



NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S110

This is to certify that an approval for use for trade has been granted in respect of the pattern and variants of the

Eclipse Model MVR 79R Driveway Flowmeter Indicator

submitted by Email Limited (formerly Kelvinator Australia Ltd)
Electronics and Petroleum Equipment Division
Cnr Canterbury and Liverpool Roads
Kilsyth Vic 3137.

Conditions of Approval

General:

This approval is subject to review on or after 30/9/85.

Instruments modified by the fitting of an indicator purporting to comply with this approval shall be marked NSC No S110 in addition to the approval number of the unmodified pattern.

This approval may be withdrawn if instruments are constructed and used other than in accordance with the drawings and specifications lodged with the Commission.

Special:

The pattern and variants may replace any 4-digit price-computing indicator on any driveway flowmeter in Table 1 and as specified in this Certificate, in which the input shaft rotates at a rate of $4,0 \pm 0,2$ revolutions per litre.

Signed

Acting Executive Director

Descriptive Advice

Pattern: approved 26/9/80

. Eclipse model MVR 79R price-computing driveway flowmeter indicator.

Variants: approved 26/9/80

1. With preset facility, when replacing the indicator on any Wayne driveway flowmeter as listed in Table 1.
2. With Epic XV self-serve console, with or without preset facility when replacing the indicator in any attendant-operated or self-serve system as listed in Table 1. If a preset facility is fitted this variant is restricted to Wayne driveway flowmeters as listed in Table 1.
3. With an optional remote totalising button.

4. With an optional electro-mechanical totaliser.

Technical Schedule No S110 describes the pattern and variants 1 to 4.

Variant: approved 10/8/81

5. Without preset facility, when replacing the indicator on any Gilbarco driveway flowmeter as listed in Table 1.

Technical Schedule No S110 Variation No 1 describes variant 5.

Variant: approved 31/8/81

6. With a Mk I or Mk II self-serve console.

Technical Schedule No S110 Variation No 2 describes variant 6.

Variants: approved 3/12/82

7. Without preset facility, when replacing the indicator in any attendant-operated or self-serve Gilbarco driveway flowmeter approved in NSC No 5/6A/63, as listed in Table 1.

8. With an alternative nozzle-operated reset lever and switch when replacing the indicator in any Gilbarco driveway flowmeter as listed in Table 1.

Technical Schedule No S110 Variation No 3 describes variants 7 and 8.

Variants: approved 19/8/83

9. Variant 7 with preset facility and with or without the Mk I or Mk II self-serve console.

10. Without preset facility and with or without the Mk I or Mk II self-serve console when replacing the 4-wheel indicator in any Gilbarco driveway flowmeter approved in NSC No 5/6A/100, now added to Table 1.

Technical Schedule No S110 Variation No 4 describes variants 9 and 10.

Variant: approved 27/2/86

11. With modified battery back-up circuit.

Technical Schedule No S110 Variation No 5 describes variant 11.

Filing Advice

Supplementary Certificate of Approval No S110 dated 26/9/83 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Supplementary Certificate of Approval No S110 dated 1/5/86
Technical Schedule No S110 dated 24/10/80 (including Test Procedures)
Technical Schedule No S110 Variation No 1 dated 3/9/81
Technical Schedule No S110 Variation No 2 dated 21/9/81
Technical Schedule No S110 Variation No 3 dated 4/1/83
Technical Schedule No S110 Variation No 4 dated 26/9/83 (including Table 1)
Technical Schedule No S110 Variation No 5 dated 1/5/86
Figures 1 to 8 and 10 to 12 dated 24/10/80
Figure 9 dated 12/5/81
Figures 13 and 14 dated 3/9/81
Figures 15 to 19 dated 21/9/81
Figure 20 dated 4/1/83



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S110

Pattern: Eclipse MVR 79R Driveway Flowmeter Price Computing Indicator.

Submittor: Wayne Pumps Australia Pty Ltd,
29 Anzac Highway,
Keswick, South Australia, 5035.

1. Description of Pattern

1.1 The pattern is an electronic price computing indicator designed to replace the 4 digit price computing indicator on driveway flowmeters intended for attendant operation (Figures 1, 2 and 3).

1.2 Range

Volume: 999,99 L in 0,01 L increments
Unit price: 99,9 c/L in 0,1 c/L increments
Price: \$999,99 in 1 c increments
Totaliser volume: 99999 L in 1 L 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 (Figure 9).
5. The provision of a preset facility.
6. The provision of a micro-power unit.
7. The provision of new dial plates.
8. The provision of new drive link from meter to Eclipse MVR 79R.
9. The provision of a modified Pump Control Module (Variant 2).
10. The provision of a hose supporting mast.

1.4 Totaliser

The electronic volume totalising function is operated by pressing the button marked TOTES on the front of the computer

or the optional remote totalising function mounted on the side panel of the driveway flowmeter (Figures 4, 5 and 11).

The total volume and money will be indicated on the LITRES and DOLLARS indicators with the unit price indicator showing the calibration factor 'K', which is not relevant to pattern approval.

The internal batteries of the instrument are checked every time the TOTES button or the optional remote totalising button is operated: if the batteries are low, all the decimal point markers on the price indicator will be illuminated (Figures 5 and 11).

1.5 Sealing

1.5.1 Driveway flowmeter indicator and stamping plug as illustrated in Figure 6.

1.5.2 Meter and gas separation test valve as per sealing detailed in Technical Schedule for unmodified instrument.

1.5.3 Epic XV Console (Variant 2) as in Figure 8.

2. Variants

1. With preset facility, when replacing the price computing indicator in any driveway flowmeter approved for Wayne Pumps Australia Pty Ltd. as listed in Table 1.
2. With Epic XV Self-serve console, with or without preset facility, when replacing the price computing indicator in any attendant-operated or self-serve system as listed in Table 1. If preset facility is fitted this variant is restricted to driveway flowmeters approved for Wayne Pumps Australia Pty. Ltd. as listed in Table 1.

The modified Epic XV console ^{M&I} is shown in Figures 7 and 8.

3. With an optional remote totalising button mounted on the side panel of the driveway flowmeter to operate the electronic totaliser on the Eclipse MVR 79R (Figure 11).
4. With an optional electro-mechanical totaliser mounted on top of the Eclipse MVR 79R.

3. Test Procedures

Carry out the tests specified in the Technical Schedule for the unmodified instrument where appropriate: in addition the following tests apply to the Eclipse MVR 79R.

1. Price computing and Volume Circuits for Eclipse Computer

This model of price computing indicator is inhibited which means it does not display volume and price below 0,05 L. This can be observed by making a slow delivery of product and observing that the volume and price displays are inhibited until the volume reaches 0,05 L.

For each driveway flowmeter:

- 1.1 Note the price per litre set on each driveway flowmeter (and if a self-serve site, that is Variant 2, also note the mode of operation). If not self-serve, proceed to 1.3.
- 1.2 If a self-serve site, that is Variant 2, set mode of operation to CONSOLE by use of the key switch.
- 1.3 Wait 15 seconds from the last sale and with the nozzle hung up press the TEST button on driveway flowmeter indicator once and release the button. Displays will blank and then show all 8's and then all 0's and the word TEST will appear on the display.
- 1.4 Remove the nozzle and change the price to 30,0 cents per litre. The price may be changed by simultaneously pressing the PRICE and the UP or DOWN buttons.
- 1.5 Hang up the nozzle and press the SLOW TEST buttons to display a volume between 7,49 litres and 7,54 litres. The price will be \$2,25 for 7,49 litres, 7,50 litres or 7,51 litres or \$2,26 for an indicated volume of 7,52 litres, 7,53 litres or 7,54 litres.
- 1.6 Lift off the nozzle and alter price to 30,6 cents per litre; an error 2 should flash in the price indicator.
- 1.7 Change the price back to the original value, that is 30,0 cents per litre. If not self-serve, proceed to 1.9.
- 1.8 If a self-serve site, that is Variant 2, press the AUTHORIZATION button on the console corresponding to the driveway flowmeter under test.

- 1.9 Press the TEST button on the indicator once. The displays will now clear, show all 8's, reset to zero and the motor will start up.
- 1:10 Hang up the nozzle (and cancel STATUS lights on console if self-serve, that is Variant 2).
- 1.11 Press the TOTES button on the driveway flowmeter indicator or the optional remote totalising button on the side panel of the driveway flowmeter. Check the price indicator that all the decimal point markers do not show up. If they do, the batteries need immediate replacement.

2. Reset and Interlock

- 2.1 Nozzle-operated reset (Figure 10) - remove the nozzle from the hang up. The indication on the driveway flowmeter should show all blanks, then all 8's, then reset to zero and the pump motor start.
- 2.2 Handle-operated reset (Figure 9) - remove the nozzle from the hang up and turn the operating handle to the on position. The indication on the driveway flowmeter should show all blanks, then all 8's, then reset to zero and the pump motor start.

The reset linkages for each model driveway flowmeter are shown in Figures 9 and 10. The purpose of these linkages is to ensure that removal of the nozzle and switching to ON position activates the microswitch to the price computing indicator.

3. Variant 1 and Variant 2 Preset Delivery

For each driveway flowmeter:

- 3.1 Set the price to 99,9 cents per litre. The price setting may be changed by simultaneously pressing the PRICE and UP or DOWN buttons. A code 3 designating a price change, will flash for up to 90 seconds after the price change procedure. At the completion of the 90 seconds the new price will be displayed and the dollars and litre displays will show all 0's.

- 3.2 After the 90 seconds lift the nozzle from its hang up (and if a self-serve site, that is Variant 2, press the AUTHORIZATION button on the console corresponding to the driveway flowmeter under test). The driveway flowmeter indicator will blank, show all 8's, then reset to zero and the pump motor will start.
- 3.3 By means of the customer preset panel on the side of the driveway flowmeter enter a \$10,00 delivery.
- 3.4 Deliver this amount with the nozzle fully open. The pump on the driveway flowmeter will slow down to approximately one-tenth of its full flow rate for the last 0,3 litres delivered and stop at the exact amount selected on the price indicator.
- 3.5 Replace the nozzle to its hang up (and cancel STATUS lights on the console if self-serve, that is Variant 2). Repeat 3.2, 3.3, 3.4, 3.5 at least 3 times.
- 3.6 Return the unit price to that noted in 1.1.

4. Variant 2 -- Epic XV Self-serve System

The following test procedure will ensure that the system is operating in accordance with the approved design:

- 4.1 In turn for each driveway flowmeter select MANUAL mode of operation. The MANUAL mode-selector switch is located within the driveway flowmeter housing near the fluorescent light.
- 4.2 For each driveway flowmeter, carry out the repeatability and accuracy tests which are normally applied to a driveway flowmeter.

If it is desired to isolate a driveway flowmeter from the Epic XV system during the following tests in order to allow the service station to continue functioning, the particular driveway flowmeter can be isolated from the system by switching it to MANUAL mode at the driveway flowmeter. Alternatively, half of the driveway flowmeters can be tested in CONSOLE mode while the other half are in MANUAL mode of operation.

- 4.3 At the console, check that CONSOLE mode of operation is selected at the key switch.

- 4.4 In turn, press each STATUS button and check that all of the seven-bar digit indicators indicate the numeral 8.

For each driveway flowmeter:

- 4.5 Lift the nozzle, AUTHORIZATION light should flash; authorize the driveway flowmeter by pressing the AUTHORIZATION button.
- 4.6 Deliver sufficient liquid to cause the price and quantity indicators on the driveway flowmeter indicator to move significantly off zero.
- 4.7 Stop the pump motor by returning the nozzle to its hang up position.
- 4.8 Record the pump number and the price indicated on the driveway flowmeter.
- 4.9 Remove the nozzle from its hang up position and check that the price computing indicator does not reset to zero and the pump motor does not start. (AUTHORIZATION and STATUS lights will be flashing.) Hang up the nozzle.
- 4.10 At the control console press the STATUS button for the driveway flowmeter and check the display price against the price recorded at the driveway flowmeter (refer 4.8).
- 4.11 Authorize a driveway flowmeter as in 4.5 and deliver sufficient liquid to cause the price indicator to move significantly off zero. Cease delivery without returning the nozzle to its hang up.
- 4.12 Check that operation of the EMERGENCY stop on the console causes the pump motor to stop and the AUTHORIZATION and STATUS lights to flash.

NOTE: The pump motors of driveway flowmeters being used in MANUAL mode will not stop.

- 4.13 **Check** that pressing the AUTHORIZATION button will not cause the price computing indicator on the driveway flowmeter to reset to zero or the pump motor to restart, but should cancel the EMERGENCY STOP light.

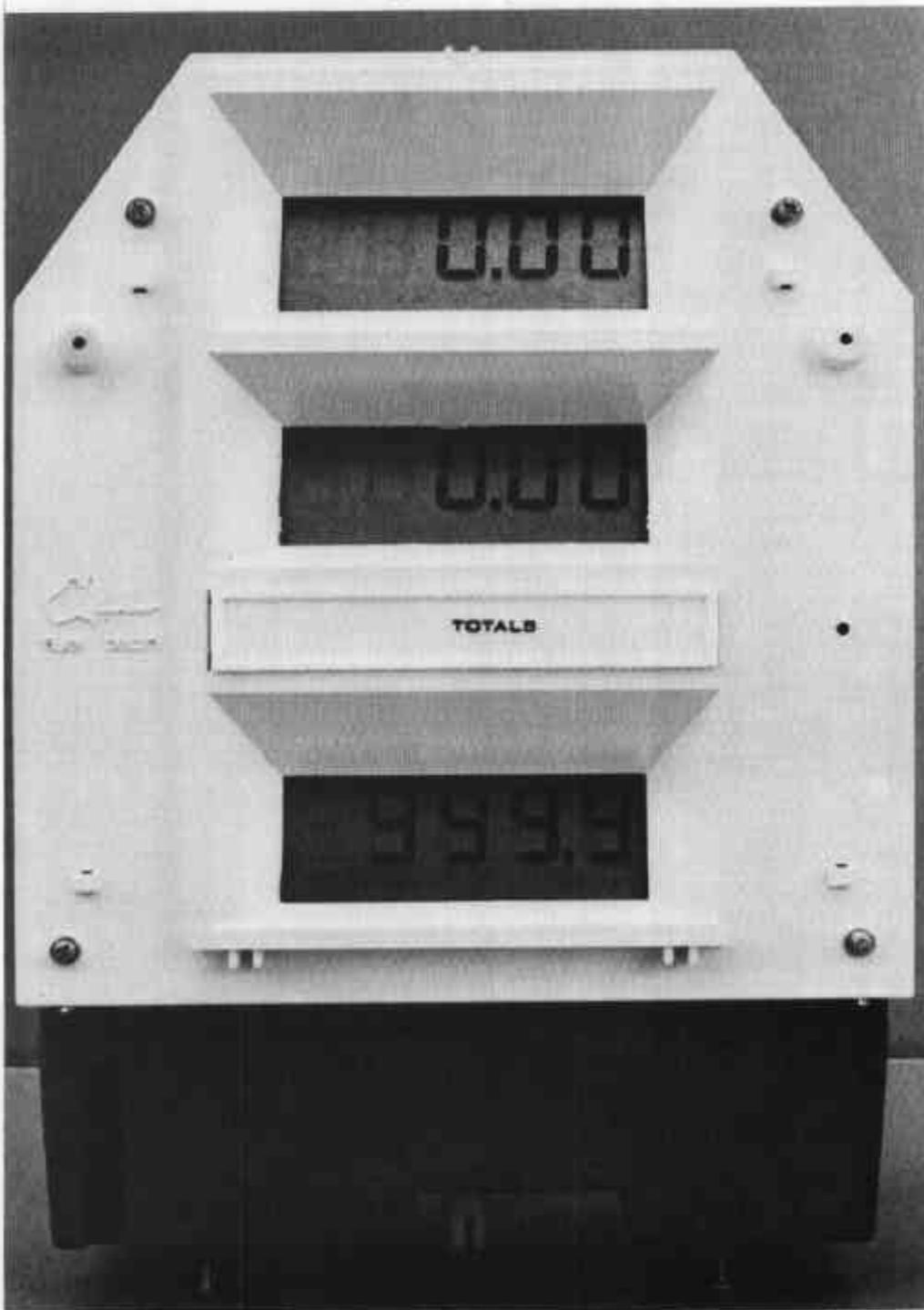
NOTE: Pressing any AUTHORIZATION button will cancel the EMERGENCY STOP condition; it will not restart any of the driveway flowmeters.

- 4.14 Every transaction taking place on a driveway flowmeter in CONSOLE mode at the time of use of the EMERGENCY STOP should be terminated by hanging up the nozzle and paying off by pressing the STATUS button, as a delivery from a driveway flowmeter cannot be restarted without losing the record of the transaction up to the time of the EMERGENCY STOP.
- 4.15 Return the nozzle to its hang up position.
- 4.16 Return the system to the mode of operation as recorded in 1.1.1.

TABLE 1

<u>Certificate No</u>	<u>Description</u>
5/6A/61	<u>Epic XV Self-Service Models - Nozzle Operated Reset</u>
	PP730B Single
	PP730BHM Single with Hose Mast
	PP730BD Single - Diesel
	PP733B Dual
	PP733BHM Dual with Hose Mast
5/6A/13	<u>700 Series Attended Models - Handle Reset</u>
	734B Single - Pedestal Housing
	730B Single - Cabinet Housing
	734BD Single - Pedestal Housing - Diesel
	730BD Single - Cabinet Housing - Diesel
	730BDH Single - Cabinet Housing - Diesel - High Delivery
	733B Dual - Cabinet Housing
	<u>700 Series Attended Models - Nozzle Operated Reset</u>
	733BE Dual - Cabinet Housing - Electric Reset
	730BE Single - Cabinet Housing - Electric Reset
5/6A/48	<u>600 Series Attended Models - Handle Reset (Patterns with 4-digit indicators)</u>
	605 Single
	605 Dual

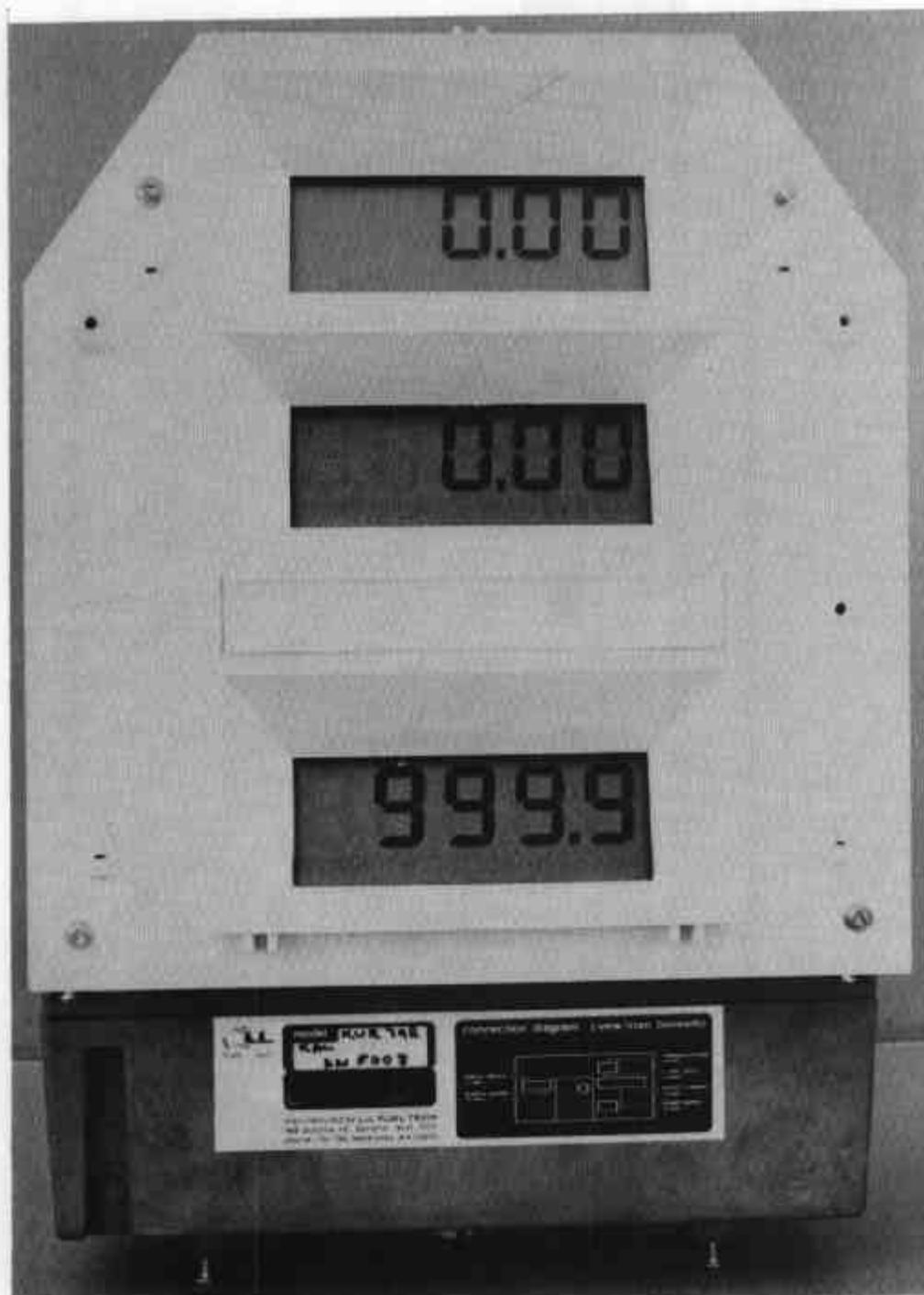
FIGURE S110 - 1



Eclipse IWR 79R - front elevation

24/10/80

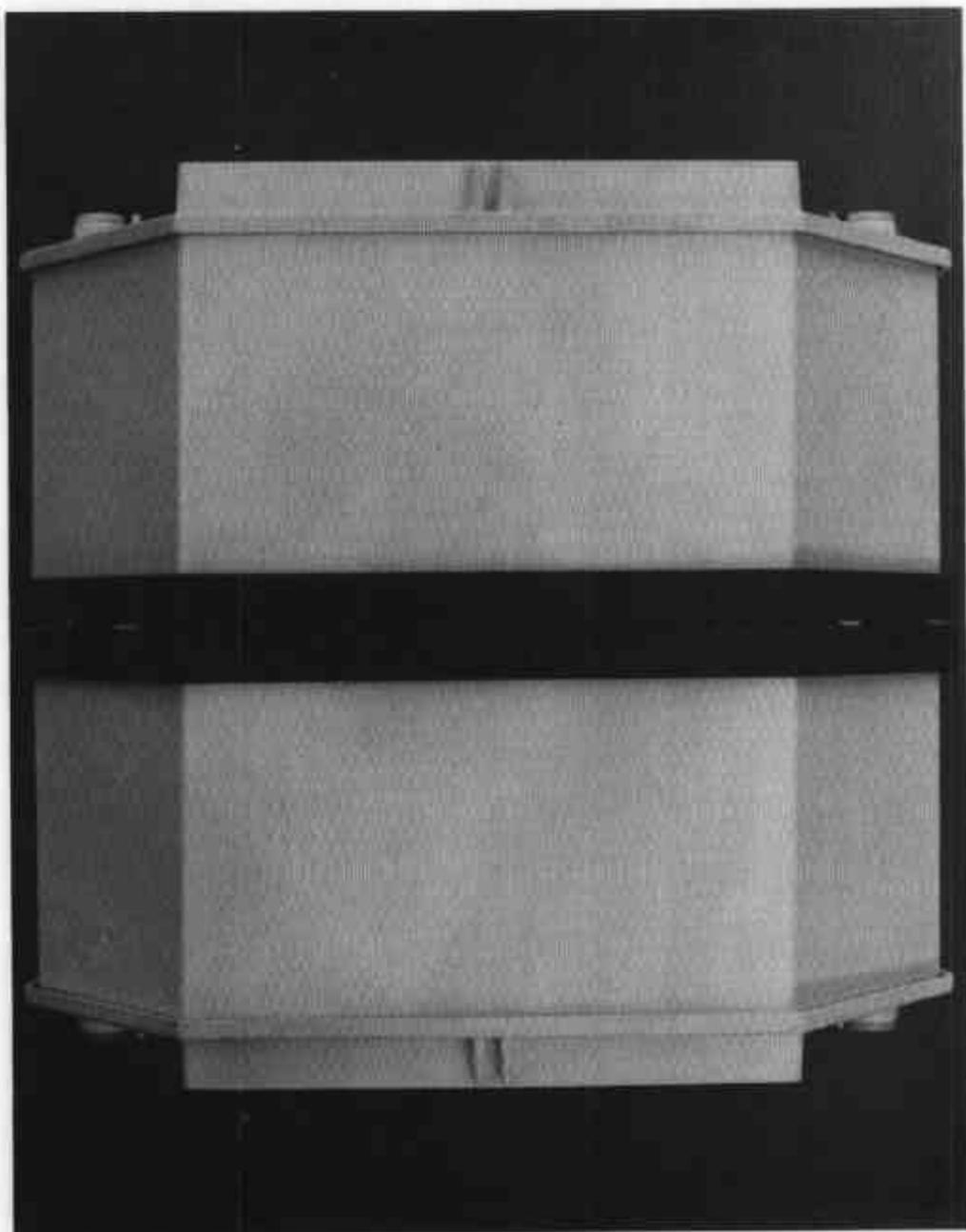
FIGURE S110 - 2



Eclipse MVR 79R - rear view

24/10/80

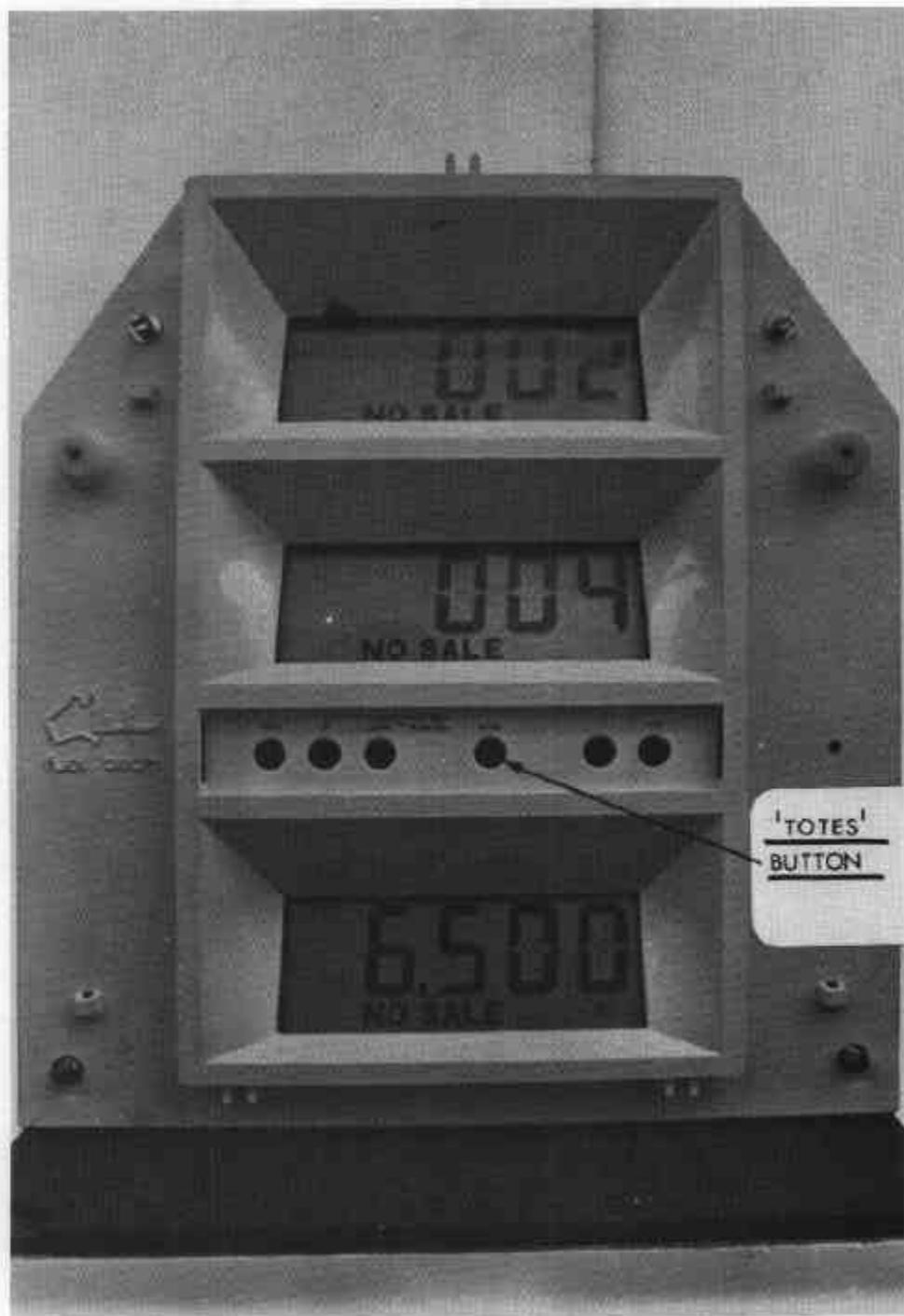
FIGURE S110 - 3



Eclipse NVR 79R - plan view

24/10/80

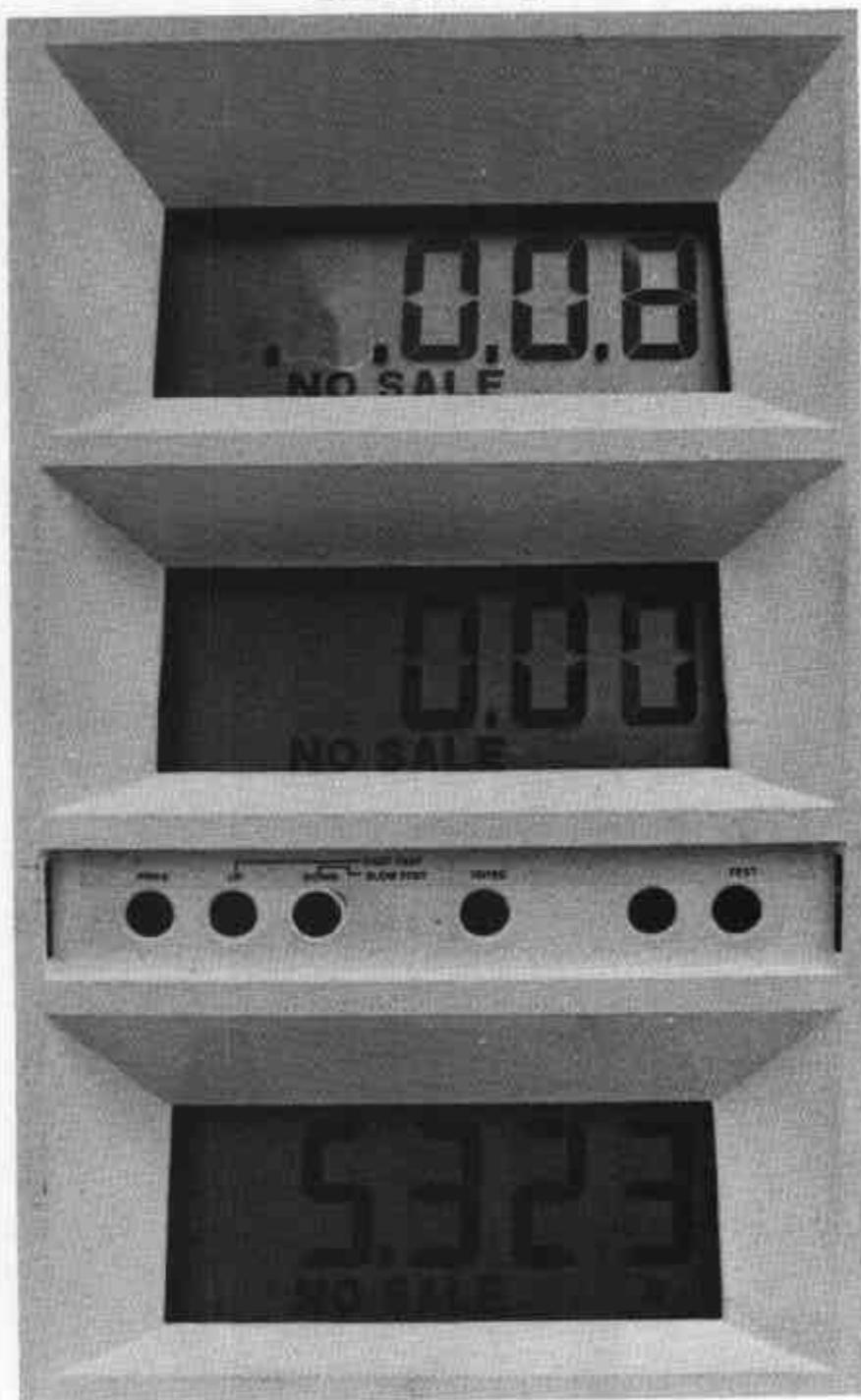
FIGURE S110 - 4



Button Panel - Eclipse MVR 79R

24/10/80

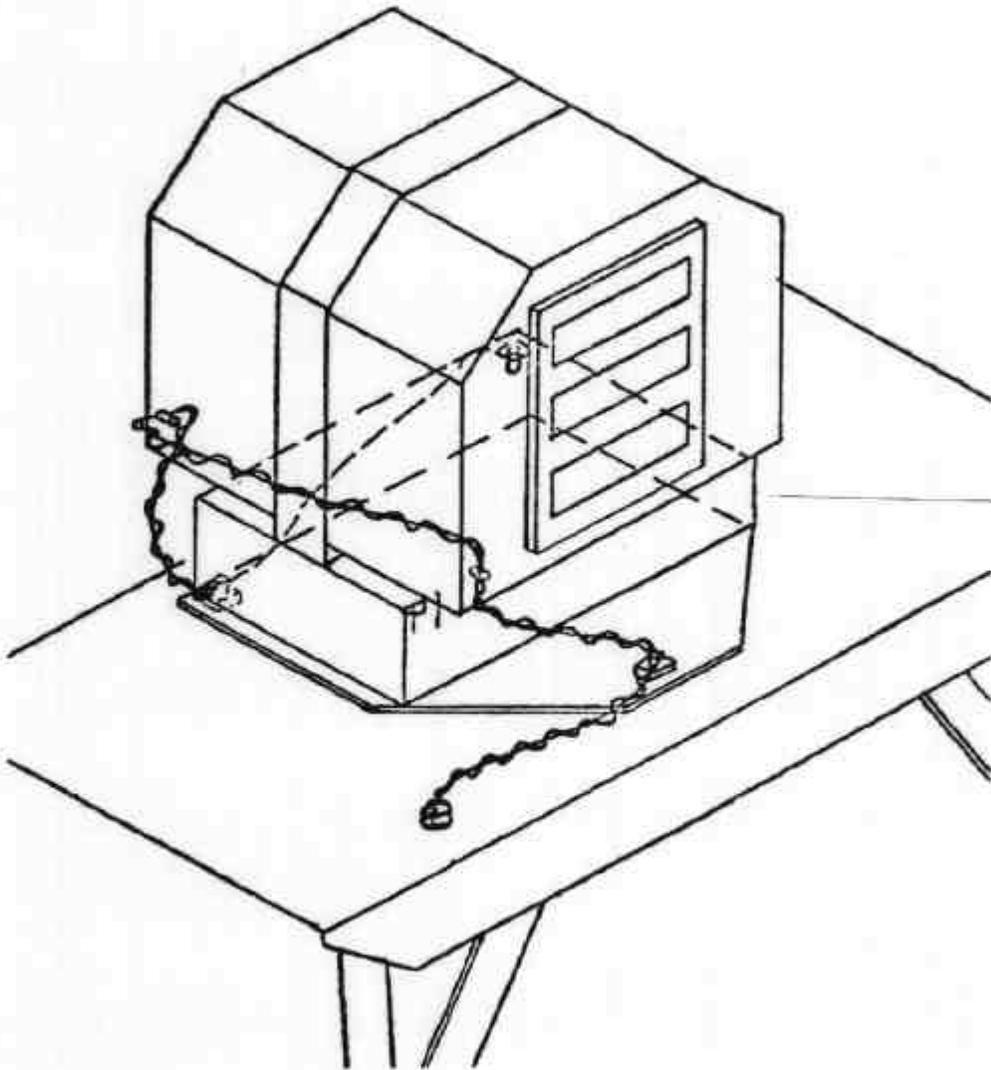
FIGURE S110 - 5



Battery low level condition

24/10/80

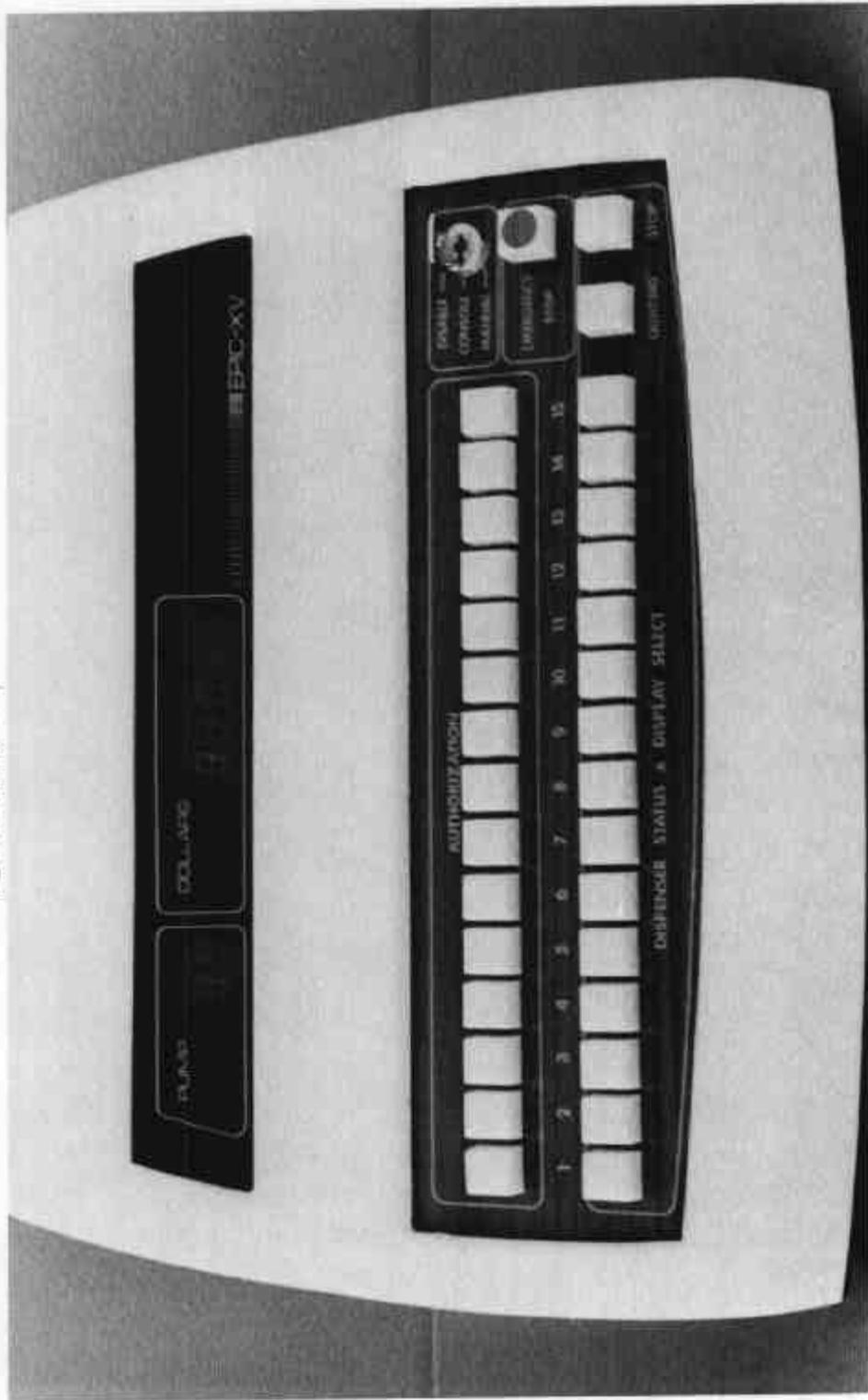
FIGURE S110 - 6



Sealing of Eclipse MVR 79R

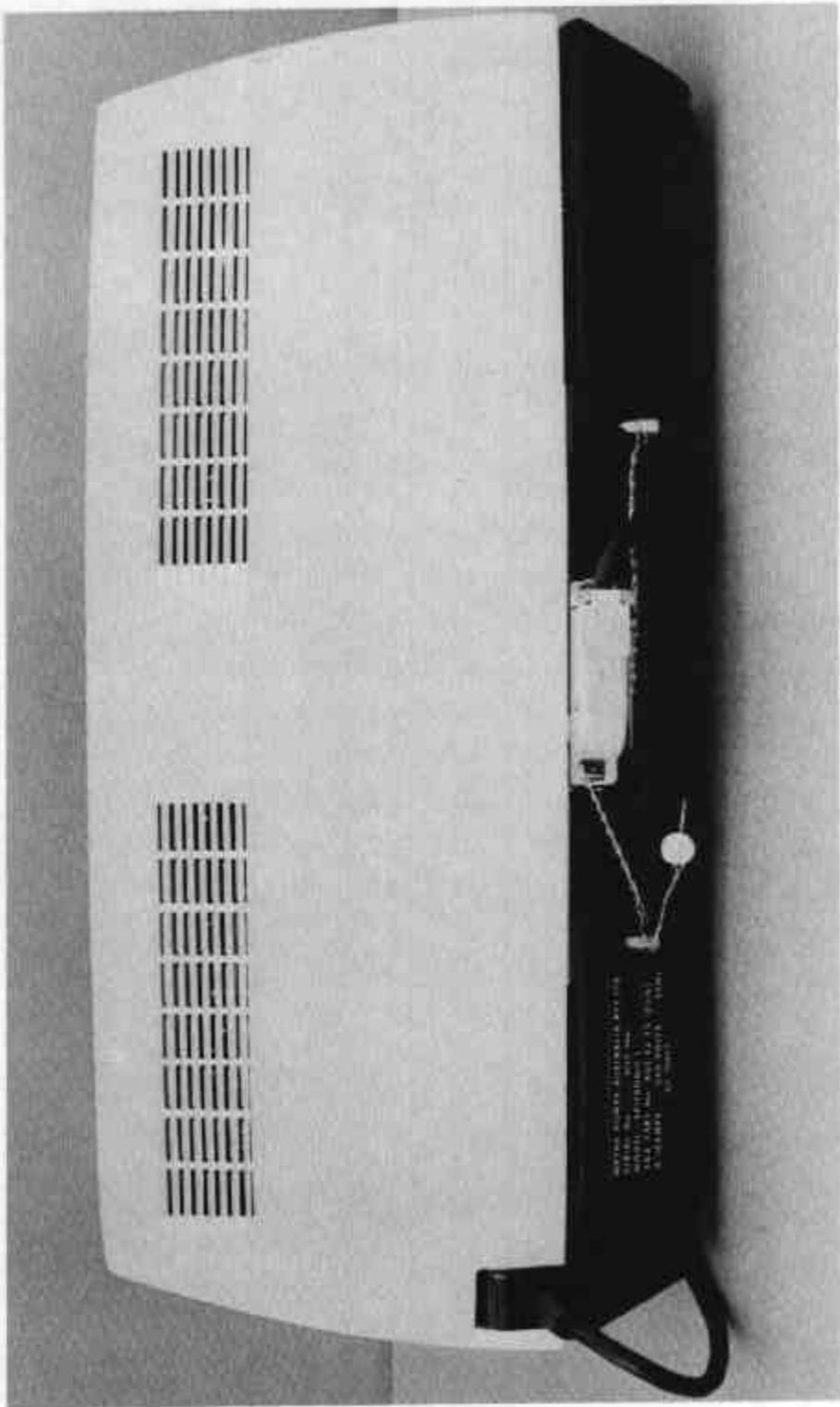
24/10/80

FIGURE S110 - 7



Epic XV Console - front elevation

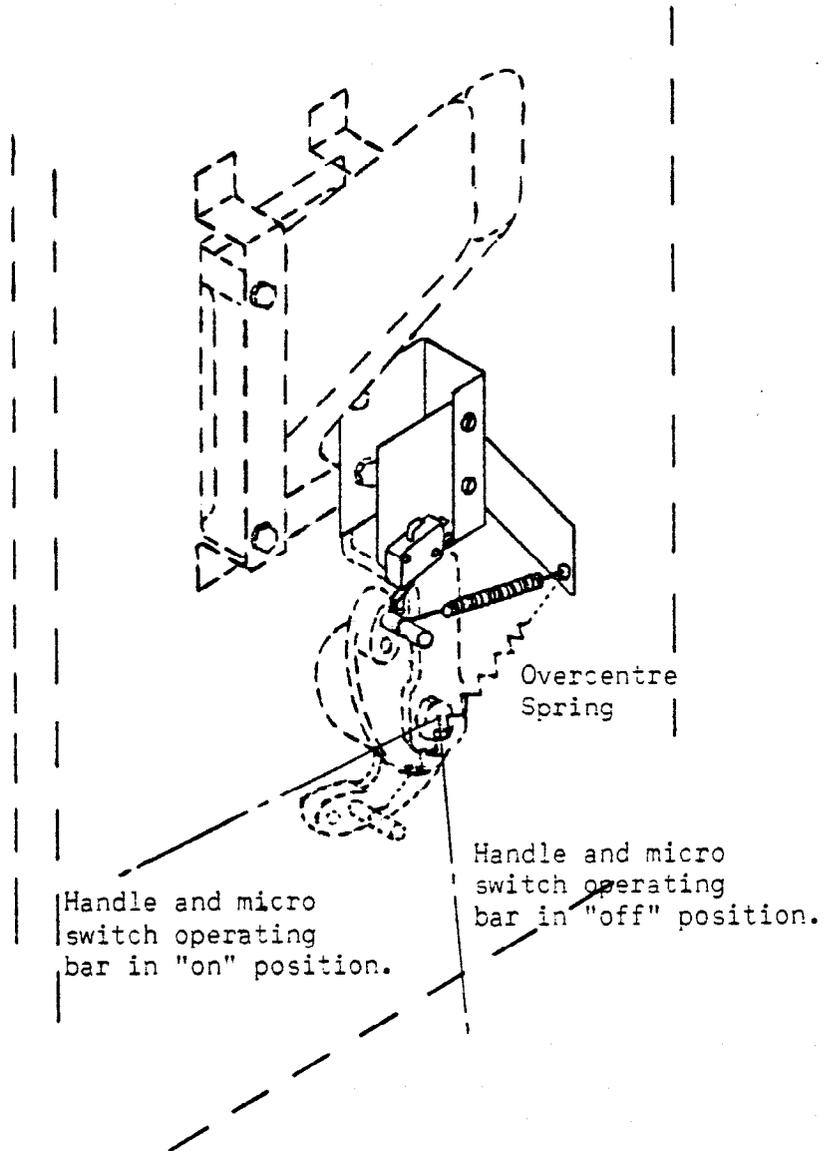
FIGURE S110 - 8



Epic XV Console - rear view showing sealing

24/10/80

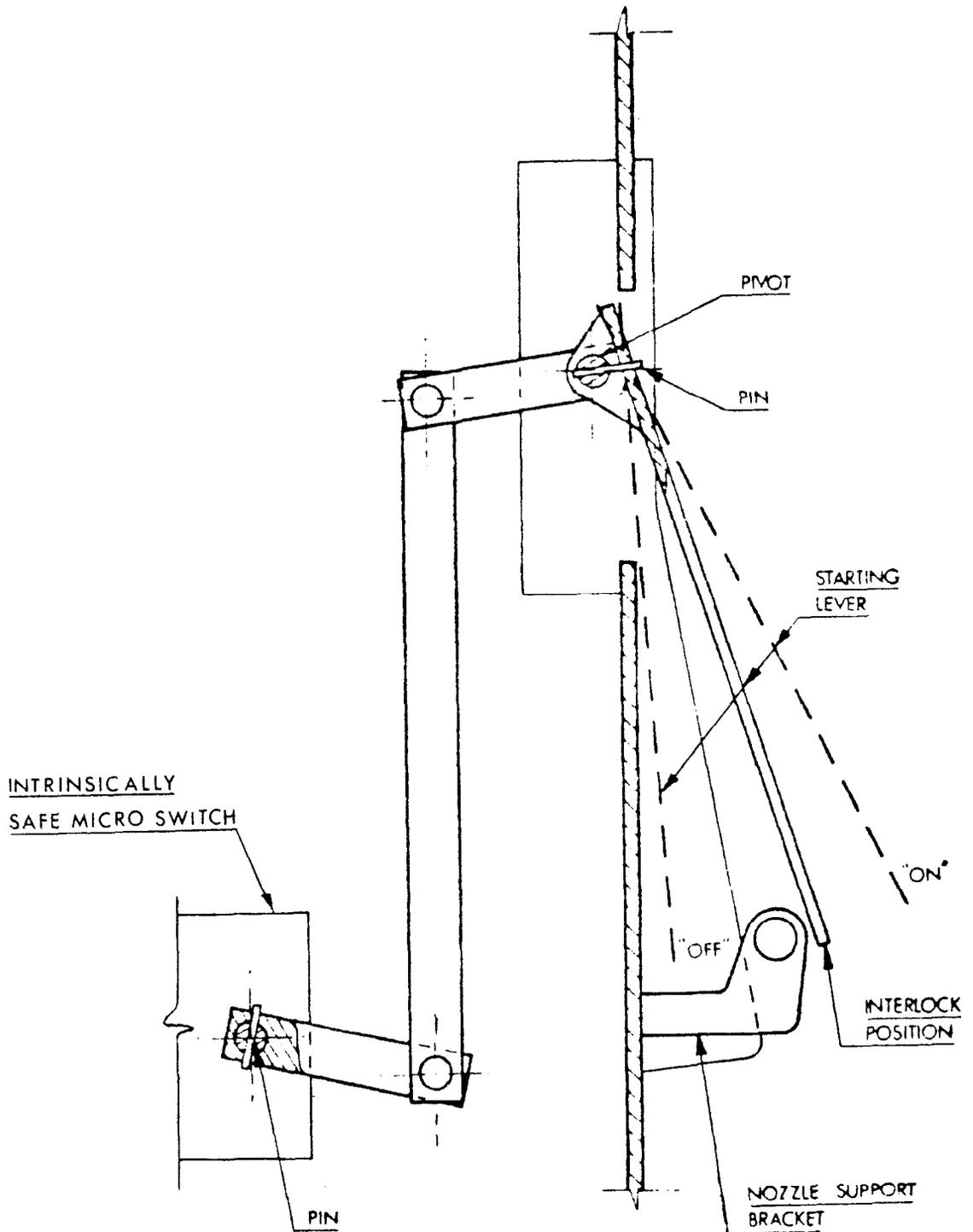
FIGURE S110 - 9



Handle-operated reset switch for Wayne 700 and 600 Series Driveway Flowmeters fitted with Eclipse MVR 79R

12/5/81

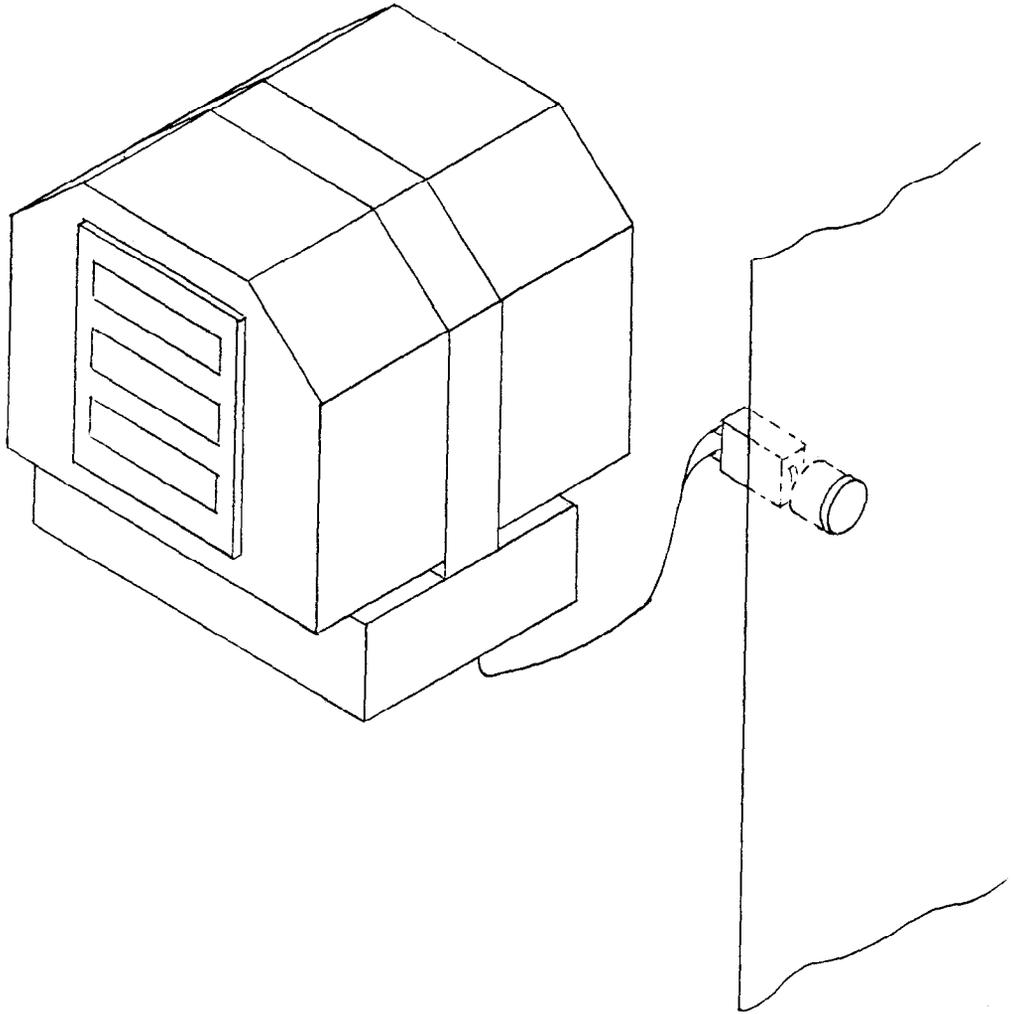
FIGURE S110 - 10



Nozzle operated reset for Wayne 700 series
and those driveway-flowmeters in Epic XV
Self-serve systems

24/10/80

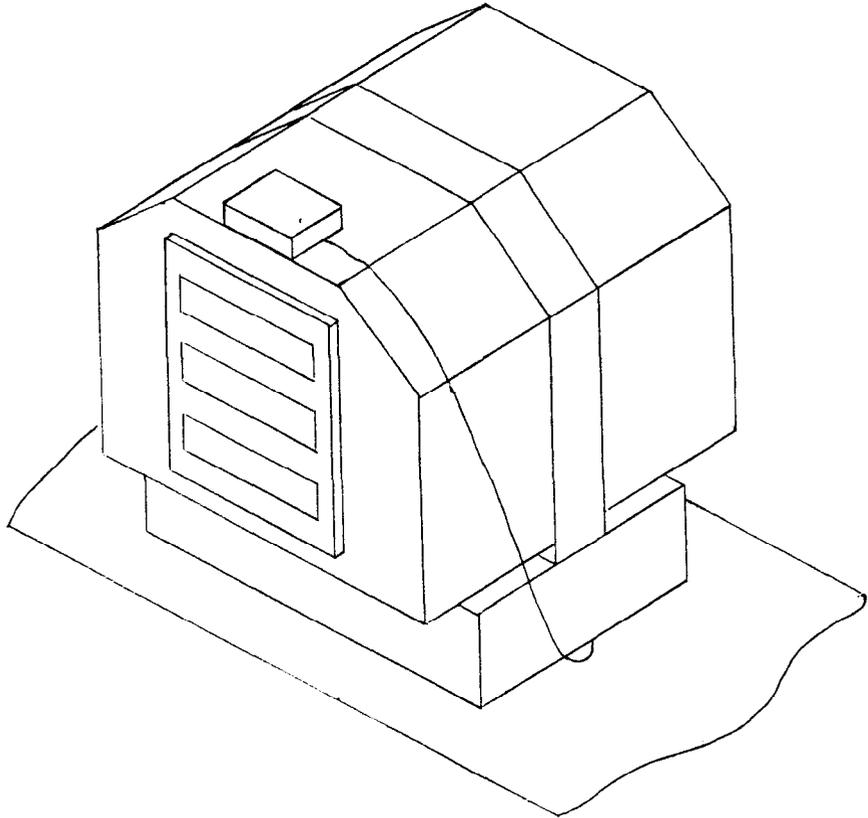
FIGURE S110 - 11



Optional Remote Totalising Button
Mounted on the Driveway Flowmeter
Side Panel

24/10/80

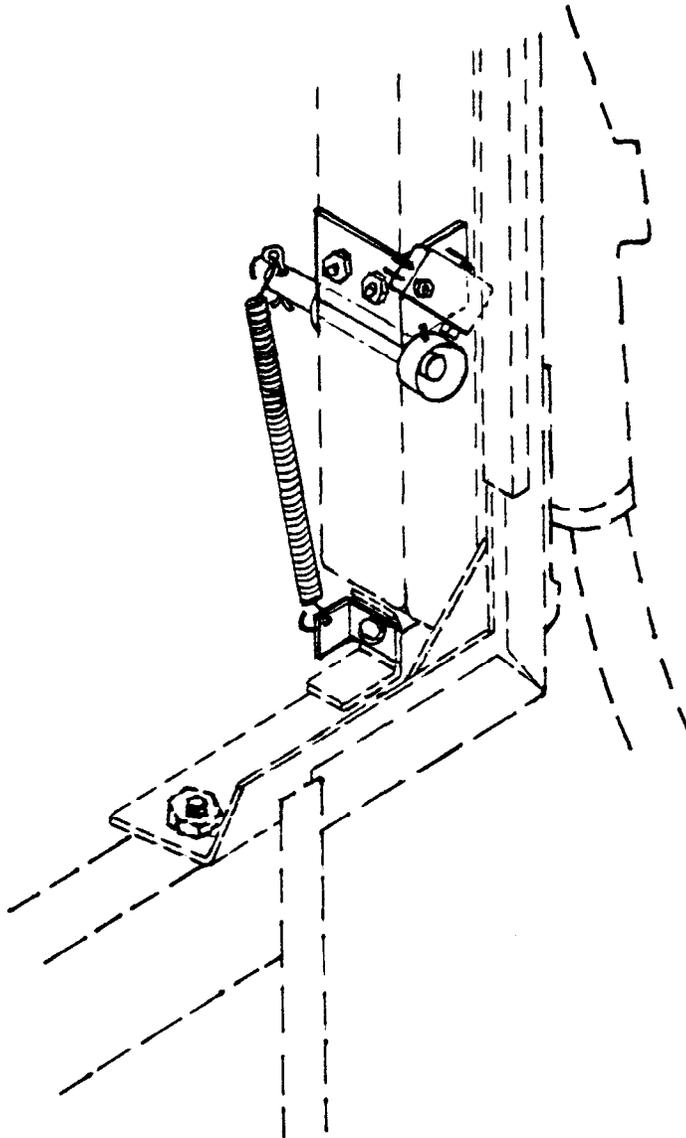
FIGURE S110 - 12



Optional electro-mechanical Totaliser mounted
on top of Eclipse MVR 79R

24/10/80

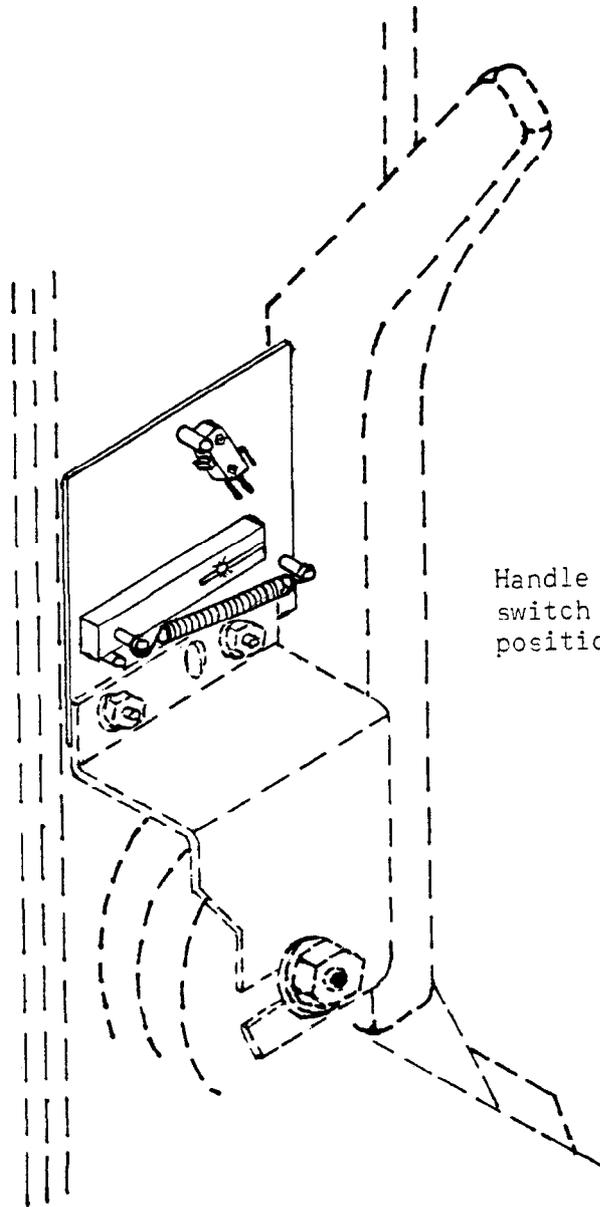
FIGURE S110 - 13



Nozzle operated reset switch for Gilbarco Trimline retrofitted with Eclipse MVR79R (Certificates of Approval Nos 5/6A/24, 5/6A/30, 5/6A/55, 5/6A/62 and 5/6A/66).

3/9/81

FIGURE S110 - 14

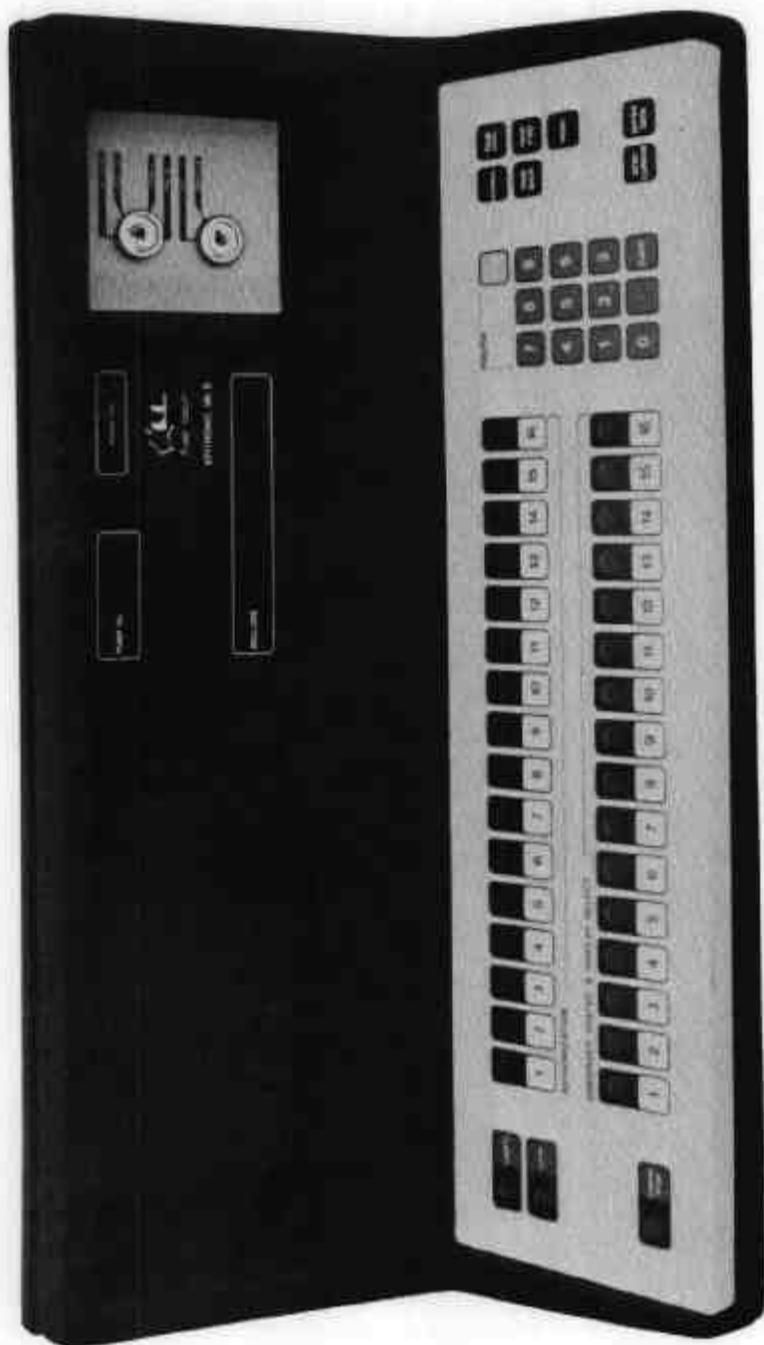


Handle and micro
switch in 'off'
position.

Handle operated reset switch for Gilbarco Trimline retrofitted with Eclipse MVR79R (Certificates of Approval Nos 5/6A/24, 5/6A/30, 5/6A/35, 5/6A/44, 5/6A/45, 5/6A/55, 5/6A/56, 5/6A/62 and 5/6A/66).

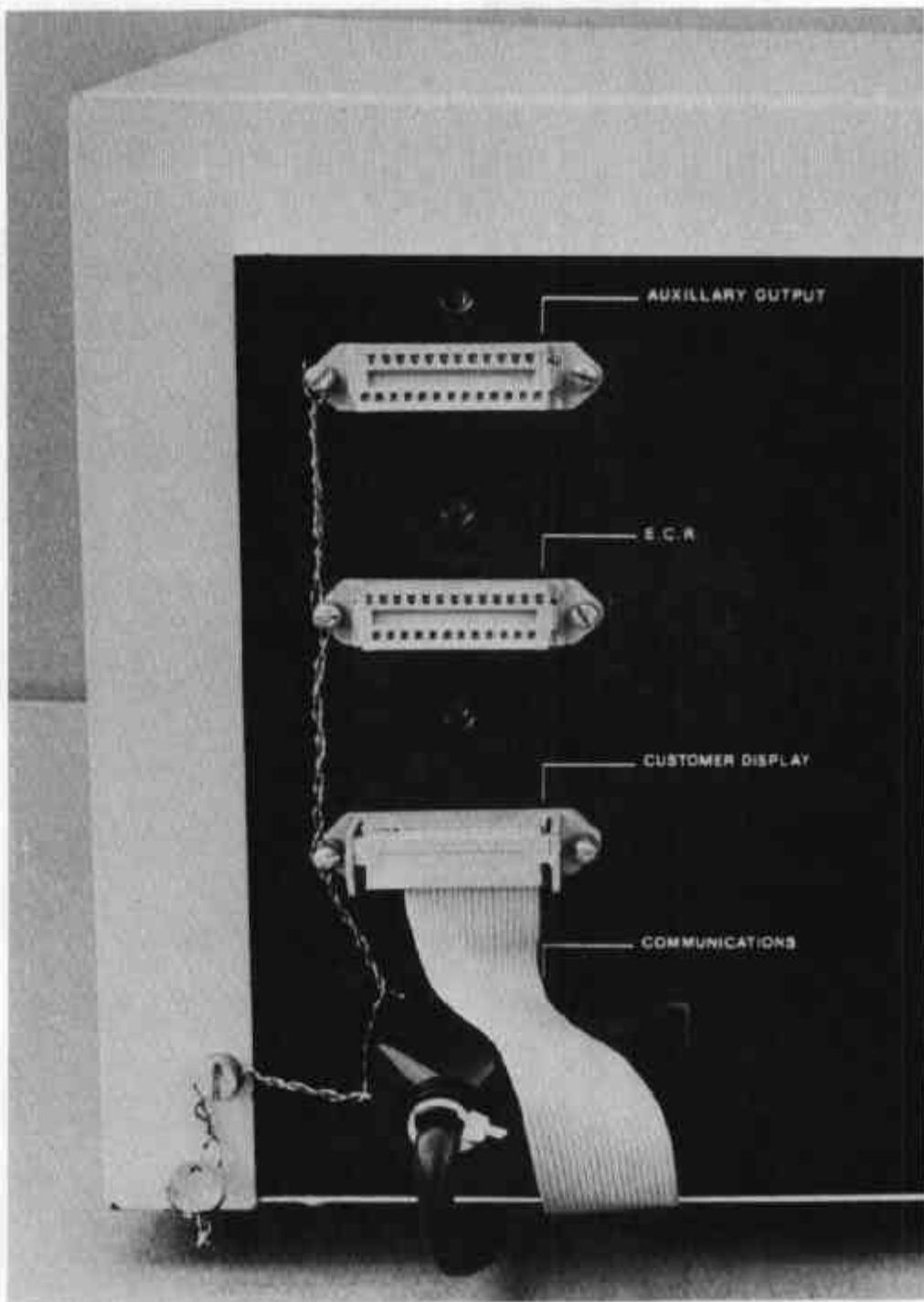
3/9/81

FIGURE S110 - 15



Mk II Console

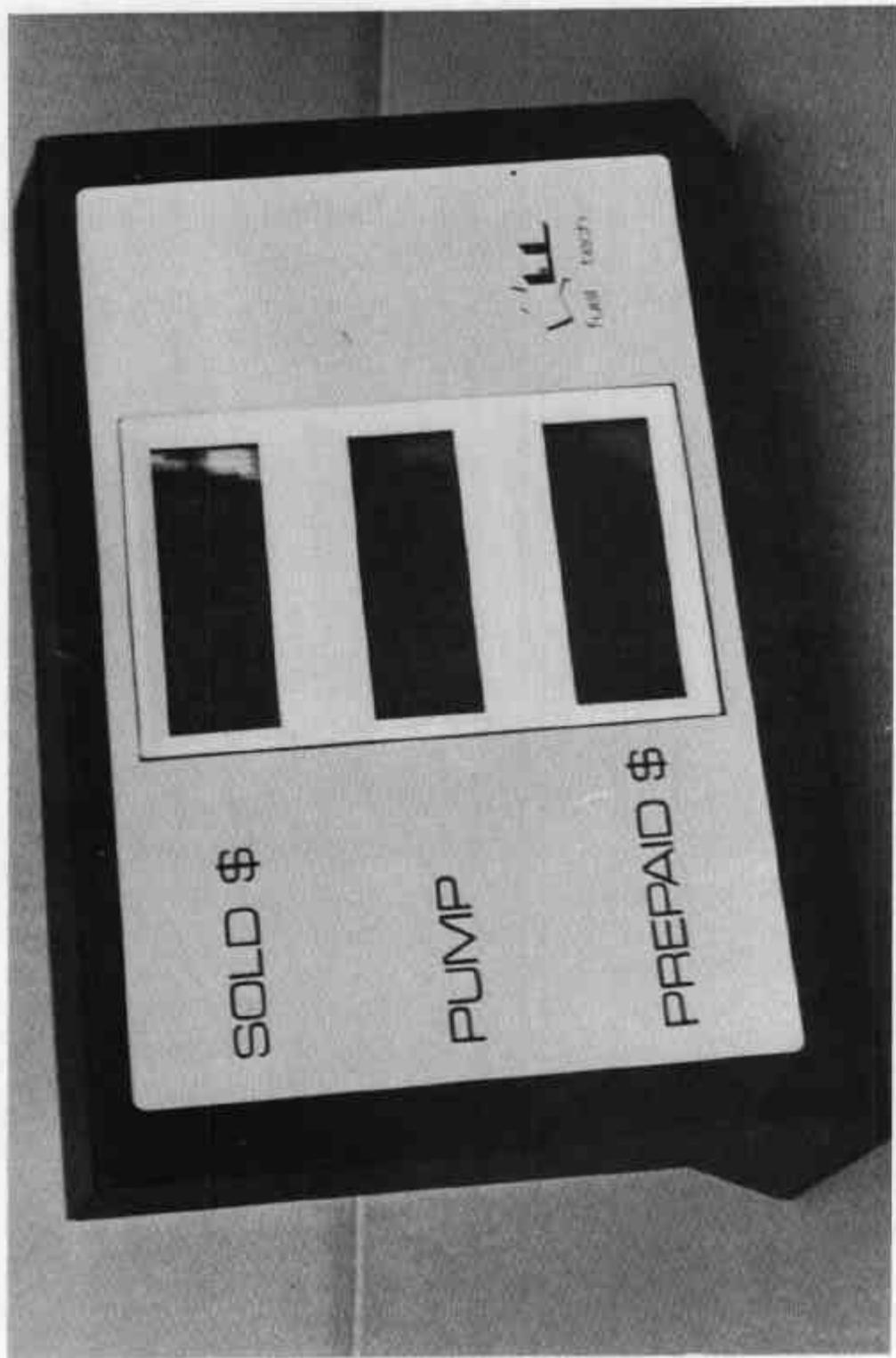
FIGURE S110 - 16



Mk II Console Showing Sealing

21/9/81

FIGURE S110 - 17



Purchaser's Indicator

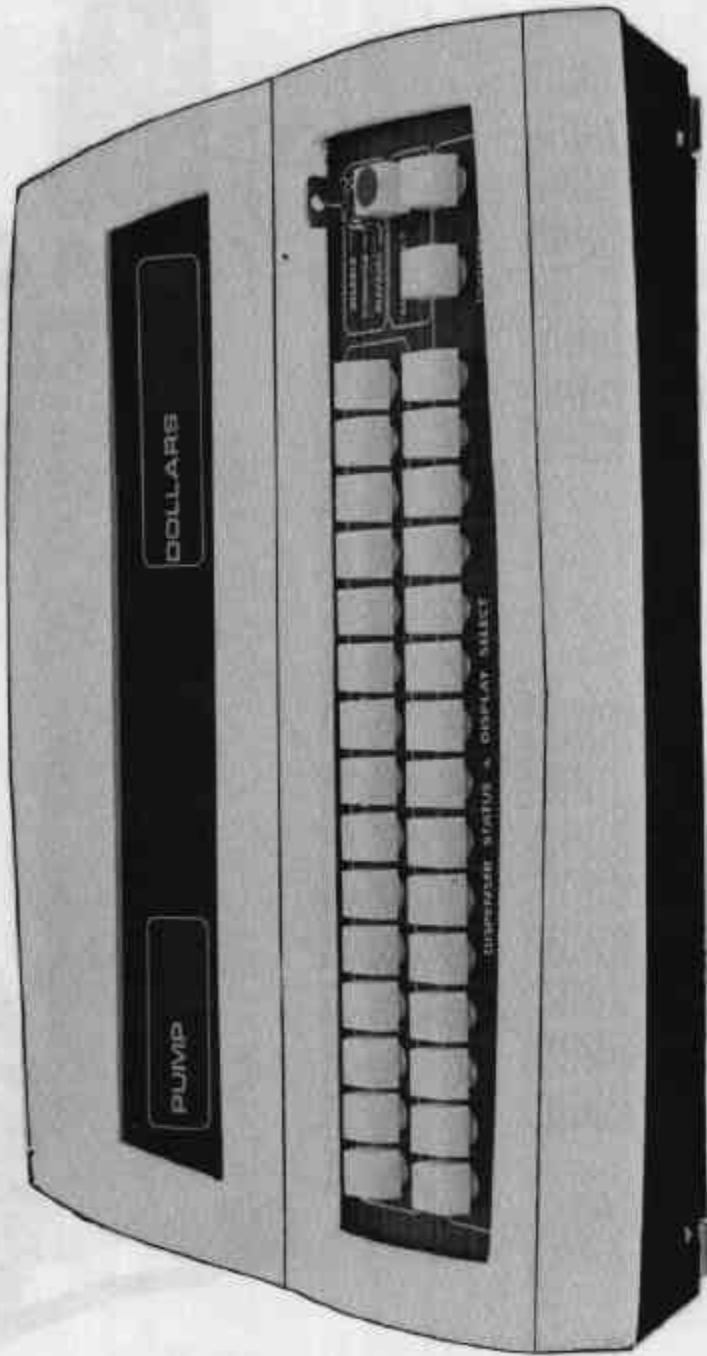
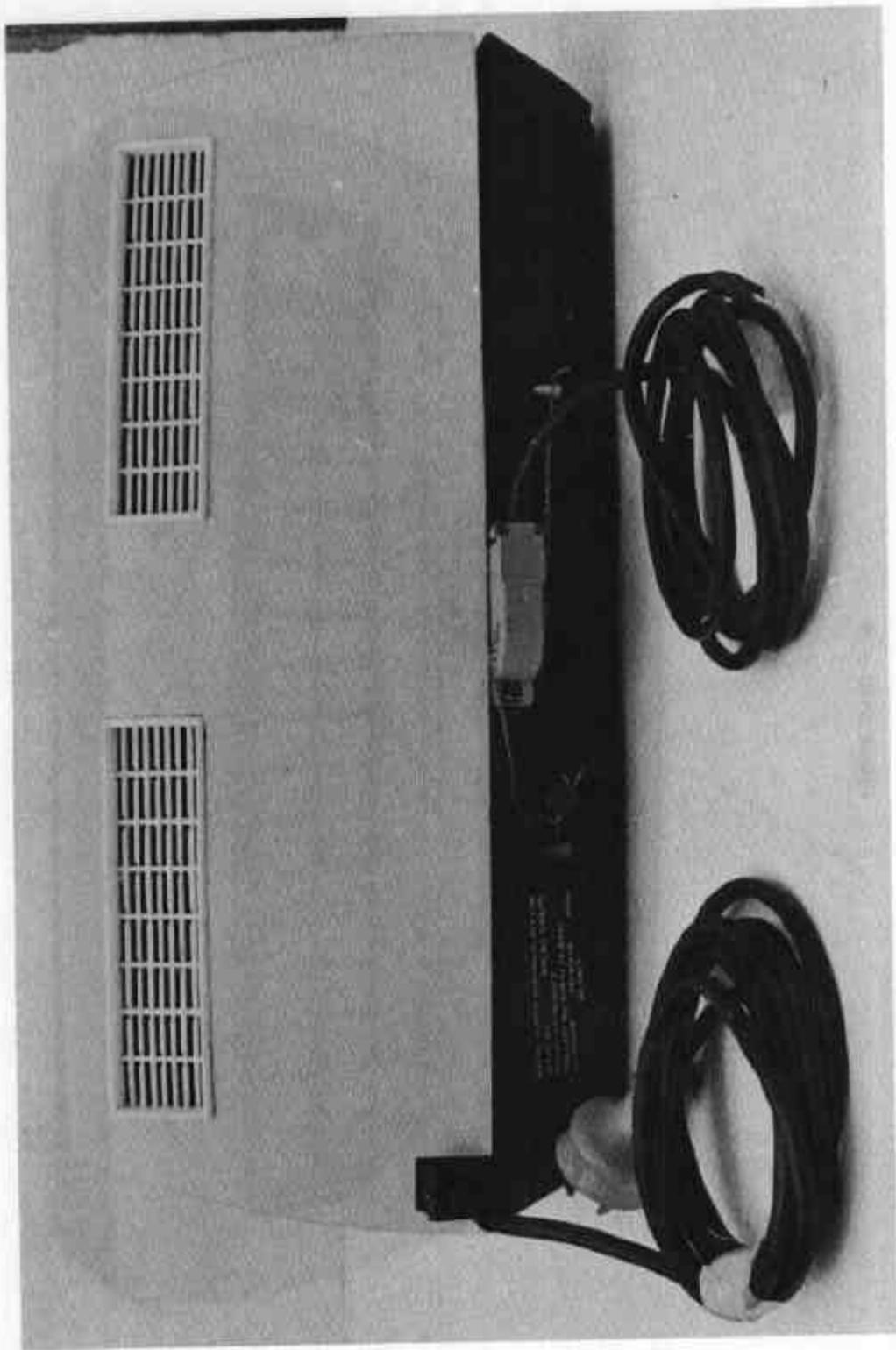


FIGURE S110 - 16

Mk I Console

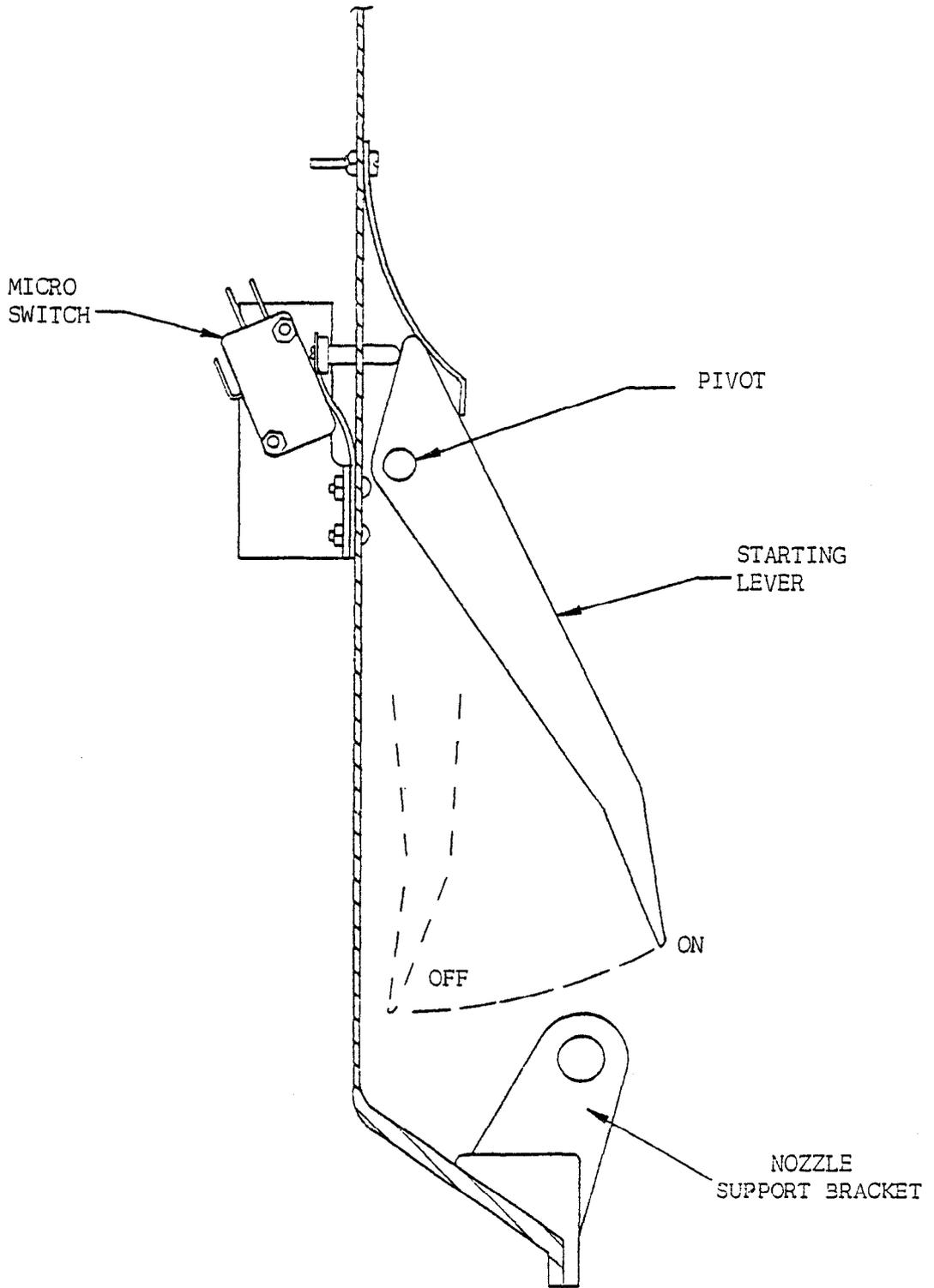
FIGURE S110 - 19



Mk I Console Showing Sealing

21/9/81

FIGURE S110 - 20



Alternative Nozzle-operated Reset Switch

4/1/83