

PQI Model 301 & 300 Test Block Procedure



Overview

The purpose of the PQI Test Block is to provide a means to identify changes in PQI characteristics that may affect accuracy during normal operations.

The Test Block is provided with a custom case that protects the block from the environment. The Test Block must remain in the case at all times to insure accuracy of the results of the Procedure. Each Test block contains an identifying serial number on the top and bottom surfaces of the block. The face of the block containing the THIS SIDE UP label must be facing the user during the Procedure. Test blocks are not interchangeable in that a given gauge will not read the same on each Test Block. Therefore as part of the Procedure the PQI serial number and the Test Block serial number will be recorded.

TransTech recommends that the Test Block Procedure should be conducted monthly on each instrument for routine preventive maintenance or if the PQI operation is suspect. TransTech also recommends that a record be kept of the results of each Procedure. A sample log form is provided. The log form should be kept with the Test Block.

Applicability

The Test Block Procedure should be performed on all new gauges as soon as possible after receipt to establish a performance baseline. For existing gauges, this procedure should be performed for the first time only if the gauge is in good working order.

This procedure is applicable to all PQI Model 301 and PQI Model 300 units. This Procedure is not applicable to PQI Models 200 and earlier.



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Procedure Model 301

- 1.0 Clean the sensing surface of the PQI as described in the Operator's Handbook. The sensing surface **MUST** be clean and dry to provide accurate results. *A particle as small as 0.015 inch can cause the test to fail possibly resulting in return of a good unit to the factory.*
- 2.0 Remove the Test Block case top and verify that the **THIS SIDE UP** label is visible. Place the top under the case bottom as shown in the photo. Verify that the surface of the test block is clean and dry. (This procedure must not be conducted in weather conditions that will result in moisture on the Test Block surface. If necessary the Test Block surface can be cleaned with a small amount of WD-40 sprayed on a clean cloth.)
- 3.0 Record the Test Block Serial #, the PQI Serial #, and the date in the spaces provided on the log form.
- 4.0 Depress the ON key to initiate the PQI startup sequence.
- 5.0 On the **SELECT PAVEMENT TYPE** screen any selection can be made.
- 6.0 On the **LIFT THICKNESS ENTER UNITS** screen select **1) inches**.
- 7.0 On the **LIFT THICKNESS** screen enter **3.0** and press ENTER.
- 8.0 On the **STARTUP MENU** screen select **2) Run**.
- 9.0 Press the "Mode" key to put the PQI in the Continuous Reading Mode and wait 5minutes.
- 10.0 Depress the **DIAG** key to enter diagnostics mode.
- 11.0 Record the **mV** and the **A** readings in the spaces provided on the log form in the 3 inch columns.
- 12.0 Press the **DIAG** key to exit the diagnostic mode and return to Continuous Reading Mode.

- 13.0 Press the MENU key
- 14.0 Select **2) Mix Information.**
- 15.0 Select **2) Lift.**
- 16.0 Enter 0.5 and press ENTER.
- 17.0 Press ENTER twice to return to the Continuous reading Mode.
- 18.0 Press DIAG key to enter diagnostics mode.
- 19.0 Record the **mV** and the **A** readings in the spaces provided on the log form in the 0.5 inch columns.
- 20.0 Press the DIAG key to exit the diagnostic mode and return to Continuous Reading Mode.
- 21.0 Turn the PQI Off.



Procedure Model 300

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- 2.0 Remove the Test Block case top and verify that the **THIS SIDE UP** label is visible. Place the top under the case bottom as shown in the photo. Verify that the surface of the test block is clean and dry. (This procedure must not be conducted in weather conditions that will result in moisture on the Test Block surface. If necessary the Test Block surface can be cleaned with a small amount of WD-40 sprayed on a clean cloth.)
- 3.0 Record the Test Block Serial #, the PQI Serial #, and the date in the spaces provided on the log form.
- 4.0 Turn the PQI 300 ON to initiate the PQI startup sequence.

- 5.0 On the SELECT PAVEMENT TYPE screen any selection can be made.
- 6.0 On the STARTUP MENU screen select **2) Run**.
- 7.0 Use the “**B**” key to put the PQI 300 in the Continuous Reading Mode and wait 5 minutes.
- 8.0 By using the “**F**” key make sure the PQI 300 is in the Deep Mode for the first set of readings. A [D] should be seen on the upper right corner of the display followed by a letter indicating the type of mix selected.
- 9.0 Depress the “**D**” key to enter diagnostics mode.
- 10.0 Record the **mV** and the **A** readings in the spaces provided on the log form in the 3 inch columns.
- 11.0 Press the “**D**” key to exit diagnostic mode and return to the Continuous Reading Mode.
- 12.0 By using the “**F**” key switch the PQI 300 to the Shallow Mode for the second set of readings. An [S] should be seen on the upper right corner of the display followed by a letter indicating the type of mix selected.
- 13.0 Depress the “**D**” key to enter diagnostics mode.
- 14.0 Record the **mV** and the **A** readings in the spaces provided on the log form in the 0.5 inch columns.
- 15.0 Press the “**D**” key to exit diagnostic mode and return to the Continuous Reading Mode.

At this time you may want to use the “F” key to switch the PQI 300 back to Deep Mode.

Test Results Interpretation

If this was the first test for this instrument on this block, the recorded readings will be the reference reading for future tests and the following computations are to be made.

1. Multiply the reference 3 inch **mV** reading by 0.015. Form the test limits by adding and subtracting the value obtained from the reference 3 inch **mV** reading. If the current reading is between the limits then the test passes.
2. Multiply the reference 0.5 inch **mV** reading by 0.015. Form the test limits by adding and subtracting the value obtained from the reference 0.5 inch **mV** reading. If the current reading is between the limits then the test passes.
3. If the **A** readings for both the 3 inch and 0.5 inch data are less than 1°, then the test passes.

If any of the above tests did not pass, call TransTech customer service to determine if the gauge should be returned for repair and/or calibration.

See Example Below!!!!!!

Example:

Test Log

PQI Test Block Serial # TB- 001
PQI Serial # _____

	Date (MM/DD/YY)	3 inch mV	3 inch A	0.5 inch mV	0.5 inch A
	Reference	1382	0.4	1621	0.5
Upper Limit	-	1402.73	-	1645.32	-
Lower Limit	-	1361.27	-	1596.69	-
	02/04/03	1387	0.4	1626	0.5

Calculate comparison between previous test readings and most current test reading:

Previous 3 inch Reading mV = **1382**

$$1382 \times 0.015 = 20.73$$

Upper test limit calculation: **1382 + 20.73 = 1402.73**

The upper test limit is calculated to be: **1402.73**

Lower test limit calculation: **1382 - 20.73 = 1361.27**

The lower test limit is calculated to be: **1361.27**

Since the most current test for the 3 inch reading in mV is 1387 and falls between the high and low test limits that we calculated, this test would pass. The test also passes because the difference in the 3" A values did not exceed 1° of change. In fact, during this test, the 3 inch A values remained the same.

The next step would be to repeat the above calculations for the 0.5 inch mV values.

The Upper limit would calculate to: **1645.32**

The Lower limit would calculate to: **1596.69**

