CANCELLED Cert. No. 01 31-12-90

NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 5/6A/78

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

Gilbarco Electroline Transac 11-5 Series Self-serve Driveway Flowmeter System

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

are suitable for use for trade.

The approval is subject to review on or after 1/11/86.

The approval may be withdrawn if instruments are used other than in accordance with the drawings and specifications lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 22/10/81

. Gilbarco Electroline Transac 11 or 11-5 self-serve system with driveway flowmeter models T090 A, B, or E; or T091 A, B, or E; or T092 A or B.

Variants: approved 22/10/81

1. Driveway flowmeter models of the pattern used without the T11 or T11-5 control console in STAND-ALONE mode.

2. Without the purchaser's indicator connected to the control console, in which case the system cannot be used in prepay mode.

Technical Schedule No 5/6A/78 dated 16/11/81 describes the pattern and variants 1 and 2.

Variants: approved 15/10/82

3. Driveway flowmeter models T180AB-7F and T181AB-7F used with or without the T11 or T11-5 control console.

4. Driveway flowmeter models T090 G, T091 G and T090 M used with or without the T11 or T11-5 control console.

5. Driveway flowmeter models T090 H, J, K, L and T091 H, J, K and L used with or without the T11 or T11-5 control console.

Technical Schedule No 5/6A/78 Variation No 1 dated 19/11/82 describes variants 3 to 5.

Variants: approved 5/5/83

6. Driveway flowmeter model T090 S used with or without the T11 or T11-5 control console.

7. Driveway flowmeter model T090 T used with or without the T11 or T11-5 control console.

8. Driveway flowmeter model T180 AB-8F used with or without the T11 or T11-5 control console.

Technical Schedule No 5/6A/78 Variation No 2 dated 25/5/83 describes variants 6 to 8.

Variant: approved 31/5/83

9. Driveway flowmeter models T090 N, P, Q and R or T091 M and N or T092 E and F as stand-alone units.

Technical Schedule No 5/6A/78 Variation No 3 dated 21/6/83 describes variant 9.

Variant: approved 11/10/83

10. With the pressure relief valve integral with the gas separator on any model driveway flowmeter of this approval.

Technical Schedule No 5/6A/78 Variation No 4 dated 31/10/83 describes variant 10.

Filing Advice

Certificate of Approval No 5/6A/78 dated 21/6/83 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6A/78 dated 31/10/83
Technical Schedule No 5/6A/78 dated 16/11/81
Technical Schedule No 5/6A/78 Variation No 1 dated 19/11/82
Technical Schedule No 5/6A/78 Variation No 2 dated 25/5/83
Technical Schedule No 5/6A/78 Variation No 3 dated 21/6/83
Technical Schedule No 5/6A/78 Variation No 4 dated 31/10/83
Test Procedure No 5/6A/78 dated 16/11/81
Figures 1 to 19 dated 16/11/81
Figures 20 to 22 dated 19/11/82.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/78

Pattern: Gilbarco Electroline Transac 11-5 Self-serve System

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

1. Description of Pattern

1.1

The pattern is a post-payment and prepayment self-serve driveway flowmeter system, comprising:

- up to 12 driveway flowmeters,
- a remotely located control console either T11 or T11-5 for the vendor,
- a purchaser's indicator located adjacent to the control console, and
- a communication interconnect box.

The system provides the operator with the following supervisory controls for each driveway flowmeter:

- repeat indications of the price and volume,
- a prepayment facility in whole dollars, and
- a remote unit-price changing function.

1.2 Control Console

The T11 and T11-5 control consoles (Figures 1, 2 and 3) comprise:

- a vendor's indicator shared by all driveway flowmeters, (Note (1))
- an emergency stop button, (Note (2))
- a key-operated switch, (Note (10))
- driveway flowmeter-selection buttons,
- an authorise button,
- a cash button,
- a credit button,
- an 11-button keyboard for entering numerical data into the memory,
- 4 push-on switches for selecting unit price (T11-5 only) and other managerial functions, (Note (10))
- 3 grade-selection buttons,
- a pump stop button, (Note (3))
- a volume/cash display button, (Note (4))
- a separate purchaser's indicator connected by cable.

In addition, the T11-5 control console allows price setting from the console when in self-serve mode.

Notes

Descriptive

(1) Vendor's indicator - is in three sections, pump, grade and amount; the pump section indicates the number of the driveway flowmeter which has been selected for display; the amount section displays:

(a) when in post-pay mode, a repeat indication of the price or volume indicated by the driveway flowmeter selected; this indication is only available after the nozzle is returned to its hang-up; and

(b) when in prepay mode, the flashing amount in whole dollars which has been prepaid and assigned to the driveway flowmeter selected; this indicator will also show the amount delivered to the nearest cent if a nozzle is returned to its hang-up before the prepaid value has been delivered.

The grade section indicates the grade of petrol for which the driveway flowmeter selected has been preset.

(2) Emergency stop button - when selected stops the pump motor of all driveway flowmeters without any loss of data and without terminating any delivery taking place (unless the nozzle is hung up); each driveway flowmeter is individually released, allowing the delivery to continue, by pressing the appropriate driveway flowmeter-select button and then the AUTHORISE button.

(3) Pump stop button - when pressed after selecting a driveway flowmeter will stop the pump motor of the selected driveway flowmeter without any loss of data or terminating the particular delivery. The driveway flowmeter is released as described for emergency stop functions.

(4) Volume/cash button - when pressed changes the price indication on the vendor's indicator to a volume indication and vice versa (Figures 1 and 2).

Operating

(5) Setting unit price on T11-5 control console - with MANAGER mode selected on the proprietor's key switch and PRICE SET push-button on, select the appropriate grade; the vendor's indicator will display the grade and the unit price presently used; set the new unit price on the keyboard to an accuracy of 0.1c; this will appear on the vendor's indicator and is entered into the system by pressing the AUTHORISE button. The unit-price change will take effect one minute after the AUTHORISE button has been pressed on those flowmeters delivering the selected grade. During the one-minute delay all the displays on the affected driveway flowmeters will be blank.

(6) Setting unit price in Stand Alone mode - the unit price is altered by the price setting switches in the top housing of the Electroline driveway flowmeters.

(7) Post-pay mode - after a delivery, pressing the appropriate driveway flowmeter-select button will display, on the console and on the purchaser's indicator* located adjacent to the console, the driveway flowmeter number and the value of the sale.

* The primary indications displayed by the driveway flowmeter should be retained on the driveway flowmeter until the transaction is completed.

The transaction is completed by pressing the CASH or CREDIT key; this will allow the driveway flowmeter to be authorised for the next transaction.

(8) Prepay mode - before a delivery, pressing a driveway flowmeter-select button at the console and keying-in a value by means of the 0 to 9 keyboard will intermittently display to the vendor and the purchaser the driveway flowmeter number and the amount preset.

Pressing the AUTHORISE button will confirm the transaction and transfer the prepaid value into the system memory and to the preset-value indicator on the driveway flowmeter. Once entered, the authorisation cannot be cancelled. If a delivery is terminated before the prepaid value is reached, the driveway flowmeter will be locked out of service for three minutes, during which time pressing the driveway flowmeter-select button will then display to the vendor and purchaser the amount delivered. The preset amount can be displayed at any time by selecting the appropriate driveway flowmeter and the "0" key sequentially.

(9) Driveway flowmeter status lights - indicate various PAY situations by short or long flashing or continuous illumination.

(10) Managerial functions - integral with the self-serve system are other facilities which are classified as managerial functions which do not affect the performance of the measuring instrument; the use of these functions does not cause any loss of measurement data or measurement control; these functions are implemented by the use of the key-switch and the four mode switches:

(a) Key-switch in OFF position; transaction started can be completed but no new transaction can be started.

(b) Key-switch in operator position:

(i) Mode switch ON activated, normal transaction is performed.

(ii) Mode switch INVENTORY activated; the volume of each grade of petrol in the supply tank can be displayed and a new value of volume can be added to the present volume.

(iii) Mode switch SHIFT TOTALS activated; the volume of each liquid sold, the value of credit allowed and the cash received during the shift, can be read and the total then reset to zero.

(iv) Mode switch STATION TOTALS: the total volume of liquid sold, the total value of credit allowed and the total value of cash received by the service station, can be displayed.

(c) Key-switch in MANUAL position: the operator can change a particular driveway flowmeter from self-serve to attendant operation or vice versa.

(d) Key-switch in MANAGER position and switch in PRICE SET; the manager can change the price of each grade of product.

1.3 Purchaser's Indicator

The purchaser's indicator is located near the control console and repeats the control-console indications when the system is in post-pay or prepay modes; the instrument cannot operate in prepay mode without this indicator (Figure 4).

1.4 Communications Interconnect Box

This box comprises 12 switches and 2 indicator lights allowing the operator to electrically disconnect any of the driveway flowmeters from the control console; the driveway flowmeter can then operate in attendant mode when STAND ALONE mode is selected at the driveway flowmeter (Figure 5).

1.5 Electroline Driveway Flowmeters

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

(a) Single, low flow, Models T090 A, B and E (Figures 6 and 7);

(b) Dual, low flow, Models T091 A, B and E (Figures 8 and 9).

Driveway flowmeters Models T090 A, B and E, and T091 A, B and E, are for delivering petroleum products at flow rates between 15 and 50 L/min. The hydraulic diagrams for these flowmeters are illustrated in Figures 10 to 13. The instrument data plates are marked APPROVED FOR PETROL or APPROVED FOR KEROSENE.

(c) Single, high flow, Models T092 A and B (Figures 6 and 7).

Driveway flowmeters Models T092 A and T092 B are for delivering petroleum product at flow rates between 15 and 90 L/min. The hydraulic diagrams for these flowmeters are illustrated in Figures 14 and 15. The instrument data plates are marked APPROVED FOR PETROL or APPROVED FOR KEROSENE or APPROVED FOR DISTILLATE. The component parts of each driveway flowmeter are listed in Figure 16.

Models T090 B, T091 B and T092 B do not have customer preset panels and indicators and therefore cannot be used in PREPAY transactions.

Models T090 E, T091 E, and T092 A have preset slow down valves. Preset on models T090 A and T091 A is controlled by the motor and pump speed.

Each driveway flowmeter is marked with a pump number.

Range:

Volume:	995.00 L in 0.01 L increments
Price:	$995.00 in 1 c increments
Unit Price:	0.5 to 999.9 c/L in 0.1 c increments
Totaliser	9999999 L in 1 L increments

Each time the nozzle is removed from its hang-up position all displays will blank, then show all 8's, then blank again, then the volume and price indicators will go to zero, the unit price will be displayed and the motor will start.

1.6 Allocation Limit Switch

In the top housing of the driveway flowmeter, see Figure 19, there is an allocation limit switch which may be set for either $5.00 or $10.00 or OFF. This toggle switch is wired into the preset panel $5.00 and $10.00 select buttons. When set for either $5.00 or $10.00 the preset panel indicator will display the amount and the preset panel buttons will be inoperative.

1.7 Sealing

(a) The cover of the console is prevented from being moved by a stamping plug (Figures 1 and 2);

(b) The data cable for other equipment is internally connected and, if connected, the cable for the purchaser's indicator is permanently fitted to the console (Figure 3);

(c) Access to the meter calibration and the gas separator test valve are both prevented by lead sealing plugs (Figure 17);

(d) The meter drive shaft and totalisers are sealed by metal plates on either side of the flowmeter, held in place with sealing plugs (Figure 18);

(e) The electronics section is sealed by a metal plate and sealing plug (Figure 19).

2. Variants

2.1 Variant 1

Driveway flowmeter Models T090 A, B and E, T091 A, B and E and T092 A and B used without the T11 or T11-5 control console in STAND ALONE mode.

2.2 Variant 2

The pattern without the purchaser's indicator connected to the control console, in which case the system cannot be used in prepay mode.

TEST PROCEDURE No 5/6A/78

1. Flowmeter Performance

For each driveway flowmeter:

(a) record the unit price set, and the operating mode selected on the driveway flowmeter (self-serve or stand alone) and on the control console (manual mode or operator mode) for returning instrument to normal use after testing;

(b) select stand alone mode by the switch at the top of the driveway flowmeter (Figure 19) and

(c) carry out the following tests:

(i) Accuracy - the maximum permissible error at any flow rate between maximum and 15 L/min is ±0.3%.

(ii) Gas separation - the progressive opening of the gas-separation test valve should allow 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 L/min 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 L/min, 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.

2. Price-computing and Volume Circuit

In turn for each driveway flowmeter:

(a) Select stand alone mode by the switch on the top of the driveway flowmeter.

(b) Set unit price on 50 c/L on the computer and deliver exactly 6.00, 10.00, and 14.00 litres, stopping at each volume; without hanging up the nozzle, ensure that the prices indicated are exactly $3.00, $5.00, and $7.00.

(c) Set the unit price on $5/L on the computer and deliver exactly 6.00, 10.00 and 14.00 litres, stopping at each volume; without hanging up the nozzle, ensure that the prices indicated are exactly $30.00, $50.00 and $70.00.

(d) Whilst a delivery is in progress alter one unit-price thumbwheel - the pump motor will stop, the price digits will blank and the volume indicator will show the quantity dispensed. The unit price displayed will be that just entered. The pump motor will not re-start until the nozzle has been returned to its holster and then removed.

Repeat Test (d) for each thumbwheel.

3. Pump Preset

This test only applies if a preset panel and indicator are fitted to the driveway flowmeter.

(a) For any unit price, at the driveway flowmeter enter a value on the keyboard to be delivered, say, $2.00.

(b) Check that the indicator on the preset panel on the driveway flowmeter shows the preset amount.

(c) Make the delivery - the dispenser will automatically stop and the exact value should be indicated.

4. T11-5 or T11 Self-serve System

(a) Ensure that all driveway flowmeters under test are set to self-serve mode. If it is desired to isolate a driveway flowmeter from the Transac system during the 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 STAND ALONE 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 remains in the self-serve mode of operation.

(b) (i) At the console select and authorise a driveway flowmeter by pressing the PUMP SELECT and AUTHORIZE buttons.

(ii) Repeat (i) for a number of driveway flowmeters.

(iii) For each driveway flowmeter selected in (i) and (ii) above:

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

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

(c) record the driveway flowmeter number, and the price and volume indicated on the computer;

(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.

(iv) At the control console press the select button for each driveway flowmeter in turn and by pressing the VOL/CASH display button, check each price and volume display against the price and volume recorded for each driveway flowmeter (refer step (iii)(c) above); the price and volume displayed will exactly equal the price and volume indicated on the driveway flowmeter.

(v) Select each driveway flowmeter and complete the transaction by pressing either the CASH or CREDIT key. This will allow the driveway flowmeter to be re-authorised.

(c) Prepay Mode: The following tests (i) to (ix) only apply if the purchaser's indicator is plugged into the console and a preset panel and indicator are fitted to the driveway flowmeters which are to be used in prepay transactions. If either of these conditions is not the case then refer to paragraph (x) below.

(i) At the console select a driveway flowmeter, enter a value by the 0-9 keyboard for the product to be delivered, of say, $2.00, and press CASH or CREDIT; then authorise the driveway flowmeter by pressing the AUTHORISE key.

Check that the preset amount is showing on the console and on the purchaser's indicator.

(ii) Repeat (i) for a number of driveway flowmeters.

(iii) At each driveway flowmeter selected:

- the preset indicator will indicate the preset value;
- make a delivery; the driveway flowmeter should automatically stop when the exact value indicated by the preset indicator is reached; return the nozzle to the hang-up position;
- at the console press the select button for the driveway flowmeter and the VOL/CASH display button and check that the volume and price displayed agree with those indications at the driveway flowmeter.

(iv) For at least one driveway flowmeter, repeat (i), then

(v) Make a delivery and return the nozzle to its hang-up before the delivery is completed.

(vi) Remove the nozzle; the pump will not restart.

(vii) At the console select the driveway flowmeter authorised and used in (iv) and (v); the price of the delivery will be displayed. Complete the transactions by pressing the CASH or CREDIT key.

(viii) Try to authorise the driveway flowmeter in (iv) and (v); this will be impossible for approximately three minutes from the time of nozzle hang-up.

(ix) Check that the purchaser's indicator cannot be unplugged from the control console once the control console has been sealed.

(x) If there is a driveway flowmeter on site to which a preset panel and indicator are not fitted, and/or there is no purchaser's indicator connected to the control console, try to make a prepay transaction as in 4(c)(i). No indication should show on the console, that is, no prepay transaction is possible without a purchaser's indicator connected to the console, and secondly, where a purchaser's indicator is connected to the console, a driveway flowmeter to which a preset panel and indicator are not fitted cannot be engaged in a prepay transaction.

(d) (i) At the console authorise a number of driveway flowmeters as in (b)(i).

(ii) Make a delivery from several of these driveway flowmeters and before the delivery is completed operate the EMERGENCY STOP at the console.

All driveway flowmeters will stop delivering.

(iii) Return at least one nozzle to its hang-up.

(iv) At the console select and authorise each driveway flowmeter. All the driveway flowmeter pumps will restart except the one on which the nozzle has been returned to its hang-up; for this driveway flowmeter the transaction must be terminated by pressing the CASH or CREDIT key.

Note: If additional delivery is needed from the driveway flowmeter with the hung-up nozzle, a new transaction must be started.

(v) On all the other driveway flowmeters the delivery and transaction can be continued.

(e) Return the system to the mode of operation recorded in 1(a).

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/78

VARIATION No 1

Pattern: Gilbarco Electroline Transac 11-5 Self-serve Driveway Flowmeter System

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

1. Description of Variants

1.1 Variant 3

The following types of driveway flowmeters, (similar to Gilbarco round casing models approved in NSC Approval No 5/6A/62, now housed in modified Gilbarco round casings) may be used:

(a) Model T180AB-7F single, low flow (similar to model T180AB-4F).

(b) Model T181AB-7F dual, low flow (similar to model T181AB-4F).

Each is fitted with preset panels and hosemast (Figure 20), and preset is controlled by motor and pump speed using a T350CH Calcopac. They may be used in a self-serve system controlled by a T11 or T11-5 control console or without the control console as stand-alone units.

Each driveway flowmeter is marked with a driveway flowmeter number when used as part of a self-serve system.

These driveway flowmeter models are for delivering petroleum products at flow rates between 15 and 50 L/min. The instrument data plates are marked APPROVED FOR PETROL or APPROVED FOR KEROSENE.

Volume	995.00 L in 0.01 L increments
Price	$995.00 in 1c increments
Unit price	0.5 to 999.9 c/L in 1c increments
Totaliser	9 999 999 L in 1 L increments.

Each time the nozzle is removed from its hang-up, all displays will blank, then show all 8's, then blank again; then the volume and price indicators will go to zero, the unit price will be displayed and the motor will start.

1.1.1 Sealing

As per Technical Schedule 5/6A/78 dated 16/11/81 paragraphs 1.7(a), (b), (c) and the following:

(a) The totalisers located on the top left corner of the Calcopac dial face are individually sealed with lead and wire (Figure 21).

(b) The meter output shaft and Calcopac input shaft are protected from interference by a single metal tube (similar to the method shown in Figure 22).

1.2 Variant 4

The following types of driveway flowmeters, formerly Gilbarco Salesmaker models now rehoused in Gilbarco Electroline casings, may be used. They are fitted with a hosemast and used as stand-alone units, or with a T11 or T11-5 control console in which case prepay transactions are inhibited as no customer preset panels are fitted.

(a) Model T090 G single, low flow (similar to Figure 7).

(b) Model T091 G dual, low flow (similar to Figure 9).

(c) Model T090 M single, low flow (similar to Figure 7).

These driveway flowmeter models are for delivering petroleum products at flow rates between 15 and 50 L/min. The instrument data plates are marked APPROVED FOR PETROL or APPROVED FOR KEROSENE. Model T090 M is also approved for use with distillate and should be marked appropriately when so used.

Each driveway flowmeter is marked with a driveway flowmeter number when used as part of a self-serve system.

Volume	995.00 L in 0.01 L increments
Price	$995.00 in 1c increments
Unit price	0.5 to 999.9 c/L in 1c increments
Totaliser	9 999 999 L in 1 L increments

Each time the nozzle is removed from its hang-up, all displays will blank, then show all 8's, then blank again; then the volume and price indicators will go to zero, the unit price will be displayed and the motor will start.

1.2.1 Sealing

Sealing is in a similar manner to that described in Technical Schedule 5/6A/78 dated 16/11/81 paragraph 1.7, as appropriate.

1.3 Variant 5

The following types of driveway flowmeters, formerly Gilbarco Trimline models now rehoused in Gilbarco Electroline casings, may be used. They are fitted with a hosemast and used with or without a T11 or T11-5 control console.

(a) Models T090 J and L single, low flow (similar to Figure 7).

(b) Models T091 J and L dual, low flow (similar to Figure 9).

(c) Models T090 H and K single, low flow (similar to Figure 6).

(d) Models T091 H and K dual, low flow (similar to Figure 8).

Models T090 J, L and T091 J, L do not have customer preset panels and indicators and therefore cannot be used in prepay transactions.

Models T090 H, K, and T091 H, K have preset which is controlled by the motor and pump speed.

Each driveway flowmeter is marked with a driveway flowmeter number when used as part of a self-serve system.

These driveway flowmeter models are for delivering petroleum products at flow rates between 15 and 50 L/min. The instrument data plates are marked APPROVED FOR PETROL or APPROVED FOR KEROSENE.

Volume	995.00 L in 0.01 L increments
Price	$995.00 in 1c increments
Unit price	0.5 to 999.9 c/L in 0.1c increments
Totaliser	9 999 999 L in 1 L increments.

Each time the nozzle is removed from its hang-up, all displays will blank, then show all 8's, then blank again; then the volume and price indicators will go to zero, the unit price will be displayed and the motor will start.

1.3.1 Sealing

Sealing is in a similar manner to that described in Technical Schedule No 5/6A/78 dated 16/11/81 paragraph 1.7, as appropriate.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/78

VARIATION No 2

Pattern: Gilbarco Electroline Transac 11-5 Self-serve Driveway Flowmeter System

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

1. Description of Variants

1.1 Variant 6

Gilbarco Electroline driveway flowmeter model T090 S, similar to model T090 A of the pattern and shown in Figure 6, but with the hydraulics modified to allow the dispensing of distillate.

This model may be used with or without the T11 or T11-5 control console.

1.2 Variant 7

Gilbarco Electroline driveway flowmeter model T090 T, similar to model T090 B of the pattern and shown in Figure 7, but with the hydraulics modified to allow the dispensing of distillate.

This model may be used with or without the T11 or T11-5 control console.

1.3 Variant 8

Gilbarco round casing driveway flowmeter model T180 AB-8F, similar to the flowmeter shown in Figure 20, and with hydraulics the same as those of models T090 S and T090 T (variants 6 and 7).

This model may be used with or without the T11 or T11-5 control console.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/78

VARIATION No 3

Pattern: Gilbarco Electroline Transac 11-5 Series Self-serve Driveway Flowmeter System

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

1. Description of Variant 9

The following models of Gilbarco driveway flowmeters are approved for use as stand-alone units:

- T090 N - similar to model T090 A of the pattern and shown in Figures 6 and 10.
- T090 P - similar to model T090 B of the pattern and shown in Figures 7 and 10.
- T090 Q - similar to model T090 S of variant 6 and shown in Figure 6.
- T090 R - similar to model T090 T of variant 7 and shown in Figure 7.
- T091 M - similar to model T091 A of the pattern and shown in Figures 8 and 12.
- T091 N - similar to model T091 B of the pattern and shown in Figures 9 and 12.
- T092 E - similar to model T092 A of the pattern and shown in Figures 6 and 14.
- T092 F - similar to model T092 B of the pattern and shown in Figures 7 and 15.

These driveway flowmeters are identical to the respective models of the pattern (except as modified for variants 6 and 7 where applicable) but with the STAND-ALONE/SELF-SERVE switch (Figure 19) removed and with modified electronics to prohibit connection to a self-serve console.

1.1 Sealing

Access to the calibration adjustments is prevented by a lead plug as shown in Figure 17, which may be used for a verification mark. No other sealing is required.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/78

VARIATION No 4

Pattern: Gilbaro Electroline Transac 11-5 Series Self-serve Driveway Flowmeter System

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

1. Description of Variant 10

With the pressure relief valve integral with the gas separator on any model driveway flowmeter of this approval.

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NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6A/78

CHANGE No 1

The following changes are made to the approval documentation for the

Gilbarco Electroline Transac 11-5 Series Self-serve Driveway Flowmeter System

submitted by Gilbarco Aust. Ltd
12-38 Talavera Road
North Ryde NSW 2113.

1) In Test Procedure No 5/6A/78 dated 16/11/81, amend test 1. Flowmeter Performance as detailed below:

1. Rewrite paragraph (b) as:

(b) (i) select STAND-ALONE mode by the switch at the top of the driveway flowmeter (Figure 19);

In addition, on some instruments it will also be necessary to proceed as follows:

(ii) set the communications interconnect box switch for the particular driveway flowmeter to the OFF position (Figure 5);

(iii) turn the power to the particular driveway flowmeter off, wait three seconds, turn power back on;

(iv) set the communications interconnect box switch for the particular driveway flowmeter to the ON position.

The driveway flowmeter is now in STAND-ALONE mode.

2. Add paragraph (d) as:

(d) To return the driveway flowmeter to SELF-SERVE mode, it is necessary to proceed as follows:

(i) select SELF-SERVE mode by the switch at the top of the driveway flowmeter;

(ii) at the control console authorise the particular driveway flowmeter.

The instrument is now in SELF-SERVE mode.

2) In Technical Schedule No 5/6A/78 Variation No 1 dated 19/11/82, amend the list of models given in clause 1.2 Variant 4 as detailed below:

a) Model T090 G (model T090 U *) single, low flow (similar to Figure 7).
b) Model T091 G (model T091 P *) dual, low flow (similar to Figure 9).
c) Model T090 M (model T090 V *) single, low flow (similar to Figure 7).

* When capable of being used only as stand-alone driveway flowmeters.

Signed

K Adam

Acting Executive Director

FIGURE 5/6A/78 - 1

T11 Console

FIGURE 5/6A/78 - 2

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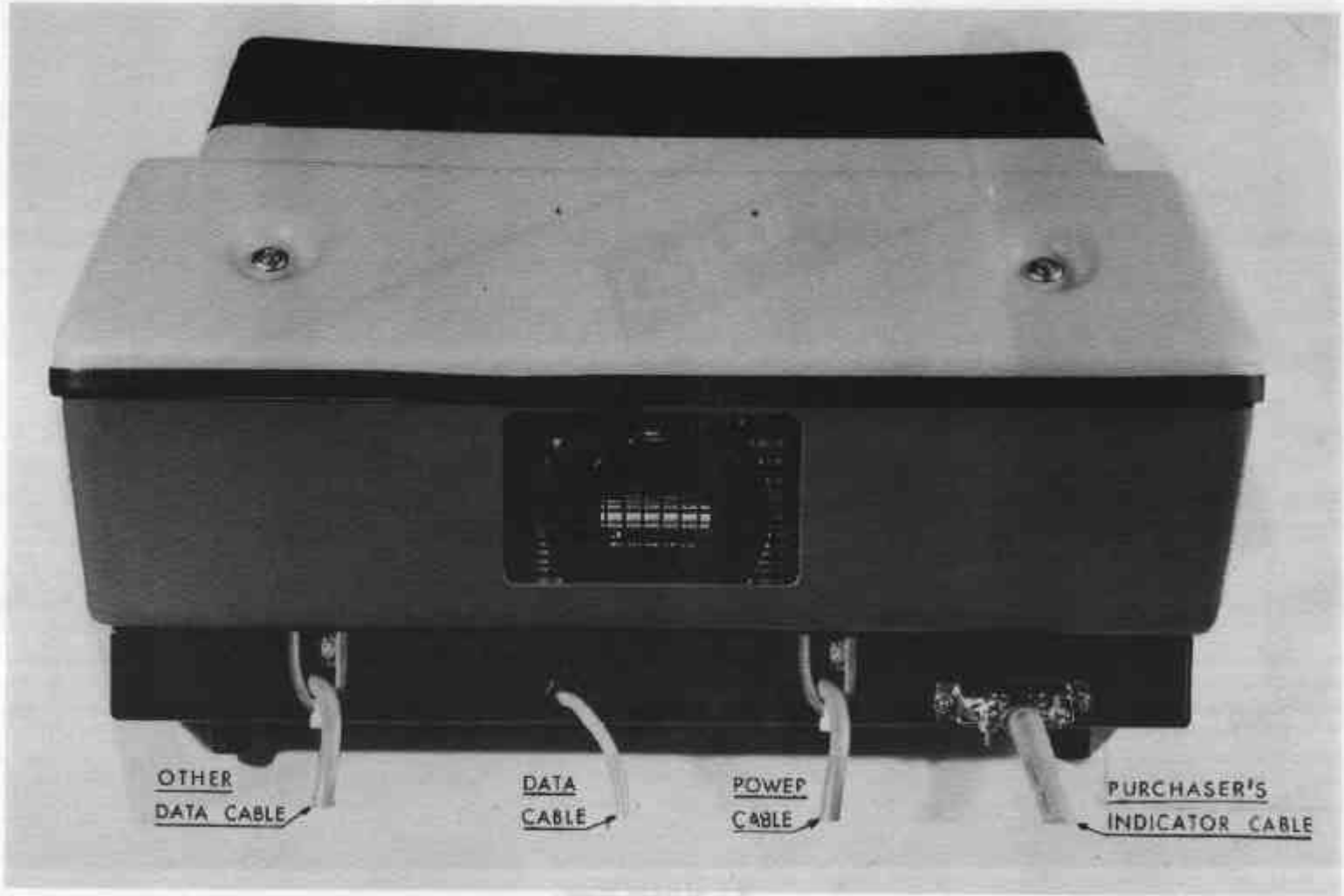
T11-5 Console

FIGURE 5/6A/78 - 3

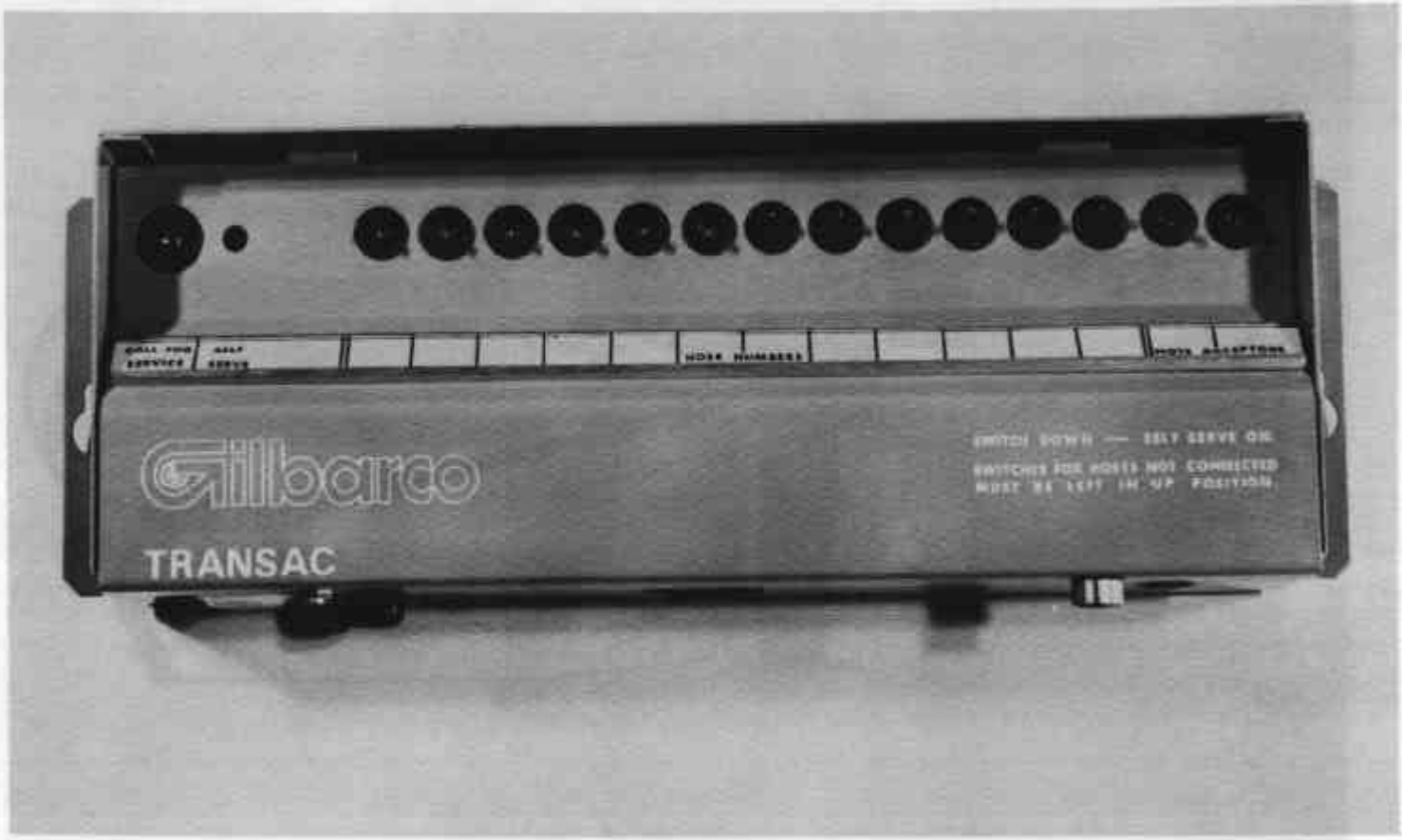


T11 and T11-5 Console - Rear View

FIGURE 5/6A/78 - 4

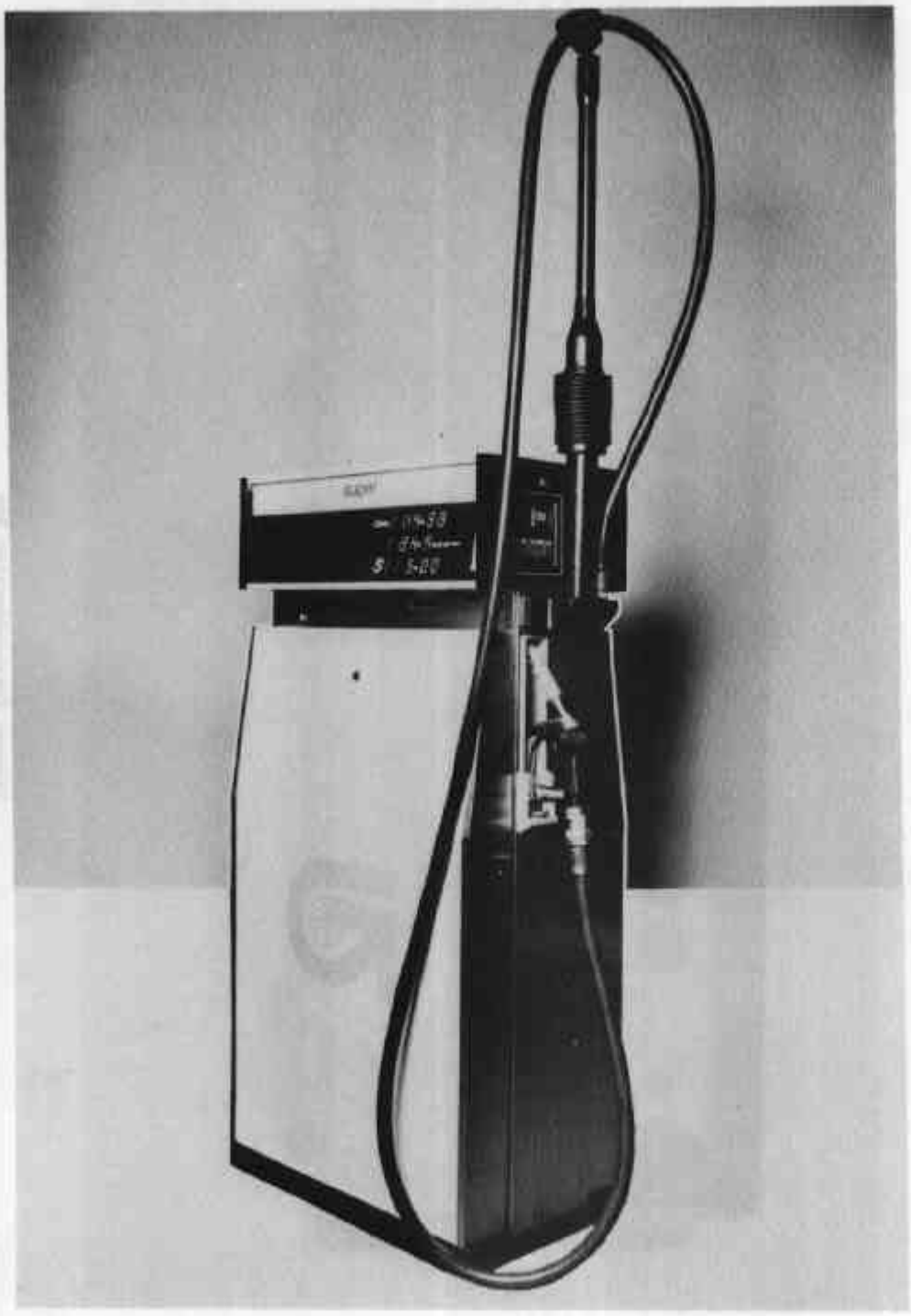
Purchaser's Indicator

FIGURE 5/6A/78 - 5



Transoc Interconnection Box

FIGURE 5/6A/78 - 6



Gilbarco Driveway Flowmeter Models T090 A and E, and Model T092 A

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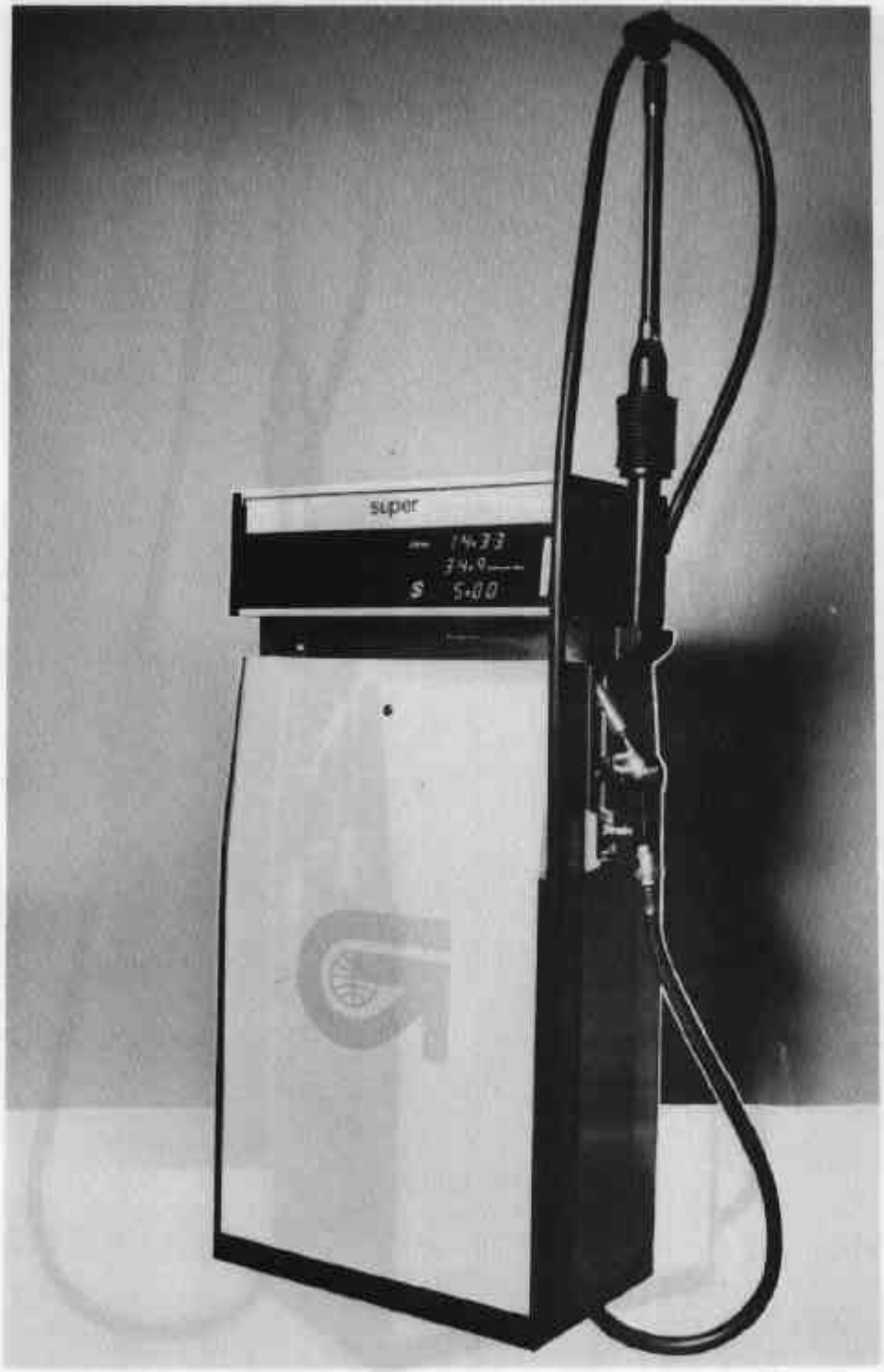
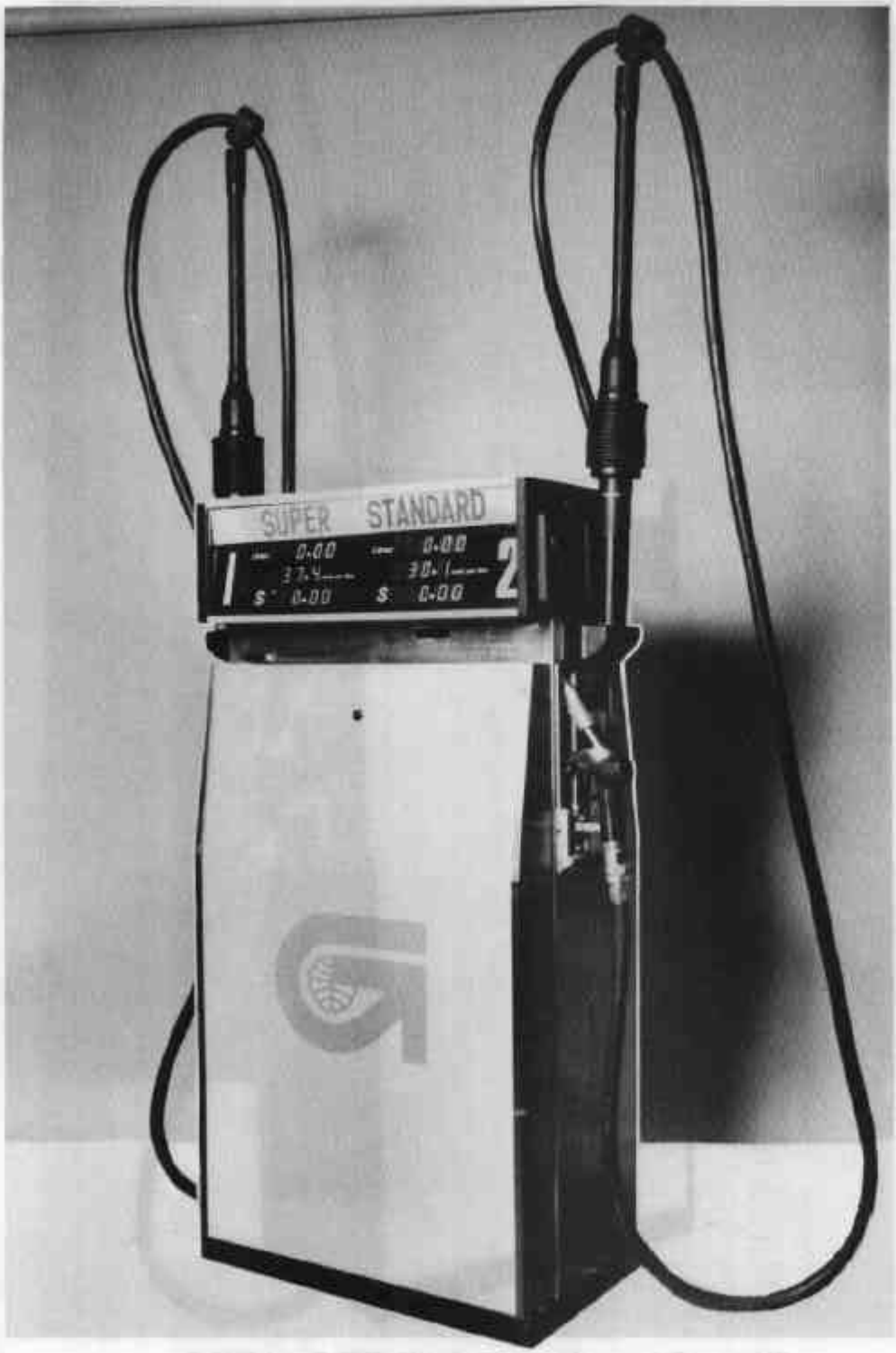
FIGURE 5/6A/78 - 7



Gilbarco Driveway Flowmeter Models T090 B and T092 B

16/11/81

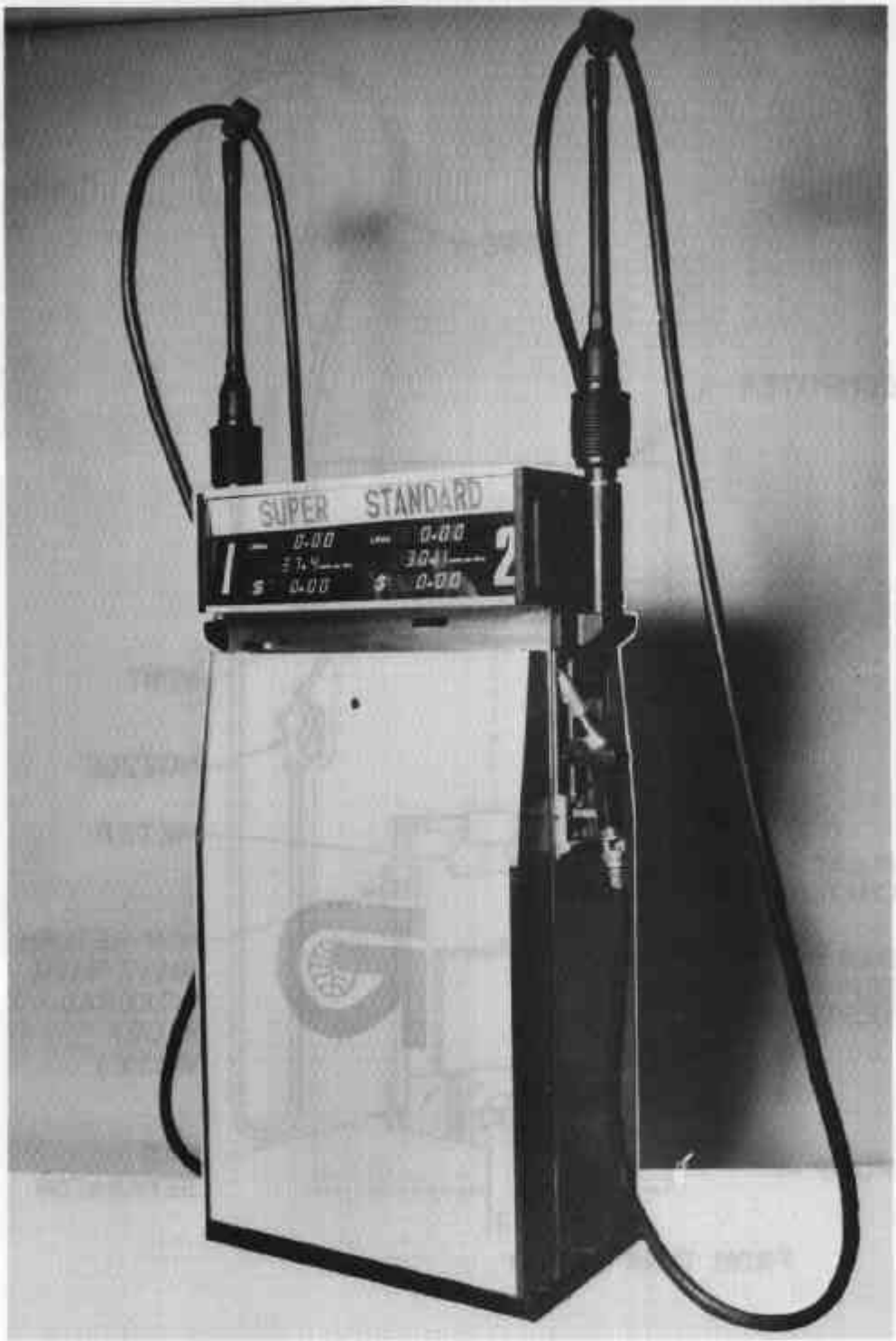
FIGURE 5/6A/78 - 8



Gilbarco Driveway Flowmeters Models T091 A and E

16/11/81

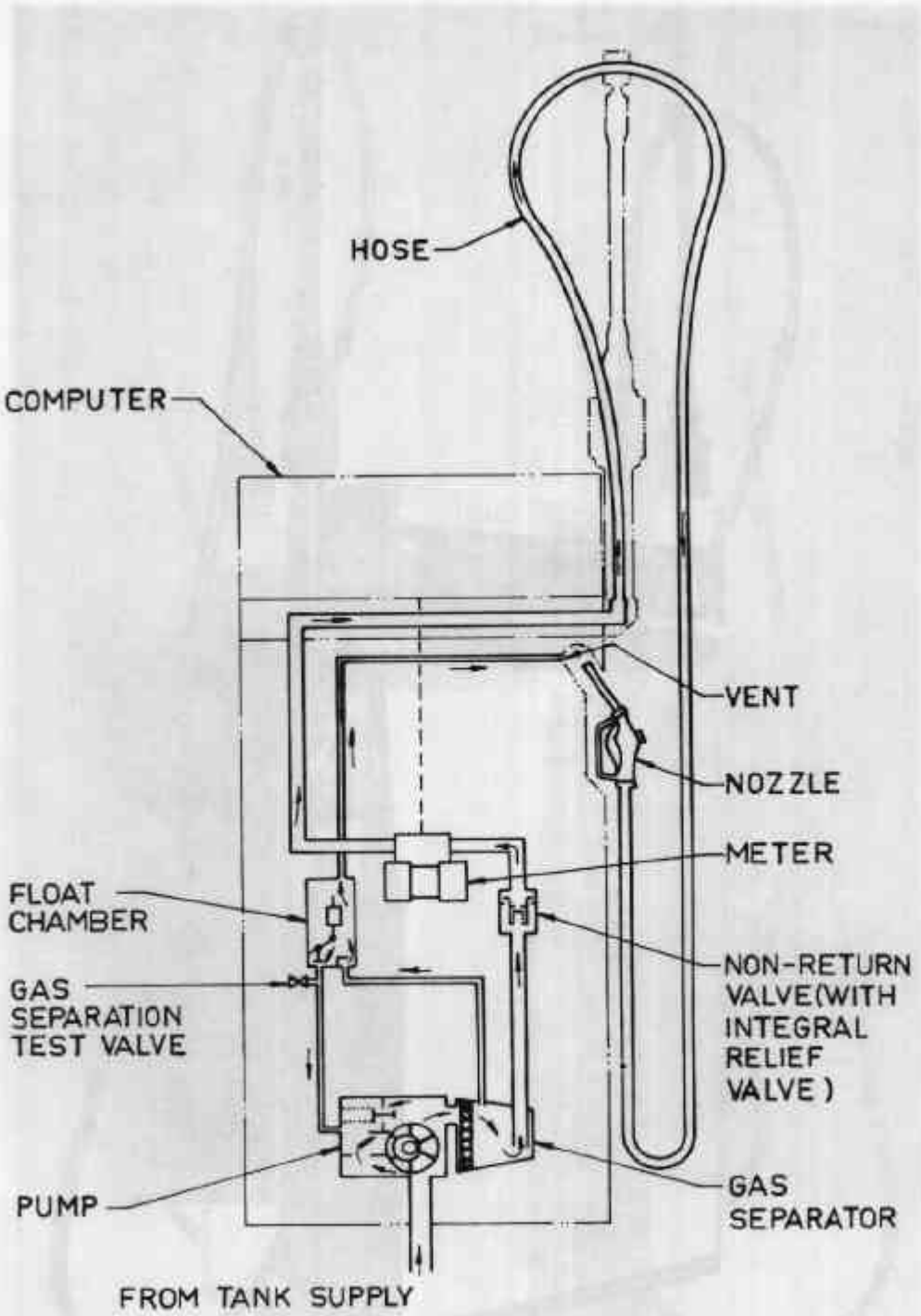
FIGURE 5/6A/78 - 9



Gilbarco Driveway Flowmeter Model T091 8

16/11/81

FIGURE 5/6A/7B - 10



Hydraulic Diagram, Models T090 A and B

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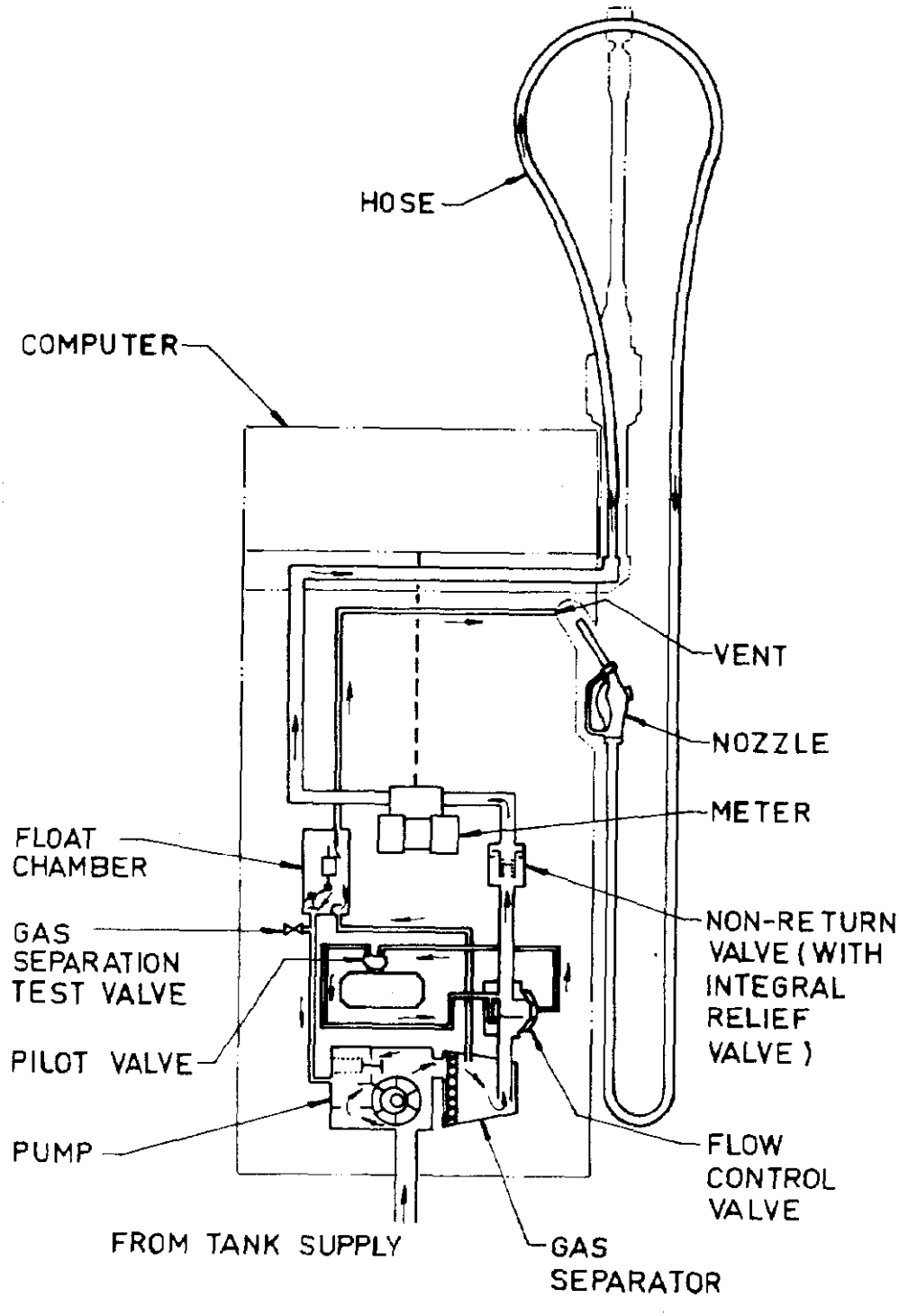
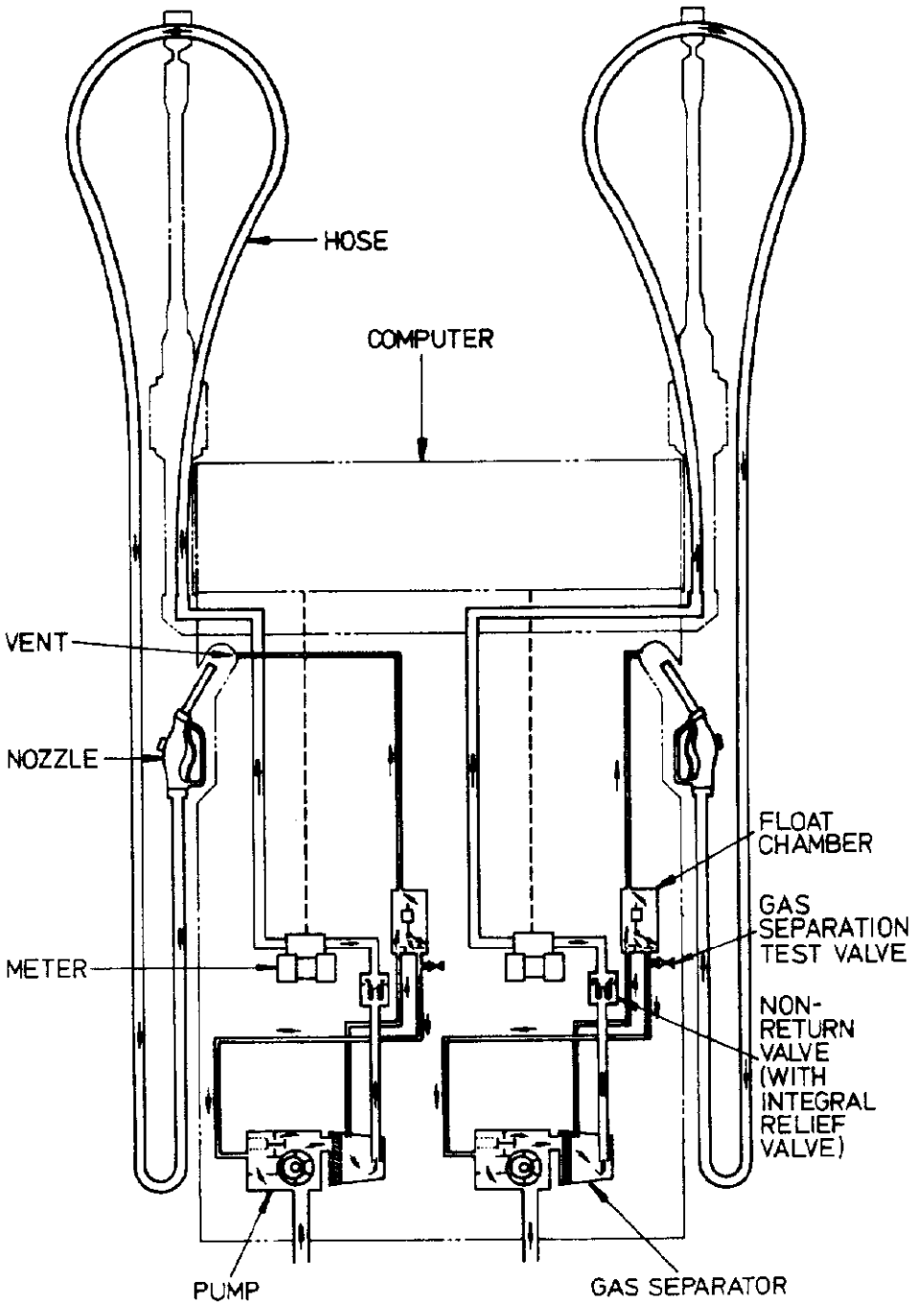
FIGURE 5/6A/78 - 11



Hydraulic Diagram, Model T090 E

16/11/81

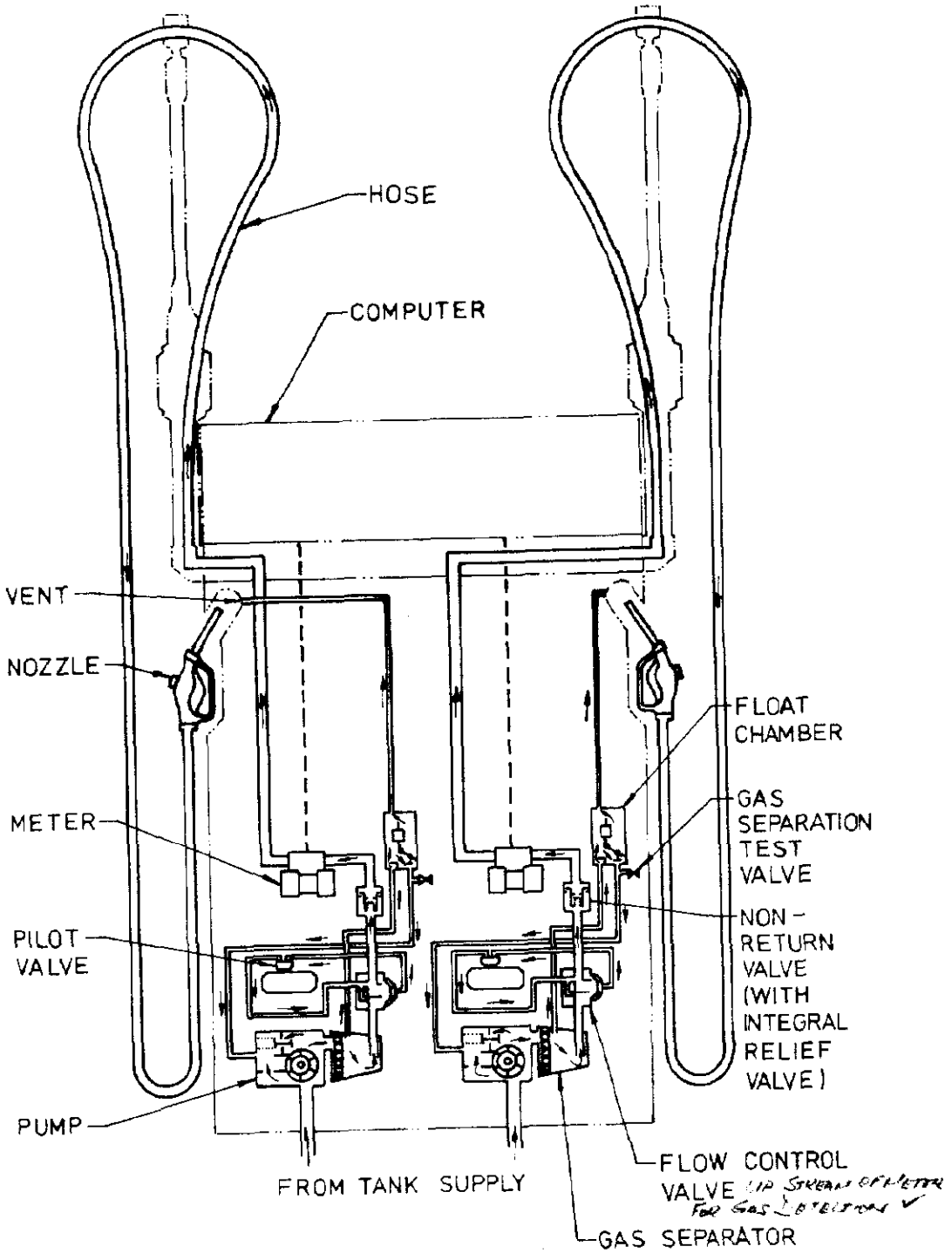
FIGURE 5/6A/78 - 12



Hydraulic Diagram, Models T091 A and B

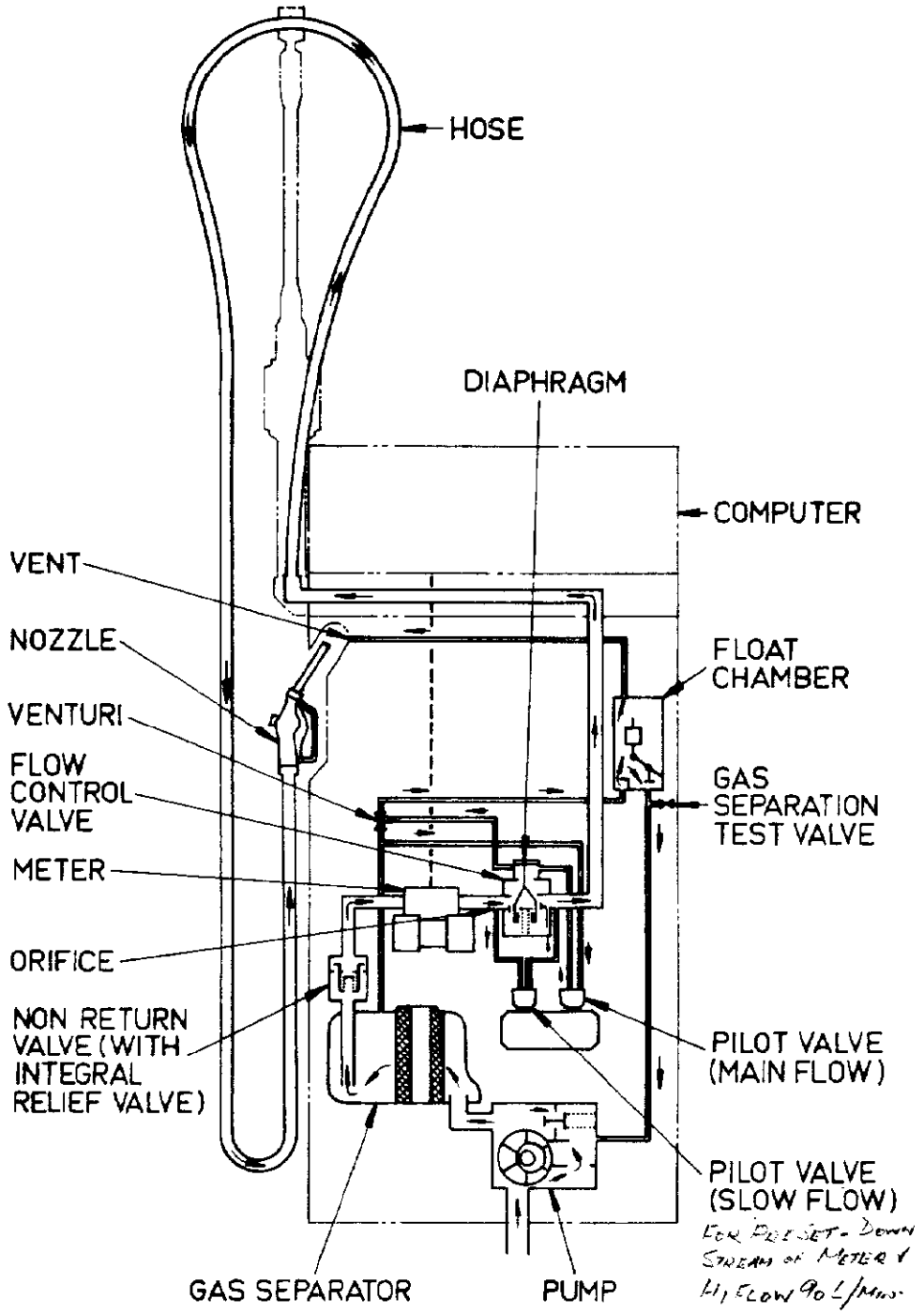
16/11/81

FIGURE 5/6A/78 - 13



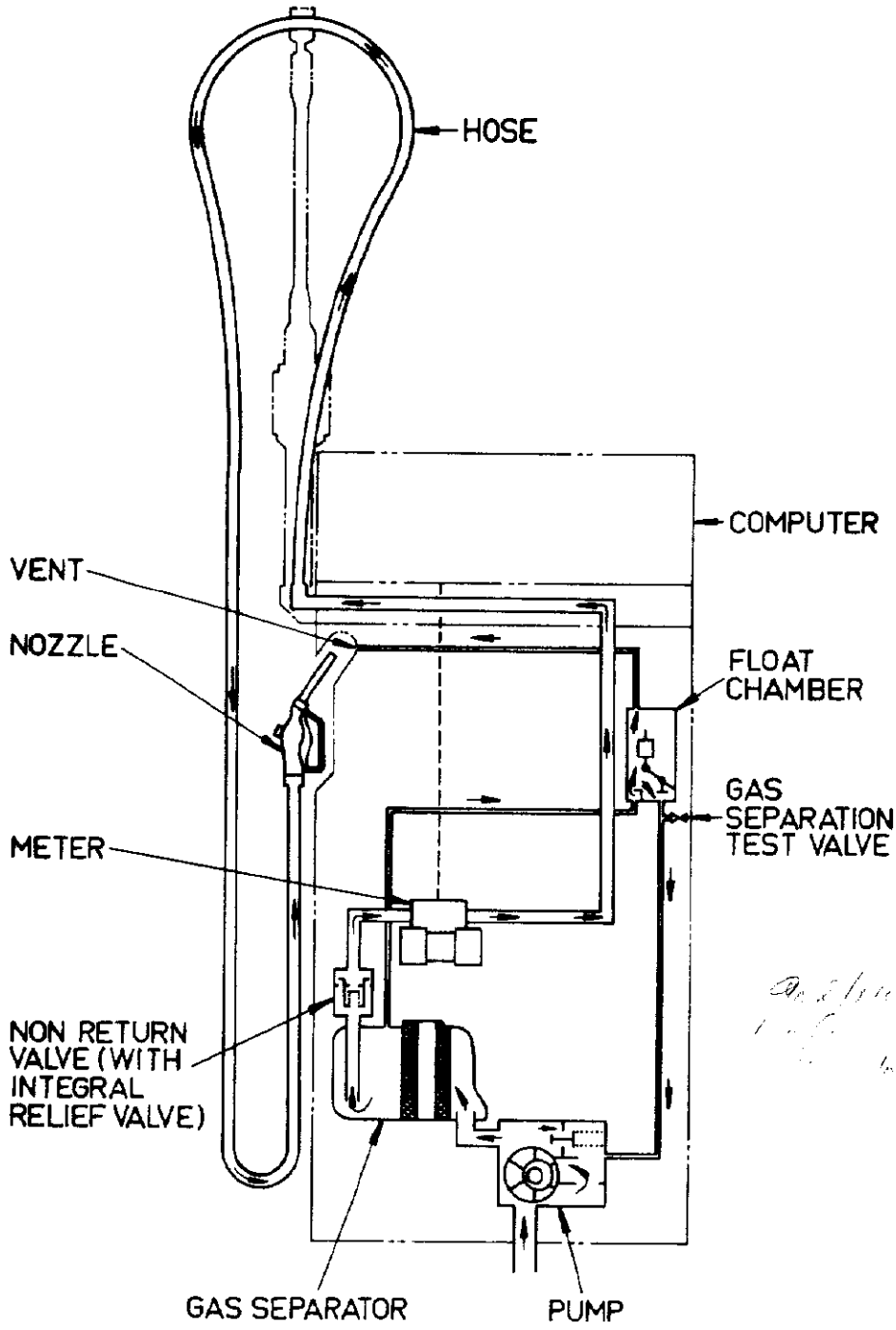
Hydraulic Diagram, Model T091 E

16/11/81



Hydraulic Diagram, Model T092 A

FIGURE 5/6A/78 - 15



Hydraulic Diagram, Model T092 B

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FIGURE 5/6A/78 -16

COMPONENT	PART NO.	FLOWMETER							
		T090			T091			T092	
		A	B	E	A	B	E	A	B
Pump	T258AM	*	*	*	*	*	*		
Pump	T258AL							*	*
Gas Separator	T257AK							*	*
Float Chamber	T257AC	*	*	*	*	*	*		
Float Chamber	T257AD							*	*
Gas-separation test valve	DK01745	*	*	*	*	*	*	*	*
Meter	T262AR	*	*	*	*	*	*		
Meter	T262AJ							*	*
Non-return valve	T260AF	*	*	*	*	*	*		
Non-return valve	T260AH							*	*
Flow-control valve	DK01044			*			*		
Flow-control valve	DR00929-001							*	
Pilot valve (main flow)	AN20475-15			*			*	*	
Pilot valve (slow flow)	AN20475-15							*	
Nozzle ZVA Slimline		a	a	a	a	a	a	a	a
Nozzle ZVA 25		a	a	a	a	a	a	a	a
Nozzle EMCO 200A		a	a	a	a	a	a	a	a
Nozzle STM 363		a	a	a	a	a	a	a	a
Nozzle STM 377		a	a	a	a	a	a	a	a
Nozzle OPW 1A		a	a	a	a	a	a	a	a
Nozzle OPW 1AS		a	a	a	a	a	a	a	a
C.D. Module electronics assembly	DT02839-001	*		*					
C.D. Module electronics assembly	DT02839-002		*						
C.D. Module electronics assembly	DT02839-003							*	
C.D. Module electronics assembly	DT02839-004								
C.D. Module electronics assembly	DT02832-001				*		*		
C.D. Module electronics assembly	DT02832-002					*			
Totaliser assembly	DR02803	*	*	*	*	*	*	*	*
T11-5 Console		¶	¶	¶	¶	¶	¶	¶	¶
Purchaser's Indicator	DR02014	¶	¶	¶	¶	¶	¶	¶	¶
Communications interconnect box	T173BF	¶	¶	¶	¶	¶	¶	¶	¶
Final Filter		¶	¶	¶	¶	¶	¶	¶	¶
T11 Console		¶	¶	¶	¶	¶	¶	¶	¶

* - indicates required components
a - indicates alternative components, one of which is required
¶ - indicates optional components

Compatibility Table

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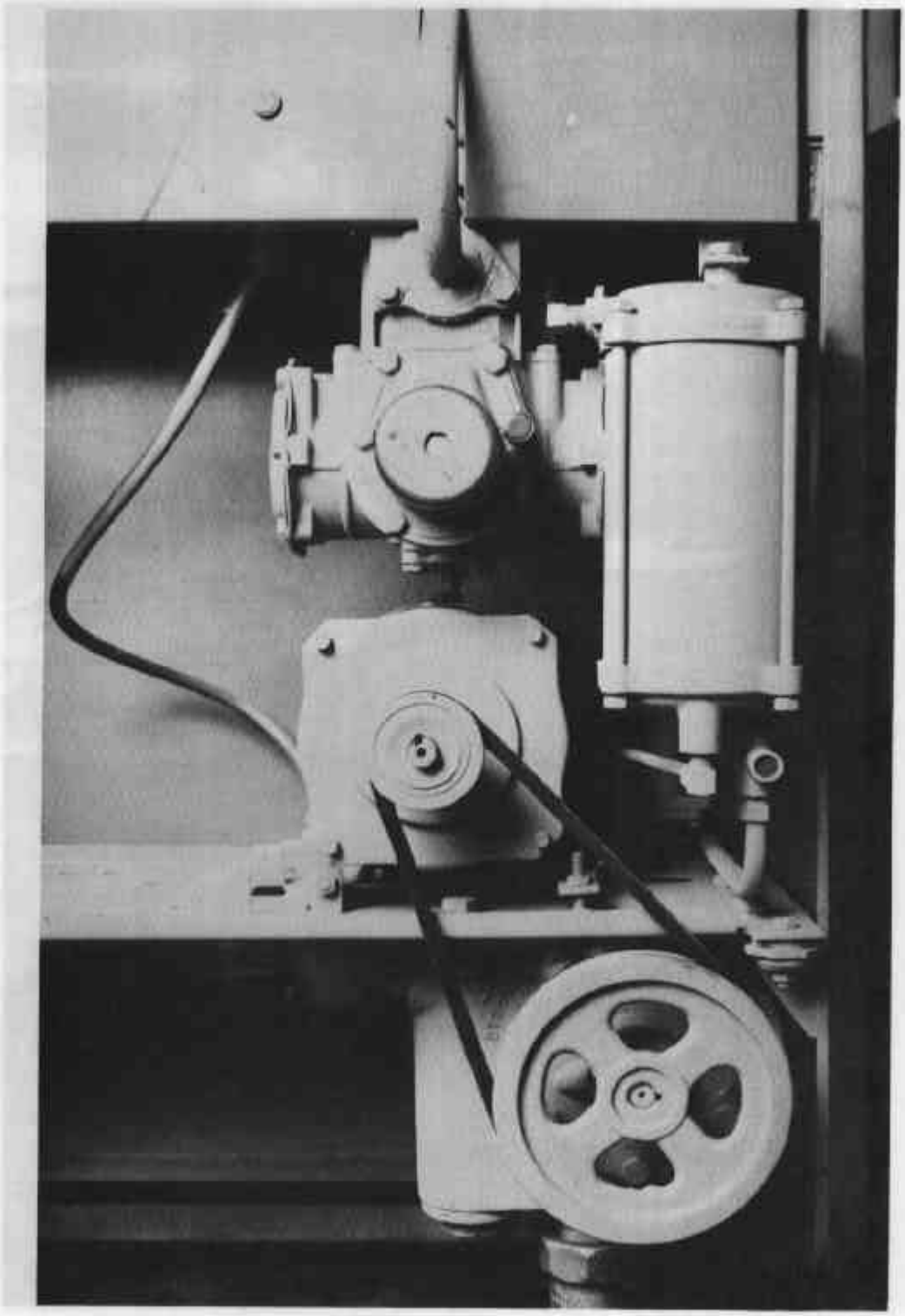
FIGURE 5/6A/78 - 17



Sealing of Meter and Gas Separation Test Valve

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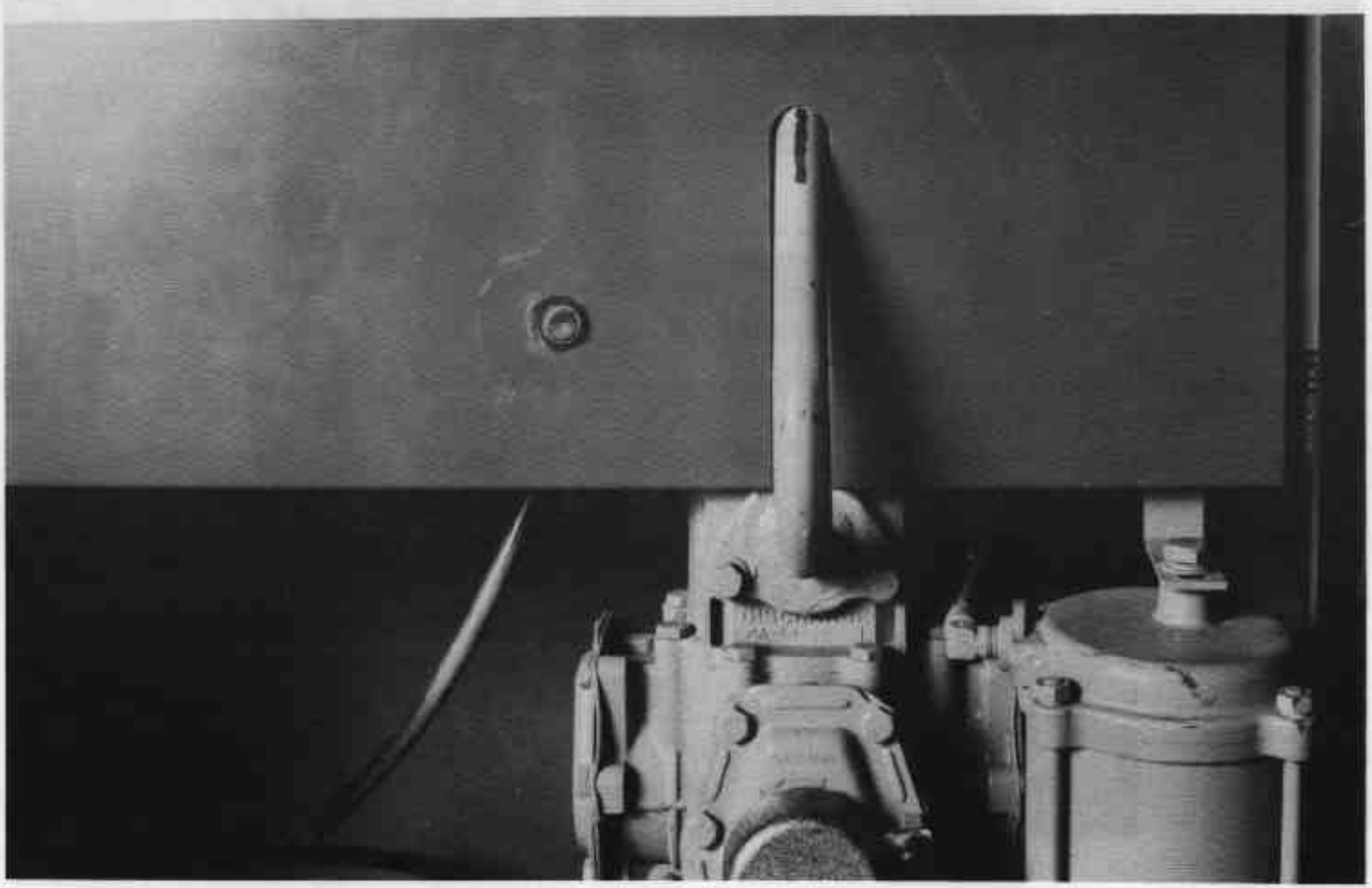
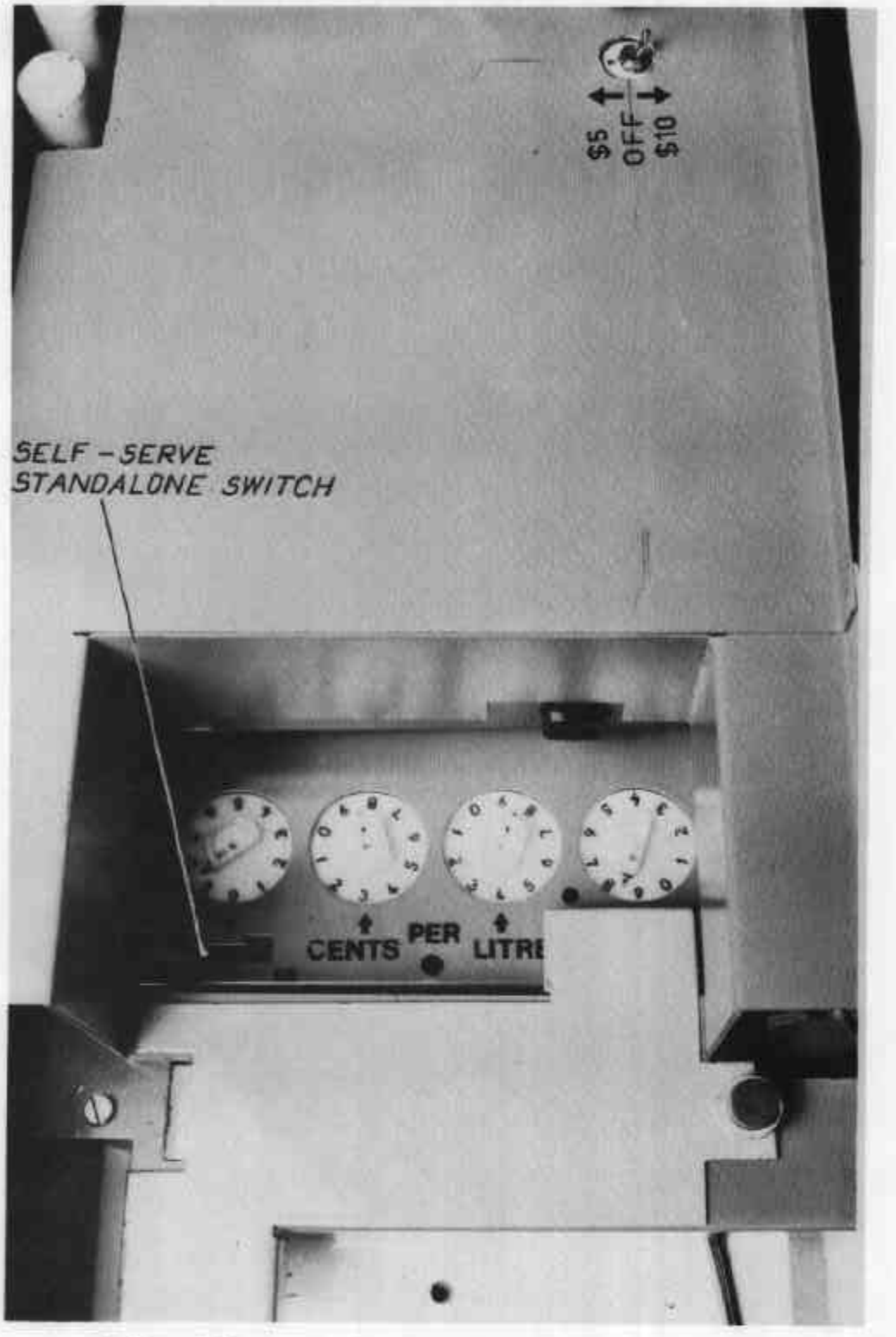


Sealing of Drive Shafts with Metal Plate

FIGURE 5/6A/78 - 19



Sealing of Electronics Section by Metal Plate and Sealing Plug
Allocation Switch also shown

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FIGURE 5/6A/78 - 20

Gilbarco Model T180AB-7F

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FIGURE 5/6A/78 - 21

Calcopac T350 CH

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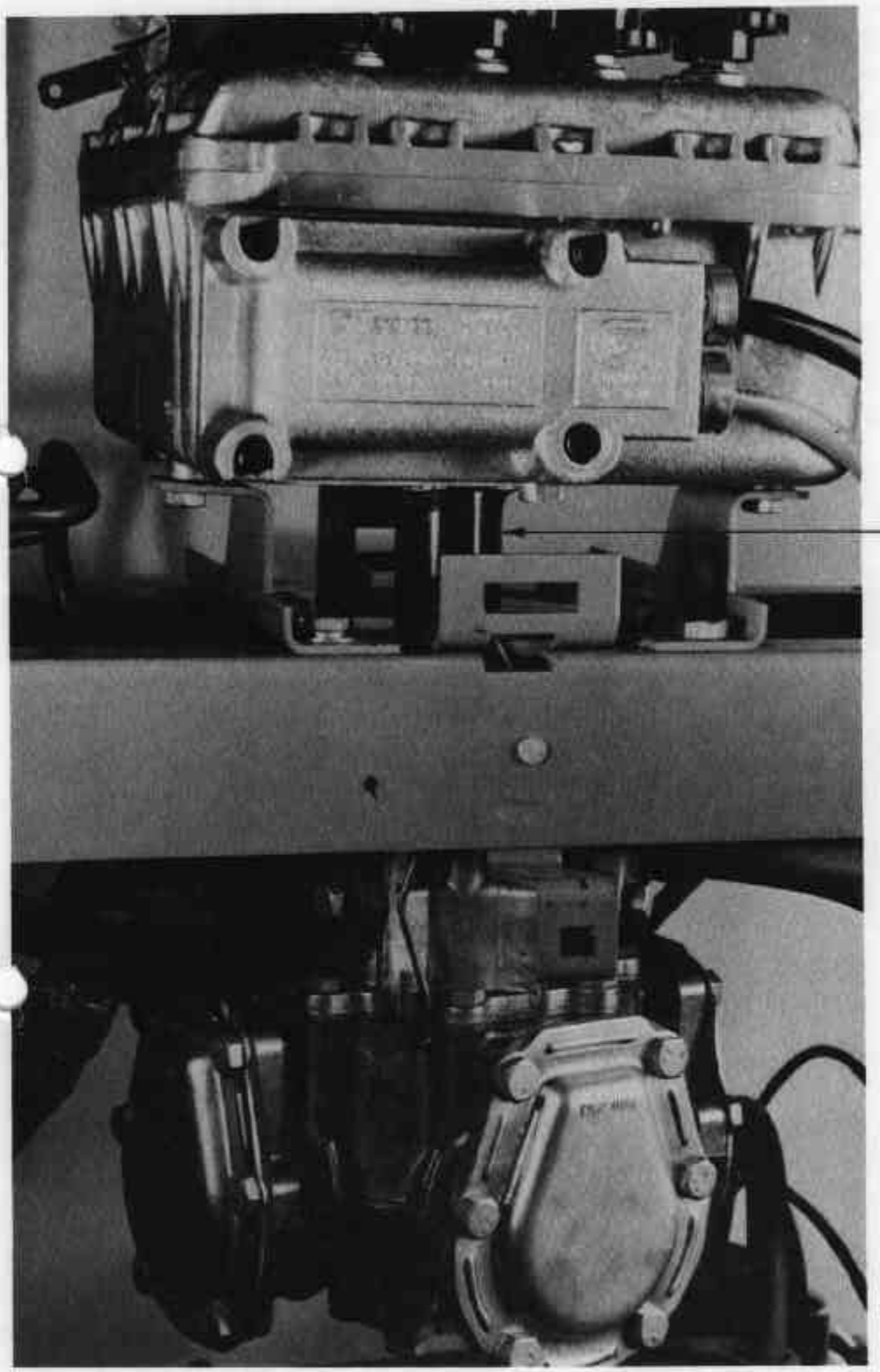
FIGURE 5/6A/78 - 22



Sealing Of Meter To Calcopac Drive-shaft

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