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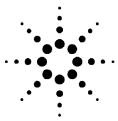
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Agilent 16034E Test Fixture

Operation and Service Manual

Third Edition

Agilent PN 16034-90041



Agilent Technologies
Innovating the HP Way

December 1999

Printed in: Japan

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Manual Printing History

The manual's printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates that are incorporated at reprint do not cause the date to change.) The manual part number changes when extensive technical changes are incorporated.

July 1992	First Edition (part number: 16034-90040)
August 1998	Second Edition (part number: 16034-90041)
December 1999	Third Edition (part number: 16034-90041)

Safety Summary

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific WARNINGS elsewhere in this manual may impair the protection provided by the equipment. In addition it violates safety standards of design, manufacture, and intended use of the instrument.

The Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

- Ground The Instrument

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To avoid electric shock hazard, the instrument chassis and cabinet must be connected to a safety earth ground by the supplied power cable with earth blade.

- DO NOT Operate In An Explosive Atmosphere

  Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

- Keep Away From Live Circuits

  Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified maintenance personnel. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

- DO NOT Service Or Adjust Alone

  Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

- DO NOT Substitute Parts Or Modify Instrument

  Because of the danger of introducing additional hazards, do not install substitute parts or perform unauthorized modifications to the instrument. Return the instrument to a Agilent Technologies Sales and Service Office for service and repair to ensure that safety features are maintained.

- Dangerous Procedure Warnings

  Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

WARNING **Dangerous voltages, capable of causing death, are presenting this instrument. Use extreme caution when handling, testing, and adjusting this instrument.**

Certification

Agilent Technologies certifies that this product met its published specifications at the time of shipment from the factory. Agilent Technologies further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institution’s calibration facility, or to the calibration facilities of other International Standards Organization members.

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This Agilent Technologies instrument product is warranted against defects in material and workmanship for a period corresponding to the individual warranty periods of its component products. Instruments are warranted for a period of one year. During the warranty period, Agilent Technologies will, at its option, either repair or replace products that prove to be defective.

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The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside the environmental specifications for the product, or improper site preparation or maintenance.

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Assistance

Product maintenance agreements and other customer assistance agreements are available for Agilent Technologies products.

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

Safety Symbol

General definitions of safety symbols used on the instrument or in manuals are listed below.



Instruction Manual symbol: the product is marked with this symbol when it is necessary for the user to refer to the instrument manual.

WARNING **This warning sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury or death to personnel.**

CAUTION This Caution sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

NOTE Note denotes important information. It calls attention to a procedure, practice, condition or the like, which is essential to highlight.

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1 Operation

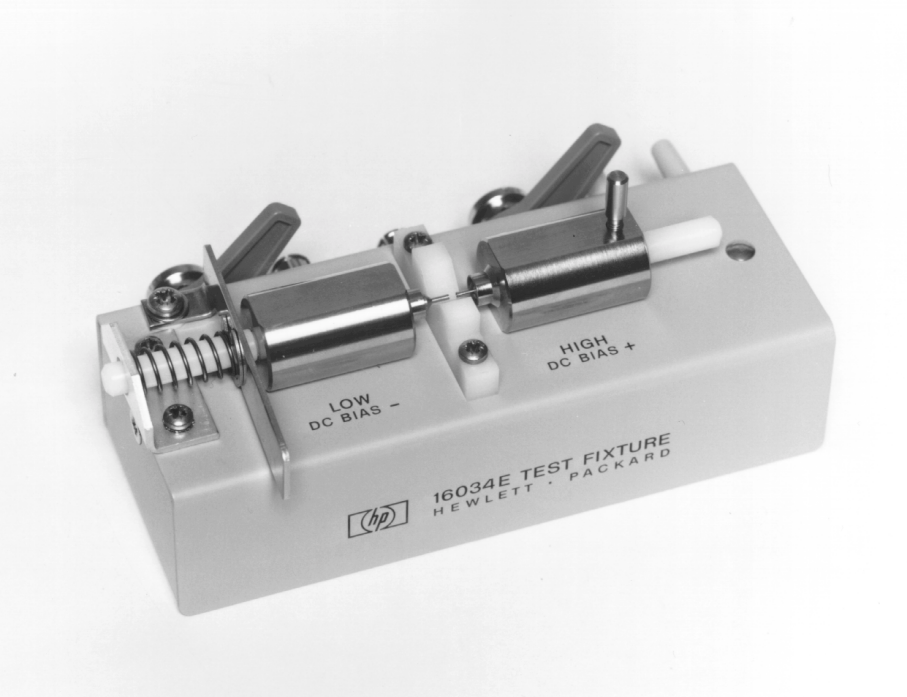
This Operating note provides Operating and service information for the Agilent 16034E Test Fixture. Specifications are listed in Table 1-1.

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Product Description

This test fixture is designed to facilitate easy and accurate measurements of chip type components and similar types not furnished with lead wires. Connection of sample components to the 16034E is done by simply pressing the loading lever to left, inserting sample components in the V-mount center section (between fixture jaws) and releasing lever. Components which may be measured with the 16034E are the rectangular paralleled chip, cylindrical chip, and other similar in shape and type to components shown in Table 1-1.

Figure 1-1



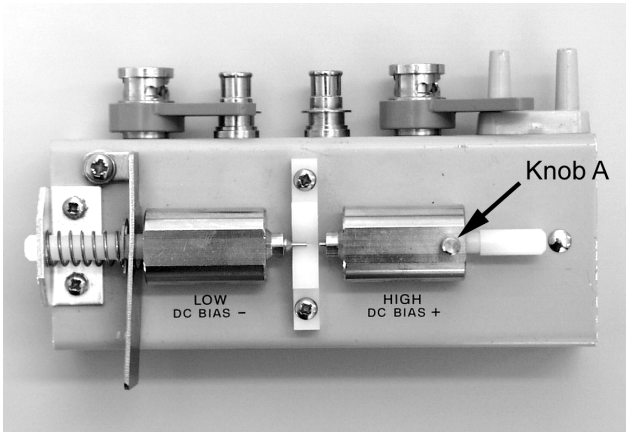
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Operation

The set up and measurement procedure is as follows:

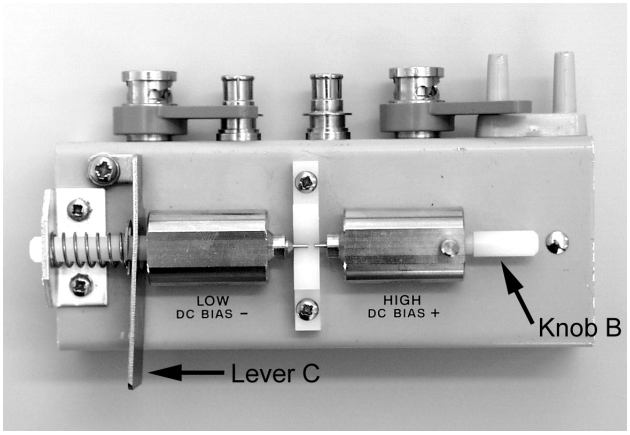
1. Set the cable length to 0m.
2. Connect the 16034E directly to the UNKNOWN terminals.
3. Loosen the knob A.

Figure 1-2



4. Adjust the contact pin position on the V-mount center section with the knob B to adapt your DUT size.

Figure 1-3

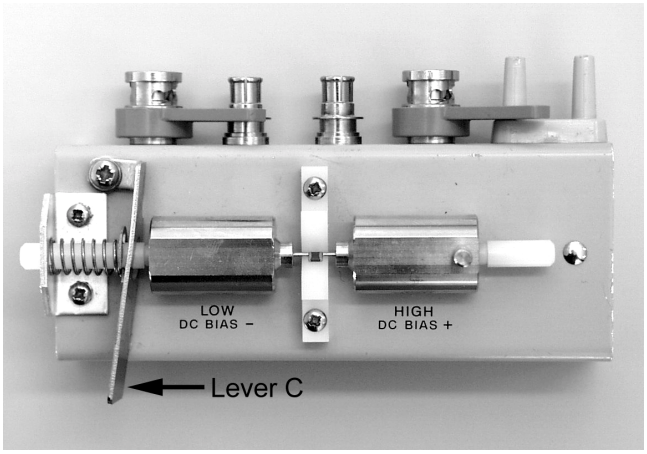


5. Tighten the knob A to fix the contact pin.
6. Make the right and the left contact pins contact.
7. Perform the short compensation described in the instrument's operation manual.
8. Pressing the loading lever C to left.
9. Hold the lever C so that the gap of contact is as same as the DUT's length.

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10. Perform the open compensation described in the instrument's operation manual.
11. Inserting a sample components in the V-mount center section (between fixture jaws).
12. Releasing the lever C to fix the DUT.

Figure 1-4

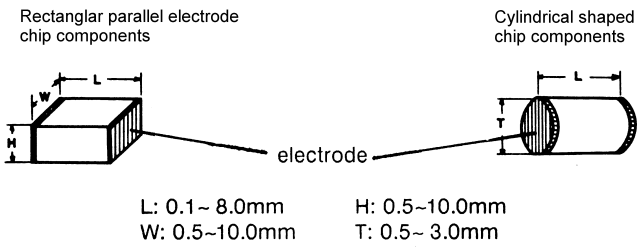


WARNING **DO NOT APPLY MORE THAN ± 40V OF DC BIAS VOLTAGE TO THE UNKNOWN TERMINALS. AN ELECTRICAL SHOCK HAZARD WILL EXIST DURING OPERATION WHEN THE DC BIAS VOLTAGE IS GREATER THAN ± 40V DC.**

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Specifications

Table 1-1 **Specification of the 16034E.**

Function:	For use with 4 terminal-pair LCR Meters and Impedance Analyzers.
Measurable components:	Chip type components (Not furnished with lead wires)
Dimension of measurable components:	
Frequency:	≤ 40 MHz
Maximum Voltage:	± 40 V peak max.(AC + DC)
Dimensions of test fixture:	128 (W) × 60 (H) × 71 (D) mm
Weight:	270 g

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Typical Characteristics

Table 1-2 **Typical characteristics**

Incremental Error at f ≥1 MHz	
Parameter reading error (%)	Offset Value for D
$\pm 1.50 \times \left(\frac{f}{10}\right)^2$	

NOTE f is the measurement frequency in MHz. The incremental errors calculated from the equations given in this table are additive when measurements are made above 1MHz. The incremental error is applicable after completion of the OPEN/SHORT compensation.

Figure 1-5

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2 Service

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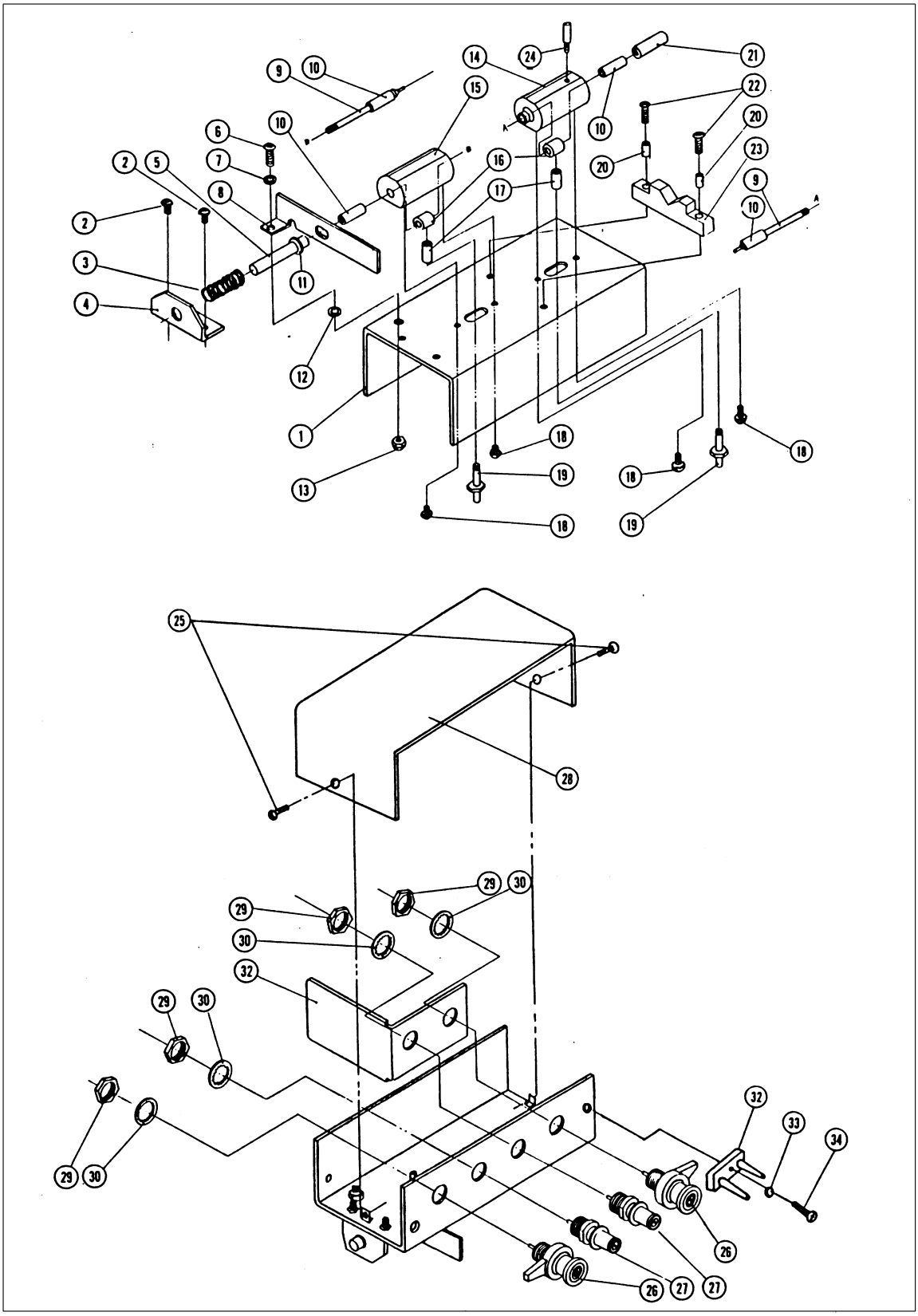
Maintenance

An exploded view of the 16034E for parts identification is shown in Figure 2-1 and Figure 2-2. Do not disassemble any further than shown. Maintenance consists principally of cleaning contacts and replacing worn or damaged parts. Take special care when cleaning contacts.

To order parts, use the Agilent Technologies part numbers listed in Table 2-1. If a faulty part is located in an assembly that cannot be disassembled, order the next higher assembly or return the fixture to the nearest Agilent Technologies Sales/Service Office for repair or replacement.

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Figure 2-1 Parts Identification



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Figure 2-2 **Parts Identification**

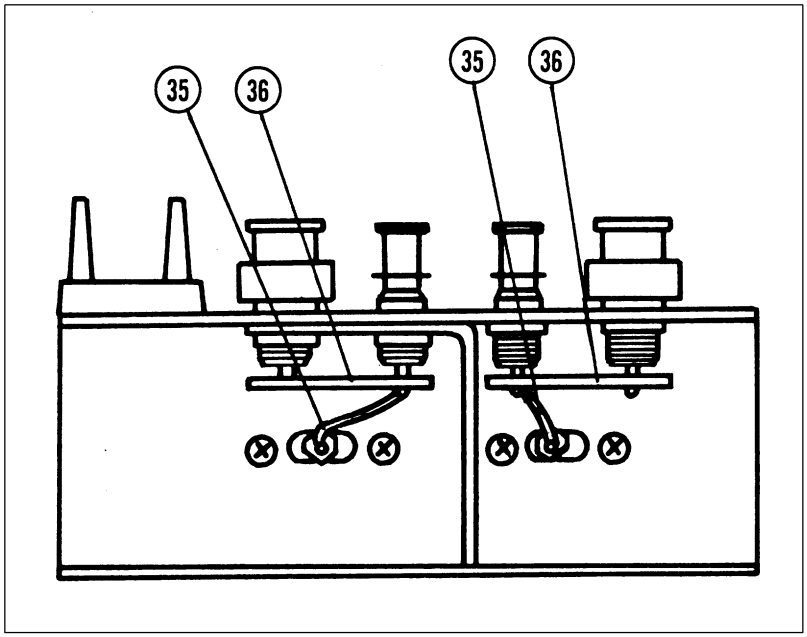


Table 2-1

Reference Designation	Agilent Part No.	Qty.	Description
1	16034-00221	1	TOP COVER
2	2200-0103	2	SCREW
3	1460-0323	1	SPRING
4	16034-01202	1	BRACKET
5	16034-25004	1	KNOB
6	2360-0201	1	SCREW
7	3050-0228	1	WASHER
8	16034-05001	1	LEVER
9	16034-23001	2	SHAFT
10	16034-25002	4	COLLAR
11	0510-0083	1	ERING
12	3050-1138	1	WASHER
13	2420-0006	1	NUT
14	16034-20002	1	BLOCK
15	16034-20001	1	BLOCK

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Reference Designation	Agilent Part No.	Qty.	Description
16	16034-24001	2	COLLAR
17	16034-25001	2	COLLAR
18	2200-0101	4	SCREW
19	16034-20003	2	PLUG
20	0380-0044	2	COLLAR
21	16034-25003	1	KNOB
22	2200-0769	2	SCREW
23	16034-25005	1	BLOCK
24	16034-23013	1	SCREW
25	2360-0192	2	SCREW
26	16012-7122	2	BNC ASS'Y
27	1250-1798	2	BNC
28	16034-00222	1	BOTTOM COVER
29	2950-0043	4	NUT
30	2190-0016	4	WASHER
31	16034-00601	1	SHIELD PLATE
32	16047-40000	1	STOPPER
33	2190-0206	1	WASHER
34	2200-0105	1	SCREW
35	16034-68021	2	J.W.L
36	16047-00617	2	PLATE

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