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CERTIFICATE OF APPROVAL No 5/6A/45

VARIATION No 3 CANCELLED 0/2

This Certificate replaces Certificate of Approval No 5/6A/45 - Variation Nos 1 and 2 dated 9 May 1974 and 15 April 1976, which were cancelled on 25 June 1976.*

This is to certify that the following modifications of the patterns of the

Gilbarco Driveway Flowmeters Model T180D and Others

approved in Certificate No 5/6A/45 dated 8 March 1973

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: Modifications Nos 1 to 4: 25 June 1976
Modifications Nos 5 and 6: 17 December 1976

The approved modifications, described in Technical Schedule No 5/6A/45 - Variation No 3 and in drawings and specifications lodged with the Commission, provide for:

1. Gilbarco T173-0037 pulse transmitter(s)
2. Gas-separation test valve
3. EMCO 200A automatic hose nozzle
4. ZVA Slimline automatic hose nozzle
5. A modified nozzle hang-up holster and starting-lever linkage
6. Relocation of the final filter

The approval in Certificate of Approval No 5/6A/45 dated 8 March 1973 of driveway flowmeter models which are not fitted with a gas-separation test valve is cancelled as from 31 December 1977, after which date all new instruments shall be fitted with a test valve.

The approval is subject to review on or after 1 June 1979.

All instruments conforming to this approval shall be marked with the approval number "NSC No 5/6A/45".

Signed .

Executive Officer

* Certificate of Approval No 5/6A/45 - Variation Nos 1 and 2 may be destroyed.

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CANCELLED

COMMONWEALTH OF AUSTRALIA

NATIONAL STANDARDS COMMISSION

Weights and Measures (National Standards) Act 1960-1966

Weights and Measures (Patterns of Instruments) Regulations

Certificate of Approval

CERTIFICATE NUMBER 5/6A/45

In respect of the pattern of

Gilbarco Round Single Driveway Flowmeter Model T180D 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 27 February 1973.

The pattern and variants are marked "NSC No 5/6A/45" and comply with the General Specifications for Measuring Instruments to be Used for Trade.

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Cont'd over

This Certificate comprises:

Pages 1 to 5 dated 8 March 1973.
Figures 5/6A/45 - 1 to 5 dated 8 March 1973.

Date of issue 8 March 1973.

Signed

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

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DESCRIPTION OF PATTERN

The pattern (see Figure 2) is of a driveway flowmeter which comprises the components tabulated in Column 5 of Figure 1, which when assembled in a round housing and arranged as shown in Figure 2 is known as the Gilbarco Round Single Driveway Flowmeter Model T180D.

The hydraulic diagram is the same as the hydraulic diagram of the Gilbarco Trimline Single Driveway Flowmeter Model T166A as described in Certificate No 5/6A/24, and the maximum flow rate is 55 litres per minute.

DESCRIPTION OF VARIANT DESIGNS

1. The components tabulated in Column 6 or Column 7 of Figure 1, assembled in a round housing and with the components arranged as in the pattern (see Figure 2), make up variants known as the Gilbarco Round Single Driveway Flowmeter Model T180D.

   The hydraulic diagram is the same as the pattern and the maximum flow rate is 55 litres per minute.

2. Two sets of the components tabulated in Column 6 or Column 7 of Figure 1, assembled in a round housing and with the components arranged as shown in Figure 3, make up variants which comprise two flowmeters in a single housing, known as the Gilbarco Round Dual Driveway Flowmeter Model T181C.

   The hydraulic diagram of each flowmeter is the same as the pattern and the maximum flow rate of each flowmeter is 55 litres per minute.

DESCRIPTION OF COMPONENTS

1. Pump — positive displacement rotary pump, with integral gas separator, Gilbarco T258GD, as described in Certificate No 5/6A/24.

2. Float chamber — Gilbarco T257AC (see Figures 4 and 5), into which gas and liquid flow from the gas separator. Gas discharges to atmosphere through a pipe in the top of the separator, and

liquid returns to the pump suction through a float-operated valve.

3. Meter — Gilbarco T262T or T262Y, as described in Certificate No 5/6A/35.

4. Meter — Gilbarco T262S or T262X, as described in Certificate No 5/6A/35.

5. Meter sealing — lead-plug seal, as described in Certificate No 5/6A/24.

6. Computer — Veeder-Root VR 101 indicating in litres, as described in Certificate No 5/6A/35.

7. Computer — Veeder-Root VR 101 indicating in gallons, as described in Certificate No 5/6A/35.

8. Electric reset unit — replacing the semi-automatic reset mechanism of the VR 101 computer. The unit is similar to the electric reset unit as described in Certificate No 5/6A/24 except that the computer reset shaft may be directly coupled to the computer (see Figure 2) or coupled by a chain drive (see Figure 3).

9. Pump interlock — the starting handle is replaced by a hinged starting lever located in the holster, similar to the pump interlock of the Gilbarco T166P driveway flowmeter, as described in Certificate No 5/6A/24.

10. Dial face — on each side of the housing behind a glazed window is a black dial face with white markings. The dial face is marked "dollars", "litres" and "cents per litre" similarly to the dial face of the Gilbarco T180C driveway flowmeter as described in Certificate No 5/6A/40.

11. Dial face — Component No 10, with the markings replaced by "dollars", "gallons" and "cents per gallon".

12. Non-return valve — Gilbarco T260Z, with integral pressure-relief valve.

13. Sight glass — Gilbarco T261AC, by-pass type, as described in Certificate No 5/6A/24.

14. Back-pressure valve — Gilbarco T162-6, as described in Certificate No 5/6A/24.

15. Hose — external retractable.

16. Swivel hose coupling — fitted between the nozzle and the hose to allow the nozzle to rotate about the axis of the hose.

17. Nozzle — STM 363 automatic hose nozzle as described in Certificate No 5/6A/7.

18. Nozzle — Gilbarco T250H manual hose nozzle as described in Certificate No 5/6A/7.

19. Nozzle — OPW 1A or 1AM automatic hose nozzle as described in Certificate No 5/6A/7.

20. Nameplate — marked "approved for petroleum $\leqq$ 1 mm^2/s", which means that the design is approved for liquid petroleum of viscosity not more than 1 mm^2/s (1 cSt).

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/45

VARIATION No 1

Pattern: Gilbarco Driveway Flowmeter Model T180D

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

Date of Approval of Variants: 9 May 1974

The modifications described in this schedule apply to the pattern and variants described in the following pages and figures of Certificate No 5/6A/45 dated 8 March 1973:

Pages 3 to 5 dated 8 March 1973
Figures 5/6A/45 - 1 to 5 dated 8 March 1973

All instruments conforming to this approval shall be marked with the approval number "NSC No 5/6A/45".

Description:

This variation approves:

1. The fitting of a Gilbarco T173-0037 pulse transmitter as described in Certificate No 5/6A/24, Variation No 1, on the quantity or quantity-and-price drive shafts of the Veeder-Root VR 101 computer in the Model T180D driveway flowmeter. The instrument is known as a Model T180G when one transmitter is fitted and Model T180F when two transmitters are fitted (see Figure 6).

   The VR 101 computer and the dial faces are as described in Certificate No 5/6A/35.

   A gas-separation test valve as described in Certificate No 5/6A/44 is fitted.

   Note: When the pulse-transmitter units are used to provide information for remote price indication, the electric reset unit may be prevented from operating until a remote switch is operated.

2. The pattern and variants fitted with an EMCO 200A automatic hose nozzle as described in Certificate No 5/6A/24, Variation No 1.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/45

VARIATION No 2

Pattern: Gilbarco T180D 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/45 dated 8 March 1973 and Technical Schedule No 5/6A/45 - Variation No 1 dated 22 May 1974.

All instruments conforming to this approval shall be marked "NSC No 5/6A/45".

Description:

The approved modification provides for a ZVA Slimline automatic hose nozzle (see Figures 7 and 8). 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/45

VARIATION No 3

Pattern: Gilbarco Driveway Flowmeters Model T180D and Others approved in Certificate No 5/6A/45 dated 8 March 1973

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

Certificate of Approval No 5/6A/45 - Variation Nos 1 and 2 were cancelled and their Technical Schedules withdrawn on 25 June 1976.* Certificates of Approval No 5/6A/45 - Variation No 3 and No 5/6A/47 and their Technical Schedules incorporate the patterns cancelled.

The approval in Certificate of Approval No 5/6A/45 dated 8 March 1973 of driveway flowmeter models which are not fitted with a gas-separation test valve is cancelled as from 31 December 1977, after which date all new instruments shall be fitted with a test valve.

Dates of Approval: 25 June 1976 and 17 December 1976

The modifications described in this Schedule apply to the patterns described in Certificate No 5/6A/45 dated 8 March 1973.

All instruments conforming to this approval shall be marked "NSC No 5/6A/45".

Description:

The approved modifications provide for:

1. A Gilbarco T173-0037 pulse transmitter (see Figure 9) on the quantity and/or price drive shafts of the Veeder-Root VR 101 computer in each of the approved driveway flowmeter models. The aperture in the dial face through which the first element of the price and quantity indicators are viewed is widened to allow two numbered graduation lines to be seen. A Gilbarco T166-0178 gas-separation test valve is fitted in the liquid-return pipe from the float chamber to the pump suction.

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* Certificate of Approval No 5/6A/45, including Figures 1 to 5, and Figures 7 and 8 of Technical Schedule 5/6A/45 - Variation Nos 1 and 2, should be retained.
The text of Technical Schedule 5/6A/45 - Variation Nos 1 and 2 and Figure 6 should be destroyed.

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, etc. The use of such peripheral equipment will not affect the operation of the driveway flowmeter.

2. A Gilbarco T166-0178 gas-separation test valve in the liquid-return pipe from the float chamber to the pump suction in all driveway flowmeter models.

3. An EMCO 200A automatic hose nozzle (see Figures 10 and 11).

4. A ZVA Slimline automatic hose nozzle (see Figures 7 and 8).

5. The holster of the Gilbarco T180D or T181C driveway flowmeter fitted with a bracket which prevents the starting lever being lifted up beyond its "on" position (see Figure 12). The linkage connecting the starting lever to the cams in the electrical reset unit is illustrated in Figures 13 and 14.

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

Special Tests:

Gas-separation Test Valve — the gas-separation test valve should be opened progressively to allow the flow rate to be reduced to, say, 90%, 80%, 70%, etc., of full flow rate, until below the minimum of 15 litres per minute or until the flow stops due to the pump losing prime. 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 air admitted on the accuracy of measurement should not exceed 0,5% of the quantity measured.

* 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 Veeder-Root computer.

FIGURE 5/6A/45 - 1

1	2	3	4	5	6	7
	COMPONENTS	DATE APPROVED	FOOT-NOTES	PATTERN T180D	VARIANTS T180D or T181C	
					(litres)	(gallons)
1	Pump, Gilbarco T258GD	27 FEB 73		*	*	*
2	Float chamber, Gilbarco T257AC	27 FEB 73		*	*	*
3	Meter, Gilbarco T262T or T262Y	27 FEB 73		*	*	
4	Meter, Gilbarco T262S or T262X	27 FEB 73				*
5	Seal, stamping plug	27 FEB 73		*	*	*
6	Computer, VR 101 litres	27 FEB 73		*	*	
7	Computer, VR 101 gallons	27 FEB 73				*
8	Electric reset unit	27 FEB 73		*	*	*
9	Pump interlock, starting lever	27 FEB 73		*	*	*
10	Dial face, litres	27 FEB 73		*	*	
11	Dial face, gallons	27 FEB 73				*
12	Non-return valve, Gilbarco T260Z	27 FEB 73		*	*	*
13	Sight glass, Gilbarco T261AC	27 FEB 73		*	*	*
14	Back-pressure valve, Gilbarco T162-6	27 FEB 73		*	*	*
15	Hose	27 FEB 73		*	*	*
16	Swivel hose coupling	27 FEB 73			‡	‡
17	Nozzle, STM 363	27 FEB 73		*	A	A
18	Nozzle, Gilbarco T250H	27 FEB 73			A	A
19	Nozzle, OPW 1A	27 FEB 73			A	A
20	Nameplate, "approved for petroleum ≤ 1 mm^2/s"	27 FEB 73		*	*	*

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

Compatibility Table for Components Described in this Certificate

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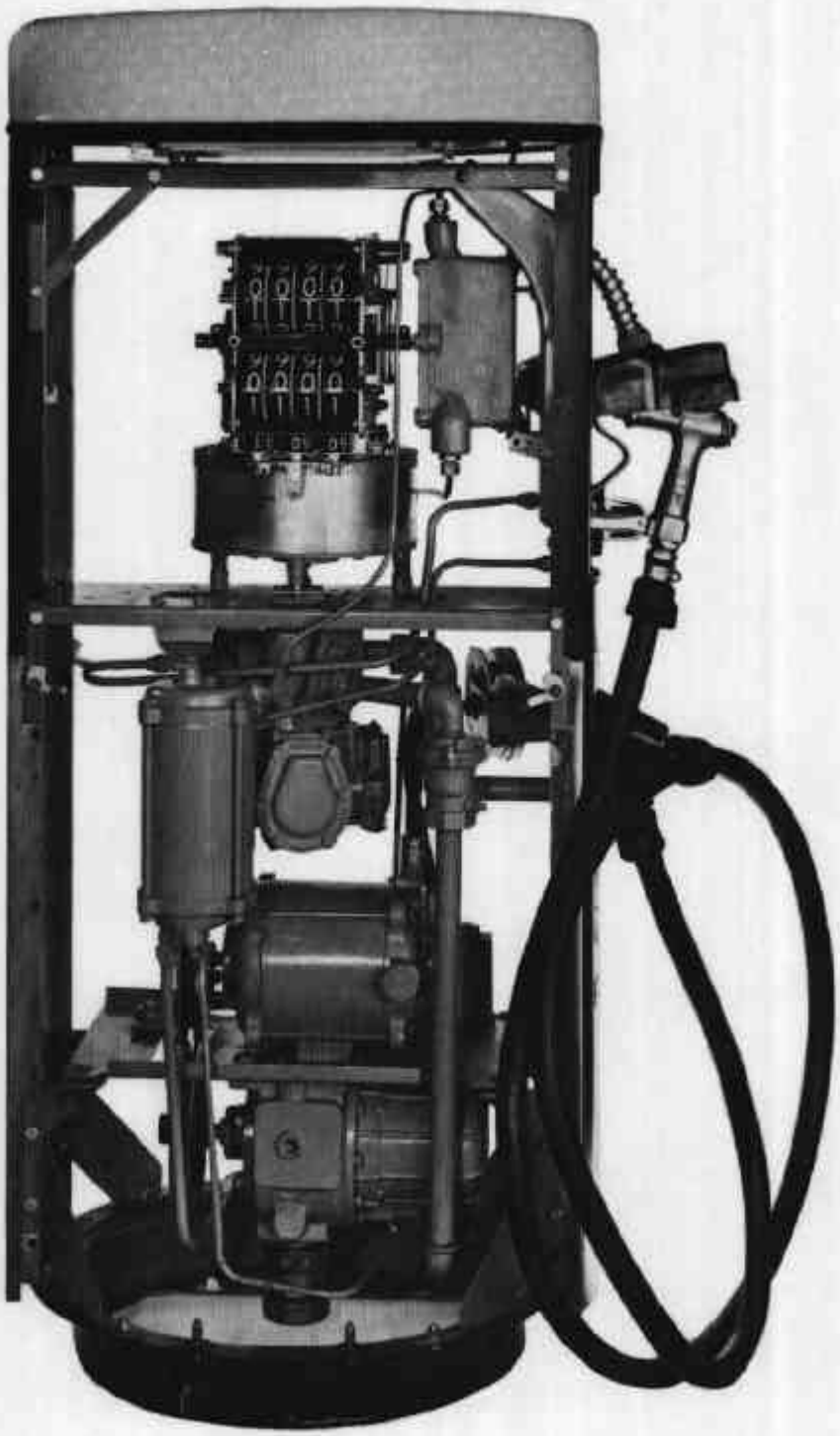
FIGURE 5/6A/45 - 2



Gilbarco T180D, with panels removed

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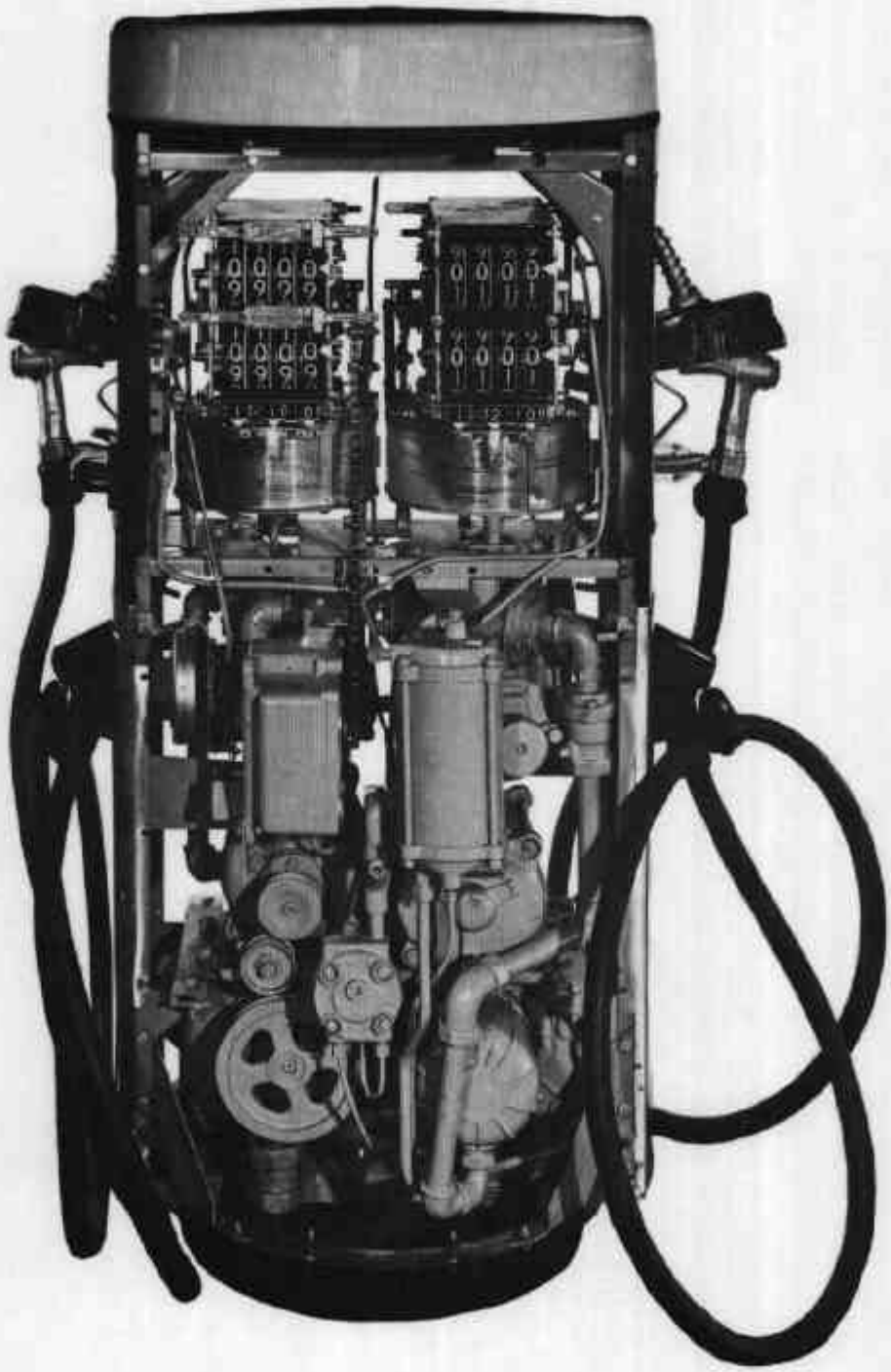
FIGURE 5/6A/45 - 3



Gilbarco T181C, with panels removed

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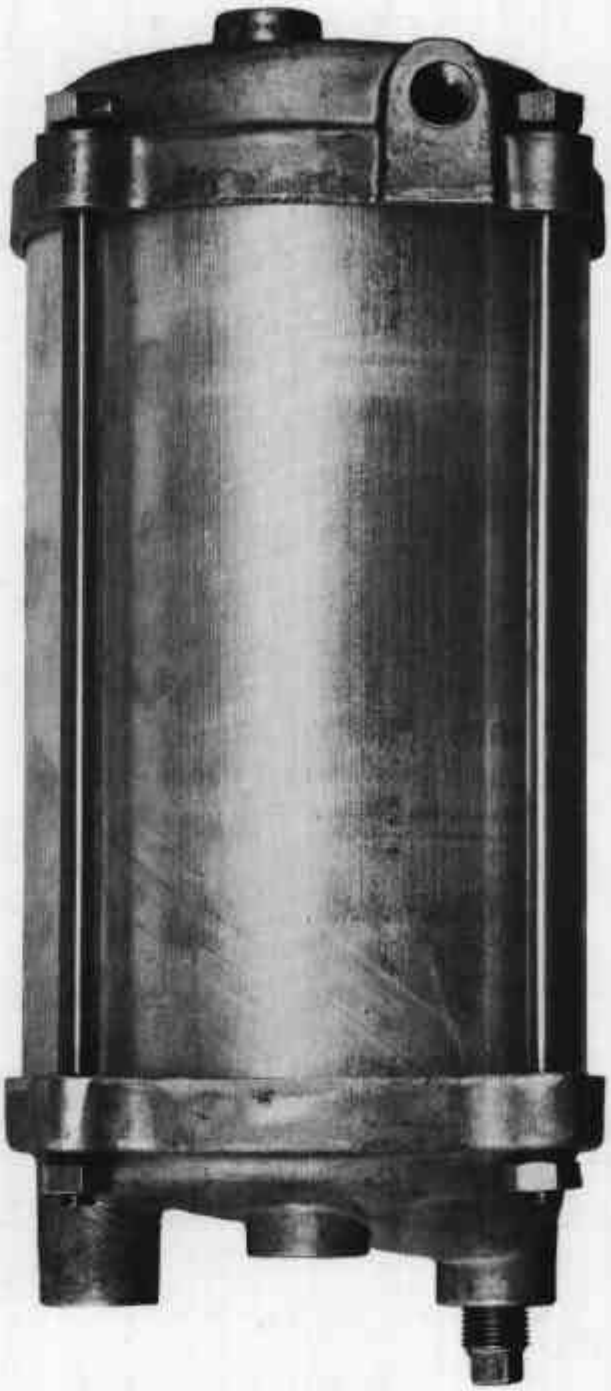
FIGURE 5/6A/45 - 4



Gilbarco T257AC Float Chamber

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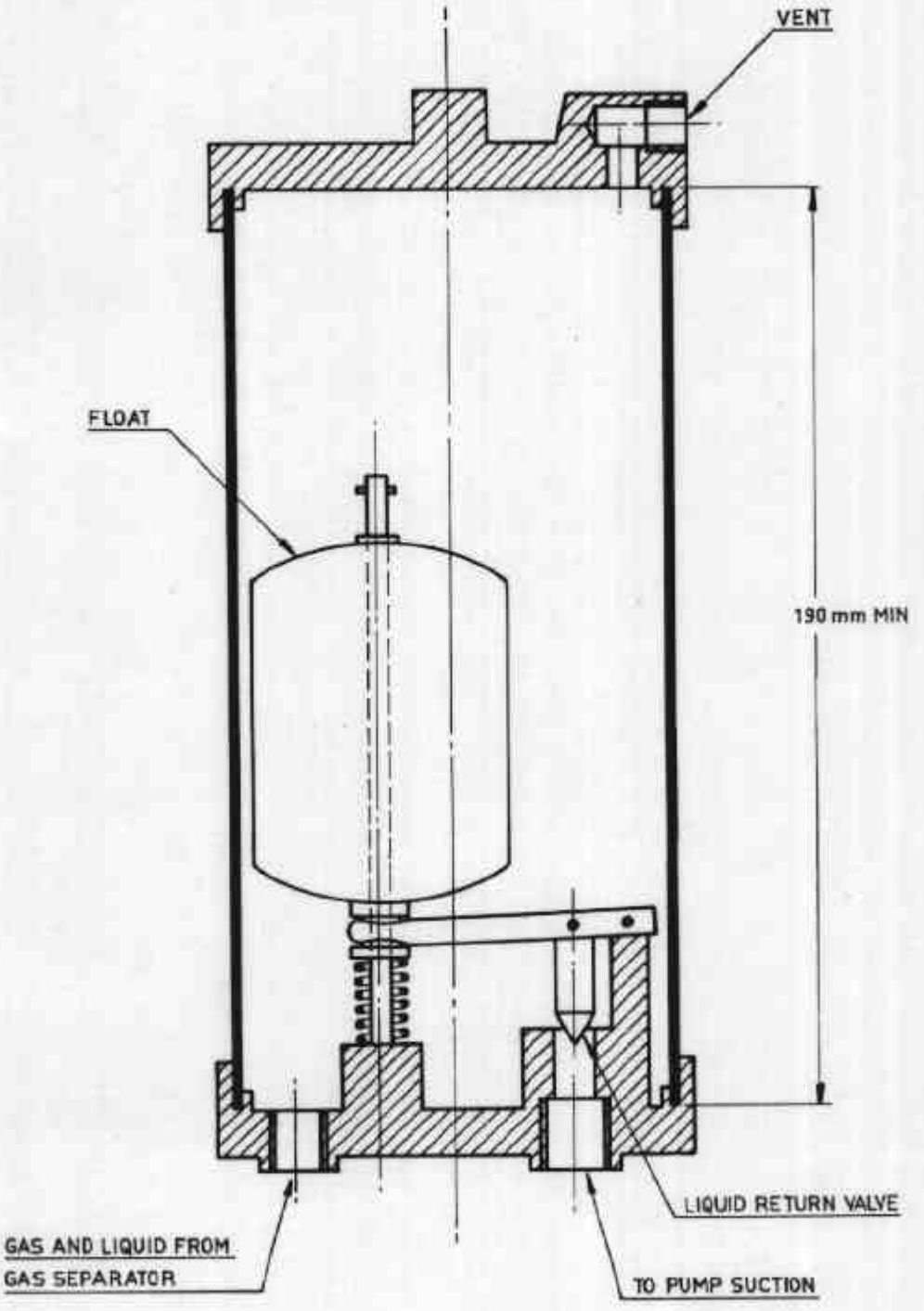
FIGURE 5/6A/45 - 5



Gilbarco T257AC Float Chamber

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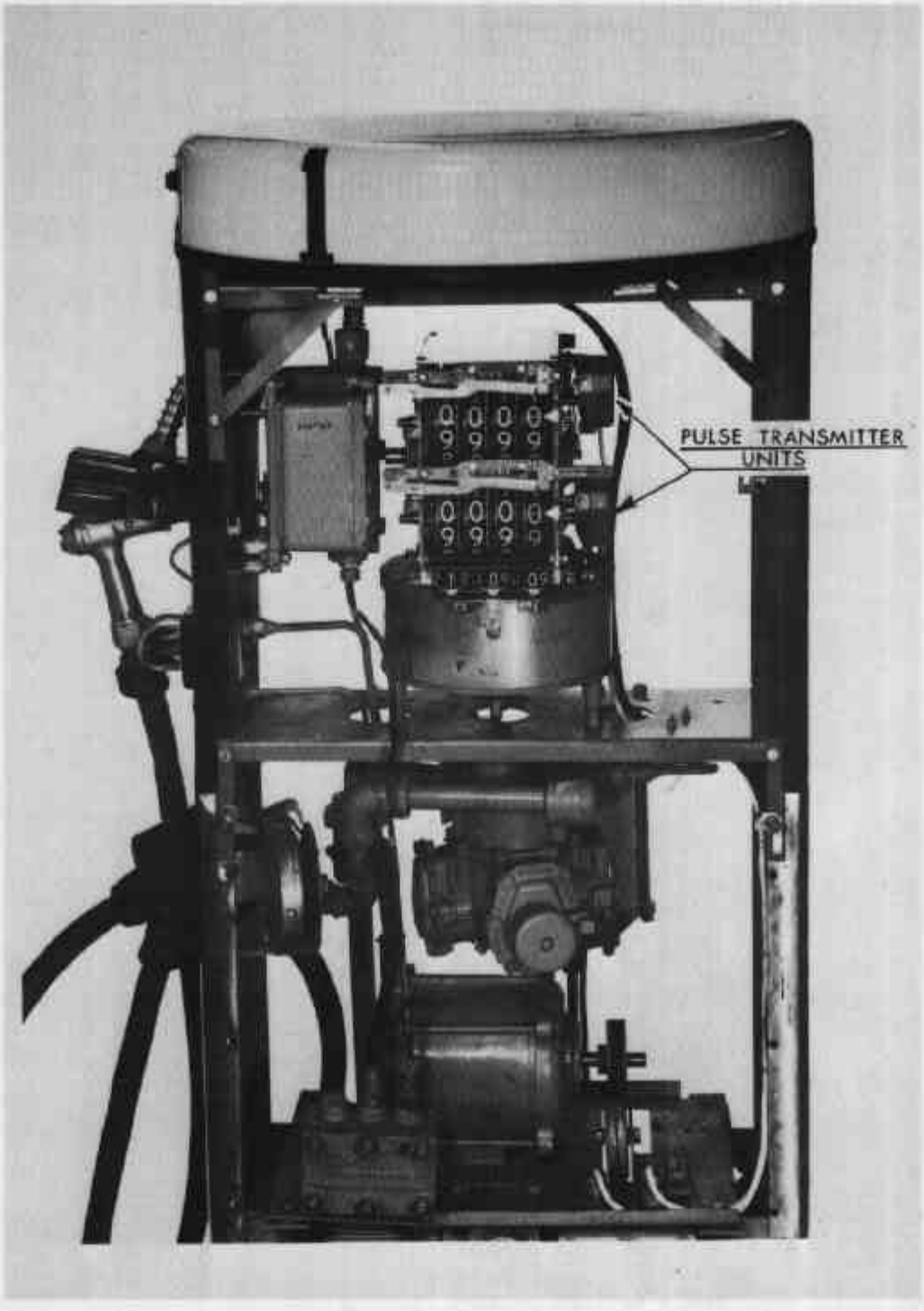
FIGURE 5/6A/45 - 6



Gilbarco T180F

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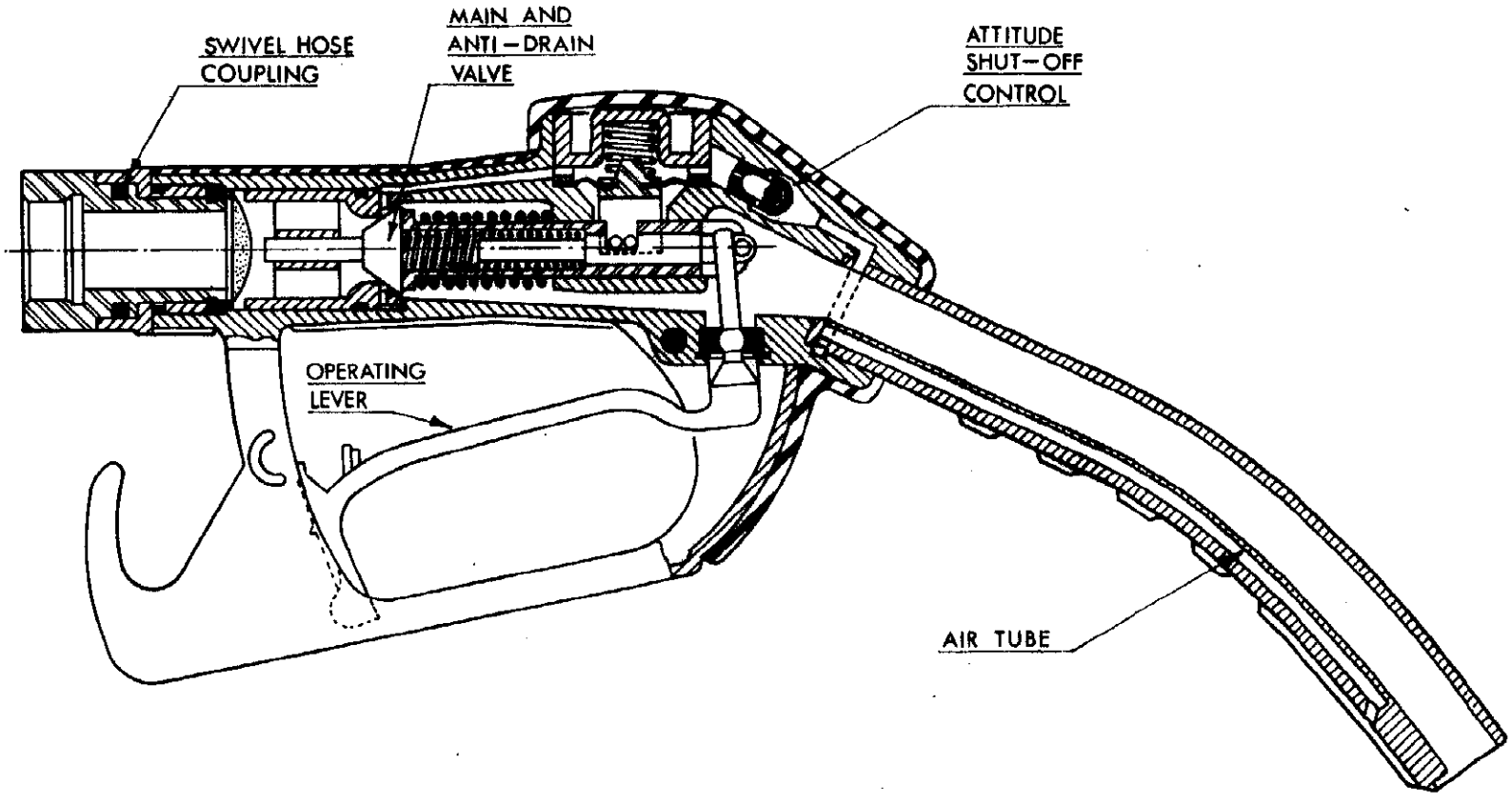
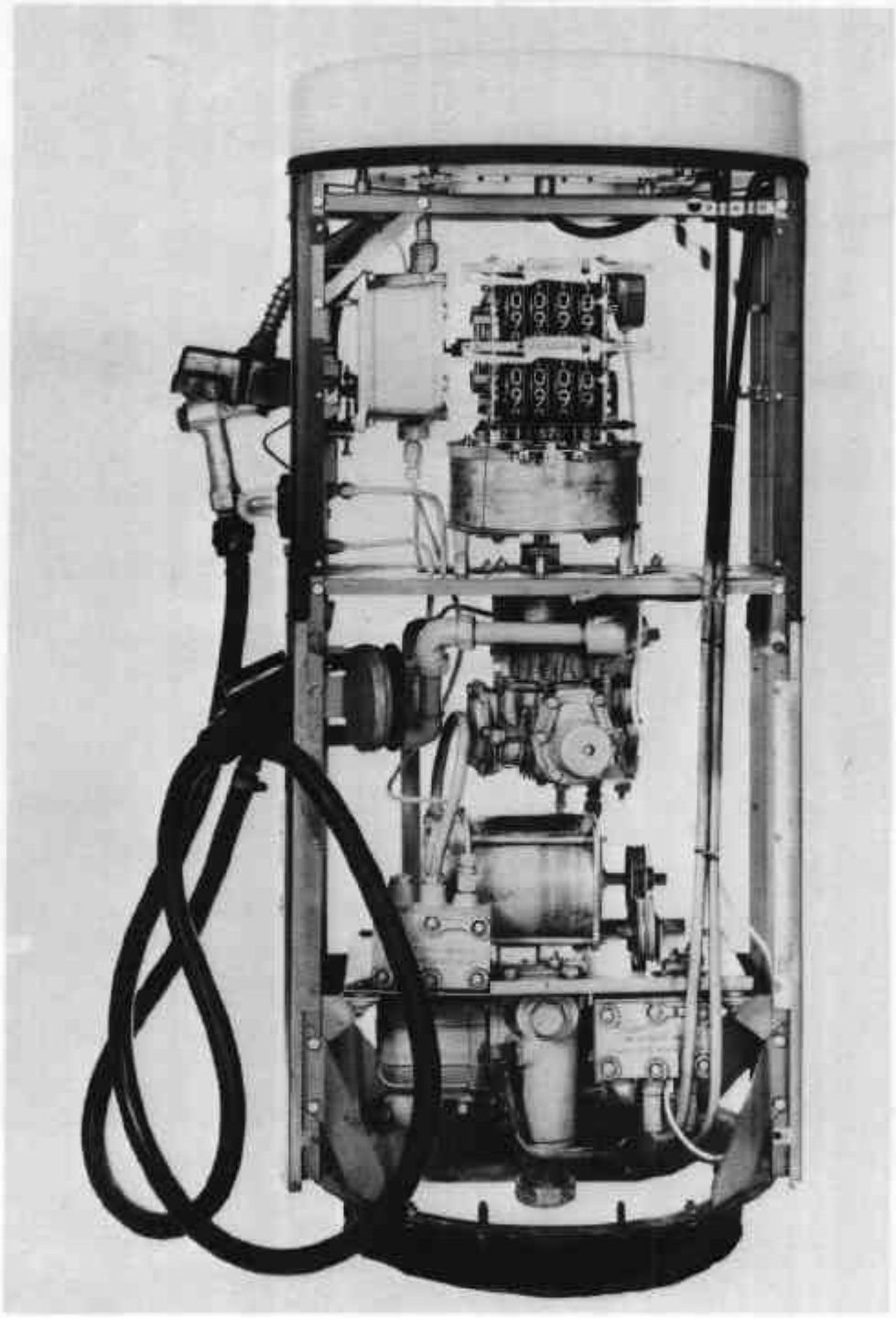
FIGURE 5/6A/45 - 7

ZVA Slimline Automatic Hose Nozzle

FIGURE 5/6A/45 - 8



ZVA Slimline Automatic Hose Nozzle



T180D with Pulse Transmitter and Gas-separator Test Valve

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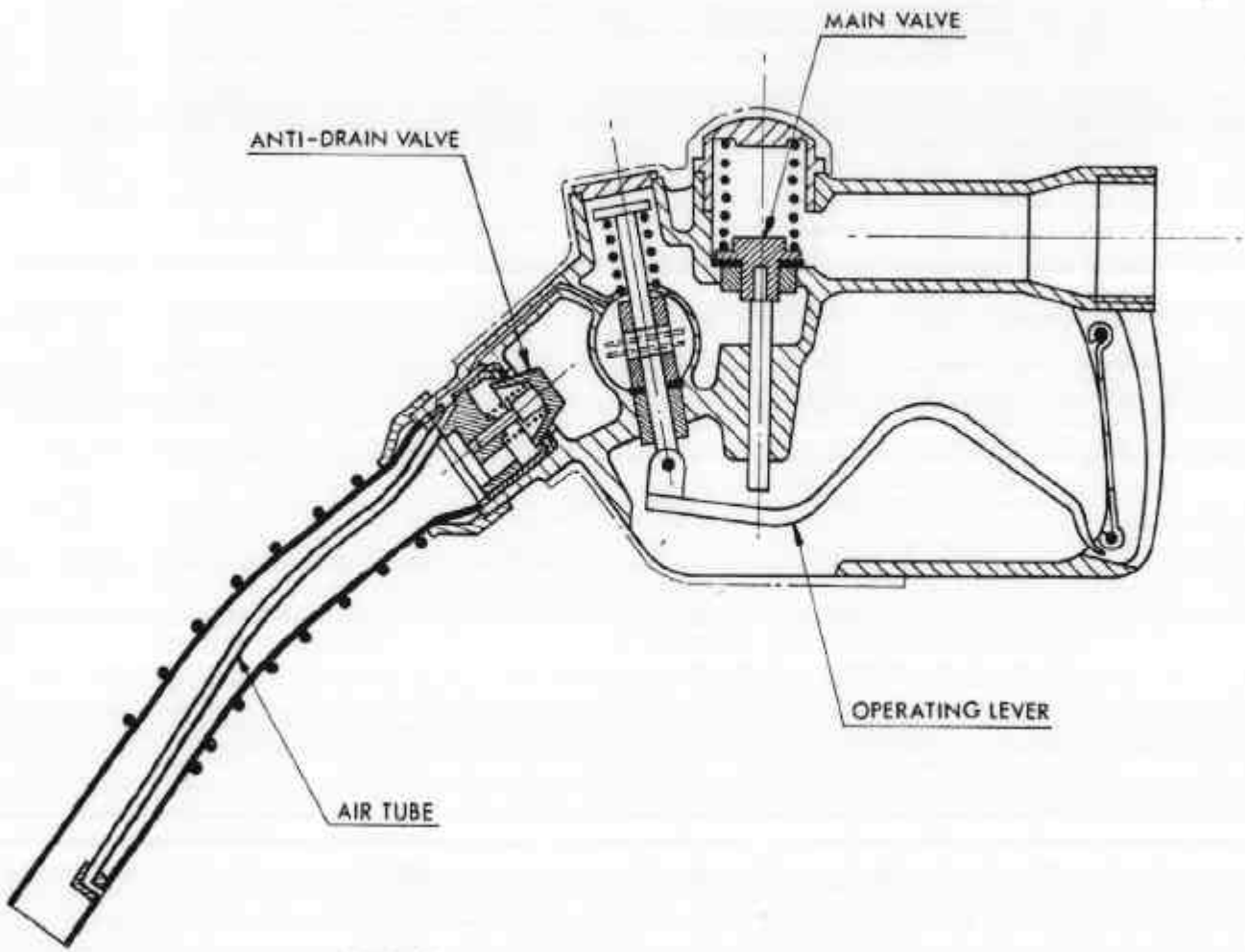
FIGURE 5/6A/45 - 10

EMCO 200A Nozzle

FIGURE 5/6A/45 - 11



EMCO 200A Nozzle — Schematic Diagram

FIGURE 5/6A/45 - 12

Hang-up Bracket

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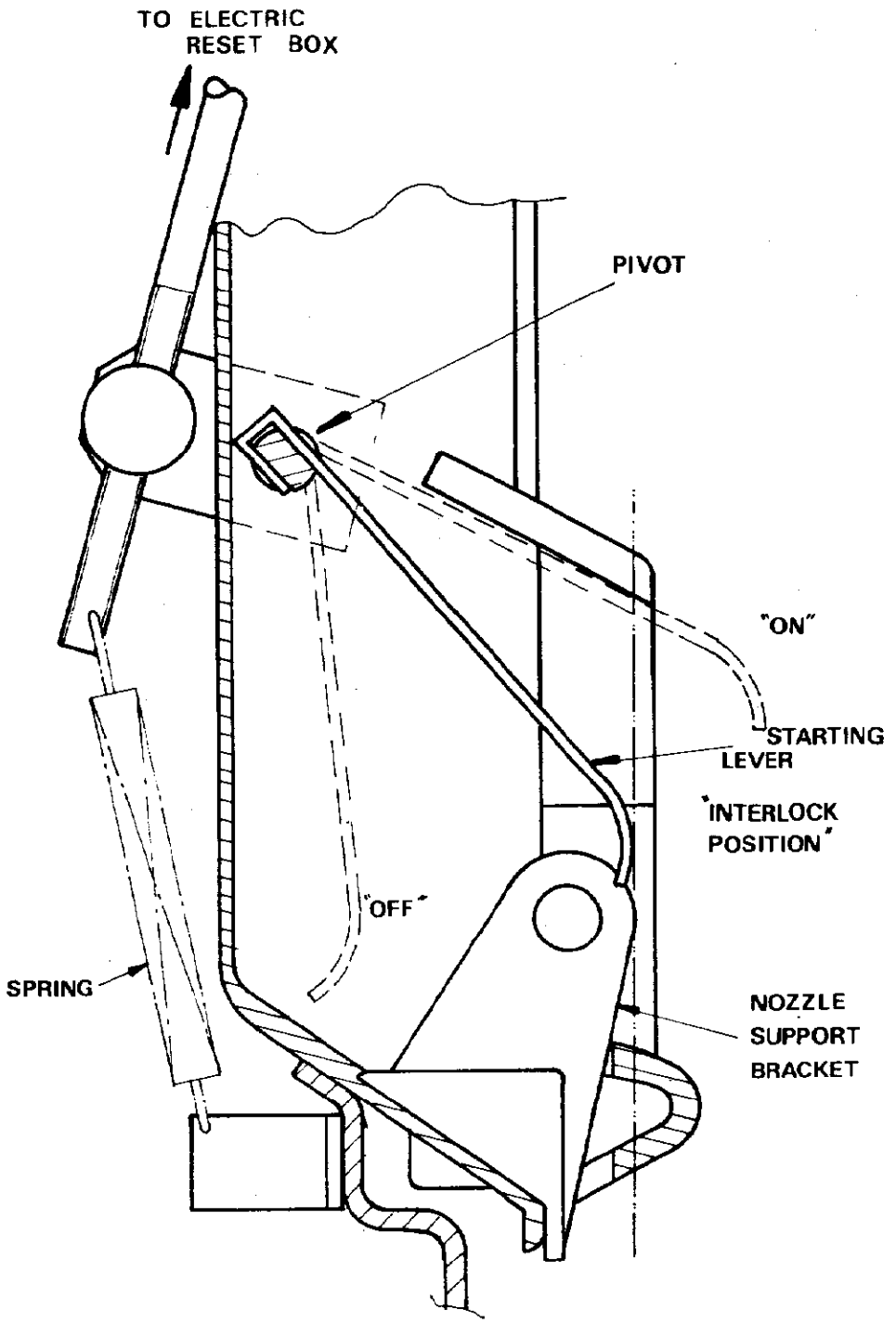

Hang-up for Gilbarco Driveway Flowmeter Model T180D
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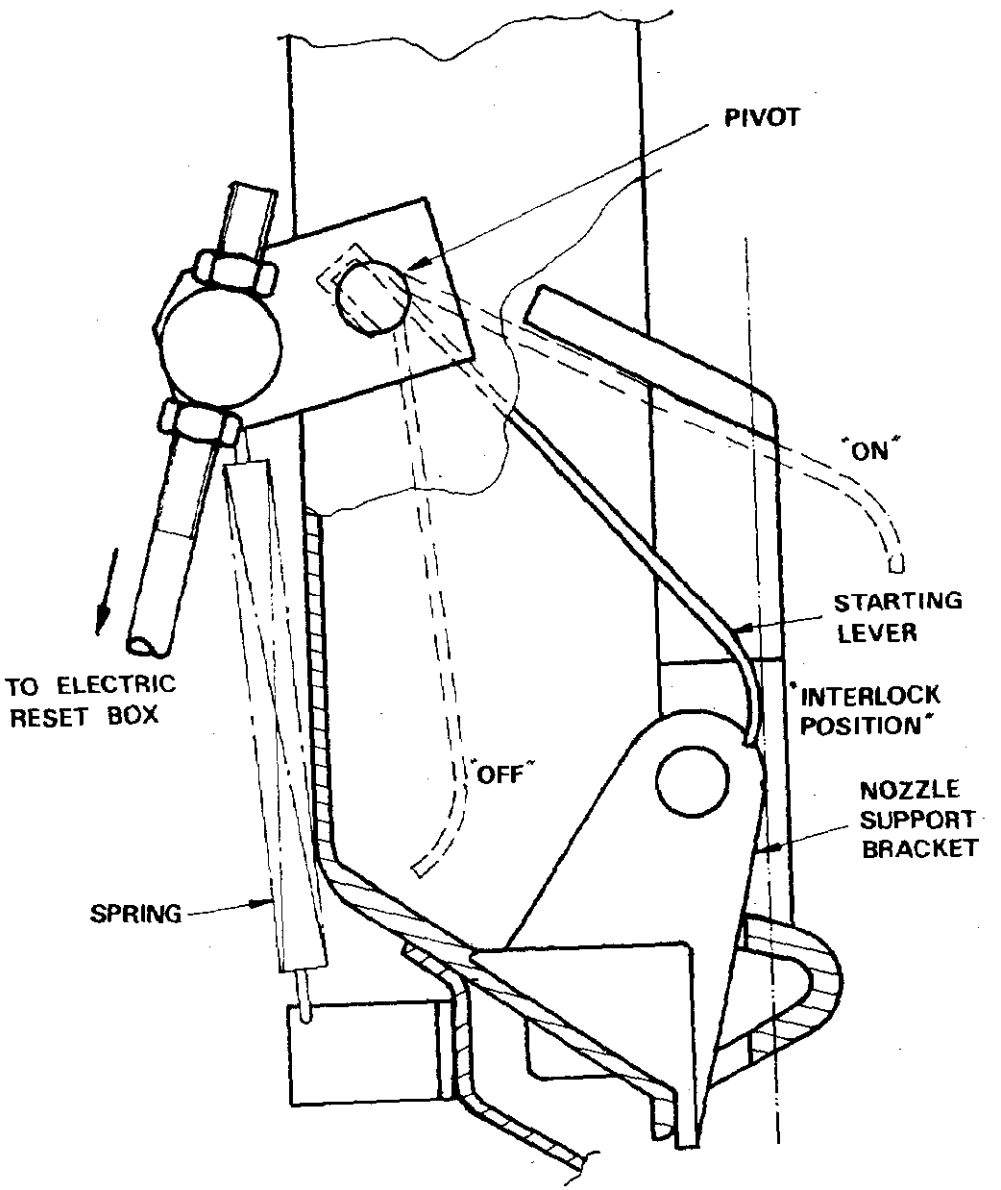
FIGURE 5/6A/45 - 14



Hang-up for Gilbarco Driveway Flowmeter Model T181C

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