

Australian Government

National Measurement Institute Bradfield Road, West Lindfield NSW 2070

Notification of Change Certificate of Approval No 5/6A/226 Change No 2

Issued by the Chief Metrologist under Regulation 60 of the National Measurement Regulations 1999

The following changes are made to the approval documentation for the

Pacific Gauge Model Ve-line AdBlue 4701.010 Liquid Dispenser for Motor Vehicles

submitted by	Pacific Gauge		
	58 Pleasant View Road		
	Maryborough	QLD	4650.

A. In Certificate of Approval 5/6A/226 dated 27 May 2011, the FILING ADVICE should be amended by adding the following:

"Notification of Change No 2 dated 20 October 2011"

- B. In the TEST PROCEDURE in Technical Schedule No 5/6A/226 dated 27 May 2011:
- (i) the 1st sentence of the 1st paragraph should be amended as follows;

"Instruments shall be tested in accordance with any relevant tests specified in the national **instrument** test procedures."

(ii) the 3rd (and later) paragraphs (giving values of the maximum permissible errors) should be amended to read;

"The maximum permissible errors applied during a verification test are:

 \pm **0.3%** for the calibration/adjustment of the meter; and \pm 0.5% for in-service inspection of the complete measuring system."

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999.*

Shr



Australian Government

National Measurement Institute Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 5/6A/226

Issued by the Chief Metrologist under Regulation 60 of the National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the

ADAST Model Ve-line AdBlue 4701.010 Liquid Dispenser for Motor Vehicles

submitted by	Pacific Gauge		
	58 Pleasant Vie	ew Road	
	Maryborough	QLD	4650.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 117-1, Measuring Systems for Liquids Other than Water, dated July 2004.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 April 2016, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 5/6A/226' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Certificate of Approval No 5/6A/226

The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

DESCRIPTIVE ADVICE

Pattern: approved 14 March 2011

• An ADAST model Ve-line AdBlue 4701.010 single liquid dispenser for motor vehicles approved for use to dispense AdBlue fluid AUS32 fitted with an ADAST model M403.25AP measurement transducer.

Variants: approved 14 March 2011

- 1. With an ADAST model M403.25EAP measurement transducer.
- 2. With an ADAST model M403.25AP/1 or model M403.25EAP/1 measurement transducer.
- 3. An ADAST model Ve-line AdBlue 4701.020 dual liquid dispenser.

Technical Schedule No 5/6A/226 describes the pattern and variants 1 to 3.

FILING ADVICE

All the documentation for approval No 5/6A/226 dated 15 March 2011 is superseded by the Certificate, Technical Schedule and Figures 1 to 12 included herein. The documentation for this approval now comprises:

Certificate of Approval No 5/6A/226 dated 27 May 2011 Technical Schedule No 5/6A/226 dated 27 May 2011 (incl. Test Procedure) Notification of Change No 1 dated 27 May 2011 Figures 1 to 12 dated 27 May 2011

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999.*



TECHNICAL SCHEDULE No 5/6A/226

Pattern: ADAST Model Ve-line AdBlue 4701.010 Liquid Dispenser for Motor Vehicles

Submittor: Pacific Gauge 58 Pleasant View Road Maryborough QLD 4650

1. Description of Pattern

An ADAST model Ve-line AdBlue 4701.010 single liquid dispenser (Figure 1) for certain motor vehicles (#1) and which is approved to dispense AdBlue (#2), in attendant-operated mode. The meter is adjusted to be correct for the liquid for which it is to be verified.

- (#1) For filling dedicated storage tanks on vehicles having heavy duty diesel engines fitted with a Selective Catalytic Reduction (SCR) unit (for the reduction of NOx in exhaust gases).
- (#2) AdBlue fluid AUS32 (NOx reduction agent AUS 32 32.5% aqueous urea solution, according to ISO 22241).

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

•	Minimum measured quantity, <i>V_{min}</i>	2 L	
•	Maximum flow rate, Qmax	40 L/min	
•	Minimum flow rate, Qmin	4 L/min	
•	Maximum pressure of the liquid, Pmax	320 kPa	
•	Dynamic viscosity (at 25°C)	1.4 mPa.s	(#3)
•	Maximum temperature of the liquid, Tmax	30°C	
•	Minimum temperature of the liquid, T_{min}	0°C	
•	Ambient temperature range	-25 to 55°C	
•	Accuracy class	0.5	

(#3) The flowmeter is adjusted to be correct for AdBlue fluid AUS32 (aqueous urea solution 32.5%) for which it is to be verified.

Dispensers are approved only for installations with submersible pumping systems in the supply tank.

1.2 Description of the Metering System

The instrument (Figures 1 and 2) incorporates the following components:

(i) A supply tank with a submersible pumping unit (Figure 2) with a low level detection float switch preventing air entering the system. The supply tank is fitted with a low level device which prevents measurements when the device is activated.

- (ii) An ADAST model M403.25AP measurement transducer (Figure 3) comprising a four piston positive displacement meter fitted with an Eltomatic model ME01-06 two channel magnetic pulse generator producing 2 x 48 pulses per revolution. The meter is fitted with a mechanical calibration adjustment device.
- (iii) A hose/nozzle, mounted on the side of the dispenser housing. A Husky model HU-731091 or an Elaflex ZVA 16 mm or an OPW 21Gu series DEF nozzle (*) is used. The hose used is an Elaflex Adblue or OPW 21Gu series DEF 16 mm (ID) hose of 6 metres maximum length.
- (*) Note that the submittor must be consulted regarding the acceptability of any alternative nozzles.
- (iv) A Danfoss model EVC146C 17BNG or an ASCO model JV 133408-001 AdBlue or an Auomatic Control Valves model Serie 230 AdBlue two stage solenoid valve.
- (v) An ADAST ADP series (**) calculator/indicator which has 3 displays (Figure 1) for indicating the following:
 - Volume up to 9999.99 L
 - Price up to 9999.99 \$
 - Unit price up to 999.9 ¢/L
 - (**) The approved models of the ADP series are:
 - Models ADP1/L and ADP1/T for control of 1 subsystem;
 - Model ADP2/T for control of up to 2 subsystems; and
 - Models ADPMPDx/T and ADPMPDx/T-PWM for control of up to 10 subsystems.

The approved software versions are:

- Model ADP1/L with version V30.62 software;
- Models ADP1/T and ADP2/T with version V20.62 software; and
- Models ADPMPDx/T and ADPMPDx/T-PWM with version V10.62 software.

The software version can be viewed by pressing the S key during the power-on delay sequence – the software version will be displayed in the unit price display.

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Checking Facilities

An automatic segment test is performed at the start of each delivery.

The calculator monitors the presence and correct transmission of signal from the measurement transducer, and in the event of detecting a fault the instrument indicates an error code and has provision for controlling electrically-operated valves to stop the delivery.

1.5 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location on a data plate:

Pattern approval sign	5/6A/226	
Manufacturer's identification mark or trade mark	Adast Systems, a.s. (Czech Republic)	
Manufacturer's designation (model number)		
Serial number		
Year of manufacture		
Maximum flow rate (Qmax)	L/min	
Minimum flow rate (Qmin)	L/min	
Minimum measured quantity (Vmin)	L	(#1)
Maximum operating pressure (<i>P</i> max)	kPa	
Nature of liquids to be measured		(#2)
Maximum temperature of the liquid, T_{max}	30°C	
Minimum temperature of the liquid, <i>T</i> _{min}	0°C	
Environmental class	class C	

- (#1) In addition, the minimum measured quantity (*V_{min}*) shall be clearly visible on any indicating device visible to the user during measurement, in the form 'Minimum delivery 2 L'.
- (#2) AdBlue fluid AUS32 (aqueous urea solution 32.5%).

1.6 Sealing Provision

The model M403.25AP measurement transducer is sealed as shown in Figure 3.

The ADP series calculator/indicators have provision for sealing as shown in Figures 4 to 8.

2. Description of Variants

2.1 Variant 1

With an ADAST model M403.25EAP measurement transducer which is fitted with an electronic calibration adjustment device.

The model M403.25EAP transducer including typical sealing is shown in Figure 9.

2.2 Variant 2

With the measuring transducer now fitted with a METRA model MTX 076 two channel magnetic pulse generator producing 2×48 pulses per revolution, in which case the transducer model number now has a "/1" suffix, e.g. the model M403.25AP used in the pattern becomes a model M403.25AP/1 and the model M403.25EAP used in variant 1 becomes a model M403.25EAP/1.

The model M403.25AP/1 and model M403.25EAP/1 transducers including typical sealing are shown in Figures 10 and 11, respectively.

2.3 Variant 3

An ADAST model Ve-line AdBlue 4701.020 dual liquid dispenser having two metering systems (Figure 12).

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the national inspection test procedures. Tests should be conducted in conjunction with any tests specified in the approval documentation for any components used.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Note: Adjusting the errors of a meter to values OTHER than as close as practical to zero is forbidden, even when these values are within the maximum permissible errors.

The maximum permissible error applied during a verification test of the fuel dispenser using the liquid for which it is to be verified, and from normal flow rate to the minimum flow rate is:

±0.5%.

Other applicable maximum permissible errors are:

±1.0% for gas elimination device for liquids having a dynamic viscosity exceeding 1 mPa.s.

For instruments with a minimum measured quantity of 2 L;

 ± 20 mL for deliveries equal to the minimum measured quantity; and ± 20 mL due to hose dilation for instruments without a hose reel.







Australian Government

National Measurement Institute Bradfield Road, West Lindfield NSW 2070

Notification of Change Certificate of Approval No 5/6A/226 Change No 1

Issued by the Chief Metrologist under Regulation 60 of the National Measurement Regulations 1999

The following changes are made to the approval documentation for the

Pacific Gauge Model Ve-line AdBlue 4701.010 Liquid Dispenser for Motor Vehicles

submitted by Pacific Gauge 58 Pleasant View Road Maryborough QLD 4650.

All the documentation for Approval No 5/6A/226 including the Certificate of Approval, its Technical Schedule and Figures 1 to 12 all dated 15 March 2011, are all superseded by the Certificate, Technical Schedule and Figures 1 to 12 included herein.

(Note that the attached documentation amends the brand name of the instrument and the name of the manufacturer, and corrects some typographical errors including in Figures 1, 3 & 12.)

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999.*

..../2

5/6A/226 27 May 2011

FIGURE 5/6A/226 - 1





ADAST Model Ve-line AdBlue 4701.010 Dispenser

















Sealing of Totalising Indicating Device – ADPMPDx/T and ADPMPDx/T-PWM Calculators









ADAST Model M403.25AP/1 Measurement Transducer Including Typical Sealing





ADAST Model M403.25EAP/1 Measurement Transducer Including Typical Sealing





ADAST Model Ve-line AdBlue 4701.020 Dispenser