

COMPANY CONFIDENTIAL

T.E. FORMAT REV. 5.0

WATERS CORPORATION

ENGINEERING TEST SPECIFICATION AND PROCEDURE

SYSTEM/ASSEMBLY/SUBASSEMBLY NAME: 2690 ALLIANCE SYSTEM

WATERS PART NUMBER AFFECTED: 270000,270002,270006,270008,270880,270882,270886,270890

TEST EQUIPMENT NAME: N/A

TEST EQUIPMENT NUMBER: N/A

TEST EQUIPMENT PLANT LOCATION: MILFORD

TEST SPECIFICATION AND PROCEDURE DOCUMENT NUMBER: 735000164

WRITTEN BY: Mike Cotter DATE: JULY 2, 1998

APPROVED BY:

RALPH WELSCH
TEST ENGINEERING

DATE:

ED VOLPICELLI
ELEC./MECH. ENGINEERING

DATE:

ROLAND DUCHARME
ASSEMBLY ENGINEERING

DATE:

REVISION HISTORY

<u>REV.</u>	<u>DWO/ECO NUMBER</u>	<u>DATE</u>	<u>ORIGINATOR</u>	<u>APPROVAL</u>	<u>DATE</u>
0	ECO-3758	7/20/98	M. Cotter		

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This document describes which tests to repeat in the case of assembly or component failure after top-level test completion. Note, however that the matrix does not include a comprehensive list of every component and sub assembly, as it would be too large to read.

Small components with clear functions were omitted for the sake of simplicity. This, however, does not indicate that relevant tests should be disregarded after small component replacement. If, for example, the needle wash pump is replaced, it is necessary to repeat the needle wash prime/test (even though it is not specifically detailed on the matrix). In replacing items not covered by the matrix, the technician should use his/her knowledge and judgement to repeat the appropriate tests.

The items on the matrix were chosen due to their complex nature and potential for individual interpretation/confusion. The use of this matrix will ensure that every instrument shipped has been fully and consistently tested to operate as designated in the performance specification. In replacing any of the included items, refer to the matrix for the proper retest strategy.

To read the matrix, locate the replaced component/assembly in the left column. Look across that row, noting where any **Xs** are located. At each **X**, look to the top of the row, and repeat the indicated test. If the **X** indicates that a 'Test Group #' should be repeated, look to the list of Test Groups below the matrix and repeat the tests indicated there.

This matrix assumes that all tests have been completed prior to component/assembly replacement. If you replace an item, and have not yet finished testing, only re-run the previously completed tests, and then proceed with the remainder of the final instrument test.

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	Test Group 6	Test Group 5	Test Group 4	Test Group 3	Test Group 2	Test Group 1	Load Methods From Disk	Random Vial Positioning Test	Seal Pack Adjustment	Z-ram Height Verification/Opto Fence Test	Seal Wash Prime and Functional Test	Verify Power Supply Fan Operation	Heater/Cooler Functionality Tests	Keypad & Display Functionality Test	High pot and Ground Continuity Test
CPU PCB						X	X						X	X	X
Fluidics Driver PCB				X				X							X
Pump Driver PCB or Pump Tray	X				X						X				X
Power Supply								X				X	X		
Front Panel Assy. or Component														X	
Floppy Disk Drive							X								
Heater/Cooler Assy.													X		
Carousel Carrier Assy.								X		X					
Degasser/Sparge Tray Assy					(a)										
Fluid Pack Component/Fitting			X											(b)	
Injector Assy.			X	X				X	X						X
Syringe or Syringe Drive Assy.		X												(b)	

Test Groups:

- 1: Initial Test Prep, Time/Date Set, Serial Port, IEEE, Event I/O & Column Heater Functionality, Flow Precision (A/C)
- 2: Verify Solvent Inlet Plumbing, Pump Static Leak Test, Sparge Valve or Degasser Tests, Flow Precision (A/C)
- 3: Needle Wash Prime & Test, Injection Accuracy Test.
- 4: System Leak Test, Purge +Compression Test, Flow Precision (A/C)
- 5: Injection Accuracy, Purge & Compression
- 6: Flowrate Accuracy, Ripple

Notes:

- a: Perform flow precision test for channels A/C and B/D if degasser tray is replaced.
- b: Repeat high pot & ground continuity test if any electrical component is replaced or disconnected.