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5/6A/79
18/3/85

CANCELLED

# NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 5/6A/79

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

Production Engineering 6301 Series Driveway Flowmeter System

submitted by Production Engineering Co Ltd
Station Road
Marton New Zealand

are suitable for use for trade.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/6/88.

Instruments purporting to comply with this approval shall be marked NSC No 5/6A/79.

This approval may be withdrawn if instruments are constructed and used other than in accordance with the drawings and specifications lodged with the Commission.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

Signed

Executive Director

Descriptive Advice

Pattern: approved 12/5/83

. Production Engineering 6301 series driveway flowmeters with Tatsuno hydraulic components and a Retron 80 price-computing indicator.

Variant: approved 12/5/83

1. With the indicator of the pattern replaced by Veeder-Root indicators as approved in NSC approval No S107, and used as stand-alone driveway flowmeters.

Technical Schedule No 5/6A/79 describes the pattern and variant 1.

...../2

Variant: approved 26/9/83

2. With driveway flowmeters models T5301H and T5301P.

Technical Schedule No 5/6A/79 Variation No 1 describes variant 2.

Variant: approved 9/11/83

3. Any 6301 series driveway flowmeter of this approval fitted with a gas detector in which case they are known as 6302 series and are approved for use with distillate.

Technical Schedule No 5/6A/79 Variation No 2 describes variant 3.

Variants: approved 12/11/84

4. With a model 6322H driveway flowmeter approved for use with either petrol or distillate at maximum and minimum flow rates of 80 L/min and 15 l/min respectively.

5. With a Veeder-Root model VR 2004 indicator replacing the indicator of variant 4, in which case the instrument is known as a model 6322HVR.

Variant: approved 17/1/85

6. Driveway flowmeters models T5301H and T5301P fitted with gas detectors in which case they are known as models T5302H and T5302P respectively, and are approved for use with distillate.

Technical Schedule No 5/6A/79 Variation No 3 describes variants 4, 5 and 6.

## Filing Advice

Certificate of Approval No 5/6A/79 dated 29/11/83 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6A/79 dated 18/3/85
Technical Schedule No 5/6A/79 dated 31/5/83
Technical Schedule No 5/6A/79 Variation No 1 dated 24/10/83
Technical Schedule No 5/6A/79 Variation No 2 dated 29/11/83
Technical Schedule No 5/6A/79 Variation No 3 dated 18/3/85
Test Procedure No 5/6A/79 dated 31/5/83
Figures 1 to 10 dated 31/5/83
Figure 11 dated 24/10/83

# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/79

Pattern: Production Engineering 6301 Series Driveway Flowmeter System

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

## 1. Description of Pattern

Production Engineering driveway flowmeter models 6301 H, 6301 DH, 6301 P and 6301 DP (Figures 1 to 3). Each is approved for use either in attendant-operated mode or with the Micro-M self-serve system (Figures 4 to 6). They are approved for delivering at flow rates between 15 L/min and 40 L/min.

Each flowmeter is marked with its flowmeter number as a part of the self-serve system.

The flowmeters are fitted with Retron 80 price-computing indicators as approved under NSC No S101.

Their hydraulics incorporate a Tatsuno pump, gas separator and 4-piston meter.

All models are fitted with hose masts and the models 6301 P and 6301 DP are fitted with preset control valves and customer preset panels and displays (Figure 2).

| | |
|---|---|
| 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 |

Each time a nozzle is removed from its hang-up the displays will show all 8's then all 0's before the pump motor will start.

### 1.1 Marking

Each driveway flowmeter is marked with the following data, together in one location:

| | |
|---|---|
| Manufacturers name or mark | |
| Serial number | |
| Model number | |
| NSC approval number | NSC No 5/6A/79 |
| Maximum flow rate | 40 L/min |
| Minimum flow rate | 15 L/min |
| Liquid temperature range | |
| Maximum operating pressure | |

In addition, the instrument is marked APPROVED FOR PETROL or APPROVED FOR KEROSENE.

### 1.2 Sealing

The meter calibration and gas separator test valve are sealed as shown in Figure 7.

## 2. Description of Variant 1

With the Retron 80 price-computing indicator of the pattern replaced by any Veeder-Root indicator approved under NSC No S107. The driveway flowmeters are then known as either model 6301 HVR (single) or model 6301 DHVR (dual) (Figures 8 to 10) and are stand-alone only.

1. Driveway-Flowmeter Performance

At the control console select MONITOR mode or ask the operator to authorise driveway flowmeters as the following tests are made. In turn for each driveway flowmeter:

(a) If a preset panel is fitted, on the driveway flowmeter select a value of product to be delivered, say, $2,00. Make a delivery and check that the delivery stops when the price indicated is exactly the preset value.

(b) Carry out the repeatability and accuracy tests which are normally applied to a driveway flowmeter; these should include a gas-separation test:

The progressive opening of the gas-separation test valve should allow flow rates to be reduced to, say, 90%, 80%,70%, etc. of full flow rate, until either the flow rate becomes less then the minimum of 15 litres per minute or the flow stops due to the pump losing prime. For all tests 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 the admitted air on the accuracy of measurement should not exceed 0.5% of the quantity delivered.

2. Micro-M System

During the testing of the Micro-M system it will be necessary to stop the service station operating as it is not possible to isolate some of the instruments for testing.

(a) Simultaneously press the TEMP-STOP and ENTER buttons. This will allow the deliveries in progress to be completed but will prevent further authorisations of driveway flowmeters.

For each driveway flowmeter not in use the upper (red) driveway flowmeter status light (driveway flowmeter out of service) will illuminate and as each transaction in progress is completed the remaining upper (red) status lights will illuminate. When all driveway flowmeters are indicated as being out of service the control console indicator will go blank except for a minus sign flashing in the MODE position.

(b) Select post-pay mode, then simultaneously press the TEMP-STOP and CLEAR buttons.

The letter "A" will be displayed on the control console indicator and after a few seconds the driveway flowmeter out of service status lights of each driveway flowmeter installed in the self-serve system will go out.

(c) For two or more driveway flowmeters deliver sufficient liquid to cause the price and quantity indicators on the computer to move significantly off zero. Hang-up all nozzles. For each driveway flowmeter record the quantity delivered and the price indicated.

(d) At the control console simultaneously press the TEMP-STOP and ENTER buttons, then in turn select each driveway flowmeter so as to display the price, hold the VOLUME button down to display the quantity and then reselect the driveway flowmeter to clear it so that the next one can be displayed.

The quantity and price indicated on the purchaser's and vendor's indicators for each driveway flowmeter should correspond exactly with the quantity and price recorded for each driveway flowmeter.

When the last driveway flowmeter has been displayed and cleared the upper driveway flowmeter status lights will illuminate to indicate that all driveway flowmeters are out of service, and the indicator will go blank except for a flashing minus sign in the MODE position. The mode selected has been cleared, allowing the selection of a new mode.

(e) Select PREPAY mode, then simultaneously press the TEMP-STOP and CLEAR buttons.

The letter "H" will be displayed on the control console indicator and after a few seconds the driveway flowmeter OUT OF SERVICE status lights of each driveway flowmeter installed in the self-serve system will go out.

(f) For driveway flowmeters that are fitted with the preset panel perform the following tests (g) to (j). For those without preset panels perform (k).

(g) At the control console select two driveway flowmeters, select an appropriate value of product to be delivered, say, $1.00, and press the ENTER button.

For each of these driveway flowmeters the purchaser's and vendor's indicators will display the appropriate driveway flowmeter number and the value selected. The next driveway flowmeter cannot be selected until the value selected is entered into the system memory by pressing the ENTER button, or alternatively clearing the value selected by one press of the CLEAR button, or the driveway flowmeter selected by a second press of the CLEAR button.

(h) In turn for each of these two driveway flowmeters, check that the value entered as prepaid is displayed on the PREPAY indicator on the driveway flowmeter and that the delivery from one of these driveway flowmeters automatically stops when this exact value of delivery is reached. For the other driveway flowmeter deliver only a portion of the preset value and leave the driveway flowmeter running with its nozzle not returned to its hang-up.

At the control console the status lights for the driveway flowmeter which has had a completed delivery will be out. The lower (yellow) status light for the delivery still in progress will be continuously on.

(i) Hang-up the nozzle of the driveway flowmeter left running without completing the delivery. Record the time at which the nozzle was returned to its hang-up and the exact value delivered.

At the control console the upper (red) status lights will be on and the lower (yellow) status light will be flashing corresponding to the driveway flowmeter which has had its delivery terminated before the prepaid value was reached.

(j) Select the driveway flowmeter which has had the incomplete delivery.

The purchaser's and vendor's displays will show the number of the driveway flowmeter selected, a flashing minus sign and the exact difference between the prepaid value and the value of the delivery.

This will continue for at least 3 minutes from the time the nozzle was returned to its hang-up.

(k) Ensure that driveway flowmeters without preset panels cannot be selected in PREPAY mode. Pressing the driveway flowmeter number button should have no effect.

(l) Simultaneously press the TEMP-STOP and ENTER keys. Return the system to the mode required by the operator.

# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/79

VARIATION No 1

Pattern: Production Engineering 6301 Series Driveway Flowmeter System

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

## 1. Description of Pattern

Production Engineering driveway flowmeter models T5301H and T5301P (Figure 11). Each is approved for use either in attendant-operated mode or with the Micro-M self-serve system (Figures 4 to 6). They are approved for delivering at flow rates between 15 L/min and 40 L/min.

Each flowmeter is marked with its flowmeter number as a part of the self-serve system.

The flowmeters are fitted with Retron 80 price-computing indicators as approved under NSC No S101.

Their hydraulics incorporate a Tatsuno pump, gas separator and 4-piston meter, as per the pattern.

Both models are fitted with hose masts and the model T5301P is fitted with preset control valves and purchaser preset panels and displays.

### 1.1 Sealing

The meter calibration is sealed as shown in Figure 7.

# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6A/79

VARIATION No 2

Pattern: Production Engineering 6301 Series Driveway Flowmeter System

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

1. Description of Variant 3

Any model of the 6301 series of driveway flowmeters of this approval fitted with a gas detector in which case they are known as 6302 series and are approved for use with distillate.

29/11/83

# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 5/6A/79

## VARIATION No 3

Pattern: Production Engineering 6301 Series Driveway Flowmeter System

Submittor: Production Engineering Co Ltd
Station Road
Marton New Zealand

### 1. Description of Variants

#### 1.1 Variant 4

With a Production Engineering model 6322H driveway flowmeter incorporating a Retron 80 price-computing indicator, and approved for use with either petrol or distillate at maximum and minimum flow rates of 80 L/min and 15 L/min respectively.

#### 1.2 Variant 5

With a Veeder-Root model VR 2004 price-computing indicator replacing the indicator of variant 4 in which case the instrument is then known as a model 6322HVR and has one of the following unit price/maximum flow rate relationships:

| Unit Price | Maximum Flow Rate |
|---|---|
| 0 - 70 c/L | 80 L/min |
| 70 - 79.9 c/L | 70 L/min |
| 80 - 89.9 c/L | 62 L/min |
| 90 - 99.9 c/L | 56 L/min |

#### 1.3 Variant 6

Driveway flowmeters models T5301H and T5301P fitted with gas detectors in which case they are known as models T5302H and T5302P respectively, and are approved for use with distillate.

5/6A/79
7/9/84

# NATIONAL STANDARDS COMMISSION

## NOTIFICATION OF CHANGE

## CERTIFICATE OF APPROVAL No 5/6A/79

## CHANGE No 1

The following changes are made to the approval documentation for the

Production Engineering 6301 Series Driveway Flowmeter System

submitted by Production Engineering Co Ltd
Station Road
Morton, New Zealand

1. In Technical Schedule No 5/6A/79 dated 31/5/83, paragraph 1.2 Sealing should be amended to read;

"The meter calibration is sealed as shown in Figure 7."

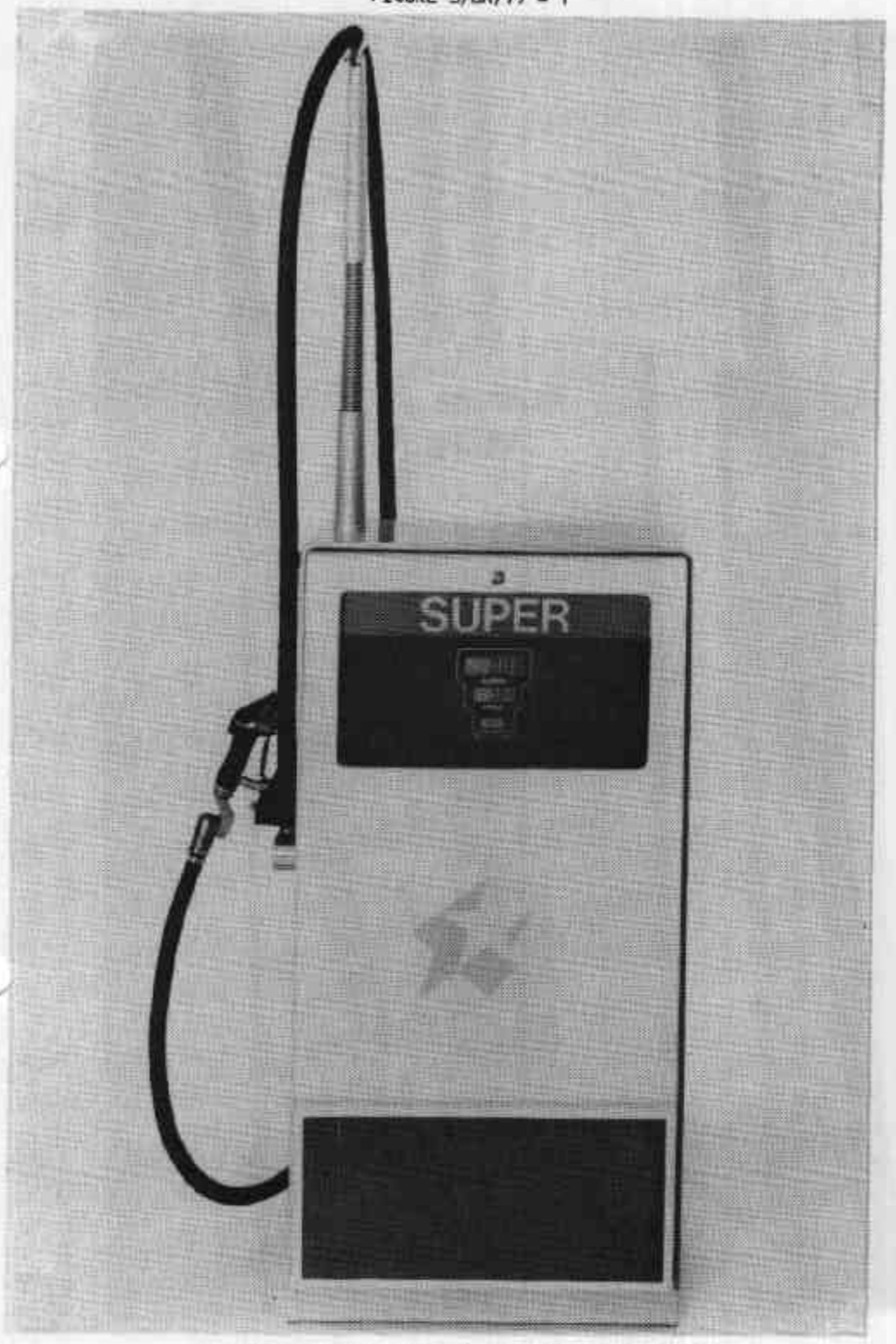
2. In Technical Schedule No 5/6A/79 Variation No 1 dated 24/10/83, the heading of paragraph 1. Description of Pattern should be amended to read;

"1. Description of Variant 2"

Signed

Executive Director

FIGURE 5/6A/79 - 1




Production Engineering Models 6301 H or 6301 P

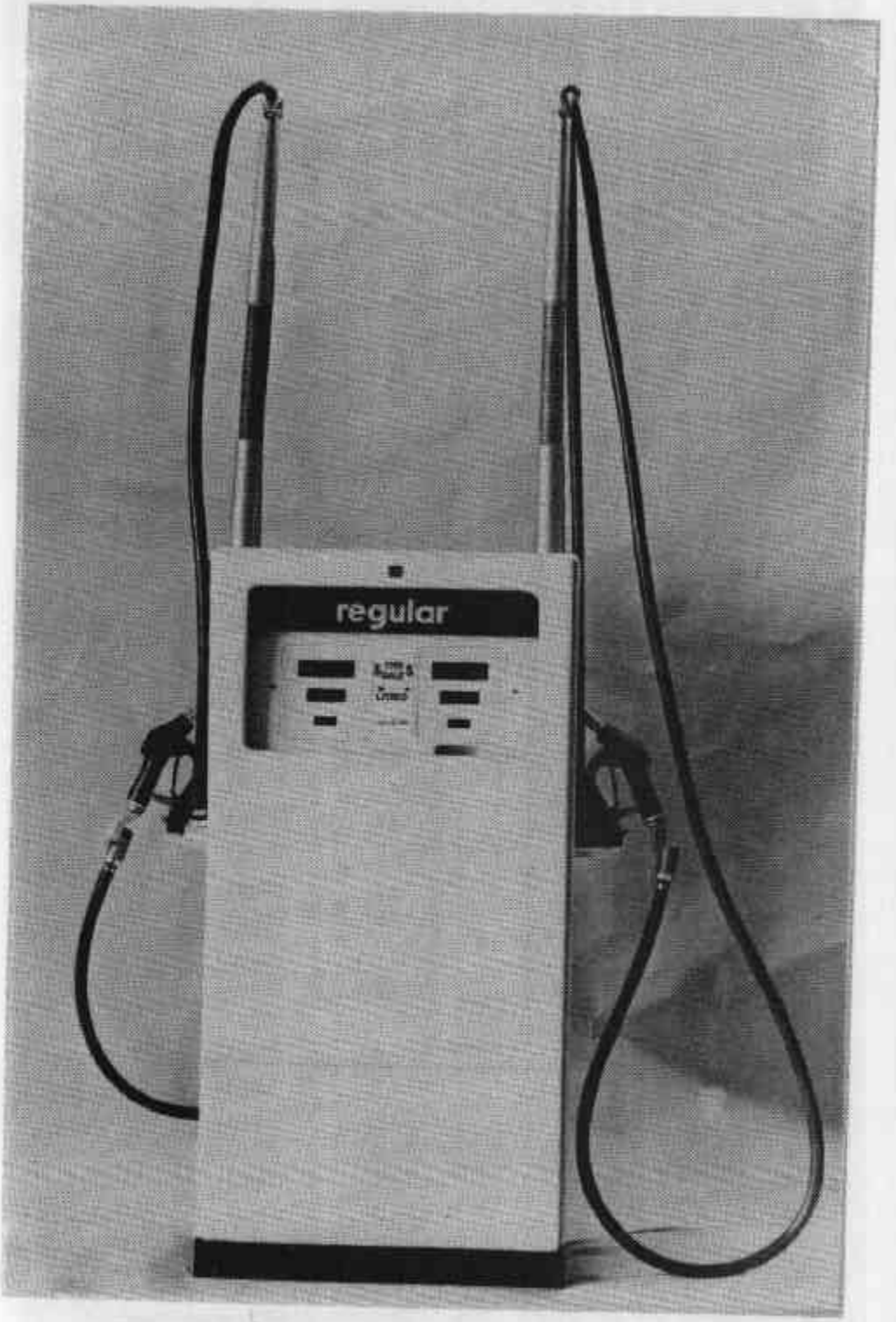
31/5/83

FIGURE 5/6A/79 - 2


Model 6301 P Preset Panel

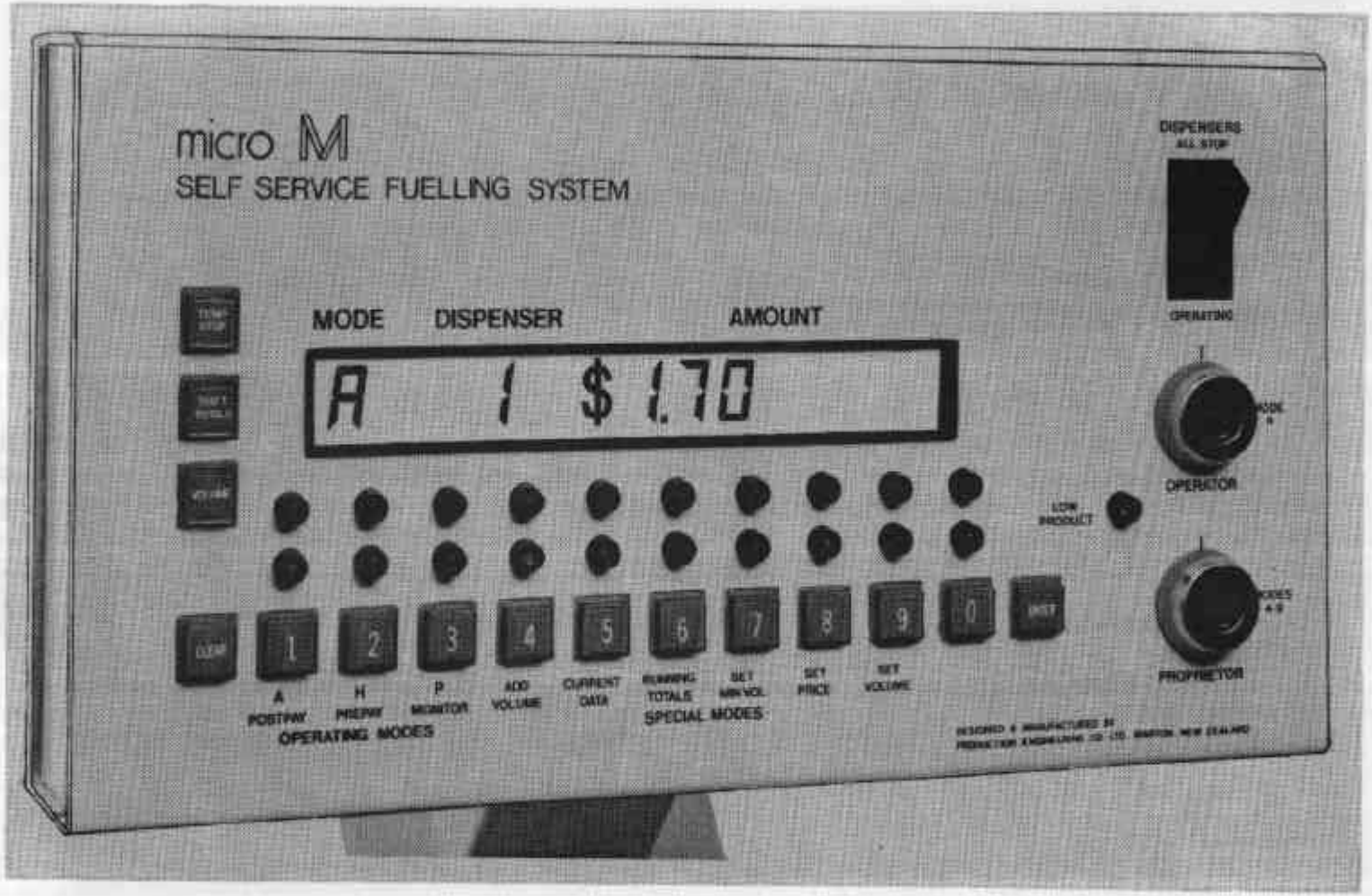
31/5/83

FIGURE 5/6A/79 - 3



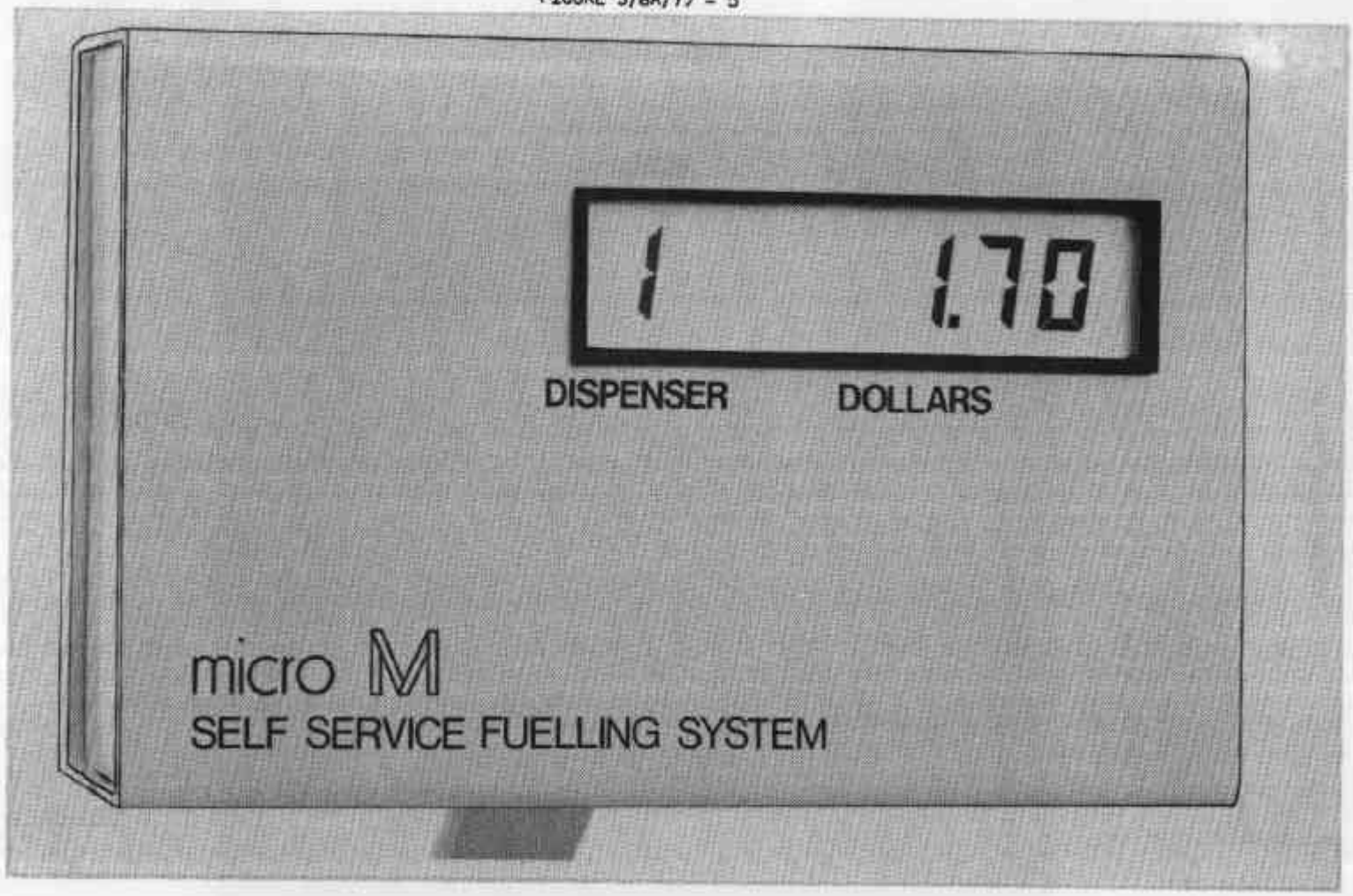

Model 6301 DH or DP

31/5/83



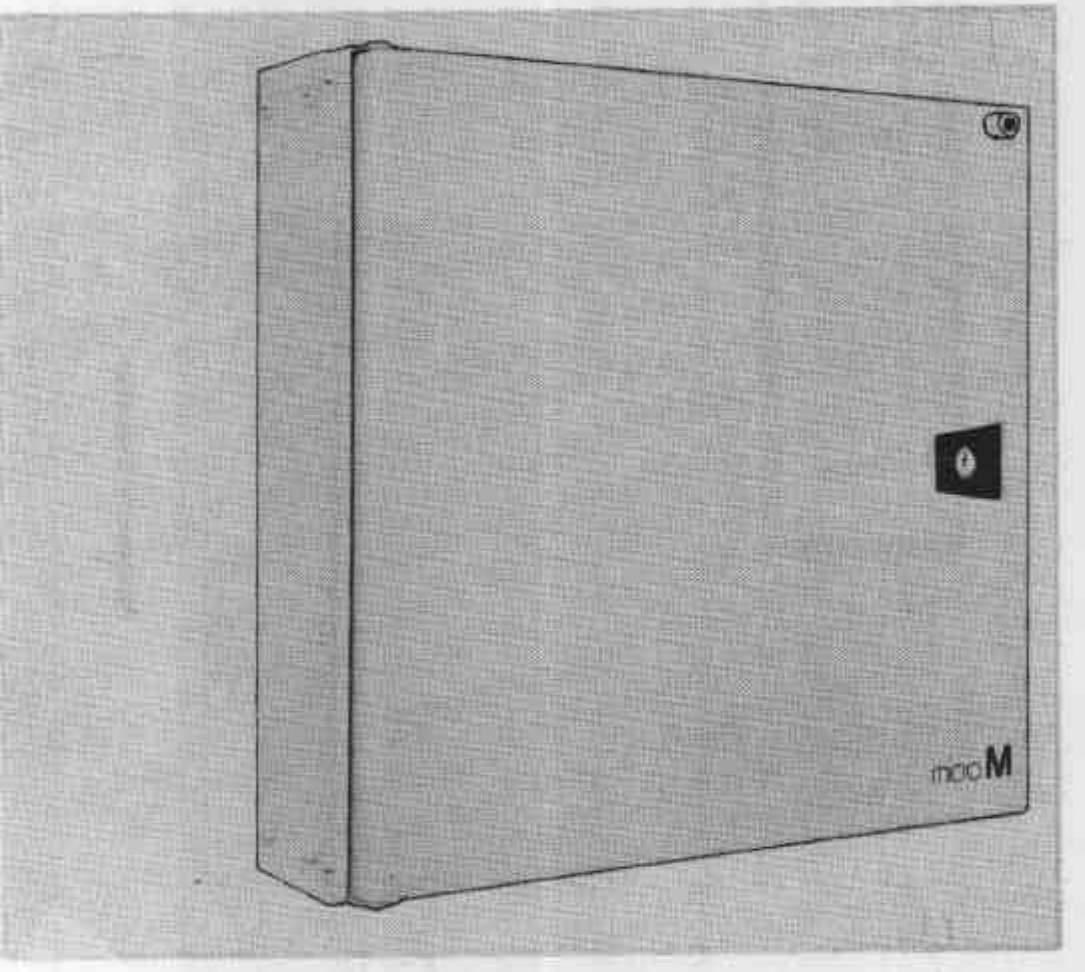

Micro-M Control Console

FIGURE 5/6A/79 - 5



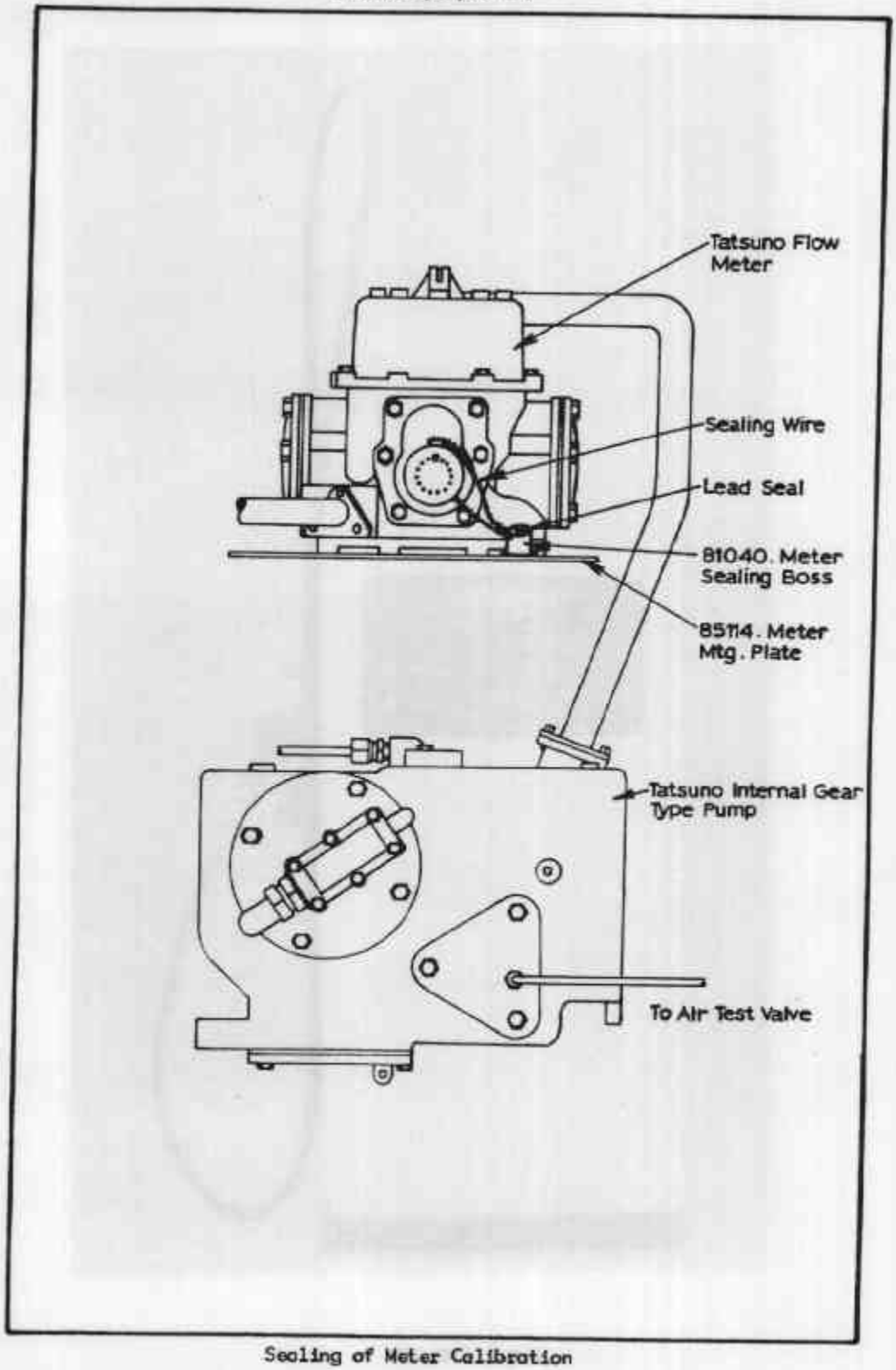

Purchaser's Indicator

FIGURE 5/6A/79 - 6




Service Module

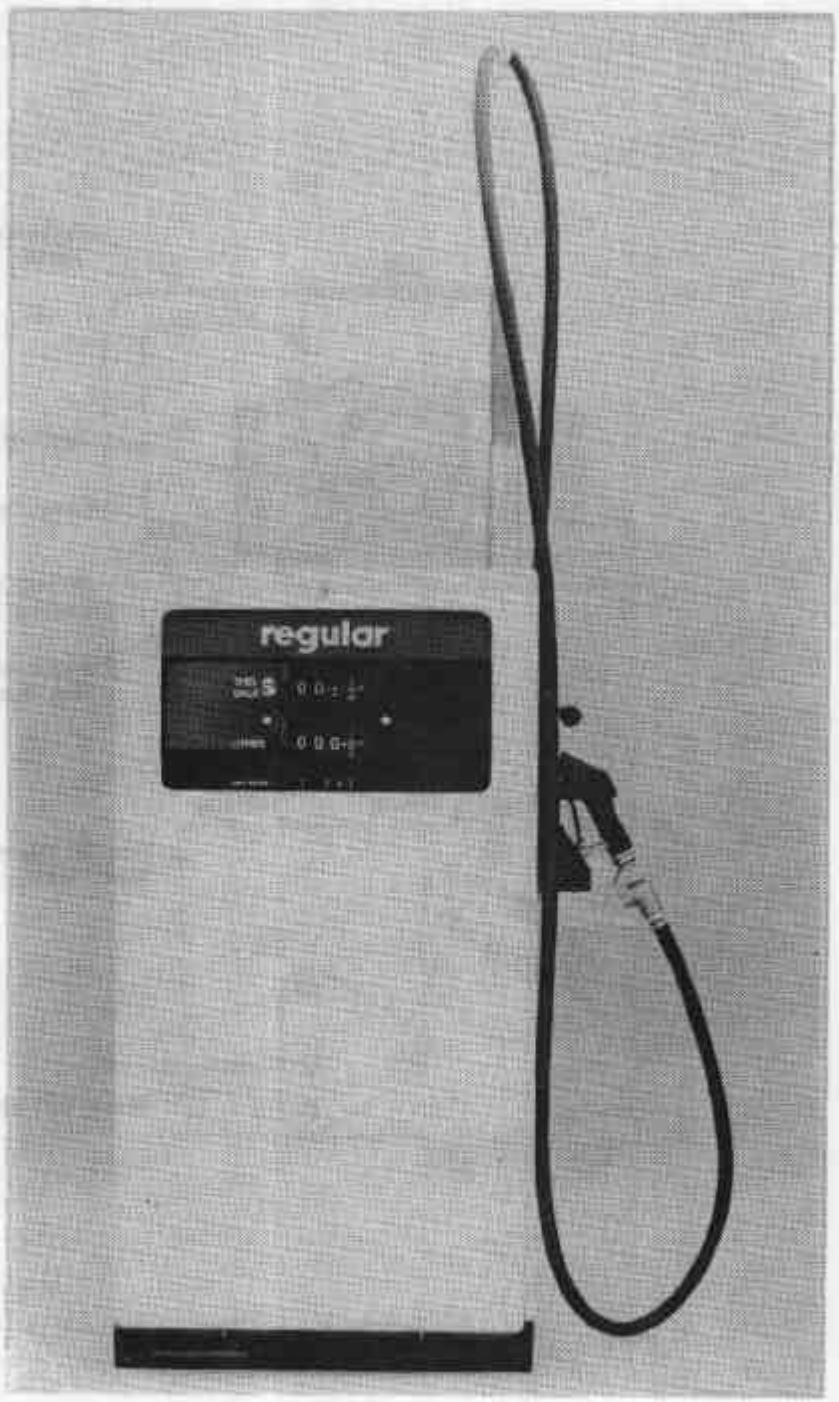
FIGURE 5/6A/79 - 7




Sealing of Meter Calibration

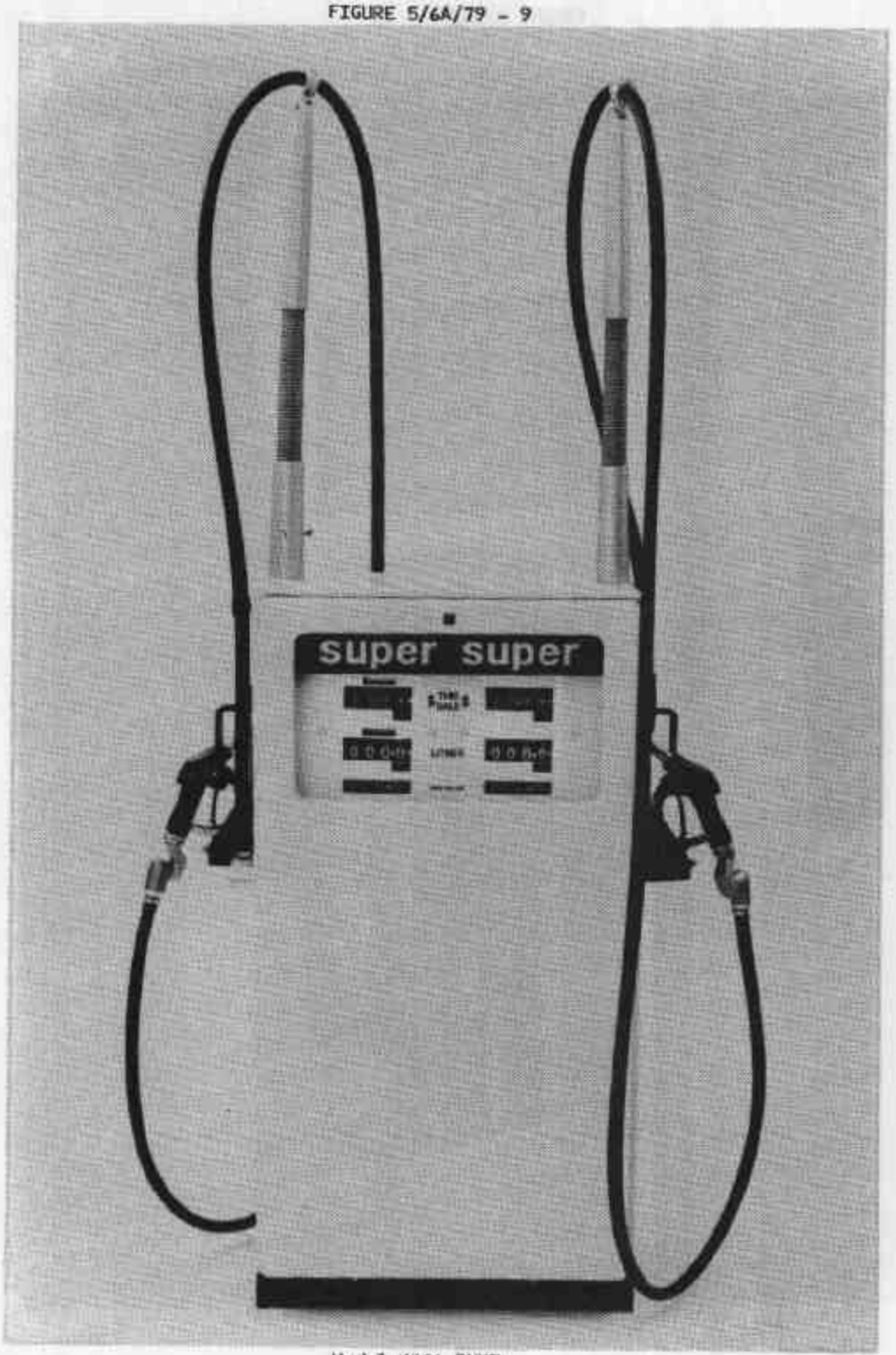
31/5/83

FIGURE 5/6A/79 - 8




Model 6301 HVR

FIGURE 5/6A/79 - 9




Model 6301 DHVR

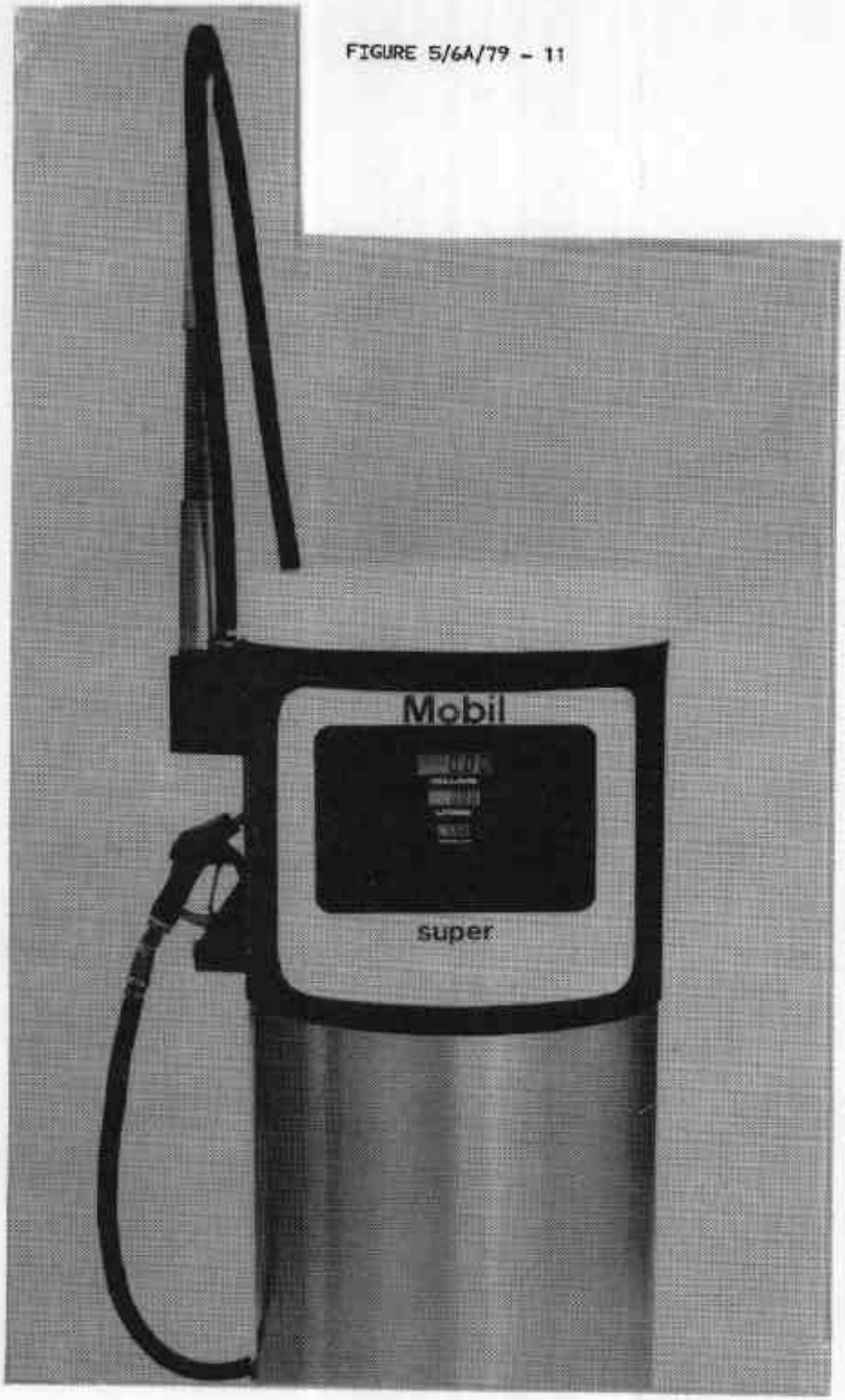
31/5/83

FIGURE 5/6A/79 - 10


Nozzle Hang-up/Computer Reset

31/5/83

FIGURE 5/6A/79 - 11




Model T5301H or T5301P

24/10/83