Keysight Double-Ended Torque Wrench for 1.0 mm Connectors

14 mm Open End, 4 lb-in (0.45 Nm)
and 10 lb-in (1.13 Nm)
Part Number: 8710-2819
Notices

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Available Accessories

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<th>Description</th>
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<td>Dual Torque wrench, 14 mm open end, 4 lb-in (0.45 Nm) and 10 lb-in (1.13 Nm)</td>
<td>8710-2819</td>
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<tr>
<td>Open end wrench, 8 mm</td>
<td>N1060-20009</td>
</tr>
<tr>
<td>Open end wrench, 7 mm</td>
<td>8710-1761</td>
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**Ruggedized Adapters**

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<th>Part Number</th>
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<tr>
<td>Adapter, 1.0 mm to 1.0 mm</td>
<td>Y1900B/C/D</td>
</tr>
<tr>
<td>Adapter, 1.0 mm (f) to 1.85 mm (f)</td>
<td>Y1901B</td>
</tr>
<tr>
<td>Adapter, 1.0 mm to 2.4 mm</td>
<td>Y1902B</td>
</tr>
<tr>
<td>Adapter, 1.0 mm (f) to 2.92 mm (f)</td>
<td>Y1903B</td>
</tr>
</tbody>
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Introduction

Use this guide to familiarize yourself with the proper use of the double-ended torque wrench shown in Figure 1 below. To prevent expensive repairs and repair downtime, take a few minutes to study the information in the following pages.

**Figure 1** Dual Torque wrench, 14 mm open end, 4 lb-in (0.45 Nm) and 10 lb-in (1.13 Nm), Part Number 8710-2819
Test Port Connector

Figure 2 shows the torque specification for the two connection threads on the N5293/95AXxx front-panel test port connectors.

**CAUTION**

Two wrenches must be used to avoid stress on cables.

**Figure 2** Torque Specification for Test Port Threads

10 lb-in torque (outer threads)

4 lb-in torque (inner threads)
Test Port Adapters

These adapters can be connected to the N5293/95AXxx’s test ports. Due to the physical requirements needed to obtain high performance, the geometry of these, as well as all 1.0 mm connectors, demands special care to avoid expensive damage as explained in this document.

Figure 3 Ruggedized Adapters

These are *not* two adapters connected by a joint

Not a connection (protect from torque)

1 piece
Making RF Connections

1. Work at a static-safe workstation.
2. Visually inspect the connectors. If necessary, clean the connectors. Carefully align the connectors. The male connector center pin must slip concentrically into the contact fingers of the female connector.
3. Push the connectors straight together.
4. Tighten lightly using only your fingers as, at this point, all you want is a connection in which the outer conductors make gentle contact at all points on both mating surfaces. Very light finger pressure (no more than 2 pound-inches of torque) is enough.

**CAUTION** Do not twist one connector into the other (like inserting a light bulb). This happens if you turn the device body rather than the connector nut. Major damage to the center conductor can occur if the device body is twisted.

5. Use a torque wrench to make the final connection. This guarantees perfectly tight, consistent connections that prevents connector damage.
   - See Figure 4 for the proper handling of the wrench.
   - To view the correct connector “flats” on which to position the wrench:
     - See Figure 5 and Figure 6 for Test Port connectors.

**CAUTION** This maximum torque setting is 4 in-lb (0.45 Nm) for non-ruggedized 1.0 mm connectors.

**CAUTION** Rotate only the connector nut when you make the connection. Do not rotate the cable or adapter.

**CAUTION** Hold the torque wrench lightly at the groove located at the end of the handle.

**CAUTION** Apply force perpendicular to the wrench handle. This applies torque to the connection through the wrench. Do not hold the wrench so tightly that you push the handle straight down along its length rather than pivoting it, otherwise you apply an unlimited amount of torque.

**CAUTION** Tighten the connection just to the torque wrench “break” point as shown in Figure 4. Do not tighten the connection further.
Applying Torque

For the 1.0 mm Test Port connectors, use the dual torque wrench.

For torquing non-ruggedized connectors using the inner threads to the N5293/95AXxx’s, use the 4 lb-in silver end of the torque wrench as shown in Figure 4 and Figure 6.

For torquing ruggedized connectors using the outer threads to the N5293/95AXxx’s, use the 10 lb-in red end of the torque wrench as shown in Figure 5.

**CAUTION**

Two wrenches must be used to avoid stress on cables.

**Figure 4**

Wrenches on Test Port

- Groove marks the correct place to hold wrench
- Direction to tighten connection
- Handle fully broken (not recommended)
- Handle begins to break (correct point to stop)
- Do not turn
- < 90°

**CAUTION**

The silver end of the dual torque wrench is 4 lb-in. The red end of the torque wrench is 10 lb-in.
Selecting and Positioning the Wrenches

For a few possible connections, the following figures show the proper “flats” on which to place the wrench.

Ruggedized Adapter to Test Port

Figure 5 shows the correct placement of the 10 lb-in torque wrench (the red end) and the 8 mm open end wrench. On the ruggedized adapter, connect the 8 mm wrench on the flats that are adjacent to the knurled ring.

Figure 5  Wrenches Positioned on Correct Flats
Non-Ruggedized Adapter to Test Port

It is recommended that you always connect a ruggedized adapter to the N5293/95AXxx test ports. However, if you want to connect an adapter that uses the inner threads, or cable directly to a test port connector, use the 4 lb-in end of the dual torque wrench (silver end of the dual torque wrench). Do NOT use the red end of the dual torque wrench which is only used when connecting the stronger outside test port connector threads to a ruggedized adapter.

Never apply in excess of 4 lb-in of torque to the N5293/95AXxx test port’s inner threads. Confirm also that your adapter or test port can withstand 4 lb-in.

Figure 6  Wrenches Positioned on Correct Flats