Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation

Certificate of Approval

No 5/6A/202A

Issued by the Chief Metrologist 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

Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

submitted by Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144

has been cancelled in respect of new instruments as from 1 December 2011.

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

Australian Government
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Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 5/6A/202A

Issued by the Chief Metrologist under Regulation 60
of the
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This is to certify that an approval for use for trade has been granted in respect of the

Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

submitted by Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144.

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 October 2011, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 5/6A/202A' 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.

…./2

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 8 September 2006

- A Gilbarco model T185P6 Enterprise fuel dispenser for motor vehicles using Gilbarco model PA024TC measurement transducers up to a maximum flow rate of 50 L/min.

Variants: approved 8 September 2006

1. Certain other models of the Enterprise series as identified in Table 1.
2. With side by side calculator/indicators.
3. An optional numeric pre-set keypad.
4. With one or more approved submersible turbine pumping systems.
5. For use up to a maximum flow rate of 160 L/min.
6. With Gilbarco model T20150 measurement transducers.
7. With a GPU-90 pumping unit.
8. For use to dispense biodiesel fuels.

Technical Schedule No 5/6A/202A describes the pattern and variants 1 to 8.

Variant: approved 10 April 2008

9. With a Fitsafe in-line filter.

Technical Schedule No 5/6A/202A Variation No 1 describes variant 9.

Variant: approved 2 June 2009

10. With a Gilbarco Stage 2 (VR2) vapour recovery system.

Technical Schedule No 5/6A/202A Variation No 2 describes variant 10.

Variant: approved 2 July 2010

11. The pattern and variants for use to dispense various grades of petrol which may include up to 85% ethanol (‘E85’).

Technical Schedule No 5/6A/202A Variation No 3 describes variant 11.

FILING ADVICE

Certificate of Approval No 5/6A/202A dated 14 December 2009 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6A/202A dated 5 July 2010
Technical Schedule No 5/6A/202A dated 11 September 2006 (incl. Test Procedure)
Technical Schedule No 5/6A/202A Variation No 1 dated 16 June 2008
Technical Schedule No 5/6A/202A Variation No 2 dated 14 December 2009 (incl. Notification of Change)
Technical Schedule No 5/6A/202A Variation No 3 dated 5 July 2010
Notification of Change No 1 dated 3 September 2008
Figures 1 to 9 dated 11 September 2006
Figure 10 dated 16 June 2008
Figures 11 and 12 dated 14 December 2009

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/202A

Pattern: Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

Submittor: Gilbarco Australia Limited
20 Highgate Street
Auburn NSW 2144

1. Description of Pattern

A Gilbarco model T185P6 Enterprise fuel dispenser (Figure 1) for motor vehicles approved to dispense kerosene, distillate and various grades of petrol (which may include up to 10% ethanol), in attendant service mode, or in attended self-service mode when interfaced to a compatible(*) approved self-service device.

(*) "Compatible" is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

1.1 Field of Operation

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

• Minimum measured quantity, V_{min}	2 L	
• Maximum flow rate, Q_{max}	50 L/min	(#1)
• Minimum flow rate, Q_{min}	5 L/min	
• Maximum pressure, P_{max}	300 kPa	
• Minimum pressure, P_{min}	140 kPa	(#2)
• Nature of the liquids to be measured	0.5 to 20 mPa.s	(#3)
• Maximum temperature of the liquid, T_{max}	50 °C	
• Minimum temperature of the liquid, T_{min}	-10 °C	
• Environmental class	-25 °C to 55 °C	
• Accuracy class	0.5	

(#1) When used to dispense diesel, instruments may be used with a Q_{max} value of 85 L/min and shall be so marked.

(#2) Minimum pressure for the effective operation of the gas elimination.

(#3) The flowmeter is adjusted for use with one product viscosity.

The flowmeter is adjusted to be correct for the liquid for which it is to be verified/certified.

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1.2 Fuel Dispenser Components

The pattern uses a 'wide frame' housing (Figure 2) and incorporates the following components:

(i) Three Blackmer model GDP-90 Monoblock pumping units which incorporates an integral by-pass, strainer and gas elimination device; any vapour or gas separated by the GDP-90 is exhausted to the vent tube. A gas detection switch is connected to the vent tube. (Refer to the documentation of approval NSC S383.)

(ii) Six Gilbarco model PA024TC four-piston measurement transducers (Figure 2).

(iii) Each measurement transducer is fitted with a Gilbarco model BR405799 pulse generator, which provides 250 pulses per shaft revolution.

(iv) An Asco model PVXT292A23 19 mm two-stage solenoid-operated control valve is connected upstream of each hose and is controlled by the calculator/ indicator to allow the control of pre-set deliveries and to allow the system to be pressurised.

(v) Six Elaflex model ZVA 'Slimline' 16 mm nozzles or any other compatible (*) approved nozzles connected to an Elaflex 16 mm hose or compatible (*) hose. The nozzle is the transfer device, which defines the start and finish of the measured volume throughput, and is designed to maintain the hose full of liquid. The nozzle and its receptacle are designed so that the nozzle cannot be placed in a hang-up position other than to end the delivery.

(*) "Compatible" is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

1.3 Calculator/ Indicator

The Gilbarco model Epsilon calculator/indicator modules (Figure 3) incorporate:

(i) A Management Interface Unit (MIU) with a keypad for programming functions.

(ii) Price, volume and transaction unit price displays for the delivery and a separate unit price display allocated for each nozzle.

(iii) Optional pre-set facility (keypad and display).

Operation of display

Removing a nozzle from its normal hang-up position initiates a segment check of the price, volume and unit price displays corresponding to the grade of fuel selected, whereas the unit price displays for the other grades of fuel blank. Then the price and volume displays reset to zero and the transaction unit price display shows the unit price of the grade of fuel selected.

…./3

An optional red LED may be installed on top of the unit price displays which illuminates when the unit price is selected by lifting the nozzle and the LED will remain illuminated during the delivery until the nozzle is hung-up.

The indicators display the following maximum values:

Volume	0 000.00 L to 9999.99 L in 0.01 L increments
Unit price	0.1 to 999.9 ¢/L in 0.1 ¢
Price	$ 0 000.00 to $9999.99 in 1 ¢ increments
Totaliser	0 000 000 to 9 999 999 L in 1 L increments

The software version can be displayed as follows:

From either Manager mode or Install mode,

- Press ‘0’ followed by the ‘Key’ icon from the Manager Interface Unit (MIU) panel.
- The digits displayed on the volume indicator are the software version number, in this case 42.99.

1.4 Checking facilities

Removing the nozzle from its normal hang-up position initiates a segment check of the price, volume, and unit price displays

- ‘Error 6(n)’ is displayed and the delivery stopped if an excessive amount of air/vapour is detected.
- ‘Error 1(n)’ is displayed and the delivery stopped when an error in pulse output is detected.
- ‘Error 16(n)’ is displayed if a pre-set amount is over-run.

Note: ‘(n)’ refers to pump number module.

1.5 Totaliser

The instrument is fitted with an SAIA part No 004, 12 VDC, electronic totaliser for indicating volume total for each flowmeter in one litre graduations up to a maximum of 9 999 999 litres The totalisers are located next to the MIU.

1.6 Sealing and Verification/Certification Provision

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

The gas separator test valve has provision for sealing. The meter is sealed as shown in (Figure 4).

1.7 Markings

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

Manufacturer's identification mark or trade mark	Gilbarco
Manufacturer's designation (model number)	Enterprise T18...
Serial number	...
Year of manufacture	...
Flow rate	... to ... L/min
Maximum operating pressure	... kPa
Minimum operating pressure	... kPa
Approved for	...
Environmental class	class C
Pattern approval sign	5/6A/202A

(#) In addition, the minimum measured quantity (V_{min}) shall be clearly visible on the indicating device during the measurement, in the form 'Minimum delivery 2 L'.

2. Description of Variants

2.1 Variant 1

Other models of the Enterprise series with configurations identified in Table 1.

TABLE 1

Meaning of model designations.

Character	Codes	Meaning
First character	T	Gilbarco product
Second character	1	Enterprise cabinet
Third character	8	Enterprise cabinet
Fourth character	5 6 7	Wide frame, lane orientation (Figure 1) Narrow frame, lane orientation (Figure 5) Narrow frame, island orientation (Figure 6)
Fifth character	P D	Self-contained dispenser With remote pump
Sixth character	1-8	Number of hoses
Seventh character (suffix)	W	Option for grades of biodiesel and biodiesel/distillate blends (suitable hose material, etc)

e.g. The pattern, model T185P6 Enterprise (Figure 1) has a wide frame (lane orientation), self-contained pumps, and six hoses.

..../5

2.2 Variant 2

With side by side calculator/indicators in the 'Narrow Frame' Island Orientated dispenser, each indicator displays volume, price and unit price (Figure 7).

2.3 Variant 3

An optional numeric keypad with an LCD display is provided for a pre-set facility (Figures 3 and 7) which allows pre-set values to be entered either in dollar increments up to a maximum of $999 or in litre increments up to a maximum of 999 litres.

2.4 Variant 4

With one or more approved submersible turbine pumping systems.

The remote pump replaces the equivalent components (i.e. motor, pump/strainer/ gas separator, and associated pipework) in any fuel dispenser covered by this approval (Figure 8).

More than one fuel dispenser may be connected to the same remote pump.

2.5 Variant 5

With ultra high flow (UHF) hydraulics comprising two meters connected in parallel and supplied from a NMI-approved submersible turbine pumping system

Field of Operation

The field of operation of this variant is the same as for the pattern, except for the use of an Elaflex ZVA 32mm nozzle and the following:

- Minimum measured quantity, (V_{min}) 2 L
- Maximum flow rate, Q_{max} 160 L/min
- Minimum flow rate, Q_{min} 16 L/min
- Maximum pressure of the liquid, P_{max} 350 kPa

In addition to the markings specified in clause **1.7 Markings**, the approved specifications (#) shall be marked when different rates are used for various hoses/nozzles within the same fuel dispenser.

(#) e.g. V_{min} = 2 L

Q_{max} = 50/160 L/min

Q_{min} = 5/16 L/min

P_{max} = 300/350 kPa

2.6 Variant 6

For use with a Gilbarco model T20150 four-piston measurement transducer (Figure 9) which is similar to the pattern accept the outlet is at the bottom of the flowmeter.

2.7 Variant 7

For use with a GPU-90 pumping unit (as described in the documentation of approval NMI S455) replacing the GDP-90 pumping unit.

2.8 Variant 8

The pattern and variants constructed for use to dispense various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard) in which case the model number has a W suffix, e.g. T185P6W.

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Uniform Test Procedures. Tests should be conducted in conjunction with any tests specified in the approval documentation for any components used, such as submersible turbine pump (STP) hydraulic systems.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors applied during a verification test of the fuel dispenser using the liquid for which it is to be verified/certified, and from normal flow rate to the minimum flow rate specified in the Certificate of Approval or Technical Schedule are:

±0.3% for the calibration adjustment of the meter; and

±0.5% for in-service inspection of the complete measuring system.

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

Other applicable maximum permissible errors are:

±0.5% for gas elimination device for liquids having a viscosity not exceeding 1 mPa.s (e.g. petrol);

±1.0% for gas elimination device for liquids having a viscosity exceeding 1 mPa.s (e.g. distillate);

±(0.01 x V_{min}) for deliveries equal to the minimum measured quantity and for hose dilation test.

To check the software version number, refer to clause **1.3 Calculator/Indicator** in the Technical Schedule.

TECHNICAL SCHEDULE No 5/6A/202A

VARIATION No 1

Pattern: Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

Submittor: Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144

1. Description of Variant 9

With a Fitsafe model FS-14ILA3\4BSPT in-line cartridge filter installed downstream of the meter and outside the fuel dispenser housing (Figure 10).

The filter may be installed on any model dispenser of this approval and used with any liquid hydrocarbon for which the dispenser is approved.

The filter unit is sealed to prevent any drainage of the product between the inlet of the filter and the nozzle of the fuel dispenser.

The maximum permissible errors applicable are those applicable to the fuel dispenser to which the instrument approved herein is fitted.

When the filter is changed the system is required to be primed with liquid up to the nozzle, and then the filter is to be sealed.

If a filter is installed after the fuel dispenser has been verified/certified, then the dispenser must be tested and certified again after the filter has been installed. Similarly if the filter is removed then the dispenser must again be tested and certified.

A destructible adhesive label should be applied after verification/certification.

TECHNICAL SCHEDULE No 5/6A/202A

VARIATION No 2

Pattern: Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

Submittor: Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144

1. Description of Variant 10

Any Gilbarco Enterprise series fuel dispenser of this approval now fitted with a Gilbarco Stage 2 (VR2) vapour recovery and monitoring system and used up to a maximum flow rate of 42 L/min.

Typical instruments are shown in Figures 11 and 12.

The vapour recovery and monitoring system is approved by the German TÜV SÜD Industrie Service GmbH authority.

Only vapour recovery components and systems as listed below and included in the relevant TÜV approval certificates may be used.

The relevant TÜV approvals (and the approved components) are:

(i) For collection of vapour:

- TÜV 85-2.128 (electric valves); or
- TÜV TÜV 85-2.160 (manual valves),

and the only approved system components are:

- Vapour recovery nozzles – Elaflex models ZVA 200 GR, ZVA SLIMLINE 2 GR, or ZVA SLIMLINE 2 GRVP.
- Coaxial hose – Elaflex model Conti Slimline 21/8 Coax.
- Control valves – Burkert model 6022 / 2832.
- Control board – Gilbarco model VRC 390/x.
- Vapour recovery pump(s) – Durr models MEX 0831-10, MEX 0831-11, or MEX 0544.

(ii) For automatic monitoring of the vapour to fuel ratio:

- TÜV UE-12.5,

and the only approved system components are:

- Gilbarco (GVR) model VMC monitor.
- Gilbarco (GVR) model GE1 flowmeter.

NOTIFICATION OF CHANGE

Technical Schedule No 5/6A/204 dated 11 September 2006 is amended as follows:

(i) In clause **1.7 Markings**, the footnote is amended to read, in part;

"… may be marked in the form Minimum Delivery 2**/5** L". (**#**)

(**#** - Instruments manufactured before the publication of this Notification of Change may not carry this marking.)

(ii) In clause **2.5 Variant 5**, the **Field of Operation** is amended to read, in part;;

"● Minimum Measured Quantity, V_{MIN} 2**/5** L."

(Note: Minimum Measured Quantity may be abbreviated as either V_{MIN} or MMQ.)

TECHNICAL SCHEDULE No 5/6A/202A

VARIATION No 3

Pattern: Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

Submittor: Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144

1. Description of Variant 11

The pattern and variants for use to dispense various grades of petrol which may include up to 85% ethanol ('E85').

Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Notification of Change
Certificate of Approval No 5/6A/202A
Change No 1

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

The following changes are made to the approval documentation for the

Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

submitted by Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144.

A. In Certificate of Approval 5/6A/202A dated 16 June 2008, the FILING ADVICE should be amended by adding the following:

"Notification of Change No 1 dated 3 September 2008"

B. In Technical Schedule No 5/6A/202A dated 11 September 2006 clause **1.2 Fuel Dispenser Components**, sub-clause (v) should be amended to read, in part;

"Six Elaflex model ZVA 'Slimline' 16 mm nozzles, **or model 'Slimline 2' ZVA nozzle,** or any other compatible approved nozzle …"

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

Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Notification of Change
Certificate of Approval No 5/6A/202A
Change No 2

Issued by the Chief Metrologist under Regulation 60
of the
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The following changes are made to the approval documentation for the

Gilbarco Model T185P6 Enterprise Fuel Dispenser for Motor Vehicles

submitted by Gilbarco Australia Limited
20 Highgate Street
AUBURN NSW 2144.

A. In Certificate of Approval 5/6A/202A dated 5 July 2010, the FILING ADVICE should be amended by adding the following:

"Notification of Change No 2 dated 13 October 2011"

B. In Technical Schedule No 5/6A/202A dated 11 September 2006, clause **1.1 Field of Operation**, should be amended to read, in part;

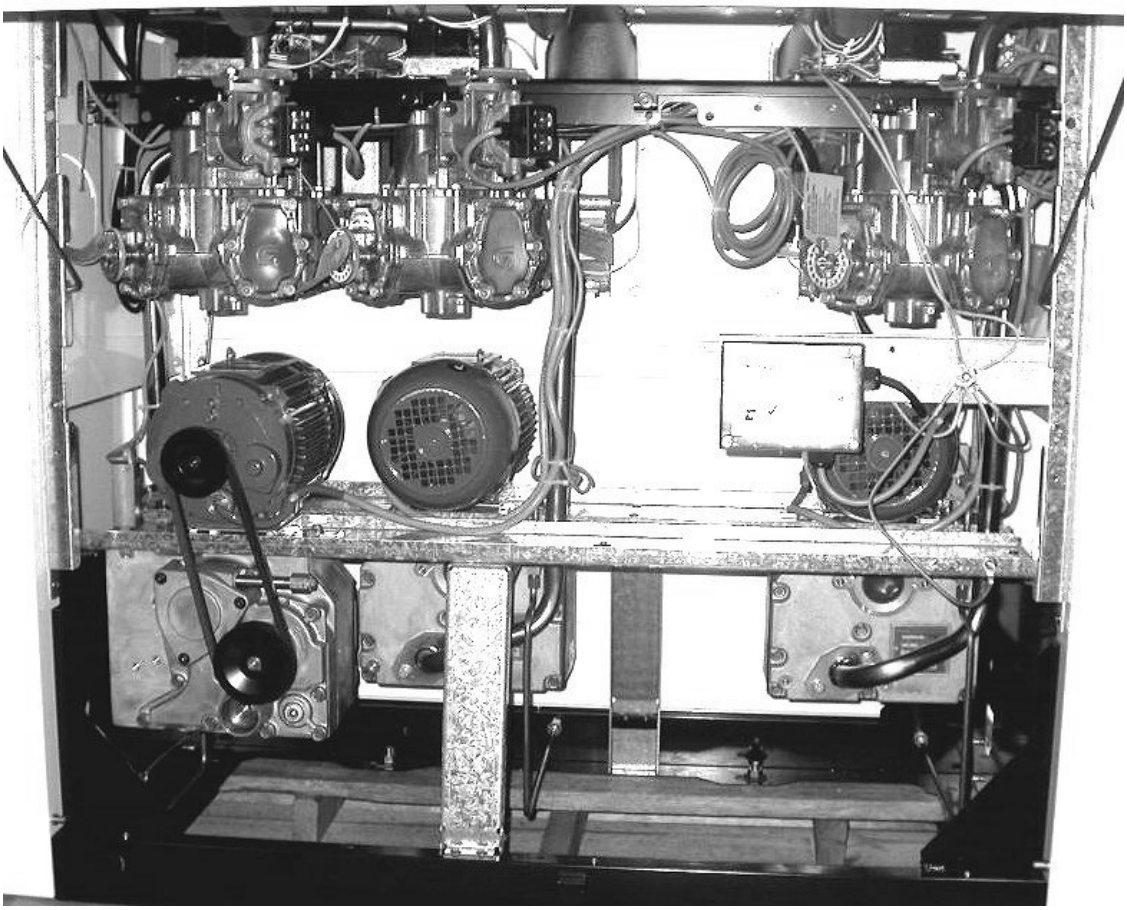
"Maximum flow rate, Q_{max}	5**5** L/min
Minimum pressure, P_{min}	1**3**0 L/min"

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

FIGURE 5/6A/202A – 1

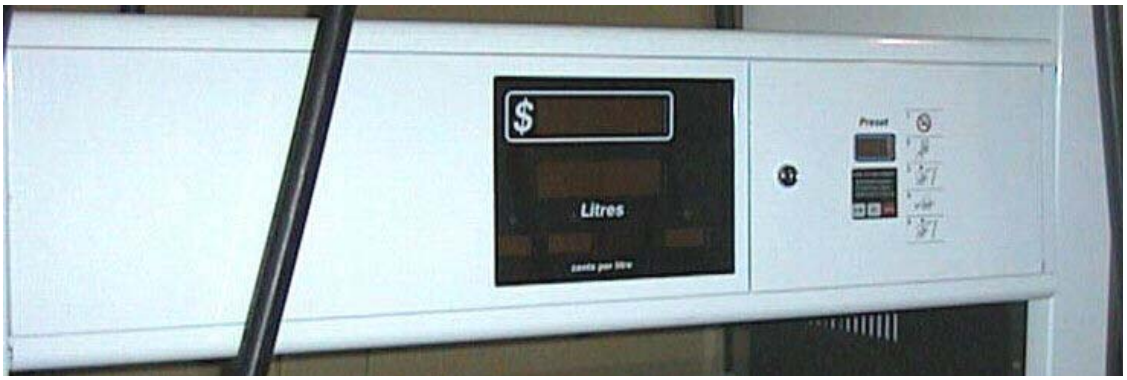
Gilbarco Model T185P6 Enterprise Fuel Dispenser

FIGURE 5/6A/202A – 2



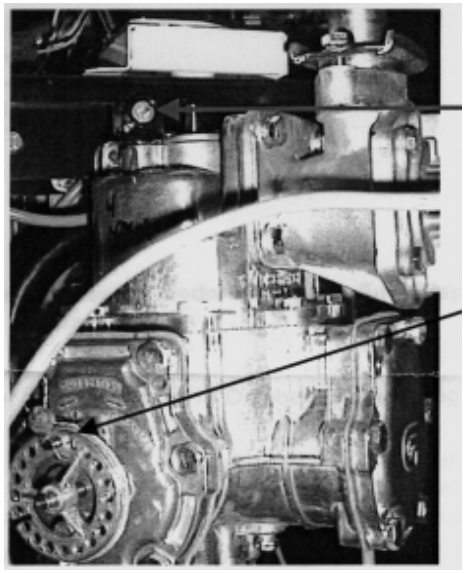
Gilbarco Model T185P6 Enterprise Fuel Dispenser

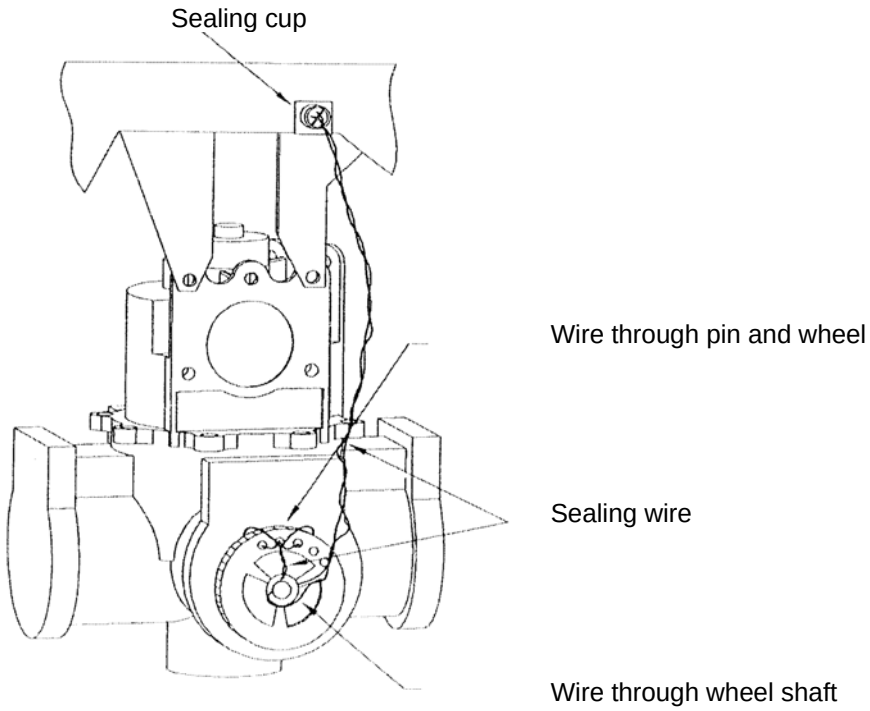
FIGURE 5/6A/202A – 3



Gilbarco Model Epsilon Indicator/Calculator Module
in 'Wide Frame, Lane Orientation' Dispenser

FIGURE 5/6A/202A – 4





Method of Sealing

FIGURE 5/6A/202A – 5

Typical ‘Narrow Frame, Lane Orientation’ Dispenser

FIGURE 5/6A/202A – 6

Typical ‘Narrow Frame, Island Orientation’ Dispenser

FIGURE 5/6A/202A – 7

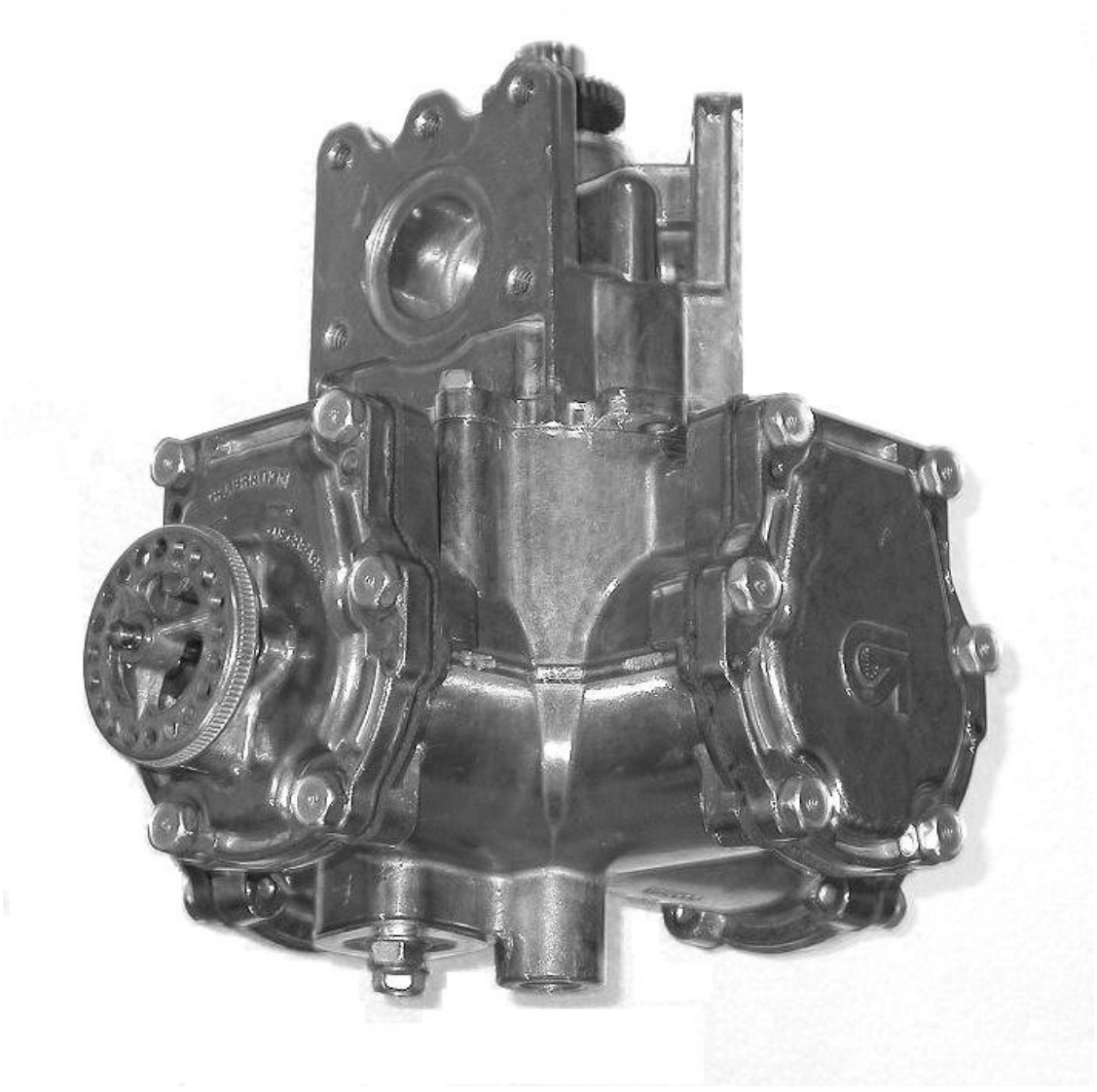
Gilbarco Model Epsilon Indicator/Calculator Module
in 'Narrow Frame, Lane Orientation' Dispenser

Gilbarco Model Epsilon Indicator/Calculator Module
in 'Narrow Frame, Lane Orientation' Dispenser

FIGURE 5/6A/202A – 8

Typical Dispenser Supplied From Remote Pump Hydraulic System

FIGURE 5/6A/202A – 9

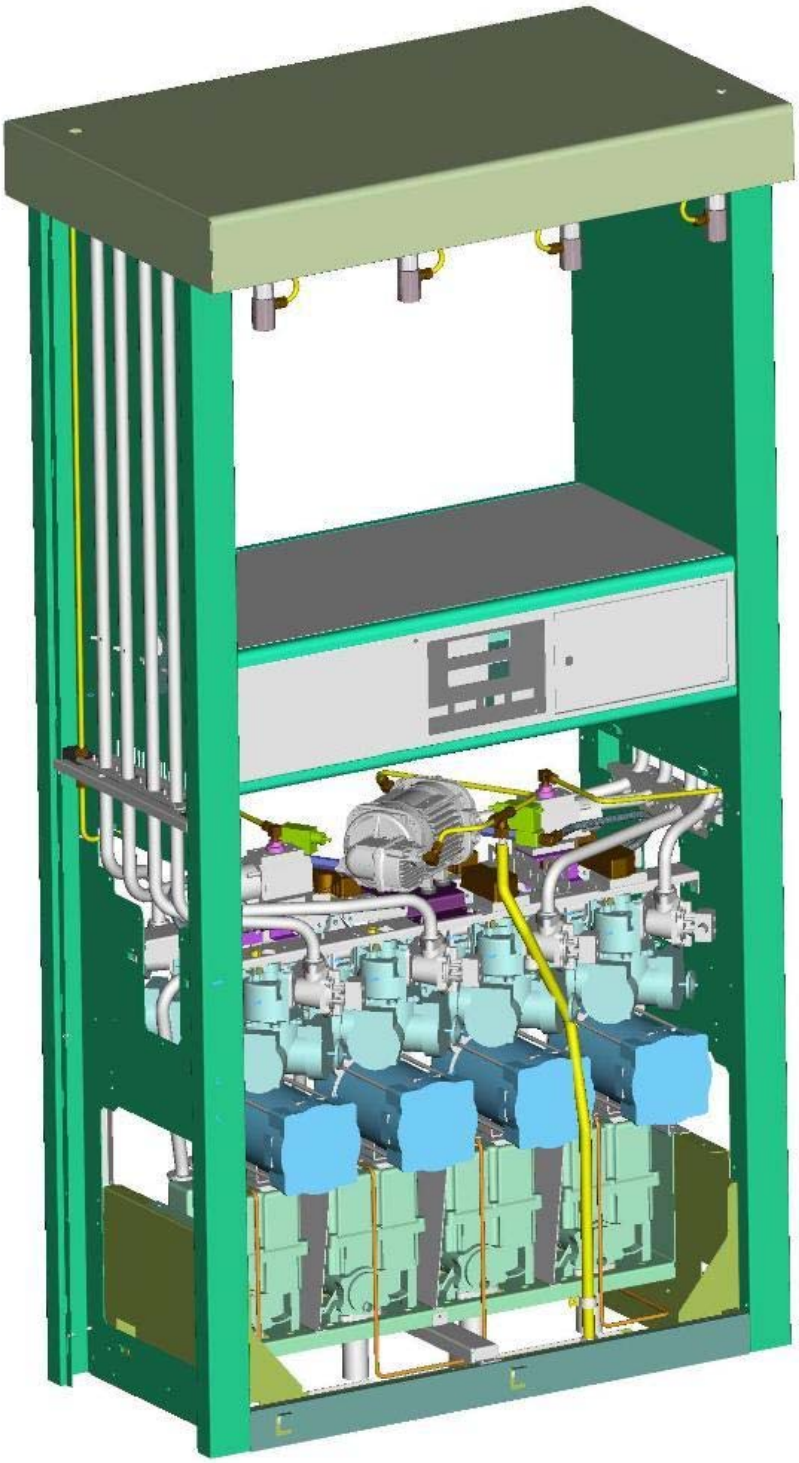


Gilbarco Model T20150 Four-piston Measurement Transducer

FIGURE 5/6A/202A – 10

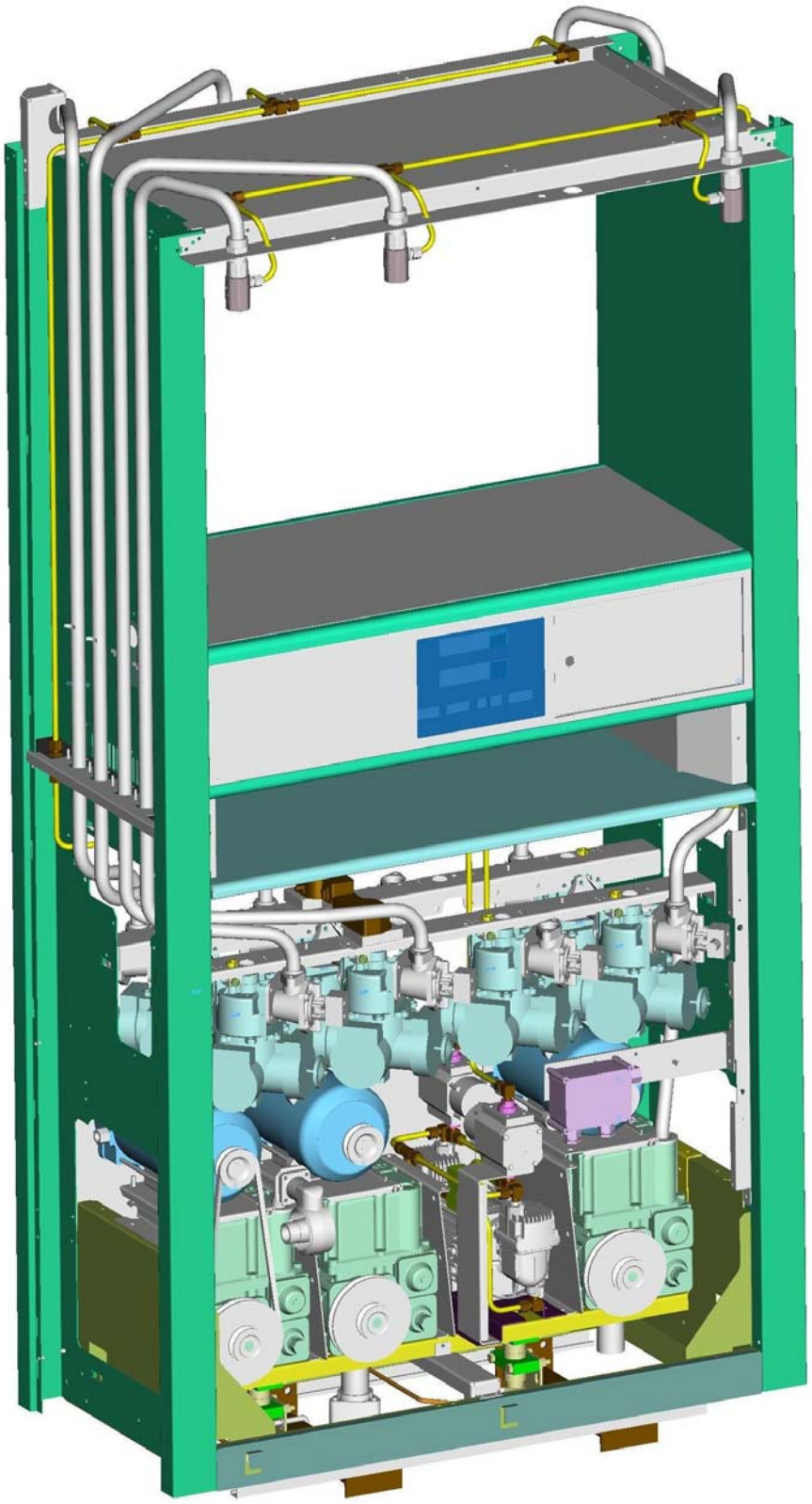
Typical Fitsafe Filter Installation

FIGURE 5/6A/202A – 11



Typical Gilbarco Stage 2 (VR2) Vapour Recovery System Installation
Eight Meter/Hose Dispenser

FIGURE 5/6A/202A – 12



Typical Gilbarco Stage 2 (VR2) Vapour Recovery System Installation
Six Meter/Hose Dispenser