Agilent Technologies
11752D/E Option K01 Connector Gage Kit

User's Guide

Agilent Technologies

Manufacturing Part Number: 11752-90008
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Warranty Statement

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Safety Notes

The following safety notes are used throughout this document. Familiarize yourself with each of these notes and its meaning before performing any of the procedures in this document.

WARNING	**Warning denotes a hazard. It calls attention to a procedure which, if not correctly performed or adhered to, could result in injury or loss of life. Do not proceed beyond a warning note until the indicated conditions are fully understood and met.**

CAUTION	Caution denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in damage to or destruction of the instrument. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.

Definitions

- *Specifications* describe the performance of parameters covered by the product warranty (temperature –0 to 55 °C, unless otherwise noted.)
- *Typical* describes additional product performance information that is not covered by the product warranty. It is performance beyond specification that 80% of the units exhibit with a 95% confidence level over the temperature range 20 to 30 °C. Typical performance does not include measurement uncertainty.
- *Nominal* values indicate expected performance or describe product performance that is useful in the application of the product, but is not covered by the product warranty.
- *Characteristic Performance* describes performance parameter that the product is expected to meet before it leaves the factory, but is not verified in the field and is not covered by the product warranty. A characteristic includes the same guard bands as a specification.

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11752D/E Option K01

Introduction

This document contains information about initial inspection, performance tests, adjustments and operation of the Agilent 11752DK01 and 11752EK01 Connector Gages.

Description

The Agilent 11752D/EK01 connector gages are used to measure connector pin depth of 2.4 mm or 3.5 mm connectors. The connector gage kit contains the following.

- male connector gage
- female connector gage
- male master gage
- female master gage
- protective caps
- storage box (foam sets)

Verifying the Shipment

After the test set has been unpacked, inspect the test set and all accessories for any signs of damage that may have occurred during shipment. If your test set or any accessories appear to be damaged or missing, refer to “Contacting Agilent” on page 11. Use the original or comparable packaging materials to transport the instrument.

If the gage kit is being returned to Agilent for calibration or service, attach a tag indicating the type of service required, return address, model number, and serial number. Also, mark the container FRAGILE to assure careful handling. In any correspondence, refer to the instrument by model number and serial number. Refer to “Shipping Your Analyzer to Agilent for Service or Repair” on page 11.

General Specifications

The specifications listed in note below are the performance standards or limits against which the connector gage kit is tested.

NOTE Gage resolution depends on your ability to discern the position of the gage needle between divisions. The specification for this characteristic is based on a statistically significant number of people making the same measurement and independently indicating their readings.

Characteristics and Conditions	Typical Limits	Comments
Measurement Range	–0.005 in (–0.127 mm) to +0.005 in (+0.127 mm	In 0.0001 inch (0.00254 mm) increments.
Gage Resolution	0.00002 in (0.00051 mm)	Fifth of an increment
Gage Calibration Accuracy	0.00004 in (0.00102 mm)	
Gage Repeatability	0.000025 in (0.00064 mm)	Quarter of an increment
Master Accuracy	0.00004 in (0.00102 mm)	
Total Uncertainty:		
Worst Case RSS	0.000125 in (0.00318 mm) 0.000062 in (0.00157 mm)	Sum of resolution, repeatability, gage and master accuracy limits. Root sum of the squares.
Operating Environment:		
Temperature Range Humidity (26 °C max dry bulb) Maximum Altitude	20 to 26 °C (+68 to +79 °F) 0 to 80% 4.5 km (15,000 ft)	No temperature fluctuations greater than 1 °C.
Storage and Shipping Environment:		
Temperature Relative Humidity Altitude	–55 to +75 °C less than 95% at 40 °C less than 15.3 km (50,000 ft)	
Net Weight	1 kg (2 lb 3 oz)	

Operating Precautions

Your fingers are a heat source; handle the devices as little as possible during calibration. Before using the connector gages, they must be inspected, cleaned, and zeroed.

CAUTION To protect the sensitive microcircuits that may be connected to the connectors you are calibrating, always wear an electrostatic discharge-grounding strap connected to a conductive bench mat when working near sensitive equipment.

CAUTION Do not use hydrocarbons such as acetone, trichlorethylene, carbon tetrachloride or benzene to clean connector or Gage surfaces. (See "Inspecting and Cleaning the Gages")

CAUTION Do not spray any liquid solvent directly onto connector or gage surfaces.

Connector wear eventually degrades performance. To prolong the life of your gages:

- Clean all surfaces that come in contact during calibration.
- Do not measure a damaged connector; doing so could damage the gage. Replace damaged connectors.
- Keep the protector caps on the gages and masters when not in use to prevent contamination.
- Turn the connector nut (not the gage itself) when making connection to avoid damage to the connector and gage.

Inspecting and Cleaning the Gages

Before using the connector gages, they must be inspected, cleaned and zeroed.

Using an illuminated magnifying glass, carefully inspect the connector gage and the gage master as well as the connector you are about to measure. Foreign material on the gage, gage master or connector will render the measurement inaccurate.

To clean connector surfaces we recommend using compressed air, directing the air where it is needed through a plastic (do not use metal) nozzle. If the compressed air does not remove the foreign material, use a cotton swab (or if the swab is too large a round wooden toothpick wrapped in a single layer of lint-free cleaning cloth soaked in isopropyl alcohol.

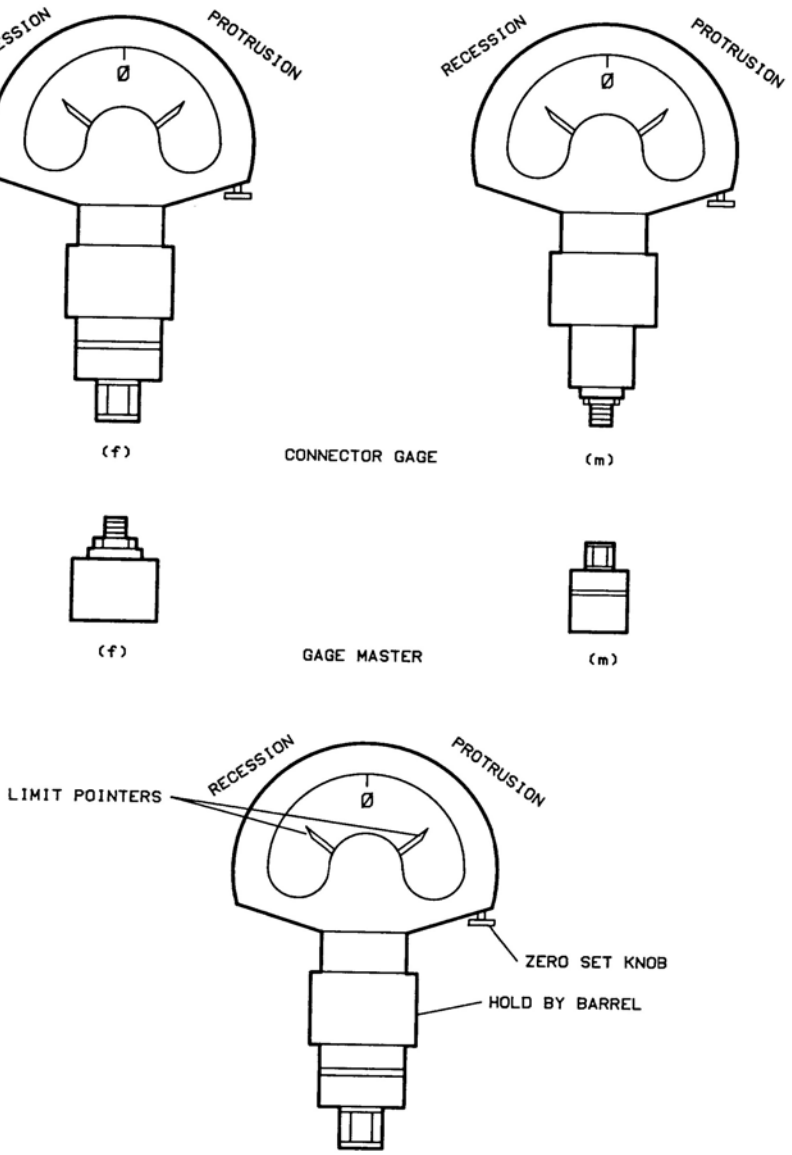
Dry the connector and gage surfaces with a brief blast of the compressed air.

Zeroing the Gage

Connect the gage to the appropriate gage master and tighten only the connecting nut (do not turn gage or master) until finger tight. Then the connecting nut to 90 N-cm (8 lb-in). Turn the zero set knob until the indicator is lined up with the zero indicator on the dial. Refer to Figure 1.

Gages should be checked often, to make sure that the zero setting has not changed. Generally, when the gage pointer, on a gage that has been recently zeroed, does not line up exactly with the zero mark, the gage or calibration block needs cleaning.

Figure 1 Connector Gage



Measuring Connectors

Measuring the recession of the center conductor, behind the outer conductor mating plane in a connector, is done in exactly the same way as zeroing the gage, except of course that the zero set knob is not re-set when the measurement is made.

Hold the gage by the barrel only and tighten only the connecting nut until finger tight. Do not turn the gage or the device. Recession or protrusion will show as a reading either counterclockwise or clockwise from zero. Refer to Figure 1 on page 5.

NOTE Protrusion of center conductor shoulder (male pin and end of the female center pin) is not allowable on any connector.

For maximum accuracy, measure the connector several times and take an average of the readings.

Service

Do not attempt to repair the gage or gage master. Any attempt to do so will void your warranty.

It is recommended that the gages be calibrated annually at an Agilent Technologies service office. Refer to “Agilent Support, Services, and Assistance” on page 11.

Replaceable Parts

Figure 2 11752D-K01 Connector Gage and Accessories

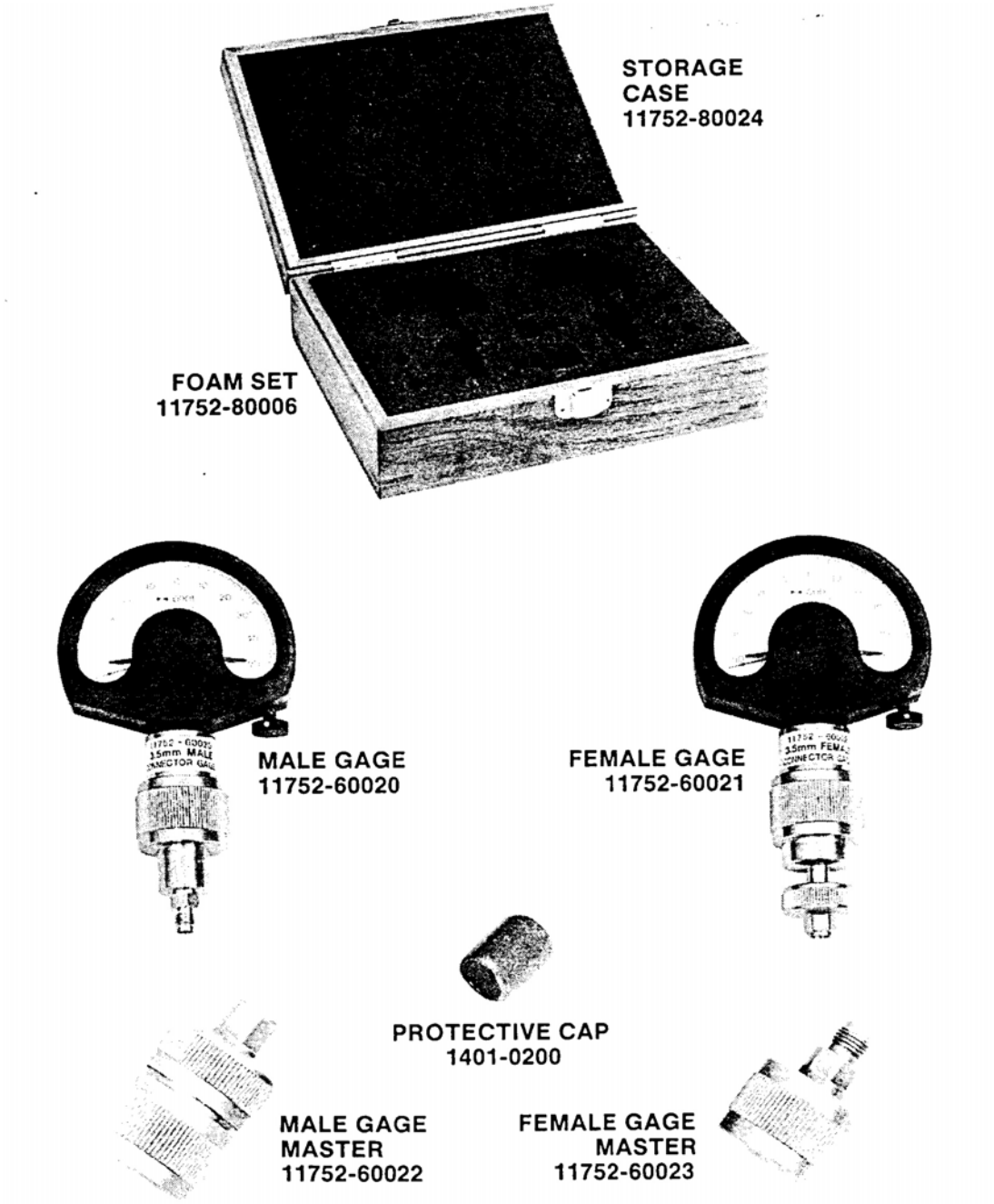
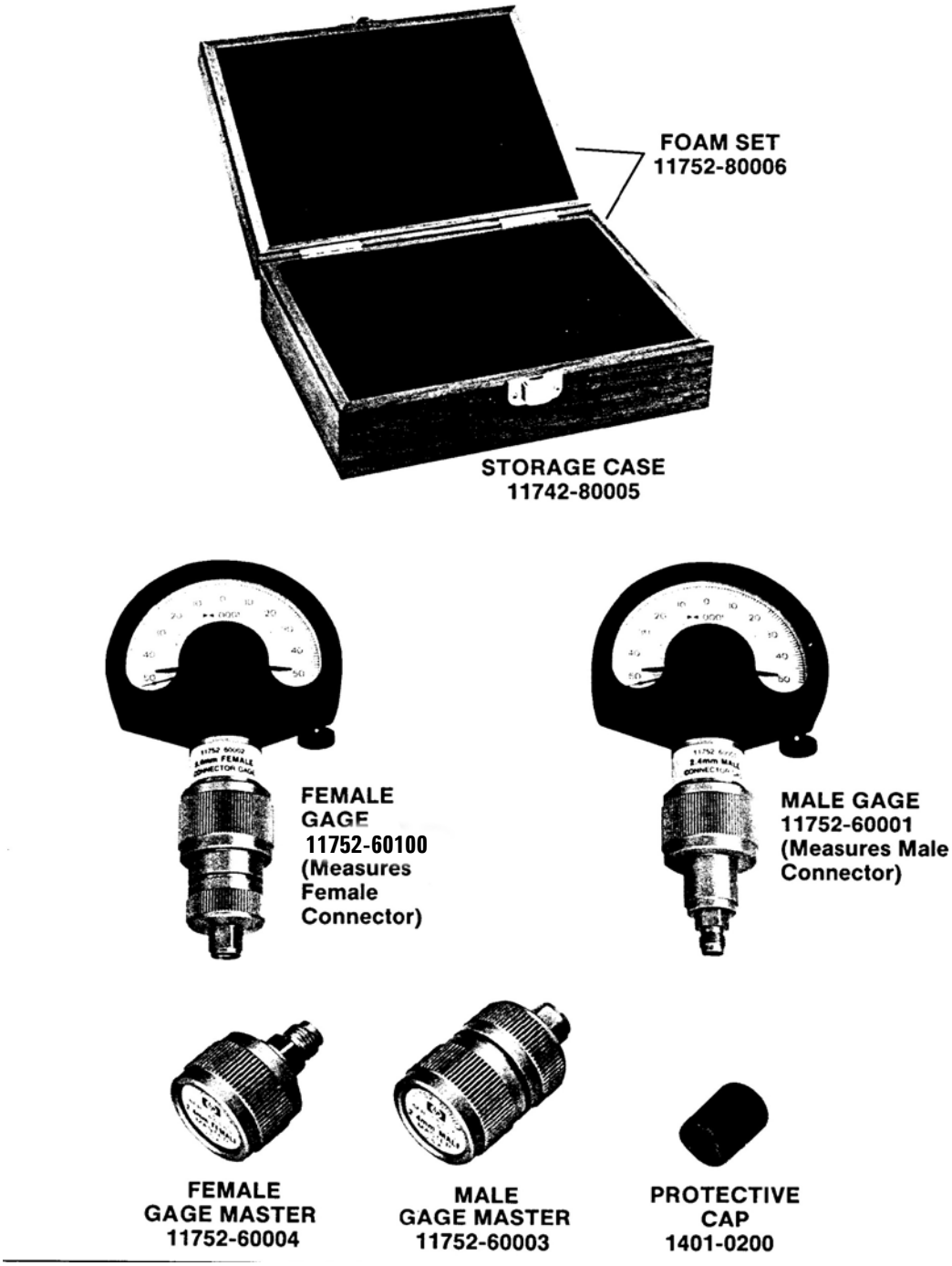


Figure 3 11752E-K01 Connector Gage and Accessories



Safety and Regulatory Information

Declaration of Conformity

For a copy of the manufacturer's Declaration of Conformity for this apparatus, contact your local Agilent Technologies office or sales representative. Refer to "Contacting Agilent" on page 11.

Statement of Compliance

This product has been designed and tested in accordance with the standards listed on the Manufacturer's Declaration of Conformity, and has been supplied in a safe condition. The documentation contains information and warnings that must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

General Safety Considerations

Before Applying Power

Verify that the product is configured to match the available main power source. If this product is to be powered by autotransformer, make sure the common terminal is connected to the neutral (grounded) side of the ac power supply.

Regulatory Information

This section contains information that is required by various government regulatory agencies.

Instrument Markings

The instruction documentation symbol. The product is marked with this symbol when it is necessary for the user to refer to the instructions in the documentation.

This symbol indicates that the instrument requires alternating current (ac) input.

This symbol indicates separate collection for electrical and electronic equipment, mandated under EU law as of August 13, 2005. All electric and electronic equipment are required to be separated from normal waste for disposal (Reference WEEE Directive, 2002/96/EC).

This symbol indicates that the power line switch is ON.

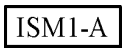
This symbol indicates that the power line switch is in the STANDBY position.

This symbol indicates that the power line switch is in the OFF position.

This symbol is used to identify a terminal which is internally connected to the product frame or chassis.

The CE mark is a registered trademark of the European Community. (If accompanied by a year, it is when the design was proven.)

The CSA mark is a registered trademark of the Canadian Standards Association. This instrument complies with Canada: CSA 22.2 No. 000000061010-1, Second Edition.



This is a symbol of an Industrial Scientific and Medical Group 1 Class A product.

This is a marking to indicate product compliance with the Canadian Interference-Causing Equipment Standard (ICES-001).

Direct Current.

This is a required mark signifying compliance with an EMC requirement. The C-Tick mark is a registered trademark of the Australian Spectrum Management Agency.

China RoHS regulations include requirements related to packaging, and require compliance to China standard GB18455-2001.

This symbol indicates compliance with the China RoHS regulations for paper/fiberboard packaging.

Agilent Support, Services, and Assistance

Service and Support Options

The analyzer's standard warranty is a one-year return to Agilent Technologies service warranty.

NOTE There are many other repair and calibration options available from the Agilent Technologies support organization. These options cover a range of service agreements with varying response times. Contact Agilent for additional information on available service agreements for this product. Refer to "Contacting Agilent" on page 11.

Contacting Agilent

Assistance with test and measurements needs and information or finding a local Agilent office are available on the Web at:
http://www.agilent.com/find/assist

If you do not have access to the Internet, please contact your Agilent field engineer.

NOTE In any correspondence or telephone conversation, refer to the Agilent product by its model number and full serial number. With this information, the Agilent representative can determine the warranty status of your unit.

Shipping Your Analyzer to Agilent for Service or Repair

IMPORTANT Agilent Technologies reserves the right to reformat or replace the internal hard disk drive in your analyzer as part of its repair. This will erase all user information stored on the hard disk. It is imperative, therefore, that you make a backup copy of your critical test data located on the analyzer's hard disk before shipping it to Agilent for repair.

If you wish to send your network analyzer to Agilent Technologies for service or repair:

- Include a complete description of the service requested or of the failure and a description of any failed test and any error message.
- Ship the analyzer using the original or comparable antistatic packaging materials.
- Contact Agilent for instructions on where to ship your analyzer.