Warning

SHOCK HAZARD

Turn bias off before disconnecting device under test from this fixture.

HOT SURFACE

Device under test, terminals and adjacent area may become hot due to high power dissipation of the DUT. Be careful when exchanging devices.

警告

感電注意

フィクスチャから試料をはずす前に、バイアス出力を OFF にして下さい。

高温注意

試料、測定端子及びその周辺は、バイアス電流により発熱し、高温になる事があります。試料交換時には注意して下さい。

WARNUNG

GEFÄHRLICHE SPANNUNG

Vor dem herausnehmen des prüflings vorspannung abschalten.

HEISSE OBERFLÄCHEN

Prüfling, anschlüsse und deren umgebung können heiss werden. Vorsicht beim wechseln des prüflings.

Agilent 42842A/B/C BIAS
CURRENT TEST FIXTURE
Agilent 42843A BIAS CURRENT CABLE

OPERATION AND SERVICE MANUAL

Agilent Technologies

Agilent Part No. 42842-90002
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Third Edition

Warranty and Assistance

All Agilent Technologies products are warranted against defects in materials and workmanship. This warranty applies for one year from the date of delivery, or, in the case of certain major components listed in the Operation Manual, for the specified period. We will repair or replace products which prove to be defective during the warranty period provided they are returned to Agilent Technologies. No other warranty is expressed or implied. We are not liable for consequential damages.

For any assistance, contact your nearest Agilent Technologies Sales and Service Office. Addresses are provided at the back of this manual.

How To Use This Manual

This is Operation and Service Manual for the 42842A/B/C Bias Current Test Fixture and the 42843A Bias Current Cable. This manual contains general information and service information following four chapters.

For the installation and configration of the 42842A/B/C and 42843A, refer to the *42841A Operation Manual* (Agilent Part Number 42841-90010).

For the operation combining with the 4284A/4285A and the 42841A, refer to the *4284A Operation Manual* (Agilent Part Number 04284-90040), *4285A Operation Manual* (Agilent Part Number 04285-90010) and the *42841A Operation Manual* (Agilent Part Number 42841-90010).

Chapter 1
42842A/B/C Operation

This chapter provides product description, initial inspection, specifications, supplemental performance characteristics, and other necessary information to operate the 42842A/B/C Bias Current Test Fixture.

Chapter 2
42842A/B/C Service

This chapter provides information and instructions for servicing the 42842A/B/C.

Chapter 3
42843A Operation

This chapter provides product description, initial inspection, specifications, and other necessary information to operate the 42843A Bias Current Cable.

Chapter 4
42843A Service

This chapter provides information and instructions for servicing the 42843A.

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HP 42842A/B/C Operation

Introduction

This chapter provides the information and instructions required to use the Hewlett-Packard 42842A/B/C Bias Current Test Fixture. It consists of the following sections.

- Incoming inspection
- Product description of the HP 42842A/B/C
- Specifications
- Supplemental performance characteristics

Incoming Inspection

This fixture has been carefully inspected both electrically and mechanically before being shipped from the factory. It should be in perfect condition, no scratches, dents or the like, and it should be in perfect electrical condition. Verify this by carefully performing an incoming inspection to check the instrument for signs of physical damage and missing contents. If any discrepancy is found, notify the carrier and Hewlett-Packard. Your HP sales office will arrange for repair and replacement without waiting for the claim to be settled.

1. Inspect the shipping container for damage, and keep the shipping materials until the inspection is completed.
2. Verify that the shipping container contains everything shown in Figure 1-1 or Figure 1-2.
3. Inspect the exterior of the HP 42842A/B/C for any signs of damage.
4. Complete the *Preparation for Use* procedures described in the *HP 42841A Operation Manual* (HP Part Number 42841-90000).

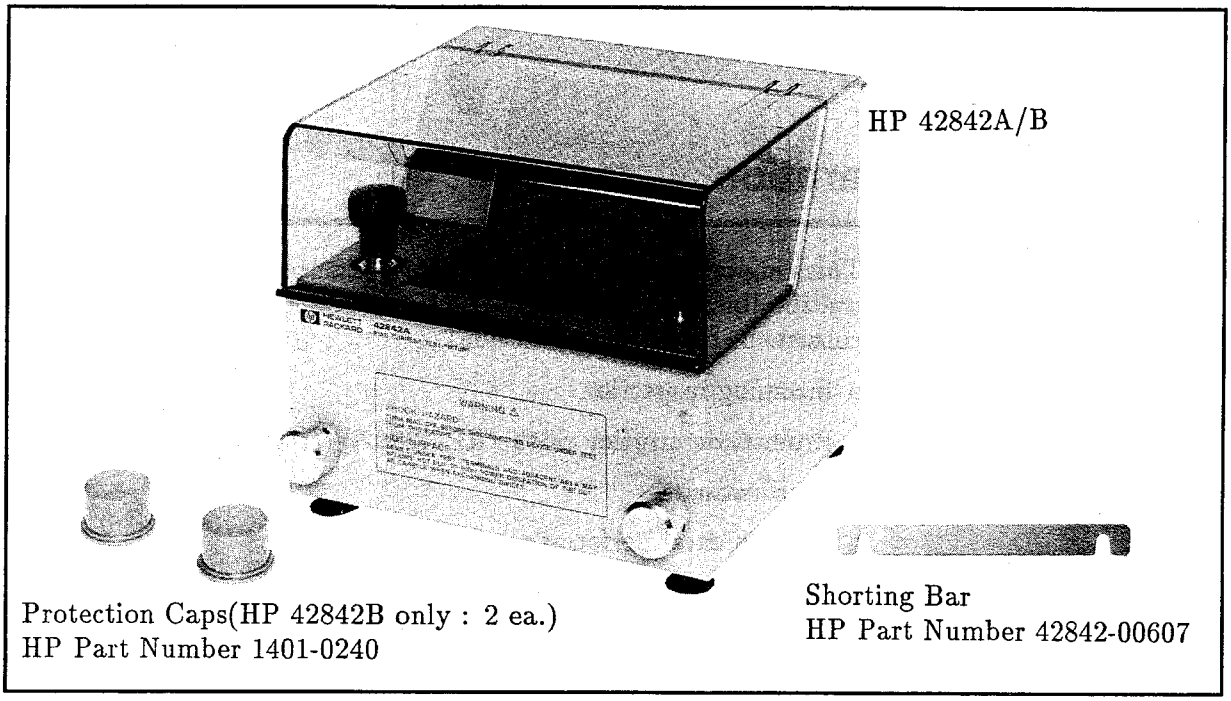


Figure 1-1. HP 42842A/B and Furnished Accessories

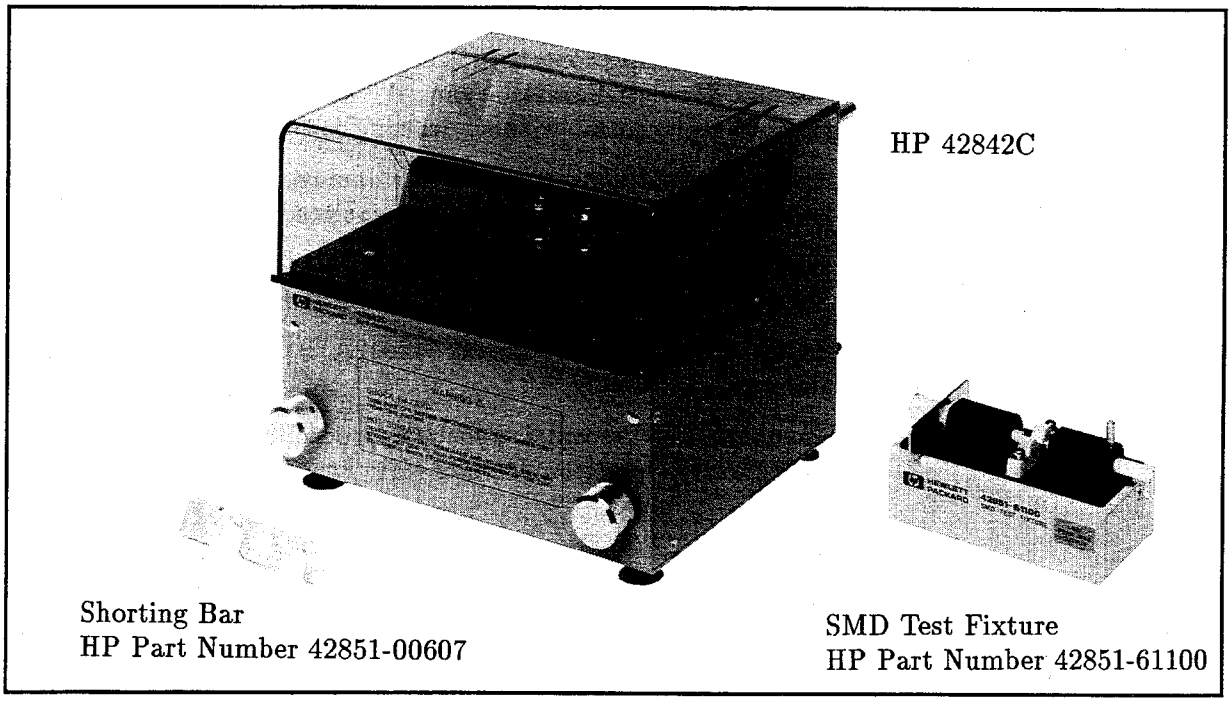


Figure 1-2. HP 42842C and Furnished Accessories

Description

Product Overview

The HP 42842A/B/C Bias Current Test Fixtures are designed for use with the HP 42841A Bias Current Source. They are connected directly to the bias current output terminals of the HP 42841A. The following features ensure accurate and safe DC current biased measurements.

- Transparent plastic protective cover allows the operator to visually check the device under test (DUT) easily while the DC bias current being applied.
- Decrease the back-e.m.f. (electromotive force) generated by the inductor to a level below 40 V within 0.1 seconds after opening the test fixture cover.
- Equipped temperature-responsive reed switch prevents the DUT from overheating.
- DC voltage applied across the DUT can be monitored at the DC V MONITOR BNC connector on the side panel.

The HP 42842A/B/C when used with a HP 42841A allows DC current bias measurements as follows:

- HP 4284A 20 A Configuration
  - HP 42842A or HP 42842B
  - HP 4284A Precision LCR Meter (20 Hz - 1 MHz)
  - HP 42841A Bias Current Source
  - HP 16048A Test Leads

  Allows 0.01 A to 20 A DC current bias measurements.

Warning

The HP 42842B can be used in a 20 A current bias system, but in this case, hazardous voltages may be present at the unused bias current input connector of the HP 42842B connected to the HP 42841A. Put the furnished red protective caps on the unused bias input connectors of the HP 42842B. DO NOT attempt to put a conductive object into the unused HP 42842B input connectors.

- HP 4284A 40 A Configuration
  - HP 42842B
  - HP 4284A Precision LCR Meter (20 Hz - 1 MHz)
  - HP 42841A Bias Current Source : 2 ea.
  - HP 42843A Bias Current Cable
  - HP 16048A Test Leads

  Allows 0.02 A to 40 A DC current bias measurements.
- HP 4285A 10 A Configuration
  - HP 42842C
  - HP 4285A Precision LCR Meter (75 kHz - 30 MHz)
  - HP 42841A Bias Current Source
  - HP 16048A Test Leads

  Allows 0.01 A to 10 A DC current bias measurements.

For the operation in use with the HP 4284A/4285A and HP 42841A, refer to the *HP 4284A Operation Manual* (HP Part Number 04284-90000), *HP 4285A Operation Manual* (HP Part Number 04285-90000) and *HP 42841A Operation Manual* (HP Part Number 42841-90000).

HP 42842A Overview

Figure 1-3 shows an overview of the HP 42842A. A description is given in the following paragraphs.

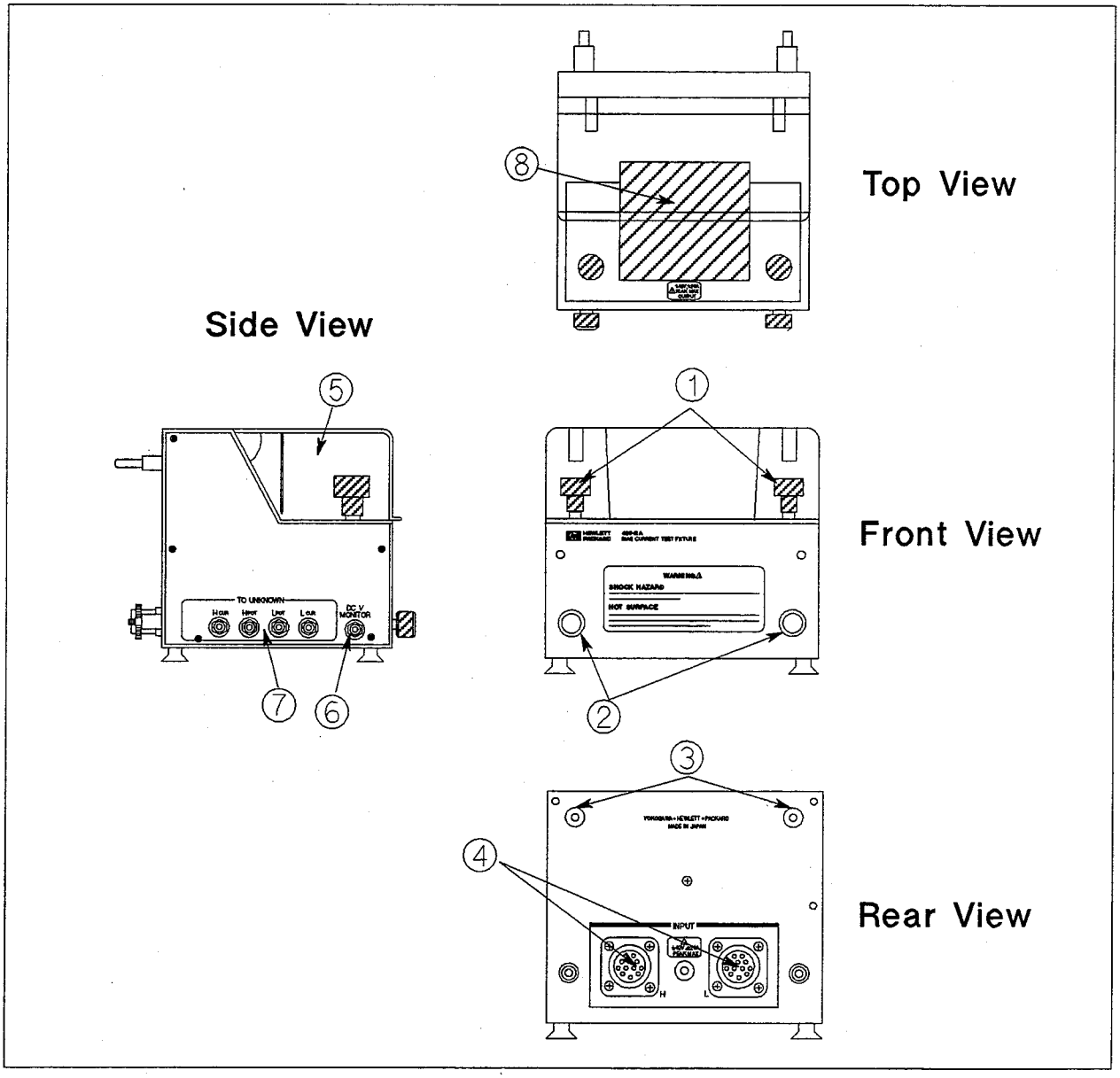


Figure 1-3. Overview of the HP 42842A

(1) Measurement Terminals

The Device Under Test (DUT) is connected to these terminals.

(2) Retaining Screws

These screws lock the HP 42842A on to the front of the HP 42841A.

(3) Guide Rods

These guide rods are used to mount the HP 42842A on to the front panel of the HP 42841A.

(4) DC Bias Current Input

These connectors are used to input the DC current bias, and it outputs the status information such as fixture connection, fixture over temperature, and fixture cover open or not open.

(5) Protective Cover

This cover prevents the operator from the electrical shock hazards. It is transparent, and the device under test (DUT) can be visually checked while the DC bias being applied.

(6) DC V MONITOR Terminal

This BNC connector is used to monitor the DC bias voltage applied across the device under test (DUT).

(7) TO UNKNOWN Terminals

These terminals are used to connect to the HP 4284A UNKNOWN terminals with the HP 16048A test leads.

(8) DUT Box

This box is where the DUT is placed.

HP 42842B Overview

Figure 1-4 shows an overview of the HP 42842B. A description is given in the following paragraphs.

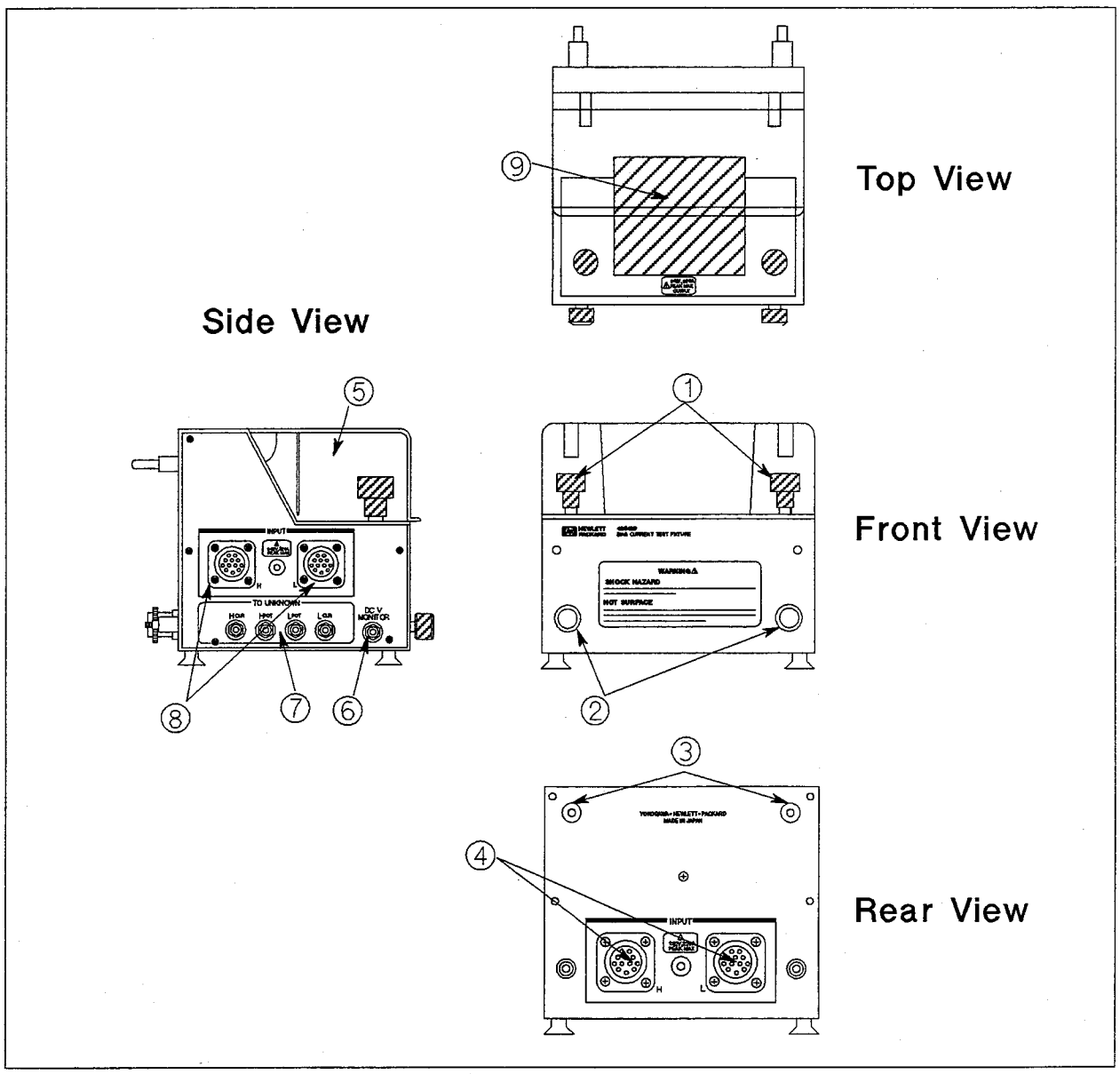


Figure 1-4. Overview of the HP 42842B

(1) Measurement Terminals

The Device Under Test (DUT) is connected to these terminals.

(2) Retaining Screws

These screws lock the HP 42842B on to the front of the HP 42841A.

(3) Guide Rods

These guide rods are used to mount the HP 42842B on to the front panel of the HP 42841A.

(4) DC Bias Current Input

These connectors are used to input the DC current bias, and it outputs the status information such as fixture connection, fixture over temperature, and fixture cover open or not open.

(5) Protective Cover

This cover prevents the operator from the electrical shock hazards. It is transparent, and the device under test (DUT) can be visually checked while the DC bias being applied.

(6) DC V MONITOR Terminal

This BNC connector is used to monitor the DC bias voltage applied across the device under test (DUT).

(7) TO UNKNOWN Terminals

These terminals are used to connect to the HP 4284A UNKNOWN terminals with the HP 16048A test leads.

(8) DC Bias Current Input

These connectors input the DC current bias. And it outputs the status information such as fixture connection, fixture over temperature, and fixture cover open or not.

(9) DUT Box

This box is where the DUT is placed.

HP 42842C Overview

Figure 1-5 shows an overview of the HP 42842C. A description is given in the following paragraphs.

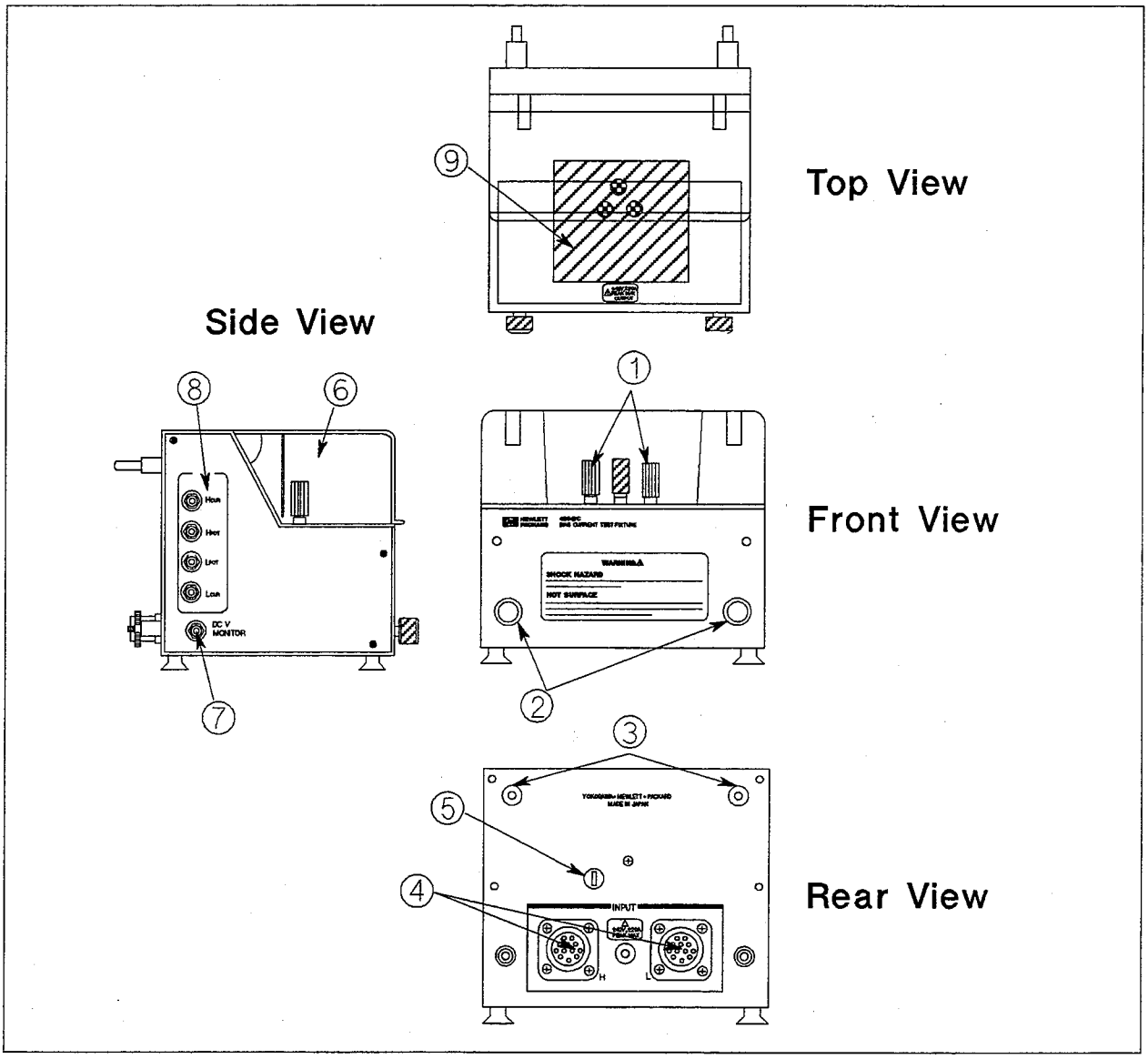


Figure 1-5. Overview of the HP 42842C

(1) Measurement Terminals

The Device Under Test (DUT) is connected to these terminals.

(2) Retaining Screws

These screws lock the HP 42842C on to the front of the HP 42841A.

(3) Guide Rods

These guide rods are used to mount the HP 42842C on to the front panel of the HP 42841A.

(4) DC Bias Current Input

These connectors are used to input the DC current bias, and it outputs the status information such as fixture connection, fixture over temperature, and fixture cover open or not open.

(5) Fuse

This is a fuse to prevent from DC current overflow.

(6) Protective Cover

This cover prevents the operator from the electrical shock hazards. It is transparent, and the device under test (DUT) can be visually checked while the DC bias being applied.

(7) DC V MONITOR Terminal

This BNC connector is used to monitor the DC bias voltage applied across the device under test (DUT).

(8) TO UNKNOWN Terminals

These terminals are used to connect to the HP 4285A UNKNOWN terminals with the HP 16048A test leads.

(9) DUT Box

This box is where the DUT is placed.

HP 42842C Option 001 Overview

A SMD test fixture (HP Part Number 42851-61100) to use for chip component measurements is furnished with the HP 42842C Option 001. The SMD test fixture is connected to the binding post measurement terminals of the HP 42842C. Figure 1-6 shows an overview of the SMD test fixture. A description is given in the following paragraphs.

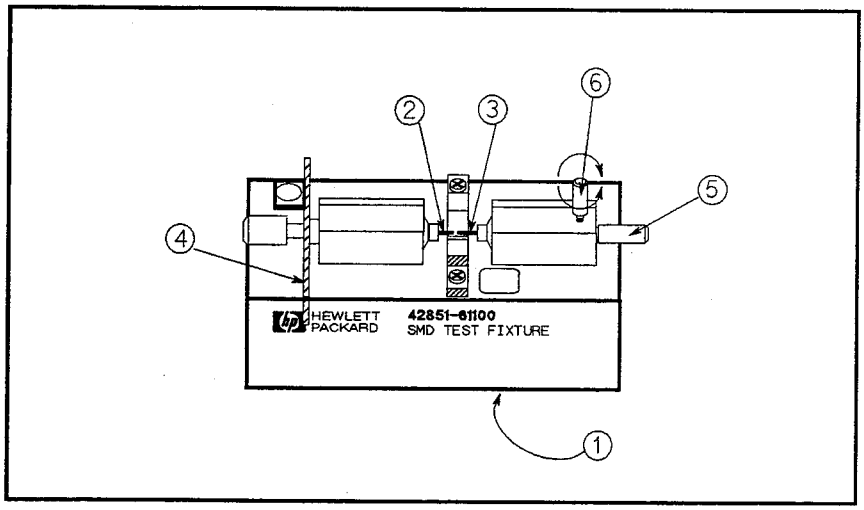


Figure 1-6. Overview of The SMD Test Fixture

(1) Binding Post Terminals (Bottom)

They are connected to the HP 42842C's binding post measurement terminals.

(2) Movable Contact Pin

This is a contact electrode which can be moved by the lever (4).

(3) Fixed Positioned Contact Pin

This is a contact electrode whose position is fixed. Its position can be adjusted by using the knobs (5) and (6).

(4) Movable Contact Pin Lever

This lever is used to move the contact pin (2), to connect a DUT.

(5) Fixed Positioned Contact Pin Knob

This knob is directly connected to the contact pin (3), and to adjust the position of the contact pin (3).

(6) Fixed Positioned Contact Pin Adjust Knob

This knob fixes the position of the contact pin (3).

To perform OPEN/SHORT error correction, the contact pins should be as shown in Figure 1-7.

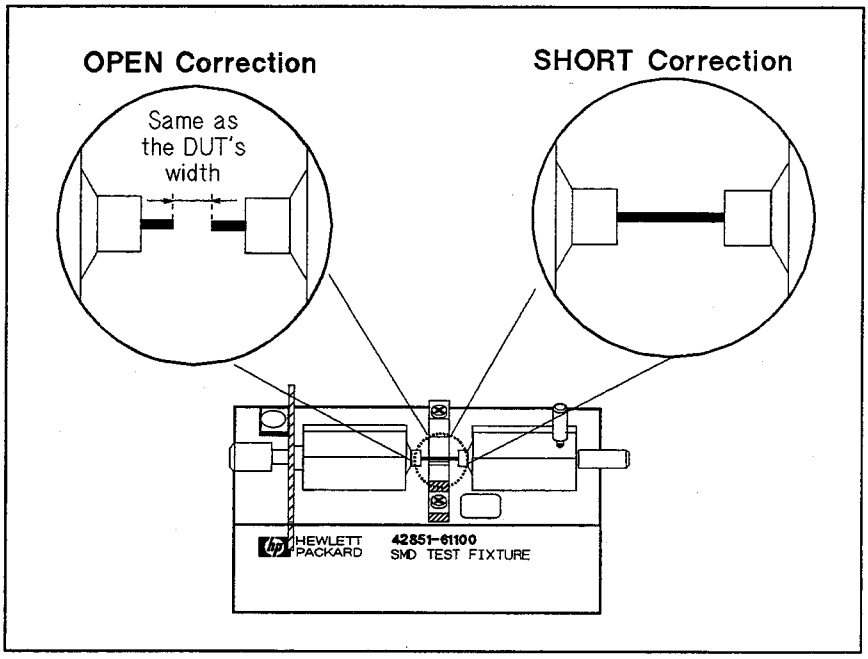


Figure 1-7. OPEN/SHORT Condition of The SMD Test Fixture

Caution on the HP 42842A/B/C Operation

The safety switch is equipped within the protective cover of each HP 42842A/B/C. This switch cuts off the circuit when the cover is opened. To set up a measurement condition such as bias level or perform measurement, the protective cover must be closed.

Warning 

Device under test, terminals and adjacent area may become hot due to high power dissipation of the DUT. Be careful when exchanging devices.

Warning 

Very high voltages (many kilovolts) are generated if the inductive circuit is broken while a high DC bias current is flowing. Stored energy is proportional to the square of the current flowing. Turn the bias off before disconnecting the device under test from the HP 42842A/B/C bias current test fixture.

Caution 

DO NOT place the DUT too close to the side panel of the HP 42842A/B/C's DUT box. DO NOT allow the temperature of the DUT to exceed 180°C, which may damage side panel of the HP 42842A/B/C's DUT box. The bottom plate of the DUT box is not damaged by heat below 180°C because it is made of heat-hardening resin.

Note 

When using the HP 42842C, the continuous running test time for a DUT is limited by the bias current and the ambient temperature (refer to "Continuous Running Time of HP 42842C" on page 1-16). If the HP 42842C is used exceeding this maximum time, the output of the 42841A will be automatically shut down to prevent the overheating.

Maintenance

If the protective cover or the DUT box becomes dirty, clean them with soft cloth or paper impregnated with alcohol or natural detergent.

Specifications

Complete specifications for the HP 42842A/B/C are listed below. When the HP 42842A/B/C is shipped from the factory, it meets these specifications.

Usable Frequency Range

HP 42842A/B	20 Hz to 1 MHz
HP 42842C	75 kHz to 30 MHz

Applicable DC bias Current

HP 42842A	20 A maximum
HP 42842B	40 A maximum
HP 42842C	10 A maximum
	2 A maximum when the SMD test fixture (HP PN 42851-61100) is used.

Measurement Terminals

2-terminal configuration

Measurable Components

HP 42842A/B	Smaller than 80(W) by 80(H) by 80(D)(mm)
HP 42842C	Smaller than 60(W) by 50(H) by 60(D)(mm)

Protection Function

Decrease the back-e.m.f. generated by inductor to a level below 40 V within 0.1 seconds when opening the test fixture protective cover.

When : DC bias current through the DUT is less than I_{max}.

$$I_{max} = \sqrt{\frac{2}{L}}\ [A]$$

Where : L is in Henrys.

Bias Voltage Monitor Output

BNC connector, output resistance approximately 10 kΩ

Furnished Accessories

HP 42842A

Operation and Service Manual	HP Part Number 42842-90001
Shorting Bar	HP Part Number 42842-00607

HP 42842B

Operation and Service Manual	HP Part Number 42842-90001
Shorting Bar	HP Part Number 42842-00607
Protection Caps (2 ea.)	HP Part Number 1401-0240

HP 42842C

Operation and Service Manual	HP Part Number 42842-90001
Shorting Bar	HP Part Number 42851-00607
SMD Test Fixture (Option 001 only)	HP Part Number 42851-61100

Operation Temperature Range

HP 42842A/B	5°C to 45°C, RH ≤ 95% at 40°C
HP 42842C	0°C to 45°C, RH ≤ 95% at 40°C

Dimensions

HP 42842A	216(W) by 173(H) by 235(D)(mm)
HP 42842B	237(W) by 173(H) by 235(D)(mm)
HP 42842C	213(W) by 173(H) by 235(D)(mm)

Weight

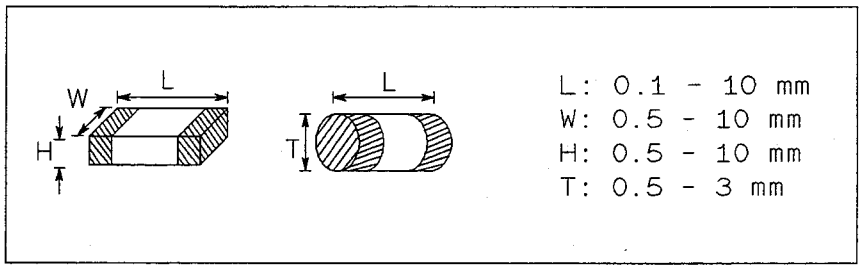
HP 42842A	approximately 2.5 kg
HP 42842B	approximately 3 kg
HP 42842C	approximately 3.1 kg

HP 42842C Option 001

SMD test fixture (HP PN 42851-61100) for chip components is furnished. The followings are specifications of the SMD test fixture.

Usable Frequency Range:	75 kHz to 30 MHz
Applicable DC Bias Current:	2 A maximum
Measurement Terminals:	2 terminal configuration

Measurable Components:



Dimensions:	122(W) by 60(H) by 58(D)(mm)
Weight:	approximately 145 g

Supplemental Performance Characteristics

Residual Parameters

The following table lists uncertainty values for the residual parameter when OPEN / SHORT correction functions are performed.

Table 1-1. Residual Parameters of HP 42842A/B/C

	HP 42842A	HP 42842B	HP 42842C	HP 42842C with SMD Fixture
Residual inductance	± 150 nH	± 150 nH	± 40 nH	± 10 nH
Residual resistance	$\pm(4+60\sqrt{f_m})$ mΩ	$\pm(4+60\sqrt{f_m})$ mΩ	$\pm(2+7\sqrt{f_m})$ mΩ	± 5 mΩ
Stray capacitance	± 0.03 pF	± 0.06 pF	± 0.05 pF	± 0.03 pF
f_m = measurement frequency [MHz]				

DC Bias Voltage Monitor Accuracy

Voltage monitor accuracy is as follows:

HP 42842A/B $\pm(0.2\%+I_{bias}\times 3\ m\Omega+5\ mV)$

HP 42842C $\pm(0.2\%+I_{bias}\times 5\ m\Omega)$

when using with the SMD Test Fixture;

$\pm(0.2\%+I_{bias}\times 20\ m\Omega)$

When, input impedance of the digital voltmeter $\geq$ 10 MΩ

Where : I_{bias} is DC bias current [A]

Continuous Running Time of HP 42842C

The maximum continuous running time is limited by the ambient temperature and the bias current. The graph in Figure 1-8 gives the relationship between the ambient temperature and bias current to the maximum continuous running time. This figure is not considered to the heating by DUT.

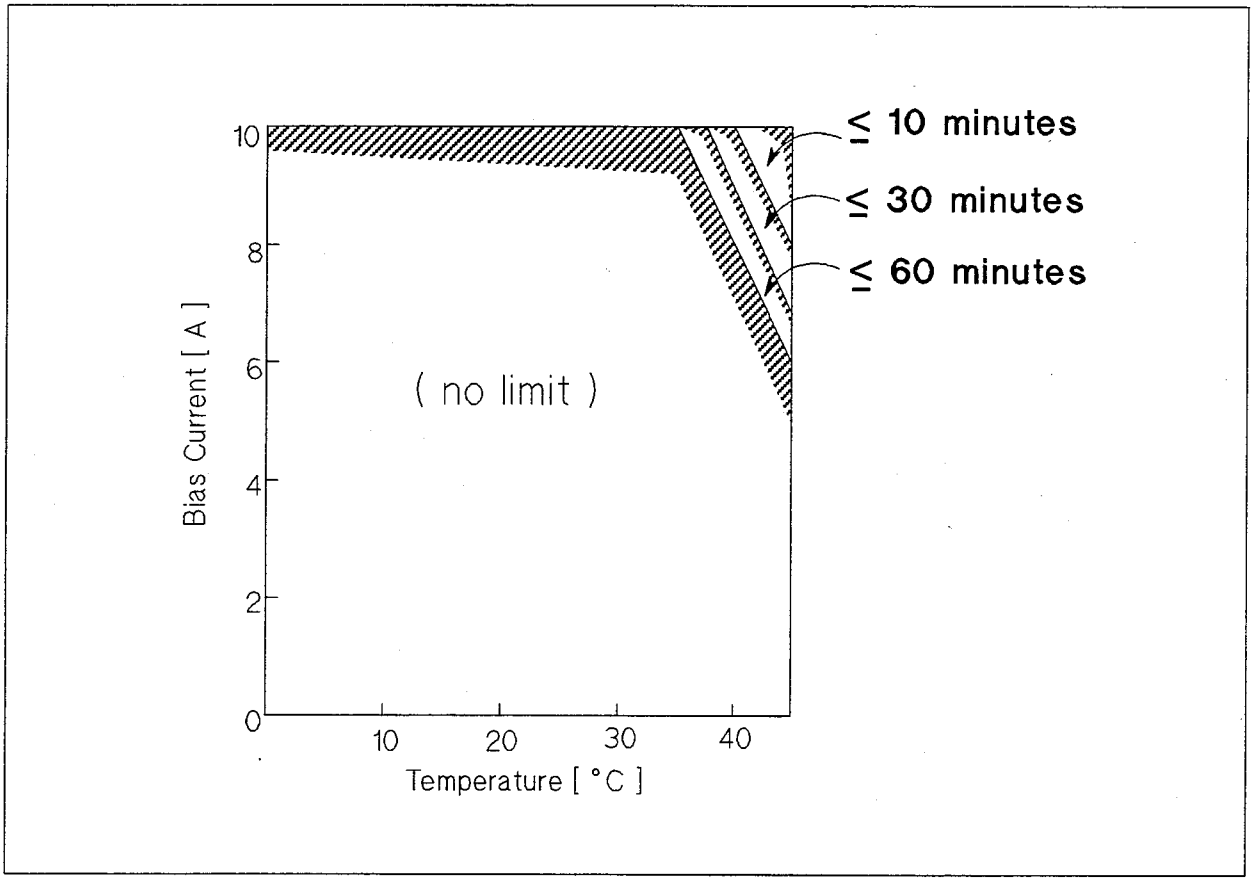


Figure 1-8. Maximum Continuous Running Time of the HP 42842C

2

HP 42842A/B/C Service

Introduction

This chapter consists of following three parts service information.

- HP 42842A Bias Current Test Fixture
- HP 42842B Bias Current Test Fixture
- HP 42842C Bias Current Test Fixture

HP 42842A Service

Table 2-1, Table 2-2 and Table 2-3 list the replaceable mechanical parts. Table 2-4, Table 2-5 and Table 2-6 show the cable assemblies and their connections. Figure 2-1 shows the component locations. Figure 2-2 shows the schematic diagram. Table 2-7 lists the replaceable electrical parts.

Parts listed on this manual can be ordered from your nearest Hewlett-Packard Office. Ordering information should include the HP part number and the quantity required.

Caution

When you remove the Fasten Connector, pull the connector up while holding the center of the connector housing with a pair of pliers, as shown in the following figure. If you remove the Fasten Connector by force, the connector may be damaged.

The following figure shows the fasten connector mechanism. When a tub is inserted to a receptacle, the receptacle's hook catches the tub's lock hole and the connection becomes tight. When the center of the connector housing is held, the release lever is pushed which releases the hook from the lock hole, and the connector can be removed easily.

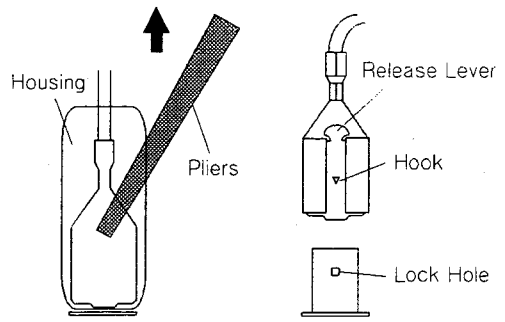


Table 2-1. Replaceable Mechanical Parts List (1 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-24002	2	Washer
2	2950-0054	2	Nut
3	0370-3211	2	Knob
4	42842-40002	1	Bezel
5	42842-00605 42842-00606	1 1	Plate (inner) Plate (outer)
6	0510-87101	1	Label Caution
7	42842-40001	1	Cover
8	42842-24003 0510-0015	2 2	Pin Ring Retaining

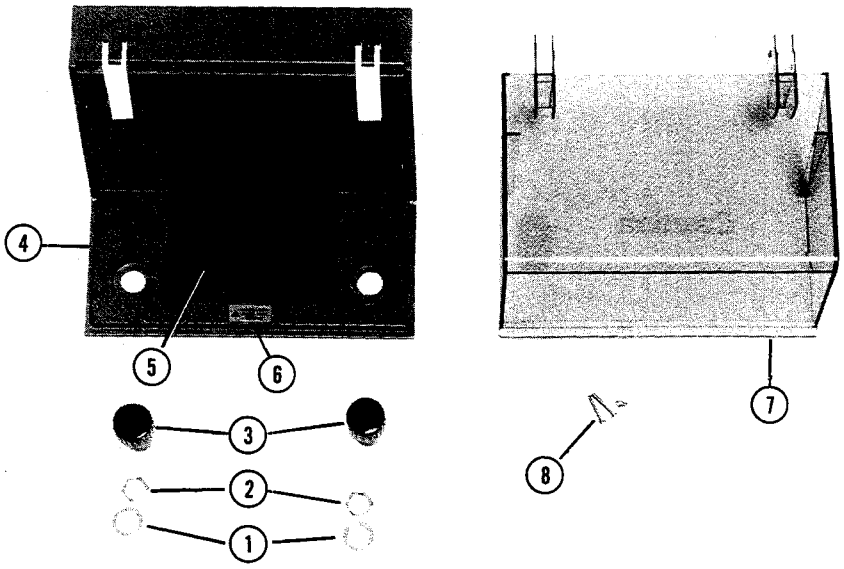


Table 2-2. Replaceable Mechanical Parts List (2 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-24001	2	Binding Post
2	42842-66501	1	Board Assembly
3	3103-0150 42842-68001 3050-0891 0515-1550	1 1 2 2	Switch Thermal +55 °C Cable Assembly Washer Nut
4	42842-04008 3050-0891 0515-1552	1 4 4	Cover Bottom Washer Screw
5	42842-04005 0515-0914	1 5	Case Side Screw
6	42842-04001 42842-04002	1 1	Case (English) Case (Japanese)
7	3101-2979 42842-01201	1 1	Switch Angle
8	42842-04007 0515-0914	1 5	Case Side Screw
9	42842-21004 3030-0007 42842-23001 0510-0083 42842-21005	2 4 2 2 2	Knob Screw Lock Shaft Ring Retaining Bushing
10	42842-01203 0535-0031	2 2	Angle Nut
11	42842-00601 1400-1048 0515-0914	1 1 3	Plate Shield Edge Saddle Screw

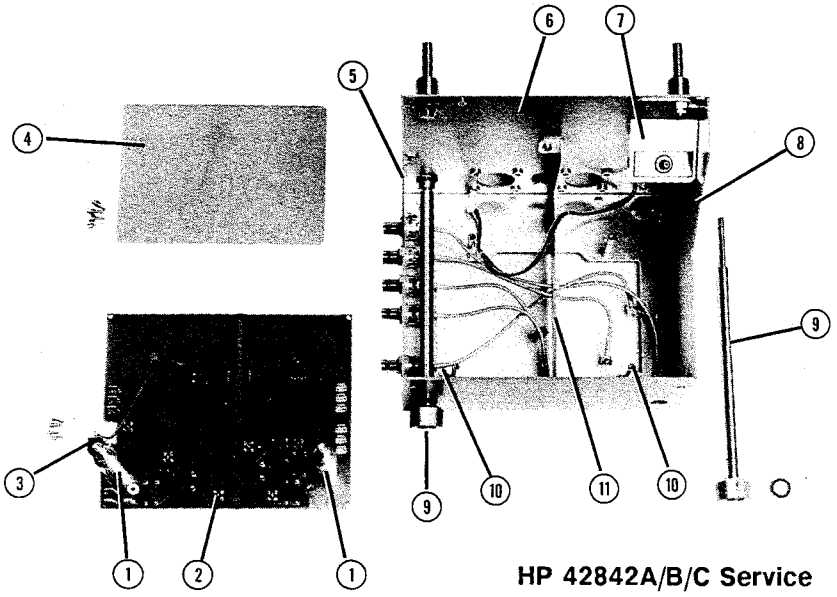


Table 2-3. Replaceable Mechanical Parts List (3 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-21001	2	Guide
	2190-0054	2	Washer
	2950-0054	2	Nut
2	42842-21002	2	Guide
	2190-0016	2	Washer
	2950-0043	2	Nut
3	0515-1552	2	Screw
	3050-0819	2	Washer
4	16015-8522	4	Foot Rubber
	0515-1550	4	Screw
5	1252-3228	2	Connector 12 Pin
	0515-0885	8	Screw
6	42842-21003	1	Guide
	2190-0016	1	Washer
	2950-0043	1	Nut
7	1250-0102	5	Connector BNC
	2190-0054	5	Washer
	2950-0054	5	Nut

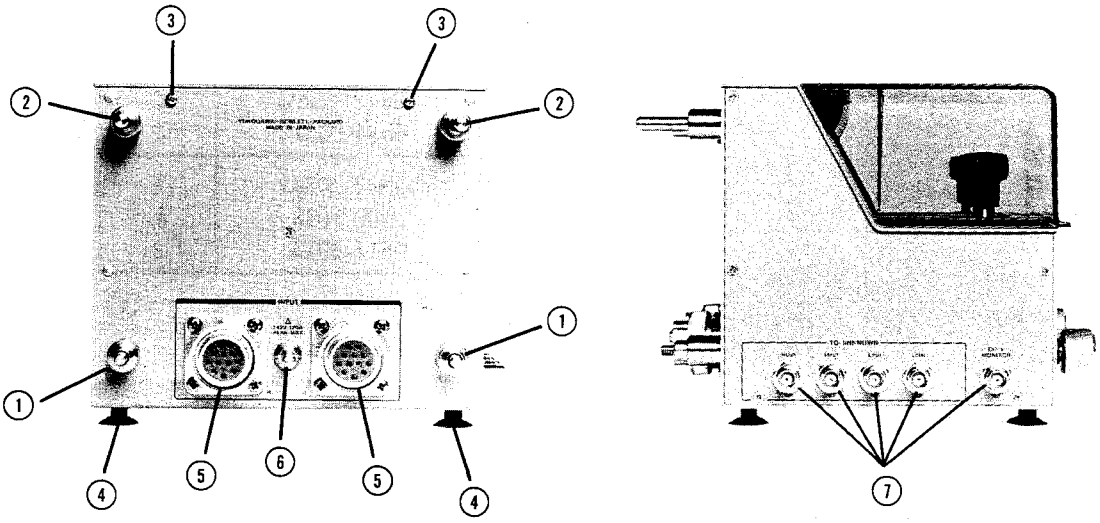


Table 2-4.
Cable Assemblies Connected to the Rear Panel INPUT

Connector	Pin Number	Cable Assembly	Connection
H	1	BRN of 42842-61608	to J8
H	2	RED of 42842-61608	to J8
H	3	ORN of 42842-61608	to J8
H	4	YEL of 42842-61608	to J8
H	5	GRN of 42842-61608	to J8
H	6	BLU of 42842-61608	to J8
H	7	BLK of 42842-61613	to J18
H	8	BLK of 42842-61613	to J19
H	9	BLK of 42842-61613	to J20
H	10	WHT of 42842-61613	to J15
H	11	WHT of 42842-61613	to J16
H	12	WHT of 42842-61613	to J17
L	1	BRN of 42842-61610	to J10
L	2	RED of 42842-61610	to J10
L	3	ORN of 42842-61610	to J10
L	4	YEL of 42842-61610	to J10
L	5	Shield of 42842-61606	to J6
L	6	BLK of 42842-61614	to J33
L	7	BLK of 42842-61614	to J34
L	8	BLK of 42842-61614	to J35
L	9	Center of 42842-61606	to J6
L	10	WHT of 42842-61614	to J36
L	11	WHT of 42842-61614	to J37
L	12	WHT of 42842-61614	to J38

Part Number	Description	Qty
42842-61608	Cable Assembly 6 Pin	1
42842-61613	6 Cables Set	1
42842-61610	Cable Assembly 4 Pin	1
42842-61606	RF Cable Assembly	1
42842-61614	6 Cables Set	1

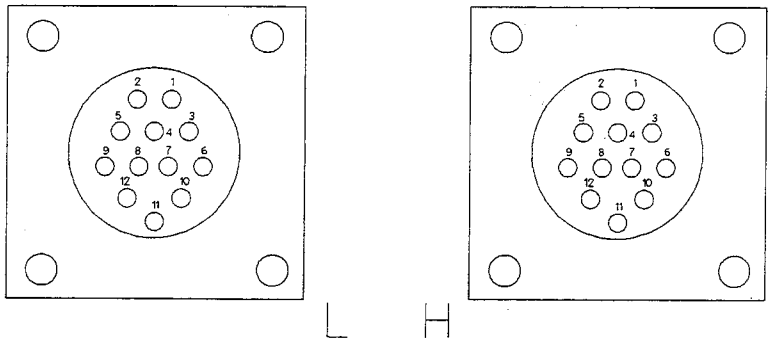


Table 2-5. Coaxial Cable Assemblies

Marker	Connection	Part Number	Qty
"1"	Hcur to J1	42842-61601	1
"2"	Hpot to J2	42842-61602	1
"3"	Lpot to J3	42842-61603	1
"4"	Lcur to J4	42842-61604	1
"5"	DC V MONITOR to J5	42842-61605	1

Table 2-6. Cable Assembly Connected to the Switch

Pin Number	Cable Assembly	Connection
8	BRN of 42842-61612	to J12
4	RED of 42842-61612	to J12
3	ORN of 42842-61612	to J12
7	YEL of 42842-61612	to J12

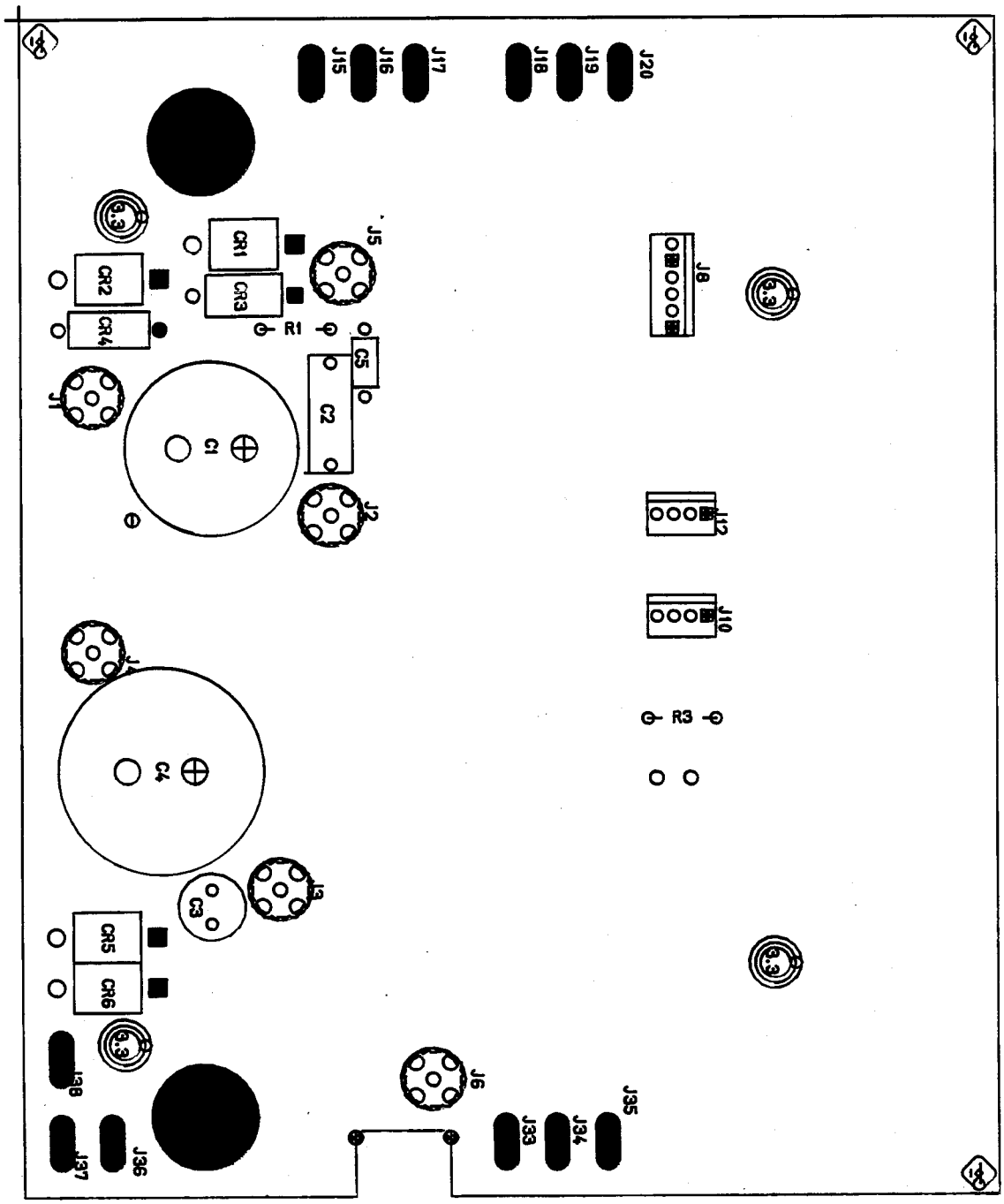


Figure 2-1. Component Locations

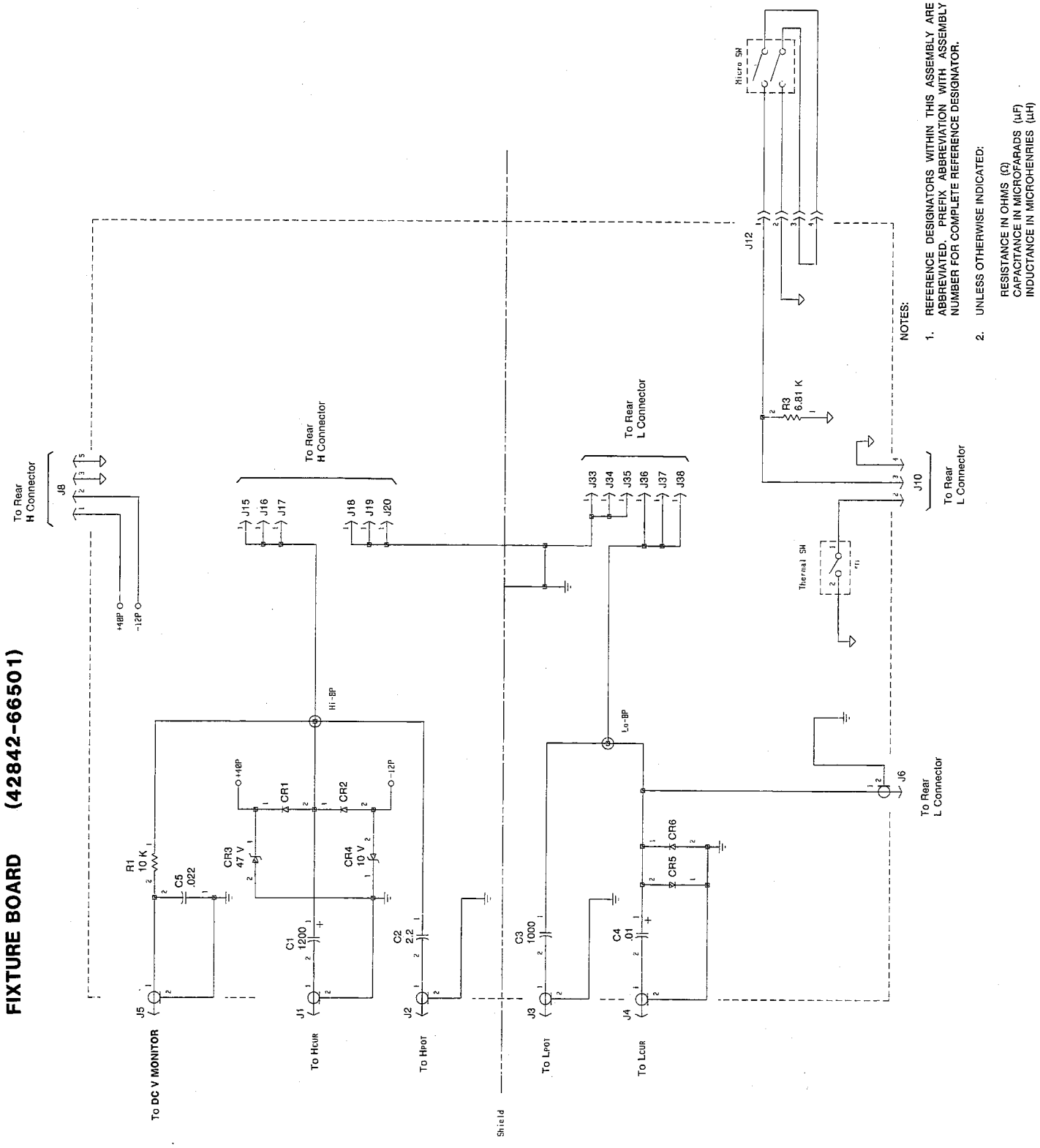


Figure 2-2. Schematic Diagram

Table 2-7. Replaceable Parts

Reference Designator	Part Number	Qty	Description
	42842-66501	1	FIXTURE BOARD ASSEMBLY
C1	0180-4070	1	CAPACITOR FXD. 1200 μF 63 V
C2	0160-6811	1	CAPACITOR FXD. 2.2 μF
C3	0180-4099	1	CAPACITOR FXD. 1000 μF 6.3 V
C4	0180-3180	1	CAPACITOR FXD. .01 F 16 V
C5	0160-4833	1	CAPACITOR FXD. .022 F
CR1	1901-1081	4	DIODE 100 V 3 A
CR2	1901-1081		DIODE 100 V 3 A
CR3	1902-1540	1	DIODE ZENNER
CR4	1902-1525	1	DIODE ZENNER
CR5	1901-1081		DIODE 100 V 3 A
CR6	1901-1081		DIODE 100 V 3 A
J1 to J6	1250-0257	6	CONNECTOR RF SMB
J8	1251-6527	1	CONNECTOR 6 PIN
J10	1251-5862	2	CONNECTOR 4 PIN
J12	1251-5862		CONNECTOR 4 PIN
J15 to J20	1252-3214	12	CONNECTOR SGL
J33 ot J38	1252-3214		CONNECTOR SGL
R1	0757-0442	1	RESISTOR FXD. 10 kΩ 1%
R3	0757-0439	1	RESISTOR FXD. 6.81 kΩ 1 %

HP 42842B Service

This section gives a service information for the HP 42842B Bias Current Fixture.

Table 2-8, Table 2-9 and Table 2-10 list the replaceable mechanical parts. Table 2-11, Table 2-12, Table 2-13 and Table 2-14 show the cable assemblies and their connections. Figure 2-3 shows the component locations. Figure 2-4 shows the schematic diagram. Table 2-15 lists the replaceable electrical parts.

Parts listed on this manual can be ordered from your nearest Hewlett-Packard Office. Ordering information should include the HP part number and the quantity required.

Caution

When you remove the Fasten Connector, pull the connector up while holding the center of the connector housing with a pair of pliers, as shown in the following figure. If you remove the Fasten Connector by force, the connector may be damaged.

The following figure shows the fasten connector mechanism. When a tub is inserted to a receptacle, the receptacle's hook catches the tub's lock hole and the connection becomes tight. When the center of the connector housing is held, the release lever is pushed which releases the hook from the lock hole, and the connector can be removed easily.

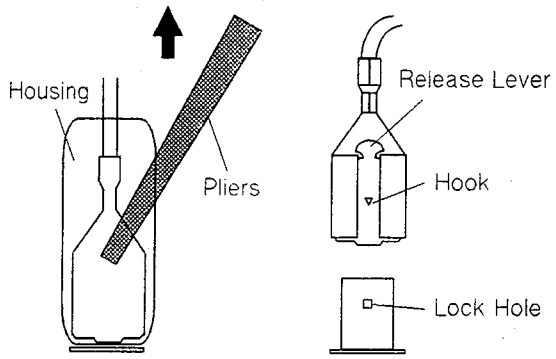


Table 2-8. Replaceable Mechanical Parts List (1 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-24002	2	Washer
2	2950-0054	2	Nut
3	0370-3211	2	Knob
4	42842-40002	1	Bezel
5	42842-00605 42842-00606	1 1	Plate (inner) Plate (outer)
6	0510-87101	1	Label Caution
7	42842-40001	1	Cover
8	42842-24003 0510-0015	2 2	Pin Ring Retaining

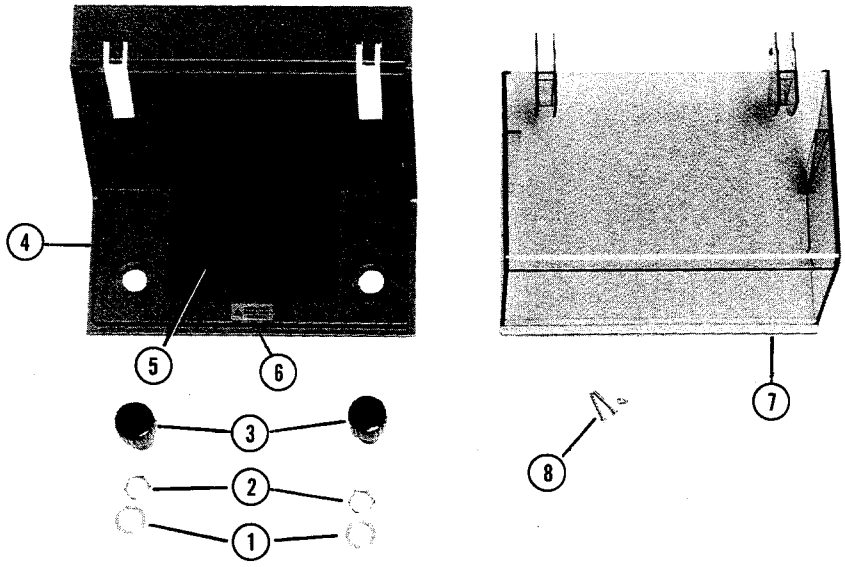


Table 2-9. Replaceable Mechanical Parts List (2 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-24001	2	Binding Post
2	42842-66501	1	Board Assembly
3	3103-0150	1	Switch Thermal +55 °C
	42842-68001	1	Cable Assembly
	3050-0891	2	Washer
	0515-1550	2	Nut
4	42842-00604	1	Plate Shield
	0515-1550	2	Screw
5	42842-04008	1	Cover Bottom
	3050-0891	4	Washer
	0515-1552	4	Screw
6	42842-04006	1	Case Side
	0515-0914	5	Screw
7	42842-00603	1	Plate Shield
	0515-0914	2	Screw
8	42842-04003	1	Case (English)
	42842-04004	1	Case (Japanese)
9	3101-2979	1	Switch
	42842-01201	1	Angle
10	42842-04007	1	Case
	0515-0914	5	Screw
11	42842-21004	2	Knob
	3030-0007	4	Screw Lock
	42842-23001	2	Shaft
	0510-0083	2	Ring Retaining
	42842-21005	2	Bushing
12	42842-01203	2	Angle
	0535-0031	2	Nut
13	42842-00601	1	Plate Shield
	1400-1048	1	Edge Saddle
	0515-0914	3	Screw

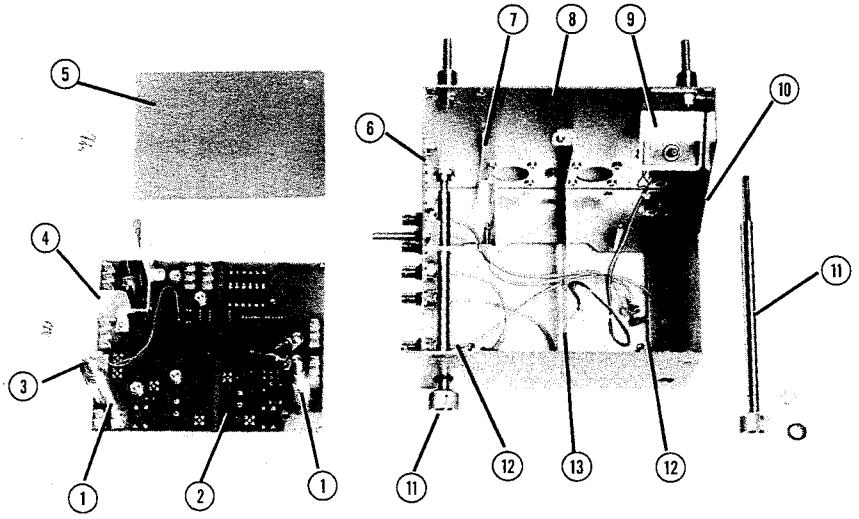
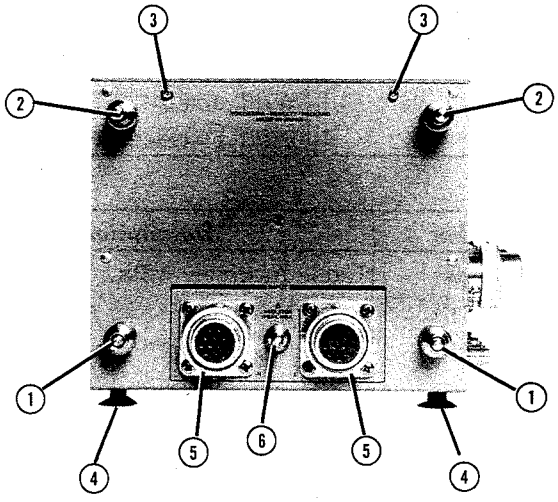


Table 2-10. Replaceable Mechanical Parts List (3 of 3)

Reference Designator	Part Number	Qty	Description
1	42842-21001	2	Guide
	2190-0054	2	Washer
	2950-0054	2	Nut
2	42842-21002	2	Guide
	2190-0016	2	Washer
	2950-0043	2	Nut
3	0515-1552	2	Screw
	3050-0819	2	Washer
4	16015-8522	4	Foot Rubber
	0515-1550	4	Screw
5	1252-3228	4	Connector 12 Pin
	0515-0885	16	Screw
6	42842-21003	1	Guide
	2190-0016	1	Washer
	2950-0043	1	Nut
7	1250-0102	5	Connector BNC
	2190-0054	5	Washer
	2950-0054	5	Nut



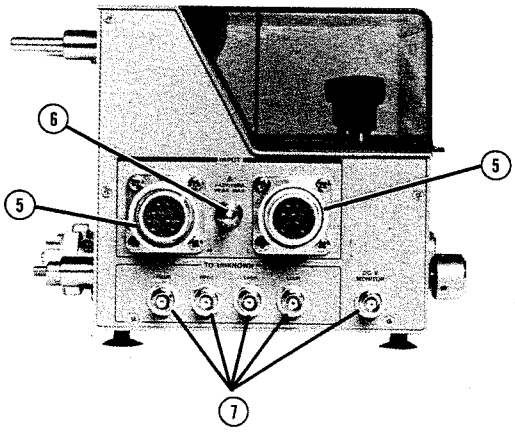


Table 2-11.
Cable Assemblies Connected to the Rear Panel INPUT

Connector	Pin Number	Cable Assembly	Connection
H	1	BRN of 42842-61608	to J8
H	2	RED of 42842-61608	to J8
H	3	ORN of 42842-61608	to J8
H	4	YEL of 42842-61608	to J8
H	5	GRN of 42842-61608	to J8
H	6	BLU of 42842-61608	to J8
H	7	BLK of 42842-61613	to J18
H	8	BLK of 42842-61613	to J19
H	9	BLK of 42842-61613	to J20
H	10	WHT of 42842-61613	to J15
H	11	WHT of 42842-61613	to J16
H	12	WHT of 42842-61613	to J17
L	1	BRN of 42842-61610	to J10
L	2	RED of 42842-61610	to J10
L	3	ORN of 42842-61610	to J10
L	4	YEL of 42842-61610	to J10
L	5	Shield of 42842-61606	to J6
L	6	BLK of 42842-61616	to J27
L	7	BLK of 42842-61616	to J28
L	8	BLK of 42842-61616	to J29
L	9	Center of 42842-61606	to J6
L	10	WHT of 42842-61616	to J30
L	11	WHT of 42842-61616	to J31
L	12	WHT of 42842-61616	to J32

Part Number	Description	Qty
42842-61608	Cable Assembly 6 Pin	1
42842-61613	6 Cables Set	1
42842-61610	Cable Assembly 4 Pin	1
42842-61606	RF Cable Assembly	1
42842-61616	6 Cables Set	1

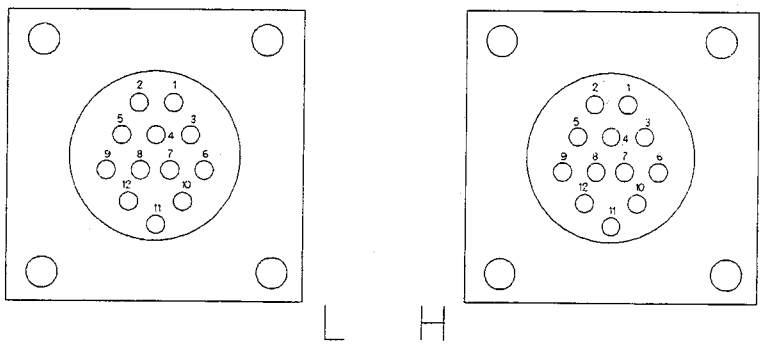


Table 2-12.
Cable Assemblies Connected to the Side Panel INPUT

Connector	Pin Number	Cable Assembly	Connection
H	1	BRN of 42842-61609	to J9
H	2	RED of 42842-61609	to J9
H	3	ORN of 42842-61609	to J9
H	4	YEL of 42842-61609	to J9
H	5	GRN of 42842-61609	to J9
H	6	BLU of 42842-61609	to J9
H	7	BLK of 42842-61615	to J21
H	8	BLK of 42842-61615	to J22
H	9	BLK of 42842-61615	to J23
H	10	WHT of 42842-61615	to J24
H	11	WHT of 42842-61615	to J25
H	12	WHT of 42842-61615	to J26
L	1	BRN of 42842-61611	to J11
L	2	RED of 42842-61611	to J11
L	3	ORN of 42842-61611	to J11
L	4	YEL of 42842-61611	to J11
L	5	Shield of 42842-61607	to J7
L	6	BLK of 42842-61617	to J27
L	7	BLK of 42842-61617	to J28
L	8	BLK of 42842-61617	to J29
L	9	Center of 42842-61607	to J7
L	10	WHT of 42842-61617	to J30
L	11	WHT of 42842-61617	to J31
L	12	WHT of 42842-61617	to J32

Part Number	Description	Qty
42842-61608	Cable Assembly 6 Pin	1
42842-61613	6 Cables Set	1
42842-61611	Cable Assembly 4 Pin	1
42842-61607	RF Cable Assembly	1
42842-61617	6 Cables Set	1

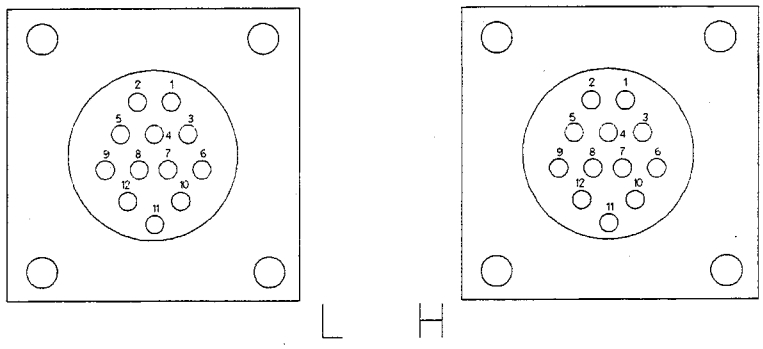


Table 2-13. Coaxial Cable Assemblies

Marker	Connection	Part Number	Qty
"1"	Hcur to J1	42842-61601	1
"2"	Hpot to J2	42842-61602	1
"3"	Lpot to J3	42842-61603	1
"4"	Lcur to J4	42842-61604	1
"5"	DC V MONITOR to J5	42842-61605	1

Table 2-14. Cable Assembly Connected to the Switch

Pin Number	Cable Assembly	Connection
8	BRN of 42842-61612	to J12
4	RED of 42842-61612	to J12
3	ORN of 42842-61612	to J12
7	YEL of 42842-61612	to J12

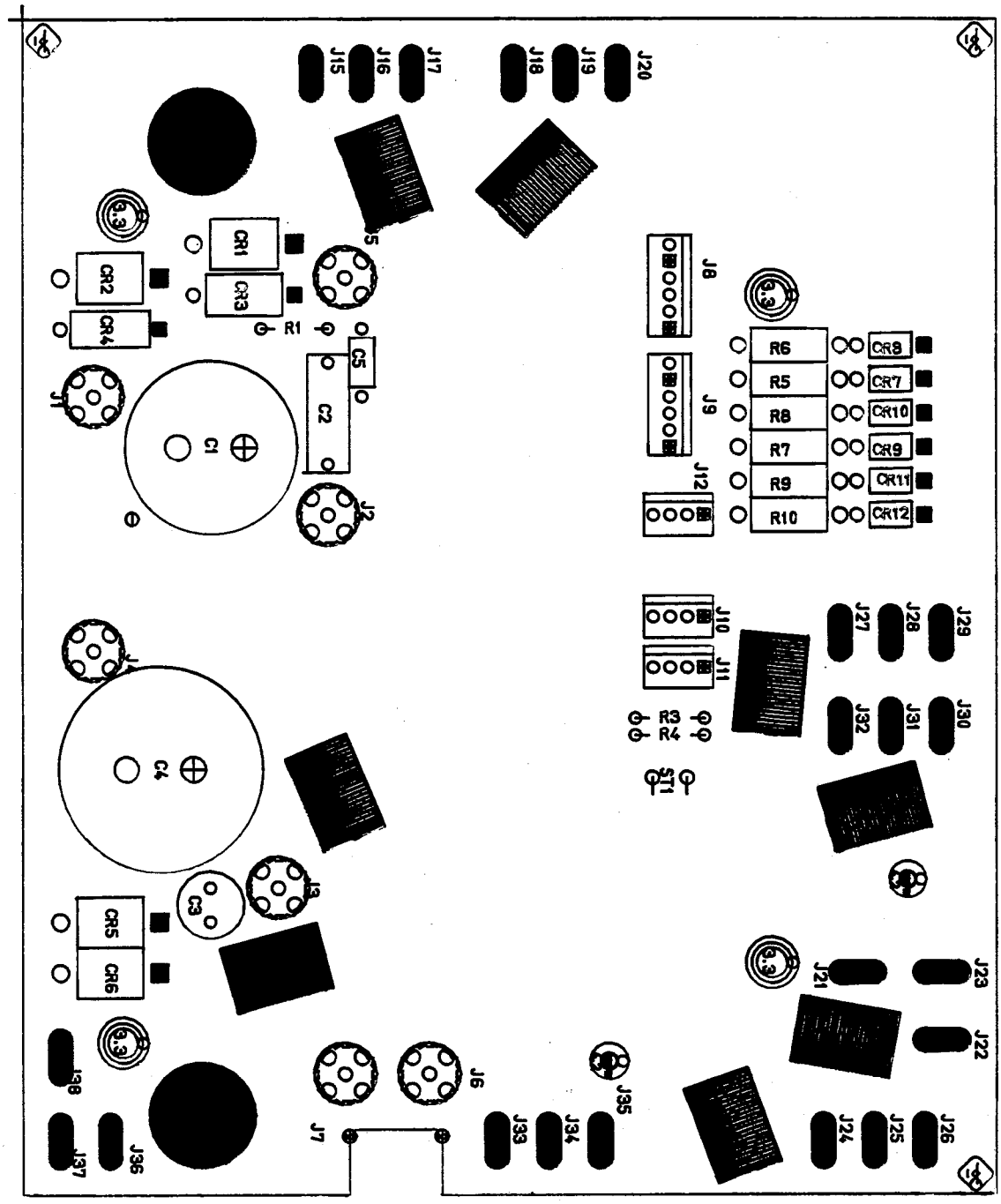


Figure 2-3. Component Locations

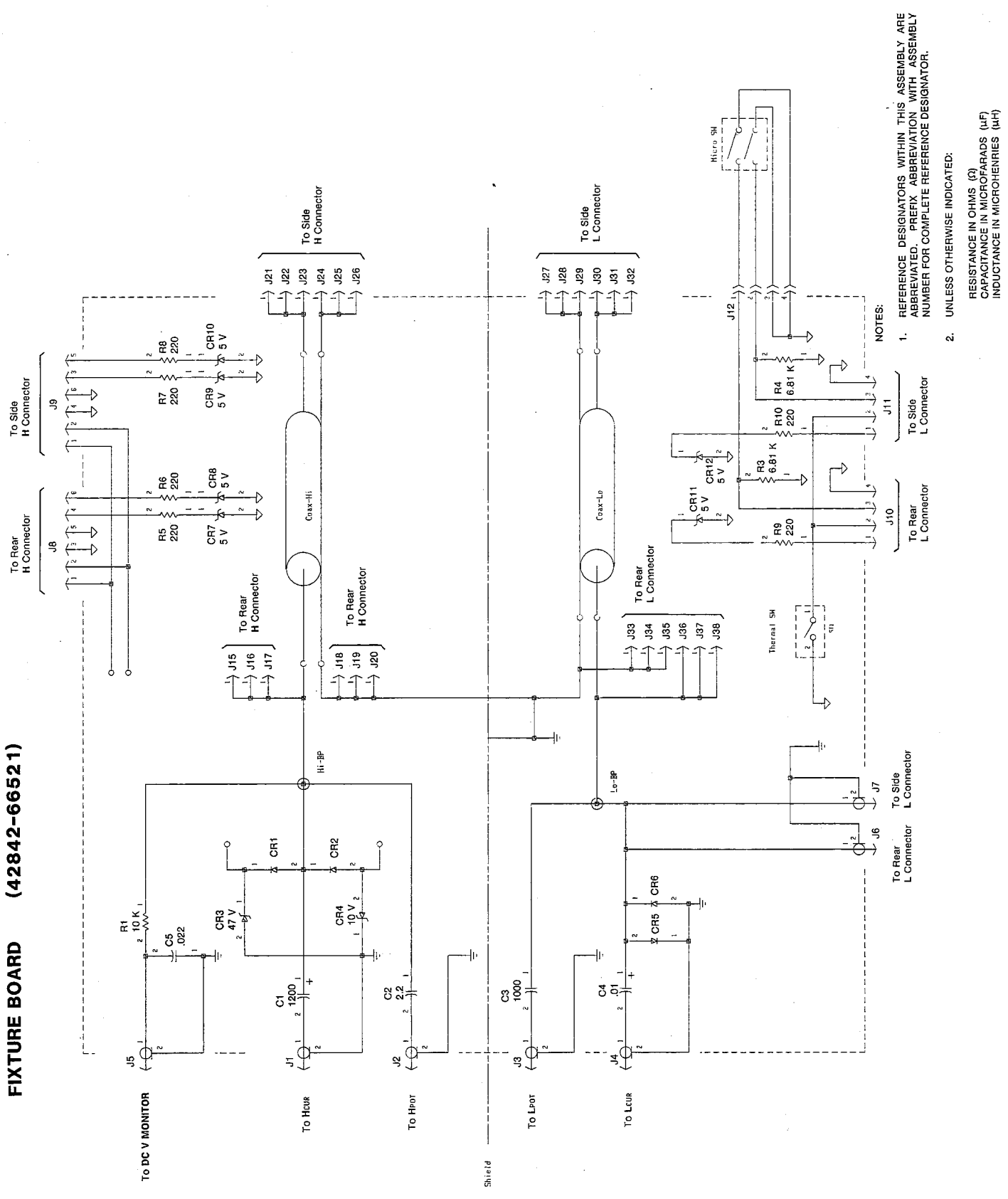


Figure 2-4. Schematic Diagram

Table 2-15. Replaceable Parts

Reference Designator	Part Number	Qty	Description
	42842-66521	1	FIXTURE BOARD ASSEMBLY
C1	0180-4070	1	CAPACITOR FXD. 1200 μF 63 V
C2	0160-6811	1	CAPACITOR FXD. 2.2 μF
C3	0180-4099	1	CAPACITOR FXD. 1000 μF 6.3 V
C4	0180-3180	1	CAPACITOR FXD. .01 F 16 V
C5	0160-4833	1	CAPACITOR FXD. .022 μF
CR1	1901-1081	4	DIODE 100 V 3 A
CR2	1901-1081		DIODE 100 V 3 A
CR3	1902-1540	1	DIODE ZENNER
CR4	1902-1525	1	DIODE ZENNER
CR5	1901-1081		DIODE 100 V 3 A
CR6	1901-1081		DIODE 100 V 3 A
CR7 to CR12	1902-0579	6	DIODE ZENNER 5.1 V
J1 to J7	1250-0257	7	CONNECTOR RF SMB
J8	1251-6527	2	CONNECTOR 6 PIN
J9	1251-6527		CONNECTOR 6 PIN
J10	1251-5862	3	CONNECTOR 4 PIN
J11	1251-5862		CONNECTOR 4 PIN
J12	1251-5862		CONNECTOR 4 PIN
J15 to J38	1252-3214	24	CONNECTOR SGL
R1	0757-0442	1	RESISTOR FXD. 10 kΩ 1%
R3	0757-0439	2	RESISTOR FXD. 6.81 kΩ 1 %
R4	0757-0439		RESISTOR FXD. 6.81 kΩ 1 %
R5 to R10	0686-2215	6	RESISTOR FXD. 220 Ω 5%

HP 42842C Service

This chapter gives a service information for the HP 42842C Bias Current Fixture.

Table 2-16, Table 2-17, Table 2-18 and Table 2-19 list the replaceable mechanical parts. Figure 2-5, Table 2-20, Figure 2-6, Table 2-21 and Table 2-22 show the cable assemblies and their connections. Figure 2-7, Figure 2-8 and Table 2-23 show the replaceable mechanical parts for OPTION 001 SMD Test Fixture.

Parts listed on this manual can be ordered from your nearest Hewlett-Packard Office. Ordering information should include the HP part number and the quantity required.

Caution

When you remove the Fasten Connector, pull the connector up while holding the center of the connector housing with a pair of pliers, as shown in the following figure. If you remove the Fasten Connector by force, the connector may be damaged.

The following figure shows the fasten connector mechanism. When a tub is inserted to a receptacle, the receptacle's hook catches the tub's lock hole and the connection becomes tight. When the center of the connector housing is held, the release lever is pushed which releases the hook from the lock hole, and the connector can be removed easily.

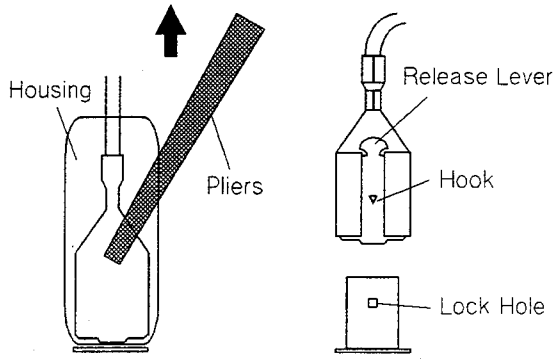


Table 2-16. Replaceable Mechanical Parts List (1 of 4)

Reference Designator	Part Number	Qty.	Description
1	42842-00616 0515-0914	1 2	Plate Screw
2	42842-25011	1	Bezel
3	42842-40001	1	Cover
4	42842-24003 0510-0015	2 2	Pin Ring Retaining
5	42851-00607	1	Shorting Bar

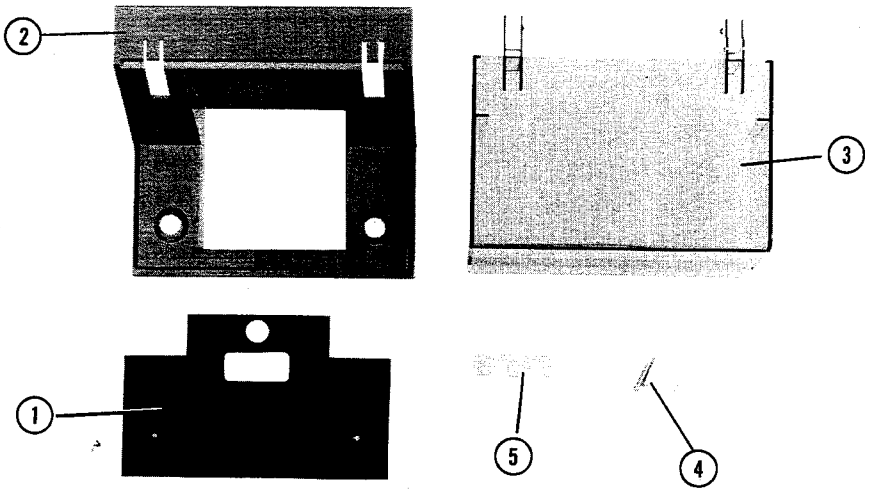


Table 2-17. Replaceable Mechanical Parts List (2 of 4)

Reference Designator	Part Number	Qty.	Description
1	42842-01212	1	Angle
	42842-25013	1	Block
	0515-0914	2	Screw
2	42842-66511	1	Board Assembly
	0515-1550	4	Screw
3	42842-04013	1	Case Side (Left)
	0515-0914	5	Screw
4	42842-04011	1	Case (English)
	42842-04012	1	Case (Japanese)
5	42842-01201	1	Angle
6	3101-2979	1	Switch Micro
	42842-68032	1	Wire Jumper
	42842-61637	1	Wire Assembly
7	42842-04007	1	Case Side (Right)
	0515-0914	5	Screw
8	42842-01211	2	Angle
	0535-0031	2	Nut
9	42842-21004	2	Knob
	3030-0007	4	Screw Lock
	42842-23001	2	Shaft
	0510-0083	2	Ring Retaining
10	42842-21005	2	Bushing
11	42842-04014	1	Cover Bottom
	3050-0891	2	F Washer
	0515-1552	2	Screw

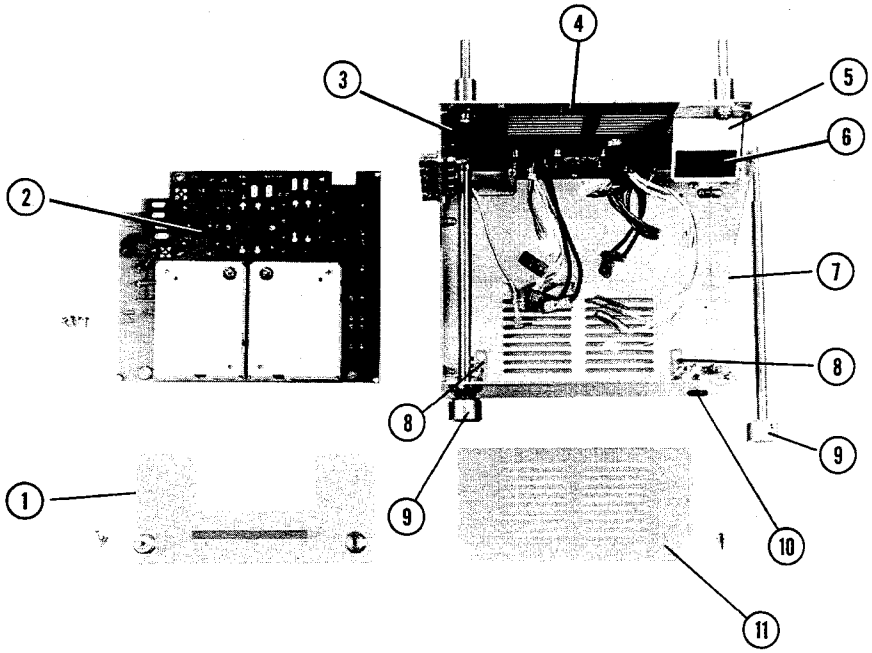


Table 2-18. Replaceable Mechanical Parts List (3 of 4)

Reference Designator	Part Number	Qty.	Description
1	0515-1550	2	Screw
2	42842-01213	1	Angle
3	42842-60001	2	Binding Post
	5040-0345	2	Insulator
	2190-0016	4	Washer
	0360-1190	2	Lug
	2950-0043	2	Nut
4	42842-00615	1	Plate
5	3103-0150	1	Switch Thermal +55°C
	3050-0891	1	F Washer
	0515-1550	1	Screw
	42842-61638	1	Wire Assembly
6	0160-6342	4	Capacitor 1 μF[1]
7	42842-25012	2	Block
	0515-1550	4	Screw
8	0757-0442	1	Resistor 10 kΩ
9	42842-00619	1	Plate
	0515-1550	2	Screw
10	3101-3011	1	Switch Micro
	0515-0982	2	Screw
	2190-0586	2	Washer
	3050-0893	2	F Washer
	42842-61639	1	Wire Assembly
11	42842-00618	1	Plate
	0515-1550	2	Screw
	1400-1048	1	Edge Saddle

1 The leads must be within 5mm.

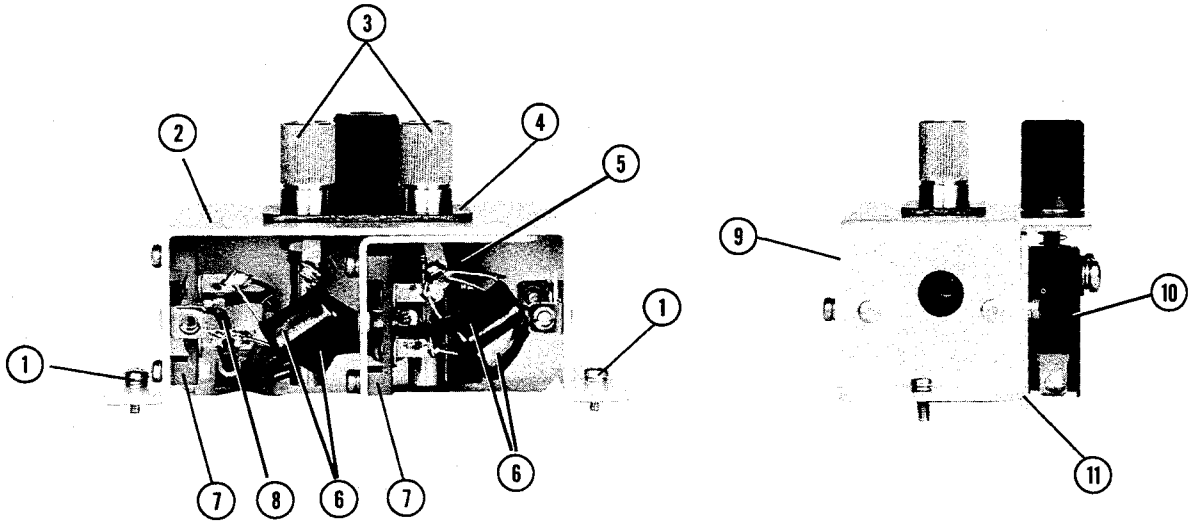
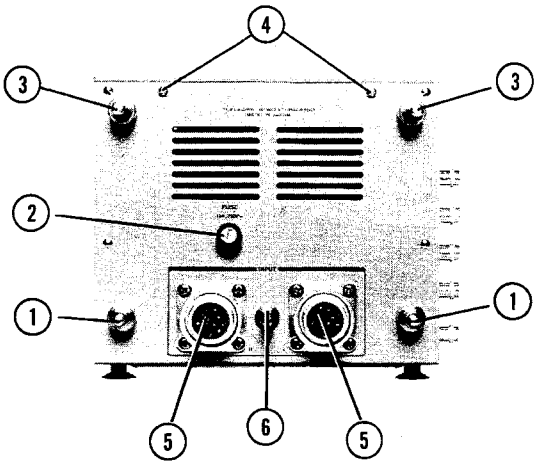
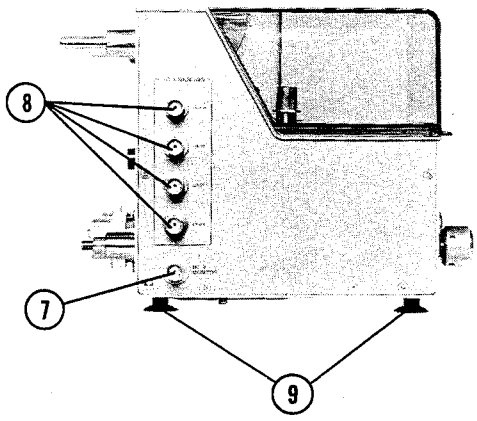


Table 2-19. Replaceable Mechanical Parts List (4 of 4)

Reference Designator	Part Number	Qty.	Description
1	42842-21001	2	Guide
	2190-0054	2	Washer
	2950-0054	2	Nut
2	2110-0249	1	Fuse 12A 250V
	2110-0565	1	Fuseholder Cap
	2110-0564	1	Fuseholder Body
	2110-0569	1	Nut
3	42842-21002	2	Guide
	2190-0016	2	Washer
	2950-0043	2	Nut
4	0515-1552	2	Screw
	3050-0891	2	Washer
5	1252-3228	2	Connector 12 Pin
	0515-0885	8	Screw
6	42842-21003	1	Guide
	0360-1190	1	Lug
	2950-0043	1	Nut
7	1250-0118	1	Connector BNC
	5040-0345	2	Insulator
	2190-0016	2	Washer
	0360-1190	1	Lug
	2950-0043	1	Nut
	0150-0012	1	Capacitor 0.01 μF
	0160-6342	1	Capacitor 1 μF
8	1250-0102	4	Connector BNC
	2190-0054	4	Washer
	2950-0054	4	Nut
9	16015-8522	4	Foot Rubber
	0515-1550	4	Screw





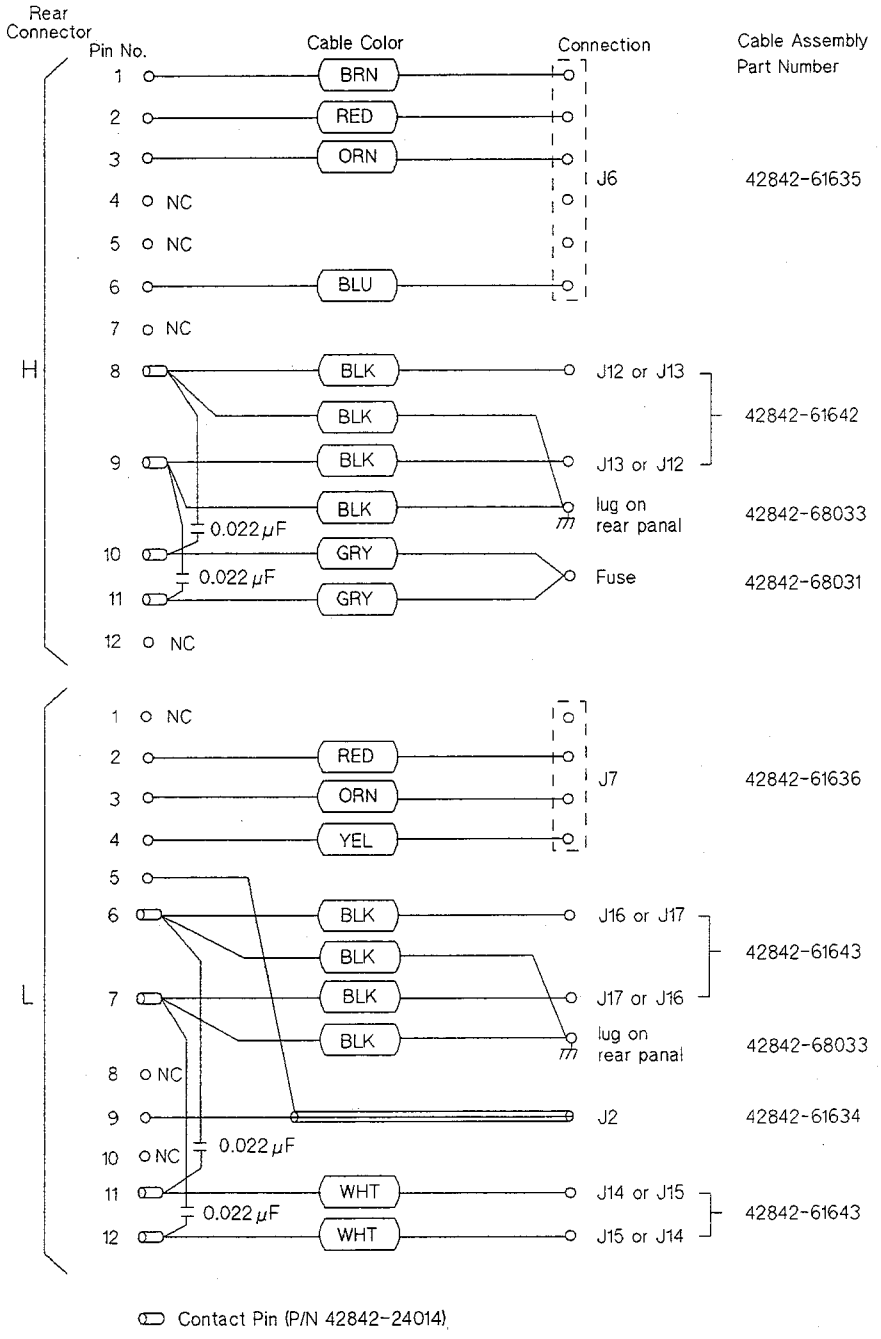


Figure 2-5.
Identification of Cable Assemblies Connected to the Rear Panel Input

Table 2-20.
Cable Assemblies Connected to the Rear Panel Input

Part Number	Description	Qty.
42842-61635	Cable Assembly 6 Pin	1
42842-61642	2 Cables Set (BLK 2 ea.)	1
42842-68033	2 Cables Set (BLK 2 ea.)	2
42842-68031	2 Cables Set (GRY 2 ea.)	1
42842-61636	Cable Assembly 4 Pin	1
42842-61643	4 Cables Set (BLK 2 ea. WHT 2 ea.)	1
42842-61634	RF Cable Assembly	1
0160-4833	Capacitor 0.022 μF	4
42842-24014	Contact Pin	8
1400-0249	Cable Tie	2
42842-61001	Connector Assembly (High)[1]	1
42842-61002	Connector Assembly (Low)[1]	1

1 Connector with all Cable Assemblies

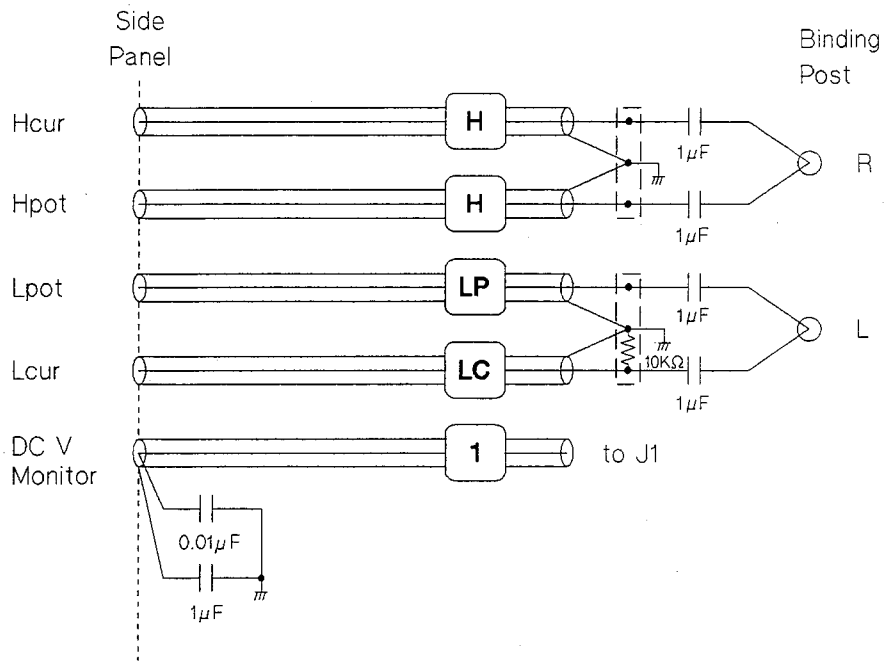


Figure 2-6.
Identification of Cable Assemblies Connected to the Side Panel Input

Table 2-21.
Cable Assemblies Connected to the Side Panel Input

Part Number	Maker	Qty.
42842-61631	"H"	2
42842-61632	"LP"	1
42842-61640	"LC"	1
42842-61633	"1"	1

Table 2-22. Cable Assembly Connected to the Switch

Switch	Part Number	Cable Assembly	Connection
Thermal	3103-0150	42842-61638	to J3
Cover	3101-2979	42842-61637 42842-68032	to J4 Jumper
SMD Test Fixture	3101-3011	42842-61639	to J5

OPTION 001.
SMD Test Fixture
Service

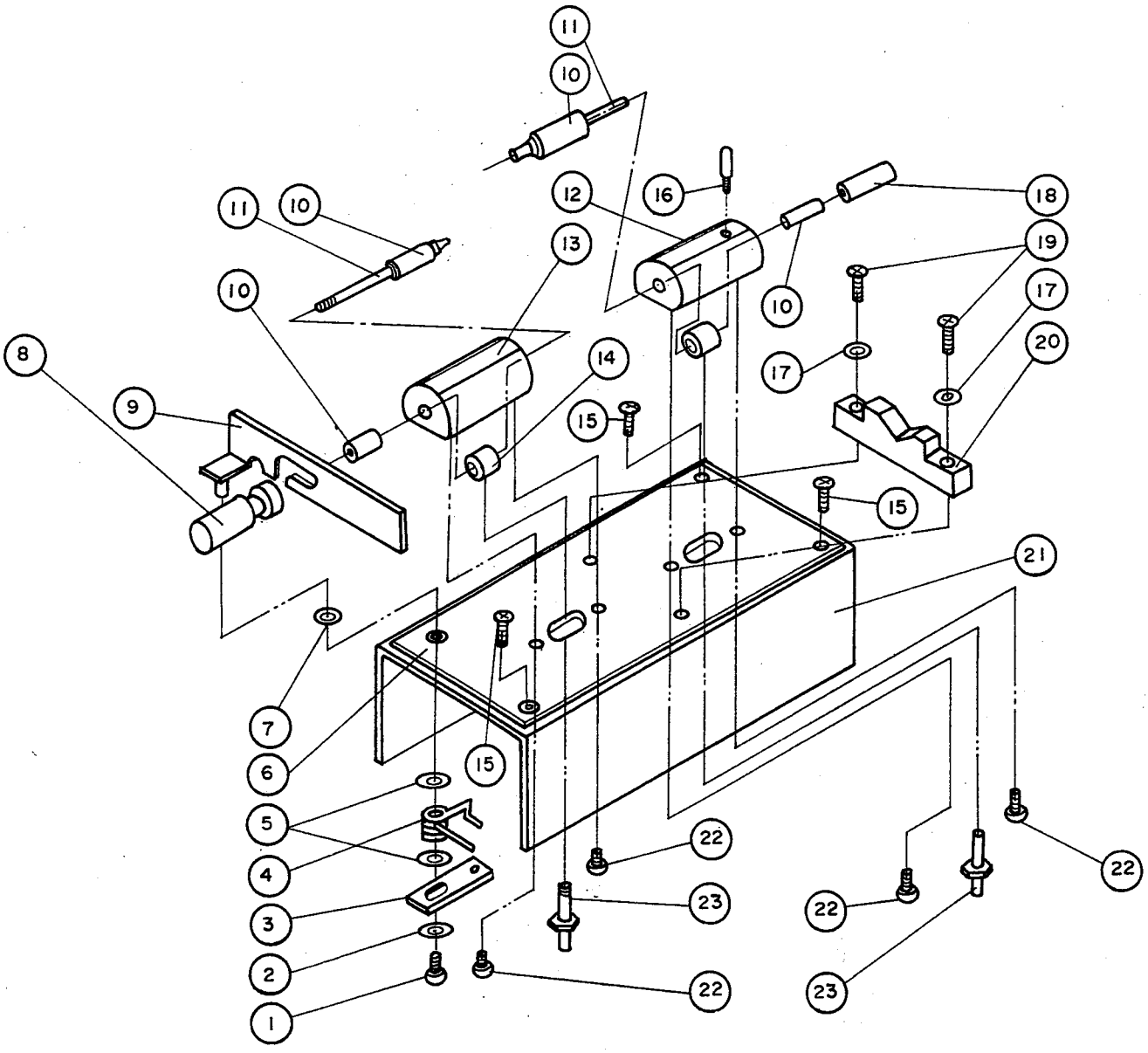


Figure 2-7. Parts Identification (1 of 2)

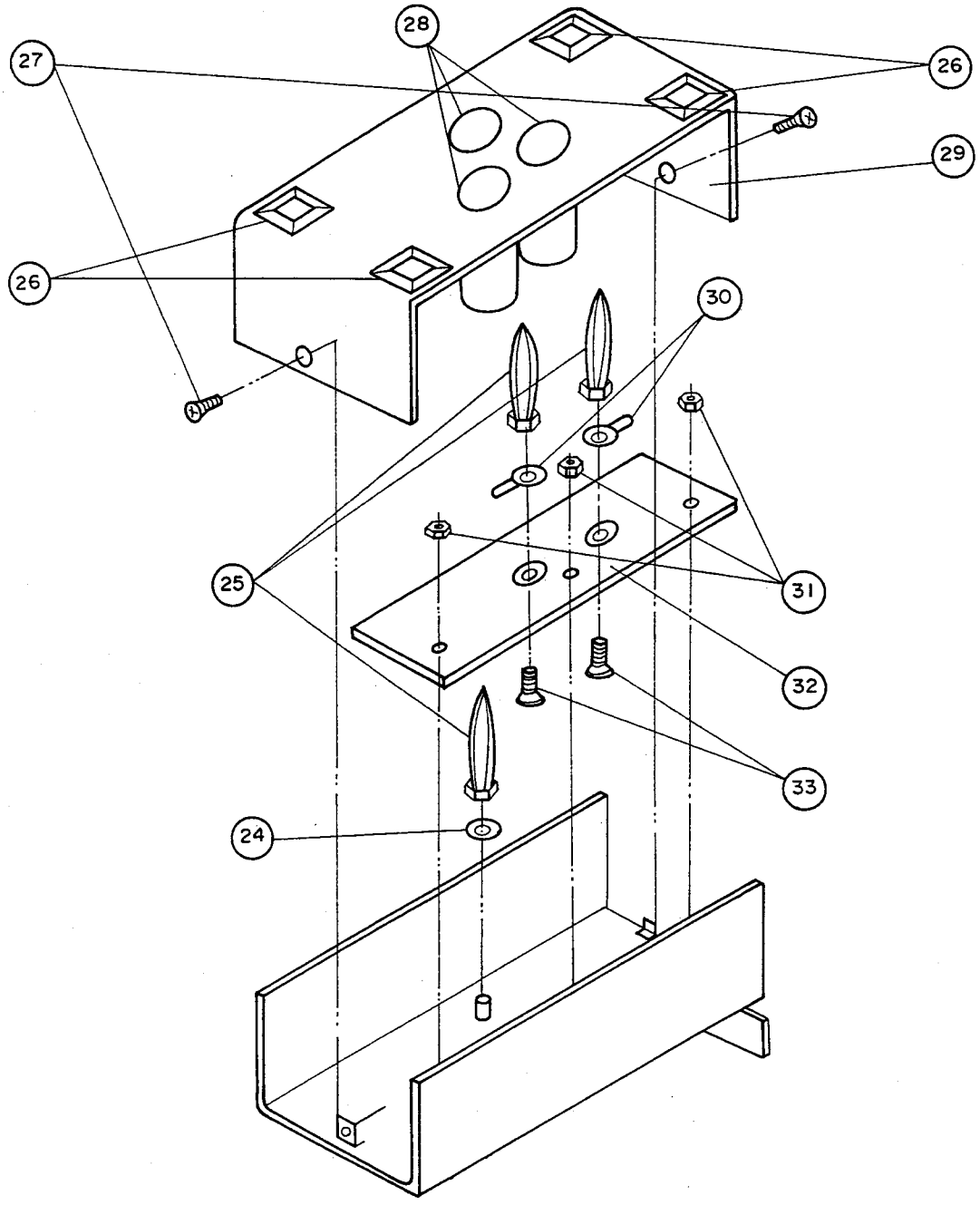


Figure 2-8. Parts Identification (2 of 2)

Table 2-23. Replaceable Parts

Reference Designator	Part Number	Qty.	Description
	42851-61100	1	Test Fixture Assembly (1 thru 33)
1	0515-1550	1	Screw
2	3050-0891	1	Washer
3	42851-00622	1	Plate
4	42851-29021	1	Spring
5	42851-24023	2	Waser
6	42851-00623	1	Plate
7	42851-24023	1	Washer
8	42851-25021	1	Knob
9	42851-05021	1	Lever
10	16034-25032	4	Collar
11	16034-23001	2	Shaft
12	42851-20022	1	Block
13	42851-20021	1	Block
14	42851-24022	2	Collar
15	0515-0914	3	Screw
16	42851-23021	1	Screw
17	3050-0891	2	Washer
18	16034-25003	1	Knob
19	0515-1552	2	Screw
20	42851-40021	1	Block
21	42851-04021	1	Top Cover
22	2200-0101	4	Screw
23	16034-20003	2	Plug
24	2190-0007	1	Washer
25	1251-8776	3	Banana Plug
26	0403-0427	4	Bumper Foot
27	0515-0914	2	Screw
28	42851-21021	3	Bushing
29	42851-04022	1	Bottom Cover
30	0360-0001	2	Term-Solder Lug
31	0535-0031	3	Nut
32	42851-25022	1	Plate
33	2360-0194	2	Screw
	42851-68021	1	Jumper Wire Set (2 ea.)

3

HP 42843A Operation

Introduction

This chapter provides the information and instructions required to use the Hewlett-Packard 42843A Bias Current Cable. It consists of following sections.

- Incoming inspection
- Product description of the HP 42843A
- Specifications

Incoming Inspection

This cable has been carefully inspected both electrically and mechanically before being shipped from the factory. It should be in perfect condition, no scratches, dents or the like, and it should be in perfect electrical condition. Verify this by carefully performing an incoming inspection to check the instrument for signs of physical damage, and missing contents. If any discrepancy is found, notify the carrier and Hewlett-Packard. Your HP sales office will arrange for repair and replacement without waiting for the claim to be settled.

1. Inspect the shipping container for damage, and keep the shipping materials until the inspection is completed.
2. Verify that the shipping container contains everything shown in Figure 3-1
3. Inspect the exterior of the HP 42843A for any signs of damage.
4. Complete the *Preparation for Use* procedures described in the *HP 42841A Operation Manual.*

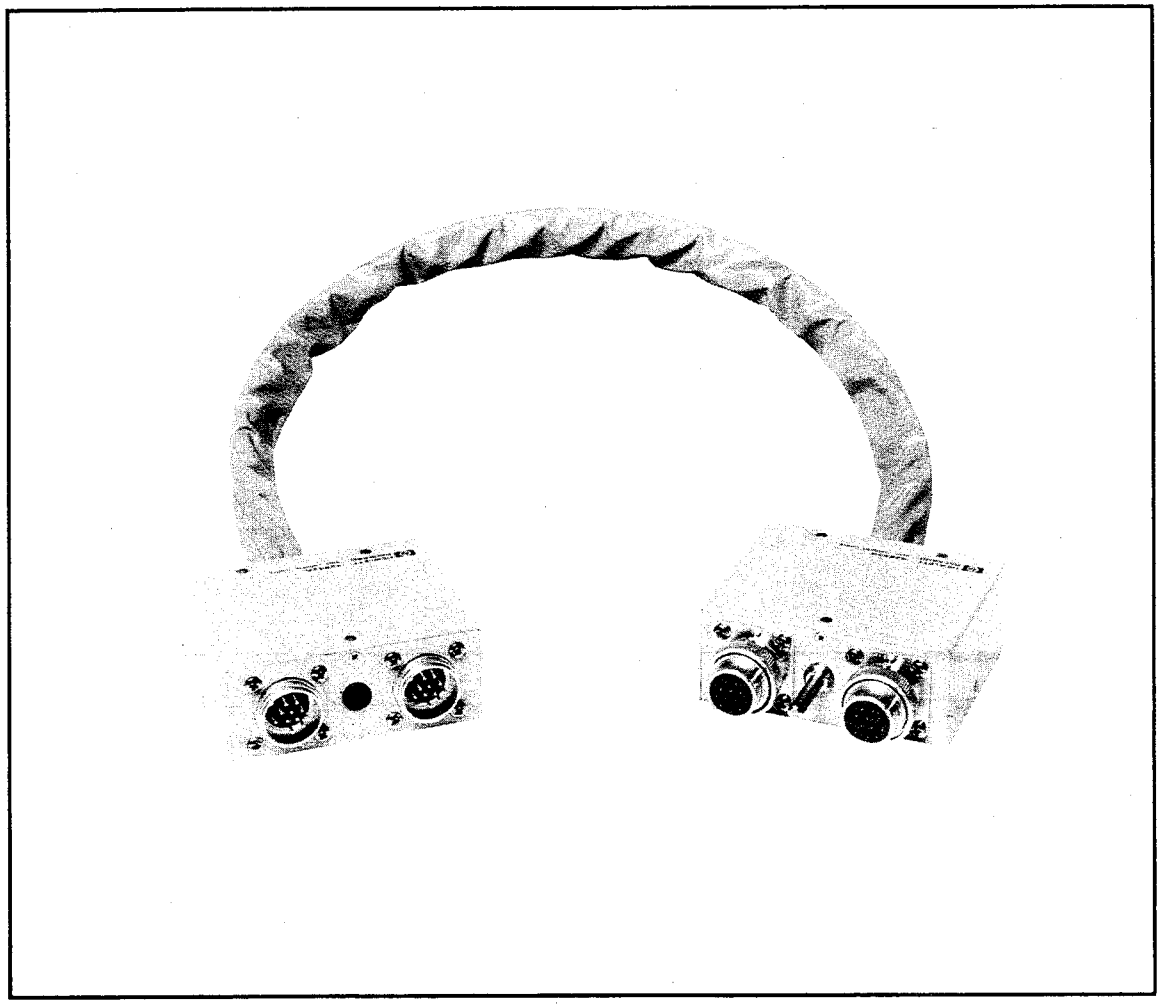


Figure 3-1. HP 42843A

Description

The HP 42843A Bias Current Cable is designed for use with the HP 42841A Bias Current Source and the HP 42842B Bias Current Test Fixture. It provides a shielded connection between the HP 42841A and the HP 42842B.

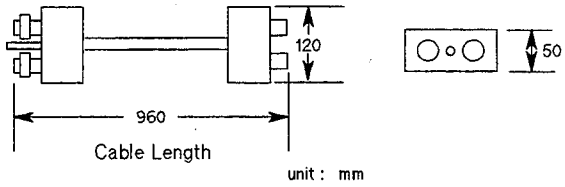
For installation, refer to the *HP 42841A Operation Manual* (HP Part Number 42841-90000). For operation combined with the HP 4284A and HP 42841A, refer to the *HP 4284A Operation Manual* (HP Part Number 04284-90000) and the *HP 42841A Operation Manual.*

Specifications

Operation Temperature Range 0°C ~ 55°C

Connector 12 pin, Circular connector

Dimensions



Weight 1.2 kg

Furnished Accessories Operation and Service Manual HP Part Number 42842-90001

4

HP 42843A Service

Introduction

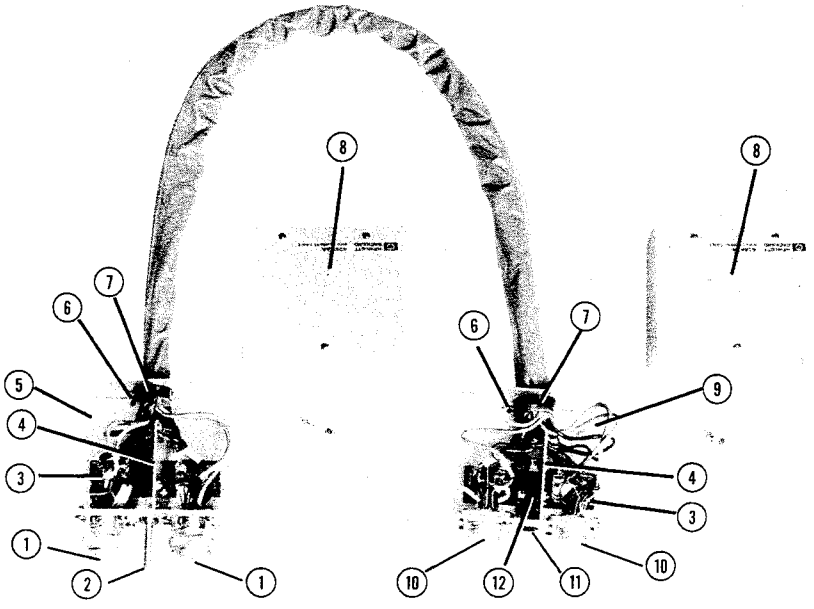
This section gives a service information for the HP 42843A Bias Current Cable.

Table 4-1 shows the replaceable mechanical Parts. Figure 4-1 shows the cable assemblies and their connections.

Parts listed on this manual can be ordered from your nearest Hewlett-Packard Service Office. Ordering information should include the HP part number and the quantity required.

Table 4-1. Replaceable Mechanical Parts List

Reference Designator	Part Number	Qty	Description
1	1252-3228	2	Connector 12 Pin Female
	0515-0980	8	Screw
2	42842-21003	1	Guide
	2190-0016	1	Washer
	2950-0043	1	Nut
3	42843-01201	8	Lug
	42843-25001	2	Insulator (upper)
	42843-25002	2	Insulator (lower)
	0515-1550	8	Screw Pan-head
	0515-0914	4	Screw Flat-head
4	42843-00601	2	Plate Shield
	0515-0914	4	Screw
5	42843-04002	1	Cover Bottom
6	3050-0893	2	Washer
	0535-0031	2	Screw
7	0340-0592	2	Grommet
8	42843-04001	2	Cover Top
	0515-0914	10	Screw
9	42843-04003	1	Cover Bottom
10	1252-3227	2	Connector 12 Pin Male
	42843-00602	2	Plate
	0515-0885	8	Screw
11	0400-0321	1	Bushing
12	3101-3011	1	Switch
	3050-0893	2	Washer Flat
	2190-0586	2	Washer Lock
	0515-0982	2	Screw



Part Number	Description	Qty
42843-61610	Cable Assembly	1
42843-68001	6 Cables Set	4
42843-68002	2 Cables Set	1

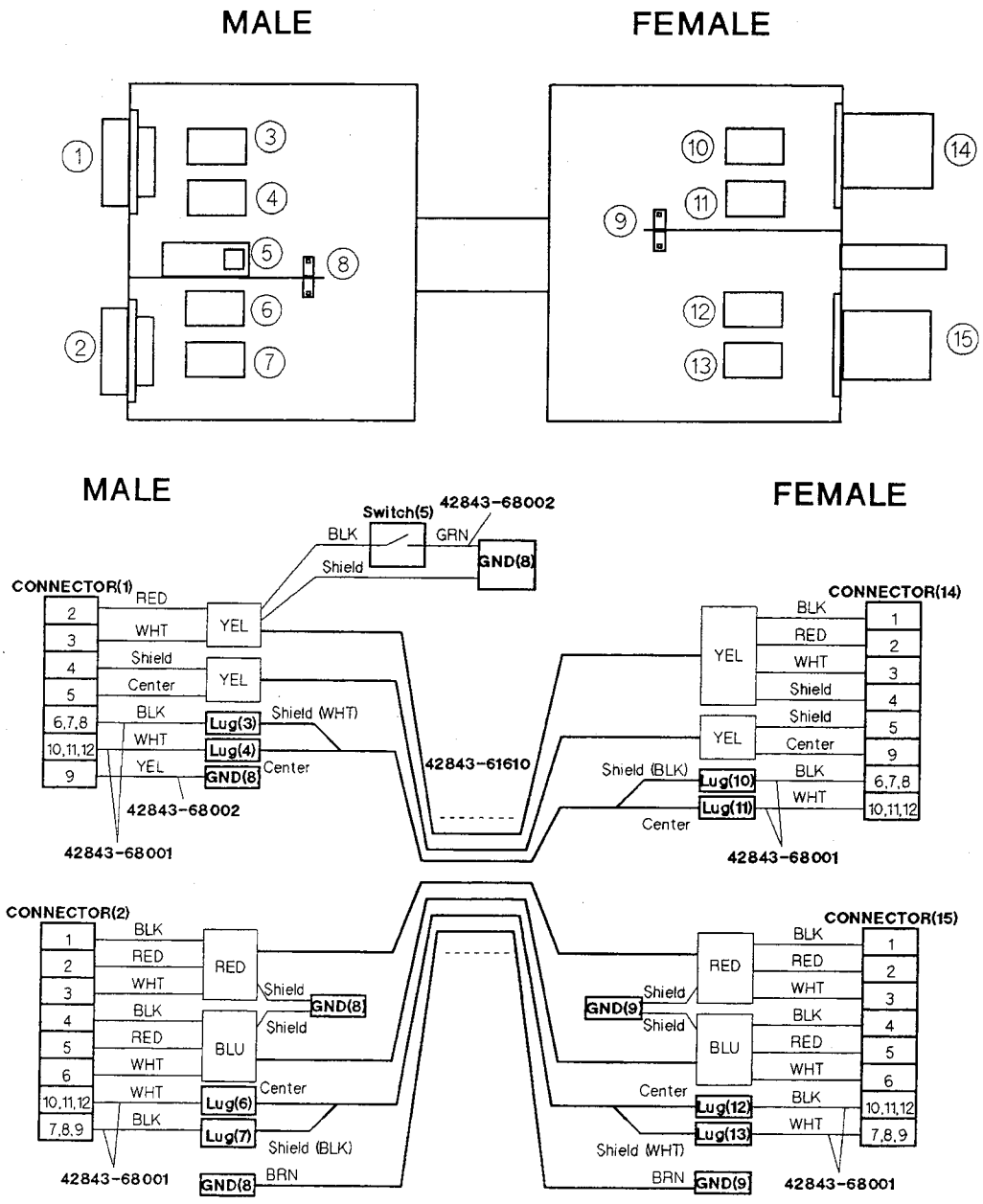


Figure 4-1. Cable Assemblies

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Taikoo Shing, Hong Kong
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