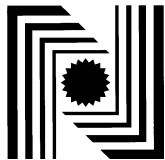
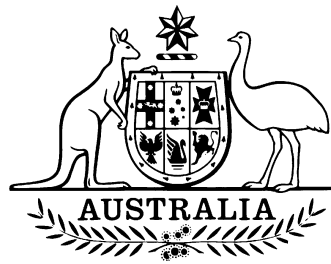


10/1/15
16 September 2002



National Standards Commission

12 Lyonpark Road, North Ryde NSW

Cancellation

Certificate of Approval

No 10/1/15

Issued under Regulation 60
of the
National Measurement Regulations 1999

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

Compac Model Premier P-LPG-DE LPG Driveway Flowmeter

submitted by Compac Industries Limited
52 Walls Road
Penrose Auckland
NEW ZEALAND

has been cancelled in respect of new instruments as from 1 October 2002.

Signed by a person authorised under Regulation 60
of the National Measurement Regulations 1999 to
exercise the powers and functions of the Commission
under this Regulation.



National Standards Commission



Certificate of Approval

No 10/1/15

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

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

Compac Model Premier P-LPG-DE LPG Driveway Flowmeter

submitted by Compac Industries Limited
52 Walls Road
Penrose Auckland
NEW ZEALAND

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.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1 January 2000.
This approval expires in respect of new instruments on 1 January 2001.

Instruments purporting to comply with this approval shall be marked NSC No 10/1/15 and only by persons authorised by the submittor.

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

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission 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 the Commission's Document 106.

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

DESCRIPTIVE ADVICE

Pattern: approved 2 December 1994

. A Compac model Premier P-LPG-DE LPG driveway flowmeter.

Variants: approved 2 December 1994

1. Certain other models and configurations.

Technical Schedule No 10/1/15 describes the pattern and variant 1.

Variants: approved 10 May 1996

2. Certain other models.


Technical Schedule No 10/1/15 Variation No 1 describes variant 2.

FILING ADVICE

Certificate of Approval No 10/1/15 dated 13 April 1995 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 10/1/15 dated 24 June 1996
Technical Schedule No 10/1/15 dated 13 April 1995 (incl. Test Procedure)
Technical Schedule No 10/1/15 Variation No 1 dated 24 June 1996
Figures 1 to 5 dated 13 April 1995
Figures 6 and 7 dated 24 June 1996

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.





National Standards Commission

TECHNICAL SCHEDULE No 10/1/15

Pattern: Compac Model Premier P-LPG-DE LPG Driveway Flowmeter.

Submittor: Compac Industries Limited
52 Walls Road
Penrose Auckland
NEW ZEALAND

1. Description of Pattern

The pattern is a Compac model Premier P-LPG-DE LPG driveway flowmeter (Figure 1) for the delivery of liquefied petroleum gas of density between 0.500 kg/L and 0.595 kg/L (at 15°C), at temperatures between -10°C and +50°C.

Instruments are approved for attendant-operated, or locally or remotely-authorised operation with maximum and minimum flow rates of 60 L/min and 15 L/min respectively. Instruments may be used with compatible control consoles which have been Commission-approved for use with the type of indicator fitted to the flowmeter.

1.1 Component Structure

Each driveway flowmeter comprises components as detailed below and as shown in Figure 2.

(i) Supply Tank

The supply tank may be located above or below ground.

(ii) Pump

The pump shall be positioned below the supply tank so that it is always in a state of flooded suction (**suction head**). Alternatively, the pump may be positioned above the supply tank, in which case the pump shall be specifically designed for use with LPG in suction lift installations.

There shall be no restrictive fittings within ten pipe diameters of the pump inlet. The inlet pipe to the pump is larger than the outlet from the pump. The external pump by-pass relief valve is installed in a line returning to the supply tank.

(iii) Meter

A Compac model COM125 liquefied petroleum gas meter with integral pulse generator is used (Figure 3).

(iv) Vapour Elimination

The meter is protected from the measurement of vapour by correct installation and by a vapour eliminator, a pressure differential valve and by indicator software.

(a) Vapour Eliminator

A Compac LPG continuous-bleed vapour eliminator (Figure 4) is used which incorporates an inlet non-return valve, a filter, a temperature sensor, and has a thermometer pocket situated at the lower end of the eliminator.

(b) Differential Valve

A Compac spring-loaded-diaphragm pressure differential valve which maintains pressure in the metering chamber to prevent the formation of vapour.

(c) Software

The indicator is equipped with software which detects a substantially reduced flow rate caused by the presence of vapour. When the software detects that the flow rate has dropped below 6 L/min the solenoid valves are closed and the delivery is stopped. When the nozzle is replaced in its hang-up position, an indication showing 'GAS' is displayed on the driveway flowmeter indicator.

(v) Driveway Flowmeter Indicator

A Compac model C3000H computing indicator (as described in the documentation of NSC approval No S280) with or without a preset facility is used and displays the following:

Volume	Up to 999.99 L in 0.01 L increments
Unit Price	Up to 9.999 \$/L in 0.1 c/L increments
Price	Up to \$999.99 in \$0.01 increments

Unit price setting is by means of a switch designated 'parameter' located on the main circuit board in the indicator. This switch may also be used to set the indicator to show converted and unconverted volumes at the same time, and also to display temperature and density.

A switch designated 'K-Factor' also located on the main circuit board is used in conjunction with the 'parameter' switch to change 'K' factors, density settings, etc.

(vi) Electronic Volume Conversion

An electronic volume conversion for temperature facility is incorporated to convert the measured volume to volume at 15°C, within the following ranges:

Density	0.500 kg/L to 0.595 kg/L
Liquid temperature	-10°C to 50°C

The volume conversion is based on ASTM IP Table 54.

The density may be set for any value in the above range in 0.001 increments.

(vii) Outlet Piping

The pipe connection from the differential valve to the hose is fitted with a solenoid controlled valve, an isolating valve and an excess flow valve.

(viii) Hose

The dispenser is fitted with a hose of 20 mm bore, complying with the Standards Australia code for hoses in use with liquefied petroleum gases.

The hose is supported on a hose mast and is fitted with a hose break coupling which will break with a loss of no more than 15 ml of liquid in the event of an excessive pull on the nozzle.

(ix) Nozzle

The nozzle used is a Compac model ZVA 1.3 or a Gasguard model L.G.1. -4.1 liquefied petroleum gas nozzle.

1.2 Markings

The instrument data plate permanently fixed to the external housing of the driveway flowmeter is marked with the following:

Manufacturer's name or mark	
Year of manufacture	
Serial number	
NSC approval number	NSC No 10/1/15
Maximum flow rate L/min
Minimum flow rate L/min
Liquid temperature range	-10°C to +50°C
Approved for LPG of density range	0.500 to 0.595 kg/L
Maximum operating pressure	2400 kPa

In addition, these markings shall include a notice stating that the density for which volume conversion for temperature facility is set may be displayed on the flowmeter indicator by using the 'parameter' switch located on the main circuit board.

1.3 Sealing

The 'K' factor switch located on the main circuit board is sealed.

1.4 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

2. Description of Variant 1

Other models, in configurations and in alternative housings, as listed below and shown in Figure 5:

Series Name	Models
Premier	P-LPG-D, & P-LPG-S
Conqueror	C-LPG-D, C-LPG-S, C-LPG-S-CK, & CC-LPG-D
Companion	MHD2Z-LPG, MHQD1Z-LPG, & MHQD2Z-LPG
Master	M-LPG-S
Ambassador (#)	MHD6Z-LPG, & MHD6AZ-LPG

- (#) The Ambassador models MHD6Z-LPG and MHD6AZ-LPG (Figure 5) are 6-hose flowmeters where an LPG hydraulic/measuring/indicating system and also non-LPG systems (petrol, distillate, etc.) are contained within the same housing. The LPG system shall comply with this approval including markings; the non-LPG systems shall comply with either NSC approval No 5/6A/91 (HILINE model MHD6) or No 5/6A/90 (HILINE model MHD6A), as appropriate, including markings.

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

TEST PROCEDURE

Instruments should be tested in accordance with tests included in the approval documentation for the control console used (where fitted), and in accordance with all relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors applied during a verification test are:

- ±1.0% with the volume conversion for temperature device deactivated; and
- ±1.2% with the volume conversion for temperature device activated.



10/1/15
24 June 1996

National Standards Commission

TECHNICAL SCHEDULE No 10/1/15

VARIATION No 1

Pattern: Compac Model Premier P-LPG-DE LPG Driveway Flowmeter.

Submittor: Compac Industries Limited
52 Walls Road
Penrose Auckland
NEW ZEALAND

1. Description of Variant 2

Certain other models as listed below and shown in Figures 6 and 7.

Series Name	Models
EURO	MHD6Z-LPG & MHP6Z-LPG
SOVEREIGN (or LOLINE)	MHD6Z-LPG

The above models are 6-hose flowmeters where an LPG hydraulic/measuring/indicating system and also non-LPG systems (petrol, distillate, etc.) are contained within the same housing. The LPG system shall comply with this approval including markings; the non-LPG systems shall comply with either NSC approval No 5/6A/91 or No 5/6A/90, as appropriate, including markings.

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

National Standards Commission



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 10/1/15

CHANGE No 1

The following change is made to the approval documentation for the

Compac Model Premier P-LPG-DE LPG Driveway Flowmeter

submitted by Compac Industries Ltd
 52 Walls Road
 Penrose Auckland
 NEW ZEALAND.

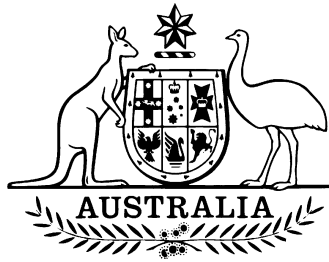
In Technical Schedule No 10/1/15 dated 13 March 1995, subclause (viii) Hose of clause 1.1 **Component Structure** should be amended by adding a reference to a 12.5 mm bore hose, so that the subclause now reads, in part:

"The dispenser is fitted with a hose of 12.5 mm or 20 mm bore, complying ..."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

A handwritten signature in black ink, appearing to read 'J. Birch'. The signature is written in a cursive style with a large initial 'J'.

10/1/15
31 January 2001



National Standards Commission

12 Lyonpark Road, North Ryde NSW

Notification of Change

Certificate of Approval No 10/1/15

Change No 2

The following change is made to the approval documentation for the

Compac Model Premier P-LPG-DE LPG Driveway Flowmeter

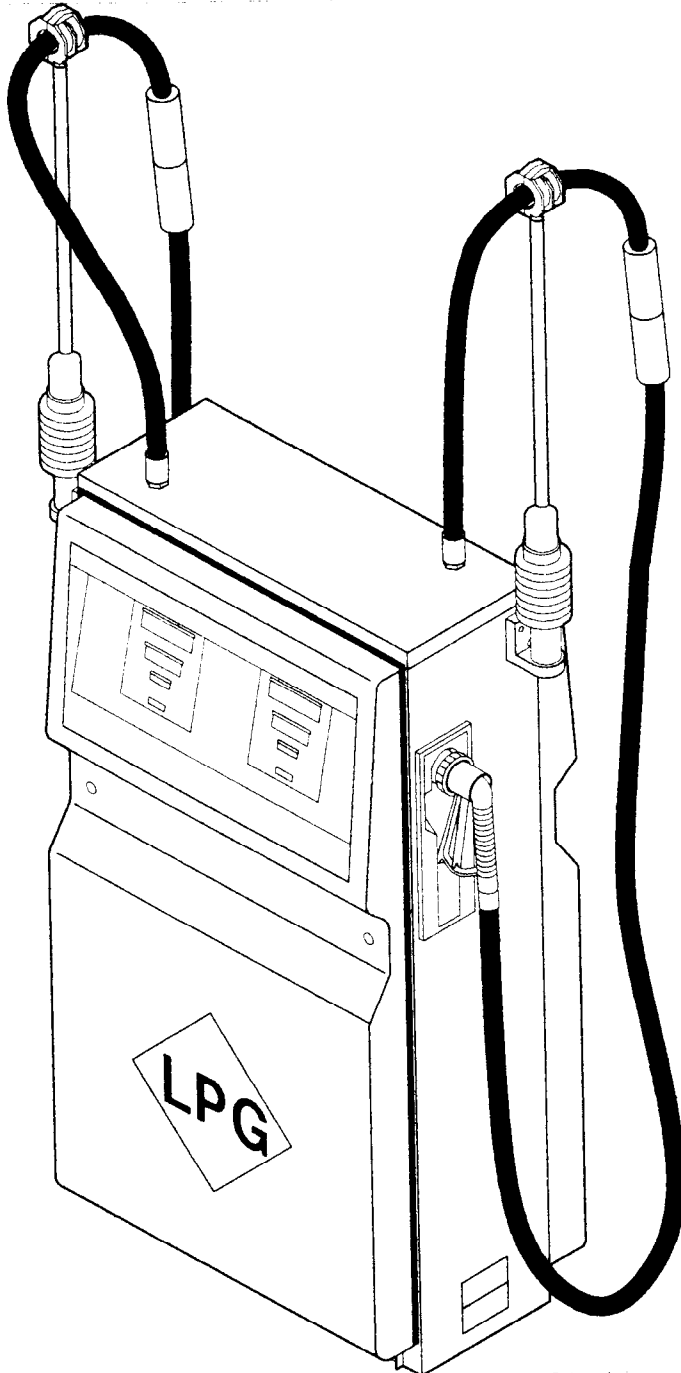
submitted by Compac Industries Limited
 52 Walls Road
 Penrose Auckland
 NEW ZEALAND.

In Certificate of Approval No 10/1/15 dated 24 June 1996, the Condition of Approval referring to the expiry of the approval should be deleted.

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

A handwritten signature in black ink, appearing to read 'Jim Bennett', written in a cursive style.

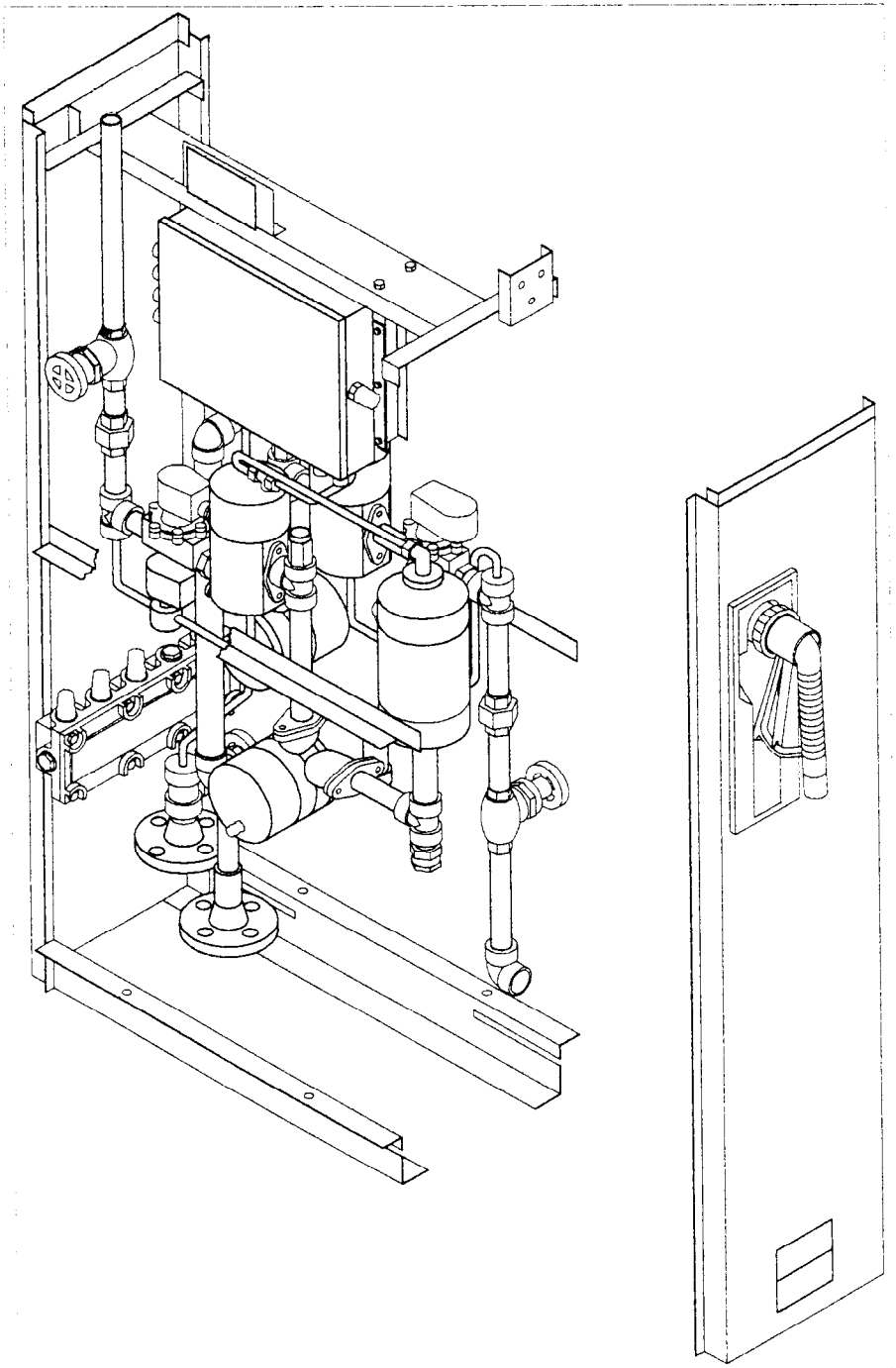
FIGURE 10/1/15 - 1



Compac Model P-LPG-DE LPG Driveway Flowmeter

10/1/15
13 April 1995

FIGURE 10/1/15 - 2



Model P-LPG-DE Hydraulics

FIGURE 10/1/15 - 3



Model COM125 LPG Meter

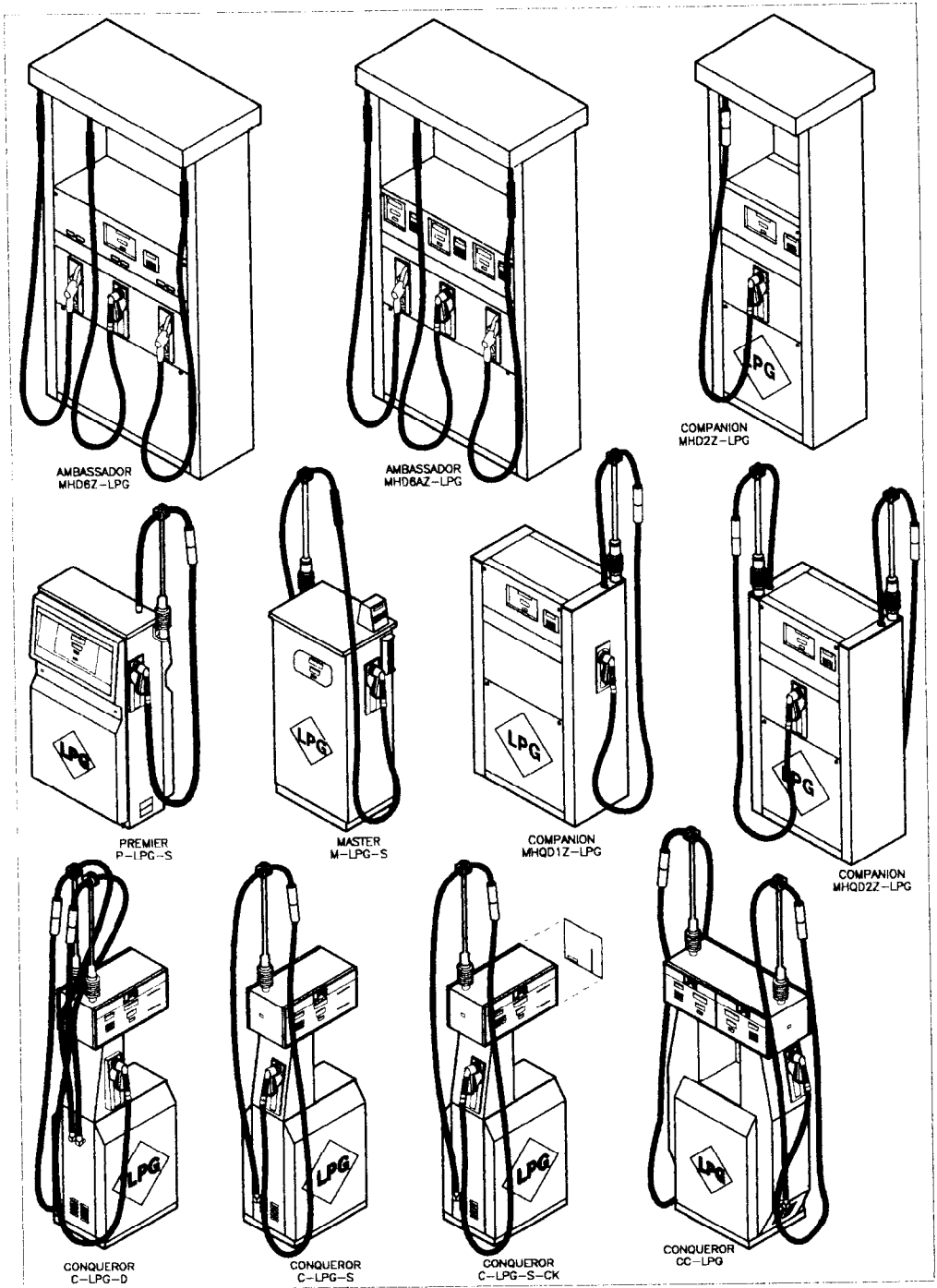
10/1/15
13 April 1995

FIGURE 10/1/15 - 4



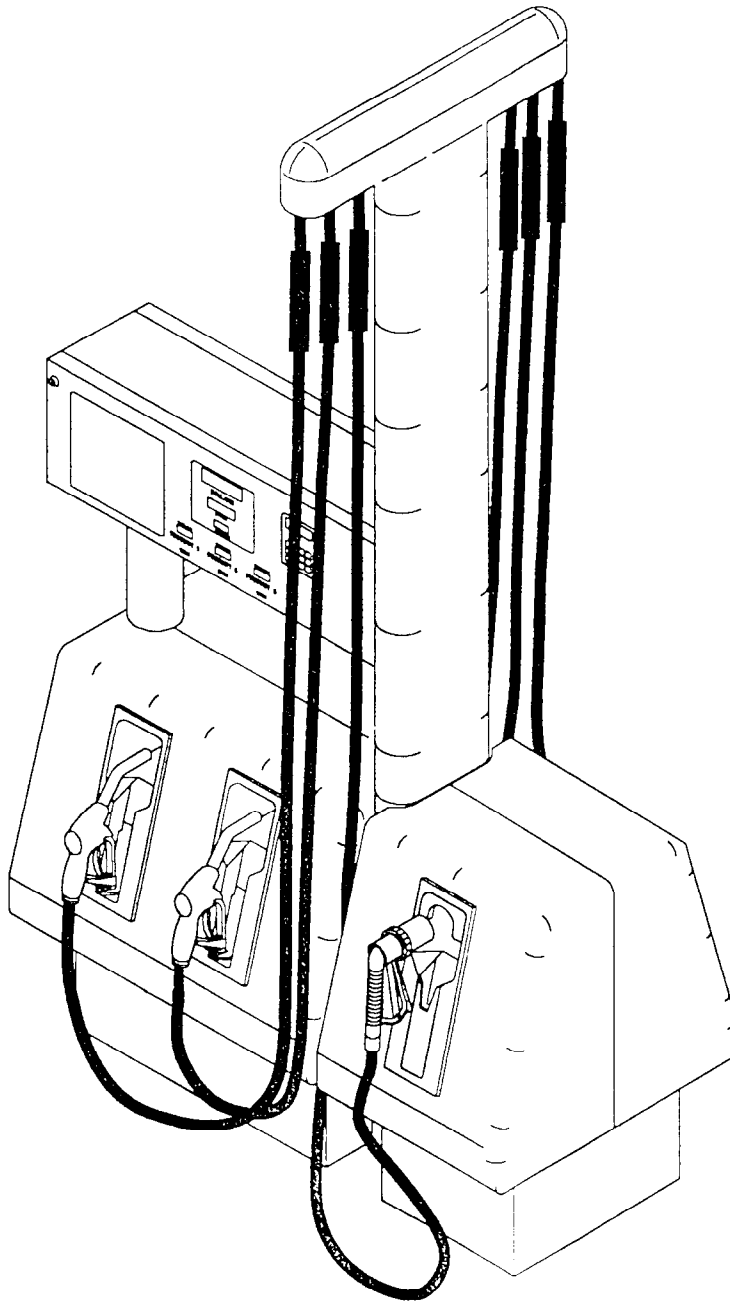
Compac LPG Vapour Eliminator

FIGURE 10/1/15 - 5



Approved Models and Configurations - Variant 1

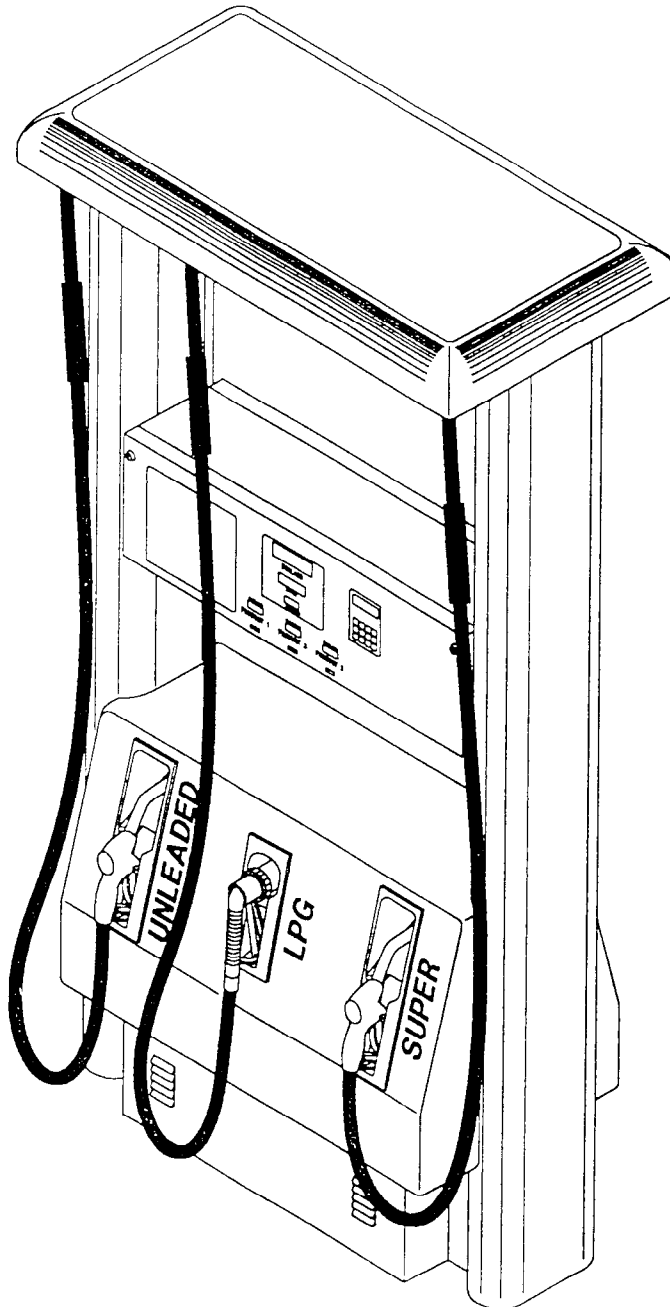
FIGURE 10/1/15 - 6



Model EURO MHP6Z-LPG

10/1/15
24 June 1995

FIGURE 10/1/15 - 7



Model SOVEREIGN MHD6Z-LPG