

WATERS CORPORATION
ENGINEERING TEST SPECIFICATION AND PROCEDURE
COMPANY CONFIDENTIAL

SYSTEM/ASSEMBLY NAME: **ASSEMBLY, TRANSFER MECHANISM, AUTOSAMPLER**

ASSEMBLY, TRANSFER MECHANISM, ELEVATOR

PART NUMBER AFFECTED: **279000778, 279000797**

TEST EQUIPMENT NAME: **SHUTTLE TESTER**

TEST EQUIPMENT NUMBER: **TE82869**

DOCUMENT NUMBER: **735001199**

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DATE: **July 22, 2005**

REVISED BY: **CHAU NGUYEN**

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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
A/R		"Snoop" Liquid Leak Detector (Swagelok P/N MS-SNOOP-8OZ)

SPECIFICATIONS

This tester tests the functionality of the Acquity Elevator shuttles (279000778 & 279000797). The test allows the user to check that the shuttle moves with the proper airflow actuation. Also by using LED's, the user can check that the home and away sensors located on either end of the base plate are operating correctly. Often in this test the Acquity Elevator shuttle will be referred to as the **UUT**.

NOTES:

This procedure does not utilize:

- Latch Actuator Switch
- Latch Away Cable and LED
- Latch Home Cable and LED
- Latch Air Tubing

1. TEST SETUP

- 1.1. Orient tester such that the AC power entry module is located in the back of tester.
- 1.2. Make sure that AC power switch is off, by pressing in the bottom side of the switch.
- 1.3. Plug an AC power cord into the power entry module located in the back of tester. Then plug the other side into a standard 120-volt AC wall socket.
- 1.4. Connect an air supply line to air supply nozzle on the back of the tester.
- 1.5. Verify that the pressure on the gauge, located on the right side of the tester, is approximately **75 PSI**.

2. CONNECT UUT

- 2.1. Orient **UUT** in front of tester, so that the arm attached to the carriage is pointing away from tester.
- 2.2. Connect the female Home sensor cable located on the left side of **UUT** to the panel-mounted connector labeled **CARRIAGE HOME** (refer to figure 1 or 2 on page 4).
- 2.3. Connect the male Away sensor cable to the small cable attached to the panel-mounted connector labeled **CARRIAGE AWAY** (refer to figure 1 or 2 on page 4).
- 2.4. Connect the **HOME AIR INLET** tubing to the bulkhead fitting labeled **HOME AIR** (refer to figure 1 or 2 on page 4).
- 2.5. Connect the **AWAY AIR INLET** tubing to the bulkhead fitting labeled **AWAY AIR** (refer to figure 1 or 2 on page 4).

3. BEGIN TEST

- 3.1. Verify that both **HOME ACTUATOR** and **AWAY ACTUATOR** are in the middle position.
- 3.2. Slide the carriage along the cylinder manually, slide enough to check that it is moving freely and is not binding, then return the carriage to the home position.
- 3.3. Turn AC power on by actuating the AC power switch to the top. Check that power switch is illuminated.
- 3.4. While the carriage is in the home position check that the **CARRIAGE HOME** green LED is illuminated.
- 3.5. Activate the **AWAY ACTUATOR** and the Carriage will move from the **HOME** position to the **AWAY** position, observe that the **CARRIAGE HOME** green LED turns off.
- 3.6. While the **AWAY** circuit is pressurized check for leaks using Snoop or other similar products used to detect leaks.
- 3.7. Move the **AWAY ACTUATOR** to the middle position and check that the **CARRIAGE AWAY** green LED is illuminated.
- 3.8. Activate the **HOME ACTUATOR** and the carriage will move from the **AWAY** position to the **HOME** position, observe that the **CARRIAGE AWAY** green LED turns off.
- 3.9. While the **HOME** circuit is pressurized check for leaks using Snoop or other similar products used to detect leaks.

- 3.10. Move the **HOME ACTUATOR** to the middle position and check that the **HOME SENSOR** green LED is illuminated.

4. END TEST

- 4.1. Disconnect all tubing, and cables from **TESTER** and **UUT**.
- 4.2. Turn off power by actuating the AC power switch to the **BOTTOM** position.

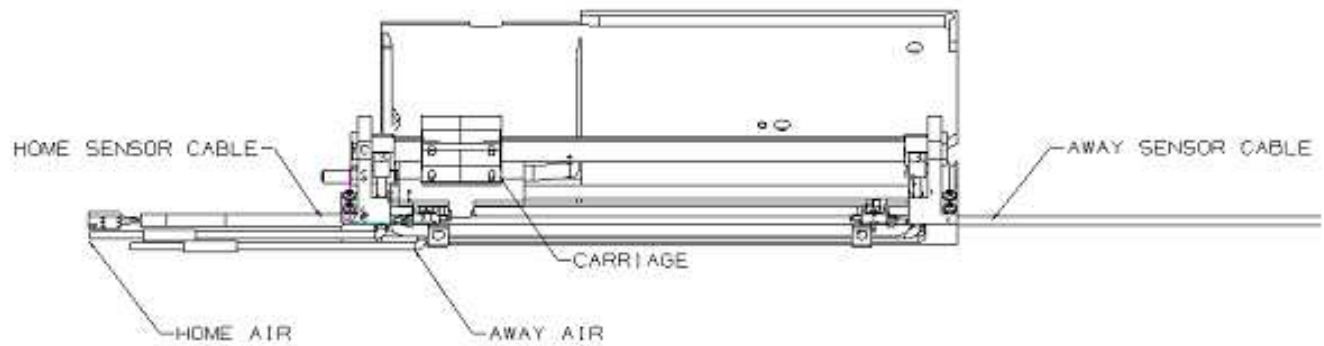


Figure 1
Transfer Mechanism, Autosampler

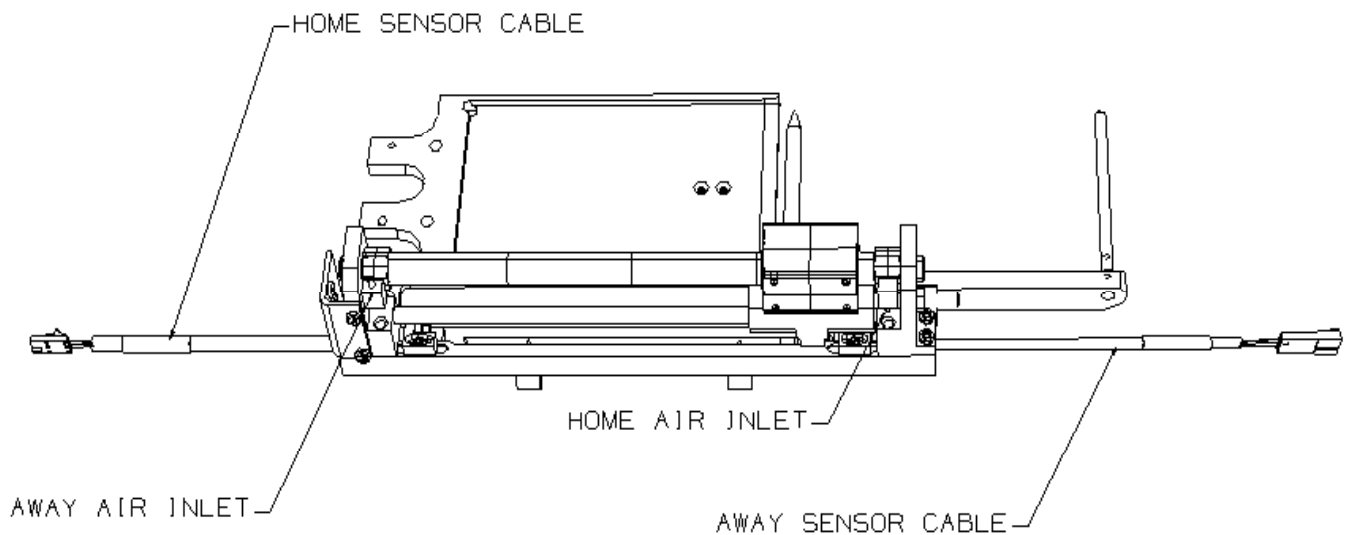


Figure 2
Transfer Mechanism, Elevator