



Australian Government
Department of Industry, Science,
Energy and Resources

National
Measurement
Institute

NITP 5.1 National Instrument Test Procedures for Fuel Dispensers other than LPG Dispensers

March 2021

www.measurement.gov.au

NSC V 2-1

First edition — April 2004

NMI V 2-1

First edition, first revision — July 2004
First edition, second revision — November 2005
First edition, third revision — May 2008
First edition, fourth revision — July 2009

NITP 5.1

First edition — December 2011
First edition, first revision — January 2014
First edition, second revision — February 2015
Second edition — March 2021

National Measurement Institute
Bradfield Road, Lindfield, NSW 2070

T: +61 2 8467 3600
F: +61 2 8467 3610
W: www.measurement.gov.au

Amendments

No.	Date	Page/s	Location	Details of change
1	March 2021	-	Multiple	Various editorial amendments made throughout the document.
2	March 2021	-	Multiple	References to 'In-service Inspection' removed.
3	March 2021	1	Part 1	Scope amended to include ethanol, avgas and diesel exhaust fluid.
4	March 2021	1	Part 2	Prescriptive requirements for reference standards reduced.
5	March 2021	4	Clause 3.7	'Low Level Cut-off' test added for applicable dispensers.

Preface

The Chief Metrologist has determined that NITP 5.1 contains the test procedures for the verification of fuel dispensers (other than LPG dispensers) and control systems for liquid measuring systems.

Contents

Amendments	ii
Preface	ii
Explanation of Terms.....	iv
Abbreviations.....	iv
1. Scope.....	1
2. Equipment.....	1
3. Test Procedures for Dispensers	1
3.1 Visual Inspection.....	1
3.2 Checking Facility for Electronic Indicating Devices	2
3.3 Zero Setting	2
3.4 Price Computing	3
3.5 Nozzle Cut-off	3
3.6 Interlock	3
3.7 Low Level Cut-off.....	4
3.8 Maximum Flow Rate	4
3.9 Accuracy	5
3.10 Accuracy of Pre-set	5
3.11 Pre-set Indications	6
3.12 Gas Elimination.....	6
3.13 Anti-drain/Hose-dilation	7
4. Test Procedure for the Verification of a Console	8
Appendix A: Test Reports.....	10

Explanation of Terms

For explanations of other terms see [General Information for Test Procedures](#). For other terms relating to fuel dispensers (other than LPG dispensers), refer to [NMI R 117 Measuring Systems for Liquids Other than Water](#).

Console

A device that controls the authorisation of a delivery. A console may be a self-service device used as part of a self-service arrangement. This is also known as a control system for liquid measuring systems.

Abbreviations

E_{AV}	average error [expressed as a percentage (%)]
E_D	error difference [expressed as a percentage (%)]
E_{FD}	relative error [expressed as a percentage (%)]
E_{min}	minimum specified volume deviation
LPG	liquefied petroleum gas
MPD	maximum permissible difference
MPE	maximum permissible error
MSPD	minimum specified price deviation
Q_{max}	maximum flow rate
Q_{min}	minimum flow rate
V_{FD}	volume indicated by the fuel dispenser
V_{min}	minimum measured quantity
V_{REF}	volume indicated by the reference standard measure

1. Scope

NITP 5.1 describes the test procedures for the verification of fuel dispensers (other than LPG dispensers) to assess whether they measure to within the maximum permissible errors (MPEs) specified in the *National Trade Measurement Regulations 2009* (Cth) and comply with the Certificate of Approval. Examples of products dispensed are petrol (including avgas), diesel, ethanol, kerosene and diesel exhaust fluid.

NITP 5.1 also describes the test procedures for the verification of consoles. Control systems which are not described in the Certificate of Approval for a fuel dispenser will have a Supplementary Certificate of Approval as a control system for fuel dispensers, and these may only be verified by a servicing licensee who holds the relevant license for control systems for liquid measuring systems.

The test procedures for instruments described as bulk flowmeters in their Certificate of Approval are described in NITP 5.2.

The test procedures for LPG dispensers are described in NITP 10.1.

Certificates of Approval are based on NMI R 117 *Measuring Systems for Liquids Other than Water*.

All fuel dispensers must also comply with the *National Measurement Act 1960* (Cth), the *National Measurement Regulations 1999* (Cth) and the *National Trade Measurement Regulations 2009* (Cth).

2. Equipment

1. Certificate(s) of Approval.
2. Appropriate volume standards of measurement as follows:
 - (a) for dispensers with a maximum approved flow rate equal to or less than 60 L/min, use a standard of measurement with a volume equal to or greater than 10 L. For dispensers with a maximum approved flow rate greater than 60 L/min, use a standard of measurement with a volume equivalent to at least 1 minutes delivery at the maximum achievable flow rate and minimum approved flow rate as applicable
 - (b) a small capacity measure verified at relevant intervals and suitable for the purposes of completing the Anti-Drain/Hose Dilation test
 - (c) standards of measurement shall have a current Regulation 13 certificate.

All volume standards of measurement shall meet the requirements described in *National Measurement Regulations 1999* (Cth), or the sum of the maximum permissible uncertainties and variations must not be greater than one-third of the MPE for the test delivery of the instrument.

3. Test Procedures for Dispensers

The following series of test procedures determine if a fuel dispenser meets the requirements for verification.

Each test procedure is explained as a discrete test. However tests can be combined to expedite the testing procedure.

Check the Certificate of Approval(s) for any additional tests that may be required.

If the fuel dispenser fails any of the applicable tests, the fuel dispenser fails and cannot be verified.

Consider and comply with the relevant safety requirements.

3.1 Visual Inspection

Visually inspect the fuel dispenser to confirm compliance with the following characteristics:

1. The fuel dispenser shall comply with its Certificate(s) of Approval.
2. The indications of volume, unit price and total price shall correctly correspond to the selected hose.
3. All indications shall be clearly visible under all conditions, day and night.

4. Hoses shall be in reasonable condition, i.e. they are not badly chafed, split or worn through to the fabric.
5. There shall be no leaks in any part of the fuel dispenser.
6. For self-service systems, the fuel dispenser number(s) shall correspond with the console.
7. For continuous indicators, the price-posting wheels shall line-up with, and follow, the internal price-setting range lever.

3.2 Checking Facility for Electronic Indicating Devices

The checking facility for an electronic indicating device shall provide visual checking of the entire display, which shall meet the following description (NMI R 117, clause 4.3.4.2):

- displaying all the elements (eights test);
- blanking all the elements (blank test); and
- displaying zeros.

This test can be carried out in conjunction with the test for zero setting using an electronic reset mechanism (see clause 3.3.2).

1. Remove the nozzle from its hang-up position and determine that the:
 - (a) display test is performed
 - (b) display segments are not faulty.

3.3 Zero Setting

The zero-setting devices of the price-indicating device and of the volume-indicating device shall be designed in such a way that zeroing either indicating device automatically involves zeroing the other (NMI R 117, clause 3.3.5).

The zero-setting device shall not permit any alteration of the measurement result shown by the price/volume-indicating device other than by making the result disappear and displaying zeros (NMI R 117, clause 3.2.4.2).

Once the zeroing operation has begun it shall be impossible for the price/volume-indicating device to show a result different from that of the measurement that has just been made, until the zeroing operation has been completed. The price/volume-indicating device shall not be capable of being reset to zero during measurement (NMI R 117, clause 3.2.4.3).

Determine whether zero setting is mechanical or electronic and conduct the appropriate test as documented below.

3.3.1 Mechanical Reset Mechanism

For mechanical indicating devices, the residual volume indication after return to zero shall not be more than half the minimum specified volume deviation (i.e. $0.5 E_{\min}$), e.g. 10 mL for dispensers with a V_{\min} of 2 L (NMI R 117, clause 3.2.4.4).

Likewise, the residual price indication after return to zero shall not be more than half the minimum specified price deviation (i.e. 0.5 MSPD) where $\text{MSPD} = E_{\min} \times \text{unit price}$ (NMI R 117, clause 3.3.8).

1. Remove the delivery nozzle from its hang-up position.
2. If a previous sale remains on the indicator move the starting lever to the ON position and ensure that the pump motor does not start or the dispenser is not activated. If the pump motor does start or the dispenser is activated then the interlock mechanism is faulty.
3. Reset the indicator/s to zero and check that the volume indicator/s is/are zero within $0.5 E_{\min}$ and the price indicator/s is/are zero within $E_{\min} \times \text{unit price} \times 0.5$.
4. Move the starting lever slowly and gently towards the ON position until the motor starts (or the dispenser is activated) and then slowly and gently towards the OFF position until the motor stops (or the dispenser is deactivated).
5. Move the starting lever slowly and gently towards the ON position and check that the interlock has engaged and prevents the motor from starting or being activated.

6. Return the starting lever to the OFF position.
7. Determine if the dispenser has passed or failed.

3.3.2 Electronic Reset Mechanism

For electronic indicating devices, the price/volume indication after return to zero shall be zero without any ambiguity (NMI R 117, clauses 3.2.4.5 and 3.3.9).

1. Remove the nozzle from its hang-up position and ensure that the display test is performed and the price and volume displays are on zero before any delivery of product is possible.
2. Carefully return the nozzle to its hang up position and ensure that when the nozzle is then removed no further deliveries are possible without the segment test being initiated and the indications returning to zero.
3. Determine if the dispenser has passed or failed.

3.4 Price Computing

The price indicated shall equal the price calculated from the volume and unit price indicated within the MPEs in Table 1.

Table 1. MPEs for price computing

Unit Price	MPE
Not more than \$1 per litre	±0.9 cents
More than \$1 per litre but not more than \$2 per litre	±1.0 cents
More than \$2 per litre but not more than \$5 per litre	±2.5 cents
More than \$5 per litre but not more than \$10 per litre	±5.0 cents

This test can be done at any time during a test delivery, e.g. accuracy test or nozzle cut-off test.

1. Reset the dispenser to zero.
2. Make a delivery of a convenient volume.
3. Calculate the total price (rounded to the nearest two decimal places) from the unit price and volume indicated.
4. Compare this calculated price with all price displays.
5. Determine if the dispenser has passed or failed.

3.5 Nozzle Cut-off

Where the hose is fitted with an automatic cut-off nozzle the nozzle should close automatically when the sensing port of the nozzle comes in contact with liquid or froth.

This test can be done during accuracy or anti-drain testing.

1. Make a delivery at normal flow rate.
2. Allow the sensing port of the nozzle to come in contact with liquid or froth.
3. Ensure the nozzle cuts off.
4. Repeat steps 1 to 3 twice more.
5. Determine if the dispenser has passed or failed.

3.6 Interlock

The use of the same indicating device for the indications of several measuring systems (which have a common indicating device) is authorised provided it is impossible to use any two of these measuring systems simultaneously (NMI R 117, clause 2.9.6).

In measuring systems intended to deliver liquids, no means shall be provided by which any measured liquid can be diverted (NMI R 117, clause 2.16.1).

The selected unit price shall be displayed by an indicating device before the start of the measurement (NMI R 117, clause 3.3.2).

These requirements are interpreted to mean that no fuel can be dispensed unless it is measured and that the unit price indicated corresponds to the unit price of the fuel selected and delivered.

Determine if the hoses have a common indicator or whether they share a pumping unit, and conduct the appropriate test as documented below.

3.6.1 Hoses Sharing a Common Indicator

1. Select and authorise any hose that shares a common indicator with the hose(s) being tested.
2. Check that the price and volume indications for the hose selected reset to zero, and for dispensers:
 - (a) **with** separate unit price display: the unit price display for the type of fuel selected is transferred to the main indication
 - (b) **without** separate unit price display: the unit price display for the hose selected is displayed and all other unit price displays disappear until the delivery has been completed.
3. Check that all other hoses sharing the same indicator are disabled by removing the other nozzles from their hang up position and confirming that they do not authorise.
4. Determine if the dispenser has passed or failed.

3.6.2 Hoses Sharing a Pumping Unit

1. Select and authorise any hose that shares the common pumping unit with the hose being tested.
2. While the pumping unit is operating, attempt to make a delivery from the hose being tested without allowing the dispenser to be actuated where it will initiate the zero setting sequence.

Note: This may require the use of a dummy nozzle placed in the holster of the hose being tested.

3. Check that it is not possible to make a delivery from the hose being tested.
4. Determine if the dispenser has passed or failed.

3.7 Low Level Cut-off

This test applies to systems fitted with a low level cut-off device. This test is required at:

- initial verification;
- when any system changes affecting low level cut-off occur; and
- at the discretion of the NMI .

This test may be simulated.

1. Ensure the quantity of product in the tank is above the low level cut-off device and is less than the capacity of the reference volume measure.
2. Conduct an additional accuracy delivery at the maximum flow rate in accordance with clause 3.9 steps 2 and 3.
3. Allow the low level cut-off to automatically stop the delivery.
4. Determine if this result is within the allowable MPE as shown in Table 2.

In most cases it will be necessary to complete an additional delivery to fill the reference standard measure to the nominal capacity in order to calculate the relative error. The additional delivery must be of a volume as minimal as practical and does not need to exceed the value of V_{min} . In the case where an additional delivery is made, V_{FD} and V_{REF} are the combined values from both deliveries for the purposes of calculating the relative error.

3.8 Maximum Flow Rate

The maximum achievable flow rate shall be within the approved range (Q_{min} to Q_{max}) marked on the data plate.

This test can be performed during one of the fast flow accuracy test deliveries or during the conditioning of the reference standard.

3.8.1 All Hoses

This is a requirement for all dispensers regardless of whether they share or have their own pumping unit.

1. Commence and time a delivery at the maximum achievable flow rate.
2. Stop the delivery after at least 10 s.
3. Note the indication on the dispenser and calculate the flow rate.
4. Determine if the dispenser has passed or failed.

3.8.2 Hoses Sharing a Pumping Unit

This is a requirement at initial verification, when any site changes occur, or at the discretion of NMI.

1. Select and authorise a number of hoses connected to the same pumping unit.
2. With all hoses operating at the maximum achievable flow rate, time the delivery for one of the hoses.
3. Stop the delivery after at least 10 s and calculate the flow rate.
4. Determine if the dispenser has passed or failed.

Refer to the Certificate of Approval for additional specific tests.

3.9 Accuracy

Accuracy testing is conducted to determine if the meter is operating within MPE. Multiple accuracy tests may be completed in sequence without terminating each delivery if practical to do so.

1. Condition the standard volume measure in accordance with the Regulation 13 certificate.
2. Make a delivery at maximum achievable flow rate. Record the volume indicated by the fuel dispenser (V_{FD}) and the volume indicated by the reference standard measure (V_{REF}).
3. Calculate and record the relative error (of indication) (E_{FD}).

$$E_{FD} = \frac{(V_{FD} - V_{REF})}{V_{REF}} \times 100$$

4. Repeat steps 1 to 3 **twice more**.
5. Make one more delivery at minimum approved flow rate. Record the volume indicated by the fuel dispenser (V_{FD}) and the volume indicated by the reference standard measure (V_{REF}).
6. Calculate and record the relative error (of indication) (E_{FD}).
7. Determine if all the results are within the allowable MPE (see Table 2).

Note: If meter adjustments are made, circulate a quantity of fuel and repeat steps 1 to 6. Any other completed test that may be affected by the adjustment shall also be repeated.

Table 2. MPEs for accuracy of dispensers

Accuracy Class	MPE
	Verification
Class 0.5	±0.3%

3.10 Accuracy of Pre-set

A pre-set accuracy test is conducted to check the accuracy of the pre-set delivery volume.

This test is only necessary if a pre-set device is fitted as specified in the Certificate of Approval for the fuel dispenser.

1. Condition the standard volume measure in accordance with the Regulation 13 certificate.

2. Enter and record a suitable pre-set value using the pre-set facility. This pre-set value should deliver close to the value of the reference standard measure being used.
3. Make a delivery at maximum achievable flow rate until the delivery stops. Record the volume indicated by the fuel dispenser (V_{FD}) and the volume indicated by the reference standard measure (V_{REF}).

Notes: Ensure that the maximum achievable flowrate is maintained for the complete delivery. Do not slow the flowrate of the delivery as the pre-set amount is approached. In most cases it will be necessary to complete an additional delivery to fill the reference standard measure to the nominal capacity in order to calculate the relative error. The additional delivery must be of a volume as minimal as practical and does not need to exceed the value of V_{min} . In the case where an additional delivery is made, V_{FD} and V_{REF} are the combined values from both deliveries.

4. Calculate and record the relative error (of indication) (E_{FD}).

$$E_{FD} = \frac{(V_{FD} - V_{REF})}{V_{REF}} \times 100$$

5. Determine if the result is within the MPE (see Table 2).

3.11 Pre-set Indications

Measuring systems with a price-indicating device may also be fitted with a price/volume pre-setting device, which stops the flow of the liquid when the price/quantity corresponds to the pre-set value (NMI R 117, clause 3.6.10).

This test can be combined with the pre-set accuracy test and one result recorded.

1. Reset the dispenser to zero.
2. Enter a suitable pre-set value using the pre-set facility. Make sure the pre-set amount appears on the display.
3. Commence a delivery into the container with the nozzle fully open allowing the pre-set facility to slow down and complete the delivery automatically.
4. Check that the price/volume indication on the display corresponds to the pre-set amount and for self-serve remains on the display or is stored in memory until the transaction is finalised.
5. Determine if the dispenser has passed or failed.

3.12 Gas Elimination

This test is only necessary if a gas elimination device is fitted as specified in the Certificate of Approval for the fuel dispenser.

The error difference (E_D) between tests without air/gas and with introduced air/gas shall not exceed the maximum permissible difference (MPD) values given in Table 3.

Table 3. MPD for the gas elimination test

Viscosity	MPD
≤ 1 mPa.s, e.g. petrol	0.5%
> 1 mPa.s, e.g. diesel, kerosene	1.0%

1. Calculate and record the average error (E_{AV}) of the three runs at maximum achievable flow rate recorded during the accuracy test (see clause 3.9).
2. Condition the standard volume measure in accordance with the Regulation 13 Certificate.
3. If sealed, remove seal from the test valve.
4. Commence a delivery at the maximum achievable flow rate. During the delivery slowly open the air/gas test valve, causing the flow to decrease noticeably or to stop.
5. Close the test valve, and complete the delivery.

6. Record the volume indicated by the fuel dispenser (V_{FD}) and the volume indicated by the reference standard measure (V_{REF}).
7. Calculate and record the relative error (of indication) (E_{FD}).

$$E_{FD} = \frac{(V_{FD} - V_{REF})}{V_{REF}} \times 100$$

8. Determine the error difference (E_D) for the gas elimination device.

$$E_D = E_{AV} - E_{FD}$$

9. Determine if E_D is within the MPD specified in Table 3.
10. Seal the test valve if mentioned in the Certificate of Approval.

3.13 Anti-drain/Hose-dilation

For full hoses in a measuring system provided with a hose reel, the increase in internal volume due to the change from the coiled hose position when not under pressure to the uncoiled hose position when under pressure without any flow of liquid shall not exceed **twice** the minimum specified volume deviation.

The minimum specified volume deviation, E_{min} is given by the formula:

$$E_{min} = 2 \times V_{min} \times \left(\frac{A}{100}\right)$$

where A has the value of 0.5.

Unless specified otherwise in the Certificate of Approval, all dispensers with a maximum approved flow rate not greater than 60 L/min shall have a V_{min} of 2 L. Dispensers with a maximum approved flowrate greater than 60 L/min where the V_{min} is not stated in the Certificate of Approval shall have a V_{min} of 5 L.

If the measuring system is not provided with a hose reel, the increase in internal volume shall not exceed the minimum specified volume deviation (NMI R 117, clause 2.15). The MPEs are given in Table 4.

Table 4. MPEs for the anti-drain test

V_{min}	MPE without hose reel	MPE with hose reel
2 L	20 mL	40 mL
5 L	50 mL	100 mL
10 L	100 mL	200 mL
20 L	200 mL	400 mL

Where the value of V_{min} of the dispenser being tested is not specified in Table 4, the MPE shall be determined as follows:

1. MPE without hose reel (mL) = V_{min} (L) x 10.
2. MPE with hose reel (mL) = V_{min} (L) x 20.

Conduct the appropriate test (hose either provided **without** a hose reel or **with** a hose reel) as documented below.

3.13.1 Without Hose Reel

1. Condition a suitable standard volume measure (see clause 2) in accordance with the Regulation 13 certificate.
2. Start the delivery to allow the hose to pressurise.

3. Stop the delivery suddenly by immersing the hose nozzle into the delivered liquid or by suddenly releasing the trigger of the nozzle.
4. Deactivate the dispenser by manually operating the nozzle hang-up flap or by inserting a dummy nozzle into the holster. Do not hang up the nozzle.
5. Whilst holding the nozzle down, drain for 5 s.
6. Open the nozzle and allow the pressure in the hose to reduce whilst draining the nozzle into the small standard volume measure.
7. Close the nozzle when the flow stops, or after 30 s. If the nozzle still drips after 30 s the nozzle should be repaired.
8. Record the volume of drained fuel indicated by the standard volume measure.
9. Determine if the dispenser has passed or failed.

3.13.2 With Hose Reel

1. Fully uncoil hose from its reel.
2. Condition a suitable standard volume measure (see clause 2) in accordance with the Regulation 13 certificate.
3. Start the delivery to allow the hose to pressurise.
4. Stop the delivery suddenly by immersing the hose nozzle into the delivered liquid or by suddenly releasing the trigger of the nozzle.
5. Deactivate the dispenser by manually operating the nozzle hang-up flap and do not hang up the nozzle.
6. Fully coil the hose back on its reel.
7. Whilst holding the nozzle down, drain for 5 s.
8. Open the nozzle and allow the pressure in the hose to reduce whilst draining the nozzle into the small standard volume measure.
9. Close the nozzle when the flow stops, or after 30 s. If the nozzle still drips after 30 s the nozzle should be repaired.
10. Record the volume of drained fuel indicated by the standard volume measure.
11. Determine if the dispenser has passed or failed.

4. Test Procedure for the Verification of a Console

Verification of a console is carried out to ensure that a fuel dispenser is communicating correctly with its console and must be carried out:

- at initial installation;
- when repairs are carried out that affect the approved functions; or
- at the request of the owner, user or NMI.

Check the Certificate of Approval for any additional tests required. Make provision for including these tests in the testing sequence.

Ensure the console is complete, undamaged and complies with the Certificate of Approval.

Ensure that the dispenser is communicating with the console.

1. Authorise the dispenser at the console.
2. Remove the nozzle from its hang-up position and deliver sufficient product to cause the price and volume indicators to move significantly off zero.
3. Return the nozzle to its hang-up position.
4. Record the dispenser number/nozzle identification and the price/volume displayed on the dispenser.
5. At the console check that the dispenser number/nozzle identification and the price/volume displayed is the same as recorded from the dispenser.

6. If the console supports stored transaction sales:
 - (a) store the current transaction
 - (b) repeat steps 2 to 5
 - (c) check that the stored transaction and the second transaction can be displayed on the console and correspond with the delivery details recorded from the dispenser.
7. Complete any other tests required in the Certificate of Approval.

Appendix A: Test Reports

Appendix A contains two test reports:

- Test Report 1 is for fuel dispensers; and
- Test Report 2 is for consoles.

Although the format of the test reports may vary according to the individual needs and requirements of servicing licensees, the following test reports contain the minimum amount of information required to satisfy the test procedures.

Note: The Certificate of Approval(s) may require additional tests not detailed.

Test Report 1 for Fuel Dispensers (other than LPG Dispensers)

Date of test.....

Type of test (tick one) Verification Reverification

For reverification record the verification mark:.....

Trading name

Address of instrument location.....

Description of instrument

Manufacturer Model.....

Dispenser number(s)..... Dispenser serial number

Fuel product(s) dispenser approved to deliver.....

Certificate(s) of Approval number

Details of the Reference Standards of Measurement (clause 2)

Reference standards	
Make	
Model	
Serial number	
Volume	
Regulation 13 certificate number	
Certificate expiry date	

Visual Inspection (clause 3.1)	Yes, no or N/A
Does the instrument comply with its Certificate(s) of Approval?	
Do the indications of volume, unit price and total price correspond with the hose selected?	
Are all indications clearly visible under all conditions day and night?	
Are the hoses in reasonable condition, e.g. they are not badly chafed, split, or worn?	
Does each nozzle terminate the delivery when returned to its holsters?	
Are there any leaks?	
For self-service systems: do the dispenser number(s) correspond with the console?	
For continuous indicators: do the price-posting wheels line up with, and follow, the internal price-setting range lever?	

Test Report 1 for Fuel Dispensers (other than LPG Dispensers)

Dispenser number and nozzle identification												
Unit price displayed	\$/L				\$/L				\$/L			
Q _{min} and Q _{max} on data plate	Q _{min} L/min				Q _{max} L/min				L/min			
Maximum achievable flow rate (clause 3.8)	L/min				L/min				L/min			
Accuracy (clause 3.9) $E_{FD} = (V_{FD} - V_{REF}) \times 100 / V_{REF}$	V _{FD}	V _{REF}	E _{FD}	E _D	V _{FD}	V _{REF}	E _{FD}	E _D	V _{FD}	V _{REF}	E _{FD}	E _D
Delivery 1 at maximum achievable flow rate	L	L	%		L	L	%		L	L	%	
Delivery 2 at maximum achievable flow rate	L	L	%		L	L	%		L	L	%	
Delivery 3 at maximum achievable flow rate	L	L	%		L	L	%		L	L	%	
Average error (E _{AV}) for 3 runs (needed for clause 3.12)			%				%				%	
Delivery at minimum approved flow rate	L	L	%		L	L	%		L	L	%	
Pre-set delivery (clause 3.10)	L	L	%		L	L	%		L	L	%	
Low Level Cut-off (clause 3.7)	L	L	%		L	L	%		L	L	%	
Gas elimination delivery (clause 3.12) $E_D = E_{AV} - E_{FD}$	L	L	%	%	L	L	%	%	L	L	%	%
Anti-drain/Hose-dilation (clause 3.13), volume of drained fuel	mL				mL				mL			
Checking facility for indicating devices (clause 3.2)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Zero setting (clause 3.3)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Price computing (clause 3.4)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Nozzle cut-off (clause 3.5)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Interlock (clause 3.6)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Pre-set indications (clause 3.11)	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	
Overall result	<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail		<input type="checkbox"/> Pass		<input type="checkbox"/> Fail	

Verifier's name..... Identification number

Signature

Comments

Test Report 2 for the Verification of Consoles

Date of test.....

Type of test (tick one) Verification Reverification

For reverification record the verification mark:

Trading name

Address of instrument location

Description of instrument

ManufacturerModel

Serial number.....Certificate of Approval number

Does the dispenser communicate with the console?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Dispenser	Console	Dispenser	Console	Dispenser	Console
First transaction	Dispenser number and nozzle identification						
	Price displayed						
	Volume displayed						
Second transaction (if console supports stored transactions)	Dispenser number and nozzle identification						
	Price displayed						
	Volume displayed						
Is the first transaction stored and displayed correctly		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Can any further transactions be authorised without first clearing the current or previous transaction?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do printed transaction docketts reproduce the information displayed by the fuel dispenser?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
Overall result		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail