CANCELLED Cert. No. 2

NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 5/6A/63

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Gilbarco Driveway Flowmeter Transac 8 Self-serve System

submitted by Gilbarco Aust. Ltd,
12-38 Talavera Road,
North Ryde, New South Wales, 2113,

are suitable for use for trade.

The approval of the pattern and variants is subject to review on or after 1/4/82.

All instruments purporting to comply with this approval shall be marked NSC No 5/6A/63. Instruments currently marked NSC No 5/6A/67 are required to have this number changed to NSC No 5/6A/63 at their next verification.

Relevant drawings and specifications are lodged with the Commission.

Variant 5 of this Certificate replaces the provisional approval described in Technical Schedule No 5/6A/63 Provisional Variation No 5, which is hereby cancelled.

Signed

H. Colin

Executive Director

Descriptive Advice

Pattern: approved 28/3/77

. Transac 8 control console with up to four driveway flowmeters.

Technical Schedule No 5/6A/63 dated 22/4/77 describes the pattern.

Variants: approved 9/11/77 and 7/2/78

1. The driveway flowmeter with STM 377 or OPW1AS automatic hose nozzles.

Technical Schedule No 5/6A/63 Variation No 1 dated 15/3/78 describes Variant 1.

Variant: approved 23/5/78

2. With a Model IG8 D 10 pulse transmitter on driveway flowmeters T166AG and T167AG, non-self-serve.

Technical Schedule No 5/6A/63 Variation No 2 dated 3/7/78 describes Variant 2.

Variants: approved 9/8/78 and 4/9/78

3. Single driveway flowmeter Model T166XG.

4. Transac 8 Control without money preset.

Variant: approved 29/5/81

5. Transac 6 bank-note-operated self-serve system.

Technical Schedule No 5/6A/63 Variation No 3 dated 24/6/81 describes Variants 3, 4 and 5.

Variant: approved 24/4/78

6. Transac 10 control console with up to 12 driveway flowmeters.

Technical Schedule No 5/6A/63 Variation No 4 dated 20/7/79 describes Variant 6.

Note: Variants have been renumbered.

Filing Advice

This Certificate, and Technical Schedule No 5/6A/63 Variation No 3, both dated 24/6/81, replace

(a) Certificate of Approval No 5/6A/63 dated 3/11/80,

(b) Technical Schedule No 5/6A/63 Variation No 3 dated 30/11/78, and

(c) Technical Schedule No 5/6A/63 Provisional Variation No 5 dated 3/11/80.

Figures 22 to 24 and 26 to 29 are retained as part of Variation No 3 dated 24/6/81; the remaining sheets of the replaced documents may be destroyed.

This approval now comprises:

Certificate of Approval No 5/6A/63 dated 24/6/81
Technical Schedule No 5/6A/63 dated 22/4/77
Technical Schedule No 5/6A/63 Variation No 1 dated 15/3/78
Technical Schedule No 5/6A/63 Variation No 2 dated 3/7/78
Technical Schedule No 5/6A/63 Variation No 3 dated 24/6/81
Technical Schedule No 5/6A/63 Variation No 4 dated 20/7/79

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/63

Pattern: Gilbarco Driveway Flowmeter — Transac T8 Self-serve System

Submittor: Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113.

Date of Approval: 28 March 1977

All instruments conforming to this approval shall be marked "NSC No 5/6A/63" on each driveway flowmeter and on the control console.

Description:

The pattern is a post-payment self-serve driveway flowmeter system comprising up to four driveway flowmeters, a service module and a remotely located control console (see Figures 2 and 3). The system provides the operator with supervisory control over each driveway flowmeter and a repeat indication of the price indicated by each driveway flowmeter.

Driveway Flowmeters:

The following types of driveway flowmeters may be used with this system:

1. Single Trimline Model T166AG (see Figures 4 and 5);

2. Dual Trimline Model T167AG (see Figures 6 and 7);

3. Single Round Model T180AG (see Figures 8 and 9);

4. Dual Round Model T181AG (see Figures 10 and 11).

Each driveway flowmeter is for the delivery of petrol at flow rates between 15 and 60 litres per minute. A pilot-operated flow-control valve (see Figure 12) may, for up to 10 seconds, reduce the flow rate below 15 litres per minute. The instrument data plate of each driveway flowmeter is marked "approved for petrol".

The component parts of each driveway flowmeter are listed in **Figure 1.**

The pump interlock of each driveway flowmeter is provided by a starting lever which prevents the nozzle being placed on its hang-up bracket, or what appears to be its hang-up bracket, without stopping the pump motor and engaging an interlock which prevents the pump motor from being restarted until the computer is reset to zero (see Figures 13 to 16). A bracket prevents the starting lever being lifted up beyond its "on" position (see Figure 17).

A lead stamping plug for the verification seal prevents adjustment of the meter calibration and a lead stamping plug for a security seal prevents adjustment of the gas-separation test valve.

Transac T8 Control:

The control console has a shared indicator of price, ~~from~~ FOUR driveway flowmeter-selector switches, authorise button, ten-button keyboard, an emergency stop button and a key-operated switch which disables the authorise button when in the "off" position. Lights on the console indicate the operational status of each driveway flowmeter. A lead stamping plug for a verification seal is provided on the control console; the seal does not prevent access to the control console.

Pressing a driveway flowmeter-selector switch and then the authorise button permits the computer in the appropriate driveway flowmeter to be reset to zero and the pump motor to start when the customer removes the nozzle from its hang-up.

On completion of the delivery, returning the nozzle to its hang-up will engage interlocks which will prevent the computer being reset to zero until the supervisor at the completion of the transaction again authorises the use of the driveway flowmeter.* During each delivery, or at the end of a delivery, the supervisor may, by pressing the appropriate driveway flowmeter-selector button, display the price indicated on the driveway flowmeter computer.

* As the remote indicator is not provided with data from a secure or fail-safe system, and as there is no remote indication for the use of the purchaser, the primary indications displayed by the driveway flowmeter must be retained until the transaction is completed, thus allowing a comparison between the primary driveway flowmeter indications of price accepted by the purchaser, and the remote indicator.

Before pressing the authorise button, the maximum value of a delivery may be limited by entering the value into the system memory by means of the keyboard. This will cause the flow-control valve in the driveway flowmeter to reduce the flow rate to below 15 litres per minute when the price indicated is within 5 cents of the set limit, and stop the pump motor when the limit is reached.

The control equipment for the four driveway flowmeters is within a service module, together with switches which select "console-off-manual" modes of operation. When manual mode of operation is selected for a driveway flowmeter, an operator can use that driveway flowmeter without use of the authorise button on the control console. In manual mode the quantity and/or price indications will be blank.

The failure of any of the driveway flowmeters in the system or the failure of the remote control console does not affect the operation of the other separately verified parts of the system, that is, in the event of a driveway flowmeter becoming unserviceable it may be isolated partially by selecting "manual" mode of operation or totally by selecting "off", and in the event of control-console failure the control console can be isolated from the driveway flowmeter by selecting "manual" mode of operation for all driveway flowmeters and allowing them to be operator-used.*

The approval includes each driveway flowmeter as an individually approved measuring instrument with or without the output from the pulse transmitter(s) or with or without the data indicated on the control console being transmitted to peripheral devices which are not a part of the measuring instrument.** These devices, which may only be provided with the authorisation of the Weights and Measures Authority of the State, may, for example, print receipts or store and process the data, etc.

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* Separate verification seals are provided on each driveway flowmeter and on the control console, allowing individual seals to be cancelled in the event of an unserviceability without affecting the remainder of the system or the other driveway flowmeters.

** The measuring instrument examined and approved by the Commission, is a post-payment self-serve system and is limited to the devices which determine the value of a physical quantity, control the measurement, and indicate the result of the measurement on a non-permanent visual display, for example, a seven-segment indicator or Veeder-Root computer; it is not approved for use as a prepayment system.

Provision is made to seal the connecting cables of peripheral devices to the instrument, and to seal the connectors which provide data for peripheral devices.

The use of such peripheral equipment will not affect the operation of the driveway-flowmeter self-serve system.

Special Tests:

Transac System

The following test procedure will ensure that the Transac System is operating in accordance with the approved design:

1. Select "manual" mode of operation for each driveway flowmeter. The mode-selector switches are located within the service module.

2. Carry out the tests which are normally applied to a driveway flowmeter.

3. Select "console" mode of operation for each driveway flowmeter.

4. At the control console select "enable" key position and then press the emergency stop button; check that all of the seven-bar digit indicators indicate the numeral 8.

5. Authorise all the driveway flowmeters by selecting each driveway flowmeter in turn and pressing the authorise button after each selection. This will cancel the emergency stop and authorise each driveway flowmeter.

6. For each driveway flowmeter —

   (a) deliver sufficient liquid to cause the price and quantity indicators on the computer to move significantly off zero;

   (b) stop the pump motor by returning the nozzle to its hang-up bracket;

   (c) record the pump number and the quantity and price indicated on the computer; and

   (d) remove each nozzle from its hang-up bracket and check that the computer does not reset to zero and the pump motor does not start.

7. At the control console select each driveway flowmeter in turn and thus repeat the indications displayed on each driveway flowmeter. Check each displayed price against the price recorded for each driveway flowmeter (refer paragraph 6 (c) above).

   The indicated price may differ from that indicated on the driveway-flowmeter dial face if the price on the dial face is between graduations; the maximum difference will be not more than the rounding error, a maximum of 0,5 graduation, plus a discrimination error of 0,1 graduation, that is, 0,4 cent may be rounded up to a whole cent or 0,6 cent may be rounded down to the lower whole cent.

8. Authorise a driveway flowmeter as in 5 and deliver sufficient liquid to cause the price indicators to move significantly off zero:

   (a) Without returning the nozzle to its nang-up, check that operation of the emergency stop on the console causes the pump motor to stop;

   Note: Any driveway flowmeter being used in manual mode will also stop delivering.

   (b) Check that selection of the driveway flowmeter and the pressing of the authorise button will not cause the computer on the driveway flowmeter to reset to zero or the pump motor to restart.

   Note: Any driveway flowmeter which was being used in manual mode will now be able to continue delivering, as the selection of any driveway flowmeter cancels the emergency stop condition.

   (c) Return the nozzle to its nang-up and check that the driveway flowmeter will not reauthorise until the value of the delivery up to the time of using the emergency stop has been displayed on the console.

   Note 1: Each driveway flowmeter may be separately re-authorised for use after an emergency stop.

   Note 2: Every transaction taking place on a driveway flow-meter in console mode of operation at the time of use of the emergency stop should be terminated as a delivery from a driveway flowmeter cannot be restarted without losing the record of the transaction up to the time of the emergency stop.

9. If it is desired to isolate a driveway flowmeter from the Transac system during the above tests in order to allow the service station to continue functioning, the particular driveway flowmeter can be isolated from the Transac system by switching it to manual mode. Alternatively, during tests other than the "emergency stop", half, say, of the driveway flowmeters can be tested at a time, while the other half remain in the normal console mode of operation.

Gas-separation Test Valve

The progressive opening of the gas-separation test valve should allow the flow rate to be reduced to, say, 90%, 80%, 70%, etc., of full flow rate, until either the flow rate becomes less than the minimum of 15 litres per minute or the flow stops due to the pump losing prime. For all tests prior to reaching the opening of the gas-separation test valve at which the flow rate is less than 15 litres per minute, or the delivery stops due to the pump losing prime, the effect of the admitted air on the accuracy of measurement should not exceed 0,5% of the quantity delivered.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/63

VARIATION No 1

Pattern: Gilbarco Driveway Flowmeter Transac T8 Self-serve System

Submittor: Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113.

Dates of Approval of Variations: 9 November 1977, 7 February 1978

The modifications described in this Schedule apply to the patterns described in Technical Schedule No 5/6A/63 dated 22 April 1977.

All instruments conforming to this approval shall be marked "NSC No 5/6A/63"; the approval number shall be marked on each driveway flowmeter and on the control console.

Description:

The approved modifications provide for:

1. an STM 377 automatic hose nozzle (see Figures 18 and 19). The anti-drain valve which is upstream of the main valve retains a pressure of not less than 15 kPa. A swivel hose coupling may be fitted to the nozzle;

2. an OPW 1AS automatic hose nozzle (see Figures 20 and 21). The anti-drain valve which is downstream of the main valve retains a pressure of not less than 15 kPa. A swivel hose coupling may be fitted to the nozzle.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/63

VARIATION No 2

Pattern: Gilbarco Driveway Flowmeter Transac T8 Self-serve System.

Submittor: Gilbarco Australia Ltd,
16 - 34 Talavera Road,
North Ryde, New South Wales, 2113.

Date of Approval of Variation: 23 May 1978.

The modification described in this Schedule applies to the patterns described in Technical Schedule No 5/6A/63 dated 22 April 1977 and Technical Schedule No 5/6A/63 - Variation No 1 dated 15 March 1978.

All instruments conforming to this approval shall be marked "NSC No 5/6A/63".

Description:

The approved modification provides for a Model IG8 D 10 gear-driven pulse transmitter driven from the quantity or price drive shaft of the computer in the driveway flowmeters known as Models T166AG and T167AG, when these instruments are not installed as a part of a self-serve system.

The output from the pulse transmitter may be used to provide data to peripheral devices which are not a part of the measuring instrument in use for trade. Such devices, which may, for example, print the volume or store and process the data, etc., may only be used with the authorisation of the Weights and Measures Authority of the State.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/63

VARIATION No 3

Pattern: Gilbarco Driveway Flowmeter Transac 8 Self-serve System

Submittor: Gilbarco Aust. Ltd,
12-38 Talavera Road,
North Ryde, New South Wales, 2113.

1. Description of Variants

1.1 Variant 3

A single Trimline driveway flowmeter Model T166XG (see Figure 22), comprising the components listed in Figure 23. The driveway flowmeter is for the delivery of petrol, kerosene or diesel fuel at flow rates between 15 and 90 litres per minute. The driveway-flowmeter data plate is marked APPROVED FOR PETROL, or APPROVED FOR KEROSENE, or APPROVED FOR DIESEL FUEL.* The hydraulic diagram is illustrated in Figure 24.

A pilot-operated flow-control valve may, for up to 10 seconds, reduce the flow rate below 15 litres per minute.

The pump interlock is provided by a starting lever which prevents the nozzle being placed on its hang-up bracket without stopping the pump motor and engaging an interlock which prevents the pump motor being restarted until the computer is reset to zero (see Figure 13). A lead stamping plug for the verification seal prevents adjustment of the meter calibration and a lead stamping plug for a security seal prevents adjustment of the gas-separation test valve.

A Gilbarco DK 01057-001 pulse transmitter may be fitted on the quantity and/or price drive shaft of the Veeder-Root VR101 computer. The output from the pulse transmitter may be used to provide data to external equipment.

1.2 Variant 4

The Transac 8 control console without the money-preset facility to allow the operator to limit the maximum value of a delivery by entering the value into the system memory by means of the keyboard before pressing the authorise button.

1.3 Variant 5

1.3.1 Description

A Transac 6 unattended, unsupervised $2-banknote-operated self-serve system as an accessory to the Transac 8 self-serve system, comprising:

Transac 6 (T6) control unit and banknote acceptor (Figure 25)

Low level detection unit (Figures 26 and 27)

1.3.2 Operation

(a) The note-acceptor is activated by selecting the accessory position on the key-selector switch on the Transac 8 control console.

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* A known trade name or abbreviation of the name of the liquid is acceptable.

(b) The Transac 6 control unit has an indicator which shows the value of banknotes accepted, and four driveway flowmeter selection buttons with corresponding indicators showing OUT-OF-SERVICE (red) and READY (green).

(c) When the purchaser selects a driveway flowmeter which is in service and not already in use, the CASH or BANKNOTES-ACCEPTED indicator on the Transac 6 unit will indicate zero and the note-acceptor will accept up to nine $2 banknotes.

The value of the notes accepted will be indicated on insertion of the required number of notes. Upon lifting the nozzle from its hang-up on the selected driveway flowmeter, or upon selection of another driveway flowmeter on the Transac 6 control unit by another purchaser, the credit indicated will be transferred to the driveway flowmeter selected by the first purchaser. The CASH or BANKNOTES-ACCEPTED indicator will go blank in the case where the nozzle is raised or will zero in the case of another purchaser selecting a driveway flowmeter.

(d) The Transac 6 note-acceptor in conjunction with the Transac 8 self-serve driveway flowmeter system monitors the performance of the driveway flowmeters in the system and will cause a driveway flowmeter to go OUT-OF-SERVICE when certain sequences of events occur, such as incomplete deliveries, broken pump belt, or starting lever inoperative. A driveway flowmeter OUT-OF-SERVICE will be indicated on the Transac 6 control unit status indicators.

(e) The low-level detection unit consists of an air-filled pressure bell in the supply tank and a low-level-sensing device (Figure 26). The low-level detection unit will cause the appropriate driveway flowmeters to go OUT-OF-SERVICE when the liquid level in the supply tank falls to a preset level. A bell is mounted in each supply tank so that gas escapes from its lower end when approximately 700 litres of liquid remain in the supply tank (Figure 27). This level may be checked by comparison with the tank dipstick.

1.3.3 Sealing

(a) Provision is made to seal the bell in the tank by a lead and wire seal (Figure 28).

(b) A seal prevents the cover over the Transac 6 control unit from being removed and seals the serial number of the note-acceptor unit to the Transac 6 control unit (Figure 29).

TEST PROCEDURE No 5/6A/63 - VARIATION No 3

The following test procedure will ensure that the Transac 6 note-acceptor is operating in accordance with the approved design.

1. Transac 6 Control Console and Banknote-Acceptor

1.1

By means of the key switch on the Transac 8 control console, select ACCESSORY position.

1.2

At the T6 control console the OUT-OF-SERVICE (red) and READY (green) status indicators will be flashing on and off, and the banknote-accepted indicator will flash all-8's.

(a) Reset the system by selecting any driveway flowmeter - all the READY status indicators will show green and the OUT-OF-SERVICE indicators will go blank.

(b) Select a driveway flowmeter - the READY status indicator of the driveway flowmeter selected will go blank.

(c) Wait 20 seconds - the READY status indicator of the driveway flowmeter selected in (b) will show green.

(d) Attempt to insert a banknote - the banknote should not be accepted.

(e) Press the button to select driveway flowmeter No 1 and attempt to insert ten banknotes into the note-acceptor - the note-acceptor should accept only nine banknotes and indicate the value of the notes accepted, i.e. $18.00; the No 1 driveway flowmeter READY status indicators will be blank.

(f) Lift the nozzle of driveway flowmeter No 1 from its hang-up and, without making a delivery, return the nozzle to its hang-up.

The computer will reset to zero and the CASH or BANKNOTE-ACCEPTED display will go blank. After 15 minutes the READY status indicator will go green. The credit allocated to driveway flowmeter No 1 will be cancelled at the end of this 15 minutes and lifting the nozzle should have no effect.

(g) Press the button to select driveway flowmeter No 2, then insert one banknote and make a delivery of say, $1 from driveway flowmeter No 2; return the nozzle to its hang-up position. After 3 minutes, READY status indicator will show green and the credit allocated to driveway flowmeter No 2 will be cancelled. Lifting the nozzle should have no effect.

(h) Press the button to select driveway flowmeter No 3, and insert nine banknotes. Lift nozzle of driveway flowmeter No 3 and make a delivery of say, $10.00; return the nozzle to its hang-up position and record the exact value of the delivery.

(i) Remove the nozzle from its hang-up position and continue the delivery from driveway flowmeter No 3. Hang-up when delivery automatically stops. The driveway flowmeter computer will rezero and the delivery will automatically stop when the value of the delivery recorded in (i) plus the value in (h) is equal to $18.00.

(j) Press the button to select driveway flowmeter No 1, insert one banknote and deliver say, $1.00; return the nozzle to its hang-up position. After 3 minutes the driveway flowmeter will go out of service and the OUT-OF-SERVICE indicator will show red.

(k) Press the button to select driveway flowmeter No 1, and attempt to insert a banknote - banknote should not be accepted.

(l) Press the button to select driveway flowmeter No 2, insert one banknote and deliver, say, $1.00 of fuel from No 2 driveway flowmeter; do not hang-up the nozzle. After 15 minutes the No 2 driveway flowmeter will go out-of-service and the OUT-OF-SERVICE indicator will show red.

(m) Press the button to select driveway flowmeter No 4, insert one banknote, and make a delivery from driveway flowmeter No 4. The delivery should automatically stop when exactly $2.00 worth is delivered.

(n) Return all the driveway flowmeters to operation by selecting SELF-SERVE mode by means of the key switch on the Transac 8 control console, then reselecting ACCESSORY.

2. Low-Level Unit

2.1

Check, by comparing the length of the probe with the dipstick, that the bell mouth of each low-level probe is set so that its height above the bottom of the supply tank is at a level equivalent to not less than 700 litres on the dipstick. Return the probe to the tank and seal with a lead-and-wire seal.

Note: Once sealed, this check need not be repeated unless the seal is broken.

2.2

At each low-level auxiliary module open the probe valve (marked needle valve in Figure 27) and release any air from the system. The red light on the low-level auxiliary module should be lit.

2.3

Check at the Transac 6 control unit that the driveway flowmeters obtaining liquid from a tank with the appropriate low-level probe illuminated indicate **OUT-OF-SERVICE.**

2.4

Connect a suitable length of tube to each probe test valve and by blowing into the tube recharge with air. Close the valve and check that the red lights on the low-level auxiliary modules are out.

2.5

Return all the driveway flowmeters to the operating condition existing at the start of the tests by means of the key switch on the Transac 8 control unit; if the the original condition was ACCESSORY position, switch to SELF-SERVE and back to ACCESSORY position.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/63

VARIATION No 4

Pattern: Gilbarco Driveway Flowmeter — Transac 8 Self-serve System

Submittor: Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113.

Date of Approval of Variation: 4/9/78

Description of Variant:

Transac 10 control console (Figure 31) replacing the Transac 8 control console, with up to twelve driveway flowmeters of the types described in the pattern.

The hydraulic diagram of each driveway flowmeter is illustrated in Figure 12; the flow-control and pilot valves are optional. Components are listed in Figure 30.

Transac 10 Console

The control console has a shared indicator for price, twelve driveway-flowmeter-selector switches, authorise button, paid button, emergency-stop button, and an individual-pump stop button. Lights on the console indicate the operational status of each driveway flowmeter. A lead stamping plug for a verification seal is provided on the control console. The seal prevents the cover of the control console from being removed; a screw beneath the stamping plug is located in a captive nut on a bracket rivetted to the inside of the cover.

Integral with these self-serve system controls and monitoring facilities are other facilities which are classified as peripheral functions and which are not approved by the Commission as a part of the measuring instrument. These controls, which do not interfere with the operation of the self-serve system, are:

1. a three-position "operator-off-manager" key-operated switch;

2. an eleven-button keyboard (0 to 9, plus 00) which allows accounting and volume inventory information to be programmed into the instrument when manager function is selected by the key-operated switch. Driveway flowmeters cannot be authorised when the manager function is selected; deliveries taking place will not be affected by the selection of the manager function;

3. three buttons marked "G1", "G2" and "G3" (grade of petrol selection) which allows the grades of petrol dispensed from the various driveway flowmeters to be programmed into the instrument;

4. four mode buttons which allow the operator or the manager to obtain accounting or inventory information appropriate to the function selected.

Pressing a driveway-flowmeter-selector button and then the authorise button permits the computer in the appropriate driveway flowmeter to be reset to zero and the pump motor to start when the customer removes the nozzle from its hang-up.

On completion of the delivery, returning the nozzle to its hang-up will engage interlocks which will prevent the computer being reset to zero until the supervisor at the completion of the transaction presses the paid button and again authorises the use of the driveway flowmeter.* During each delivery, or at the end of a delivery, the supervisor may, by pressing the appropriate driveway-flowmeter-selector button, display the price indicated on the driveway-flowmeter computer.

Service modules each contain control equipment for four driveway flowmeters, together with switches which select "console-off-manual" modes of operation. When manual mode of operation is selected for a driveway flowmeter, an operator can use that driveway flowmeter without use of the authorise button on the control console. In manual mode the price indication on the console blank out.

The failure of any of the driveway flowmeters in the system or

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* As the remote indicator is not provided with data from a secure or fail-safe system, and as there is no remote indication for the use of the purchaser, the primary indications displayed by the driveway flowmeter must be retained until the transaction is completed, thus allowing a comparison between the primary driveway-flowmeter indications of price accepted by the purchaser, and the remote indicator.

the failure of the remote control console does not affect the operation of other separately verified parts of the system; that is, in the event of a driveway flowmeter becoming unserviceable it may be isolated partially by selecting MANUAL mode of operation or totally by selecting OFF, and in the event of a control-console failure the control console can be isolated from the driveway flowmeter by selecting MANUAL mode of operation for all driveway flowmeters and allowing them to be attendant-operated.*

The approval includes each driveway flowmeter as an individually approved measuring instrument with or without the output from the pulse transmitter(s) and with or without the data indicated on the control console being transmitted to peripheral devices which are not a part of the measuring instrument.** These devices, which may only be provided with the authorisation of the Weights and Measures Authority of the State, may, for example, print receipts or store and process the data, etc.

Provision is made to seal the connecting cables of peripheral devices to the instrument, and to seal the connectors which provide data for peripheral devices.

The use of such peripheral equipment will not affect the operation of the driveway-flowmeter self-serve system.

Test Procedure

Transac System 10

The following test procedure will ensure that the Transac system is operating in accordance with the approved design:

1. Select MANUAL mode of operation for each driveway flowmeter. The mode-selector switches are located within the service module.

*. Separate verification seals are provided on each driveway flowmeter and on the control console, allowing individual seals to be cancelled in the event of an unserviceability without affecting the remainder of the system or the other driveway flowmeters.

** The measuring instrument examined and approved by the Commission is a post-payment self-serve system and is limited to the devices which determine the value of a physical quantity, control the measurement, and indicate the result of the measurement on a non-permanent visual display, for example, a seven-segment indicator or Veeder-Root computer.

2. Carry out the tests which are normally applied to a driveway flowmeter.

3. Select CONSOLE mode of operation for each driveway flowmeter.

4. At the control console select operator key position and then press the emergency-stop button; check that all of the seven-bar digit indicators alternatively indicate the numeral 8 and blank.

5. Authorise all the driveway flowmeters by selecting each driveway flowmeter in turn and pressing the authorise button. The selection of any driveway flowmeter will cancel the emergency stop indications.

6. For each driveway flowmeter:

   (a) deliver sufficient liquid to cause the price indicators on the computer to move significantly off zero;

   (b) stop the pump motor by returning the nozzle to its hang-up bracket;

   (c) record the pump number and the price indicator on the computer to the nearest 0,1 cent; and

   (d) remove each nozzle from its hang-up bracket and check that the computer does not reset to zero and the pump motor does not start.

7. At the control console select each driveway flowmeter in turn and thus repeat the indications displayed on each driveway flowmeter. Check each displayed price against the price recorded for each driveway flowmeter (refer paragraph 6 (c) above).

   The indicated price may differ from that indicated on the driveway-flowmeter dial face if the price on the dial face is between graduations; the maximum difference will be not more than 0,6 cent, that is, 0,4 cent may be rounded up to a whole cent or 0,6 cent may be rounded down to the lower whole cent.

8. Authorise a driveway flowmeter as in 5 and deliver sufficient liquid to cause the price indicators to move significantly off zero:

   (a) without returning the nozzle to its hang-up, check that

operation of the emergency stop on the console causes the pump motor to stop.

Note: Any driveway flowmeter being used in manual mode will also stop delivering.

(b) Check that reselection of the driveway flowmeter and the pressing of the authorise button restarts the pump motor allowing the delivery to continue, without resetting the computer on the driveway flowmeter to zero.

Note: (i) Each driveway flowmeter may be separately restarted after the emergency stop.

(ii) Any driveway flowmeter which was being used in manual mode will now be able to continue delivering, as the selection of any driveway flowmeter cancels the emergency stop condition.

(c) Again operate the emergency stop on the console and then return the nozzle to its hang-up; check that the driveway flowmeter will not reauthorise until the driveway flowmeter is selected and the paid button pressed.

Note: (i) Each driveway flowmeter may be separately authorised for re-use after the emergency stop.

(ii) If the nozzle of a driveway flowmeter is returned to its hang-up during the emergency stop, that transaction should be terminated as a delivery cannot then be restarted without losing the record of the transaction up to the time of the emergency stop.

9. If it is desired to isolate a driveway flowmeter from the Transac system during the above tests in order to allow the service station to continue functioning, the particular driveway flowmeter can be isolated from the Transac system by switching it to manual mode. Alternatively, during tests other than the EMERGENCY STOP, half, say, of the driveway flowmeters can be tested at a time, while the other half remain in the normal console mode of operation.

Gas-separation Test Valves

The progressive opening of the gas-separation test valve should allow the flow to be reduced to, say, 90%, 80%, 70%, etc., of full flow

rate, until either the flow rate becomes less than the minimum of 15 litres per minute or the flow stops due to the pump losing prime. For all tests prior to reaching the opening of the gas-separation test valve at which the flow rate is less than 15 litres per minute, or the delivery stops due to the pump losing prime, the effect of the admitted air on the accuracy of measurement should not exceed 0,5% of the quantity delivered.

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTOFICATE OF APPROVAL No 5/6A/63

CHANGE No 1

The description of the

Gilbarco Driveway Flowmeter — Transac T8 Self-serve System

given in Technical Schedule No 5/6A/63 dated 22 April 1977

is altered by changing:

1. on page 2, in the first line of the fourth paragraph the word "from" to "four";

2. on page 3, the last line of the second paragraph;

3. on page 5, Special Test No 8;

replacement pages 3, 4, 5 and 6 are attached in regard to changes 2 and 3. The altered text is marked by a line in the margin.

7/4/78

FIGURE 5/6A/63 - 1

1	2	3			
Identification No	Components	Driveway Flowmeters			
		T1664AG	T1667AG	T1808AG	T1818AG
	Pump T258AK	*	*	*	*
	Float chamber T257AC	*	*	*	*
	Gas-separation test valve T166-0170	*	*	*	*
	Meter T262AJ		*		*
	Meter T262AK	*		*	
	Computer VR 101	*	*	*	*
	Flow-control valve DK 1044	*	*	*	*
	Non-return valve T260AF	*	*	*	*
	Back-pressure valve DK 00660-001	*	*	*	*
	Sight glass T261AC			*	*
	Sight glass T261AD	*	*		
	Nozzle ZVA Slimline	A	A	A	A
	Nozzle ZVA 25	A	A	A	A
	Nozzle EMCO 200A	A	A	A	A
	Nozzle STM 363	A	A	A	A
	Nozzle OPW 1A	A	A	A	A
	Final filter	†	†	†	†
	Electric reset unit	*	*	*	*
	Pump interlock - starting lever	*	*	*	*
	Pulse-transmitter unit on computer price shaft DK 01057-001	*	*	*	*
	Service module	*	*	*	*
	Control console T8	*	*	*	*

* - indicates required component
A - indicates alternative components, one of which is required
† - indicates optional component

Footnotes: 1. The nozzle operating lever latch mechanism may be removed to allow the nozzle to comply with the requirements of other Statutory Authorities.

2. The T167AG and T181AG are dual driveway flowmeters, which comprise two driveway flowmeters in one housing.

Compatibility Table

Transac T8 Control Console

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FIGURE 5/6A/63 - 3

Service Module

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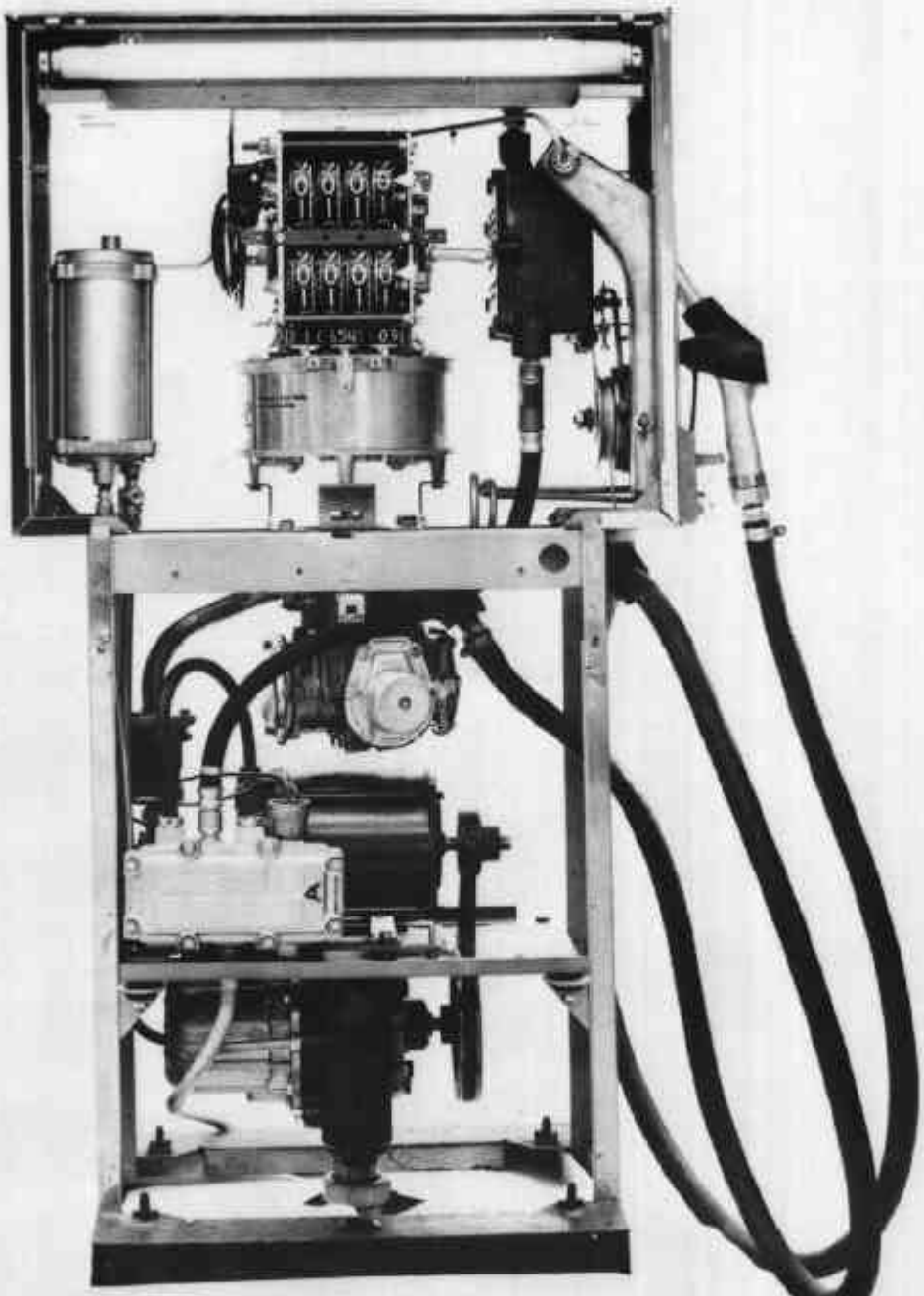
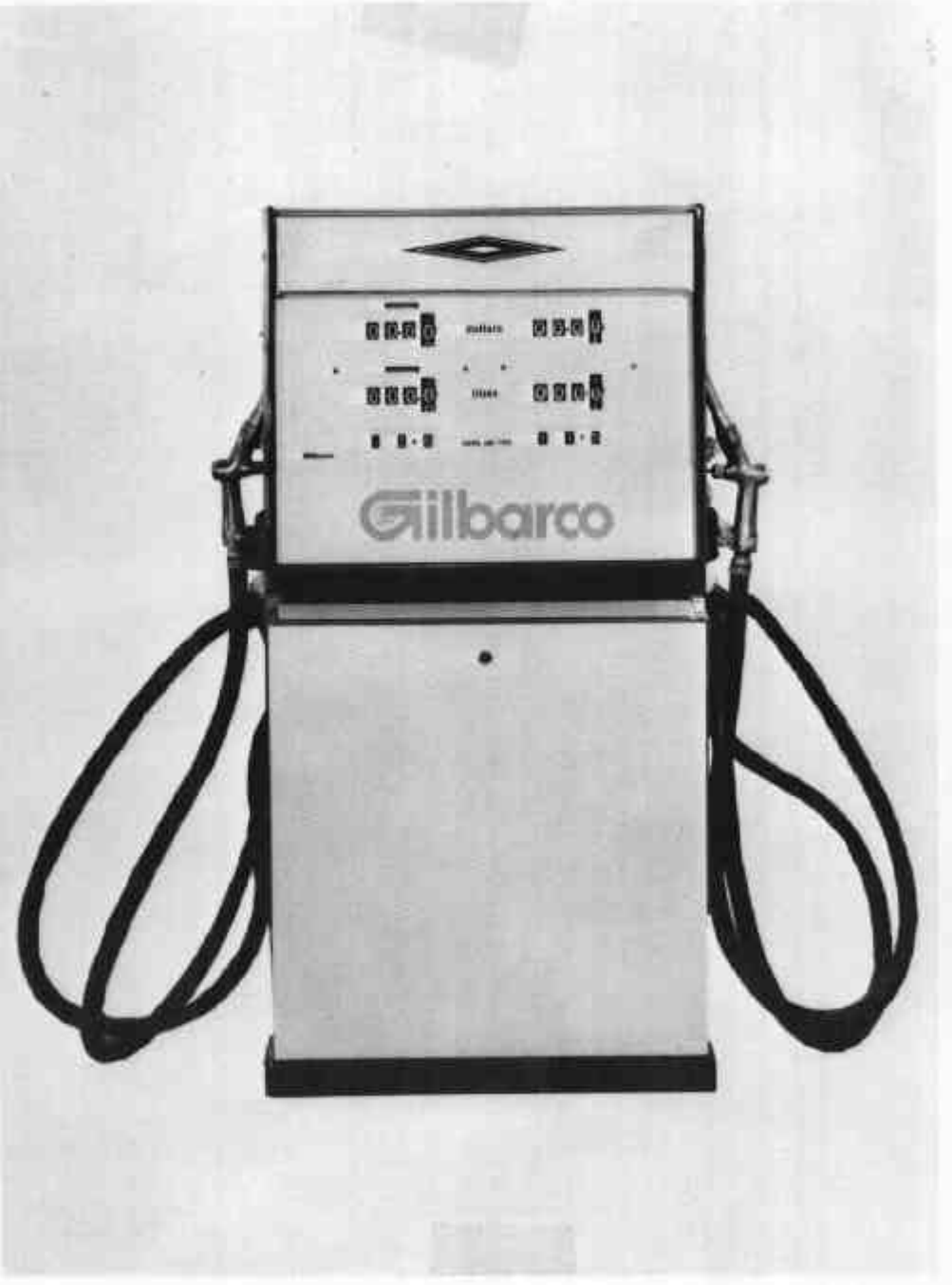
Gilbarco T166AG

FIGURE 5/6A/63 - 5



Gilbarco T166AG

22/4/77

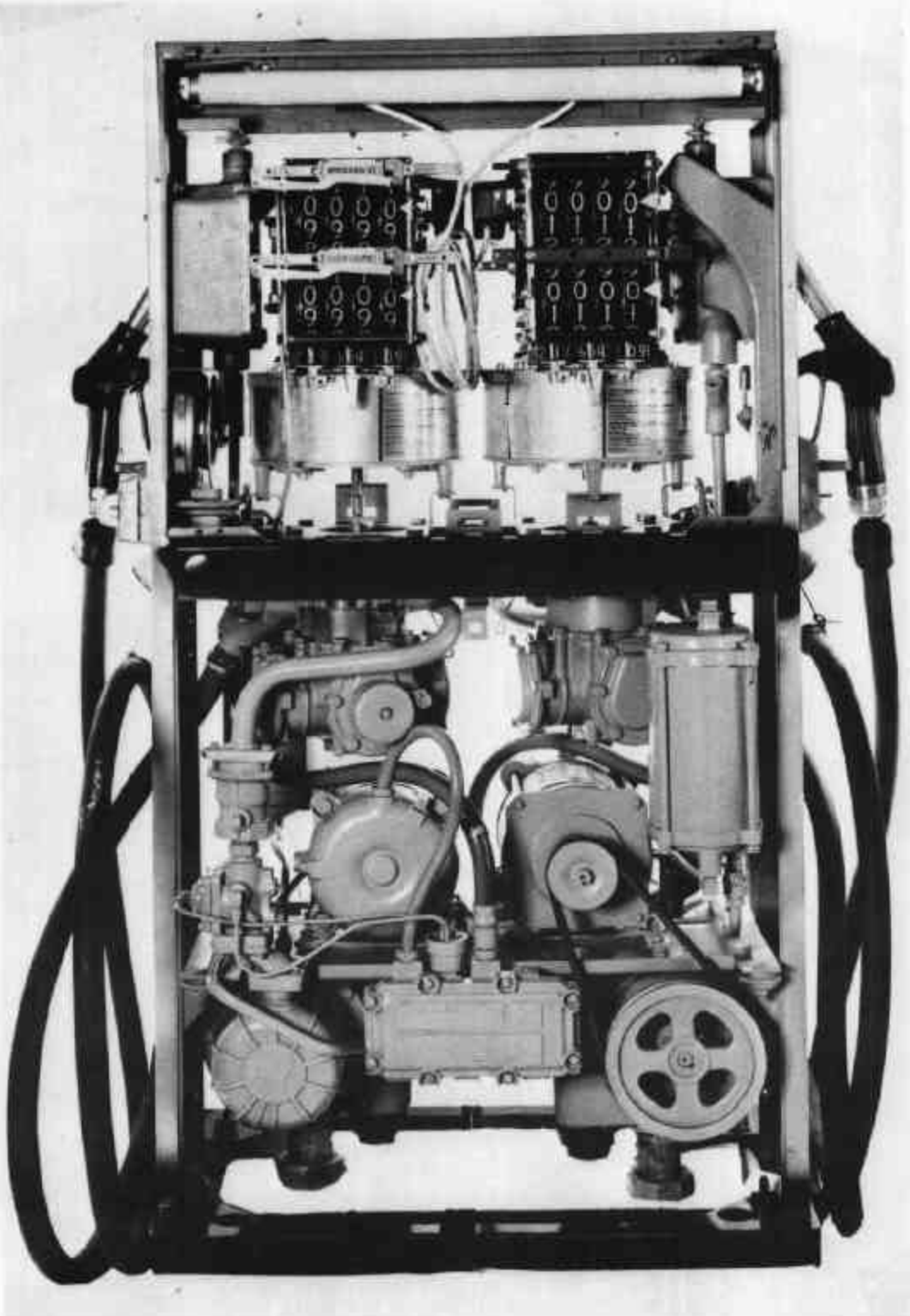


Gilbarco T167AG

(Note: The nozzle illustrated is not approved for use with this flowmeter)

22/4/77

FIGURE 5/6A/63 - 7



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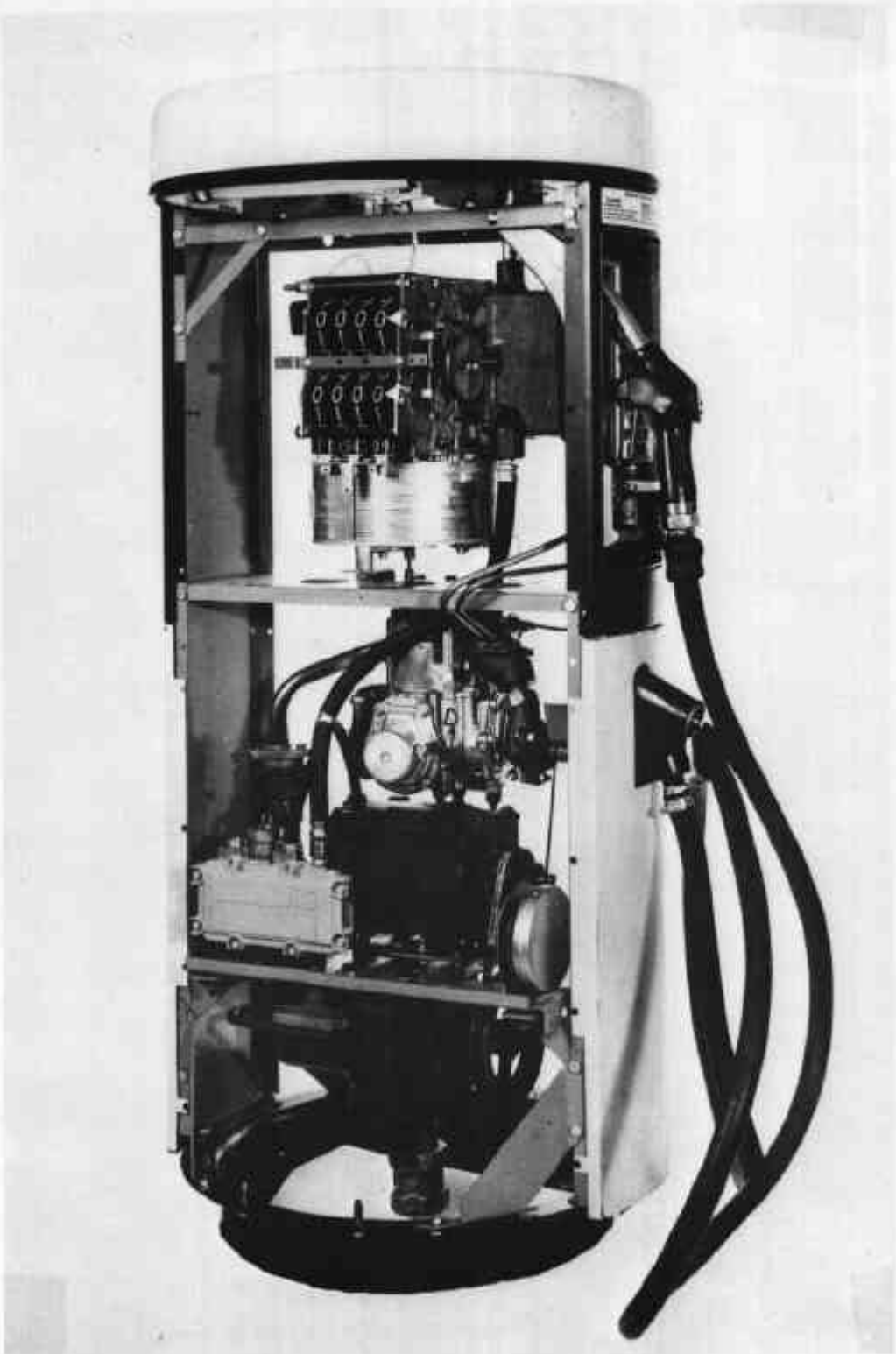
Gilbarco T167AG

FIGURE 5/6A/63 - 8

Gilbarco T180AG

22/4/77

FIGURE 5/6A/63 - 9



Gilbarco T180AG

22/4/77

FIGURE 5/6A/63 - 10

Gilbarco T181AG

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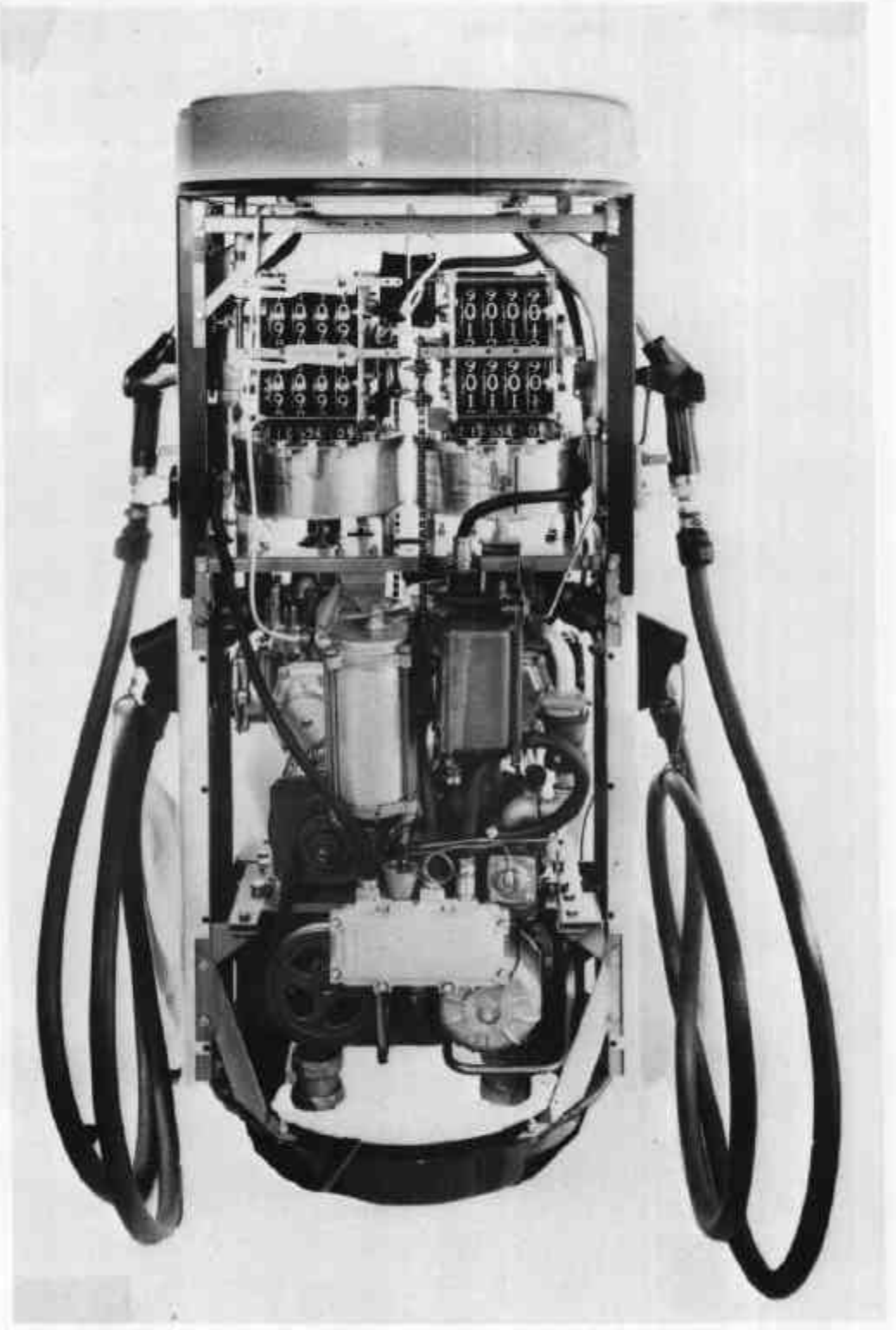
FIGURE 5/6A/63 - 11



Gilbarco T181AG

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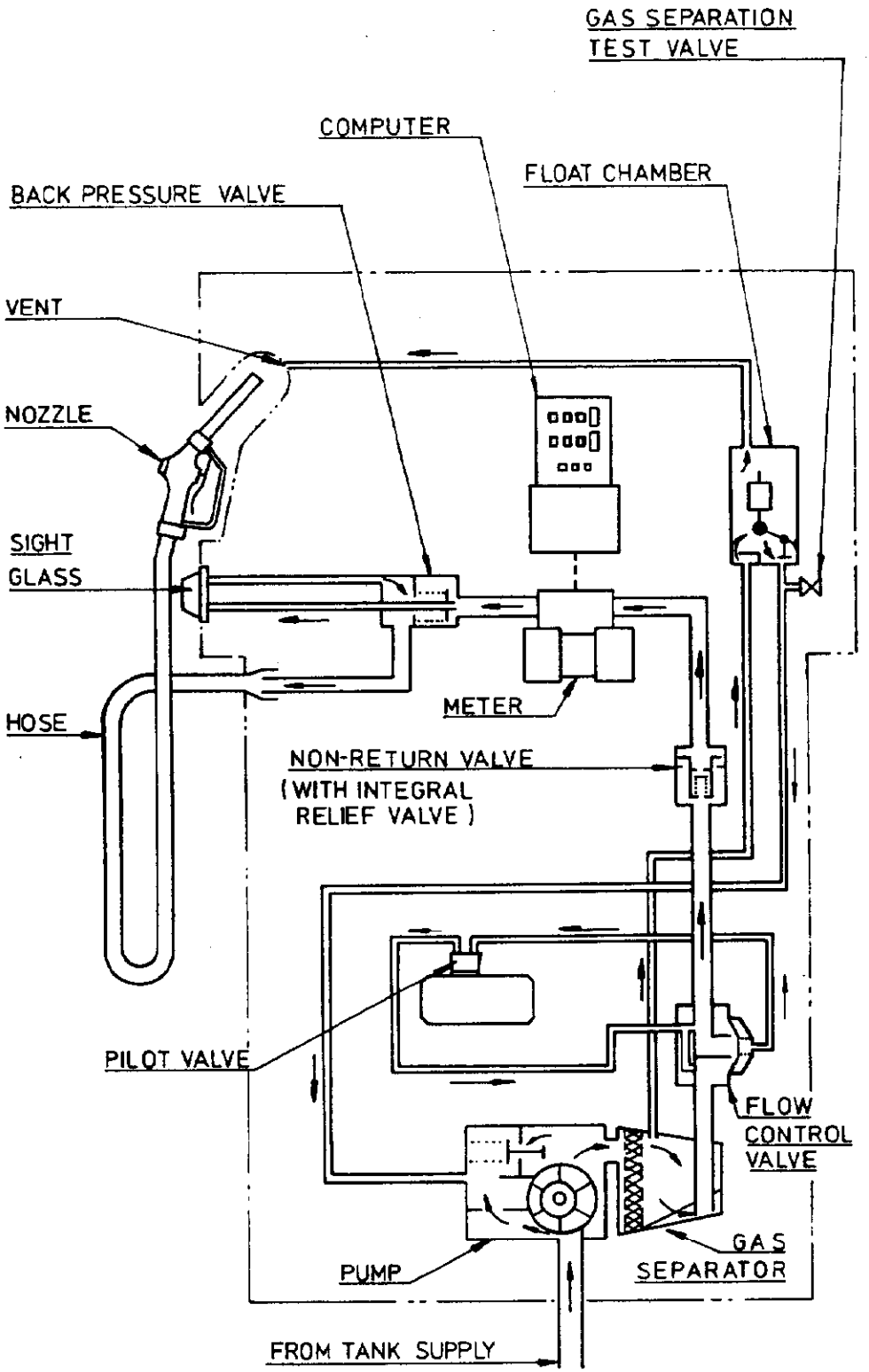
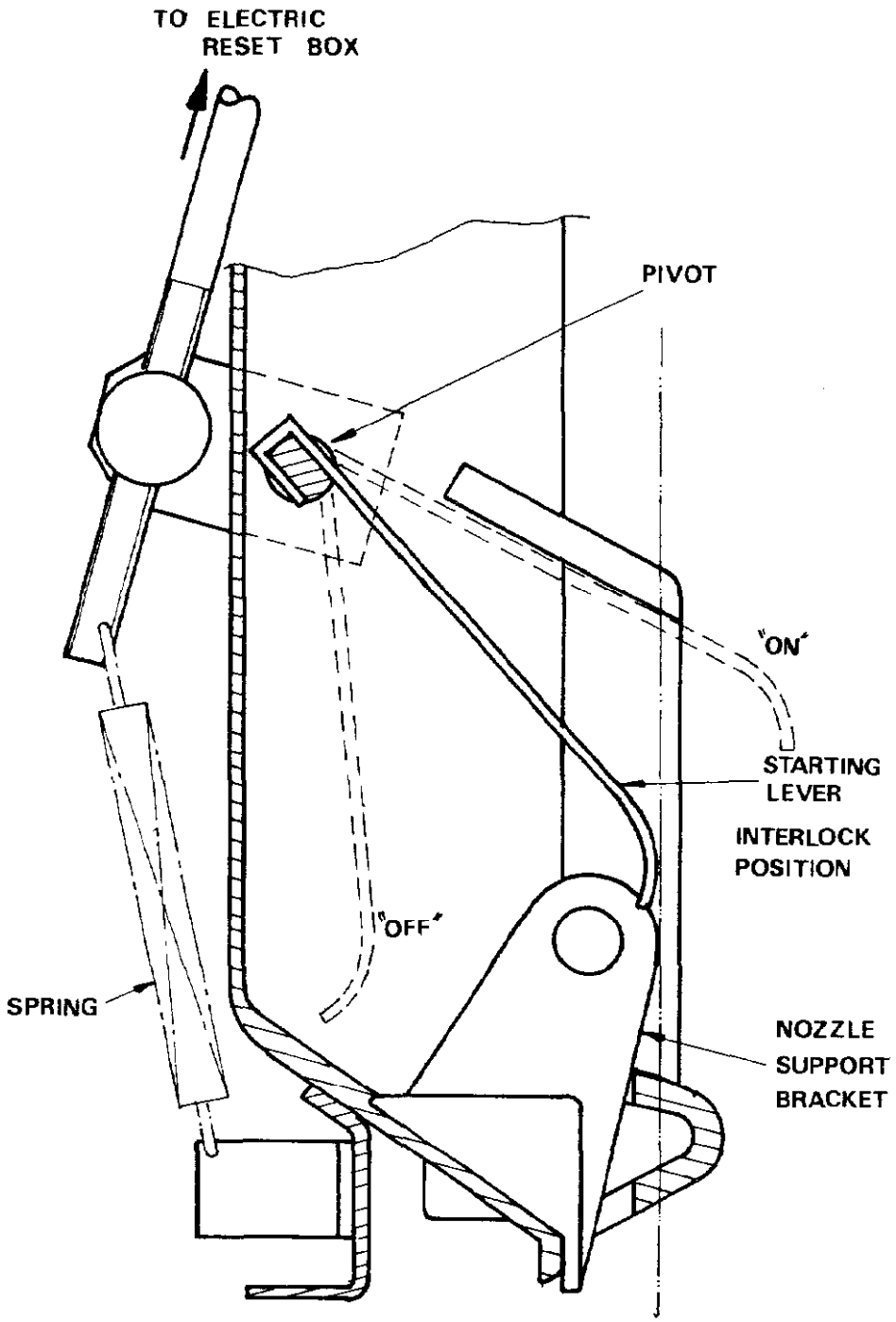
FIGURE 5/6A/63 - 12



Hydraulic Diagram FOR WHAT?

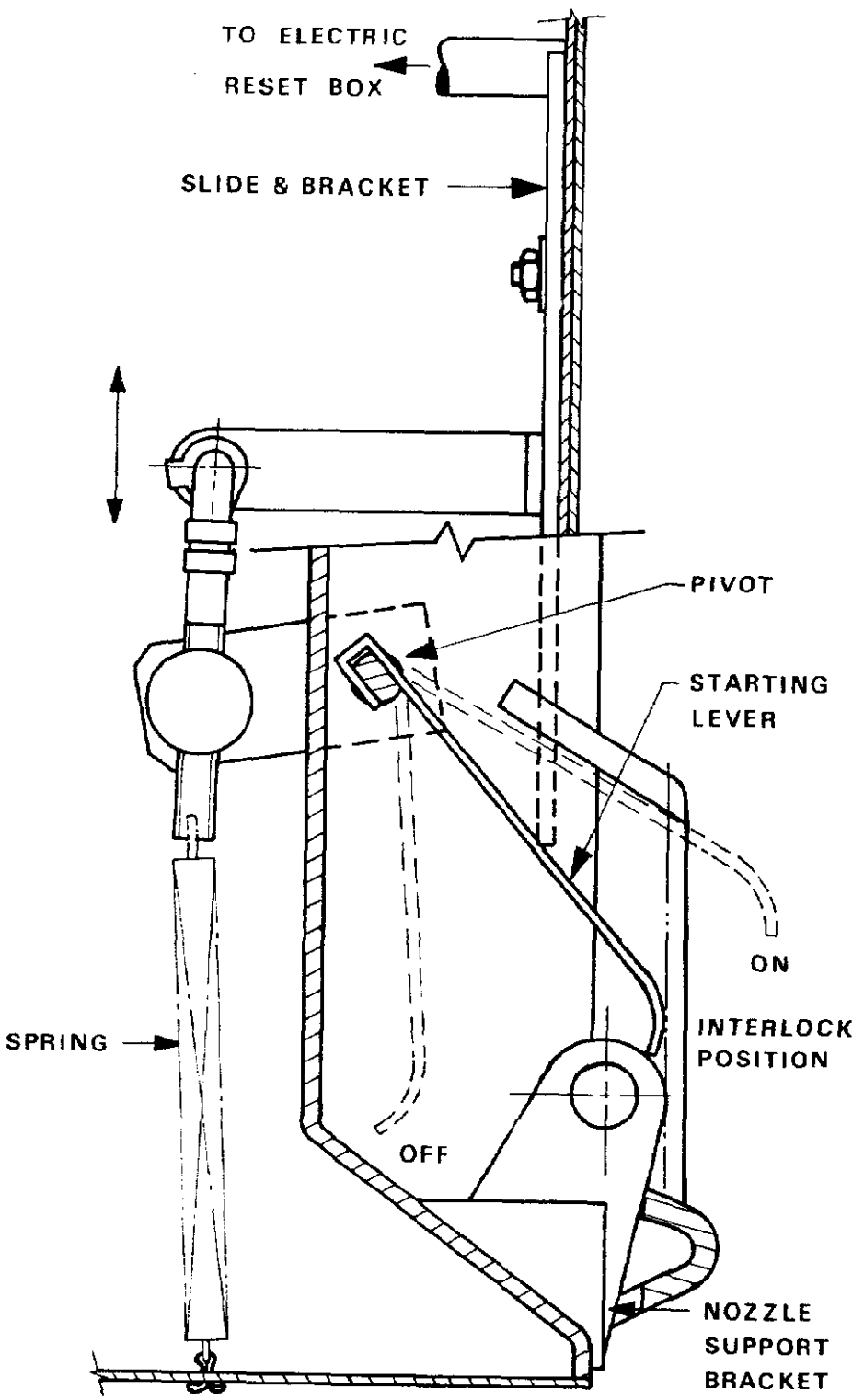
22/4/77



Gilbarco T166AG — Nozzle Hang-up

22/4/77

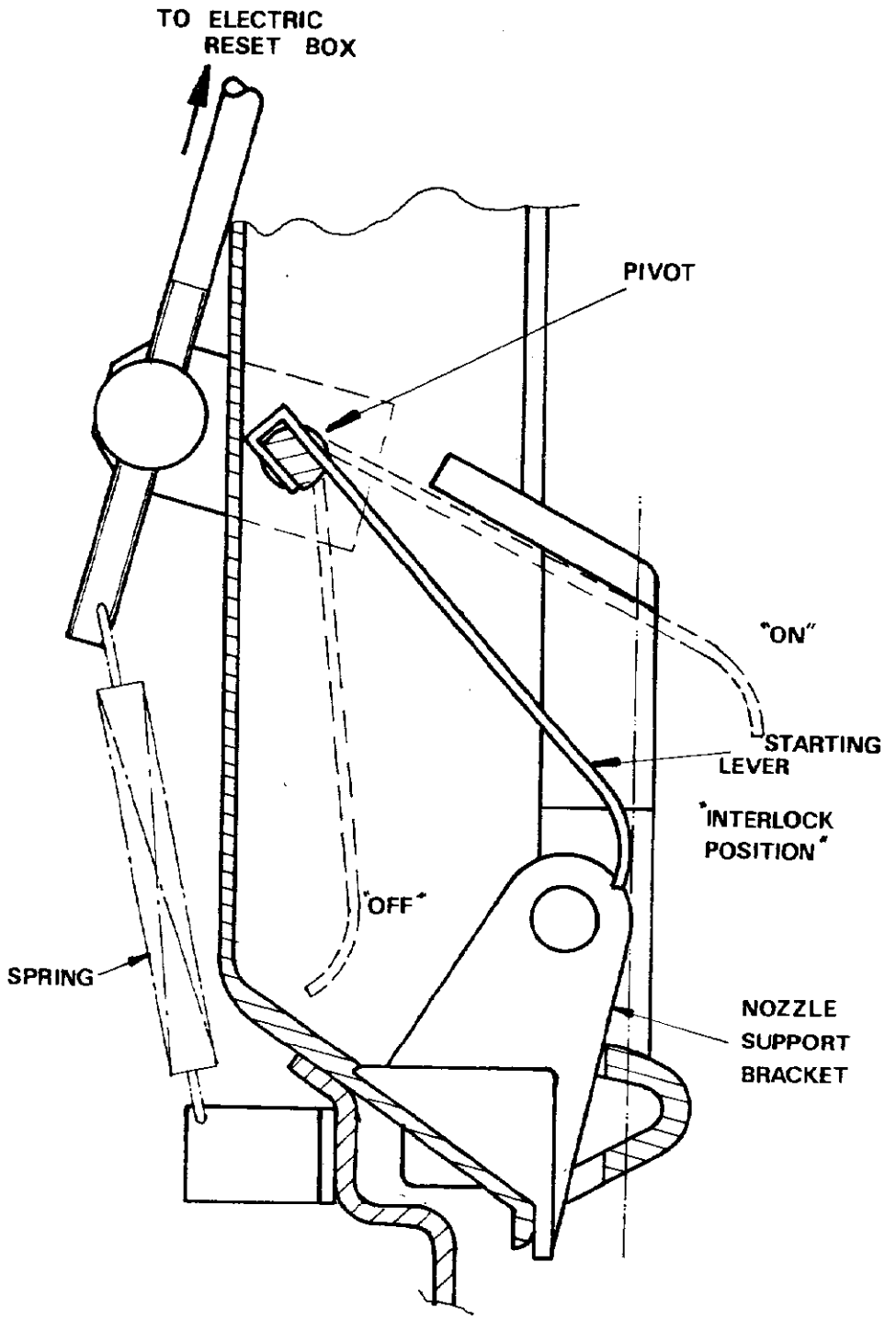
FIGURE 5/6A/63 - 14



Gilbarco T167AG — Nozzle Hang-up

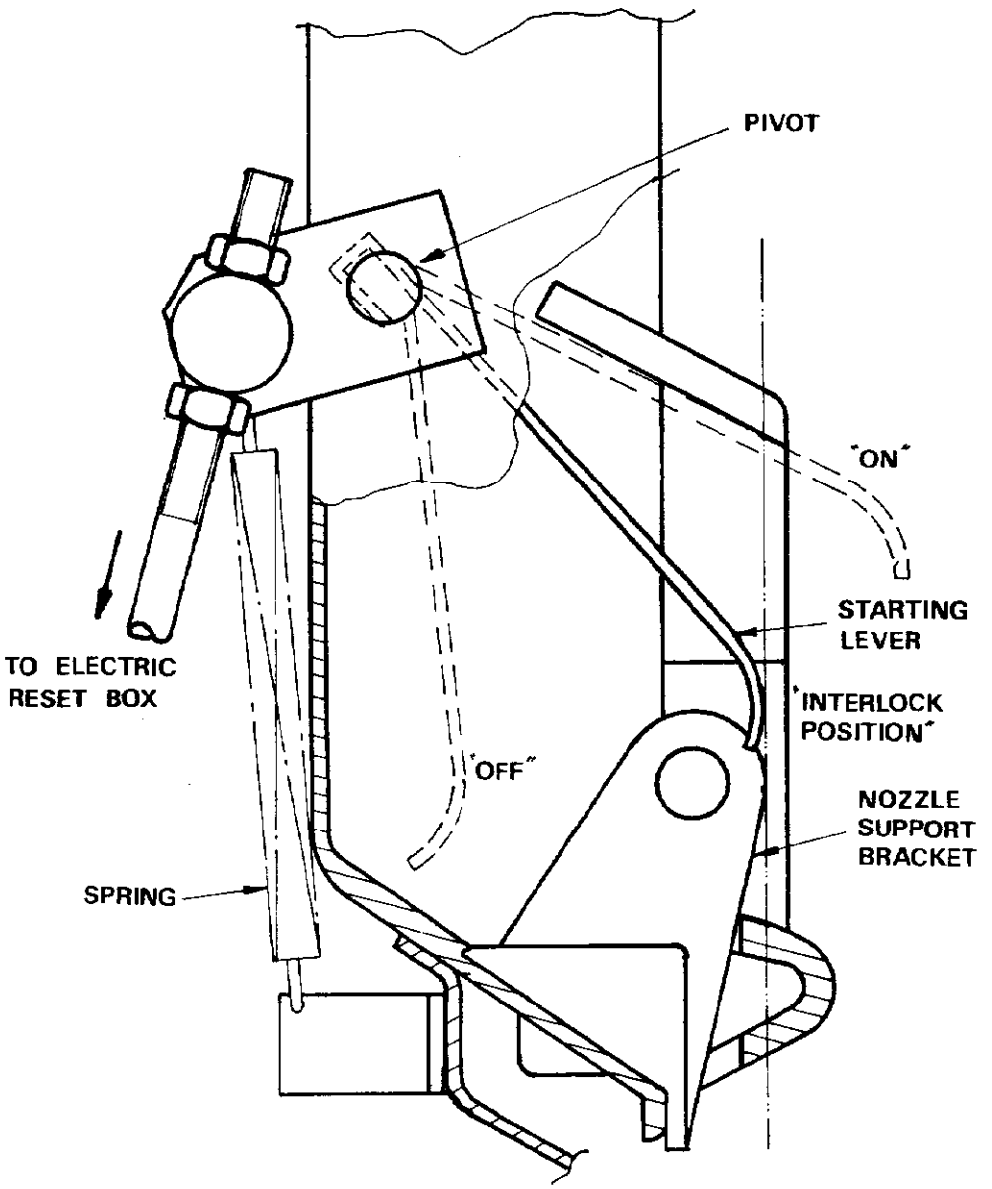
22/4/77

FIGURE 5/6A/63 - 15



Gilbarco T180AG — Nozzle Hang-up

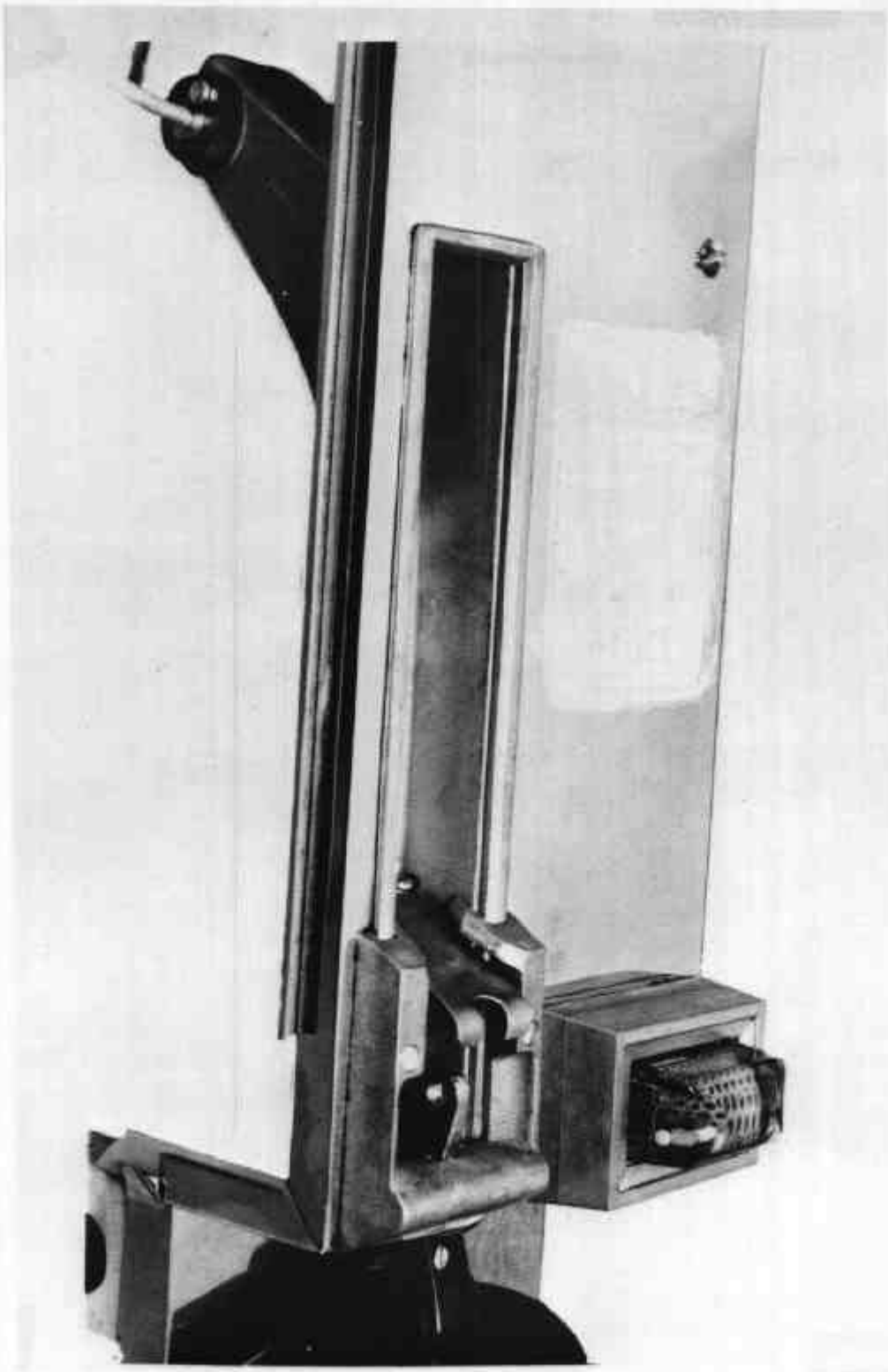
22/4/77



Gilbarco T181AG — Nozzle Hang-up

22/4/77

FIGURE 5/6A/63 - 17



Nozzle Hang-up

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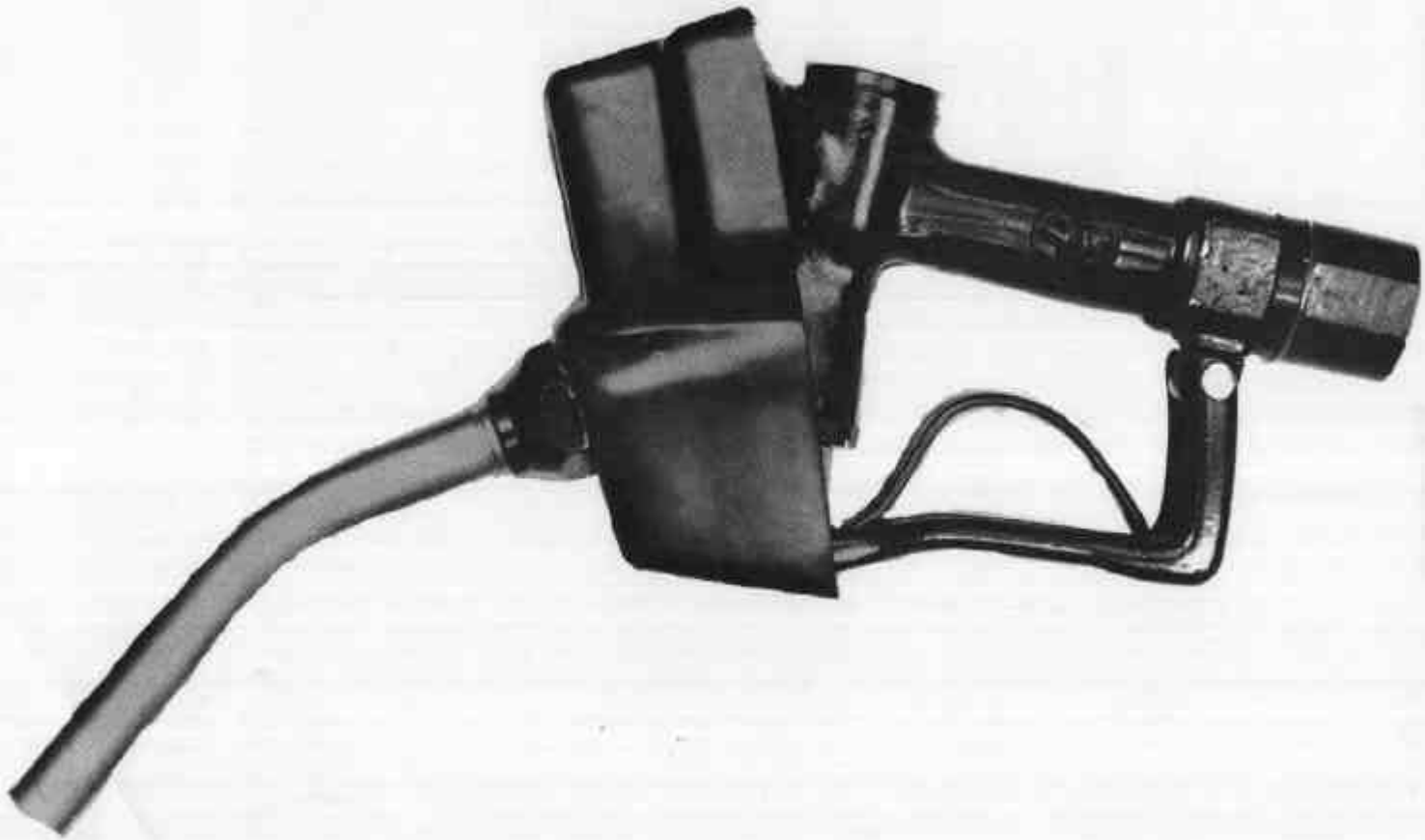
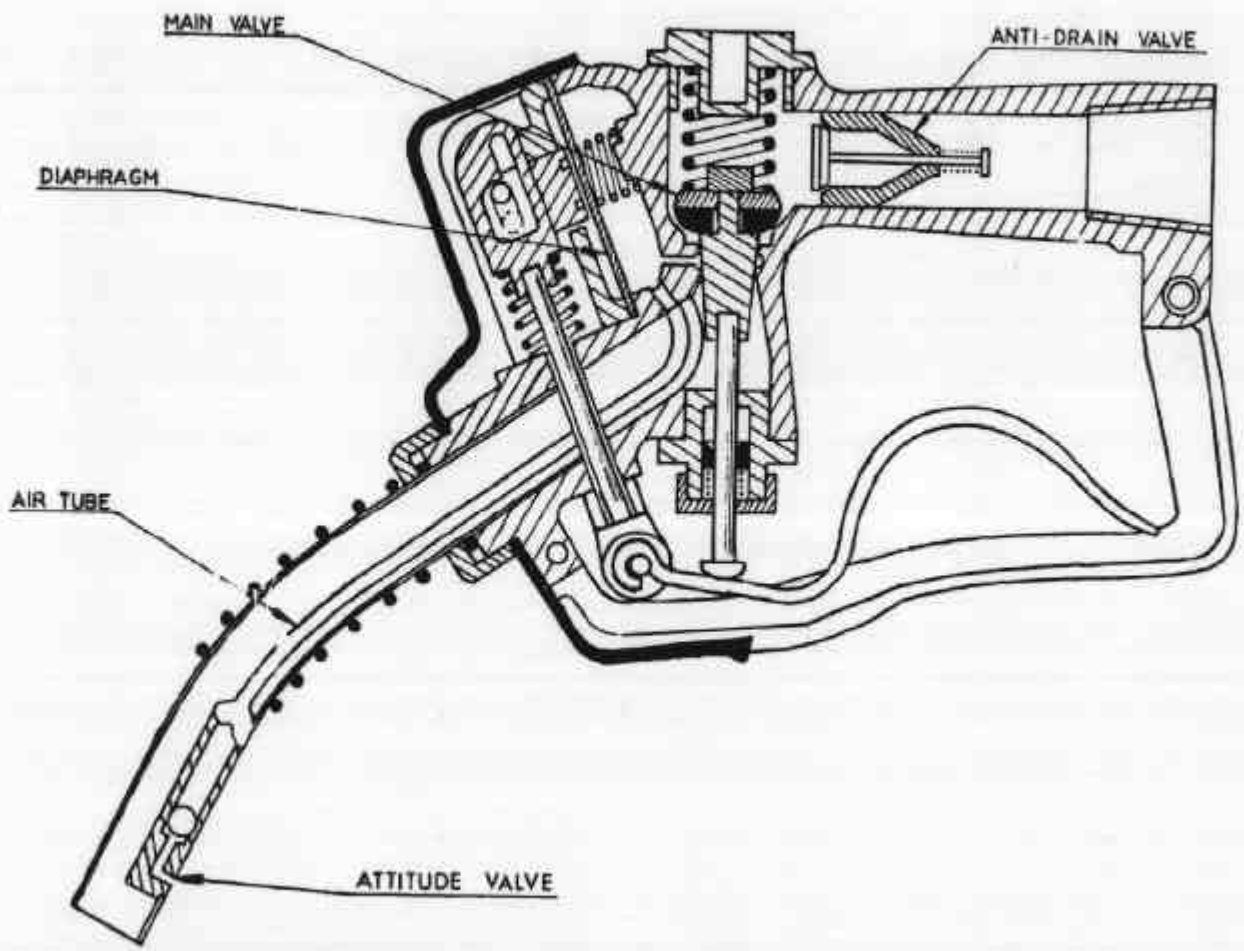
FIGURE 5/6A/63 - 18



STM 377 Automatic Hose Nozzle

FIGURE 5/6A/63 - 19



STM 377 Automatic Hose Nozzle — Schematic Diagram

FIGURE 5/6A/63 - 20

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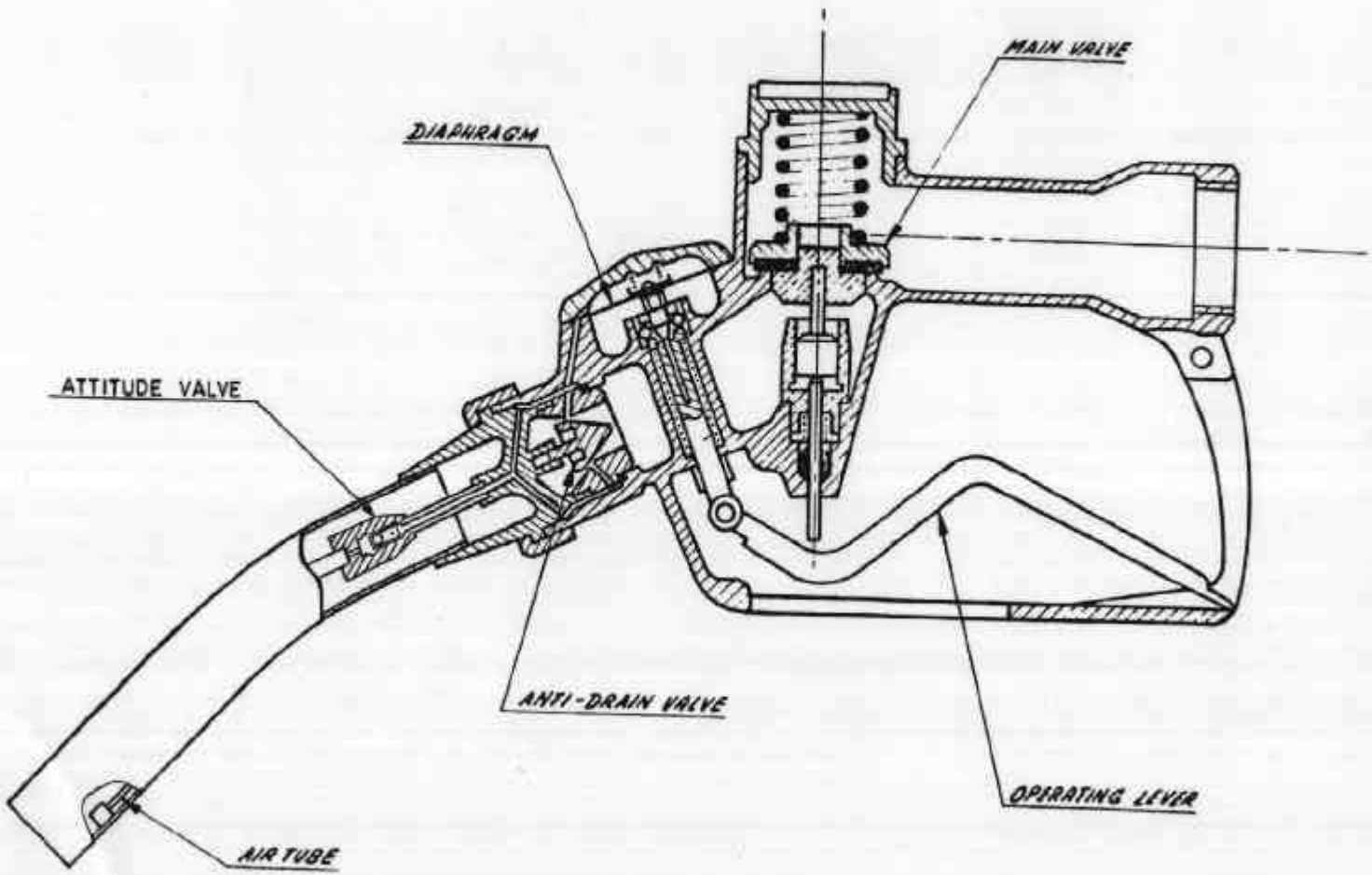
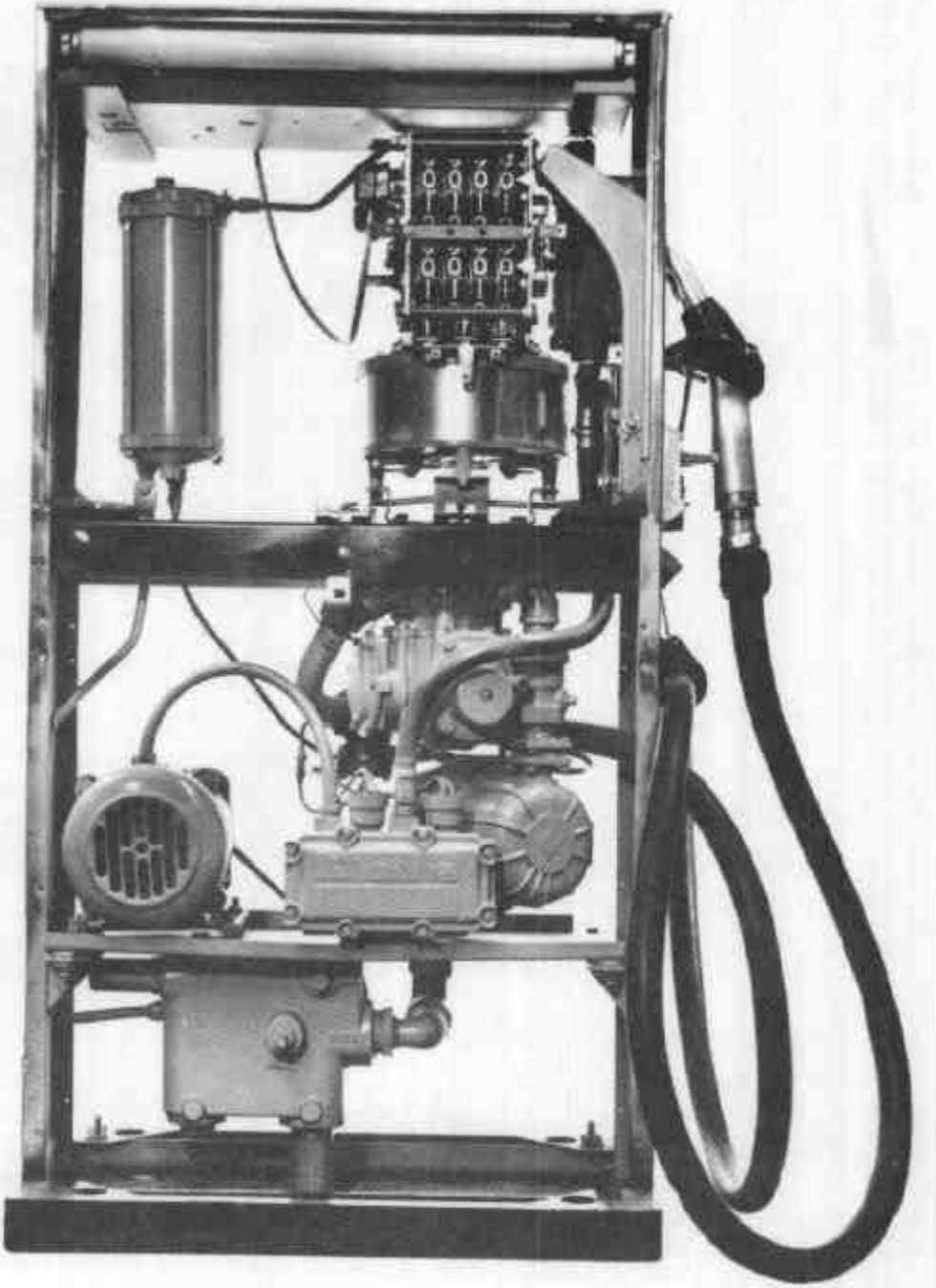
OPW 1AS Automatic Hose Nozzle

FIGURE 5/6A/63 - 21



OPW 1AS Automatic Hose Nozzle — Schematic Diagram

FIGURE 5/6A/63 - 22



Gilbarco T166XG

FIGURE 5/6A/63 - 23

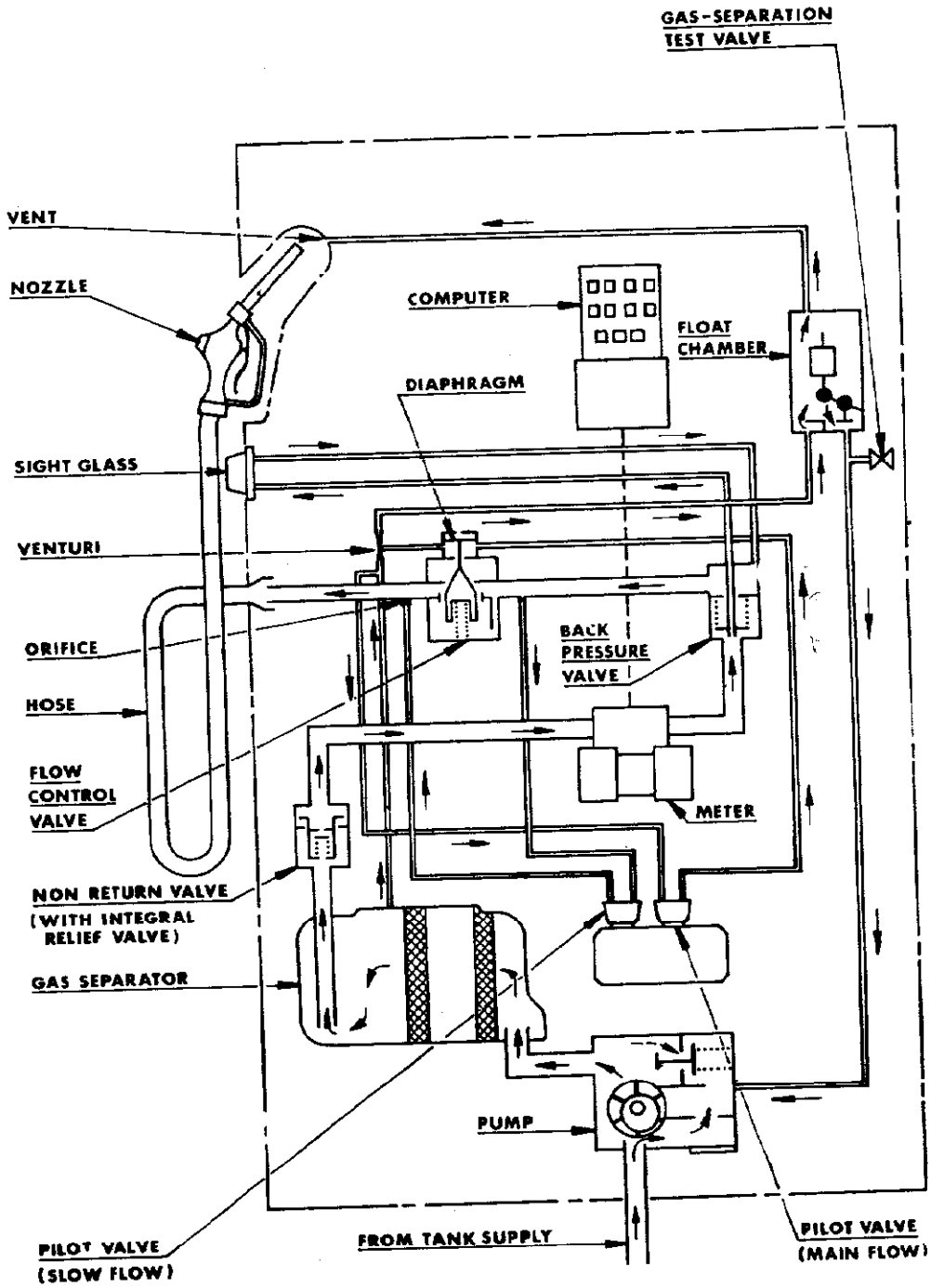
1	2	3
	Component	Driveway flowmeter Model T166XG
	Pump, Gilbarco T258AL	*
	Gas separator, Gilbarco T257AK	*
	Float chamber, Gilbarco T257AD	*
	Non-return valve, Gilbarco T260AH	*
	Meter, Gilbarco T262AJ	*
	Back-pressure valve, Gilbarco DK 00660-003	*
	Sight glass, Gilbarco T261AD	*
	Flow-control valve, Gilbarco DR 00929-001	*
	Pilot valve (main flow), Gilbarco AN 20475-15	*
	Pilot valve (slow-flow), Gilbarco AN 20475-15	*
	Gas-separation test valve, Gilbarco T166-0170	*
	Final filter	†
	Nozzle, STM 363	A
	Nozzle, STM 377	A
	Nozzle, T250H	A
	Nozzle, OPW 1AS	A
	Nozzle, ZVA Slimline	A
	Nozzle, ZVA 25	A
	Nozzle, EMCO 200A	A
	Computer, VR 101	*
	Pulse Transmitter Unit, Gilbarco DK 01057-001	*
	Electric reset unit	*
	Pump interlock — starting lever	*
	Data plate — "approved for petrol"	B
	Data plate — "approved for kerosene"	B
	Data plate — "approved for diesel fuel"[1]	B

* - indicates required component
A - indicates alternative components, one of which is required
B - as for A
† - indicates optional component

Footnote: [1] A known trade name or abbreviation of the name of the liquid is acceptable

Compatibility Table

FIGURE 5/6A/63 - 24



Gilbarco T166XG — Hydraulic Diagram

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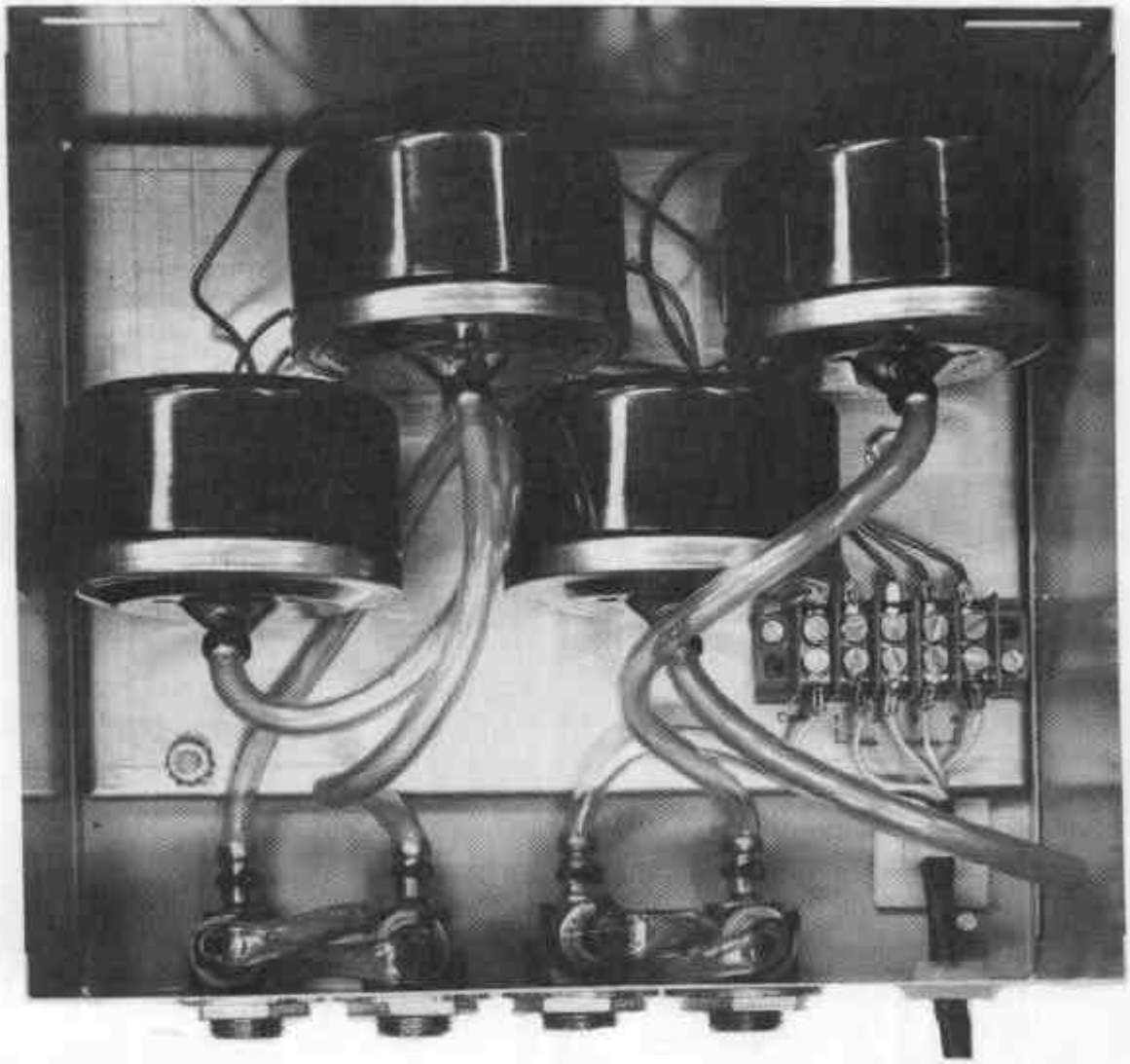
FIGURE 5/6A/63 - 25

T6 Control Unit and Banknote-acceptor Unit

FIGURE 5/6A/63 - 26



Low-level Sensing Device

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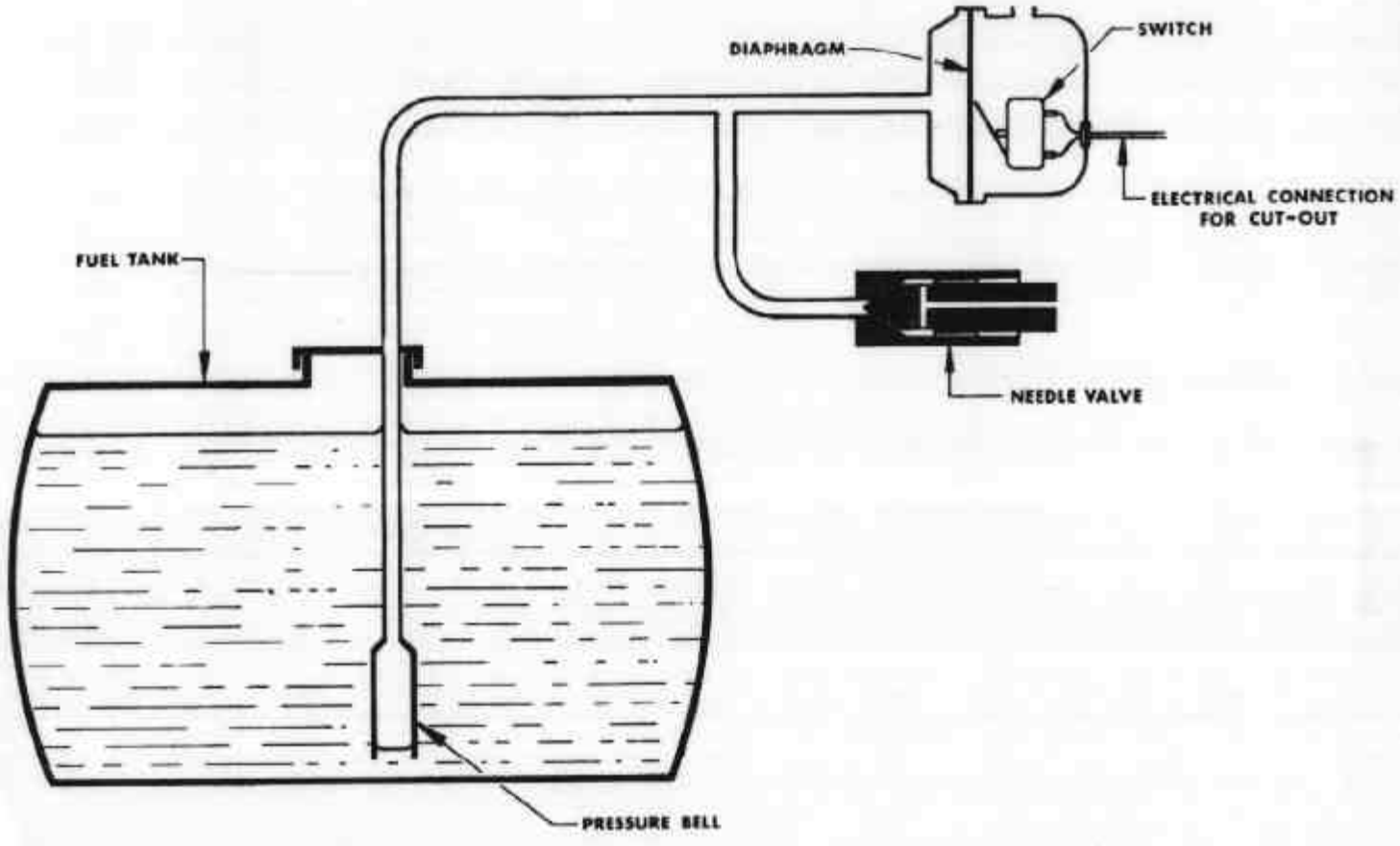
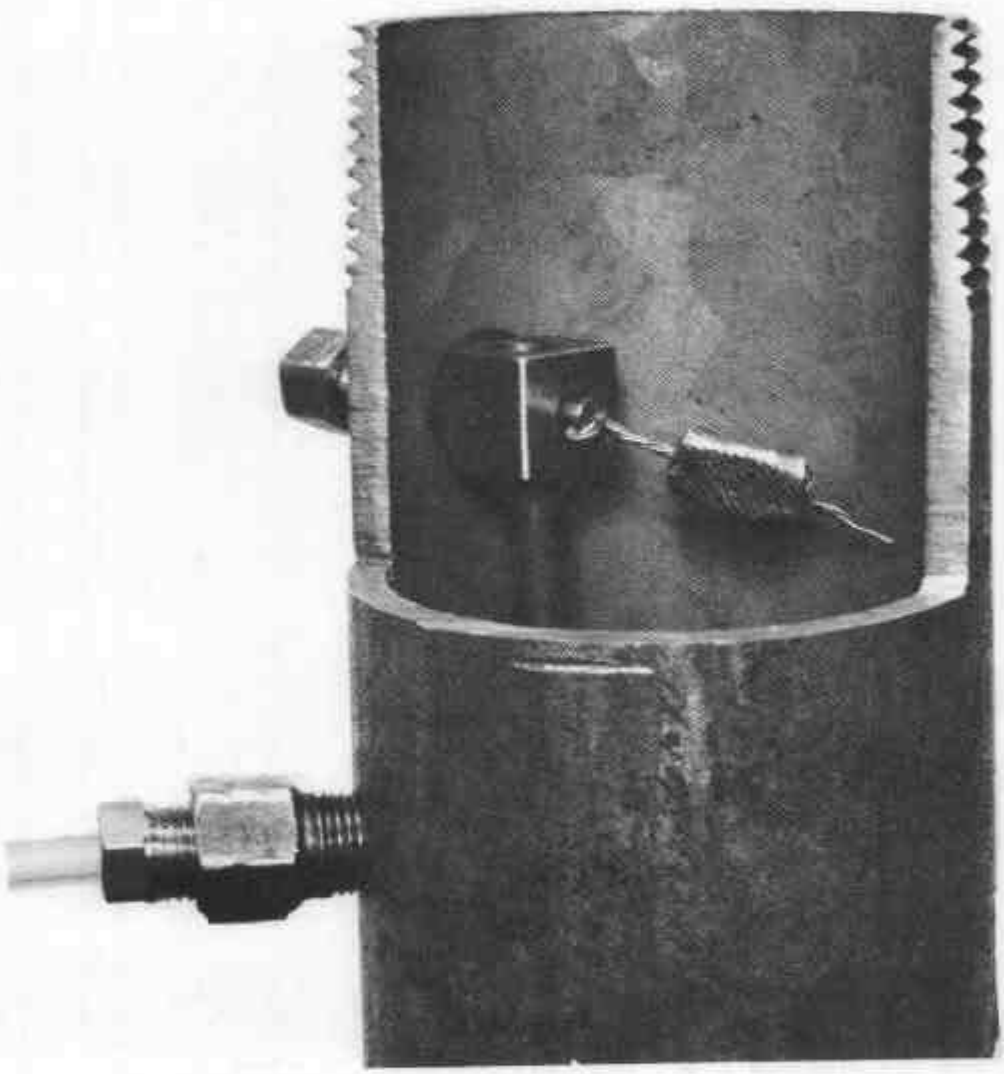
FIGURE 5/6A/63 - 27



Low-level Unit

FIGURE 5/6A/63 - 28



Sealing of Pressure Bell (cutaway view)

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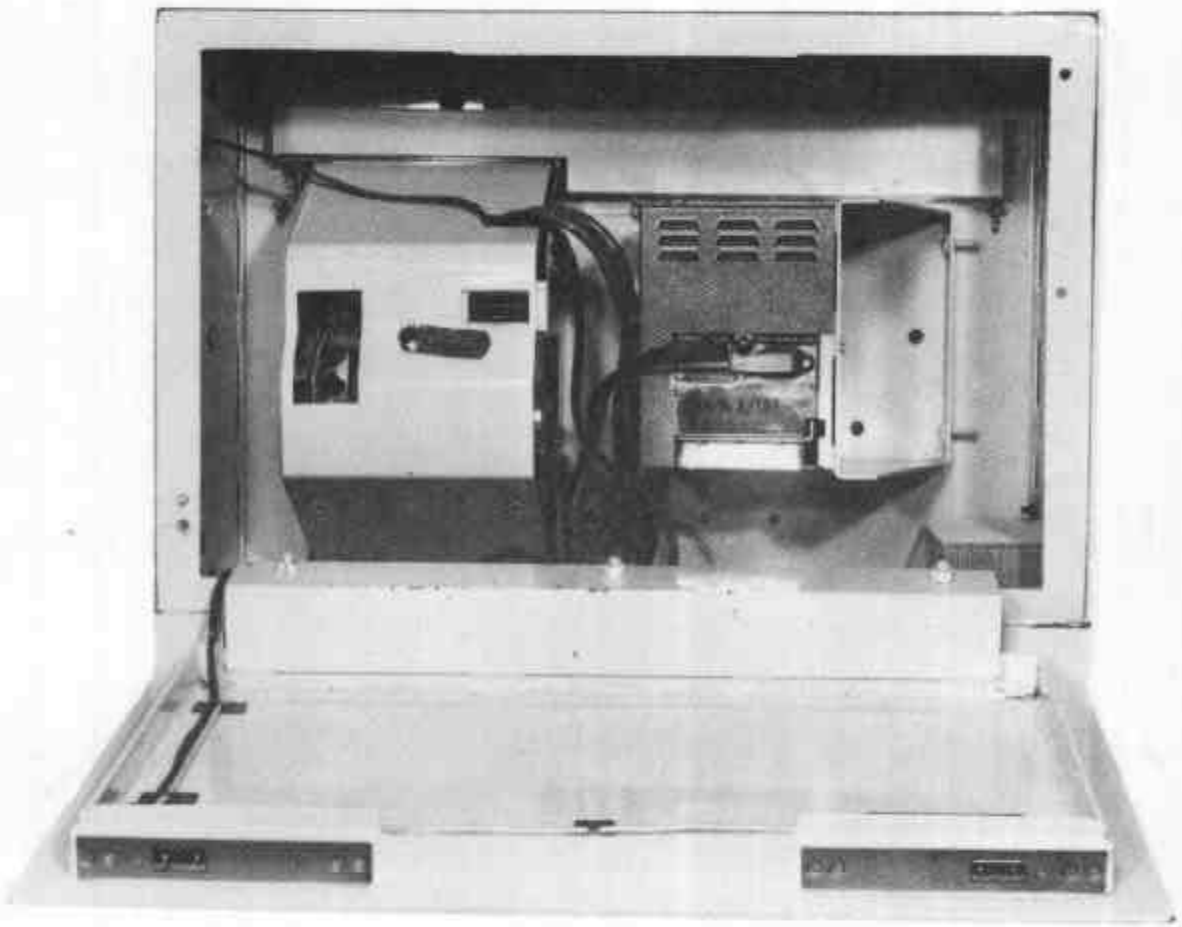
FIGURE 5/6A/63 - 29



Sealing of T6 Control Unit

30/11/78

FIGURE 5/8A/83 - 30

1	2	3			
Identification No	Components	Driveway Flowmeters			
		T1666AG	T1667AG	T1800AG	T1801AG
	Pump T258AK	*	*	*	*
	Float chamber T257AC	*	*	*	*
	Gas-separation test valve T166-0170	*	*	*	*
	Meter T262AJ		*		*
	Meter T262AK	*		*	
	Computer VR 101	*	*	*	*
	Flow-control valve DK 1044	†	†	†	†
	Non-return valve T260AF	*	*	*	*
	Back-pressure valve DK 00660-001	*	*	*	*
	Sight glass T261AC			*	*
	Sight glass T261AD	*	*		
	Nozzle ZVA Slimline	A	A	A	A
	Nozzle ZVA 25	A	A	A	A
	Nozzle EMCO 200A	A	A	A	A
	Nozzle STM 363	A	A	A	A
	Nozzle STM 377	A	A	A	A
	Nozzle OPW 1A	A	A	A	A
	Nozzle OPW 1AS	A	A	A	A
	Final filter	†	†	†	†
	Electric reset unit	*	*	*	*
	Pump interlock - starting lever	*	*	*	*
	Pulse-transmitter unit on computer price shaft DK 01057-001	*	*	*	*
	Service module	*	*	*	*
	Control console T10	*	*	*	*

* - indicates required component
A - indicates alternative components, one of which is required
† - indicates optional component

Footnotes:
1. The nozzle operating lever latch mechanism may be removed to comply with the requirements of other Statutory Authorities.
2. The T167AG and T181AG are dual driveway flowmeters, which comprise two driveway flowmeters in one housing.
3. The flow-control valve may not be fitted as it is not used with the T10 self-serve system.

Compatibility Table

FIGURE 5/6A/63 - 31

Transac 10 Control Console

FIGURE 5/6A/63 - 32

T6 Control Unit and Banknote-acceptor Unit