

CERTIFICATE OF APPROVAL No 5/6A/35

CANCELLED

VARIATION No 2

0/2

This is to certify that the following modifications of the patterns of the
Gilbarco Driveway Flowmeters Models T171C and Others

approved in Certificate No 5/6A/35 dated 21 September 1972 and subsequent
variation

submitted by Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113,

have been approved under the Weights and Measures (Patterns of Instruments)
Regulations as being suitable for use for trade.

Date of Approval: Modification No 1 ... 25 June 1976
Modification No 2 ... 17 December 1976

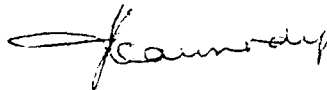
The approved modifications, described in Technical Schedule No 5/6A/35 -
Variation No 2 and in drawings and specifications lodged with the
Commission, provide for:

1. Gilbarco T173-0037 pulse transmitter(s);
2. relocation of the final filter.

The approval is subject to review on or after 1 February 1980.

All instruments conforming to this approval shall be marked with the
approval number "NSC No 5/6A/35".

Signed



Executive Officer



CANCELLED
COMMONWEALTH OF AUSTRALIA

Weights and Measures
(National Standards)
Act 1960-1966

Weights and Measures
(Patterns of Instruments)
Regulations

NATIONAL STANDARDS COMMISSION

Certificate of Approval

CERTIFICATE NUMBER 5/6A/35

In respect of the pattern of

Gilbarco T171C Driveway Flowmeter and Variants.

Submitted and
manufactured by:

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

This is to certify that the pattern and variants of the instrument illustrated and described in this Certificate have been examined by the National Standards Commission under the provisions of the abovementioned Regulations and have been approved as being suitable for use for trade.

The pattern and variants were approved on 15 September 1972.

The pattern and variants are marked "NSC No 5/6A/35" and comply with the General Specifications for Measuring Instruments to be Used for Trade.

The submittor shall notify the Commission[‡] of the location and serial number of the first ten instruments conforming to the pattern and variants submitted to State or Territorial Weights and Measures Authorities for verification.

‡ Inspectors should not verify any instrument conforming to this Certificate until advised in writing by the Pattern Approval Laboratory that the Commission has been notified.

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Cont'd over

The Commission reserves the right to examine any of the abovementioned ten instruments after verification.

Instruments purporting to conform to this Certificate shall be tested in accordance with the procedure specified in the General Notes.

This Certificate comprises:

Pages 1 to 9 dated 21 September 1972.

Figures 5/6A/35 - 1 to 8 dated 21 September 1972.

Date of issue 21 September 1972.

Signed

A handwritten signature in black ink, appearing to read 'P. M. M. M.', is written over a horizontal line.

A person authorized by the Commission to sign Certificates under the abovementioned Regulations.

DESCRIPTION OF PATTERN

The pattern (see Figure 2) is of a price-computing driveway flowmeter comprising the components tabulated in Column 5 of Figure 1 which, with the exception of the pump assembly, when assembled in a cabinet and arranged as shown in Figure 2, is known as the Gilbarco T171C Driveway Flowmeter. The cabinet is similar to the cabinet of the Gilbarco T166A Driveway Flowmeter as described in Certificate No 5/6A/24.

The remote pump is started by a switch in the driveway flowmeter which is activated by the starting handle; at the same instant, the normally closed solenoid valve is energized, allowing the pump pressure to be applied through the flowmeter to the nozzle.

The hydraulic diagram is illustrated in Figures 3 and 4, and the maximum flow rate is 60 litres per minute.

DESCRIPTION OF VARIANT DESIGNS

1. The components tabulated in Columns 6 and 7 of Figure 1 make up variants known as the Gilbarco T171C Driveway Flowmeter, each variant having the housing and component arrangement as the pattern.

The hydraulic diagram is the same as the pattern (see Figures 3 and 4) and the maximum flow rate is 60 litres per minute.

2. One pump assembly with two sets of the components tabulated in Columns 8 and 9 of Figure 1 make up variants known as the Gilbarco T172C Dual Driveway Flowmeter. With the exception of the pump assembly, the components in each variant are assembled in a cabinet which is similar to the cabinet of the Gilbarco T167A Driveway Flowmeter as described in Certificate No 5/6A/24.

The hydraulic diagram of each set of components is the same as for the pattern (see Figures 3 and 4) and the maximum flow rate is 60 litres per minute.

3. The components tabulated in Columns 10 and 11 of Figure 1 make up variants known as the Gilbarco T183A Driveway Flowmeter,

each variant having the components assembled in a cabinet which is similar to the cabinet of the Gilbarco T180A Driveway Flowmeter as described in Certificate No 5/6A/24.

The hydraulic diagram is the same as the pattern (see Figures 3 and 4) and the maximum flow rate is 60 litres per minute.

4. One pump assembly with two sets of the components tabulated in Columns 12 and 13 of Figure 1 make up variants known as the Gilbarco T184A Dual Driveway Flowmeter (see Figure 5). With the exception of the pump assembly, the components in each variant are assembled in a cabinet which is similar to the cabinet of the Gilbarco T181A Driveway Flowmeter as described in Certificate No 5/6A/24, and arranged as shown in Figure 5.

The hydraulic diagram of each set of components is the same as the pattern (see Figures 3 and 4) and the maximum flow rate is 60 litres per minute.

5. Installations in which more than one driveway flowmeter is connected to one pump are approved as variants. In such installations, the electric control system is arranged so that the first driveway flowmeter to be started will start the pump, which will continue to operate until all the driveway flowmeters have been shut off by their starting handles.

DESCRIPTION OF COMPONENTS

1. Pump assembly — a non-positive displacement pump with a falling head/flow characteristic; it is fitted with an integral non-return valve, a manual by-pass valve, and a sight glass which indicates when the delivery pipe is empty of liquid (see Figure 4).
2. Test valve — Gilbarco T040-0068, which is similar to the Wayne P10107 as described in Certificate No 5/6A/37.
3. Flow-control valve — Gilbarco T184-0001, which is located upstream of the gas separator, restricts the flow of liquid from the pump when gas is detected by the gas separator (see Figures 3 and 6).

Referring to Figure 3, the top of the piston in the flow-control valve is connected by a port to the pump side of the valve and by a pipe to the pilot valve in the gas separator. When the pilot valve is open, the pressure on the top of the piston is reduced, and pump pressure will lift the piston and allow liquid to flow.

Closing the pilot valve will apply pump pressure to the top of the piston, which will close and restrict the flow from the pump to a by-pass formed by a groove machined into the valve face. The by-pass formed by the groove has an effective area of not more than 2 mm^2 .

4. Gas separator — Gilbarco T257Y (see Figures 3 and 6), in which gas separation is achieved by passing the liquid through a wire mesh and reducing its velocity. The accumulation of gas in the top of the chamber causes a decrease in the liquid level, which allows one float to open the vent valve and the other float to close the pilot valve. The gas in the top of the chamber is vented through a pipe of not less than 10 mm OD to the upper extremity of the hose-nozzle holster.

As the gas is purged, the liquid level in the gas separator will rise due to the liquid which is by-passing the flow-control valve, closing the vent valve and opening the pilot valve. Opening the pilot valve reduces the pressure on the top of the piston in the flow-control valve and allows the valve to be opened by the pump pressure.

5. Non-return valve — Gilbarco T260AH.
6. Meter — Gilbarco T262X, as described in Certificate No 5/6A/24, with external gears of ratio 1 : 2.4 so that the output is 0.25 gallons for each revolution of the drive shaft to the computer.
7. Meter — Gilbarco T262Y, Component No 6, with external gears of ratio 1.9 : 1 so that the output is 0.25 litre for each revolution of the drive shaft to the computer.
8. Meter — Gilbarco T262S, as described in Certificate No 5/6A/24, with external gears of ratio 1 : 2.4 so that the output is 0.25 gallons for each revolution of the drive shaft to the computer.

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9. Meter — Gilbarco T262T, Component No 8, with external gears of ratio 1.9 : 1 so that the output is 0.25 litre for each revolution of the drive shaft to the computer.
 10. Meter sealing — lead-plug seal, as described in Certificate No 5/6A/24.
 11. Computer — Veeder-Root 1613, which is a 4-drum decimal-currency unit indicating price to \$99.99, unit price to 99.9 cents per litre in 0.1-cent increments, and quantity to 999.9 litres. The computer is similar to the Veeder-Root 1613 computer as described in Certificate No 5/6A/6, except for the following significant modifications:
 - (a) The right-hand price and quantity wheels have ten graduations numbered 0 to 9.
 - (b) All other price and quantity wheels are numbered 0 to 9.
 - (c) The price-posting wheels are each numbered 0 to 9.
 12. Computer — Component No 11 except -
 - (a) the unit price is indicated to 99.9 cents per gallon in 0.1-cent increments; and
 - (b) the quantity is indicated to 999.9 gallons.
 13. Computer — Veeder-Root VR 101, which is a 4-drum decimal-currency unit indicating price to \$99.99, unit price to 99.9 cents per litre in 0.1-cent increments, and quantity to 999.9 litres. The computer is similar to the Veeder-Root VR 101 computer as described in Certificate No 5/6A/30, except for the following significant modifications:
 - (a) The right-hand price and quantity-indicating wheels have ten graduations numbered 0 to 9.
 - (b) All other price and quantity wheels are numbered 0 to 9.
 14. Computer — Component No 13 except -
 - (a) the unit price is indicated to 99.9 cents per gallon in

- 0.1-cent increments; and
- (b) the quantity is indicated to 999.9 gallons.
15. Computer — Veeder-Root 1611, which is a 4-drum decimal-currency unit indicating price to \$99.99, unit price to 99.9 cents per litre in 0.1-cent increments, and quantity to 999.9 litres. The computer is similar to the Veeder-Root 1611 computer converted to decimal currency as described in Certificate No 5/6A/11, except for the following significant modifications:
- (a) The right-hand price and quantity-indicating wheels have ten graduations numbered 0 to 9.
- (b) All other price and quantity wheels are numbered 0 to 9.
- (c) The price-posting wheels are each numbered 0 to 9.
16. Computer — Component No 15 except -
- (a) the unit price is indicated to 99.9 cents per gallon in 0.1-cent increments; and
- (b) the quantity is indicated to 999.9 gallons.
17. Back-pressure valve — Gilbarco T16 2-6 as described in Certificate No 5/6A/24.
18. Sight glass — Gilbarco T261X, as described in Certificate No 5/6A/7.
19. Sight glass — Gilbarco T261AC, as described in Certificate No 5/6A/24.
20. Solenoid valve — Gilbarco T010-0826, which is similar to the Wayne P8526 as described in Certificate No 5/6A/37. It is an electrically operated normally closed valve in the pipe downstream from the back-pressure valve, and is energized by placing the starting handle in the "on" position.
21. Hose — external retractable.

22. Swivel hose coupling — as described in Certificate No 5/6A/24.
23. Final filter — as described in Certificate No 5/6A/1/3.
24. Nozzle — Gilbarco T250H manual hose nozzle as described in Certificate No 5/6A/7.
25. Nozzle — STM 363 automatic hose nozzle as described in Certificate No 5/6A/7.
26. Nozzle — OPW 1A or 1 AM automatic hose nozzle as described in Certificate No 5/6A/7.
27. Pump interlock 240 mm — in returning the starting handle to the "stop" position, the motor is stopped and the interlock which prevents it from being restarted is engaged, when or before the outer corner of the palm piece adjacent to the pump casing is at a height of 240 mm above the top of the lug of the nozzle hang-up bracket (see Figure 7).
28. Pump interlock 200 mm — Component No 27, except that the interlock occurs at a height of 200 mm above the top of the lug of the nozzle hang-up bracket (see Figure 8).
29. Dial face — on each side of the housing behind a glazed window is a grey or black dial face with white markings or a white dial face with black markings. The quantity aperture and unit-price aperture are marked "litres" and "cents per litre" respectively and the price aperture is marked "dollars" (see Figures 2 and 5).
30. Dial face — Component No 29 with the quantity and unit-price apertures marked "gallons" and "cents per gallon" respectively.
31. Nameplate — marked "approved for petroleum $\leq 1 \text{ mm}^2/\text{s}$ ", which means that the design is approved for liquid petroleum of viscosity not more than $1 \text{ mm}^2/\text{s}$ (1 cSt).

GENERAL NOTES

1. Test Procedure for Gas Separator

1. Check accuracy of delivery and adjust if necessary; record

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the actual amount delivered.

2. Stop the pump by turning off the driveway flowmeter (and all other driveway flowmeters if more than one is connected).
3. Open the pump by-pass valve (see Figure 4).
4. Close the impact valve.
5. Connect the compressed air hose to the test valve at the driveway flowmeter and purge the delivery pipe of liquid, observing the sight glass in the by-pass pipe (see Figure 4).
6. Disconnect the compressed air hose and close the by-pass valve.
7. Open the impact valve.
8. Start the driveway flowmeter and repeat the accuracy test of Step 1. The amount delivered should be within 0.5% of the amount recorded in Step 1. (It should be noted that when the nozzle valve is opened no liquid will be discharged until the air in the delivery pipe is purged by the gas separator.)

2. Test Procedure for Minimum Flow Rate

In installations in which more than one driveway flowmeter is connected to one pump, check the flow rate for each driveway flowmeter with all driveway flowmeter nozzles fully open. The flow rate of each driveway flowmeter shall not be less than that specified in the General Specifications.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/35

VARIATION No 1

Pattern: Gilbarco T171C Driveway Flowmeter

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

Date of Approval of Variation: 30 January 1976

The modification described in this Schedule applies to the patterns described in Certificate No 5/6A/35 dated 21 September 1972.

All instruments conforming to this approval shall be marked "NSC No 5/6A/35".

Description:

The approved modification provides for a ZVA Slimline automatic hose nozzle (see Figures 9 and 10). The anti-drain valve which is integral with the main valve retains a pressure of not less than 15 kPa. A swivel hose coupling is fitted to the nozzle.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/35

VARIATION No 2

Pattern: Gilbarco Driveway Flowmeter Models T171C and Others approved in Certificate No 5/6A/35 dated 21 September 1972 and subsequent variation

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

Dates of Approval of Variation: 25 June 1976 and 17 December 1976

The modifications described in this Schedule apply to the patterns described in Certificate No 5/6A/35 dated 21 September 1972 and Technical Schedule No 5/6A/35 - Variation No 1 dated 15 April 1976.

All instruments conforming to this approval shall be marked "NSC No 5/6A/35".

Description:

The approved modifications provide for:

1. A Gilbarco T173-0037 pulse transmitter (see Figure 11) on the quantity and/or price drive shaft of the Veeder-Root VR 101 computer in each of the approved driveway flowmeter models.

The output from the pulse transmitter(s) may be used to provide data 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. The use of such peripheral equipment will not affect the operation of the driveway flowmeter.

2. A "final filter" unit fitted on the side of the cabinet between the back-pressure valve and the nose, or between the nose and the nozzle.

* The measuring instrument examined and approved by the Commission is limited to those 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 a Veeder-Root computer.

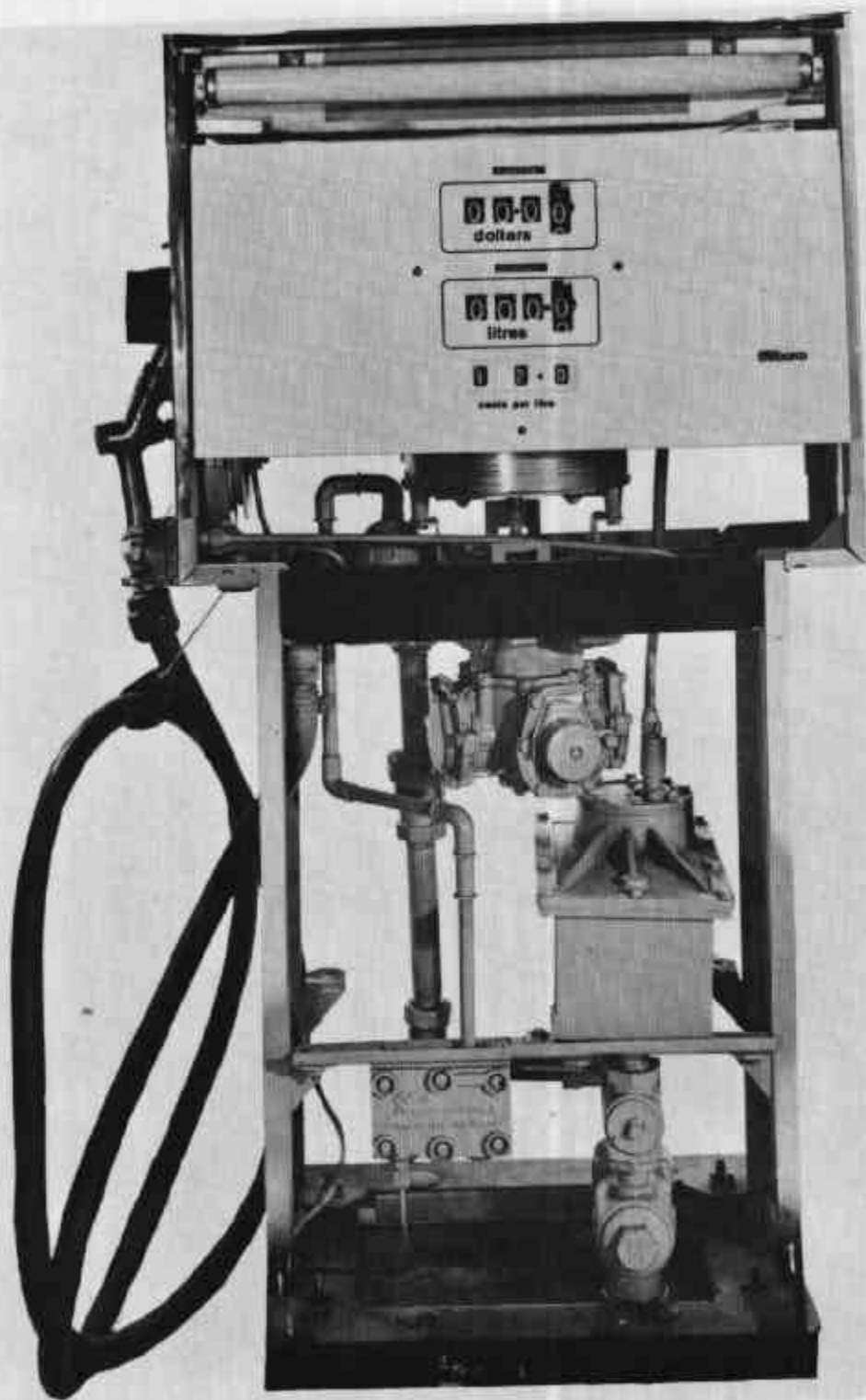
FIGURE 5/6A/35 - 1

1	2	3	4	5	6	7	8	9	10	11	12	13
	COMPONENTS	DATE APPROVED	FOOT-NOTES	TI71C PATTERN	VARIANTS							
					TI71C	TI71C	TI72C	TI72C	TI88A	TI88A	TI84A	TI84A
1	Pump assembly	15 SEP 72		*	*	*	*	*	*	*	*	*
2	Test valve - Gilbarco T040-0068	15 SEP 72		*	*	*	*	*	*	*	*	*
3	Flow-control valve - Gilbarco TI84-0001	15 SEP 72		*	*	*	*	*	*	*	*	*
4	Gas separator - Gilbarco T257Y	15 SEP 72		*	*	*	*	*	*	*	*	*
5	Non-return valve - Gilbarco T260AH	15 SEP 72		*	*	*	*	*	*	*	*	*
6	Meter - Gilbarco T262X	15 SEP 72				*				*		
7	Meter - Gilbarco T262Y	15 SEP 72		*	*				*			
8	Meter - Gilbarco T262S	15 SEP 72					*				*	*
9	Meter - Gilbarco T262T	15 SEP 72					*				*	*
10	Seal - lead-plug	15 SEP 72		*	*	*	*	*	*	*	*	*
11	Computer - VR 1613 litres	15 SEP 72		*	A		A		A		A	
12	Computer - VR 1613 gallons	15 SEP 72				B		B		B		B
13	Computer - VR 101 litres	15 SEP 72			A		A		A		A	
14	Computer - VR 101 gallons	15 SEP 72				B		B		B		B
15	Computer - VR 1611 litres (\$c)	15 SEP 72			A		A		A		A	
16	Computer - VR 1611 gal (\$c)	15 SEP 72				B		B		B		B
17	Back-pressure valve - Gilbarco TI62-6	15 SEP 72		*	*	*	*	*	*	*	*	*
18	Sight glass - Gilbarco T261X	15 SEP 72		*	*	*	*	*		*	*	*
19	Sight glass - Gilbarco T261AC	15 SEP 72		*	*	*	*	*	*	*	*	*
20	Solenoid valve - Gilbarco T010-0826	15 SEP 72		*	*	*	*	*	*	*	*	*
21	Hose	15 SEP 72		*	*	*	*	*	*	*	*	*
22	Swivel hose coupling	15 SEP 72							‡	‡	‡	‡
23	Final filter	15 SEP 72			‡	‡	‡	‡				
24	Nozzle - Gilbarco T250H	15 SEP 72		*	C	C	C	C	C	C	C	C
25	Nozzle - STM 363	15 SEP 72			C	C	C	C	C	C	C	C
26	Nozzle - OPW 1A	15 SEP 72			C	C	C	C	C	C	C	C
27	Pump interlock - 240 mm	15 SEP 72		*	*	*	*	*				
28	Pump interlock - 200 mm	15 SEP 72							*	*	*	*
29	Dial face - "litres"	15 SEP 72		*	*		*		*		*	*
30	Dial face - "gallons"	15 SEP 72				*		*		*		*
31	Nameplate - "approved for petroleum $\leq 1 \text{ mm}^2/\text{s}$ "	15 SEP 72		*	*	*	*	*	*	*	*	*

- * - indicates required component
- A - indicates alternative component, one of which is required
- B and C - as for A
- ‡ - optional component

Compatibility Table for Components Described
in this Certificate

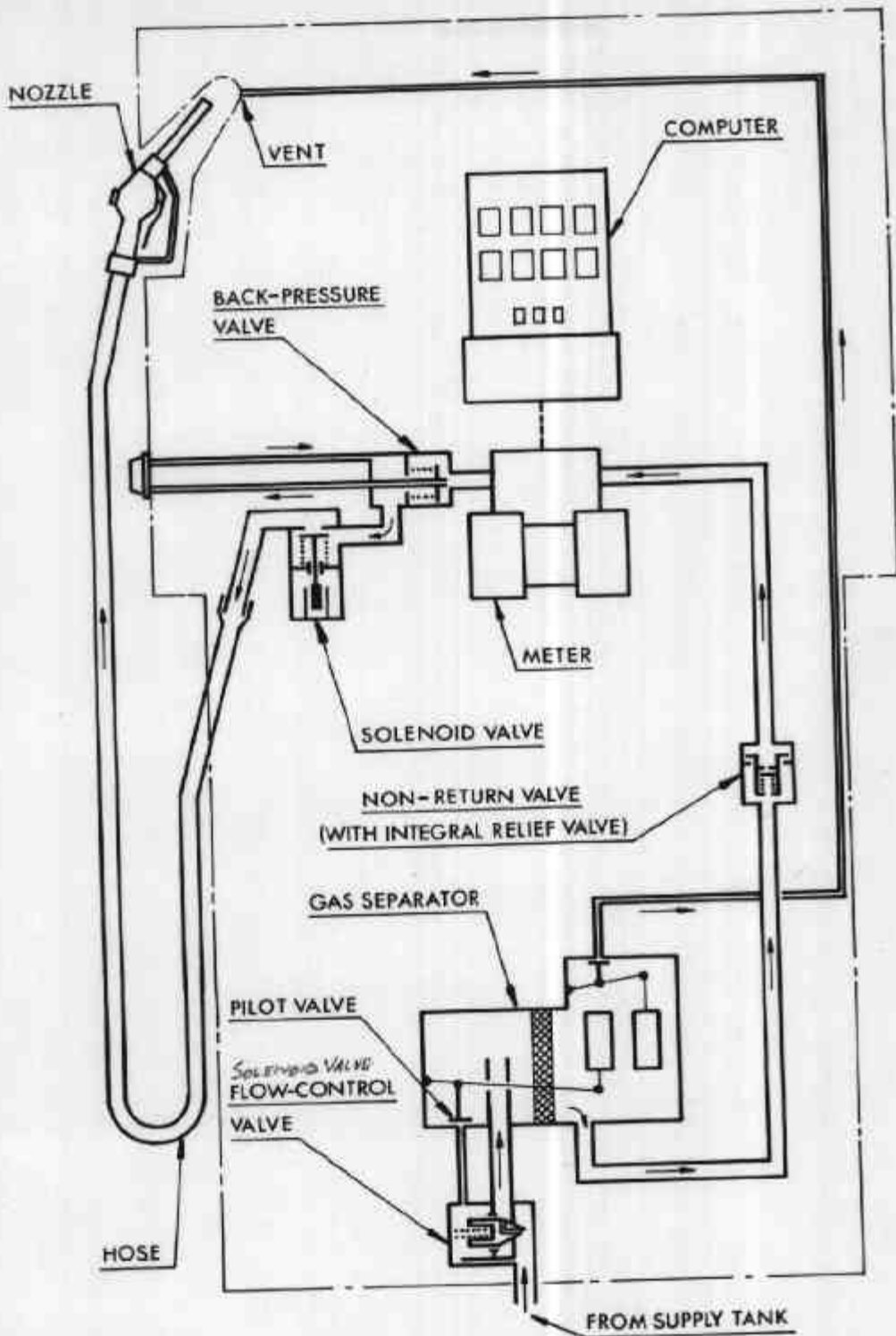
FIGURE 5/6A/35 - 2



Gilbarco T171C

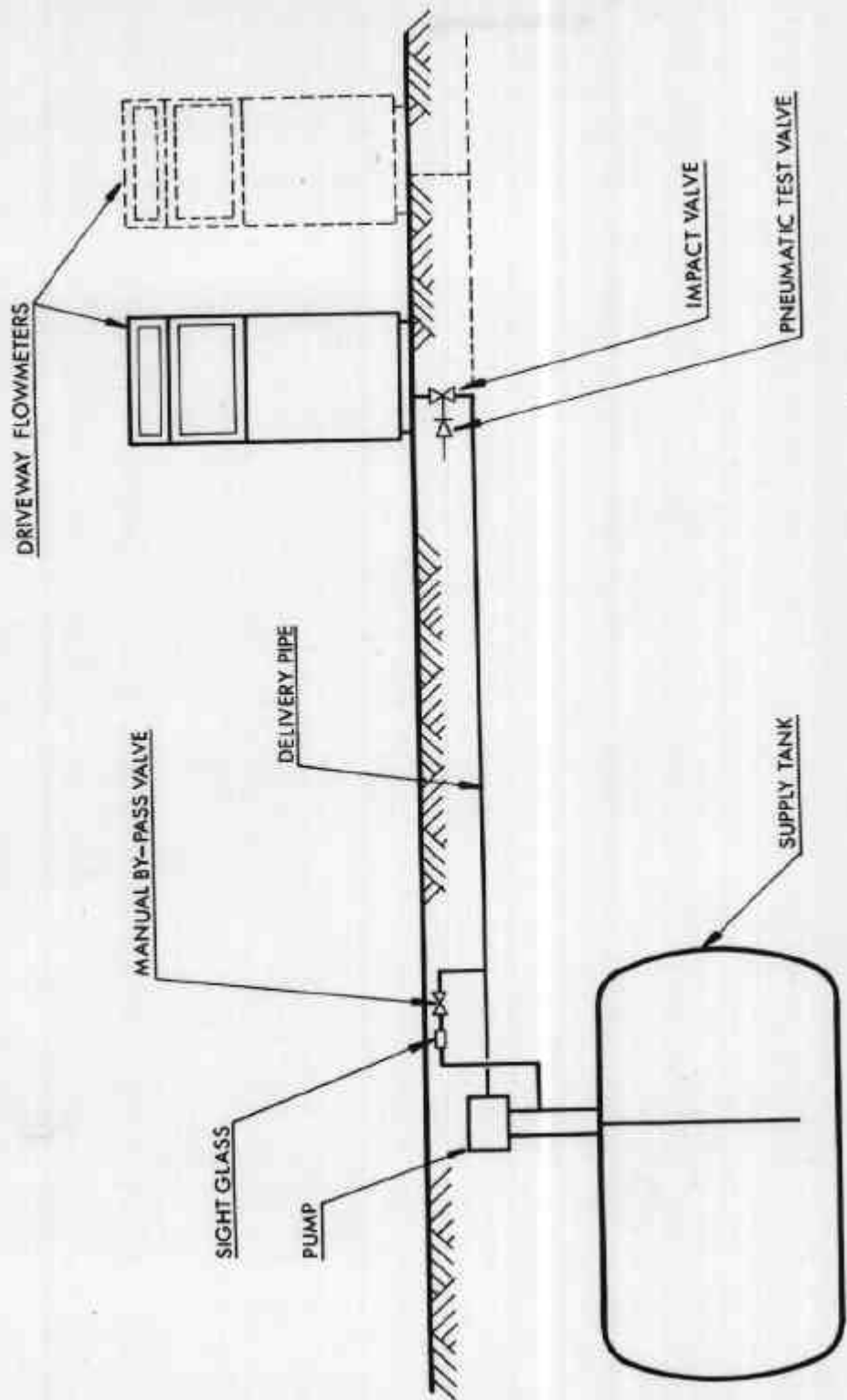
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FIGURE 5/6A/35 - 3



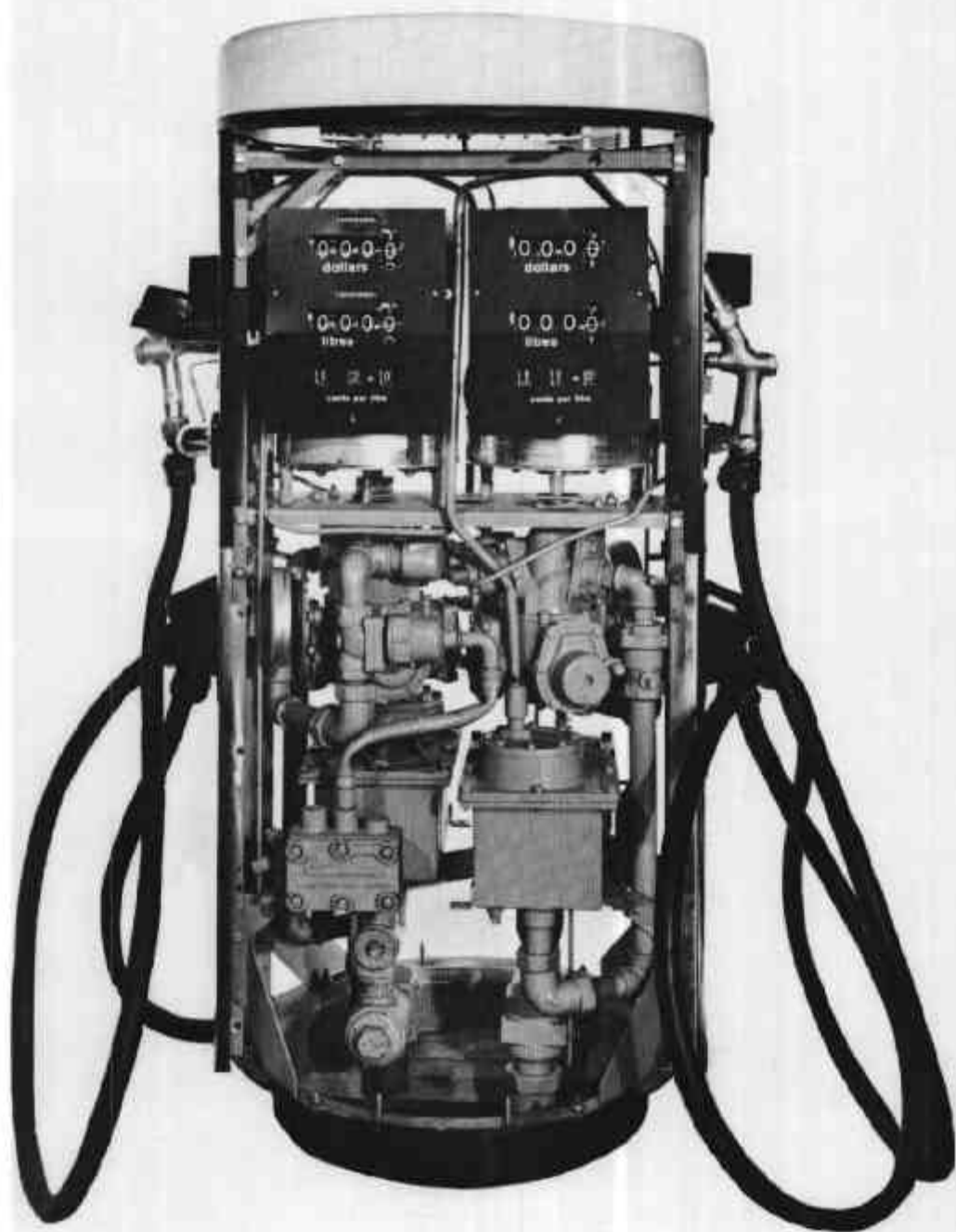
Gilbarco T171C — Hydraulic Diagram

FIGURE 5/6A/35 - 4



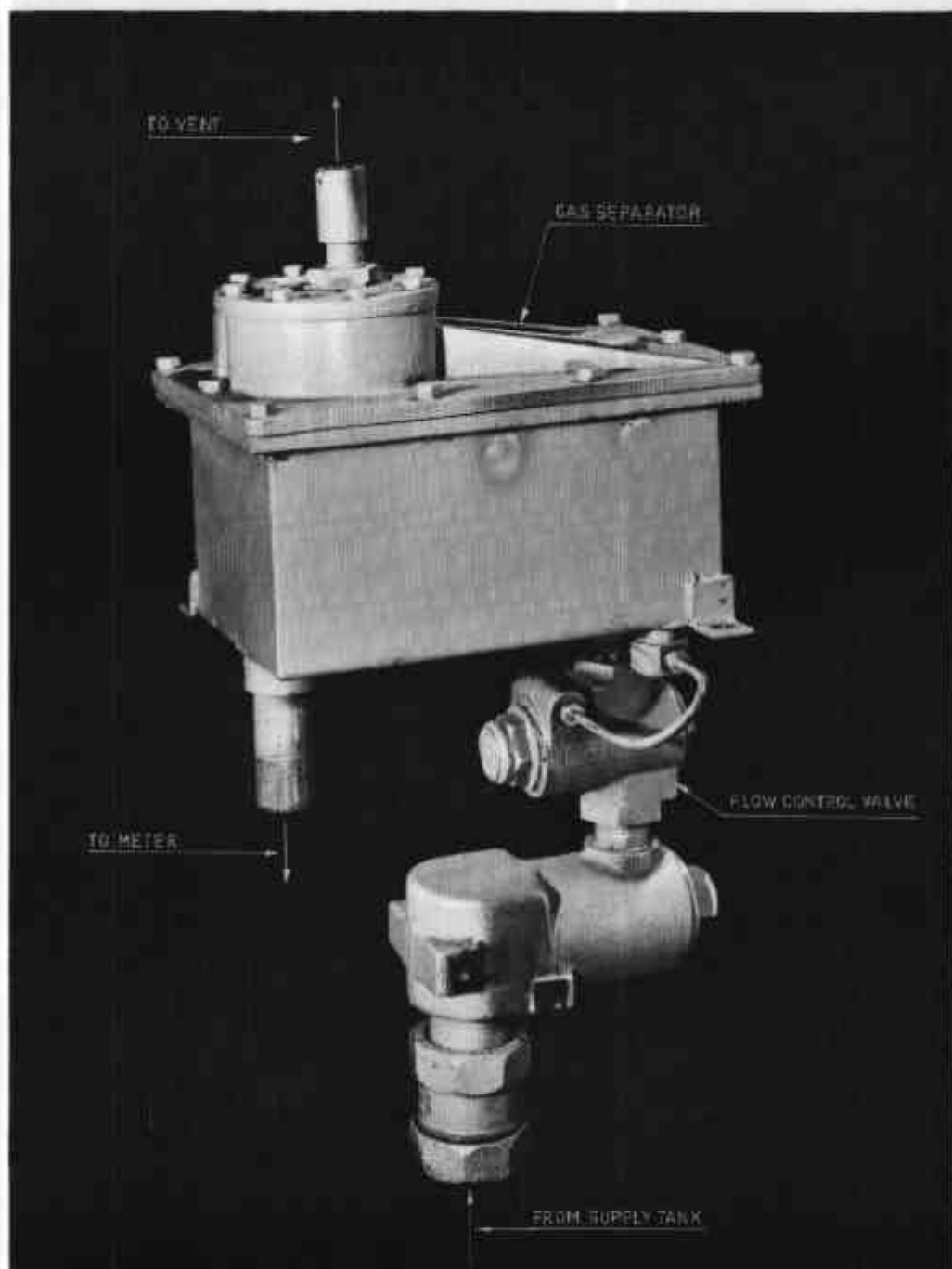
Gilbarco TL71C — Hydraulic Diagram of the Installation

FIGURE 5/6A/35 - 5



Gilbarco T184A

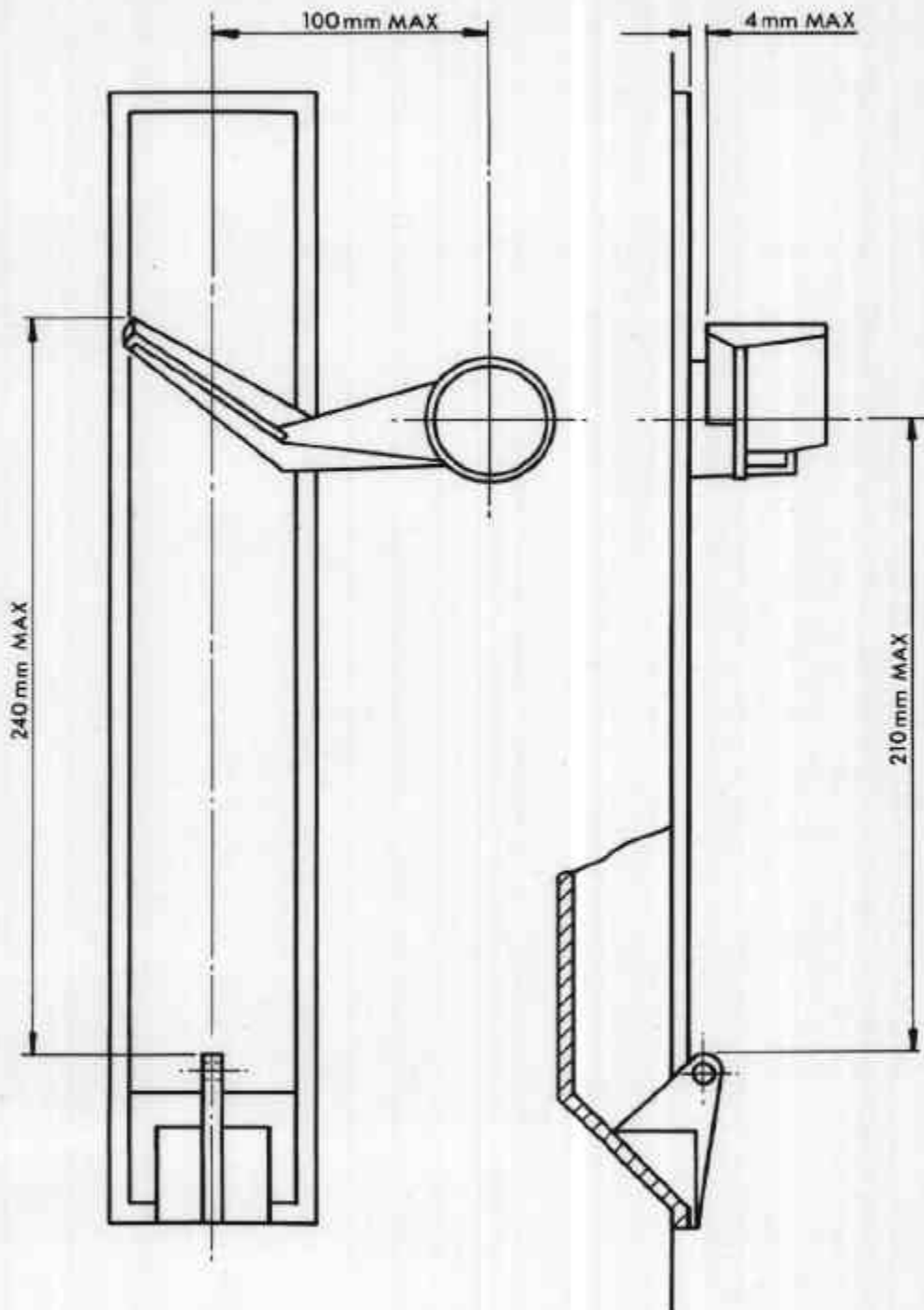
FIGURE 5/6A/35 - 6



Gilbarco T257Y Gas Separator and
T184-0001 Flow-control Valve

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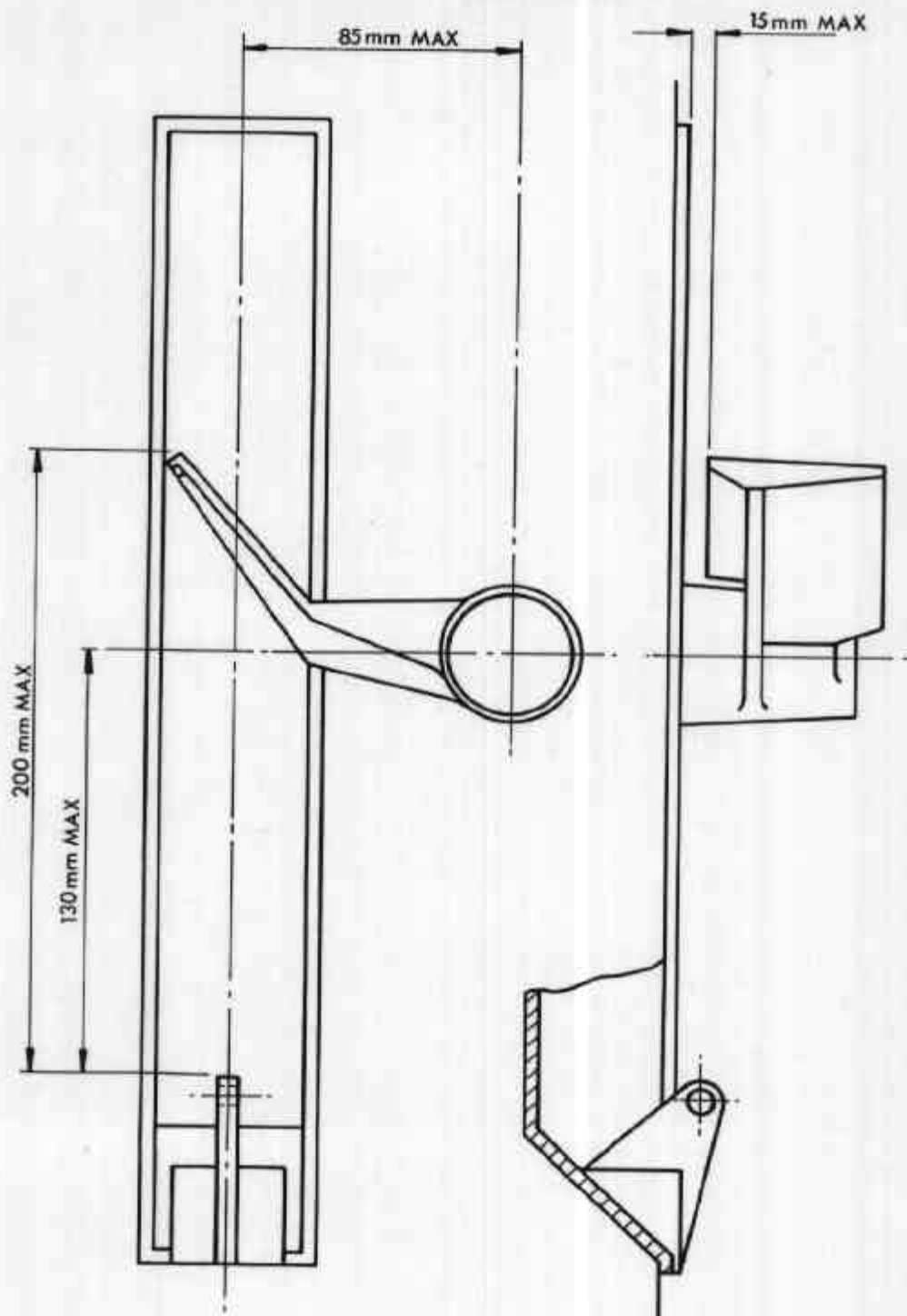
FIGURE 5/6A/35 - 7



Gilbarco T171C — Nozzle Hang-up

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FIGURE 5/6A/35 - 8



Gilbarco T183A — Nozzle Hang-up

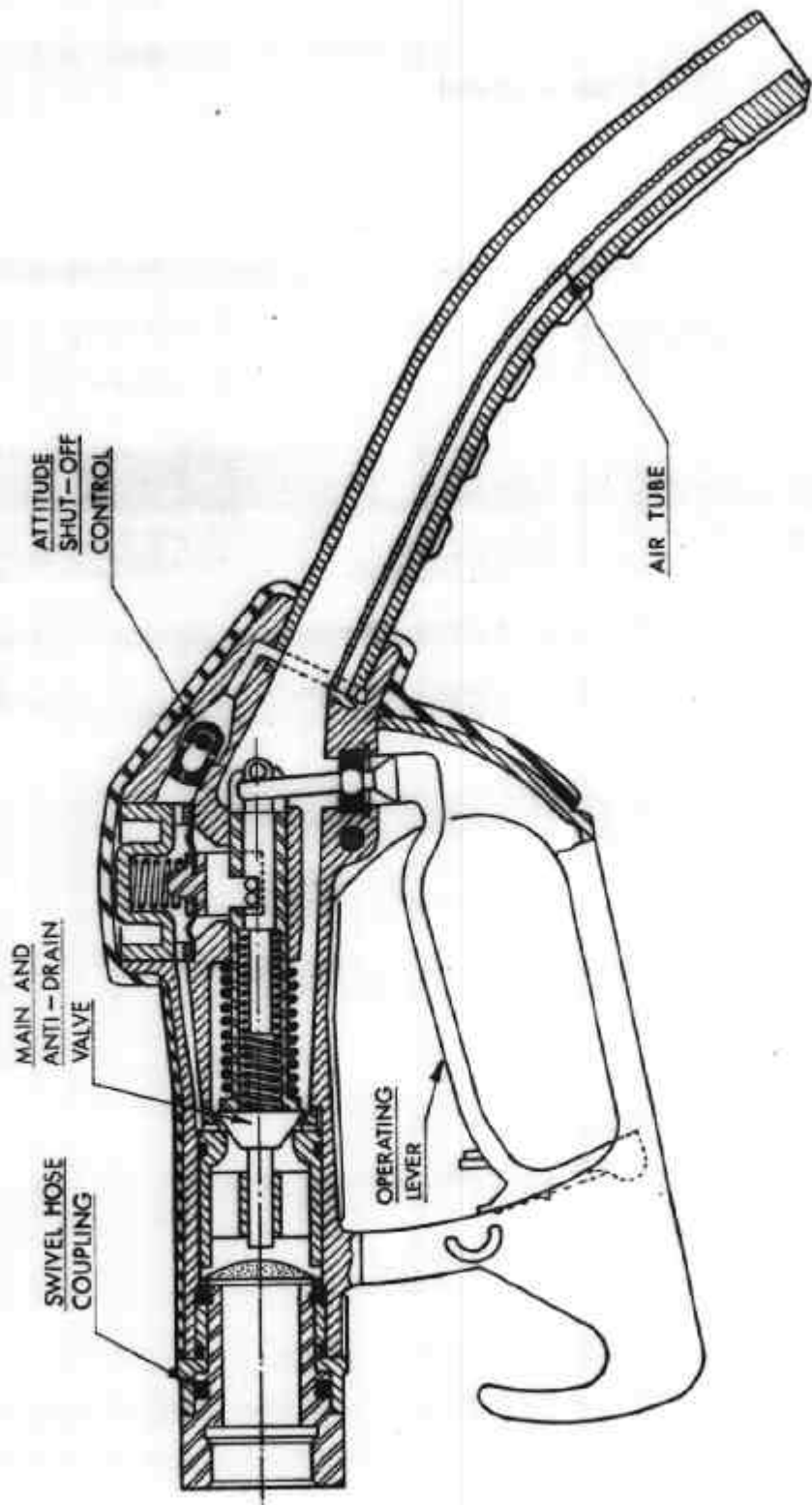
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FIGURE 5/6A/35 - 9

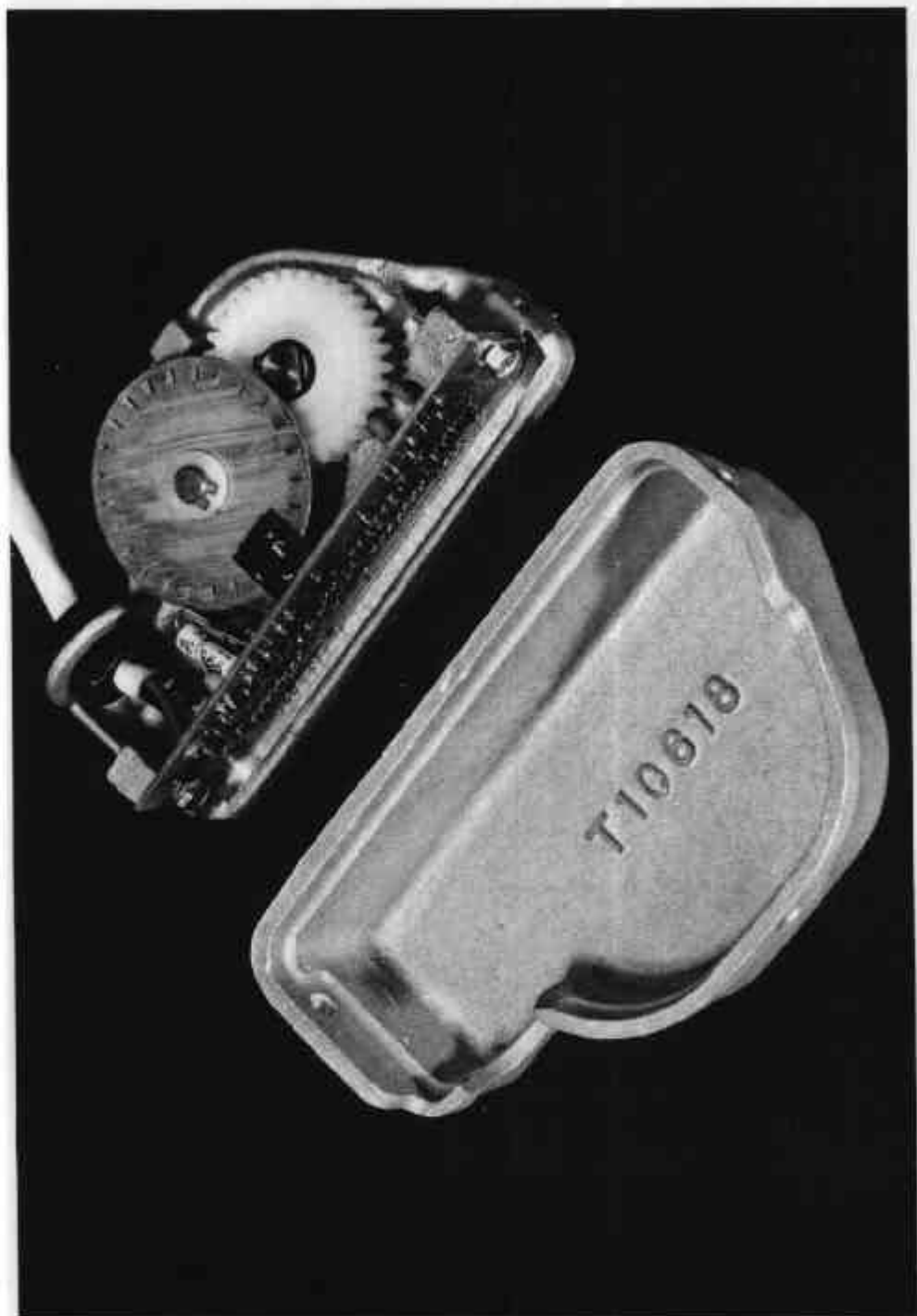


ZVA Slimline Automatic Hose Nozzle

FIGURE 5/6A/35 - 10



ZVA Slimline Automatic Hose Nozzle



Gilbarco T173-0037 Pulse-transmitter Unit