



Australian Government

National Measurement
Institute

Bradfield Road, West Lindfield NSW 2070

Notification of Change

Interim

Certificate of Approval No 10/1/13

Variation No 4

Change No 1

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

The following change is made to the approval documentation for the

Batchen Model SCB Commander LPG Driveway Flowmeter

submitted by D J Batchen Pty Ltd
Raglan Road
Auburn NSW 2144.

In Interim Certificate of Approval No 10/1/13 Variation No 4 dated 23 December 1998, the description of **provisional variant 11** should be amended by adding the following:

“This variant also includes the model 3261 which has the features of the model 2261P, and also the model 3161 which is a single meter/hose/nozzle version. All models are in a PEC Apollo style configuration.

The model numbers may also have either an ‘N’ or a ‘P’ suffix (where ‘P’ indicates the presence of a pre-setting device)”.

Note: Certificate of Approval No 10/1/13 has been cancelled in respect of new instruments as from 1 August 2001.

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

A handwritten signature in black ink, appearing to be 'R. J. Batchen', written over a horizontal line.



National Standards Commission

12 Lyonpark Road, North Ryde NSW

Cancellation Certificate of Approval No 10/1/13

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

Batchen Model SCB Commander LPG Driveway Flowmeter

submitted by D J Batchen Pty Ltd
 Raglan Road
 Auburn NSW 2144

has been cancelled in respect of new instruments as from 1 August 2001.

Instruments which were verified/certified before that date may, with the concurrence of the relevant verifying authority, be submitted for reverification.

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 2110



Interim

Certificate of Approval

Approval No 10/1/13

Variation No ~~2~~ 4

VALID UNTIL 23 DECEMBER 1999

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

Batchen Model SCB Commander LPG Driveway Flowmeter

submitted by D J Batchen Pty Ltd
Raglan Road
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.

CONDITIONS OF APPROVAL

This Interim Certificate is valid for verification/certification purposes for 3 months from the date of approval.

It is the responsibility of the submitter to make special arrangements with the respective State or Territorial Trade Measurement Department (if required by that department) to have instruments covered by this Interim Certificate verified/certified pending issue of the final Certificate and Technical Schedule.

Instruments purporting to comply with this approval shall be marked NSC No 10/1/13 and only by persons authorised by the submitter.

The submitter, in presenting instruments for verification/certification using this Interim Certificate, is responsible for making any changes required to such instruments where any differences occur between the final Certificate (and Technical Schedule) and this Interim Certificate, and accepts the commercial risks involved.

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.

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

Special: for Provisional Variant 11

This provisional approval is for a limited number of instruments.

The submitter shall obtain written agreement from the Commission to the location of each instrument prior to it being submitted to a trade measurement authority/licensed certifier for initial verification/certification.

Instruments purporting to comply with this variant shall be marked NSC No P10/1/13 and only by persons authorised by the submitter.

DESCRIPTIVE ADVICE

Pattern: approved 21 January 1993

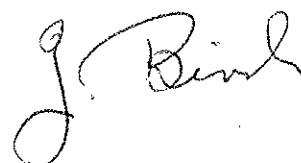
- Batchen Model SCB Commander LPG Driveway Flowmeter.

Technical Schedule No 10/1/13 and its Variations No 1 describe the pattern and variants 1 to 10.

Variant: provisionally approved 23 December 1998

11. A model 2261P two hose LPG Driveway Flowmeter, similar to variant 10, but in a PEC Apollo style configuration, with the hydraulic components including the meters of the instrument located underground (in a pit).

Signed 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.



Date of Approval: 23 December 1998

National Standards Commission



Certificate of Approval

No 10/1/13

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

Batchen Model SCB Commander LPG Driveway Flowmeter

submitted by D J Batchen Pty Ltd
 Raglan Road
 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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 February 1998, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 10/1/13 and only by persons authorised by the submitter.

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.

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

Special:

The initial verification of each driveway flowmeter shall be carried out under the supervision of a government-licensed LPG installer or a person experienced in the design and installation of LPG systems.

DESCRIPTIVE ADVICE

Pattern: approved 21 January 1993

- A Batchen model SCB Commander LPG Driveway Flowmeter

Variants: approved 21 January 1993

1. Model DCB Commander LPG driveway flowmeter.
2. In alternative housings.
3. Model SGB or DGB Commander LPG driveway flowmeters.
4. In an Email MPP2G type housing.

Variants: approved 27 May 1993

5. Model SCS or DCS Commander LPG driveway flowmeters using Schwelm meters.
6. Model DCX or DGX Commander LPG driveway flowmeters using Batchen and Schwelm meters.

Technical Schedule No 10/1/13 describes the pattern and variants 1 to 6.

Variants: approved 19 June 1995

7. With a Batchen model BVE MkIV or BVE MkV vapour eliminator.
8. With a magnetic coupling between the meter and the pulse generator.

Variant: approved 22 December 1995

9. Other models with certain Email or PEC indicators.

Variant: approved 14 August 1996

10. Certain models with Batchen hydraulics in PEC multi-product style housings.

Technical Schedule No 10/1/13 Variation No 1 describes variants 7 to 10.

FILING ADVICE

Certificate of Approval No 10/1/13 dated 31 May 1993 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 10/1/13 dated 28 April 1997

Technical Schedule No 10/1/13 dated 31 May 1993 (incl. Test Procedure)

Technical Schedule No 10/1/13 Variation No 1 dated 28 April 1997 (incl.
Notification of Change)

Figures 1 to 11 dated 31 May 1993

Figures 12 to 17 dated 28 April 1997

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 10/1/13

Pattern: Batchen Model SCB Commander LPG Driveway Flowmeter.

Submittor: D J Batchen Pty Ltd
Raglan Road
AUBURN NSW 2144.

1. Description of Pattern

The pattern is a Batchen model SCB Commander single driveway flowmeter (Figures 1 and 2) for the delivery of liquefied petroleum gas of density 0.505 to 0.545 kg/L (at 15°C), at liquid temperatures between -5°C and +45°C.

Instruments are approved for locally or remotely-authorized operation with maximum and minimum flow rates of 50 L/min and 10 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

The driveway flowmeter includes the major components as detailed below. The hydraulic diagram of the flowmeter is shown in Figure 3.

(i) Supply Tank

The supply tank may be located above or below ground.

(ii) Pump

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

The installation shall be constructed in accordance with the relevant requirements of the Commission's Code of Practice No 2.

(iii) Meter

A Batchen model MkI or MkII two-piston liquefied petroleum gas meter (Figure 4) is used.

(iv) Vapour Eliminator

The meter is protected from the measurement of vapour by correct installation and by a Batchen model BVE-1 constant bleed vapour eliminator (Figure 5). The vapour eliminator incorporates a strainer and is vented through a non-return valve, via a vapour return line to the vapour space in the supply tank.

A thermometer pocket is situated at the top of the vapour eliminator.

(v) Driveway Flowmeter Indicator

An Email model Eclipse MVR79S electronic driveway flowmeter indicator with a model ELS/42 remote pulser is used. The pulser is mounted on the meter and is driven directly by the meter output shaft.

Volume	999.99 L in 0.01 L increments
Unit Price	999.9 c/L in 0.1 c/L increments
Price	\$999.99 in 1 c increments
Totaliser Volume	9999999 L in 1 L increments

The operating cycle is started by removing the nozzle from its receptacle. The display will be cleared of any previous sale and the remote pump will start. After a short delay a segment check is initiated; when completed, only the unit price is displayed. At the end of this cycle a solenoid valve opens. Provided that the nozzle has been attached to a receiving container, which may be done at any time during the cycle, filling can now commence. Replacement of the nozzle stops the remote pump but allows the details of the delivery to remain until the next reset cycle.

If filling is not commenced within 20 seconds after removing the nozzle from its receptacle (i.e. the solenoid being actuated), the pump motor and system will shut down and the sale will be terminated.

(vi) Electronic Volume Conversion for Temperature Device

Volume conversion for temperature is achieved by means of an electronic converter built into the Eclipse MVR79S indicator.

The probe for the conversion device is located in the top of the vapour eliminator and senses the temperature of the liquid; the device converts the measured volume to the equivalent volume at 15°C.

The volume convertor is fitted with an integrated circuit programmed with one of the tables of ASTM IP Table 54, for particular density values within the range 0.505 to 0.545 kg/L. The integrated circuit (IC) fitted is chosen to suit the density of the liquid being used (and as marked on the data plate), as follows:

IC for 0.510 kg/L used for densities 0.505 to 0.515 kg/L;
IC for 0.520 kg/L used for densities 0.515 to 0.525 kg/L;
IC for 0.530 kg/L used for densities 0.525 to 0.535 kg/L; and
IC for 0.540 kg/L used for densities 0.535 to 0.545 kg/L;

Fifteen seconds after the nozzle has been returned into its receptacle, pressing the TOTALS (or TOTES) button in the middle of the indicator will display the following:

Cumulative Dollars Sold in Whole Dollars
Cumulative Volume Sold in Whole Litres
Temperature Display

On release of the button the display will revert to the previous sale information.

The temperature display is an indirect display of the temperature that the probe is reading. The display can be converted into degrees Celsius by the following:

$$\frac{\text{Temperature Display} - 20}{2} = \text{Liquid Temperature in } ^\circ\text{C}$$

For testing purposes a switch is provided to deactivate the volume conversion device. When the convertor is deactivated the temperature display will show '50'.

(vii) Differential Valve

A Batchen model BDC-1 spring-loaded-piston pressure differential valve (Figure 6) maintains pressure in the metering unit and prevents the formation of vapour. A pressure-equalising pipe is connected from the top of the differential valve to the supply tank, through the vapour return line from the vapour eliminator vent (Figure 3).

A sightglass flow indicator is incorporated in the outlet of the pressure differential valve, downstream of the meter. A pressure gauge is fitted in the differential valve pressure-equalising pipe.

The differential valve may be fitted with one or more bleed valves. In normal operation, these valves shall be capped and sealed.

(viii) Solenoid Valve

A 20 mm solenoid valve is located downstream of the meter. The valve is controlled by the computing indicator and prevents delivery during the reset cycle.

(ix) Outlet Pipe

The pipe connection from the differential valve, between the solenoid valve and the hose is fitted with an hydraulic accumulator which prevents meter creep and separation of the hose break coupling caused by excessively high hose pressures.

(x) Hose

The dispenser is fitted with a hose of 20 mm bore, complying with the SA code for hoses in use with liquefied petroleum gases. The hose is supported on a hose mast and is fitted with a Batchen model Sentry 20 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.

(xi) Nozzle

The nozzle used is either a Gilbarco model 102-ZVG 1.3, also known as an Elaflex, as described in the documentation of NSC approval No S158A or a Gasguard model LG1 liquefied petroleum gas nozzle.

The nozzle can only be removed from the vehicle tank once the trigger has been released, at which time a small loss of liquid will be evident.

An optional key-operated or solenoid-operated nozzle latch may be fitted.

(xii) Pressure Equalisation

Provision is made for a vapour line from the vapour space in the supply tank to a pressure prover used for testing, either directly or via a tee in the vapour return line from the vapour eliminator. During a normal delivery there is no vapour return connection between the receiving container and the supply tank.

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	
Model number	
Serial number	
NSC approval number	NSC No 10/1/13
Maximum flow rate L/min
Minimum flow rate L/min
Liquid temperature range	-5°C to +45°C
Approved for LPG of density range	0.505 to 0.545 kg/L
Density for which volume convertor is set kg/L
Maximum operating pressure	2450 kPa

1.3 Provision for Sealing and Verification/Certification

The side of the MVR79S indicator which provides access to the electronic calibrator shall be sealed. The mechanical calibrators fitted to the top of each meter cylinder shall be sealed.

The volume conversion device switch, the vapour return line provided for pressure equalisation during testing with a pressure prover, and any bleed valves downstream of the meter shall also be sealed.

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

2. Description of Variants

2.1 Variant 1

With two flowmetering systems in the one housing and known as the Batchen model DCB Commander dual LPG driveway flowmeter.

2.2 Variant 2

In alternative housings, e.g. 'round' and 'Email MPP' styles (Figure 7).

2.3 Variant 3

A Batchen model SGB Commander single or DGB Commander dual LPG driveway flowmeter (Figures 8 and 9) for the delivery of liquefied petroleum gas of density 0.510 to 0.560 kg/L (at 15°C), at liquid temperatures between -5°C and +45°C.

The Eclipse indicator of the pattern is replaced by a Gilbarco model LPG Electroline CD module with electronic volume conversion for temperature device.

(a) Driveway Flowmeter Indicator

The Gilbarco model LPG Electroline CD indicator/computer module is mounted in a separate housing atop the main housing. The pulse generator is driven from the output shaft of the meter through a gear assembly on which is mounted a checking pulse generator. A weights and measures ('W & M test') switch is located within the module.

Unit prices may be changed either by buttons within the module, or centrally if connected to a control console which is Commission-approved with that facility.

The operating cycle is started by removing the nozzle from its receptacle and thereby starting the pump motor immediately. After a delay to compress any vapour in the system, the reset cycle commences, with the solenoid valve opening at the end of the cycle to allow a delivery to commence.

(b) Electronic Volume Conversion For Temperature Device

Volume conversion for temperature is achieved by means of an electronic converter built into the Gilbarco CD indicator/computer module.

The temperature probe for the convertor is located at the vapour eliminator. The CD module converts the measured volume to the equivalent volume at 15°C. The CD module has density adjustment switches which are set (by referring to the service manual) to suit the density of the liquid being used.

For testing purposes, the unconverted volume is displayed if the 'W & M test' switch is depressed; the probe temperature is also displayed instead of the unit price (in this mode the price is blank). The display will revert to the previous sale information if the switch is depressed again.

(c) Markings

The instrument data plate permanently fixed to the external housing of the driveway flowmeter is marked as described for the pattern, except that the approved density range is 0.510 to 0.560 kg/L.

(d) Sealing

The mechanical/hydraulic components shall be sealed as described for the pattern. The 'W & M test' switch and the density adjustment switches in the CD module shall also be sealed.

2.4 Variant 4

With Email model MPP2G electronic price-computing indicators, in an Email MPP2G type housing, and known as a Batchen model MPP Mk II (Figure 10).

This indicator has similar features to that of the pattern. The electronics for the indicators are located in the supporting column.

The operating sequence is the same as that described for Variant 3 (cl. 2.3 (a) 3rd para.).

2.5 Variant 5

A Batchen model SCS Commander single or DCS Commander dual LPG driveway flowmeter (Figure 11) using Schwelm model ZWM 1237 two-piston meters and Email model Eclipse indicators (as in the pattern).

Instruments are approved for the delivery of liquefied petroleum gas of density 0.505 to 0.545 kg/L (at 15°C) with maximum and minimum flow rates of 60 L/min and 15 L/min respectively.

2.6 Variant 6

As dual driveway flowmeters with one flowmetering system using the Batchen meters of the pattern and the other system using the Schwelm meter of variant 5.

Instruments are known as either model DCX Commander when Email model Eclipse indicators (as in the pattern) are used, or as model DGX Commander when Gilbarco model LPG Electroline CD indicators (as in variant 3) are used. The approved density range is determined by the indicators used as described for either the pattern or variant 3, as applicable.

Instruments are approved for the delivery of liquefied petroleum gas with maximum and minimum flow rates of 50 L/min and 15 L/min respectively.

TEST PROCEDURE

Instruments should be tested in accordance with tests included in the approval documentation for the indicator and control console used, and in accordance with all relevant tests specified in the Inspectors Handbook. (Note that the minimum flow rate for some instruments of this approval is 10 L/min.)

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors applied during a verification test from normal flow rate to the minimum flow rate specified in the Certificate of Approval or Technical Schedule are:

±1.0% with the volume conversion for temperature device deactivated;
and

±1.2% with the volume conversion for temperature device activated.

National Standards Commission

TECHNICAL SCHEDULE No 10/1/13

VARIATION No 1

Pattern: Batchen Model SCB Commander LPG Driveway Flowmeter.

Submittor: D J Batchen Pty Ltd
Raglan Road
AUBURN NSW 2144.

1. Description of Variants

1.1 Variant 7

With modified hydraulics including having the vapour eliminator of the pattern replaced by a Batchen model BVE MkIV or BVE MkV vapour eliminator (Figures 12 and 13).

1.2 Variant 8

With a magnetic coupling between the meter and the pulse generator (Figure 14).

1.3 Variant 9

Other models of single or dual driveway flowmeters in a variety of housings (Figures 15 to 17) and using either Email model Vision or PEC model MHP electronic price-computing indicators, as listed below:

COMMANDER II Series: Models CII-SCE, CII-SCP, CII-DCE, CII-DCP, CII-STE, CII-STP, CII-DTE, CII-DTP, CII-SWE, CII-SWP, CII-DWE and CII-DWP.

CONCEPT 2000 SERIES: Models C2000-SE, C2000-SP, C2000-DE and C2000-DP.

Where, in the suffixes: S = single and D = dual flowmeters.
C = cantilever, T = twin column, and
W = wardrobe housings.
E = Email and P = PEC indicators.

For Email Vision indicators, the calibration facility (and displays of density, temperature, and unconverted volume) are accessed by means of a pushbutton switch on the 'Vision Computer' circuit board; for PEC MHP indicators, these features are accessed by means of a toggle switch on the 'Input Processor' circuit board.

Access to the calibration facility is restricted by a sealed cover.

1.4 Variant 10

Various models of driveway flowmeters as listed below, in PEC multi-product style housings using Batchen hydraulics including model Mkl or MkII LPG meters:

Models 8661, 8671, 8672, 8461, 8471, 8472, 7661, 7671, 7672, 7461, 7471 and 7472.

NOTIFICATION OF CHANGE

In Technical Schedule No 10/1/13 dated 31 May 1993, clause 1.1 (vii) **Differential Valve** should be amended by changing the model number to read 'BDV-1'.

National Standards Commission



NOTIFICATION OF CHANGE

VARIOUS CERTIFICATES OF APPROVAL

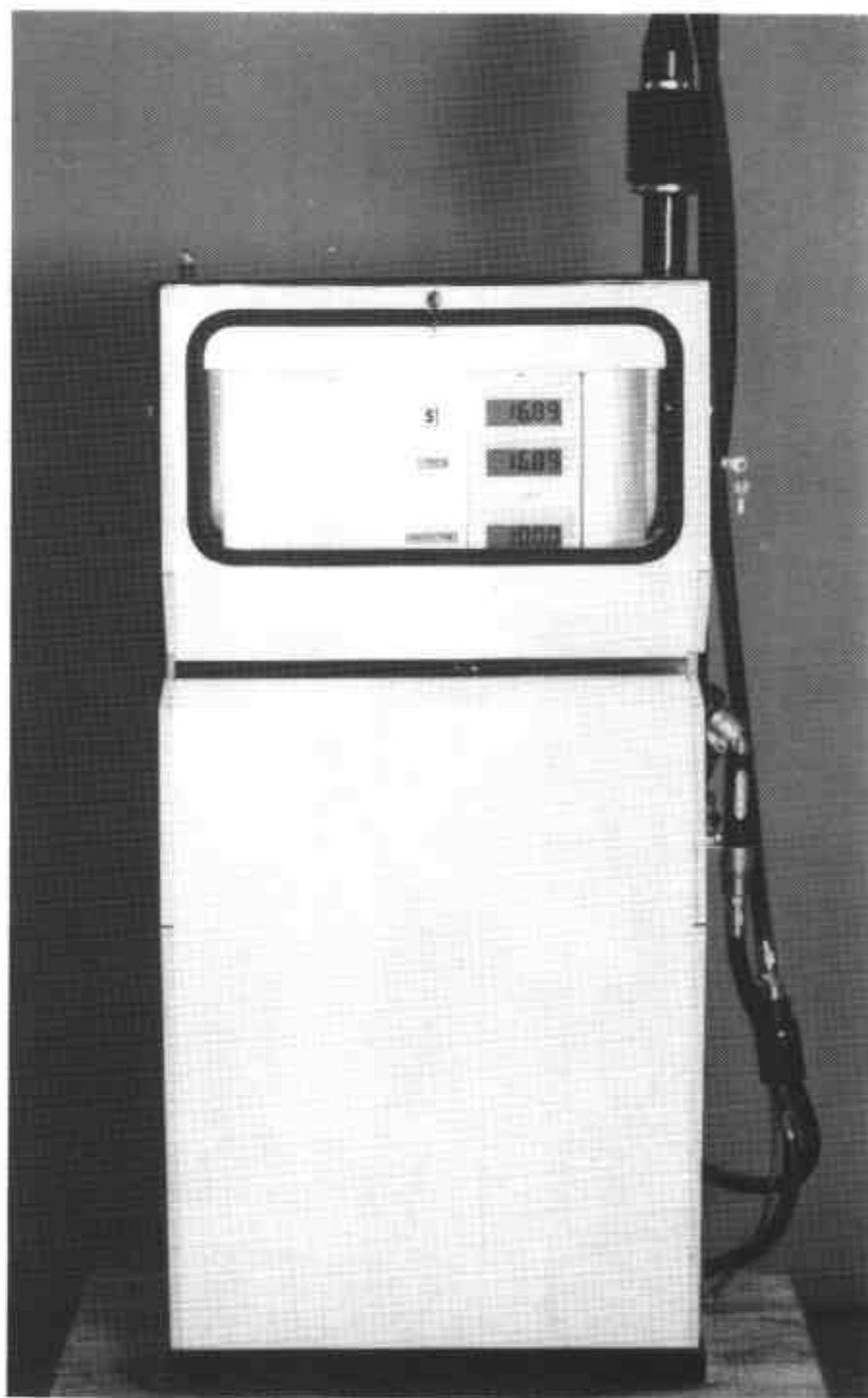
The following changes are made to the approval documentation for various LPG flowmeter approvals as listed below:

In the approvals listed below, remove from the Certificate, Technical Schedule and Test Procedure, any Condition of Approval or clause that refers to instruments being verified, re-verified or calibrated at specific intervals. (Note that the re-verification period is determined by the Trade Measurement Authority in the State or Territory in which the instrument is located.)

APPROVAL NUMBER	PATTERN
10/1/2	Halco Neptune 32/38 mm LPG Flowmeter
P10/1/3	Acme Model LGD 100 LPG Driveway Flowmeter
10/1/3A	Acme Model LGD 105S LPG Driveway Flowmeter
P10/1/5	Batchen Model Mk II LPG Driveway Flowmeter
P10/1/6	Wayne Model ELC1 LPG Driveway Flowmeter
10/1/6A	Email Model ELC1 LPG Driveway Flowmeter
P10/1/7	Indeng Model MKO LPG Driveway Flowmeter
10/1/8	Gilbarco Model T093D LPG Driveway Flowmeter
10/1/8A	Gilbarco Model T093D LPG Driveway Flowmeter
10/1/9	Batchen Model Commander LPG Driveway Flowmeter
P10/1/10	LPG Engineering Model Stargas LPG Driveway Flowmeter
10/1/10A	LPG Engineering Model Stargas LPG Driveway Flowmeter
10/1/11	LPG Engineering Model Stargas EPSN LPG Driveway Flowmeter
10/1/12	CleverHead Model 93 LPG Driveway Flowmeter
10/1/13	Batchen Model SCB Commander LPG Driveway Flowmeter
P10/2/2	Liquid Controls Model MA-7-GY-10 Bulk LPG Flowmeter
10/2/3	Neptune Model 4D 32 mm Bulk LPG Flowmeter
P10/2/4	Euromatic Model FL 11/2-125 Turbine Bulk LPG Flowmeter

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.

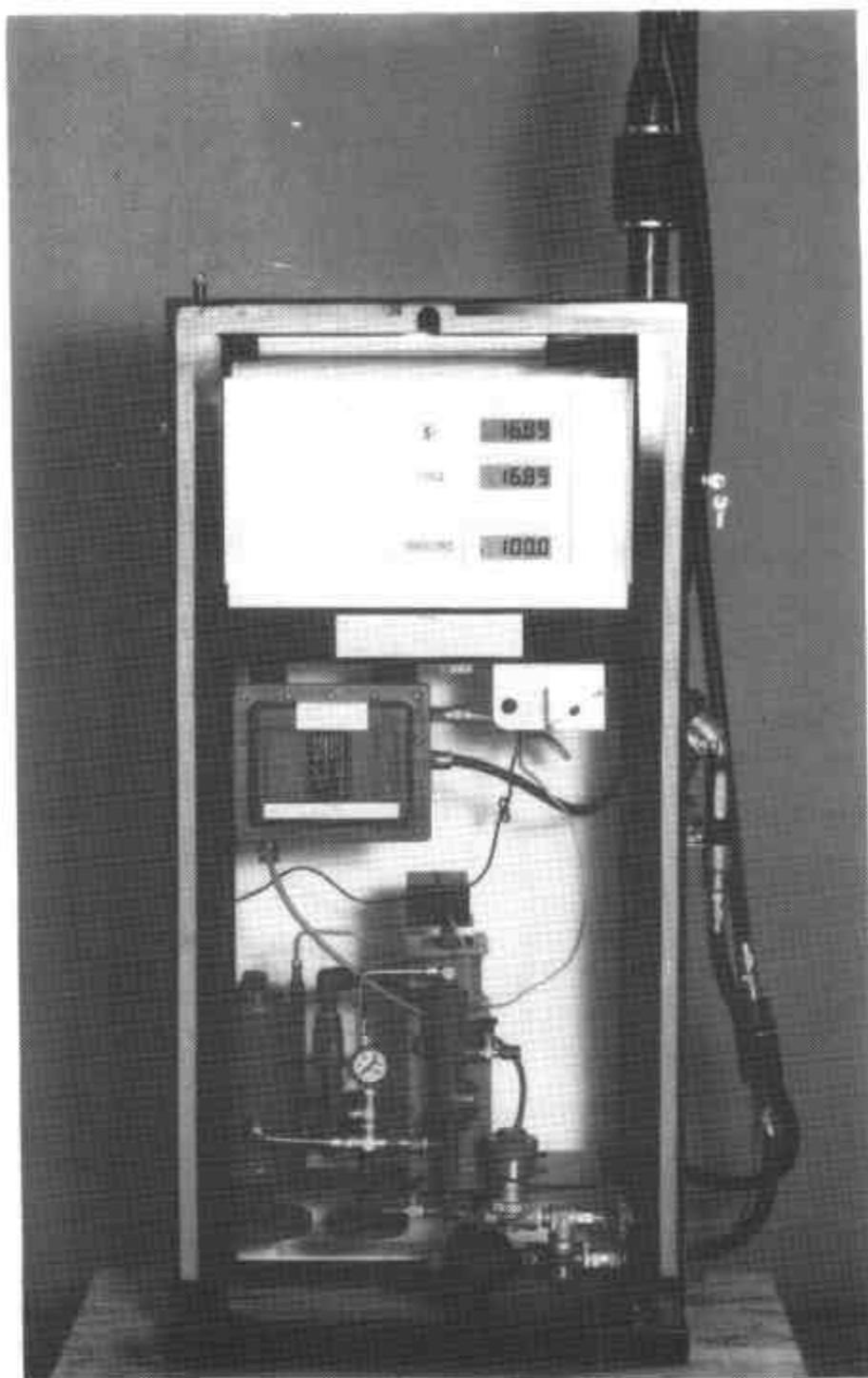
FIGURE 10/1/13 - 1



Batchen Model SCB Commander LPG Driveway Flowmeter

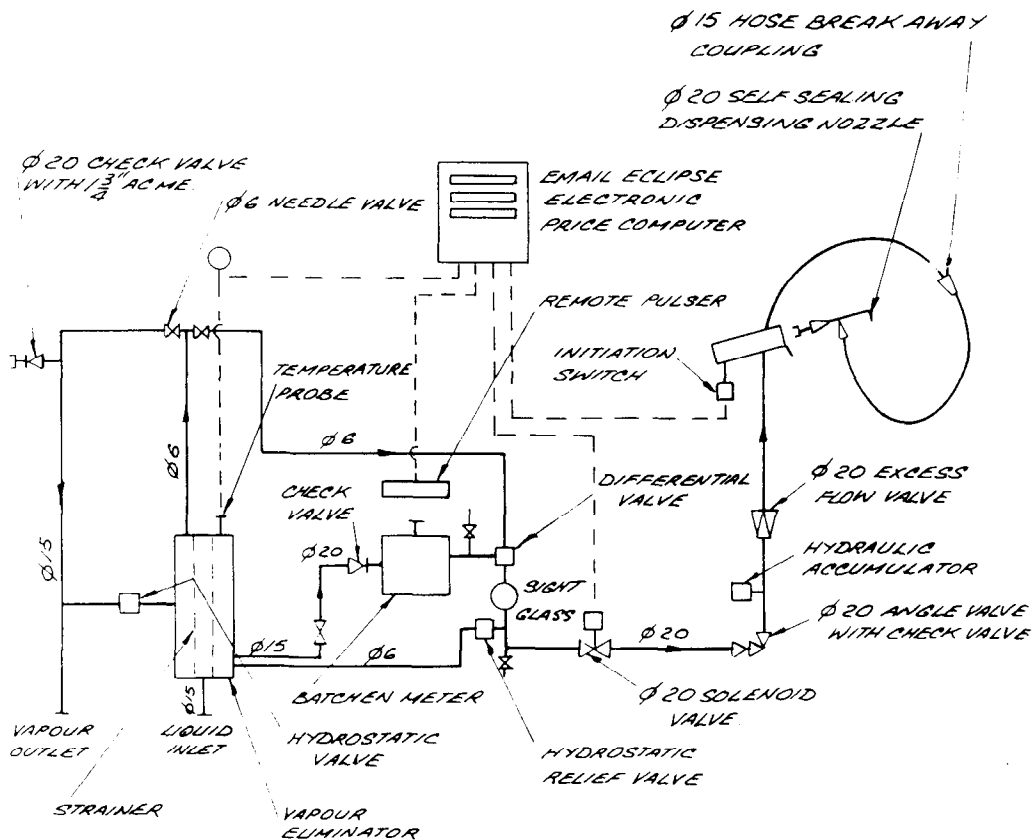
10/1/13
31/5/93

FIGURE 10/1/13 - 2



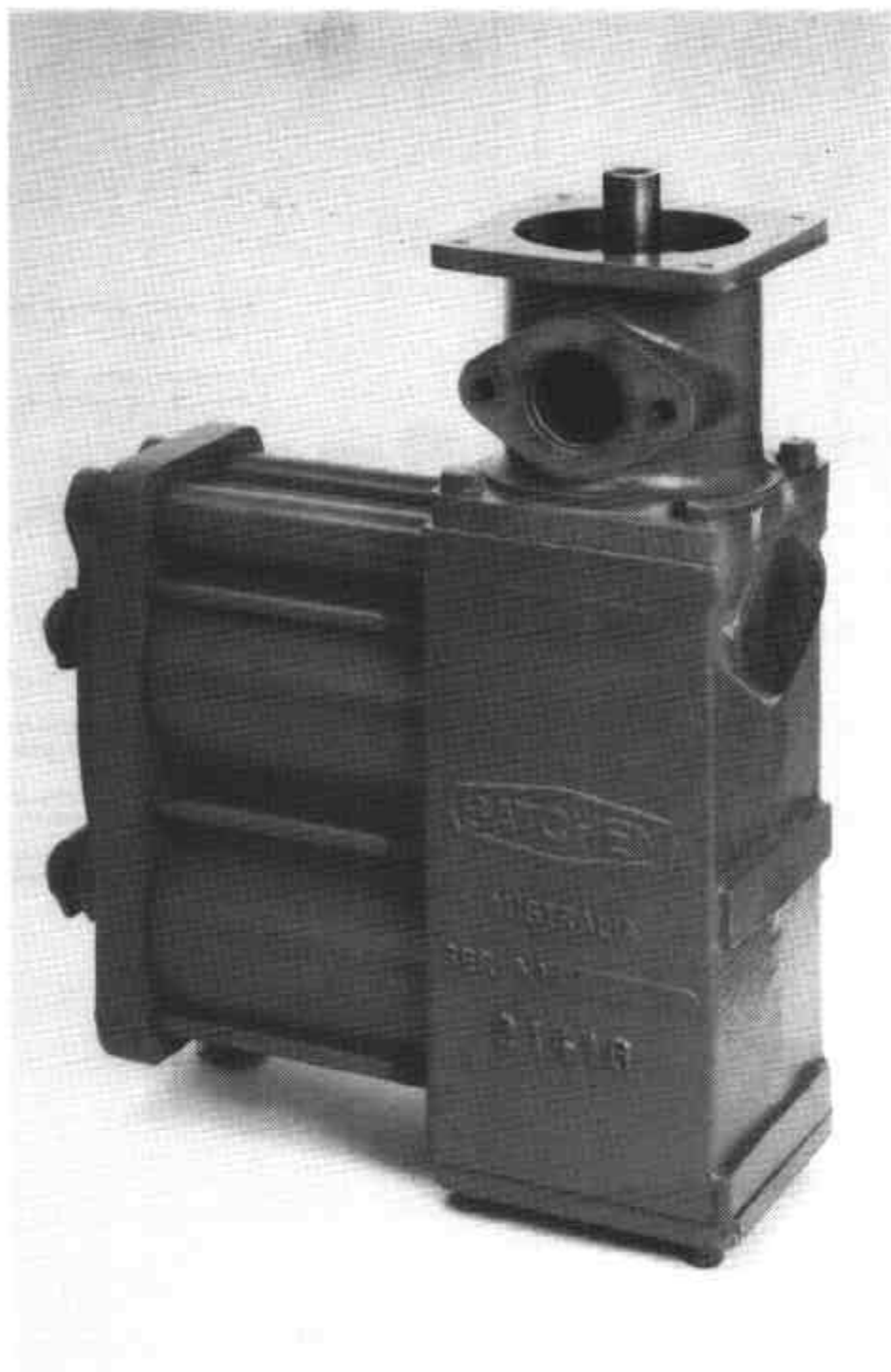
Batchen Model SCB Commander Without Covers

FIGURE 10/1/13 - 3



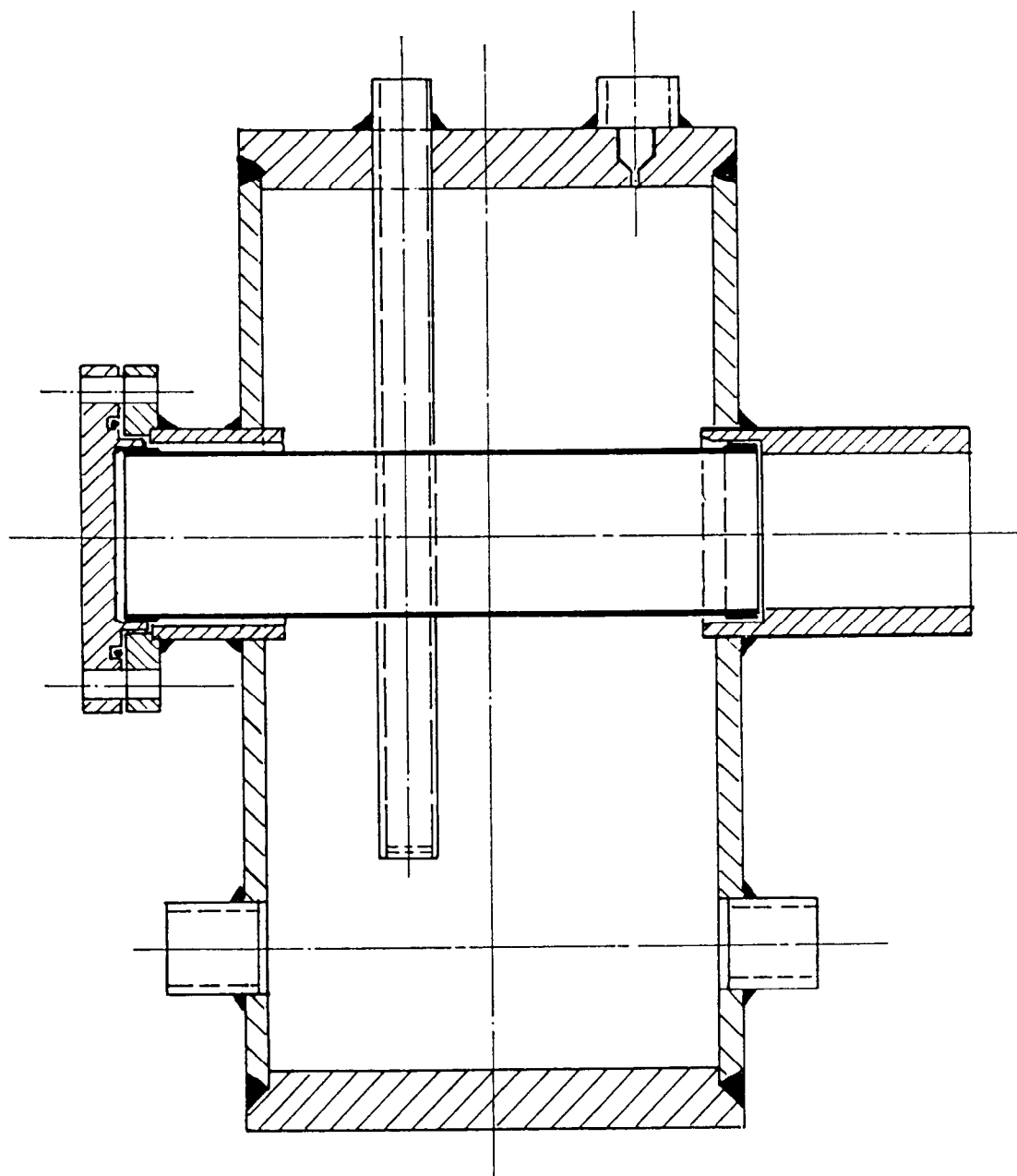
Typical Model SCB Commander Hydraulic Diagram

FIGURE 10/1/13 - 4



Batchen Model Mkl LPG Meter

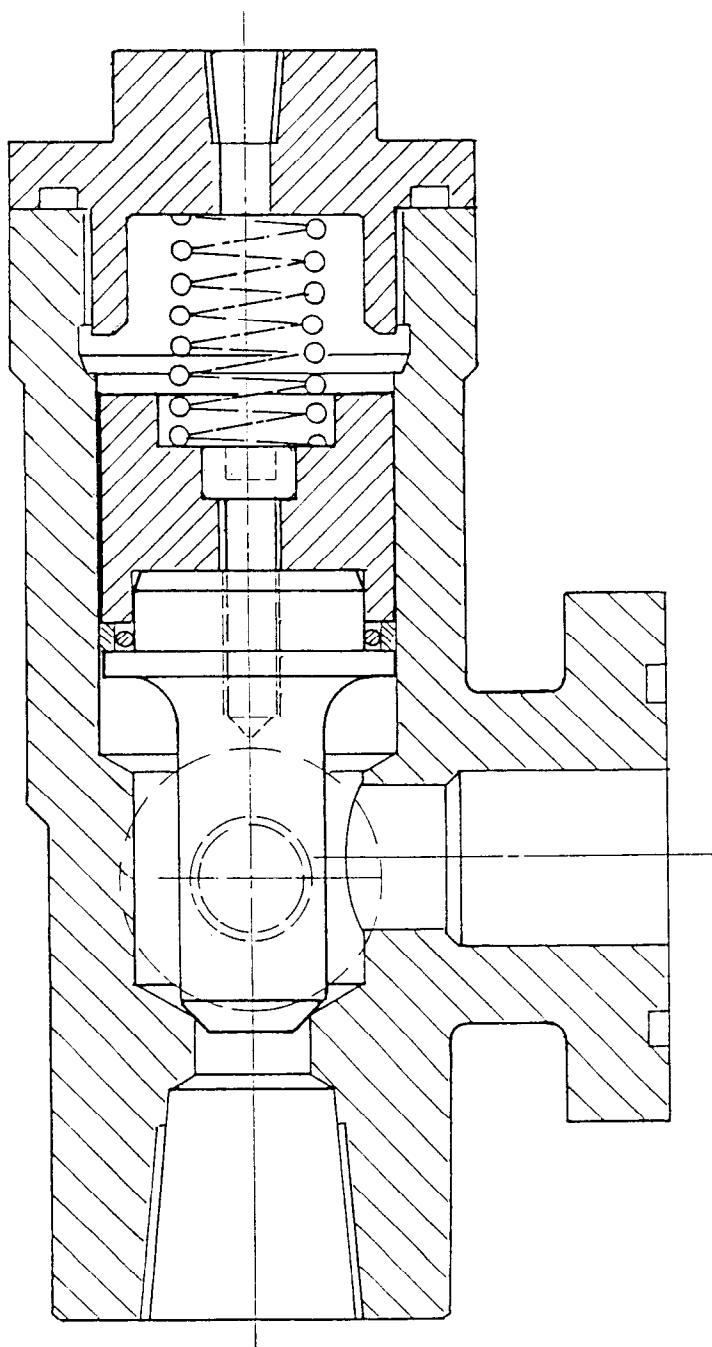
FIGURE 10/1/13 - 5



Batchen Model BVE-1 Vapour Eliminator

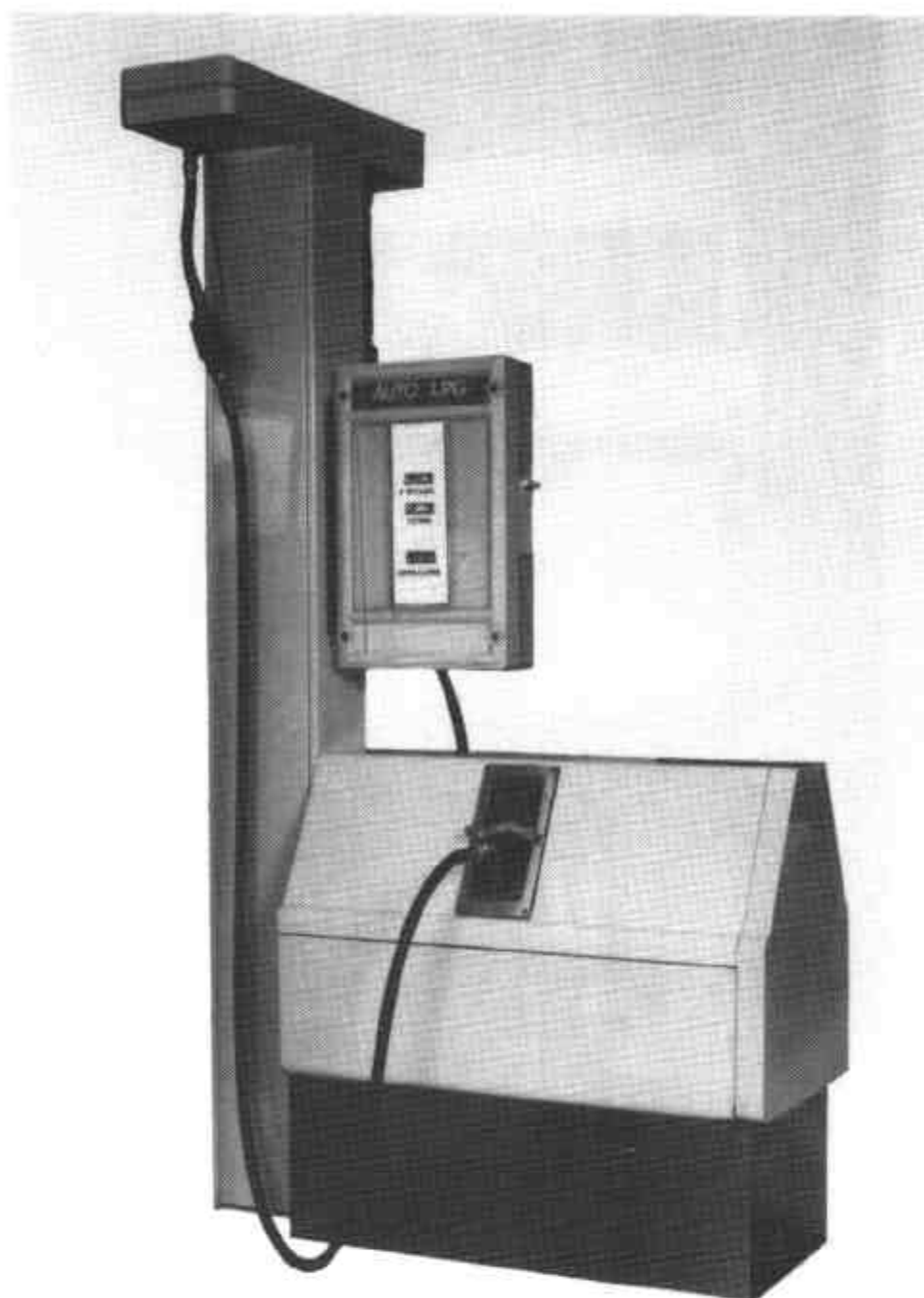
10/1/13
31/5/93

FIGURE 10/1/13 - 6



Batchen Model BDV-1 Pressure Differential Valve

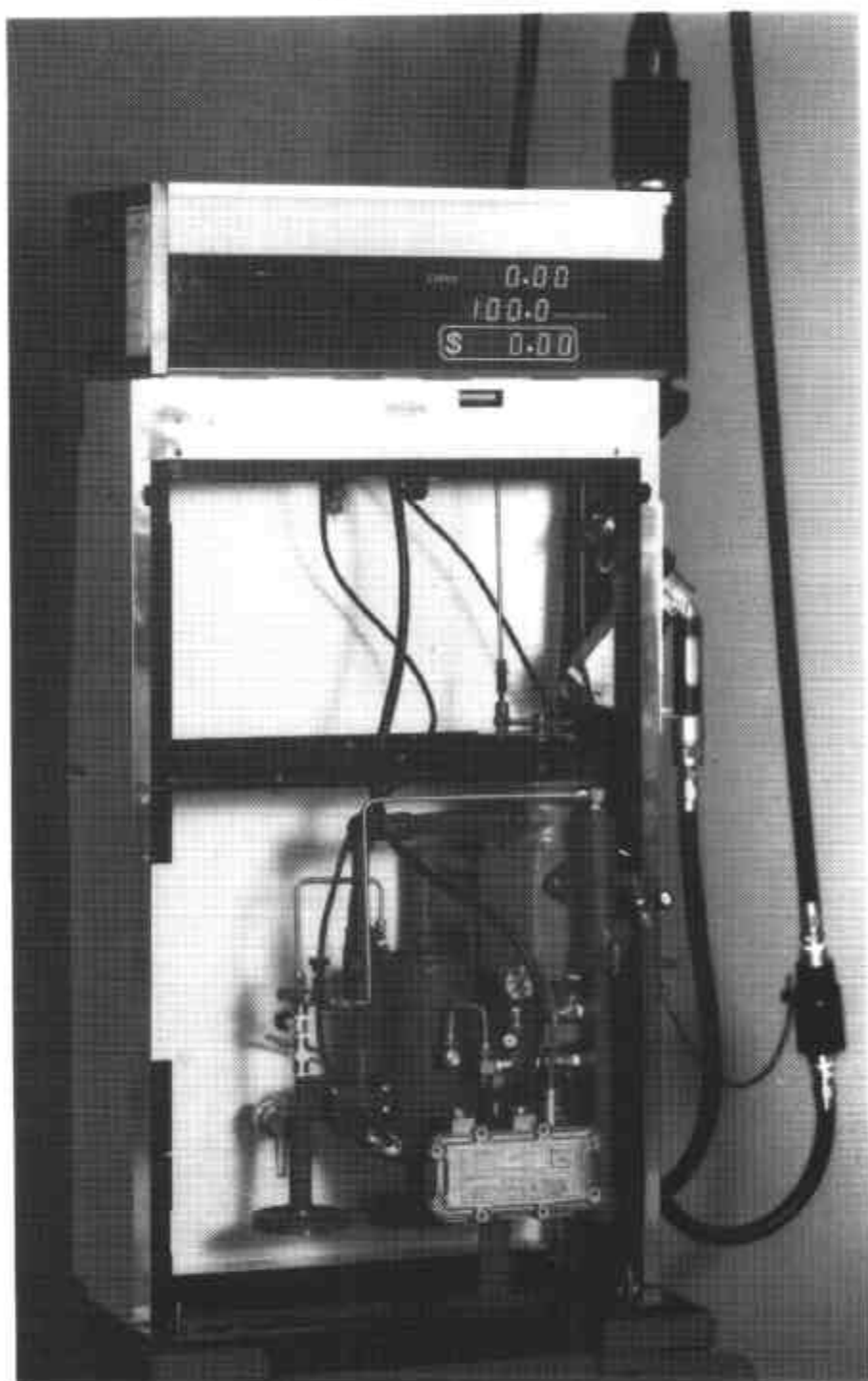
FIGURE 10/1/13 - 7



Batchen Commander in MPP-style Housing

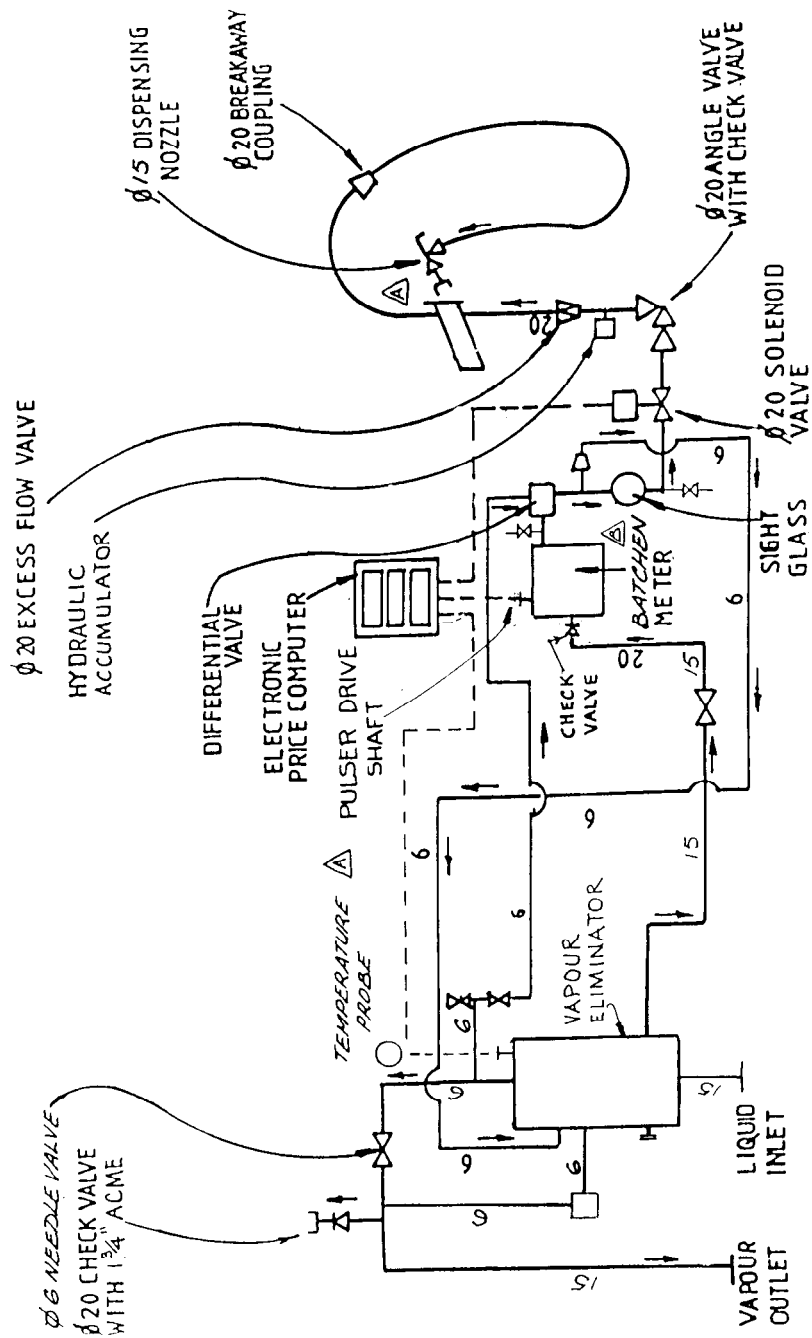
10/1/13
31/5/93

FIGURE 10/1/13 - 8



Batchen Model SGB Commander

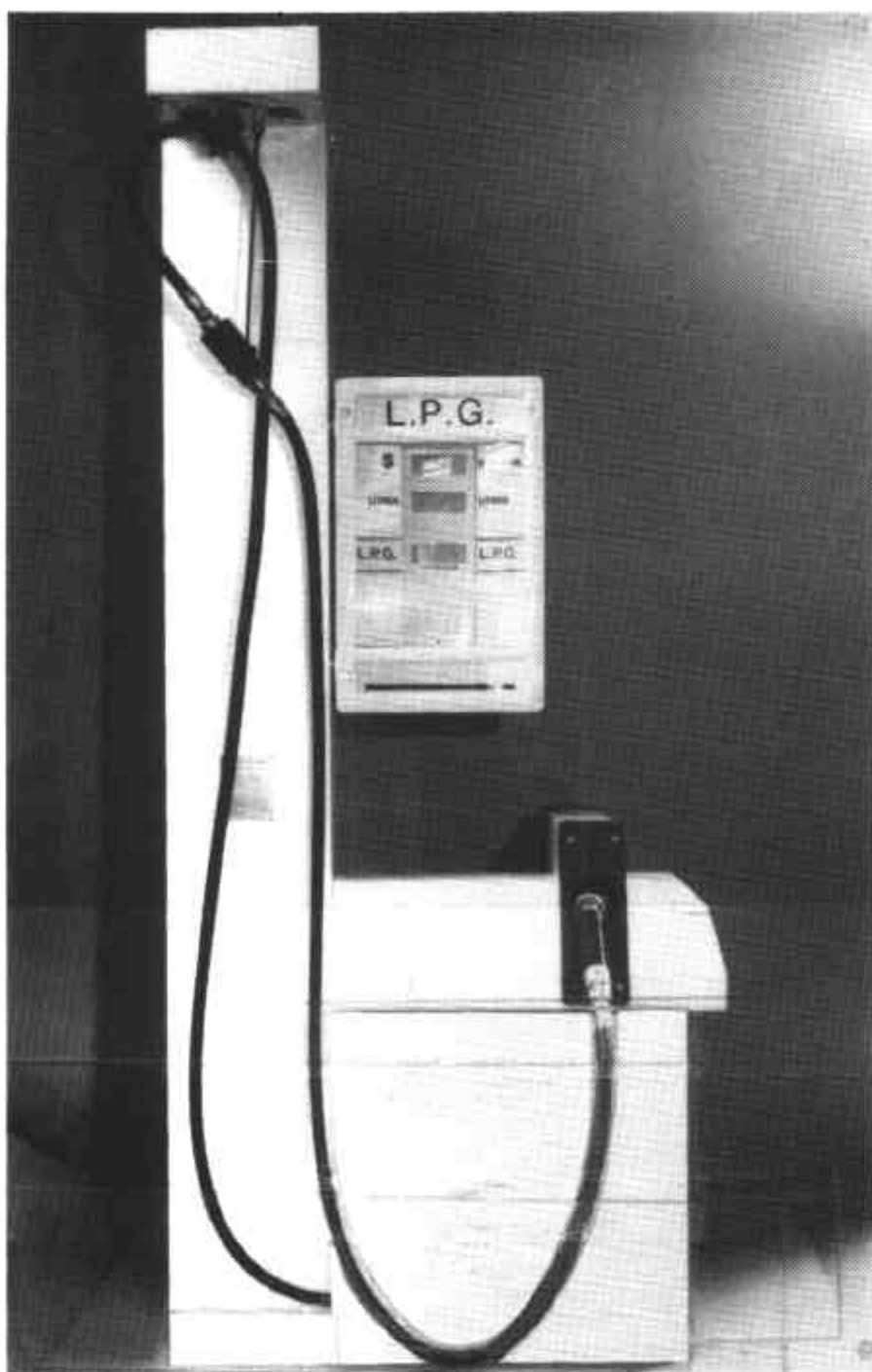
FIGURE 10/1/13 - 9



Typical Model SGB Commander Hydraulic Diagram

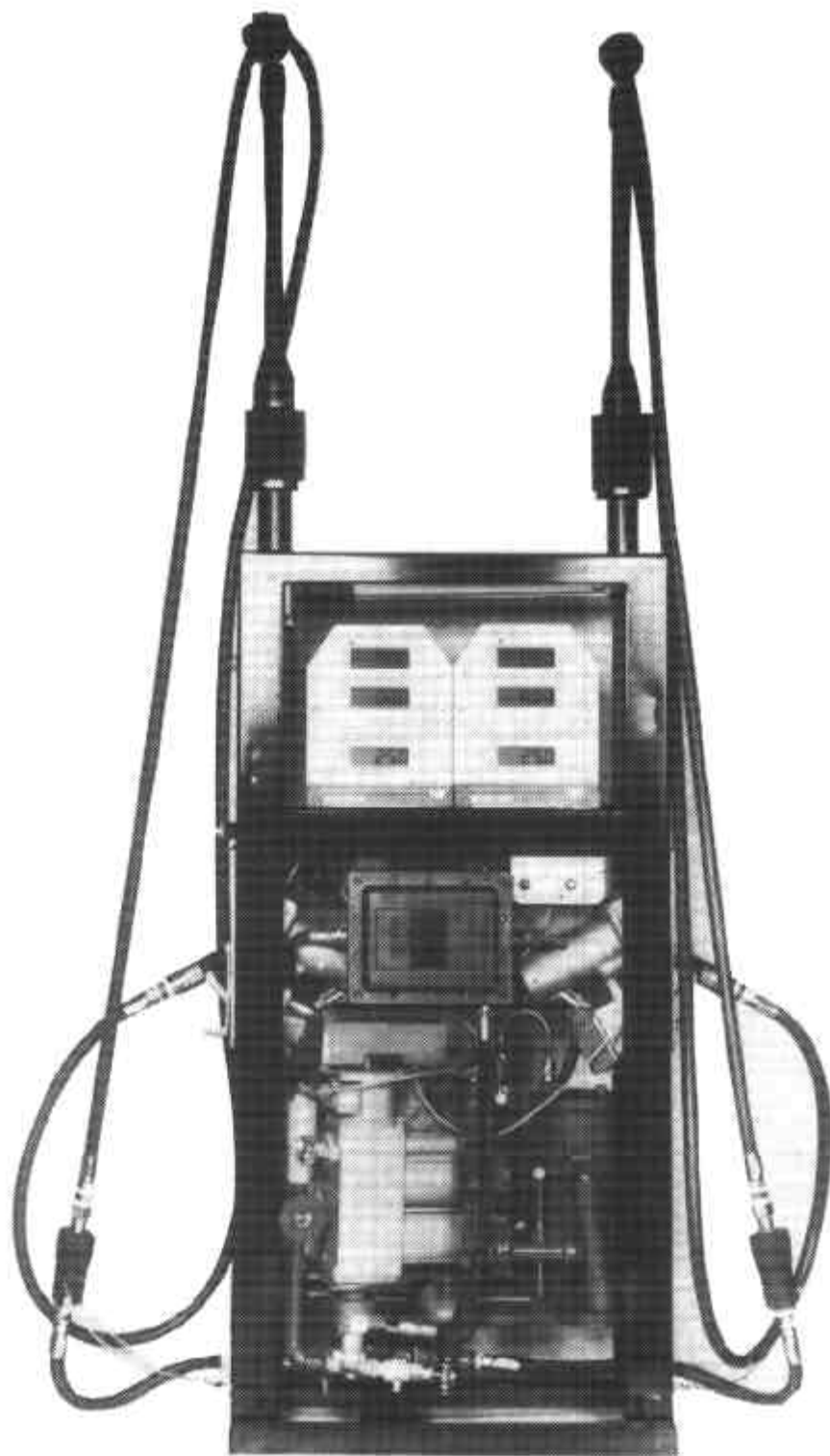
10/1/13
31/5/93

FIGURE 10/1/13 - 10



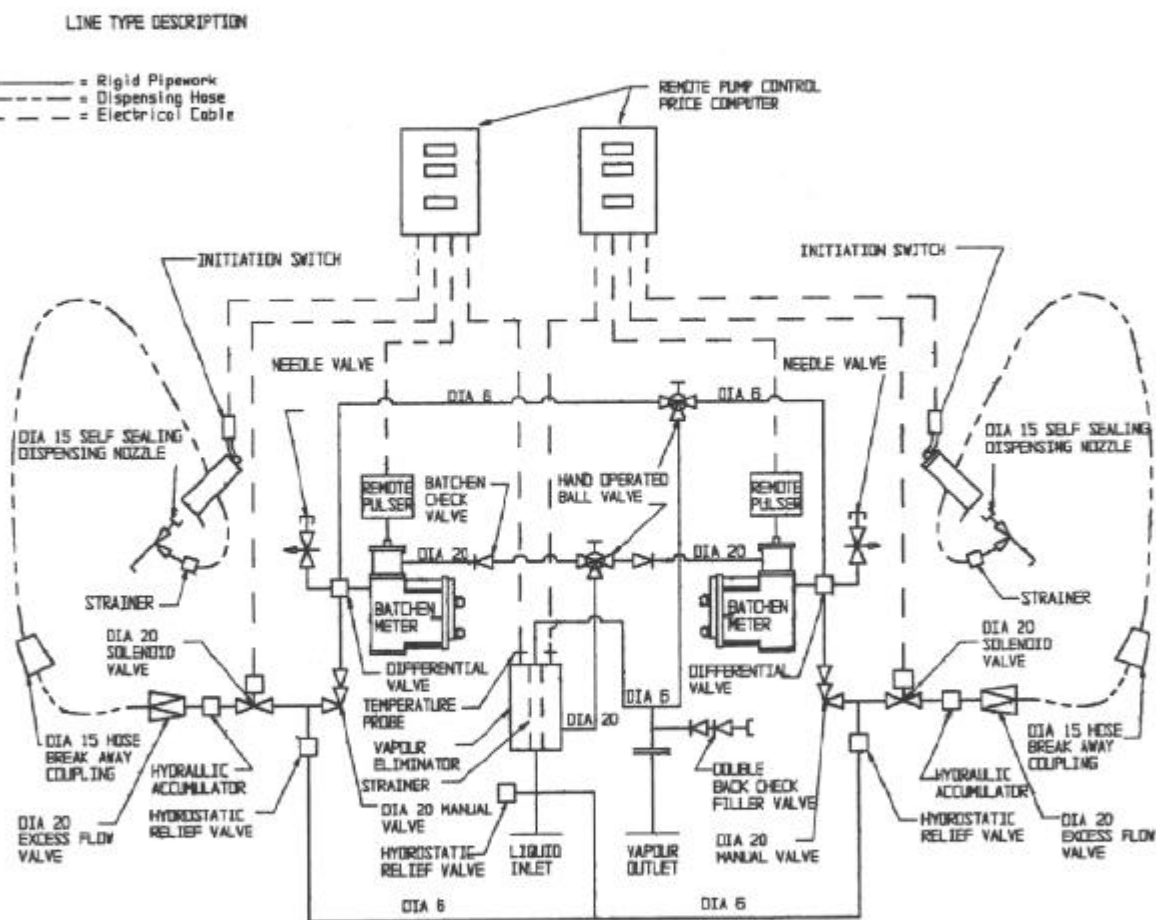
Batchen Model MPP MkII LPG Flowmeter

FIGURE 10/1/13 - 11



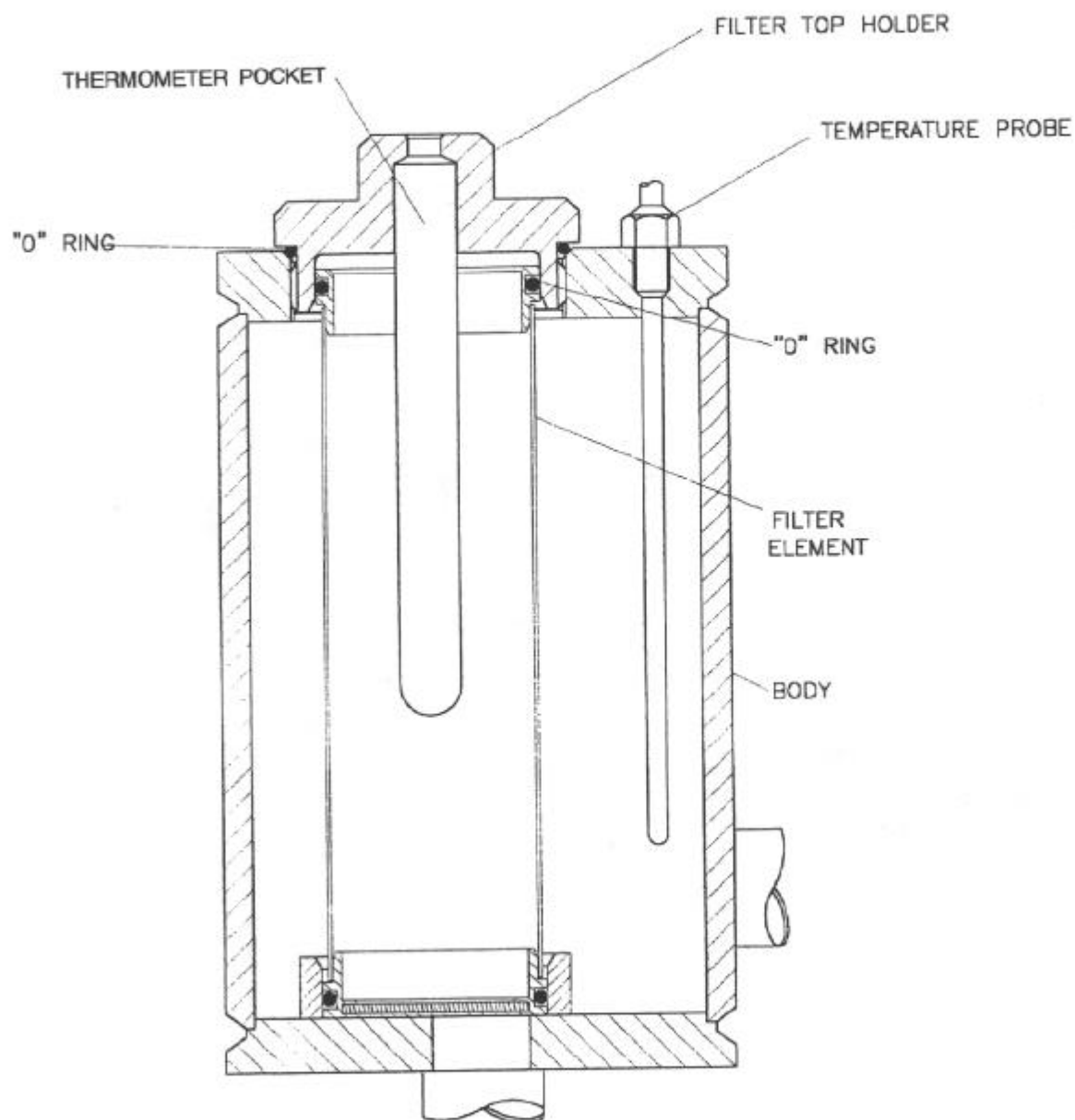
Typical Dual Flowmeter With Schwelm Meters

FIGURE 10/1/13 - 12



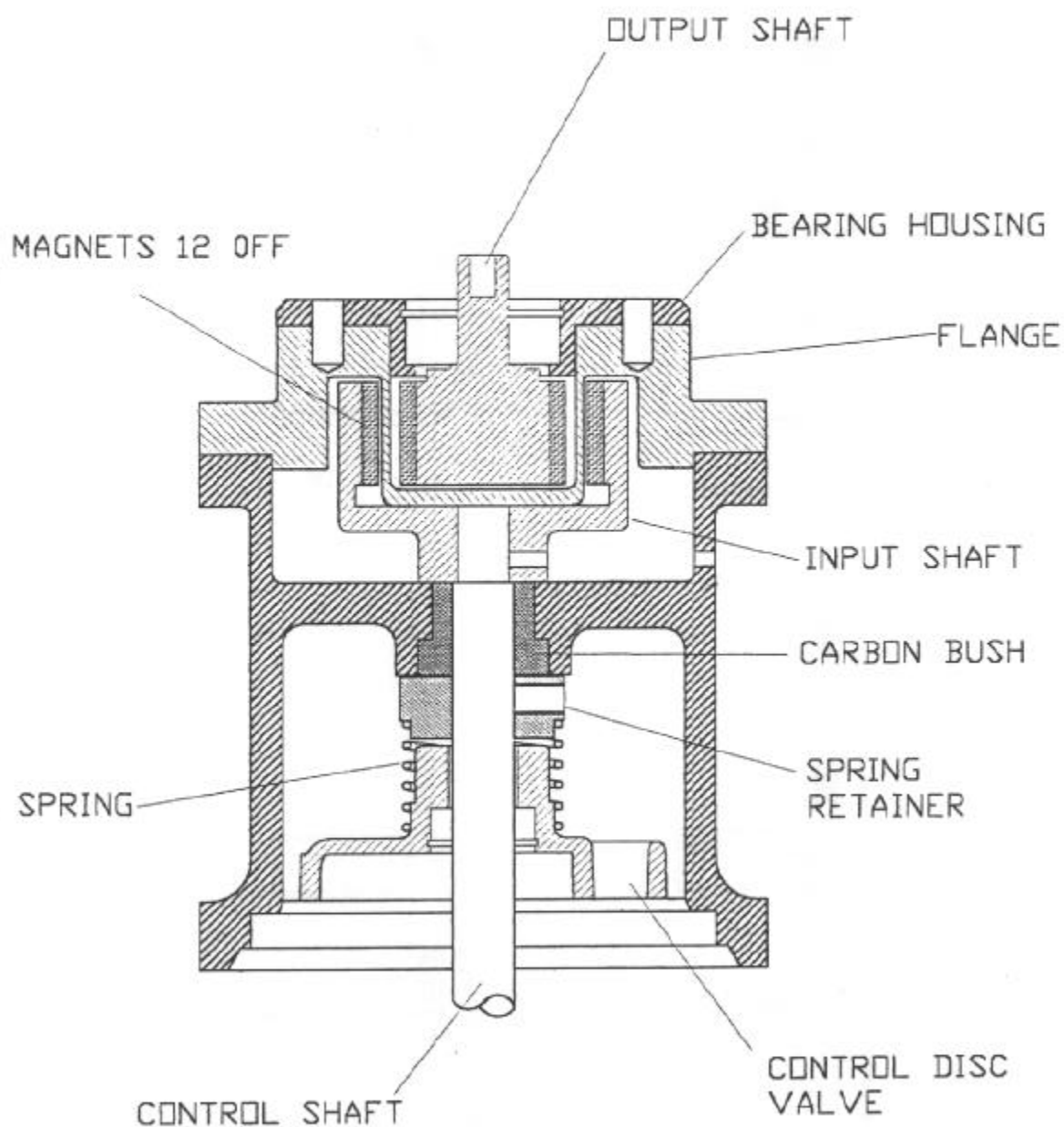
Hydraulic Diagram - Variant 7

FIGURE 10/1/13 - 13



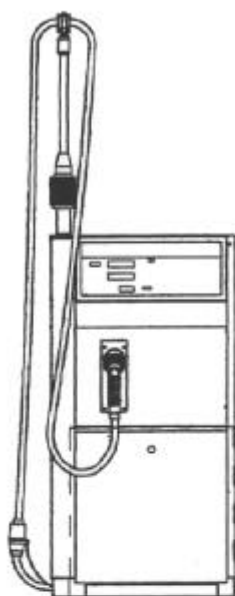
Model BVE MkIV or BVE MkV Vapour Eliminator

FIGURE 10/1/13 - 14

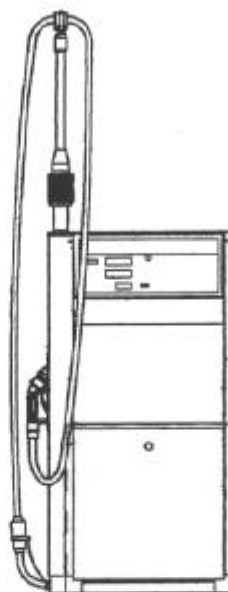


Magnetic Coupling - Variant 8

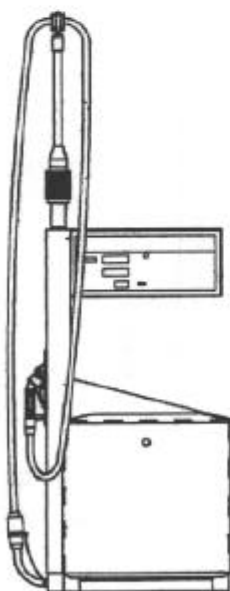
FIGURE 10/1/13 - 15



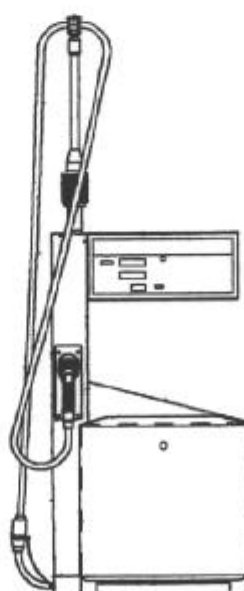
CII - DWE, DWP



CII - SWE, SWP



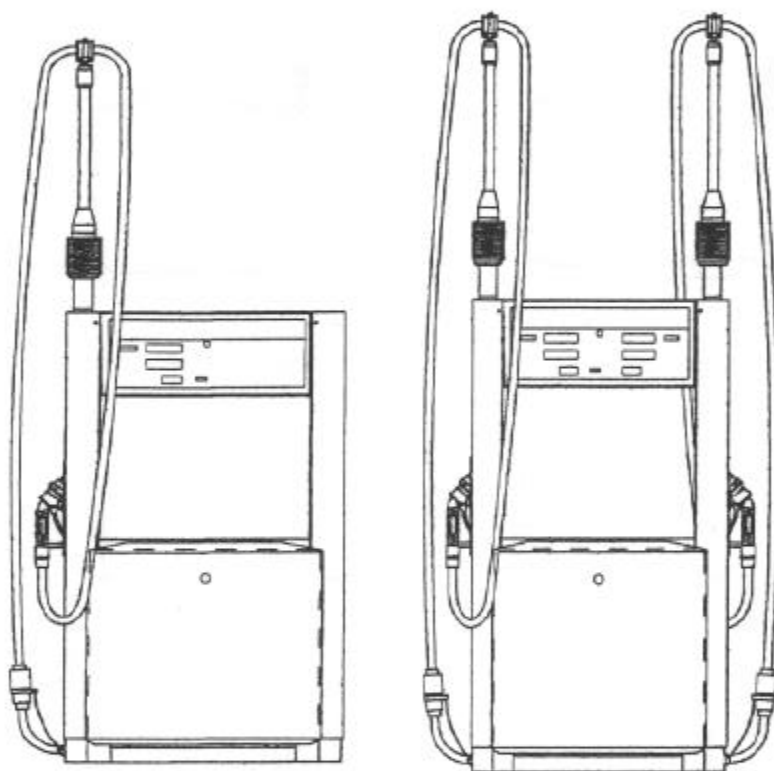
CII - SCE, SCP



CII - DCE, DCP

CII Series Housings - Variant 9

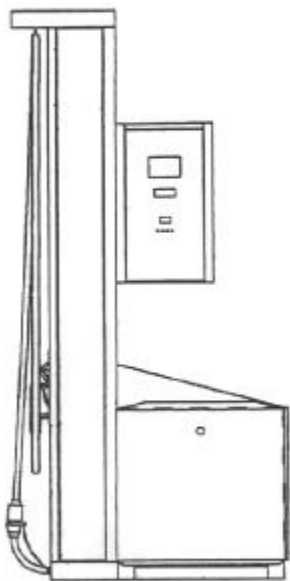
FIGURE 10/1/13 - 16



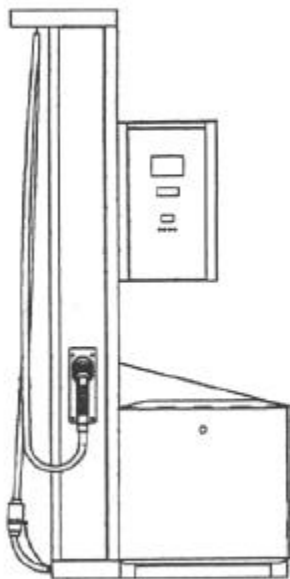
CII - STE,STP

CII - DTE,OTP

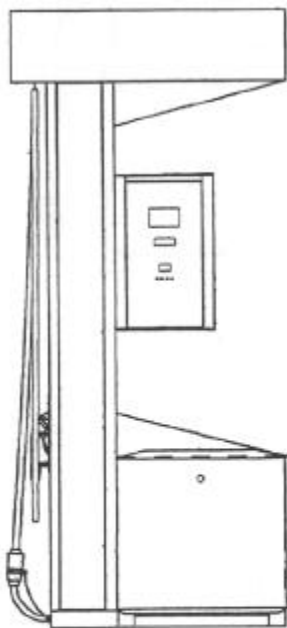
FIGURE 10/1/13 - 17



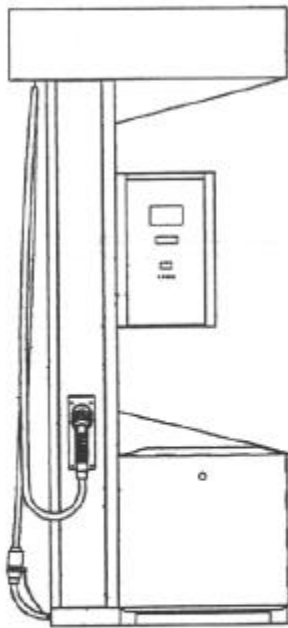
C2000 - SE, SP



C2000 - DE, DP



C2000 - SE, SP
(WITH LIGHT BOX)



C2000 - DE, DP
(WITH LIGHT BOX)

C2000 Series Housings - Variant 9