NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S101

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

Retron 80 Price-computing Driveway Flowmeter Indicator

submitted by Production Engineering Co. Ltd
Station Road
Marton, New Zealand

are suitable for use for trade when replacing the price-computing indicator in any Commission-approved driveway flowmeter specified in this Certificate.

The approval is subject to review on or after 1/4/85.

Instruments modified by the fitting of an indicator purporting to comply with this approval shall be marked NSC No S101 in addition to the approval number of the unmodified pattern.

Relevant drawings and specifications are lodged with the Commission.

Condition of Approval

The pattern and variants replace any 4-digit price-computing indicator in any driveway flowmeter listed in Table 1 in which the input shaft rotates at 4.0 ±0.2 revolutions per litre or 2.0 ±0.1 revolutions per litre.

Signed

Executive Director

Descriptive Advice

Pattern: approved 27/5/80

. Retron 80 price-computing driveway flowmeter indicator.

Variants: approved 27/5/80

1. With preset facility, replacing the price-computing indicator in any Avery-Hardoll driveway flowmeter complying with Certificate No 5/6A/38.

2. With Micro-M consoles, with or without preset facility, replacing the mechanical computer in any attendant-operated or self-service system listed in Table 1.

   If a preset facility is fitted this variant is restricted to dispensers of Avery-Hardoll manufacture complying with Certificate No 5/6A/38.

Technical Schedule No S101 dated 30/5/80 describes the pattern and variants 1 and 2.

18/2/83

...../2

Variant: approved 29/5/81

3. In diecast housing.

Technical Schedule No S101 Variation No 1 dated 29/6/81 describes variant 3.

Variants: approved 24/1/83

4. With Gilbarco Transac 10 control console without preset, replacing the mechanical computer in any attendant-operated or self-serve driveway flowmeter listed in Table 1.

5. With Gilbarco Transac 10 control console with preset, attached to PECT series driveway flowmeters approved in 5/6A/68, variant 3.

Technical Schedule No S101 Variation No 2 dated 18/2/83 describes variants 4 and 5.

Filing Advice

Certificate of Approval No S101 dated 29/6/81 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No S101 dated 18/2/83
Technical Schedule No S101 dated 30/5/80 (including Test Procedures)
Technical Schedule No S101 Variation No 1 dated 29/6/81
Technical Schedule No S101 Variation No 2 dated 18/2/83
Test Procedure No S101 Variation No 2 dated 18/2/83
Table 1 dated 18/2/83
Figures 1 to 13 dated 30/5/80
Figures 14 and 15 dated 29/6/81
Figures 16 and 17 dated 18/2/83.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S101

Pattern: Retron 80 Driveway Flowmeter Price Computing Indicator

Submittor: Production Engineering Co. Ltd,
Station Road,
Marton, New Zealand.

1. Description of Pattern:

1.1 The pattern is an electronic price-computing indicator for driveway flowmeters intended for attendant operation (Figures 1, 2 and 3).

1.2 Range:

Volume	999,99 L in 0,01 L increments
Price	$399,99 in 1c increments
Unit price	99,9 c/L in 0,1c increments
Totaliser	9999999 L in 1 L increments
Totaliser	$9999999 in $1 increments

1.3 The only additional changes permitted to the original driveway flowmeter are:

(1) The provision of an electrical junction box.

(2) The removal of the reset-control drive shaft.

(3) The locking or removal of the reset-control knob.

(4) A modified reset linkage (Figures 4, 5, 6, 7 and 8).

(5) The provision of new dial plates (Figures 9 and 10). The dial plates are bolted flush with the face-plate of the computer.

(6) The provision of 2 stage solenoid valve and Preset Keyboard and display unit for preset versions. This facility is restricted to dispensers of Avery Hardoll manufacture.

(7) The provision of a hose supporting mast.

(8) Modification of panelling to comply with specification detailed in Figure 12. Figure 13 shows an Avery-Hardoll Driveway Flowmeter so modified.

1.4 Sealing:

The totaliser and computer are sealed to prevent removal of the top cover of the Retron-80 casting by passing sealing wires through holes in a lug, one on each side, terminating in lead-plug seals on the computer mounting frame (Figure 11).

The meter is sealed in a similar way, the sealing wire terminating in lead-plug seals on the computer mounting frame (Figure 11).

2. Variants:

2.1 With preset facility replacing the price-computing indicator in any Avery Hardoll driveway flowmeter complying with Certificate No 5/6A/38.

2.2 With MICRO-M consoles, with or without preset facility, replaces the mechanical computer in any attendant-operated or self-serve system in Table 1.

If a preset facility is fitted this variant is restricted to dispensers of Avery Hardoll manufacture complying with Certificate No 5/6A/38.

3. Test Procedures:

In addition to the tests specified in the original approval the following tests are applicable to the Retron-80.

3.1 Computation Test:

(1) Deliver an amount of liquid equivalent to, say, $1,00.

(2) Press the test button once (Figure 9). The total-price indicator will indicate $1,01.

(3) Continue the delivery to, say, $2,00.

(4) Return the nozzle to its hang-up. The total price on the driveway flowmeter will blank out indicating a price-computation error.

(5) Try to start a new delivery. This should not be possible.

The instrument is in a computation error mode. To bring the instrument out of this mode turn the power to the driveway flowmeter off for at least one minute, after which the instrument will be back to its normal operation mode.

3.2 Reset and Interlock:

(a) Electric reset - remove the nozzle from the hang up; the indication should show all '8's' then all '0's' before energising the pump motor.

(b) Mechanical reset - remove the nozzle from the hang up and then turn the operating handle to the ON position; all '8's' and all '0's' should be indicated as in the electric reset test before the pump motor starts.

The reset linkage for each model driveway flowmeter is shown in figures 4, 5, 6, 7 and 8. The purpose of this linkage is to ensure the removal of the nozzle and switch to the ON position activates the push button switch on the Retron-80 casting.

3.3 Variant 1:

With a preset facility fitted to any Avery Hardoll driveway flowmeters complying with Certificate No 5/6A/38, the following

additional tests are required:

(a) At the driveway flowmeter enter a value on the keyboard to be delivered, say $2,00.

(b) Check that the purchaser's indicator shows the preset amount.

(c) Make the delivery - the dispenser should automatically stop when the exact value is indicated.

3.4 Variant 2:

(a) Carry out all those tests applicable to the original approval, however, because the Retron-80 computer has a digital indicator, the price and volume displayed shall exactly equal the price and volume indicated at the driveway flowmeter.

(b) If a preset facility is fitted carry out the tests specified for Variant 1.

(c) Preset a value on the keyboard; make part of that delivery; the indication on the console must agree exactly with the indication on the driveway flowmeter.

TABLE 1

Certificate	Equipment Description
5/6A/6	Epex 600 Series
5/6A/7A	Epex 600 Series
5/6A/12	Epex 600 Series
5/6A/13	Wayne 700 Series
5/6A/24	GB Trimline Series including those with round casings.
5/6A/29	Wayne 700 Series
5/6A/30	GB Trimline Series including those with round casings
5/6A/35	GB Trimline Series including those with round casings
5/6A/37	Wayne 67-1 Series
5/6A/38	Eng. Prod. M System
5/6A/40	GB Trimline Series including those with round casings
5/6A/44	GB Trimline Series
5/6A/45	GB T180 D, F & G, and T181 C
5/6A/47	GB Transac System
5/6A/48	Wayne 600 Series
5/6A/55	GB Trimline Series
5/6A/56	GB T183 B, T183 C, T184 B and T184 C
5/6A/61	Wayne 700 Series SS System
5/6A/62	GB Trimline Series including those with round casings
5/6A/63	GB T166 AG, T167 AG, T180 AG and T181 AG
5/6A/66	GB Trimline Series
5/6A/67	GB T166 AG, T167 AG, T180 AG, T181 AG and T166 XG
5/6A/100	Patterns with 4-digit indicators.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S101

VARIATION No 1

Pattern: Retron 80 Driveway Flowmeter Price Computing Indicator

Submittor; Production Engineering Co. Ltd,
Station Road,
Marton, New Zealand.

1. Description of Variant

With diecast housing, modified display panel, and modified reset mechanism (Figures 14 and 15).

29/6/81

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S101

VARIATION No 2

Pattern: Retron 80 Price-computing Driveway Flowmeter Indicator.

Submittor: Production Engineering Co. Ltd
Station Road
Marton, New Zealand.

1. Description of Variants

1.1 Variant 4

With Gilbarco Transac 10 control (Figure 16) without preset, replacing the mechanical computer in any attendant-operated or self-serve driveway flowmeter listed in Table 1.

1.2 Variant 5

With Gilbarco Transac 10 control console with preset, attached to PECT series driveway flowmeters approved in 5/6A/68, variant 3, now added to Table 1.

TABLE 1

Certificate	Equipment Description
5/6A/13	Wayne 700 series
5/6A/24	Gilbarco Trimline series*
5/6A/29	Wayne 700 series
5/6A/30	Gilbarco Trimline series*
5/6A/35	Gilbarco Trimline series*
5/6A/38	Production Engineering M system
5/6A/40	Gilbarco Trimline series*
5/6A/44	Gilbarco Trimline series
5/6A/45	Gilbarco T180 D, F & G, and T181 C
5/6A/47	Gilbarco Transac System
5/6A/48	Wayne 600 series
5/6A/55	Gilbarco Trimline series
5/6A/56	Gilbarco T183 B and C, and T184 B and C
5/6A/61	Wayne 700 series self-serve system
5/6A/62	Gilbarco Trimline series*
5/6A/63	Gilbarco T166 AG, T167 AG, T180 AG and T181 AG
5/6A/66	Gilbarco Trimline series
5/6A/68 (Variant 3 only)	Production Engineering PECT series only
5/6A/100	Patterns with 4-digit indicators.

* Including those with round casings.

TEST PROCEDURE No S101

VARIATION No 2

1.1 (i) At the service module (Figure 17) select CONSOLE mode of operation.

(ii) At the console, ensure that the keyswitch is in the OPERATOR position.

1.2 (i) Lift the nozzle of any driveway flowmeter. The corresponding status light at the console will flash and a tone will be heard, signalling a request for authorization. Authorize the flowmeter by pressing the SELECT button followed by the AUTHORIZE button.

(ii) Deliver sufficient liquid for the indications to move significantly off zero.

(iii) Hang-up the nozzle.

(iv) Check that the price displayed at the console agrees with that in the flowmeter display.

(v) Pay-off the delivery by pressing the flowmeter SELECT button followed by the PAID button.

1.3 (i) Lift the nozzle and authorize the flowmeter.

(ii) Begin a delivery; at some stage during the delivery, press EMERGENCY STOP.

DO NOT HANG UP THE NOZZLE.

The console should display flashing 8's.

Press any flowmeter SELECT button; this should cancel the flashing 8's display and leave the console price display blank.

(iii) Hang-up the nozzle, and wait at least 3 seconds.

(iv) Lift the nozzle and check that the flowmeter displays do not reset to zero.

(v) The console should be displaying a request for authorization. Authorize the flowmeter. The flowmeter displays will reset to zero and the pump motor will start.

(vi) If preset is not fitted, repeat the sequence 1.2(ii) to (v).

(vii) If preset is fitted then proceed as in 1.4.

1.4 (i) At the preset panel on the flowmeter, press $10.

(ii) Begin the delivery.

(iii) The pump should stop when the price indication on the flowmeter is $10.00 exactly.

(iv) Hang-up the nozzle and pay-off the delivery.

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No S101

CHANGE No 1

The description of the

Retron 80 Driveway Flowmeter Price Computing Indicator

given in Technical Schedule No S101 is altered by deleting references to 5/6A/67 from Table 1 and from Figure 5.

Signed

Executive Director

29/8/80

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NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No S101

CHANGE No 2

The following change is made to the description of the Retron 80 Driveway Flowmeter Price Computing Indicator given in Technical Schedule No S101 dated 30/5/80:

The following Certificate No's and their corresponding Equipment Description are deleted from Table 1:

5/6A/6

5/6A/7A

5/6A/12

Signed

Acting Executive Director

20/2/81

RA

S101
26/8/87

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S101

CHANGE No 3

The following changes are made to the approval documentation for the

Retron 80 Price-computing Driveway Flowmeter Indicator

submitted by Production Engineering Pty Ltd
Suite 403, 4th Floor
270 Pacific Highway
Crows Nest NSW 2065.

1. In Technical Schedule No S101 Variation No 1 dated 29/6/81, add the following:

   "The height of the digits of the top (dollar) liquid crystal display is now increased to be nominally 25 mm and may be larger than or equal in size to the middle (litres) display."

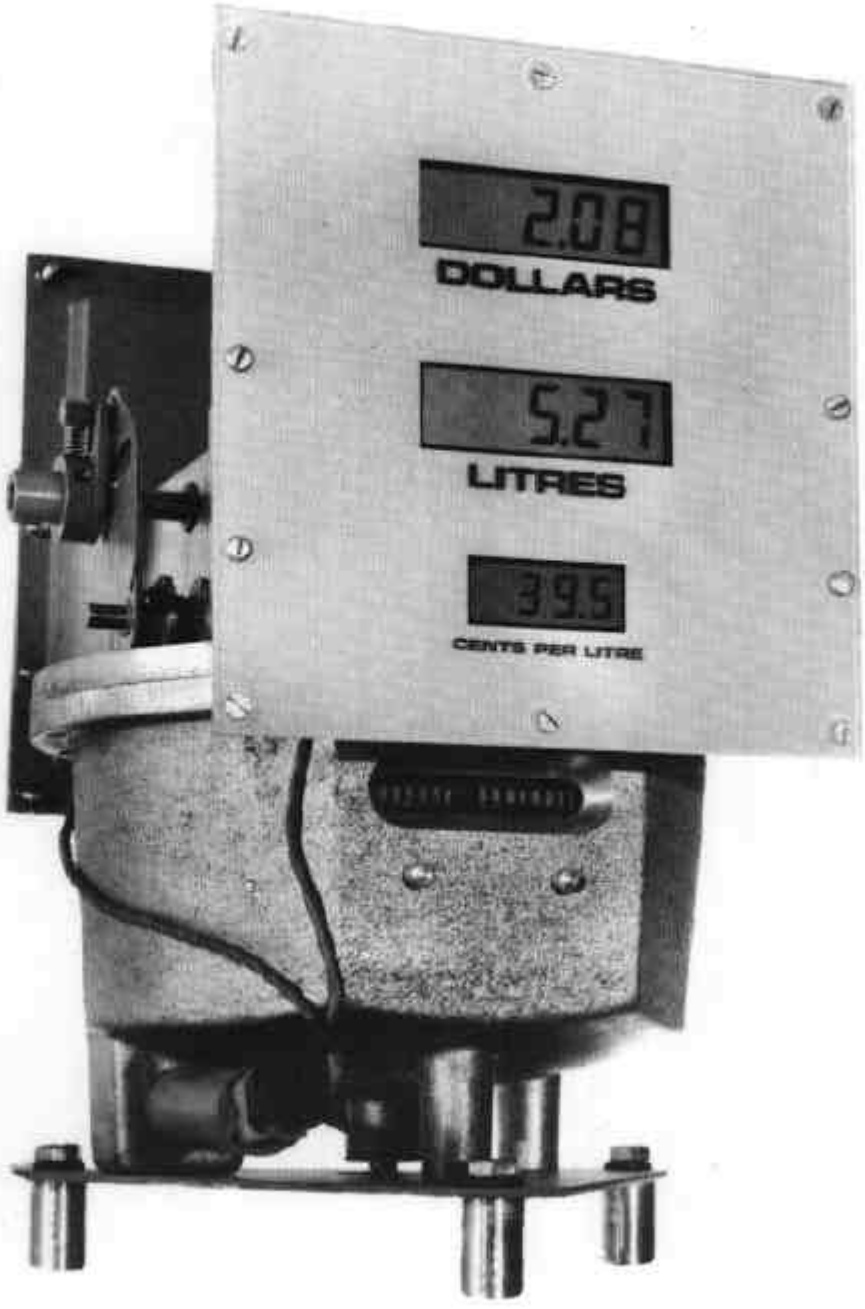
2. In Test Procedure No S101 dated 30/5/80, delete 3.1 Computation Test, and renumber tests 3.2, 3.3 and 3.4 accordingly.

Signed

J. Bunch

Executive Director

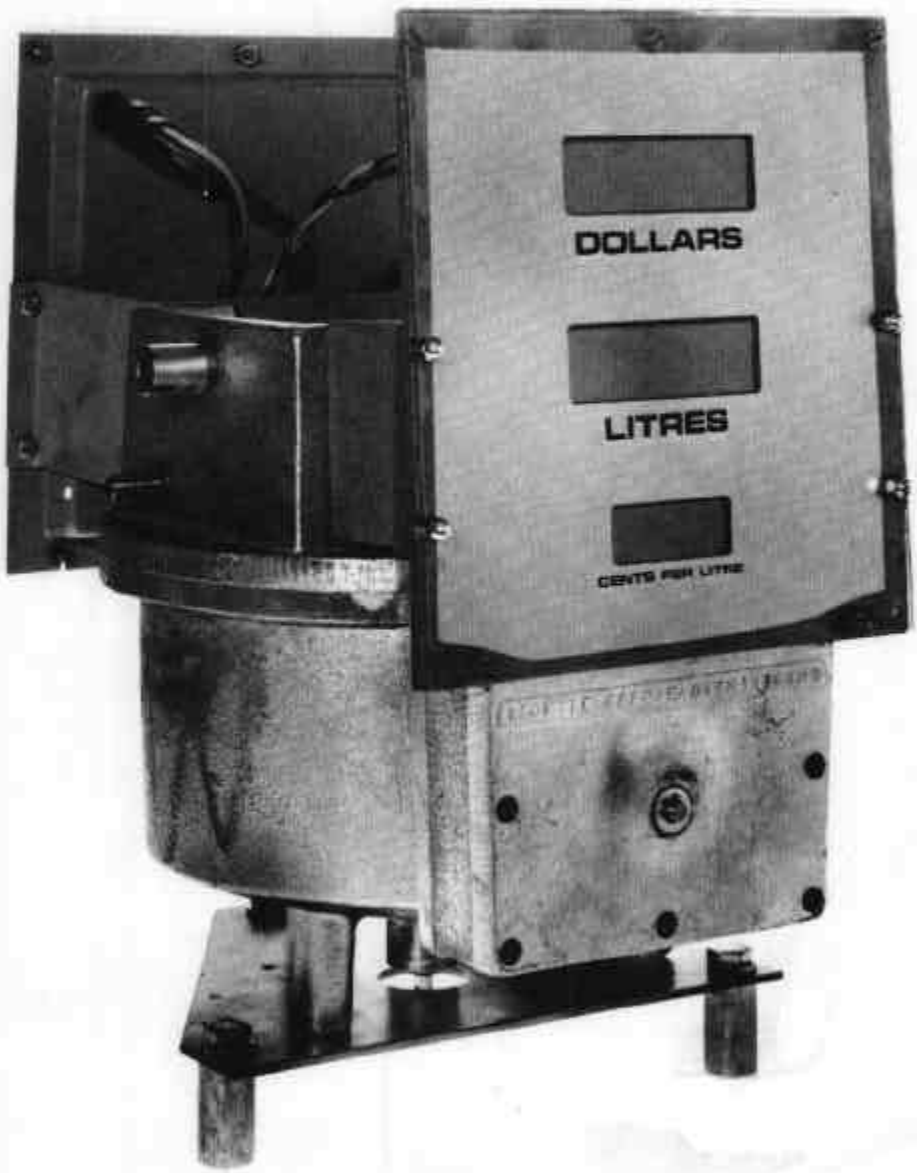
Figure S101 - 1



Retron 80

30/5/80

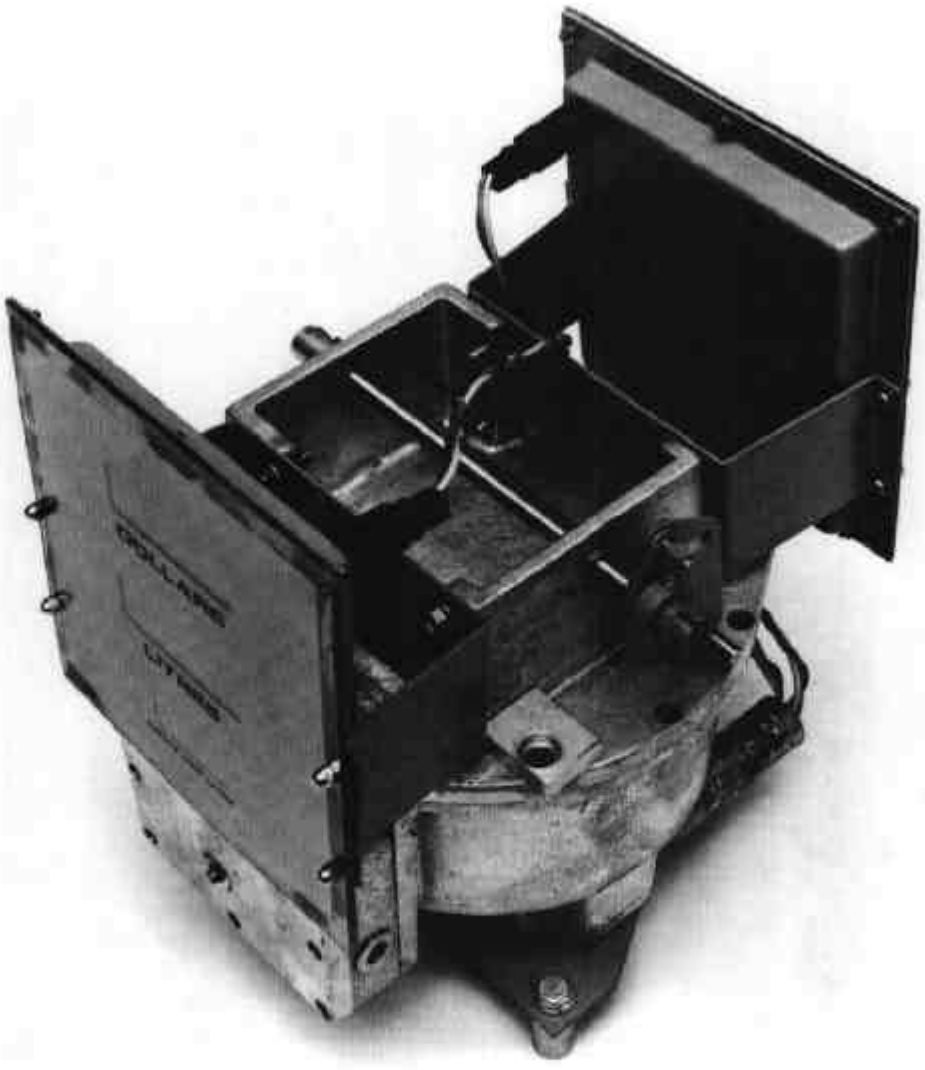
Figure S101 - 2



Retron 80

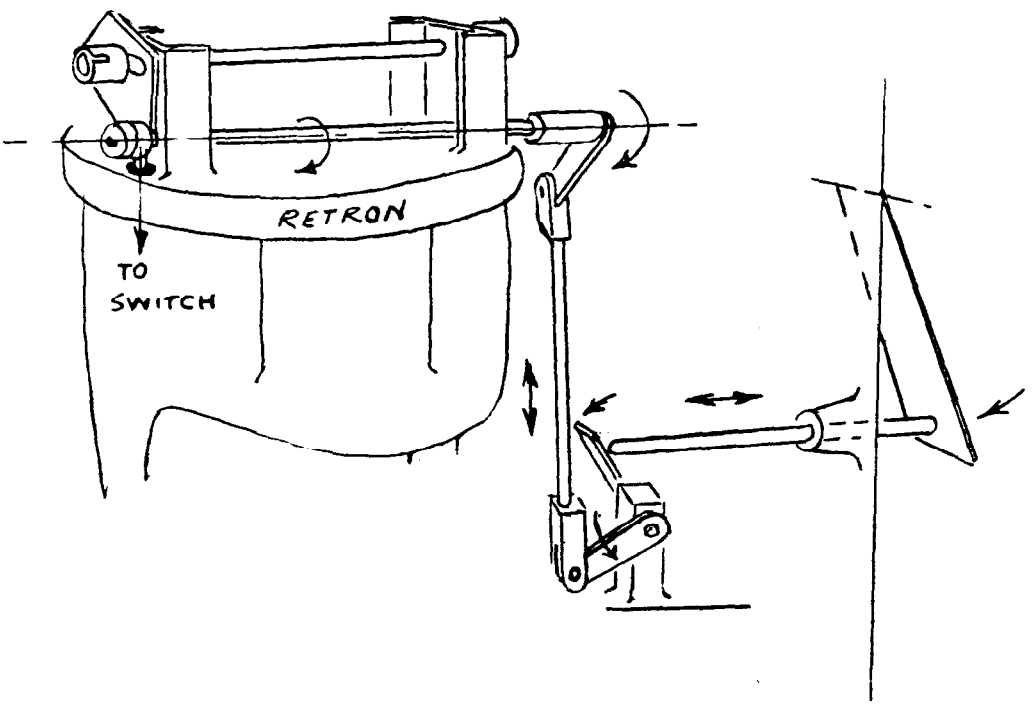
30/5/80

Figure S101 - 3



Retron 80

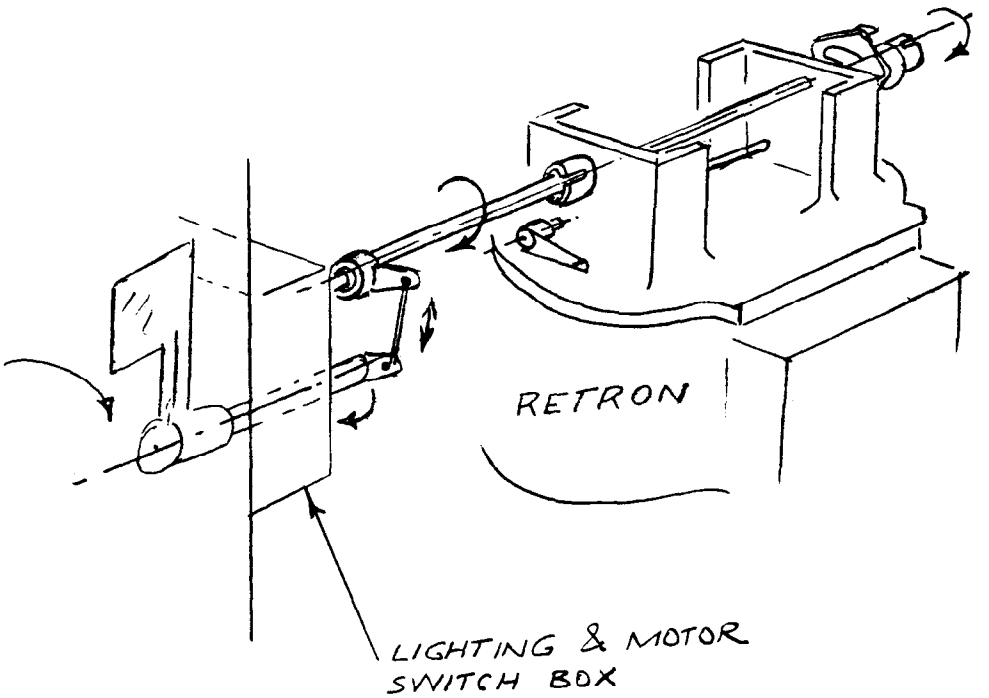
30/5/80



Reset Linkage for Avery Hardoll retrofitted
with Retron 80 (Certificate No 5/6A/38)

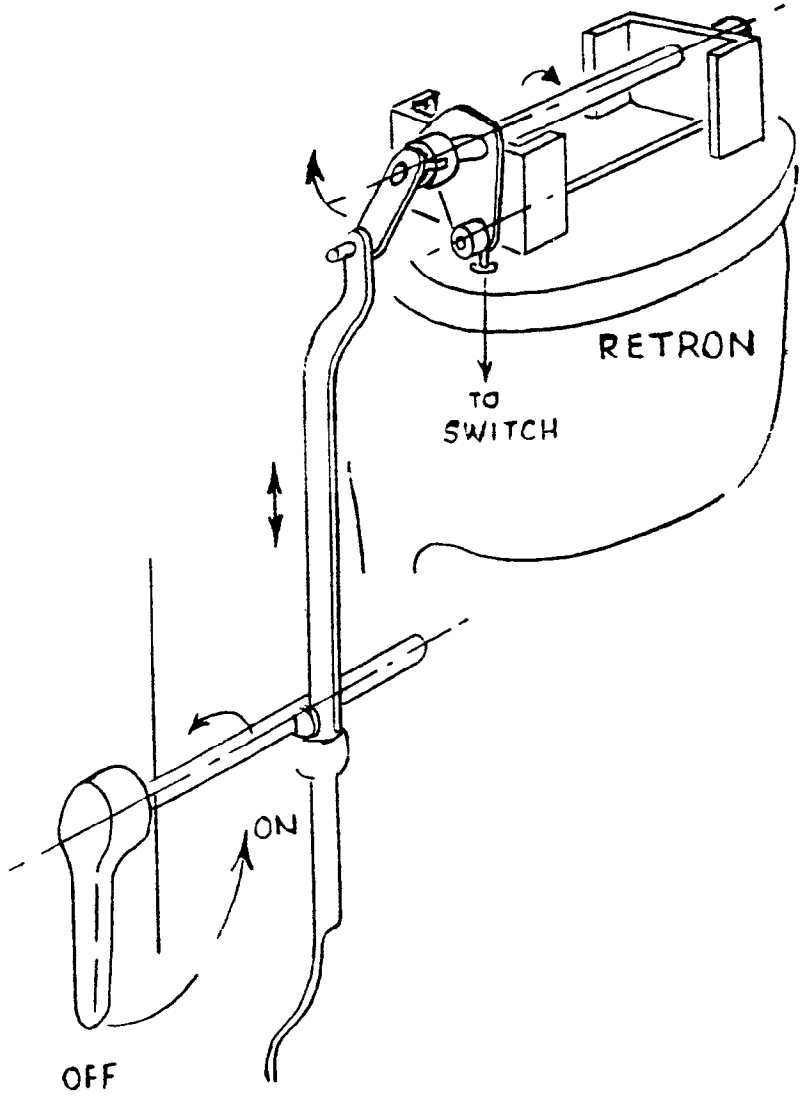
30/5/80

Figure S101 - 5

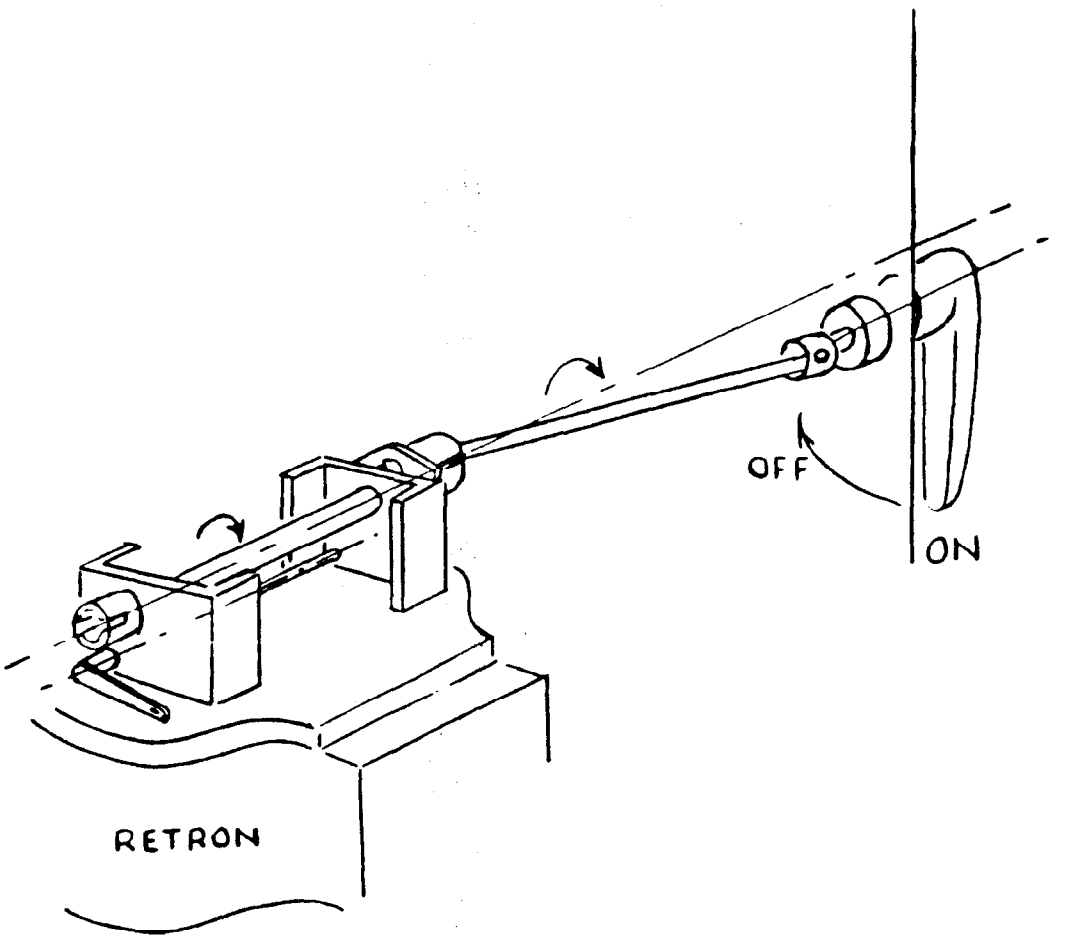


Reset Linkage for Gilbarco Trimline retrofitted with Retron 80 (Certificate Nos 5/6A/24, 5/6A/30, 5/6A/35, 5/6A/40, 5/6A/44, 5/6A/45, 5/6A/47, 5/6A/55, 5/6A/56, 5/6A/62, 5/6A/63, 5/6A/66, 5/6A/67).

30/5/80

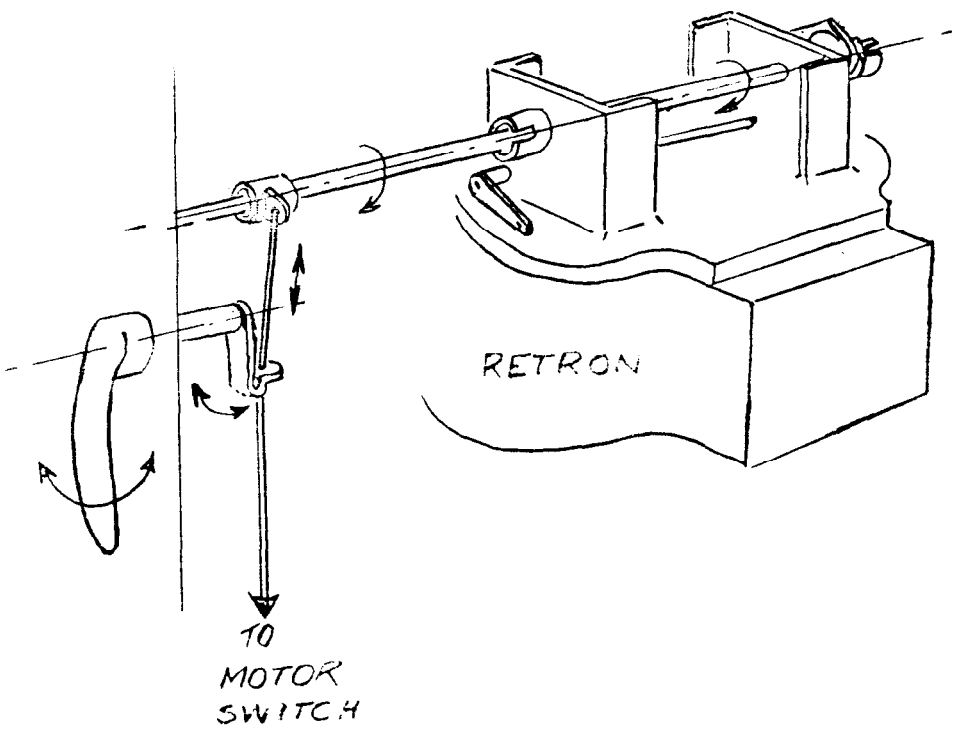


Reset Linkage for Gilbarco Salesmaker retrofitted with Retron 80 (Certificate No 5/6A/100)



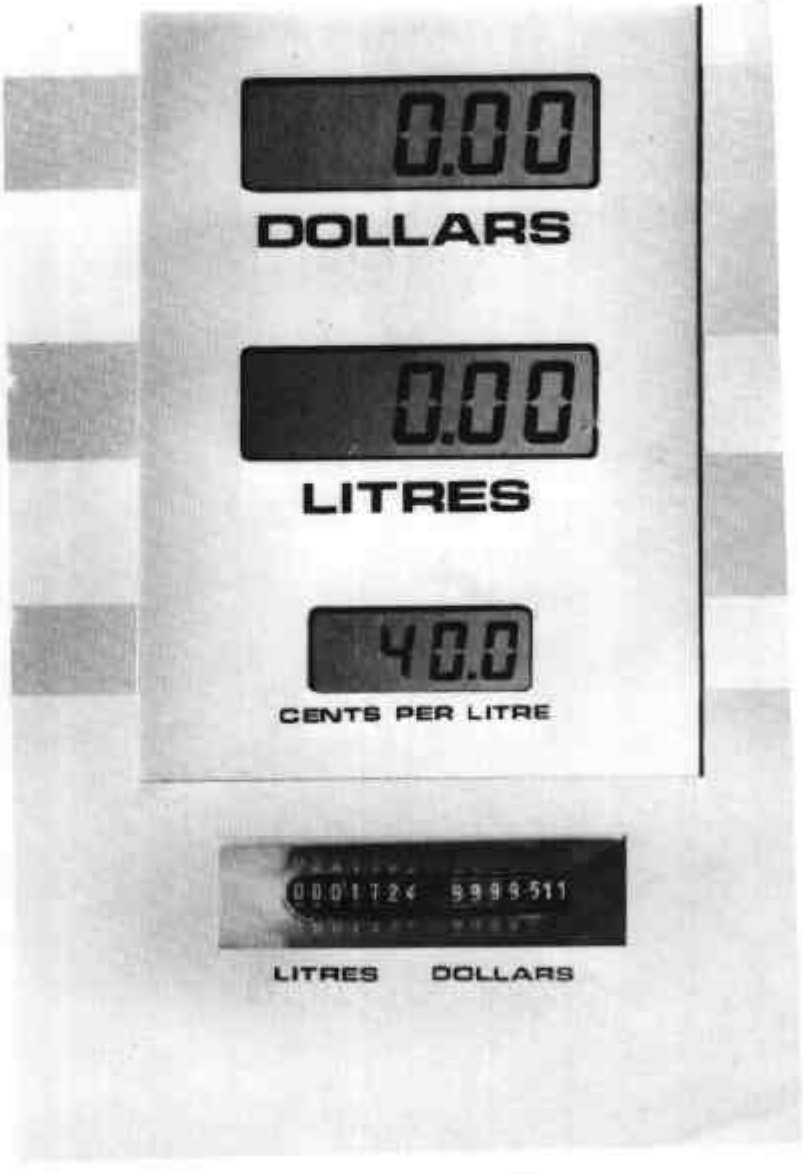
Reset Linkage for Wayne 60 and 600 Series retrofitted with Retron 80 (Certificate Nos 5/6A/37, 5/6A/48)

30/5/80

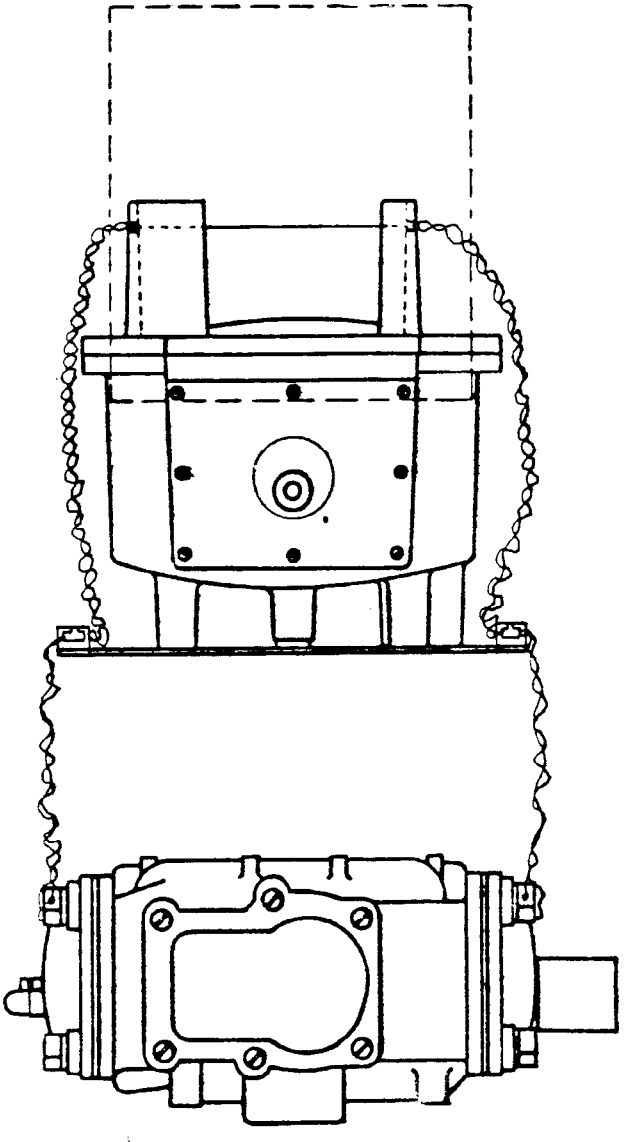


Reset Linkage for Wayne 700 Series retrofitted with Retron 80 (Certificate Nos 5/6A/13, 5/6A/29, 5/6A/61)

Retron 80 Showing Test Button

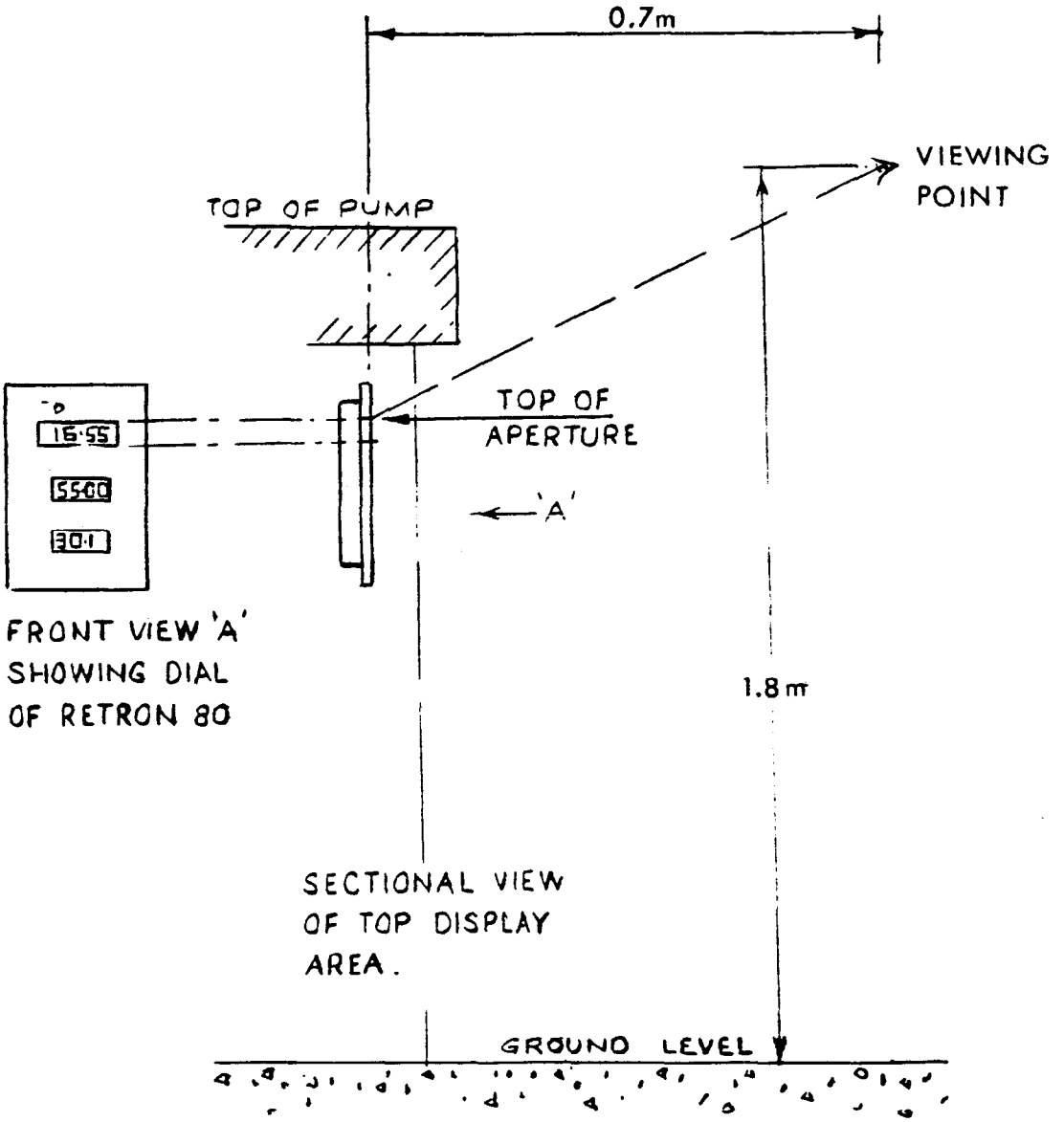


Retron 80 Totaliser



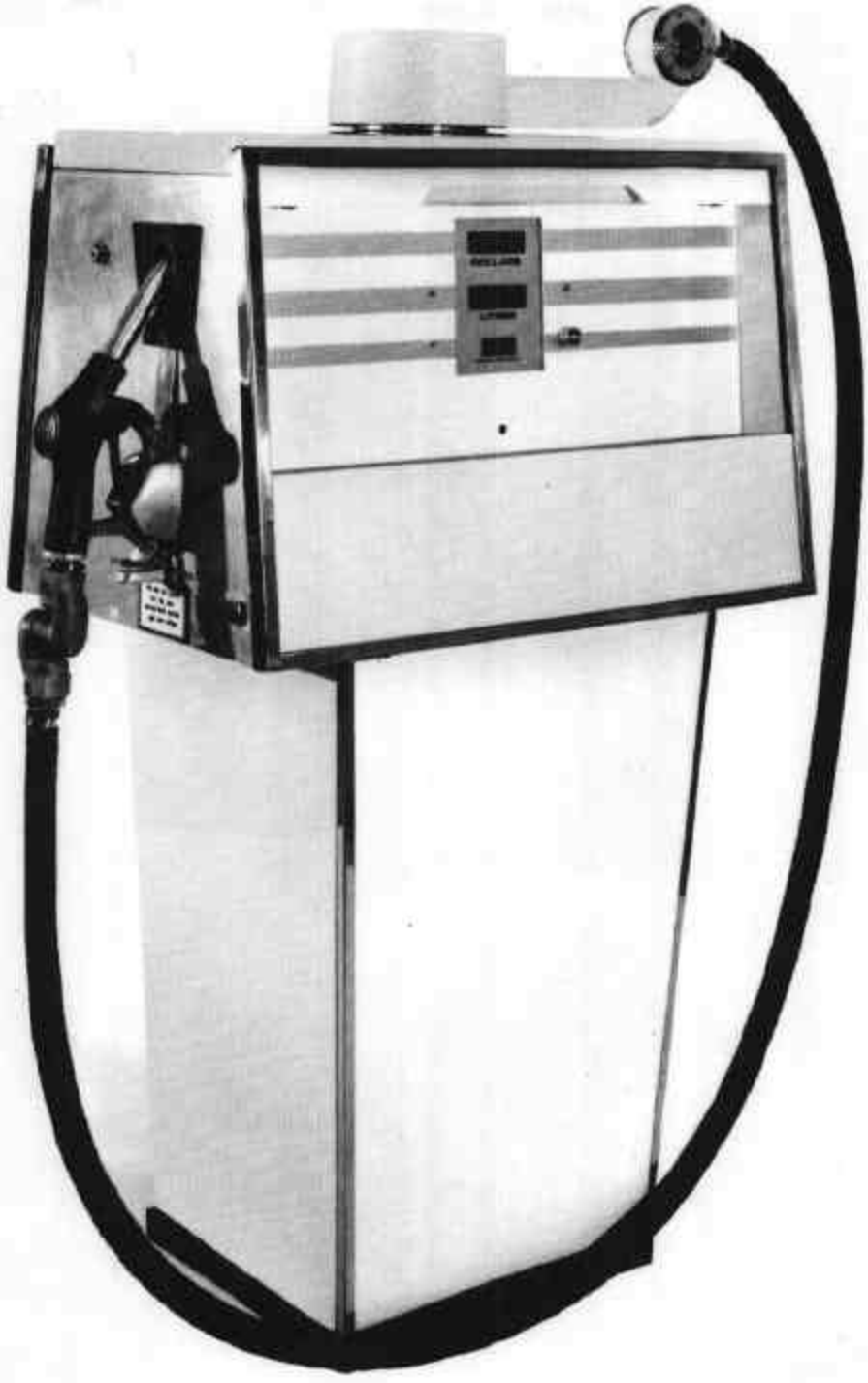
Retron 80 Sealing Arrangement

TOP APERTURE OF DISPLAY MUST
BE VISIBLE 1.8m OFF GROUND
AT A DISTANCE OF 0.7m FROM RETRON



SIGHTING DISTANCES FOR RETRON 80
DISPLAY FITTED TO A DRIVEWAY FLOWMETER

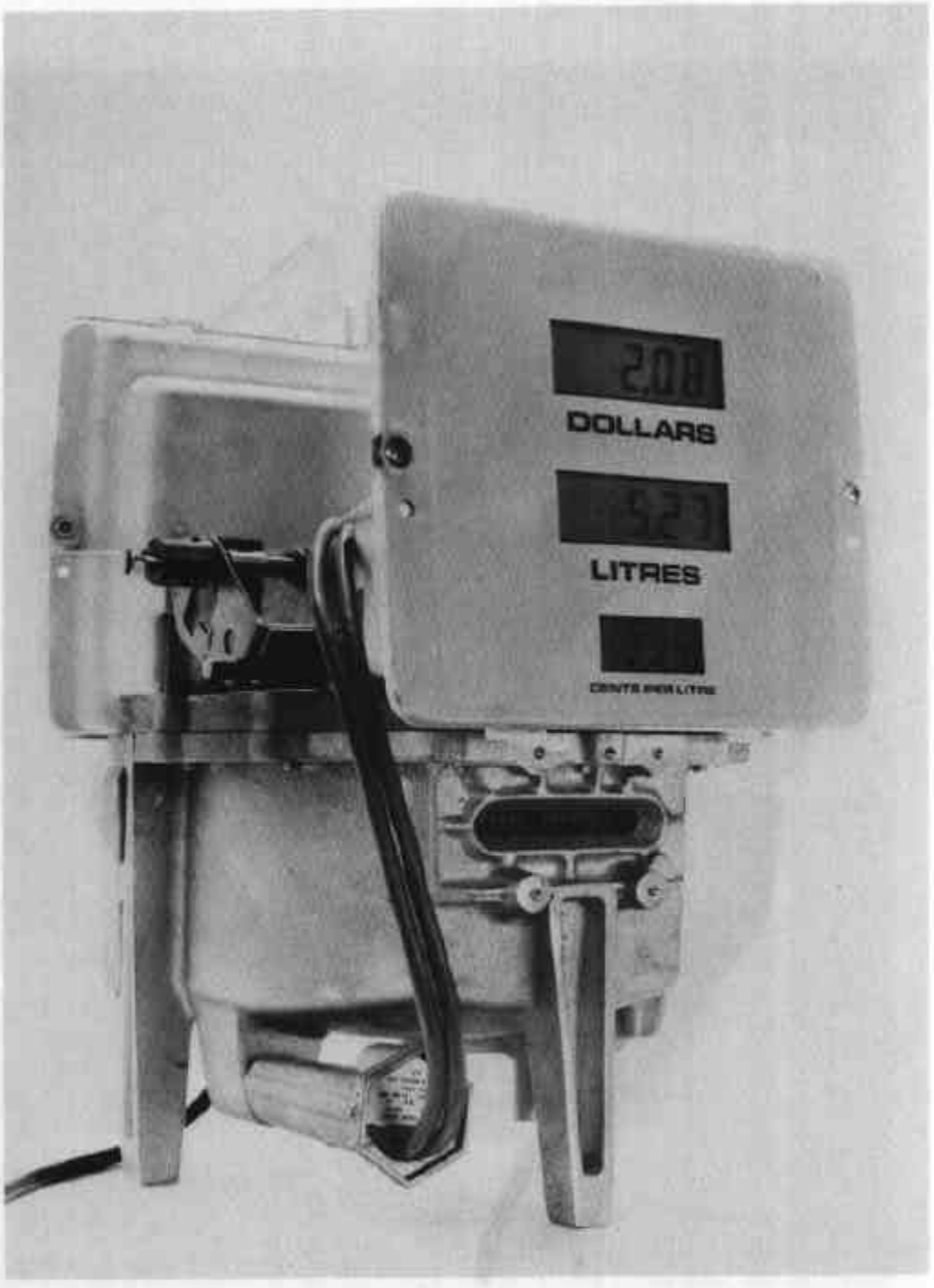
Figure S101 - 13



Avery Hardoll Driveway Flowmeter fitted with
Retron 80 and Modified Panelling

30/5/80

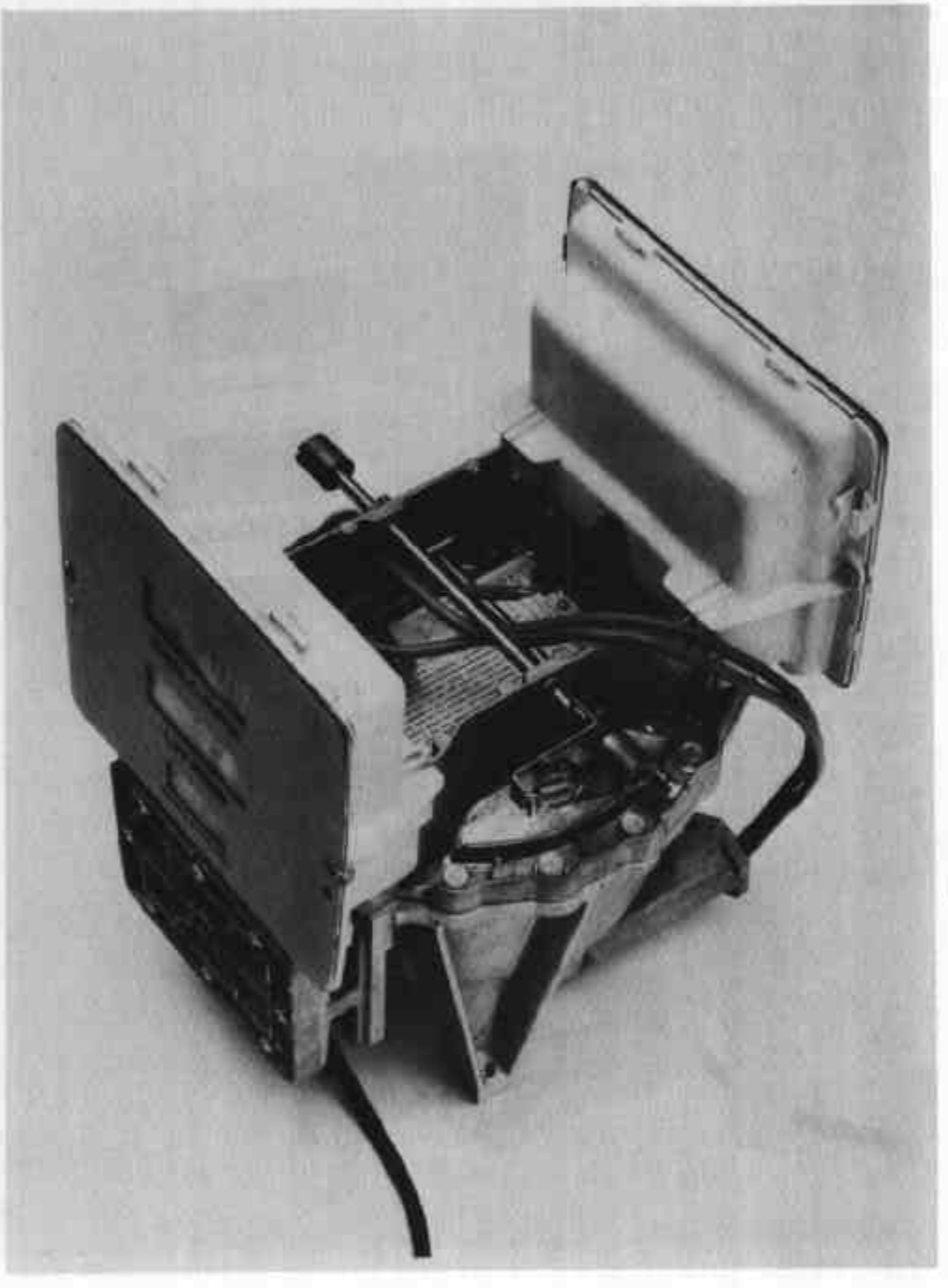
FIGURE 5101 - 14



Retron 80 showing Totaliser, Diecast Housing,
Modified Display Panel and Reset Mechanism

29/6/81

FIGURE S101 - 15



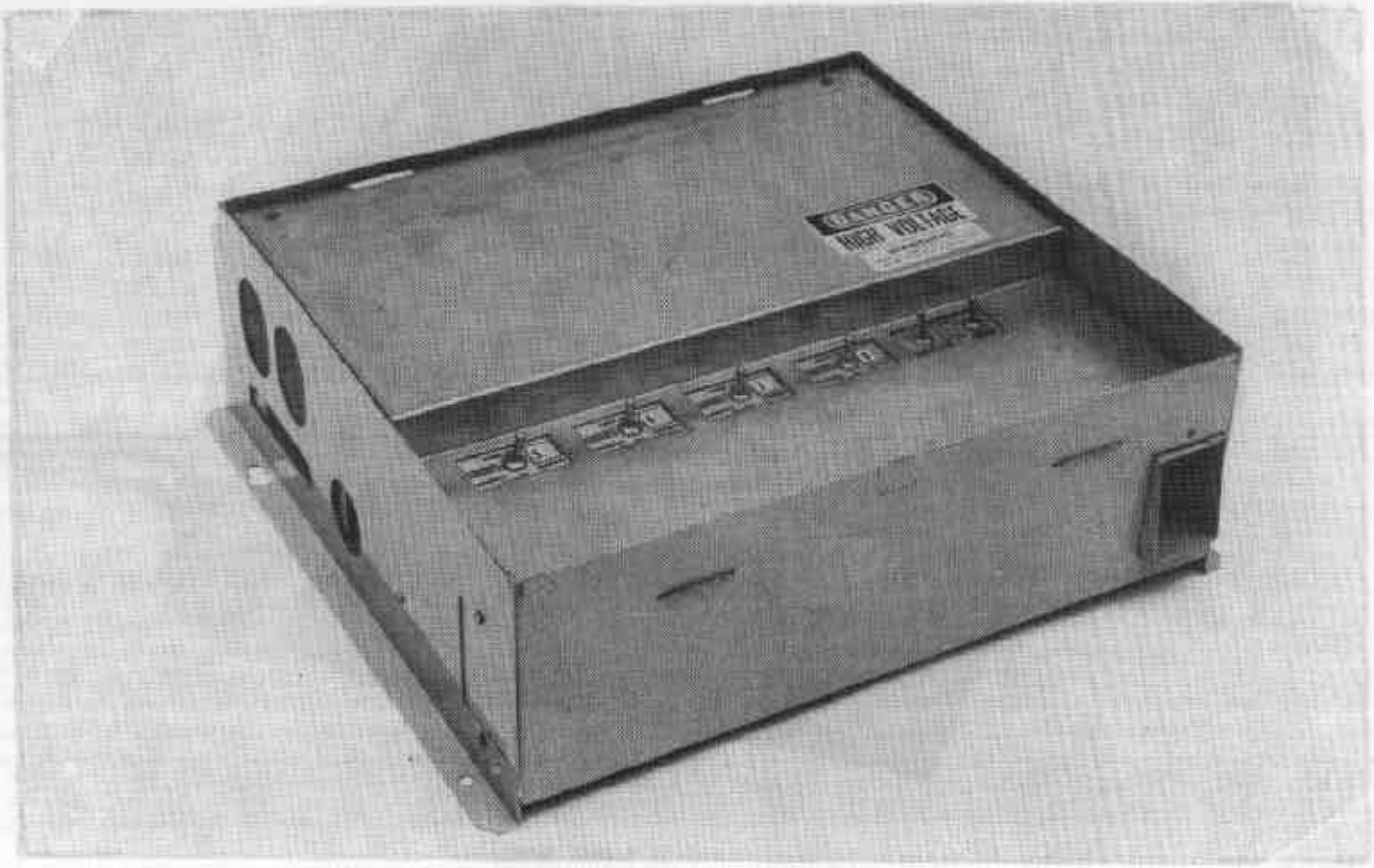
Retron 80 showing Angled View of Modified Reset Mechanism,
Diecast Housing and Display Panel

29/6/81

FIGURE S101 - 16

Gilbarco Transac 10 Control Console

FIGURE 3101 - 17



Service Module With Cover Removed