

Keysight 16334A Test Fixture

Operation and
Service Manual

Notices

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1 Operation

This operation note provides complete information on the 16334A Test Fixture.

Description

The 16334A Test Fixture is designed for use with the instruments, type of LCR/Impedance meter.

The latest applicable instruments for 16334A test fixture is described in the Accessories Selection Guide for Impedance Measurements of 5965-4792E.

The 16334A is a direct attachment, 4-terminal pair type fixture which is equipped with a tweezer type probe for measurement of leadless components such as chip capacitors.

The tweezer tips are replaceable. The distance between the tweezer tips is continuously adjustable according to the distance between the DUT terminals. A compensation block is furnished for compensation to be minimize the effects of residual impedance and the stray admittance.

The specifications of the 16334A are given in **Table 1-2** and the typical characteristics are shown in **Figure 1-2**, and listed in **Table 1-3**.

Operation
Description

Figure 1-1 Product Overview

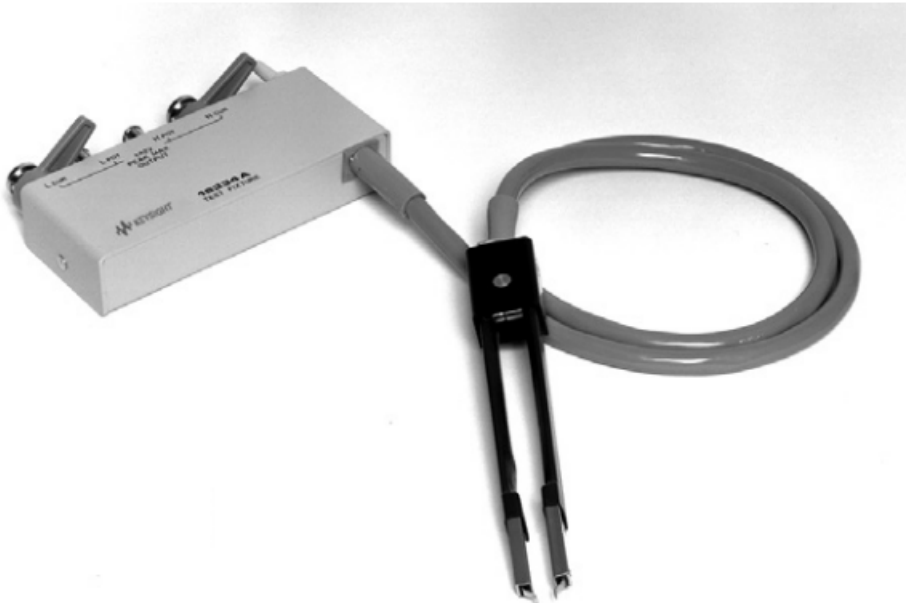
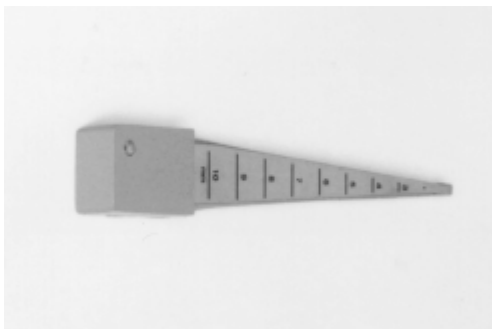


Table 1-1 Accessories

Description	Keysight Part No
Compensation Block	16334-60001
Tweezer Tip	16334-09002 (1ea.)

Figure 1-2 Accessories



Specifications

Table 1-2 16334A Specifications

Function:	For use with 4 terminal-pair LCR Meters and Impedance Analyzers.
Measurable Components:	Miniature components with terminals on opposite faces (Distance between component terminals $\leq 10\text{mm}$).
Terminal Configuration:	4-terminal pair configuration from BNC connectors to the top of the tweezers (excluding the tweezer tips).
Cable Length:	Approximately 1m
Maximum Voltage:	$\pm 42\text{V}$ peak max. (AC+DC)
Measurement Frequency Range:	5Hz to 15MHz
Cable Length:	Approximately 1m (from BNC connector to the top of the tweezers)
Weight:	Approximately 0.29 kg

Typical Characteristics

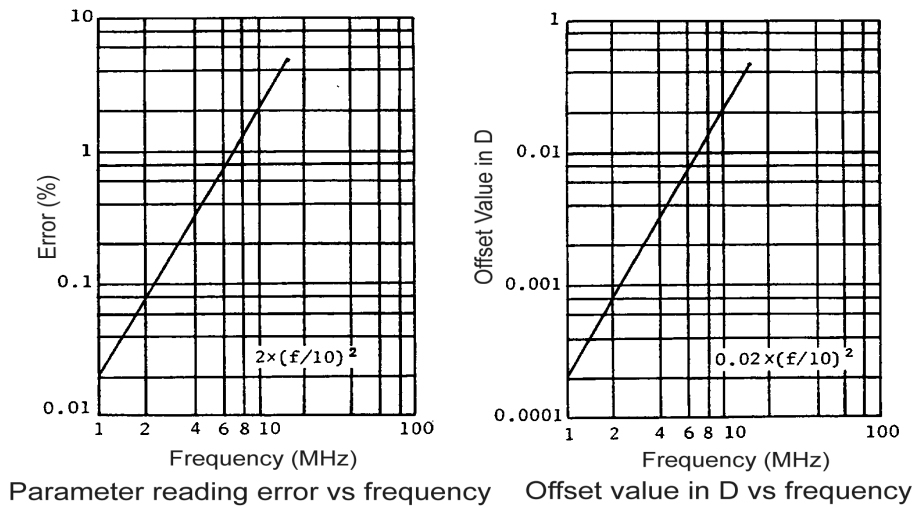
Table 1-3 Typical Characteristics

Model	Applicable Measurement Range		Incremental error (1MHz ≤ f)	
	Parameter Value	Measurement Frequency	Parameter reading error (%)	Offset value for D
4 terminal-pair LCR Meters and Impedance Analyzers	Full range	below 15MHz	$\pm 2x(f/10)^2\%$	$\pm 0.02x(f/10)^2$

NOTE

f is the measurement frequency in MHz. The incremental error is available at the frequency range 1MHz to 15MHz, and incremental error applies after the completion of OPEN/SHORT compensation.

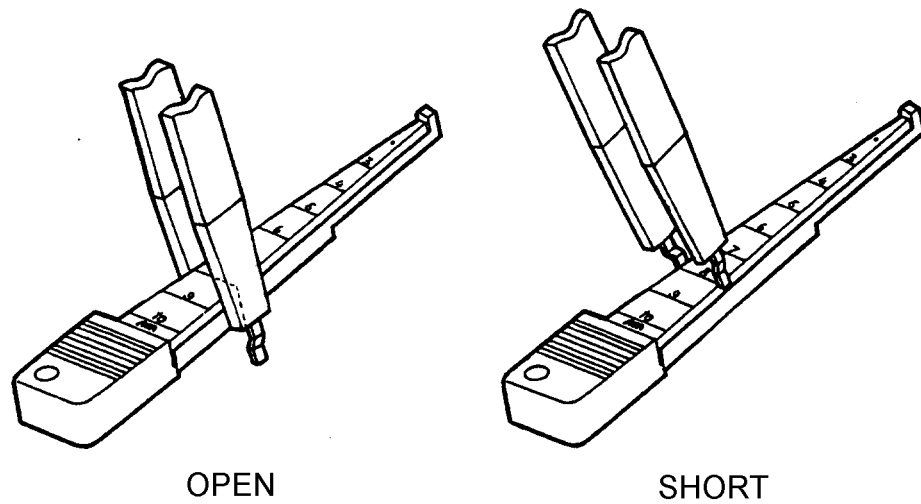
Figure 1-3 Incremental Error



Fixture Compensation

The 16334A has inherent residual impedance and stray admittance that affects the accuracy of the measurements. To compensate for, or negate, these residuals in order to minimize measurement error, the instrument's fixture compensation procedure should be performed. The fixture compensation procedure is described in the instrument's manual. When performing the fixture compensation, use compensation block Keysight PN 16334-60001 (furnished with probe). An illustration showing how to use the compensation block is shown in **Figure 1-4**.

Figure 1-4 Fixture Compensation



Operation

Setup and measurement procedure is as follows:

1. Set the instrument's cable LENGTH to 1m.
2. Connect the 16334A directly to the UNKNOWN terminals of the instrument.
3. Perform the OPEN/SHORT fixture compensation described in the instrument's operation manual.
4. Connect the DUT to the 16334A test fixture.

WARNING

DO NOT APPLY MORE THAN $\pm 42\text{V}$ OF DC BIAS VOLTAGE TO THE UNKNOWN TERMINALS. AN ELECTRICAL SHOCK HAZARD WILL EXIST DURING OPERATION WHEN THE DC BIAS VOLTAGE IS GREATER THAN $\pm 42\text{V}$ DC.

2 Service

Introduction

This chapter gives replaceable parts information for 16334A test fixture.

Serial Number for Non-RoHS 16334A Test Fixture:

“MY44100001 - MY44199999”/ “SG44100001 - SG44199999”

Serial Number for RoHS 16334A Test Fixture:

“MY44200001 and above”/ “SG44200001 and above”

Maintenance

An exploded view of the 16334A (for parts identification) is shown in **Figure 2-1**. 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 Keysight 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 whole device to the nearest Keysight Technologies Sales/Service Office for repair or replacement.

Shown are the supported parts and their respective RoHS compliant replacement support part. RoHS conversion involves with design and dimension change which result in the RoHS support part backward incompatible with non-RoHS test fixture. Special handling is needed while using the RoHS replacement part on non-RoHS test fixture. The original support part number is replaced by the respective “RoHS Compliant Replacement Part”. Once the original support part is depleted, please proceed to obtain the RoHS compliant support part.

Figure 2-1 Parts Identification

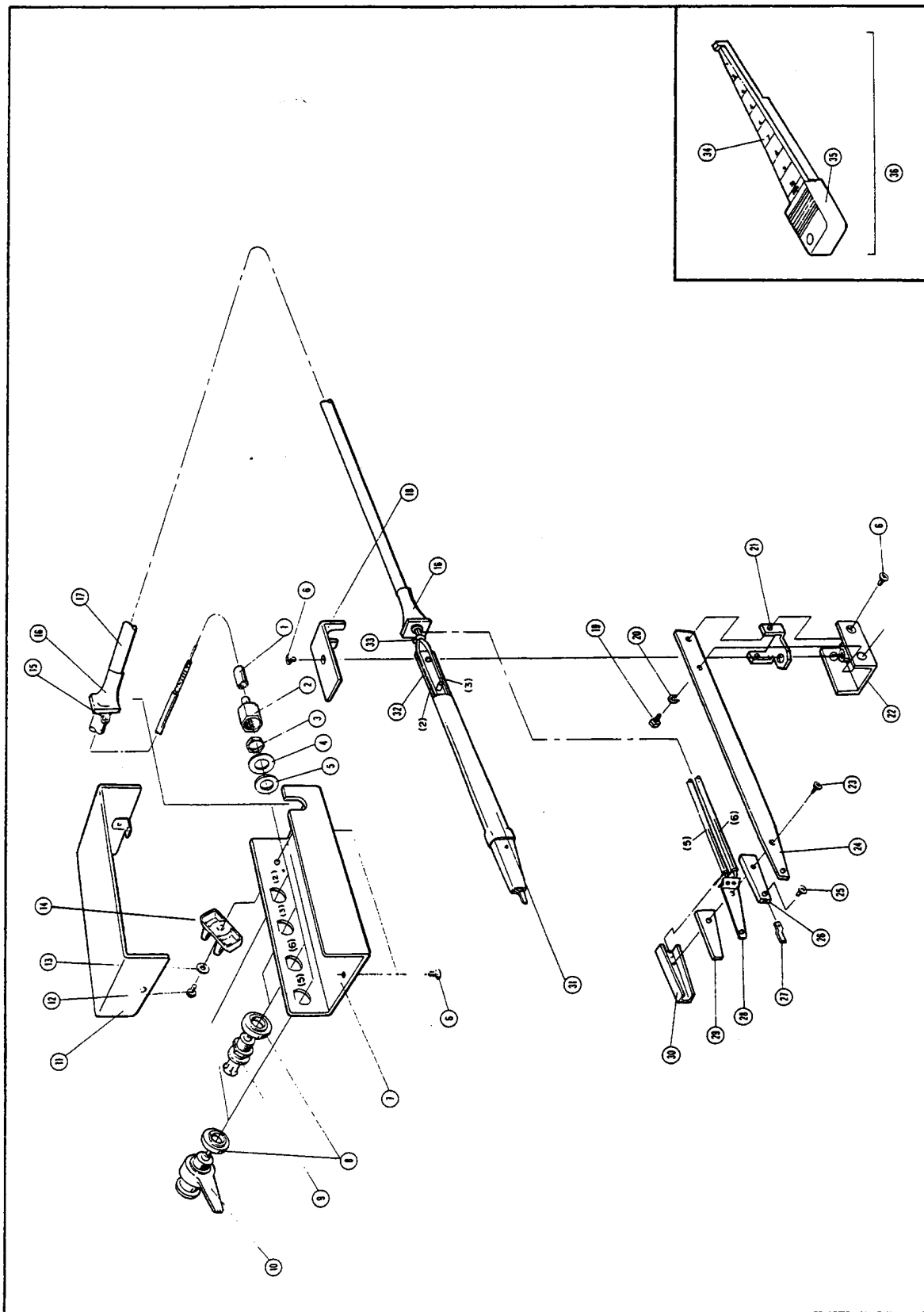


Table 2-1

Parts Identification

Ref /D	Keysight Non-RoHS Part No.	Description	Qty	Keysight Non-RoHS Part No.	Description	Qty
1	(*) ¹	Sleeve-Metal	4	(*) ¹	Sleeve-Metal	4
2	(*) ¹	Nut	4	(*) ¹	Nut	4
3	(*) ¹	Nut	4	(*) ¹	Nut	4
4	(*) ¹	Washer	4	(*) ¹	Washer	4
5	(*) ¹	Washer	4	(*) ¹	Washer	4
6	0515-0914	Screw	7	0515-1946	Screw	7
7	(*) ¹	Cover-Bottom	1	(*) ¹	Cover-Bottom	1
8	(*) ¹	Insulator	4	(*) ¹	Insulator	4
9	(*) ¹	Connector-BNC	2	(*) ¹	Connector-BNC	2
10	(*) ¹	BNC_ASSY	2	(*) ¹	BNC_ASSY	2
11	16334-04001	Cover-Top	1	16334-04601	Cover-Top	1
12	0515-1550	Screw	1	RoHS unit doesn't have the STOPPER	-	-
13	2190-0206	Washer	1	RoHS unit doesn't have the STOPPER	-	-
14	16047-40000	Stopper	1	RoHS unit doesn't have the STOPPER	-	-
15	1400-0719	Cable-Tie	2	1400-3284	Cable-Tie	2
16	16334-40003	Cable Bushing	2	16334-40013	Cable Bushing	2
17	(*) ¹	Cable	103.5 cm	(*) ¹	Cable	103.5 cm
18	16334-01202	Angle	1	16334-01202	Angle	1
19	16334-24002	Screw	1	16334-24002	Screw	1
20	2190-0584	Washer	1	2190-0584	Washer	1

Table 2-1

Parts Identification

Ref /D	Keysight Non-RoHS Part No.	Description	Qty	Keysight Non-RoHS Part No.	Description	Qty
21	16334-01213 ² (OLD: 16334-01203)	Bracket	1	16334-01213 ² (OLD: 16334-01203)	Bracket	1
22	16334-01211 ² (OLD: 16334-01201)	Bracket	1	16334-01211 ² (OLD: 16334-01201)	Bracket	1
23	0515-1873	Screw	2	0515-5023	Screw	2
24	16334-00612	Arm Plate (marked "L")	1	16334-00612	Arm Plate (marked "L")	1
25	0515-1872	Machine Screw	2	0515-1872	Machine Screw	2
26	16334-40001	Insulator	2	16334-40001	Insulator	2
27	16334-09002	Contact (Tweezer tip)	2	16334-09002	Contact (Tweezer tip)	2
28	16334-09001	Contact	2	16334-09001	Contact	2
29	16334-09003	Spacer	2	16334-09003	Spacer	2
30	16334-00601	Shield	2	16334-00601	Shield	2
31	0890-1821	Tube, Heat Shrinkable	2x8.8 cm	0890-1821	Tube, Heat Shrinkable	2x8.8 cm
32	16334-00613	Arm Plate (marked "H")	1	16334-00613	Arm Plate (marked "H")	1
33	1400-0249	Cable Tie	2	1400-0249	Cable Tie	2
1 thru 33	16334-60010	Test Fixture	1	16334-60610	Test Fixture	1
34	16334-00604	Plate	1	16334-00604	Plate	1
35	16334-40002	Base	1	16334-40002	Base	1
36	16334-60001	Compensation Block Assy	1	16334-60001	Compensation Block Assy	1

1. Not separately replaceable. Order 16334-60610.
2. For old designed (one screw) part, order the (OLD) part number stated in the bracket.

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