

WATERS CORPORATION
ENGINEERING TEST SPECIFICATION AND PROCEDURE
COMPANY CONFIDENTIAL

SYSTEM/ASSEMBLY NAME: **ACQUITY TUV TC DOWNLOAD / PRETEST**

PART NUMBER AFFECTED: **279001743**

TEST EQUIPMENT NAME: **FIRMWARE DOWNLOAD STATION**

TEST EQUIPMENT NUMBER: **NA**

TEST EQUIPMENT LOCATION: **MILFORD, SINGAPORE**

DOCUMENT NUMBER: **735002130**

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DATE: **3/15/2010**

REVISED BY: **MARK JUSSAUME**

DATE: **6/14/2012**

REVISION: **B**

VALID IF CURRENT EFFECTIVE REVISION AND STAMPED IN RED BY DOCUMENT CONTROL OR WITH SAP-GENERATED TIME & DATE STAMP.

EQUIPMENT REQUIRED

Quantity	Part Number	Description
1	289002450	TUV Med. Shunt
1		Empower Work Station with System Suitability Option
1		RS232 Serial Cable
1		Ethernet Cable
1		Appropriately Grounded Anti-Static Wrist Strap
1	TE82989	Leak Detect Simulator

REFERENCE DOCUMENTATION

Document Number	Description
WAT046538	Electrical Safety Test procedure

1. VISUAL INSPECTION

- 1.1. Complete header information for *Instrument Test Record*.
- 1.2. Visually inspect unit for obvious defects.
- 1.3. Check that all cables are seated properly into their perspective connectors.
- 1.4. Check for proper ground connections.
- 1.5. *Record Pass/Fail results for the Visual Inspection test onto Instrument Test Record.*

2. ELECTRICAL SAFETY TESTS

- 2.1. Perform the Electrical Safety Test per Hi-Pot and Ground Continuity Test Procedure, document # WAT046538.
- 2.2. *Record Pass/Fail results for Electrical Safety Test onto Instrument Test Record.*

3. FIRMWARE LOADING

- 3.1. Connect power cord, RS232 cable and Ethernet cable to detector.
- 3.2. Switch detector power on.
- 3.3. From the desktop, double click on the LOADER icon.
- 3.4. In the firmware Loader Dialog, select the "Scan" box then click on the "Next" button.
- 3.5. Loader will show the Ethernet port on instrument available.
- 3.6. Select Ethernet download by clicking on it then click the "OK" button.
- 3.7. Select or browse to find **ACQUITY TUVII Detector.sft** then select and click OK.
- 3.8. Click on the "Next" button to start downloading the software.
- 3.9. Click on the "Finish" button when the download completes.
- 3.10. Switch instrument power OFF.
- 3.11. *Record firmware version onto header of Instrument Test Record.*

4. POWER ON / CALIBRATION (TUV)

- 4.1. Install 289002450 Med. Shunt into bench.
- 4.2. Connect flowcell ID cable to shunt.
- 4.3. Plug TE82989 Leak Detect Simulator into panel of Acquity TUV. Set leak switch OFF.
- 4.4. Switch unit power ON.
- 4.5. Select *Acquity Terminal* icon on desktop. Type **setserialnumber xxxxxx** (xxxxxx is unit serial #), enter.
- 4.6. Double click the *Stop Acquity Processes* icon on desktop.
- 4.7. Double click the *Acquity Console* icon on desktop.

- 4.8. Select *TUV Detectors*.
- 4.9. Click on *Control*, and then click *Reset TUV*. (This will calibrate unit)
- 4.10. Verify that unit calibrates. (Lamp LED will be solid green when successfully calibrated.)
- 4.11. *Record Pass/Fail results for Calibration onto Instrument Test Record.*

5. LEAK DETECT TEST

- 5.1. Select / launch *Acquity Terminal* on desktop.
- 5.2. TE82989 Leak Detect Simulator should be plugged in and leak switch OFF.
- 5.3. Verify that Leak Detect LED on simulator is illuminated.
- 5.4. Type **dump leakdetector**. Press enter. Verify response:
* PRESENT -> * NO Leak
- 5.5. Set Leak switch ON.
- 5.6. Type **dump leakdetector**. Press enter. Verify response:
* PRESENT -> * Leak detected
- 5.7. *Record Pass/Fail results for Leak Detect onto Instrument Test Record.*

6. FAN TESTS

- 6.1. Verify that the rear panel Fan is turning and that air is blowing out the back of unit.
- 6.2. Verify that the two internal partition Fan's are turning and that air is blowing towards the front of the unit.
- 6.3. *Record the Pass/Fail results for the Fan Test onto Instrument Test Record.*

7. LAMP ID COMMUNICATIONS TEST

- 7.1. Enable ibutton data dump.
 - 7.1.1. Type **edit ibutton**. Press enter.
 - 7.1.2. Type **true**. Press enter.
- 7.2. Type **dumplampmemory**. Press enter. Verify response:
Lamp Device Found
- 7.3. *Record the Pass/Fail results for Lamp ID Communications Test onto Instrument Test Record.*

8. FLOW CELL ID COMMUNICATIONS TEST

8.1. Type **dumpflowcellmemory**. Press enter. Verify response:

Flow Cell Device Found

8.2. *Record Pass/Fail results for Flow cell ID Communications Test onto Instrument Test Record.*

8.3. Disable ibutton data dump.

8.3.1. Type **edit ibutton**. Press enter.

8.3.2. Type **false**. Press enter.

9. END OF TEST

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INSTRUMENT - FINAL TEST RECORD

Part Number: <u>279001743</u>	Description: <u>AcQuity TUV TC Detector</u>
Tested By: _____	Date: <u> </u> / <u> </u> / <u> </u>
Serial Number: _____	Control Number: _____
Software Revision: _____	Factory Order: _____

1) Visual Inspection	PASS ☐	FAIL ☐	see note # _____	PASS ☐
2) Electrical Safety	PASS ☐	FAIL ☐	see note # _____	PASS ☐
4) Calibration	PASS ☐	FAIL ☐	see note # _____	PASS ☐
5) Leak Detect	PASS ☐	FAIL ☐	see note # _____	PASS ☐
6) Fan's	PASS ☐	FAIL ☐	see note # _____	PASS ☐
7) Lamp ID Communication	PASS ☐	FAIL ☐	see note # _____	PASS ☐
8) Flow Cell ID Communication	PASS ☐	FAIL ☐	see note # _____	PASS ☐

Instrument Result: PASS ☐ FAIL ☐ Signed _____ Date: / /

Notes: _____

This Test Record and any data contained within it are proprietary to Waters Corporation and must be retained by Waters for the time period prescribed in its Quality Records Retention Policy. If any of the individual tests noted above fail, a note must be referenced that details the work performed to correct that specific deficiency. An overall failure indicates a special circumstance in which case a complete retest is to be done. A second form is required to document that testing. The initial form must be attached and retained.