

Navigator 550

Hydrazine and sodium wet-sections



Navigator 550
hydrazine and sodium
wet-sections

1 Introduction

These procedures must be carried out by a trained technician.

Tools required

- Adjustable spanner

Flowmeter upgrade procedures
(single-stream and multi-stream)

Measurement made easy

2 For more information

Further information is available from:
www.abb.com/analytical

or by scanning these codes:



Sales



Service

3 Safety

Warning.

These procedures must be carried out by a trained technician.

CHEMICAL

- Ensure personal protective equipment (PPE) such as **gloves** and **eye protection** are worn during any maintenance.
- Observe all health and safety procedures for handling chemicals.
- To familiarize yourself with handling precautions, dangers and emergency procedures, always review the Material Safety Data Sheets prior to handling containers, reservoirs and delivery systems that contain chemical reagents and standards.
- Take care if cleaning any spillages and observe all relevant safety instructions. Wipe up any spillages using clean water.
- Perform general cleaning of the wet-section using a damp cloth only – mild detergent can be used as a cleaning aid. Do not use Acetone or any organic solvents.

ELECTRICAL

- Isolate all high voltage supplies to the transmitter before performing bottle / label replacement procedures.
- The wet-section is vulnerable to electrostatic damage. Wear an anti-static strap or dismantle the wet-section on an anti-static workbench.
- Ensure all electrical connections are kept dry at all times.

GENERAL

- Shut off the external sample supply to the wet-section before performing replacement procedures. When a procedure is complete, restore power to the transmitter and sample to the wet-section at the correct flow rate. If necessary, calibrate the wet-section – refer to the wet-section Operating Instructions (sodium OI/ASO550-EN or hydrazine OI/AHM550-EN) for calibration instructions.
- Dispose of the old components in accordance with the guidelines contained in the Operating instructions (sodium OI/ASO550-EN or hydrazine OI/AHM550-EN).

4 Items required

4.1 Single-stream wet-sections (hydrazine / sodium)

- 1 x flowmeter upgrade kit, part number AW500 040

4.2 Multi-stream wet-sections (sodium)

- 3 x flowmeter upgrade kits, part number AW500 041

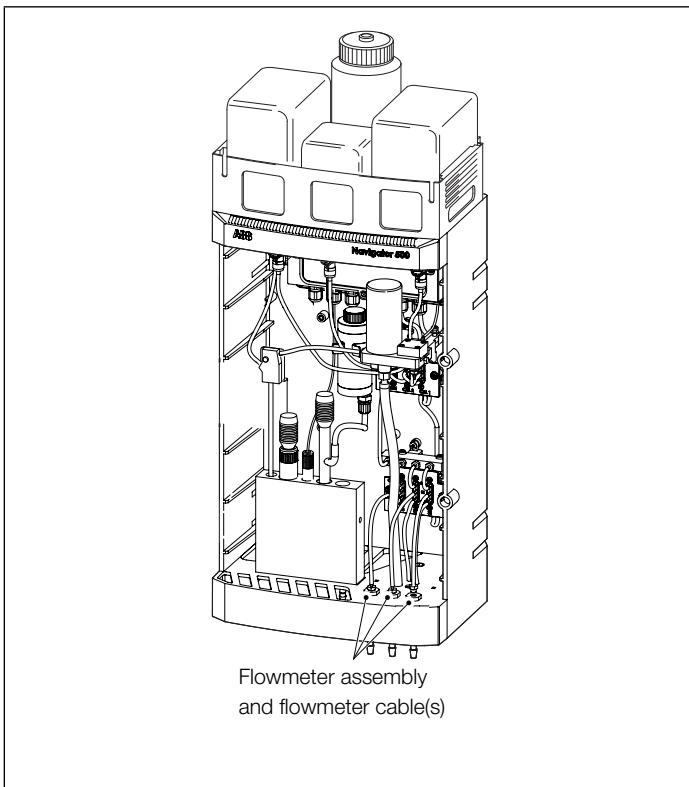


Fig. 4.1 Flowmeter assembly upgrade – flowmeter location(s)
(sodium wet-section shown)

5 Flowmeter upgrade procedure

Referring to Fig. 4.1:

1. Disconnect external sample tubing (A) from each inlet hose connector (B) on underside of the wet-section and allow to drain.
2. Disconnect sample inlet tubes (C) from the barbed connectors (D) on the top of each inlet assembly (E) and discard stream 2 and stream 3 tubing.
3. Loosen locknuts (F) on the underside of each inlet assembly (E) and pull each inlet assembly adaptor out from the top side of the wet-section.
4. Fit new adaptors (G) (1 supplied with each kit) as follows:
 - fit the stream 1 adaptor (single- and multi-stream) into the inlet hole below locknut (H) and secure in position using locknut (H) on the top face of the wet-section base.

Note. If upgrading a single-stream wet-section, fit the new stream adaptor in the 2nd inlet hole from the right in the base. The hole must be punched or cut out of the knock-out.

- for stream 2 (sodium multi-stream only), punch- or cut-out the knock-out below locknut (I), fit the stream 2 adaptor into the inlet hole and secure in position using locknut (I) on the top face of the wet-section base.
 - for stream 3 (sodium multi-stream only), punch- or cut-out the knock-out below locknut (J), fit the stream 3 adaptor into the inlet hole and secure in position using locknut (J) on the top face of the wet-section base.
5. Re-connect stream 1 sample inlet tube (C) to the barbed connector on the new stream 1 adaptor.
 6. Push the stream 1 flowmeter (K) into the QD coupling (L) ensuring the flow arrow on the flowmeter body is facing into the wet-section.

Hydrazine and sodium single-stream wet-sections only – proceed to step 11.

7. Connect a 190 mm (7.5 in.) length of new sample inlet tube (M) between the stream 2 (S2) manifold inlet (N) and the barbed connector on the stream 2 adaptor.

Caution. Inlet tubing must be the specified length and type to ensure correct operation.

8. Push the stream 2 flowmeter into the stream 2 QD coupling ensuring the flow arrow on the flowmeter body is facing into the wet-section.
9. Connect a 245 mm (9.6 in.) length of new sample inlet tube (O) between the stream 3 (S3) manifold inlet (P) and the barbed connector on the stream 3 adaptor.

Caution. Inlet tubing must be the specified length and type to ensure correct operation.

10. Push the stream 3 flowmeter into the stream 3 QD coupling ensuring the flow arrow on the flowmeter body is facing into the wet-section.
11. Remove and retain the 4 PCB cover fixing screws and washers (Q) and remove PCB cover (R).
12. Remove the upper cable gland blanking plug from the top right-hand side of the PCB housing taking care not to lose the locking nut on the inside.
13. Fit a new cable gland (S) in place of the blanking plug removed at step 12.
14. Punch- or cut-out the hole (T) in the base of the wet-section and feed each flowmeter cable (supplied) through and up to the PCB housing.
15. Feed the each cable through cable gland (S) and connect the flowmeter wires to the PCB terminal block numbers shown in Table 4.1:

| | Terminal number / cable color | | | Single-stream | | |
|------------|-------------------------------|--------------|-------------|---------------|-------------|-------------|
| | Multi-stream | | | Single-stream | | |
| Stream 1* | 13 Red | 15 Brown | 17 Black | 13 Red | 15 Brown | 17 Black |
| Stream 2** | 19 Orange | 21 Yellow | 23 Green | | | |
| Stream 3** | 20 Blue | 22 Violet | 24 Grey | | | |

Table 5.1 Streams 1, 2 and 3 – terminal connections / wire colors

*Stream 1 – sodium and hydrazine single-stream wet-sections

**Streams 2 / 3 used with stream 1 for sodium multi-stream wet-sections

16. Tighten cable gland (S) to seal the cable(s) into the gland.
17. Connect each cable to the correct flowmeter cable connector (stream 1 cable connector to flowmeter S1, stream 2 cable connector to flowmeter S2, stream 3 cable connector to flowmeter S3).
18. Change the (external) sample lines or adapt to 3/8 in. ID flexible tubing and fit onto the correct inlet of each flowmeter.
If necessary, secure using a hose clip or similar.
19. Ensure the O-ring (U) between the PCB housing and cover is located correctly in the PCB housing groove and refit the PCB terminal cover (R) to the PCB housing using the 4 PCB cover fixing screws and washers (Q).
20. Restore power to the transmitter and refer to the wet-section Operating instructions to configure the software to enable the flowmeter(s):
 - OI/ASO550-EN Sodium
 - OI/AHM550-EN Hydrazine
21. Re-introduce sample to the wet-section and check that the flowrate is displayed on the transmitter.

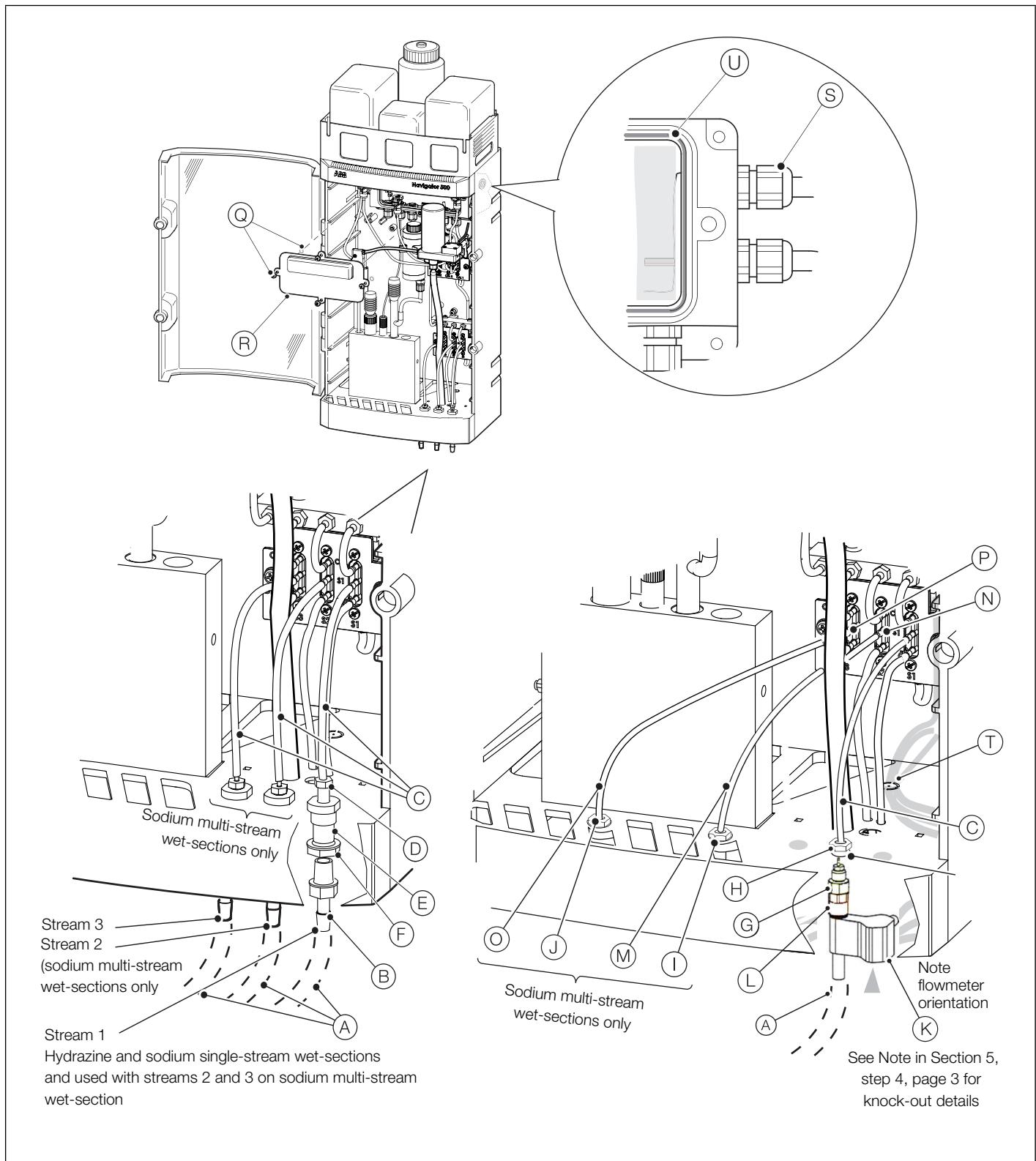


Fig. 5.1 Flowmeter upgrade – hydrazine and sodium single-stream and sodium multi-stream wet-sections (sodium multi-stream wet-section shown)

Notes

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