-00           |                      |                      | 2   | LEAD SET,ELEC:8 CHANNEL ASSY, REDUCED BIAS, P6417/18, 2MM ≤ SPACINGS   | 060D9     | 196-3477-00           |
| -1  | 196-3479-00           |                      |                      | 1   | LEAD SET,ELEC:1 CHANNEL ASSY, P6417/18, 2MM ≤ SPACINGS   | 060D9     | 196-3479-00           |
| -2  | 196-3476-00           |                      |                      | 1   | LEAD SET,ELEC:8 CHANNEL ASSY, P6417/18, 2MM≤ SPACINGS  | 060D9     | 196-3476-00           |
| 19-2  | 016-1784-00           |                      |                      | 1   | CABLE MANAGERS; KIT OF FIVE (P6418 ONLY)   | 80009     | 016-1784-00           |
| -3  | 407-4435-01           |                      |                      | 1   | BRACKET,SUPPORT1.2MM THK CRS,LOGIC ANALYZER PROBE,SATIN NICKEL PL  | TK0JL     | 407-4435-01           |
| -4  | 211-0292-00           |                      |                      | 2   | SCR,ASSEM WSHR 4-40 X 0.29,PNH,BRS NI PL,POZ MACHINE (P6418 ONLY)  | 0KB01     | 211-0292-00           |