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P.O. Box 282 NORTH RYDE
N.S.W. 2113
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Telephone: 888 3922

CERTIFICATE OF APPROVAL No 5/6A/26

VARIATION No 4 CANCELLED 0/2

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

Gilbarco (Blending) Driveway Flowmeter Model T169A and Others

approved in Certificate No 5/6A/26 dated 6 April 1973 and subsequent variations

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

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

Date of Approval: 17 December 1976

The approved modifications, described in Technical Schedule No 5/6A/26 - Variation No 4 and in drawings and specifications lodged with the Commission, provide for:

1. a modified nozzle hang-up holster and starting-lever linkage;

2. relocation of the final filter.

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/26".

Signed

Executive Officer

8/3/77

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/26

This Certificate replaces Certificate No 5/6A/26 dated 11 September 1970.*

In respect of the pattern of

Gilbarco T169A Proportional Blending 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 1 to 4 were approved on 18 March 1969 and 18 July 1969 for various limited durations expiring on 31 December 1969.

Variant 5, which was limited to 189 instruments with serial numbers between 40001/2 and 40377/8, was approved on 2 September 1970.

* NOTE: Figures 5/6A/26 - 1 to 9 of the previous issue form part of the Certificate and must be retained.

6/4/73

Cont'd over

On 30 March 1973 variant 6 was approved and the approval of variants 5 and 6 was limited to a total of 245 instruments with serial numbers between 40001/2 and 40489/90.

The pattern and variants are marked "NSC No 5/6A/26" and comply with the General Specifications for Measuring Instruments to be Used for Trade.

This Certificate comprises:

Pages 1 to 6 dated 6 April 1973.
Figures 5/6A/26 - 1 to 9 undated.

Date of issue 6 April 1973.

Signed

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

DESCRIPTION OF PATTERN*

The pattern (see Figures 1 and 2) is of a retail price-computing flowmeter, dispensing either liquid-A (high octane rating) or liquid-B (low octane rating), or a blend in the ratios 1 : 3 (25-75), 1 : 1 (50-50) or 3 : 1 (75-25), and comprises the following components significant to the approval, housed in a sheet-metal cabinet and arranged as shown in Figure 3:

1. Two positive displacement rotary pumps incorporating gas separators — Gilbarco T258GE, as described in Certificate No 5/6A/24.

2. Two float chambers — Gilbarco T257S — similar to the T257P as described in Certificate No 5/6A/7, but with a light spring placed under the float valve to counteract high vacuum conditions.

3. Two non-return valves — Gilbarco T260AC, with integral pressure-relief valves.

4. Two meters — Gilbarco T262AB, 4-piston radial meters — similar to the T262G as described in Certificate No 5/6A/7, but with the gearing changed so that the output drive shaft rotates at double the speed.

5. Blend-control valve — Gilbarco T169-0034 (see Figure 4), which contains two separate chambers through which the two liquids flow after leaving the meters; a shaft common to the two chambers operates two valves arranged such that as the flow of one liquid increases the flow of the other decreases.

6. Two back-pressure valves — Gilbarco T142-0024 — located downstream of the blend-control valve, between the inlet and outlet pipes of the partial-flow sight glasses, to ensure that liquid flows through the sight glasses by creating a pressure difference between the inlet and outlet pipes.

7. Two sight glasses — Gilbarco T261X, as described in Certificate No 5/6A/7.

8. Hose outlet — Gilbarco T169-0009 (see Figure 5), in which the

* Approval expired 31 December 1969.

output of the two meters is connected to the inner and outer hoses.

9. Two concentric hoses, the inner one of $\frac{1}{2}$ inch ID being 2 inches longer than the outer, which is 1 inch ID.

10. Nozzle — Gilbarco T250H, as described in Certificate No 5/6A/7.

11. Computer — Gilbarco T350AH (see Figure 6), a Veeder-Root 1649 price-computing blend-control system as described in Certificate No 5/6A/28, indicating the quantity delivered in 0.05-gallon increments and giving maximum indications of 99.95 gallons, $99.99 total price and 99.9 cents unit price.

12. Dial face (see Figure 7) — on each side of the pattern behind a glazed window is a white dial with black markings marked as follows:

    (a) the selected blend ratio in contrasting colours and figures;

    (b) the price per gallon of each of the two liquids, being the prices at which the computer is calculating the total price;

    (c) the quantity of liquid dispensed;

    (d) the total price.

The price-computing blend-control system (see Figure 8) is driven by the two meters, one for each liquid. The proportion of each liquid in the blend delivered is controlled by the blend-control valve which controls the flow of liquid from each meter, such that the output drive shafts rotate at speeds which are proportional to the selected blend. A differential gear senses the relative rotation of the meters and through a rod (see Figure 9) sets the position of the blend-control valve.

The selection of either one of the two liquids stops the pump motor for the other liquid; the selection of a blend engages the appropriate gear to determine the relative speed of the meters, and thus the selected blend.

If insufficient quantity of one liquid is available for blending in the correct ratio, the blend-control valve will stop the flow of the other liquid and no delivery will occur.

On the computer an external cam and spring-loaded finger allows only the 1 : 0 (100-0), 1 : 3 (25-75), 1 : 1 (50-50), 3 : 1 (75-25), and 0 : 1 (0-100) blend ratios to be selected.

The instrument is approved for a maximum flow rate of 11 gallons per minute and is approved for liquid petroleum of viscosity not more than 1 cSt, the nameplate being marked "approved for petroleum ≦ 1 cSt". The maximum flow rate is achieved with a 1 : 1 blend ratio.

The nozzle hang-up is as described in variant 2 to Certificate No 5/6A/24.

The blend-selector knob cannot be turned after the starting handle is on, and the starting handle cannot be turned on unless the blend-selector knob is set to one of the five denominated positions.

All quantity and price indications are stationary when the instrument is "on" but with the nozzle shut off.

DESCRIPTION OF VARIANTS

*1. With grey dial with white markings.

*2. Being fitted with:

(a) An OPW 1A or 1AM automatic hose nozzle as described in Certificate No 5/6A/7.

(b) An STM 363 automatic hose nozzle as described in Certificate No 5/6A/7.

*3. Being fitted with a final filter, as described in Certificate No 5/6A/1.

*4. Having the 0.1-cent price-posting wheels on the computer indicating in whole numbers with a decimal point marked on the dial plate.

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* Approval expired 31 December 1969.

*5. The pattern having the meter sealed by a cup seal as described in Certificate No 5/6A/24, and fitted with any of the following:

(a) grey dial with white markings;

(b) the nozzle as described in variant 2;

(c) a final filter as described in variant 3; and

(d) the price-posting wheels as described in variant 4.

*6. Variant 5 having the computer replaced by the Veeder-Root computer Model 7067, as described in Certificate No 5/6A/39.

GENERAL NOTES

1. Variant 5 approves of the pattern of instruments made in conformity with the pattern and variants 1 to 4, provided the instrument is sealed by a cup seal. This variant was added after a re-examination of the pattern requested pursuant to regulation 10 of the Weights and Measures (Patterns of Instruments) Regulations.

2. The following test procedures should be applied:

(a) The accuracy of the volume delivered, the price computed and the flow rate must be checked on every blend, as well as for the individual liquids.

(b) Check hose dilation in each unblended position and in the 1 : 1 blend position of the blend-selector knob.

3. Each instrument is marked with a serial number, which is two consecutive numbers and which is written in the form 40001/2, 40003/4 .... 40487/8, 40489/90.

* Approval limited to instruments serial numbers 40001/2 to 40489/90.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/26

VARIATION No 1

Pattern: Gilbarco Blending Driveway Flowmeter Model T169A

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

Date of Approval of Variants: 13 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/26 dated 6 April 1973:

Pages 3 to 6 dated 6 April 1973
Figures 5/6A/26 - 1 to 9 undated

All instruments conforming to this approval shall be marked with the approval number "NSC No 5/6A/26".

The approval is limited to a total of 245 instruments with serial numbers between 40001/2 and 40489/90.

Description:

This variation approves:

1. The fitting of a Gilbarco T173-0037 pulse transmitter to the quantity or quantity-and-price drive shafts of the Veeder-Root 1649 computer through sprockets and toothed belts (see Figures 10 and 11). An electric reset unit as described in Certificate No 5/6A/24 is fitted. The nozzle hang-up interlock position is shown in Figure 12. The instrument is known as Model T169C; and

2. converting all blending driveway flowmeter models to indicate in metric units in accordance with Appendix 14 of the General Specifications for Measuring Instruments to be Used for Trade.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/26

VARIATION No 2

Pattern: Gilbarco T169A (Blending) Driveway Flowmeter

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

Date of Approval of Variation: 26 September 1975

The modifications described in this Schedule apply to the patterns described in Certificate No 5/6A/26 dated 6 April 1973, and Technical Schedule No 5/6A/26 - Variation No 1 dated 22 May 1974.

All instruments conforming to this approval shall be marked "NSC No 5/6A/26".

The method of converting blending driveway flowmeters to the metric system of measurement advised in Technical Schedule No 5/6A/26 - Variation No 1 dated 22 May 1974 is replaced by the method detailed below. Appendix 14 is not applicable to blending driveway flowmeters.

Description:

The approved modifications convert the Veeder-Root computer from the imperial to the metric system of measurement.

The modification of the Veeder-Root 1649 computer comprises:

1. The overgearing on the drive from the meter to the computer changed to provide an input to the computer of four revolutions per litre.

2. The gear ratio (4 : 3) between the price spur gear in the variator and input gear of the counter section of the computer changed to 8 : 3 by the replacement of two drive gears (see Figure 13).

3. The right-hand quantity-indicating wheel replaced by a quantity wheel with ten graduations numbered 0 to 9.

4. The dial face marked "litres" and "cents per litre". A decimal marker is provided between the tenths and whole litre indicating wheels.

The computer* indicates in 0,1-litre increments, giving a maximum indication of 999,9 litres, $99,99 total price and 99,9 cents unit price.

The approval includes similar modifications to the Veeder-Root 7525 computer**, which comprises a blend-control section and a counter section (see Figure 14) and two VR 101 variators (see Figures 15 and 16).

The pinions on the variators are topped with pinned metal shields which prevent the segmented gears from being disengaged from the pinions (see Figures 16 and 17). Metal guards attached to studs on the counter and blend-control sections prevent the price-posting wheels from being disengaged from the segmented price-posting gears (see Figure 18).

The computer* indicates in 0,1-litre increments, giving a maximum indication of 999,9 litres, $99,99 total price and 99,9 cents unit price. The right-hand quantity-indicating wheels are marked with ten graduations numbered 0 to 9.

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* Note: The maximum speed recommended by the manufacturer for the right-hand wheel of any computer should not be exceeded.

** This computer was previously referred to as a Veeder-Root 7067 computer.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/26

VARIATION No 3

Pattern: Gilbarco T169A (Blending) 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/26 dated 6 April 1973 and Technical Schedule No 5/6A/26 - Variations 1 and 2 dated 22 May 1974 and 27 October 1975 respectively.

All instruments conforming to this approval shall be marked "NSC No 5/6A/26".

Description:

The approved modification provides for a ZVA Slimline automatic hose nozzle (see Figures 19 and 20). 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/26

VARIATION No 4

Pattern: Gilbarco (Blending) Driveway Flowmeter Model T169A and Others
approved in Certificate No 5/6A/26 dated 6 April 1973 and subsequent variations

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

Date of Approval of Variation: 17 December 1976

The modifications described in this Schedule apply to the patterns described in Certificate No 5/6A/26 dated 6 April 1973 and Technical Schedule No 5/6A/26 - Variation Nos 1, 2 and 3 dated 22 May 1974, 27 October 1975 and 15 April 1976 respectively.

All instruments conforming to this approval shall be marked "NSC No 5/6A/26".

Description:

The approved modifications provide for:

1. The holster of the Gilbarco T169C Driveway Flowmeter fitted with a bracket which prevents the starting lever being lifted up beyond its "on" position (see Figure 21). The linkage connecting the starting lever to the cams in the electric reset unit is illustrated in Figure 22.

2. 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.

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6A/26

CHANGE No 1

The restriction on the number of

Gilbarco Blending Driveway Flowmeters Model T169A

approved in Certificate No 5/6A/26 dated 6 April 1973 and subsequent variations

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

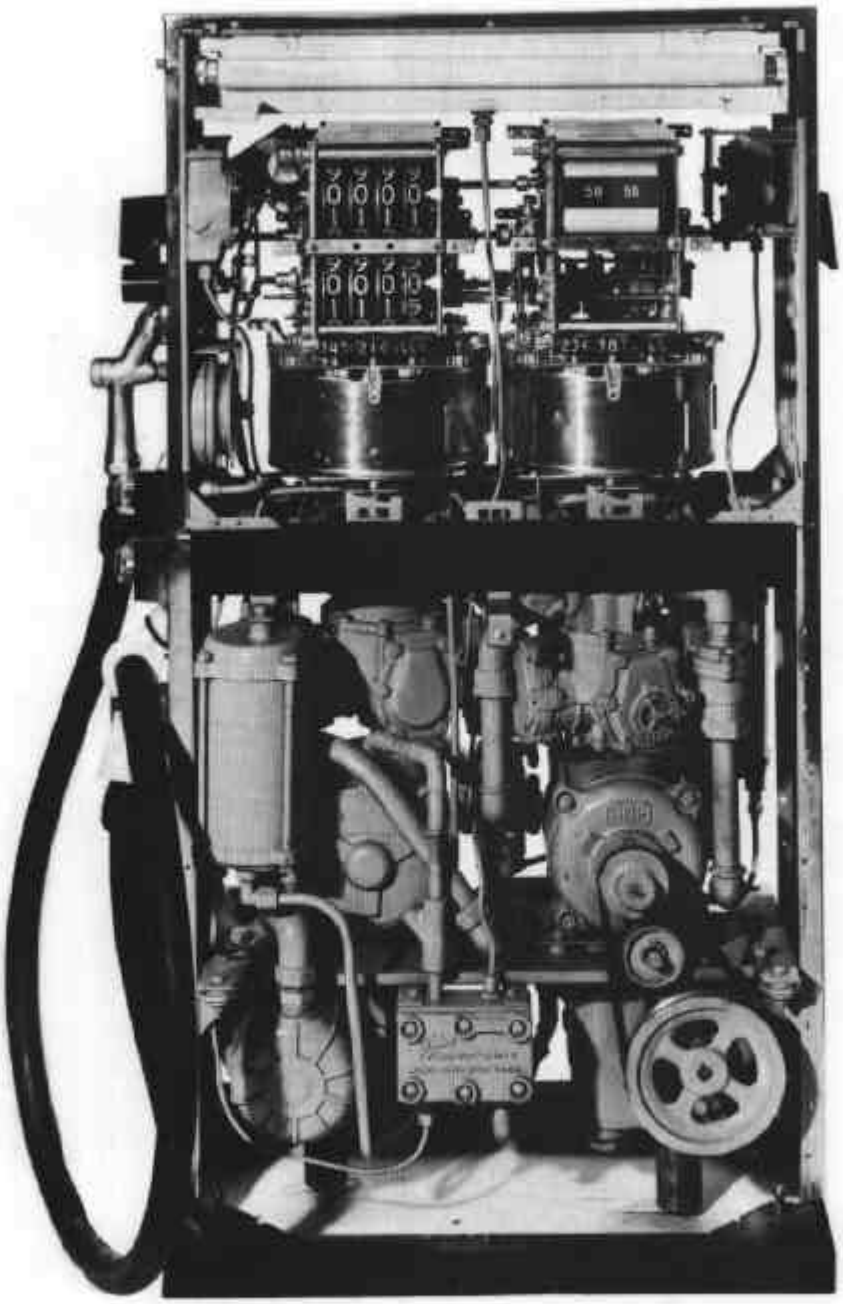
was removed on 13 February 1975.

Signed

Executive Officer

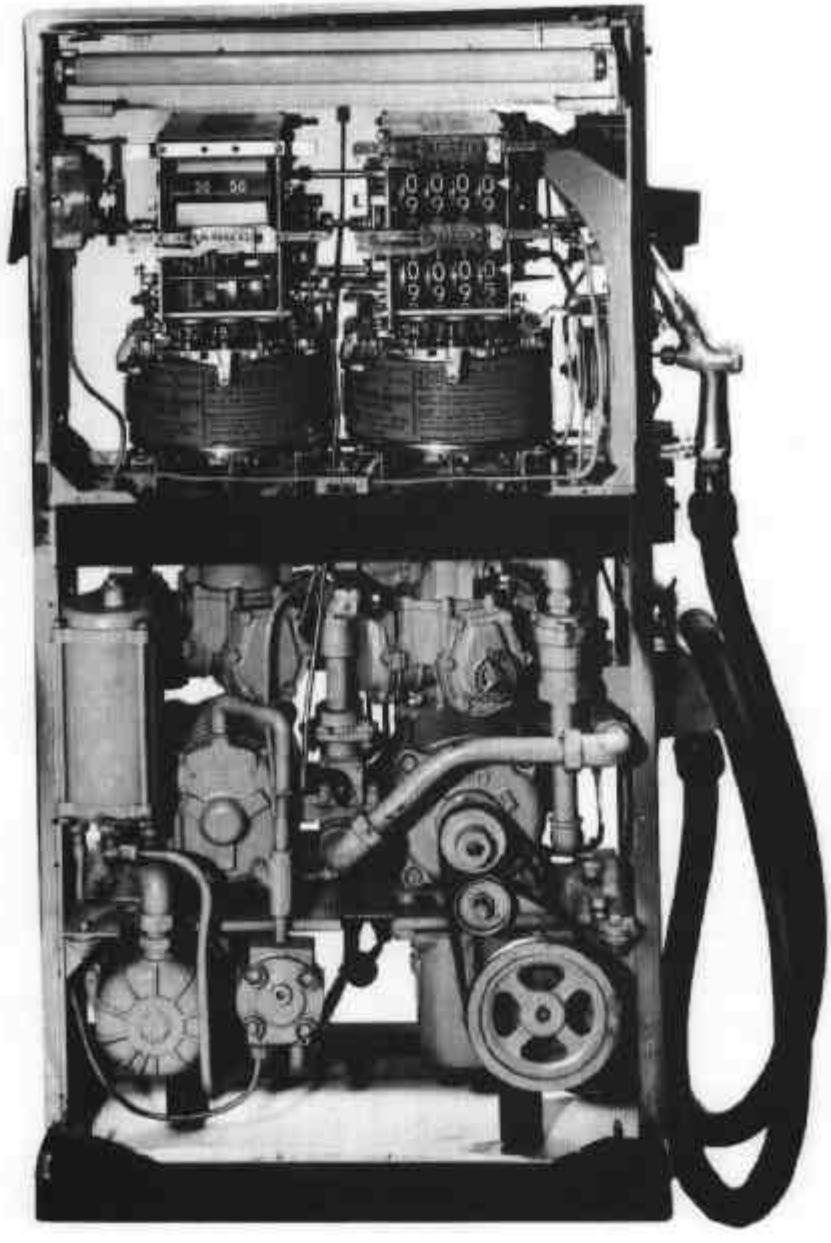
20/2/75

FIGURE 5/6A/26 - 1



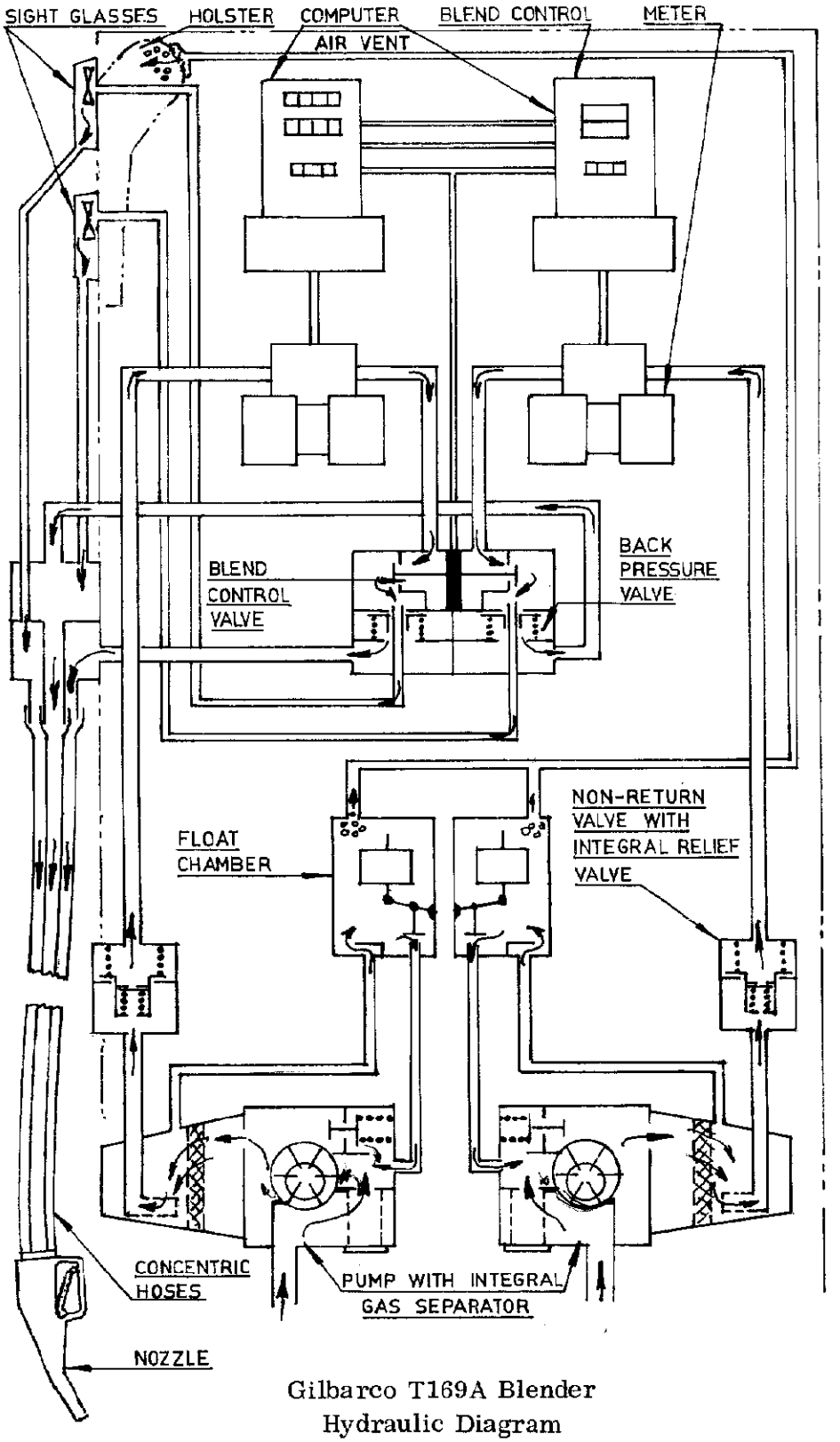
Gilbarco T169A Blender - Front

FIGURE 5/6A/26 - 2



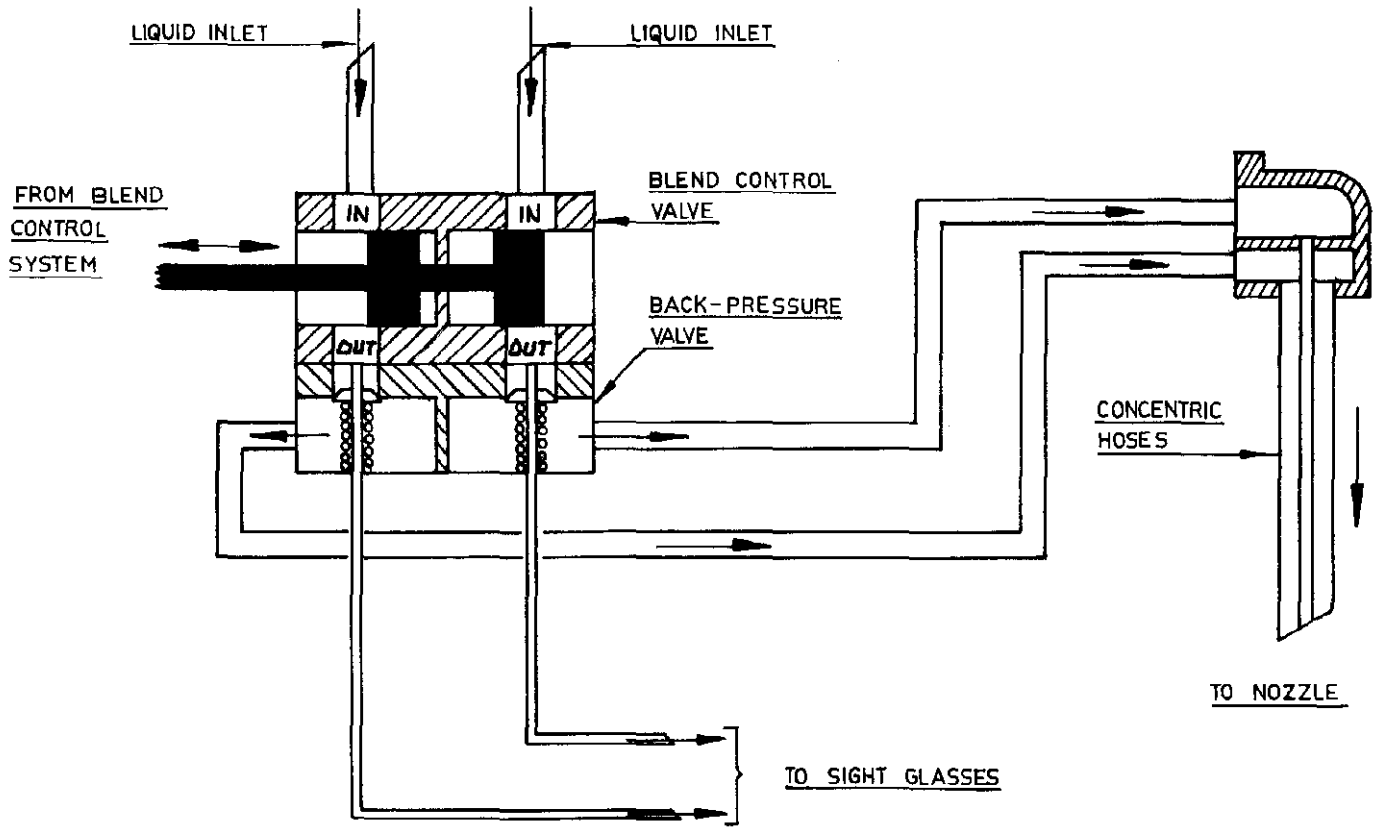
Gilbarco T169A Blender - Rear

FIGURE 5/6A/26 - 3



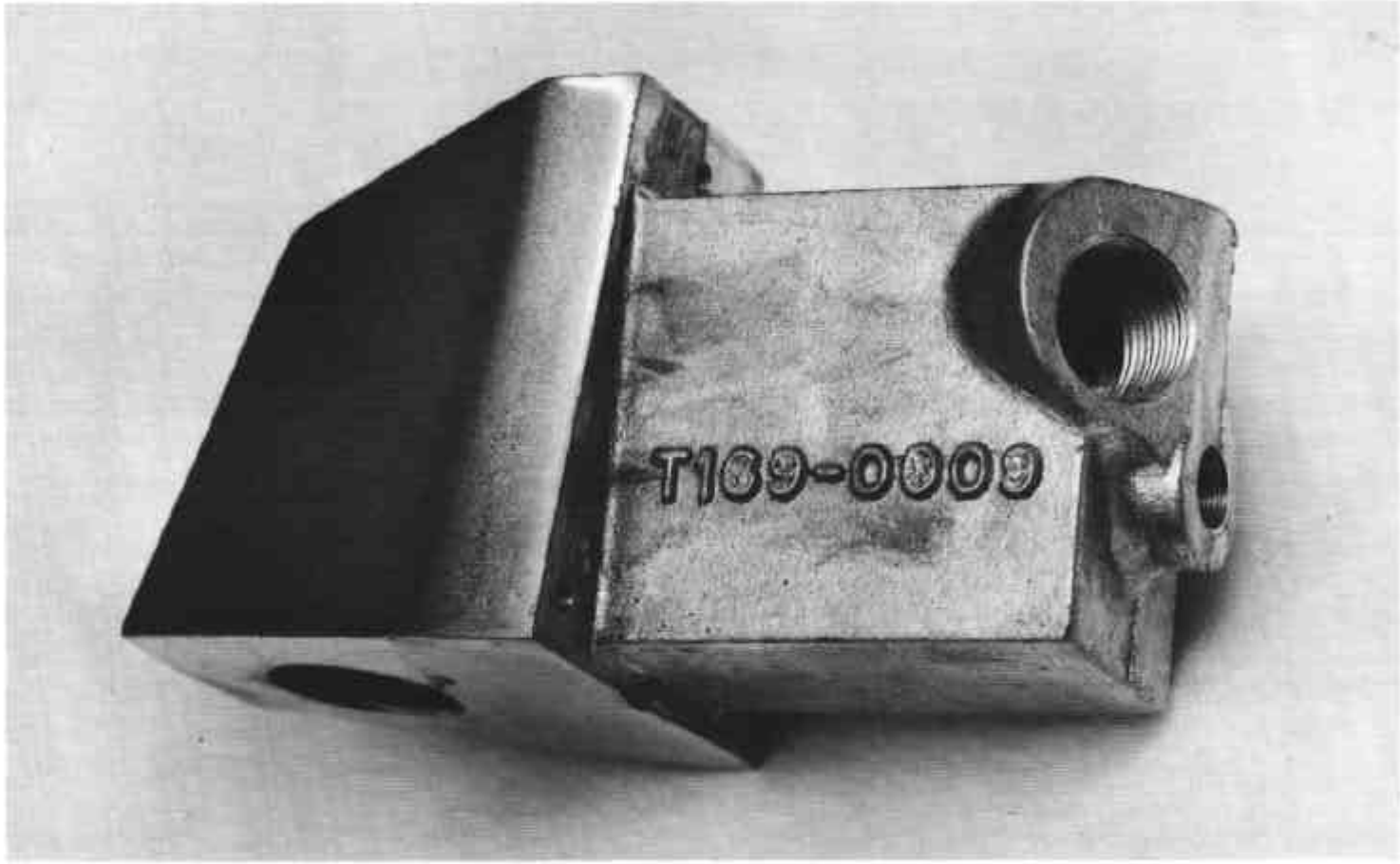
Gilbarco T169A Blender
Hydraulic Diagram

FIGURE 5/6A/26 - 4



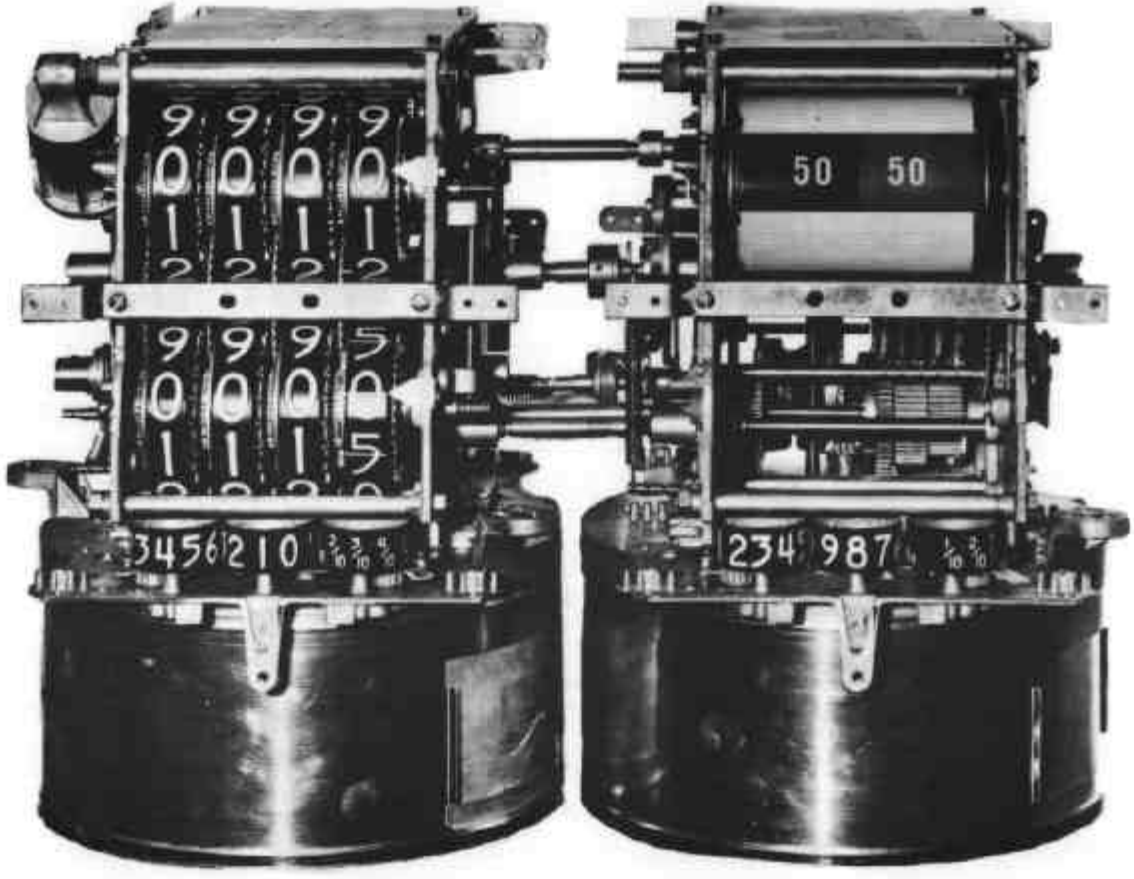
Gilbarco T169A-0034 Blend Control Valve

FIGURE 5/6A/26 - 5



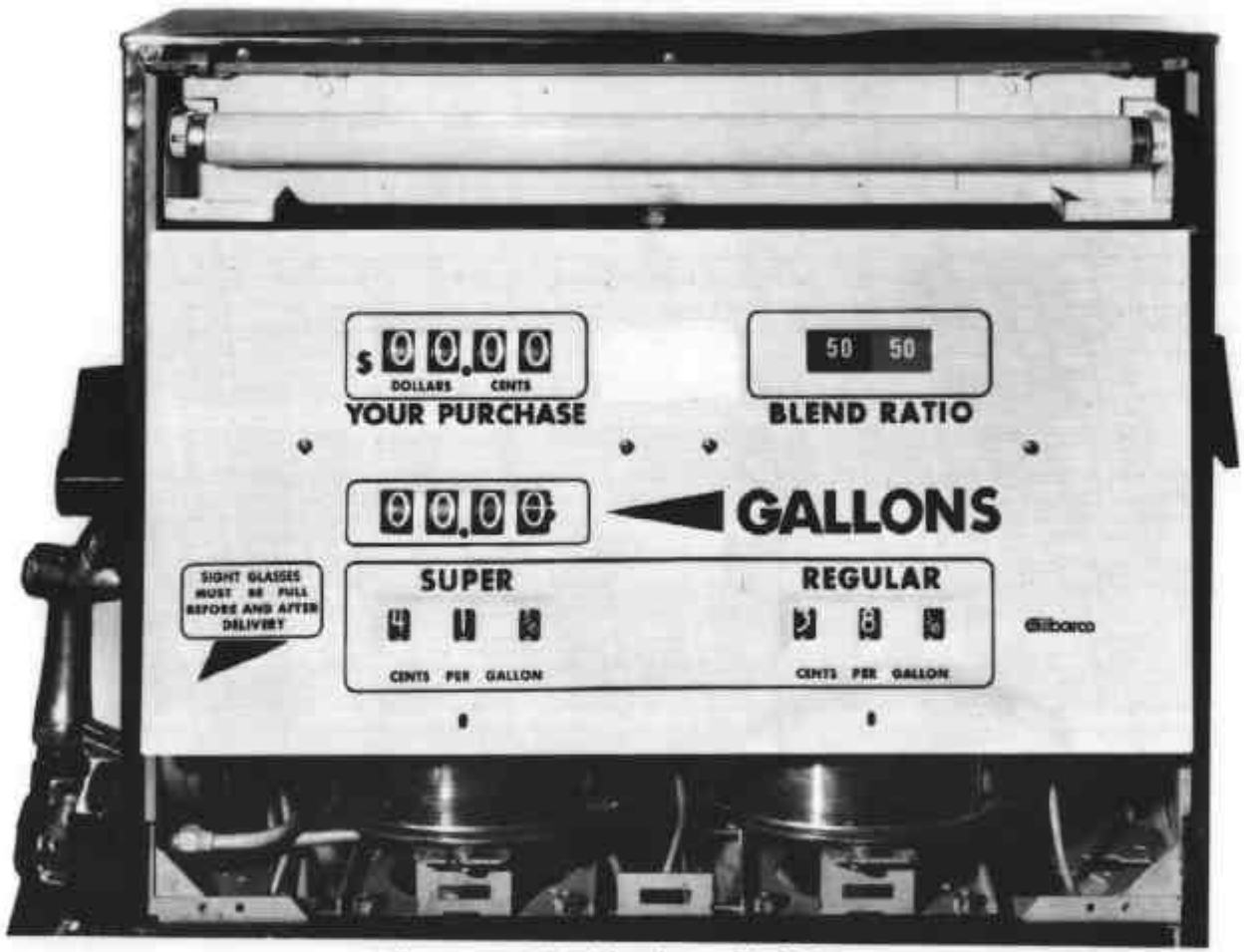
Gilbarco T169-0009 Hose Outlet

FIGURE 5/6A/26 - 6



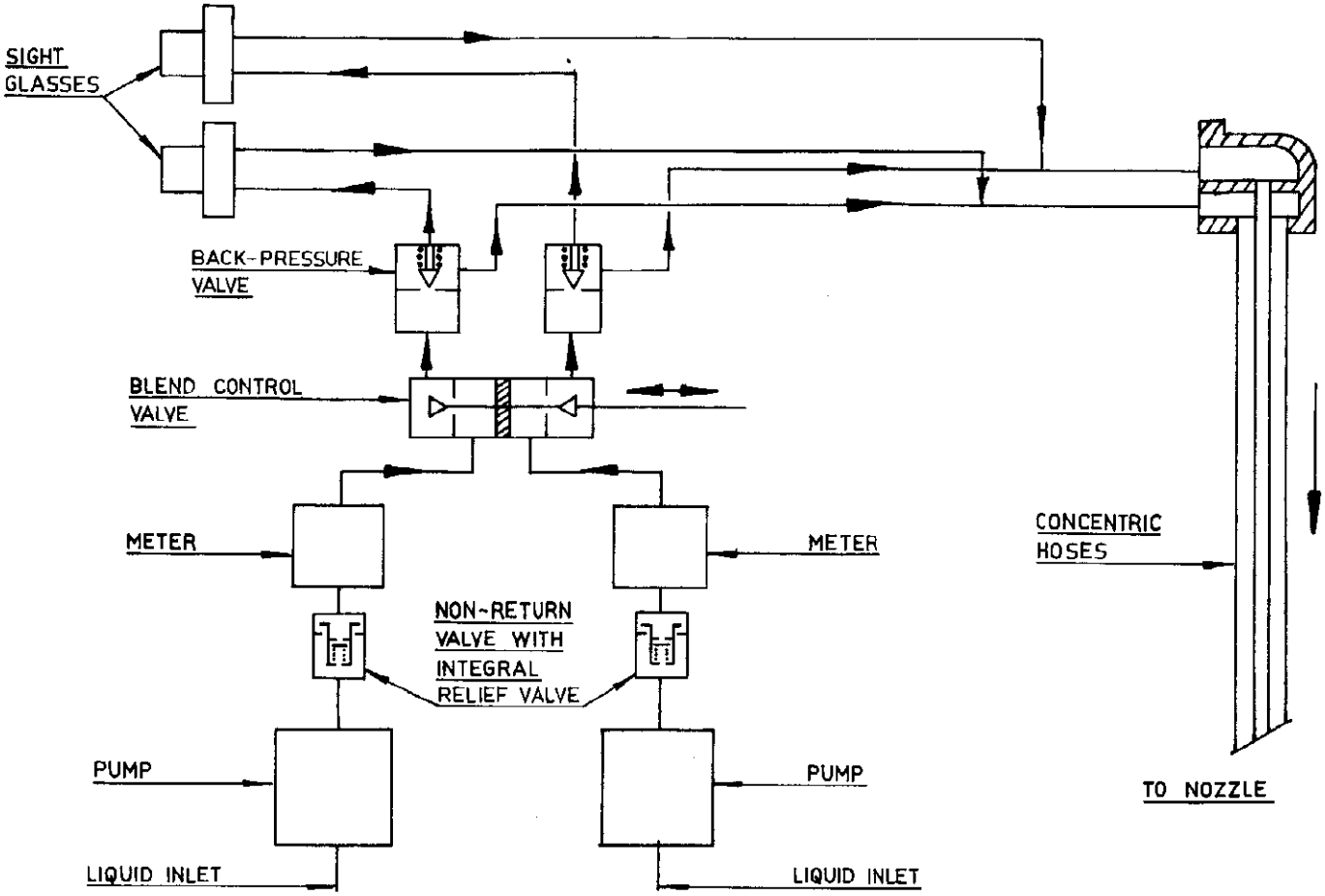
Gilbarco T350AH Computer
(Veeder-Root 1649)

FIGURE 5/6A/26 - 7



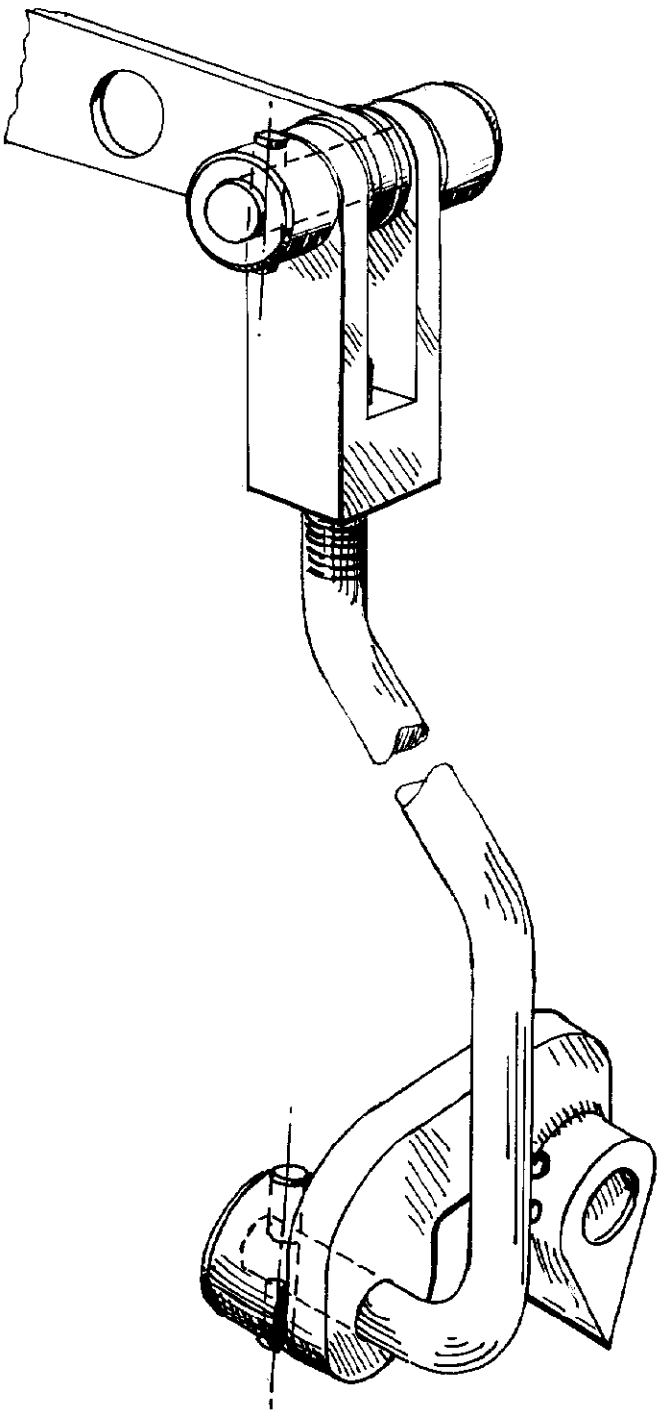
Gilbarco T169A Blender - Dial Face

FIGURE 5/6A/26 - 8



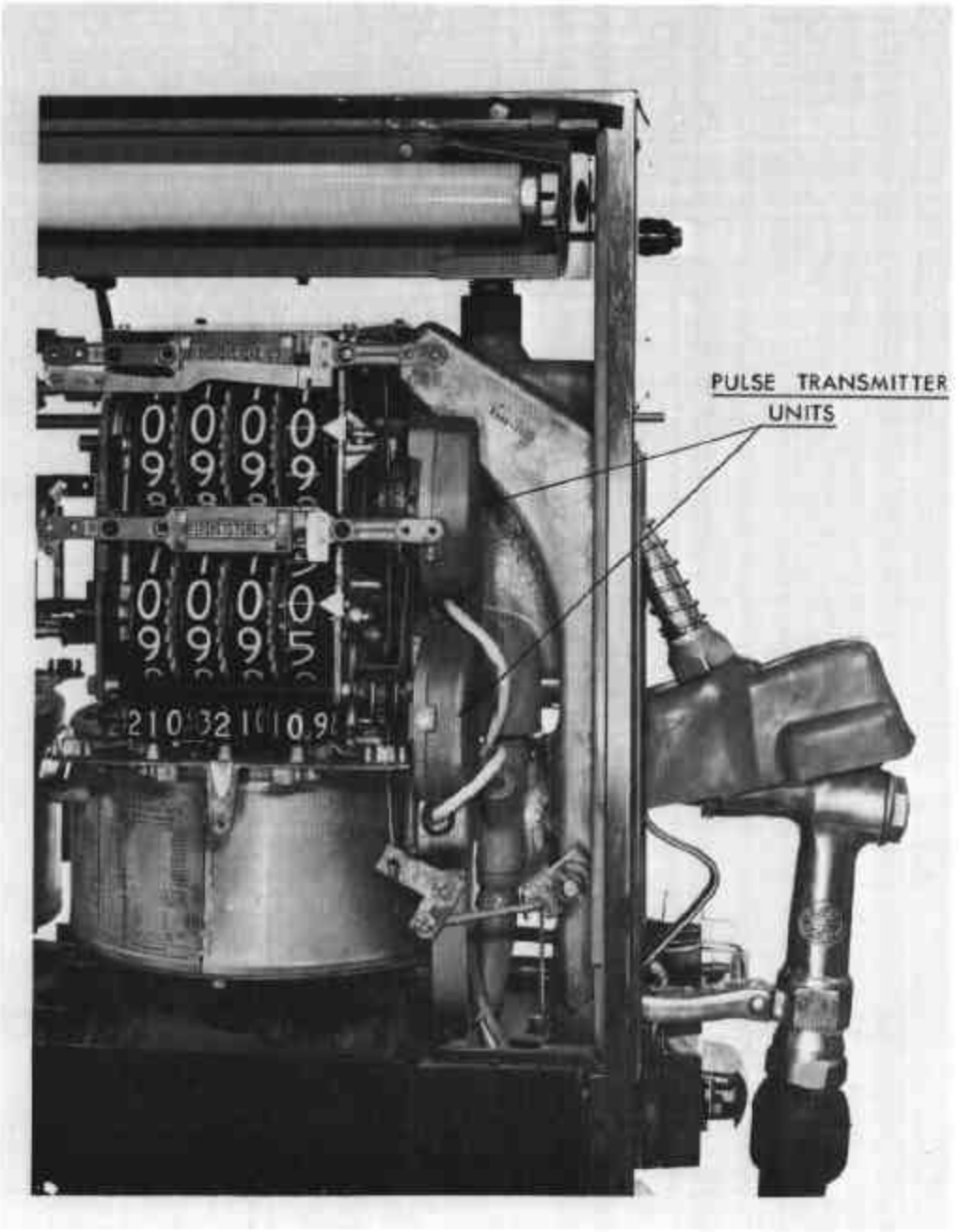
Gilbarco T169A - Blend Control System

FIGURE 5/6A/26 - 9



Coupling Rod
Blend Control System to Blend Control Valve

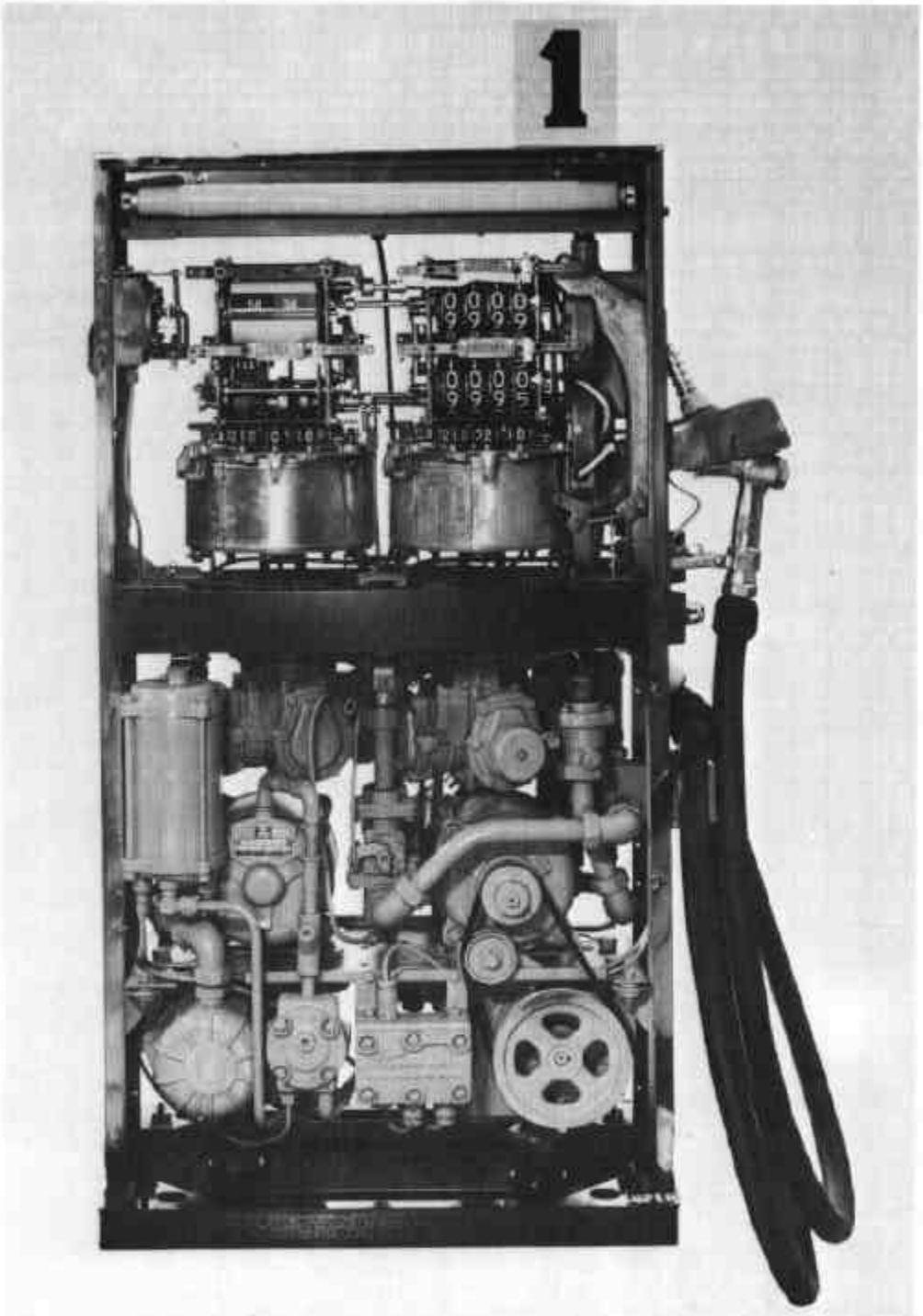
FIGURE 5/6A/26 - 10



Pulse-transmitter Units

22/5/74

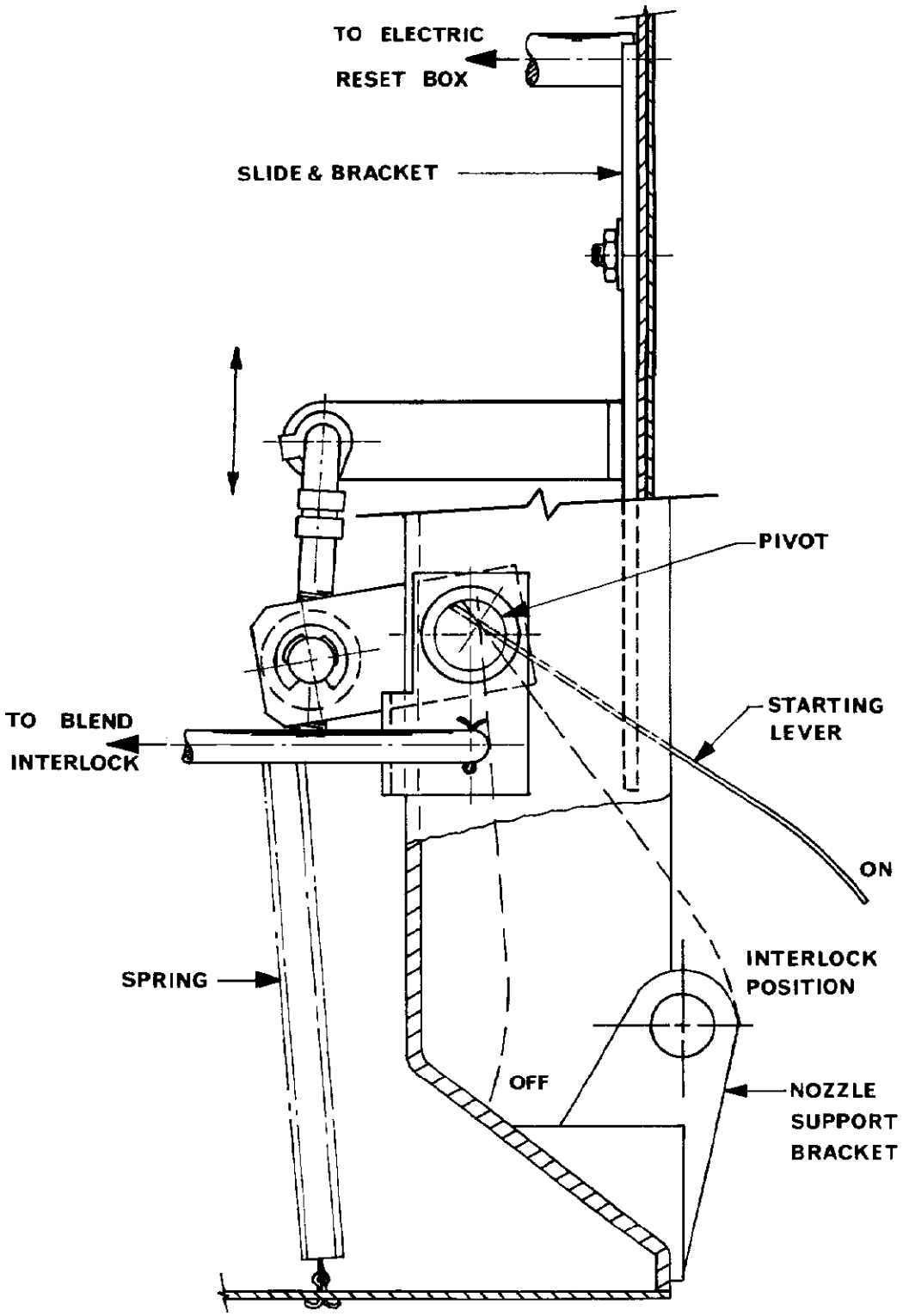
FIGURE 5/6A/26 - 11



Gilbarco T169C

22/5/74

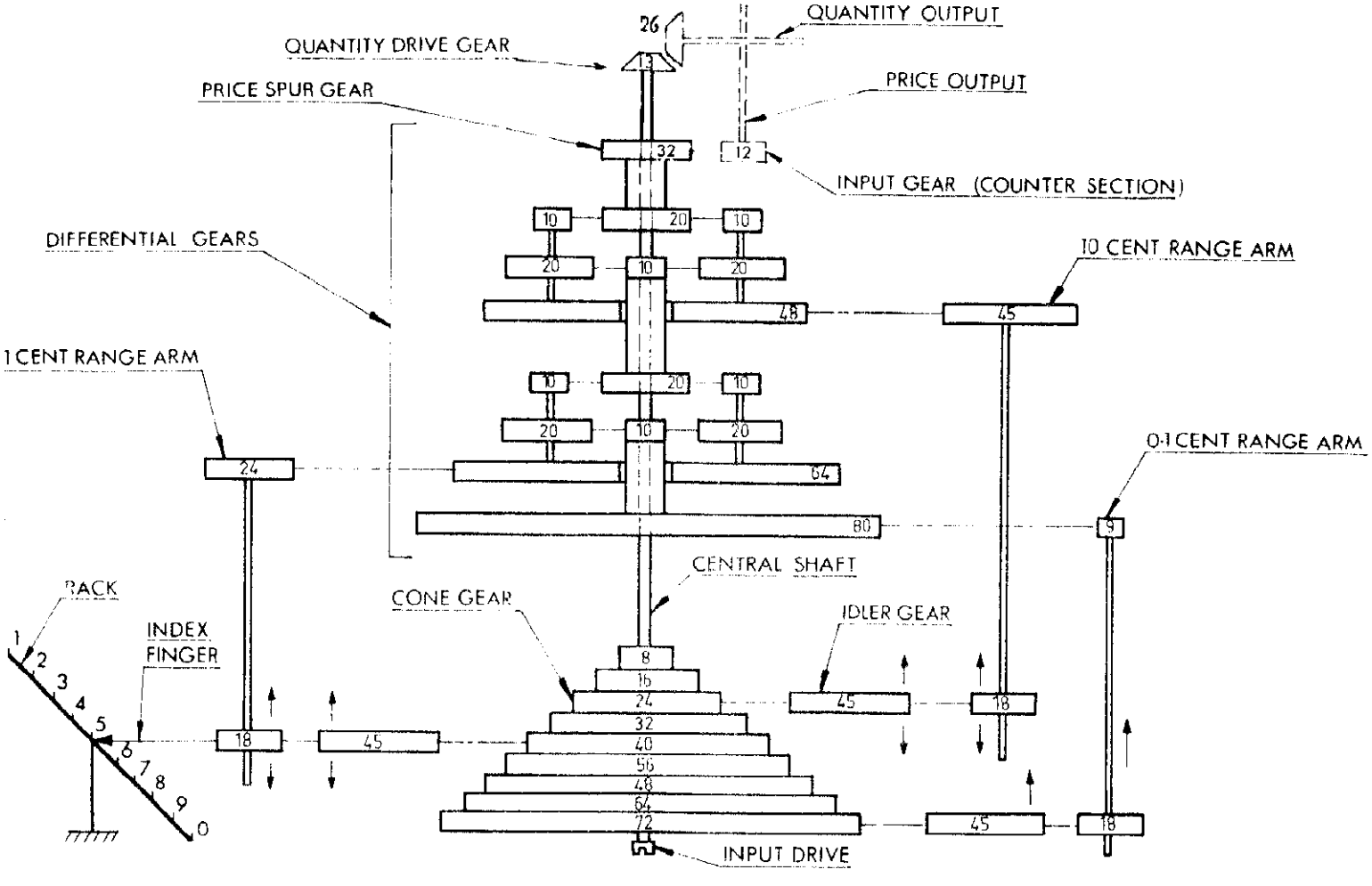
FIGURE 5/6A/26 - 12



Gilbarco T169C — Nozzle Hang-up

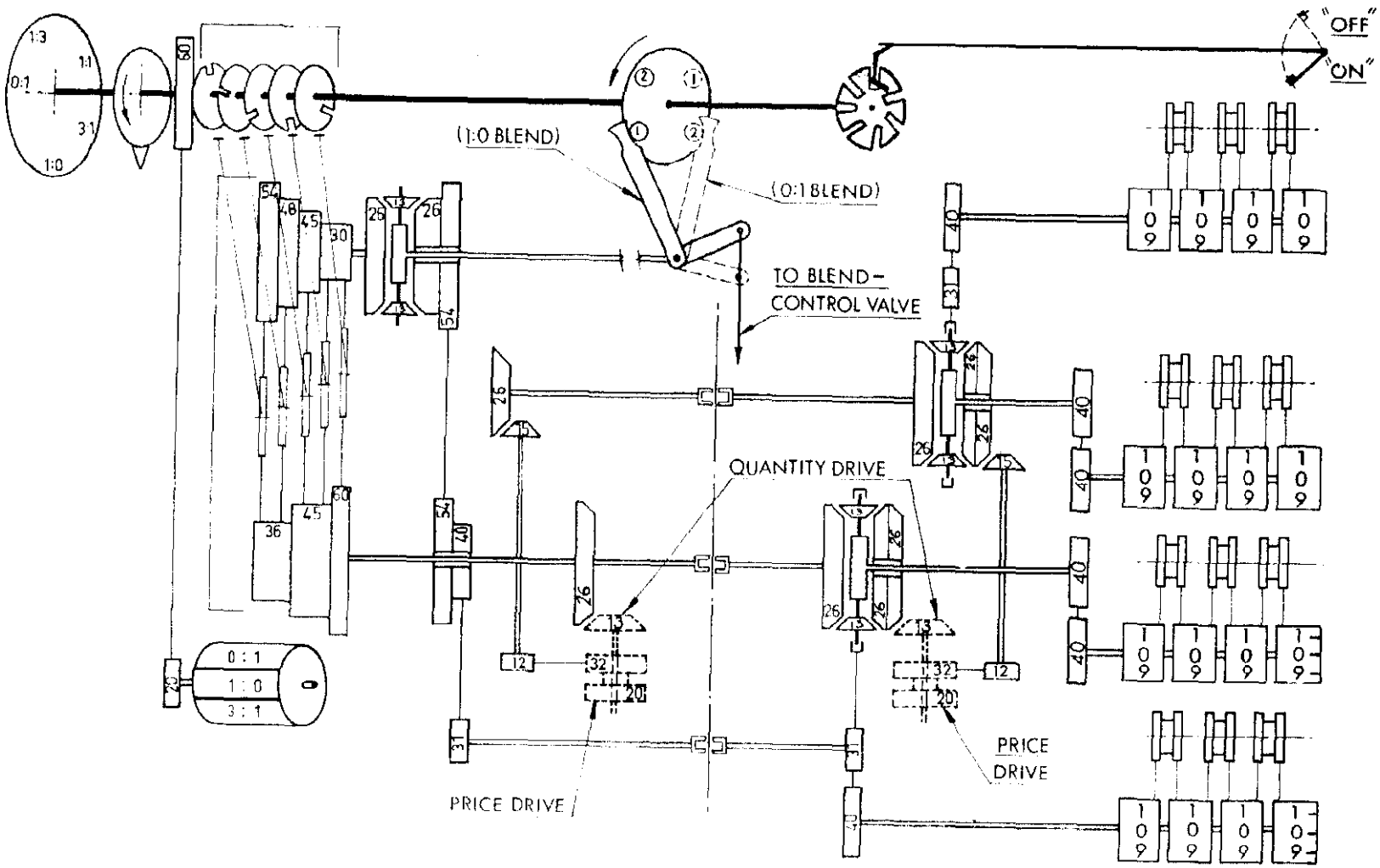
22/5/74

FIGURE 5/6A/26 - 13



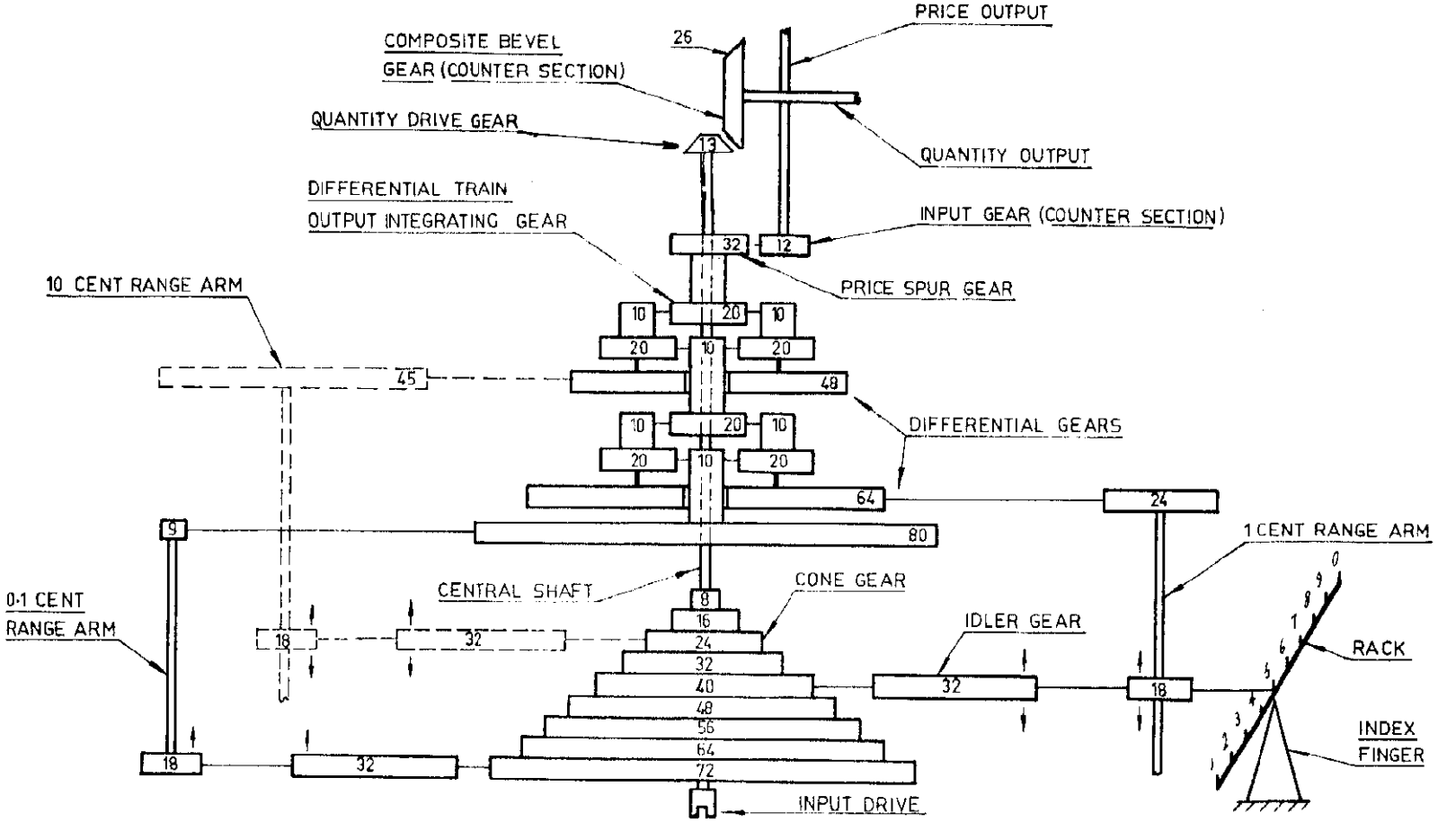
Veeder-Root Computer VR 1649 — 99,9-cents Variator
with changes for Metric System of Measurement

FIGURE 5/6A/26 - 14



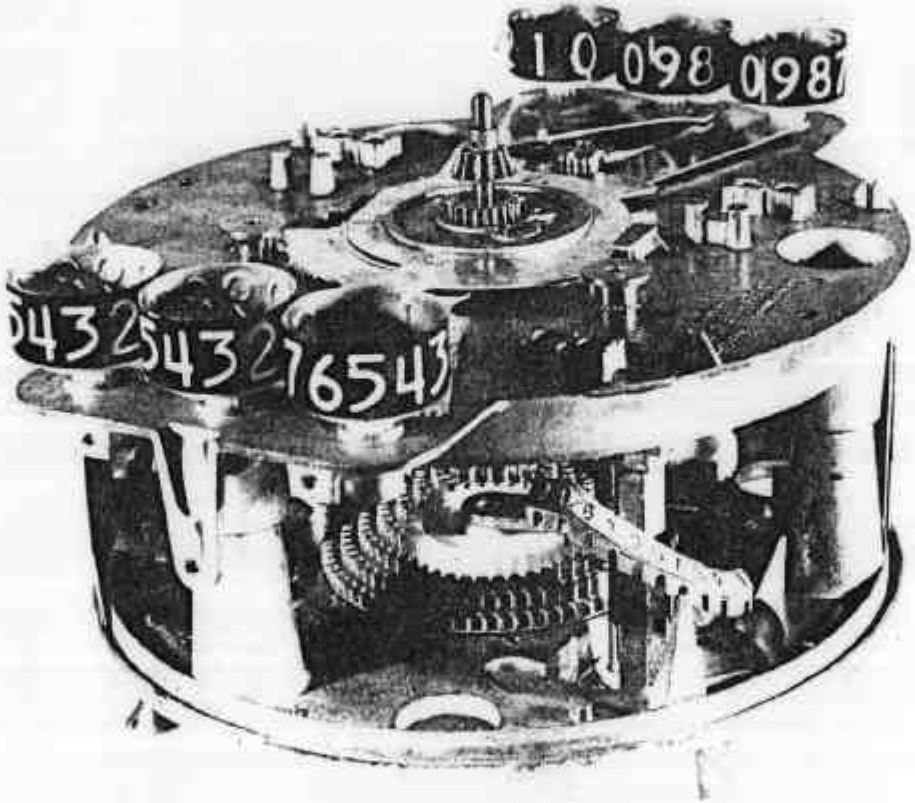
Veeder-Root Computer VR 7525 -- Blend-control and Counter Sections with Changes for Metric System of Measurement

FIGURE 5/6A/26 - 15



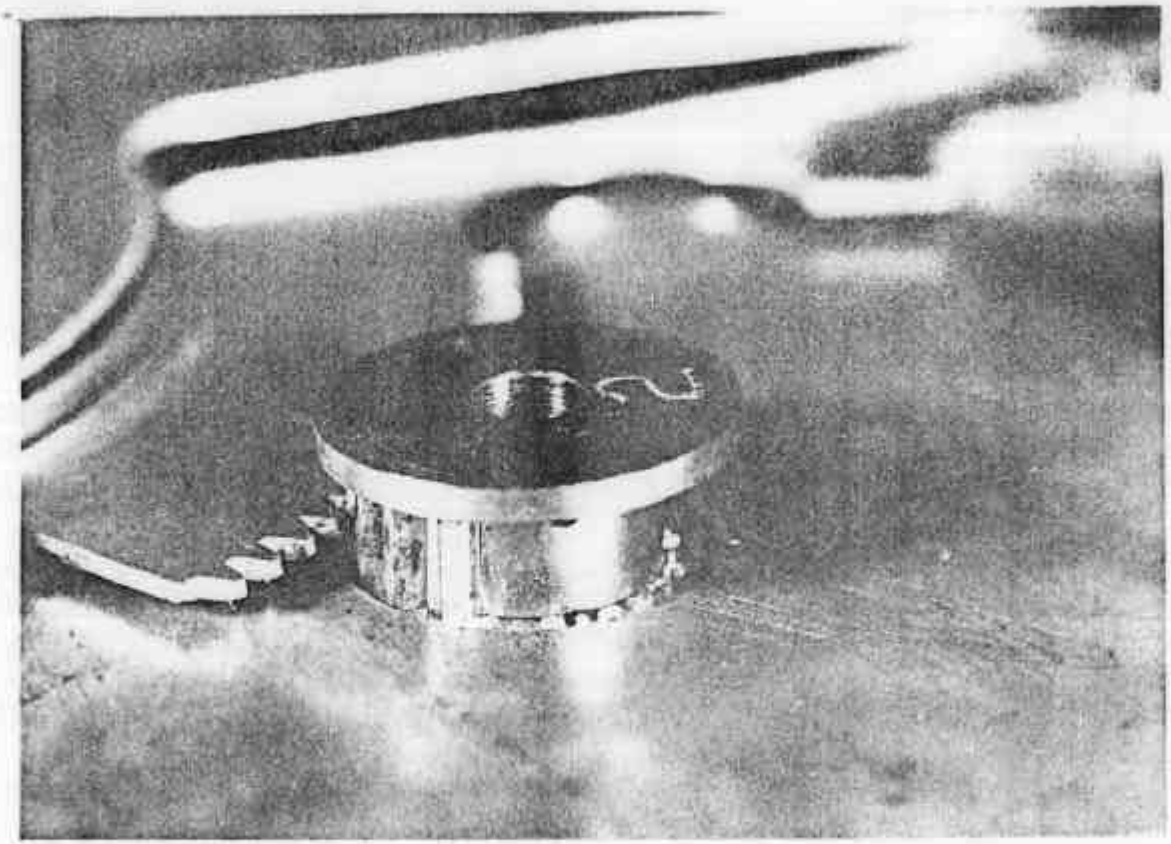
Veeder-Root VR 101 Variator
with Changes for Metric System of Measurement

FIGURE 5/6A/26 - 16



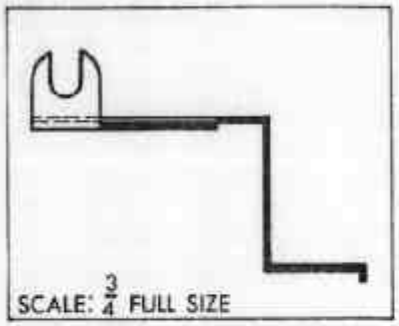
Veeder-Root VR 101 Variator

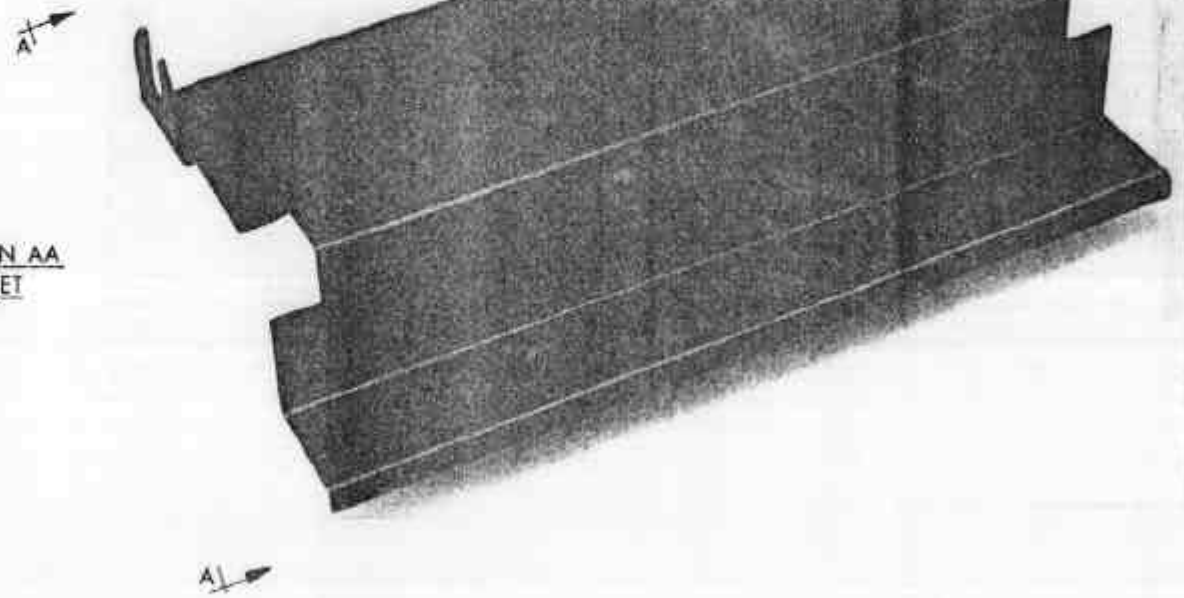
FIGURE 5/6A/26 - 17



Veeder-Root VR 101 Variator -- Pinned Shield

FIGURE 5/6A/26 - 18

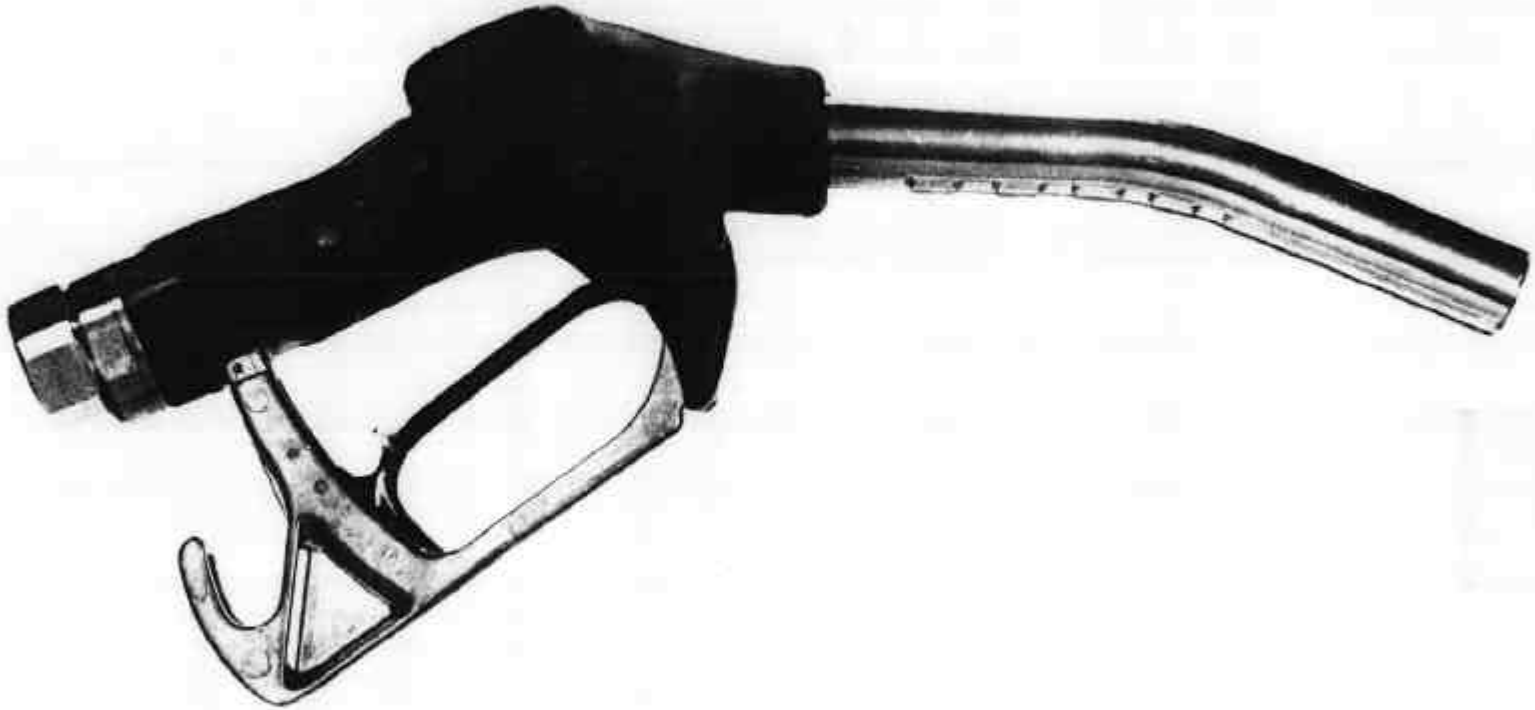




VIEW ON AA
SEE INSET

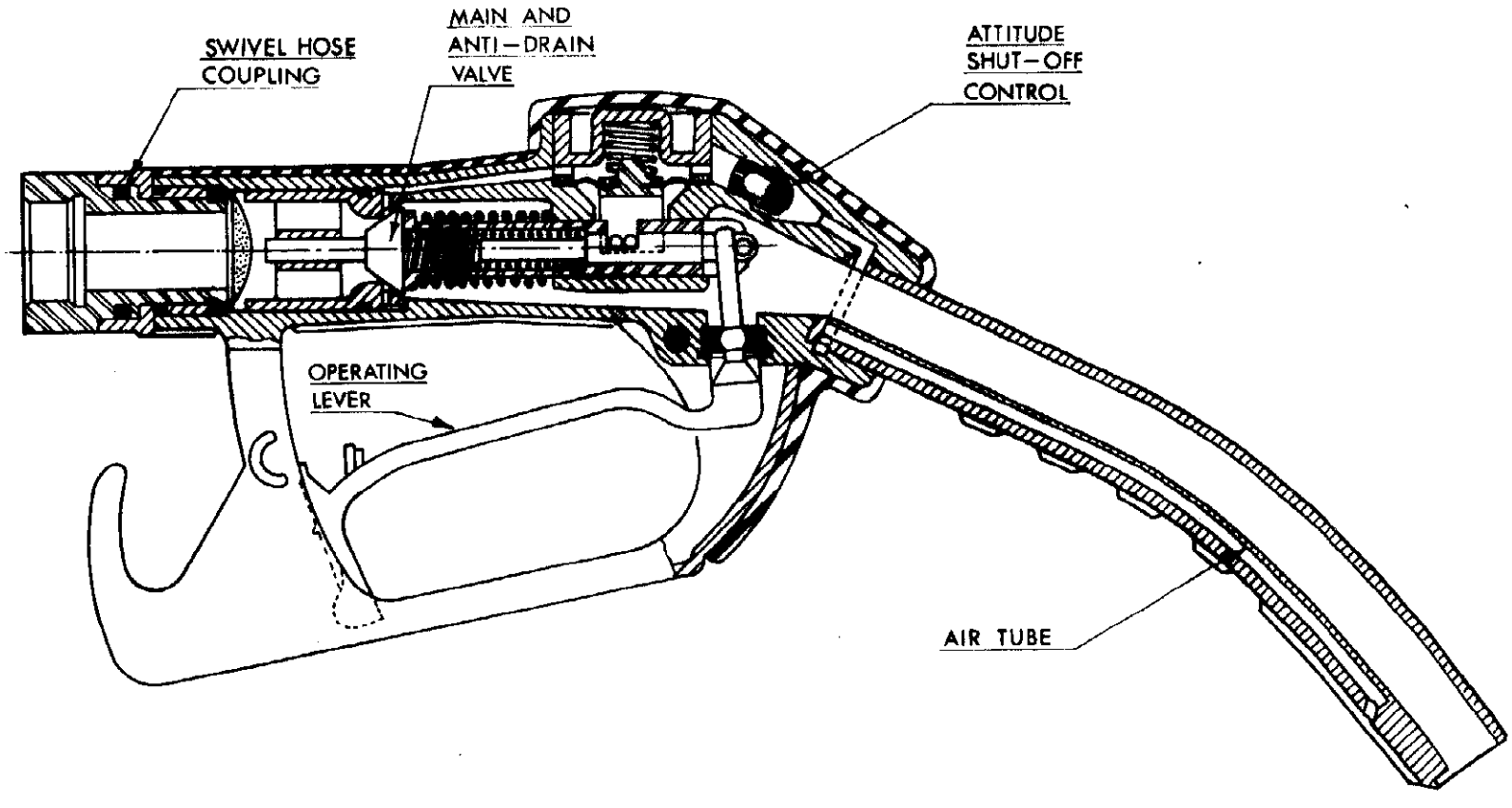
Veeder-Root Computer VR 7525 — Shield for Price-posting Wheels

FIGURE 5/6A/26 - 19



ZVA Slimline Automatic Hose Nozzle

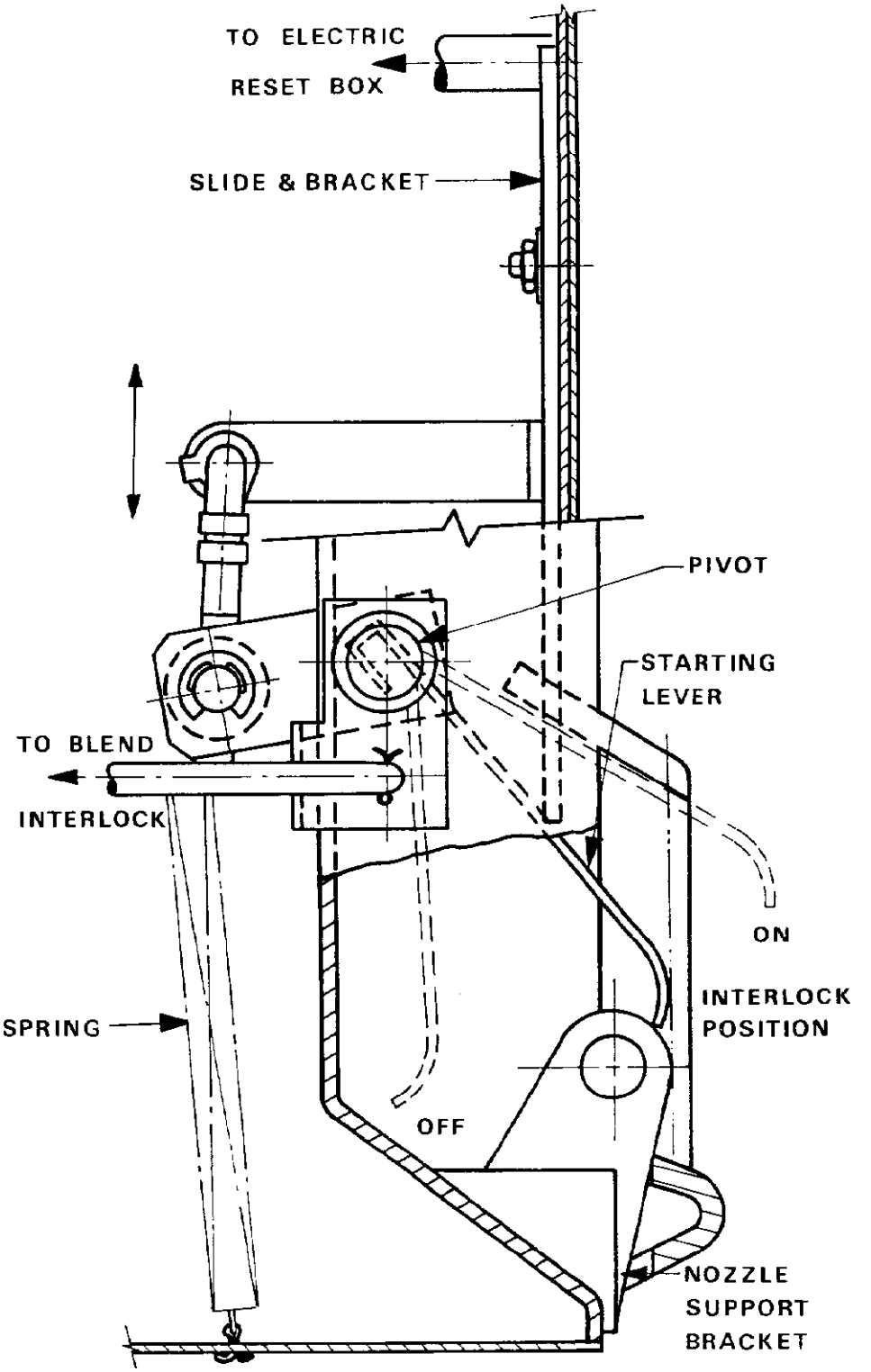
FIGURE 5/6A/26 - 20



ZVA Slimline Automatic Hose Nozzle

Hang-up Bracket

FIGURE 5/6A/26 - 22



Hang-up for Gilbarco Driveway Flowmeter Model T169C

8/3/77