

CERTIFICATE OF APPROVAL No 5/6A/61  
VARIATION No 2

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

Wayne Driveway Flowmeter System Model EPIC XV

approved in Certificate No 5/6A/61 dated 23 February 1977 and  
subsequent variation

submitted by Wayne Pumps Australia Pty Ltd,  
29 Anzac Highway,  
Keswick, South Australia, 5035,

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

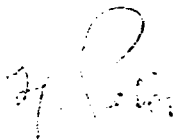
Date of Approval: 15 January 1979

The approved modification, described in Technical Schedule No 5/6A/61 -  
Variation No 2 and in drawings and specifications lodged with the Commission,  
provides for a hose of any bore with or without a hose mast.

The approval is subject to review on or after 1 December 1981.

All instruments conforming to this approval shall be marked with the  
approval number "NSC No 5/6A/61".

Signed



Executive Officer



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 5/6A/61

Pattern: Wayne Driveway Flowmeter System Model EPIC XV

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

Date of Approval: 30 November 1976

All instruments conforming to this approval shall be marked "NSC No 5/6A/61"; the approval number will be marked on each driveway flowmeter and on the control console.

### Description:

The pattern is a post-payment self-serve driveway flowmeter system comprising up to fifteen driveway flowmeters each fitted with pulse transmitter(s) and a "pulse counter memory unit", and a remotely located control console (see Figure 2). The system provides the operator with supervisory control over each driveway flowmeter and quantity and/or price indications for each driveway flowmeter.

The following types of driveway flowmeter may be used with this system (see Figures 3 to 14); their component parts are listed in Figure 1:

1. Wayne single driveway flowmeter PP730B.
2. Wayne single driveway flowmeter PP730BQ.
3. Wayne dual driveway flowmeter PP733B.
4. Wayne dual driveway flowmeter PP733BQ.
5. Wayne single driveway flowmeter PP730BHM.
6. Wayne single driveway flowmeter PP730BHMQ.
7. Wayne dual driveway flowmeter PP733BHM.
8. Wayne dual driveway flowmeter PP733BHMQ.

The driveway flowmeters are approved for use with petrol, that is, liquid petroleum of viscosity less than 0,8 mPa.s, at a maximum

flow rate of 50 litres per minute. The driveway-flowmeter data plate is marked "approved for petrol". The hydraulic diagram of the flowmeters is illustrated in Figure 15.

The pump interlock of each driveway flowmeter is provided by a starting lever which prevents the nozzle being placed on its hang-up bracket without stopping the pump motor and engaging an interlock which prevents the pump motor from being restarted (see Figures 16 and 17). A lead stamping plug for the verification seal, together with sealing wire, prevents adjustment of the meter calibration, and a lead stamping plug for a security seal, together with sealing wire and a cover, prevents adjustment of the gas-separation test valve (see Figure 18).

The control console has up to fifteen sets of display and authorisation buttons — one set for each driveway flowmeter — and shared indicators of price, quantity (may not be connected) and driveway-flowmeter number, stop buttons and a key switch which selects "disable" (authorise buttons inoperative), "console" (self-serve), and "manual" (operator-serve). Pressing the "stop" button stops the pump motor and terminates the delivery taking place only on the driveway flowmeter selected when the stop button is pressed; the "emergency stop" button stops all pump motors and terminates all deliveries taking place. A lead stamping plug for a verification seal is provided on the control console; the seal does not prevent access to the control console.

Pressing an authorise button permits the computer in the appropriate driveway flowmeter to be reset to zero and the pump motor to start when the customer removes the nozzle from its hang-up.

On completion of the delivery, returning the nozzle to its hang-up will engage interlocks which will prevent the computer being reset to zero until the supervisor at the completion of the transaction again authorises the use of the driveway flowmeter.\* During each delivery, or at the end of a delivery, the supervisor may, by pressing the appropriate display button, display the quantity and/or price indicated on the driveway-flowmeter computer by transferring the data stored in the "pulse counter memory unit" of the driveway flowmeter to the console.

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\* As the remote indicator is not provided with data from a secure or fail-safe system, and as there is no remote indication for the use of the purchaser, the primary indications displayed by the driveway flowmeter must be retained until the transaction is completed, thus allowing a comparison between the primary driveway-flowmeter indications of quantity and price accepted by the purchaser and the remote indicator.

Driveway flowmeters may be individually switched to manual operation by means of a switch within each driveway-flowmeter housing behind the fluorescent light.

When manual mode is individually selected for a driveway flowmeter, an operator can use that driveway flowmeter without use of the authorise button on the control console. In manual mode the quantity and/or price indications will still be available to the control console.

The failure of any of the driveway flowmeters in the system or the failure of the remote control console does not affect the operation of the other separately verified parts of the system. This means that in the event of a driveway flowmeter becoming unserviceable it may be isolated partially by selecting by means of the switch within the driveway flowmeter "manual" mode of operation, or totally by turning the power to that driveway flowmeter off, and in the event of a control-console failure the control console can be isolated from the driveway flowmeters by selecting by means of the switch on the control console "manual" and allowing all the driveway flowmeters to be operator-used.\*\*

The approval includes each driveway flowmeter as an individually approved measuring instrument with or without the data from the "pulse counter memory unit" being transmitted 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.

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\*\* Separate verification seals are provided on each driveway flowmeter and on the control console, allowing individual seals to be cancelled in the event of an unserviceability without affecting the remainder of the system or the other driveway flowmeter.

\*\*\* The measuring instrument examined and approved by the Commission is limited to the 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.

Special Tests:EPIC XV System

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

1. In turn select for each driveway flowmeter "manual" mode of operation. The manual mode-selector switch is located within the driveway-flowmeter housing behind the fluorescent light.
2. For each driveway flowmeter, carry out the repeatability and accuracy tests which are normally applied to a driveway flowmeter.
3. At the control console check that "console" mode of operation is selected.
4. Press an authorise button and check that all of the seven-bar digit indicators indicate the numeral 8.
5. Authorise all the driveway flowmeters by pressing the "authorise" button for each driveway flowmeter.
6. For each flowmeter —
  - (a) deliver sufficient liquid to cause the price and quantity indicators on the computer to move significantly off zero;
  - (b) stop the pump motor by returning the nozzle to its hang-up bracket;
  - (c) record the pump number and the quantity and within 0,1 cent the price indicated on the computer; and
  - (d) remove each nozzle from its hang-up bracket and check that the computer does not reset to zero and the pump motor does not start.
7. At the control console press the display button for each driveway flowmeter in turn and check each display quantity and/or price against the quantity and/or price recorded for each driveway flowmeter (refer para 6 (c) above).

The indicated price may differ from that indicated on the driveway-flowmeter dial face if it is between graduations; the maximum difference will be not more than the rounding error, a maximum of 0,5 graduation, plus a discrimination error of 0,1 graduation, that is, 0,4 cent may be rounded up to a whole cent

or 0,6 cent may be rounded down to the lower whole cent.

8. Authorise a driveway flowmeter as in 5 and deliver sufficient liquid to cause the price indicators to move significantly off zero without returning the nozzle to its hang-up:

- (a) Check that operation of the emergency stop on the console causes the pump motor to stop.

Note: The pump motors of driveway flowmeters being used in manual mode will not stop.

- (b) Check that pressing the authorise button will not cause the computer on the driveway flowmeter to reset to zero or the pump motor to restart.

Note: Pressing any authorise button will cancel the emergency stop condition; it will not restart any of the driveway flowmeters.

- (c) Check that the selection of the driveway flowmeter and the pressing of the authorise button cause the computer on the driveway flowmeter and the indicators on the console to reset to zero and the pump motor to start.

Note: (i) The nozzle of a driveway flowmeter need not be returned to its hang-up to allow the driveway flowmeter to be reauthorised.

(ii) Each driveway flowmeter may be separately reauthorised for use after an emergency stop.

(iii) Every transaction taking place on a driveway flowmeter in console mode of operation at the time of use of the emergency stop should be terminated, 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.

Return the nozzle to its hang-up.

9. If it is desired to isolate a driveway flowmeter from the EPIC XV system during the above 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. Alternatively, half of the driveway flowmeters can be tested in console mode while the other half are in manual mode of operation.

Gas-separation Test Valve

The progressive opening of the gas-separation test valve should allow flow rate to be reduced to, say, 90%, 80%, 70%, etc., of full flow rate, until either the flow rate becomes less than 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.



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 5/6A/61

### VARIATION No 1

Pattern: Wayne Driveway Flowmeter System Model EPIC XV

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

Dates of Approval of Variations: 5 May 1977, 9 November 1977, 21  
December 1977, and 7 February 1978

The modifications described in this Schedule apply to the patterns described in Technical Schedule No 5/6A/61 dated 23 February 1977.

All instruments conforming to this approval shall be marked "NSC No 5/6A/61".

### Description:

The approved modifications provide for:

1. The following types of driveway flowmeter to be used in the EPIC XV system; their component parts are listed in Figure 19:
  - (a) Wayne Single Driveway Flowmeter PP730BD (see Figure 20),
  - (b) Wayne Single Driveway Flowmeter PP730BDQ,
  - (c) Wayne Single Driveway Flowmeter PP730BDHM,
  - (d) Wayne Single Driveway Flowmeter PP730BDHMQ,
  - (e) Wayne Single Driveway Flowmeter PP730BDL,
  - (f) Wayne Single Driveway Flowmeter PP730BDQL,
  - (g) Wayne Single Driveway Flowmeter PP730BDHML,
  - (h) Wayne Single Driveway Flowmeter PP730BDHMQ.

Note: The instruments are all similar in appearance to the PP730BD (see Figure 20); the suffix letters Q, HM and L indicate two pulse generators fitted, hose mast fitted, and 80 litres per minute respectively.

The driveway flowmeters are approved for use with diesel fuel, that is, liquid petroleum of viscosity between 1,7 and 8,3 mPa.s, at a



maximum flow rate of 80 litres per minute. The driveway flowmeter data plate is marked "approved for diesel fuel".\*

The hydraulic diagram of the flowmeter is illustrated in Figures 21 and 22.

The pump interlock of each driveway flowmeter is provided by a starting lever which prevents the nozzle being placed on its hang-up bracket without stopping the pump motor and engaging an interlock which prevents the pump motor from being restarted (see Figures 16 and 17). A lead stamping plug for the verification seal, together with sealing wire, prevents adjustment of the meter calibration, and a lead stamping plug for a security seal, together with sealing wire and a cover, prevents adjustment of the gas-separation test valve (see Figure 18).

The approval includes each driveway flowmeter as an individually approved measuring instrument with or without the data from the "pulse counter memory unit" being transmitted to peripheral devices which are not a part of the measuring instrument.\*\* Such devices, which may, for example, print receipts or store and process the data, etc., may only be used with the authorisation of the Weights and Measures Authority of the State.

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

2. An STM 377 automatic hose nozzle (see Figures 23 and 24). The anti-drain valve, which is upstream of the main valve, retains a pressure of not less than 15 kPa. A swivel hose coupling may be fitted to the nozzle.
3. The sight glass located between the hose and the nozzle (see Figure 25).
4. An OPW 1AS automatic hose nozzle (see Figures 26 and 27). The anti-drain valve, which is downstream of the main valve, retains a pressure of not less than 15 kPa. A swivel hose coupling may be fitted to the nozzle.

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\* A known trade name of the liquid is acceptable.

\*\* The measuring instrument examined and approved by the Commission is limited to the 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.



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 5/6A/61

### VARIATION No 2

Pattern: Wayne Driveway Flowmeter System Model EPIC XV

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

Date of Approval of Variation: 15 January 1979

The modification described in this Schedule applies to the patterns described in Technical Schedule No 5/6A/61 dated 23 February 1977 and Technical Schedule No 5/6A/61 - Variation No 1 dated 30 March 1978.

All instruments conforming to this approval shall be marked "NSC No 5/6A/61".

### Description:

The approved modification provides for a hose of any bore with or without a hose mast being fitted.

### Special Tests:

#### Hose Dilation

A measure of the hose-dilation quantity may be obtained by the following method:

Deliver a small quantity of liquid, then,  
with the pump stopped open the nozzle to reduce the pressure in the hose to the anti-drain valve retaining pressure. Zero the volume indicator, start the pump and, after allowing not less than 30 seconds for the hose to fully dilate, and with the pump still running, read the quantity indicated on the volume indicator. This quantity should not exceed 0,05 litre.

12/2/79



# NATIONAL STANDARDS COMMISSION

## NOTIFICATION OF CHANGE

### CERTIFICATE OF APPROVAL No 5/6A/61

#### CHANGE No 1

The description of the

Wayne Driveway Flowmeter System Model EPIC XV

in Technical Schedule No 5/6A/61 dated 23 February 1977

is varied by changing the Special Tests - paragraphs 8 and 9,  
to read:\*

8. Check for one driveway flowmeter on console mode of operation that -
  - (a) operation of the "emergency stop" during a delivery causes the pump motor of the selected flowmeter (and all other flowmeters in use on console mode) to stop;
  - (b) after an emergency stop no driveway flowmeter on console mode of operation can be reauthorised or restarted until all interrupted transactions are displayed at the console.

Note: All transactions on instruments in console mode of operation taking place at the time of use of the emergency stop must be terminated as deliveries from driveway flowmeters on console mode cannot be restarted without resetting the indicators of all driveway flowmeters on console mode of operation to zero.

9. If it is desired to isolate a driveway flowmeter from the EPIC XV system during the above 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. Alternatively, half of the driveway flowmeters can be tested in console mode while the other half are in manual mode of operation.

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\* The above paragraphs can be cut out and used to replace the original paragraphs 8 and 9.



# NATIONAL STANDARDS COMMISSION

## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6A/61

CHANGE No 2

The description of the

Wayne Driveway Flowmeter System Model EPIC XV

given in Technical Schedule No 5/6A/61 dated 23 February 1977

is altered by changing:

on page 3, the third paragraph; and  
on pages 4 and 5, Special Tests 1, 2, 3, 4, 8 and 9.

Replacement pages, 3, 4, 5 and 6 are attached; the altered text is marked by a line in the margin. ✓

This Notification of Change supersedes Change No 1 dated 19 July 1977, which is hereby cancelled.

FIGURE 5/6A/61 - 1

1	2	3		4	
No	Components	Single Driveway Flowmeters		Dual Driveway Flowmeters <sup>2</sup>	
		<sup>1</sup> PP730B	<sup>1</sup> PP730BQ	<sup>1</sup> PP733B	<sup>1</sup> PP733BQ
	Pump, Wayne P9108	*	*	*	*
	Float chamber, Wayne P9115	A	A	A	A
	Float chamber, Wayne P9949	A	A	A	A
	Meter, Wayne P6521	B	B	B	B
	Meter, Wayne P8765	B	B	B	B
	Seal, 1-hole cup-and-wire	*	*	*	*
	Computer VR 101	*	*	*	*
	Non-return valve, Wayne P5687, with cup-and-wire seal	*	*	*	*
	Gas-separation test valve	*	*	*	*
	Back-pressure valve, Wayne P9252	*	*	*	*
	Sight glass, Wayne P8957	*	*	*	*
	Hose, 16-mm ID, with nose mast	C	C	C	C
	Hose, 20-mm ID	C	C	C	C
	Nozzle, ZVA Slimline <sup>3</sup>	D	D	D	D
	Nozzle, Wayne P7775, with external anti-drain valve <sup>3</sup>	D	D	D	D
	Nozzle, Ljungman 83427 with external anti-drain valve <sup>3</sup>	D	D	D	D
	Nozzle, OPW 1A <sup>3</sup>	D	D	D	D
	Nozzle, STM 363 <sup>3</sup> (STM 377)	D	D	D	D
	Electric reset	*	*	*	*
	Pump interlock, starting lever	*	*	*	*
	Pulse generator, Wayne Model 1 on computer quantity and price shaft		*		*
	Pulse generator, Wayne Model 1 on computer quantity or price shaft	*		*	
	Pulse counter memory unit for quantity and price		*		*
	Pulse counter memory unit for quantity or price	*		*	

\* - Indicates required component

A - Indicates alternative component, one of which is required

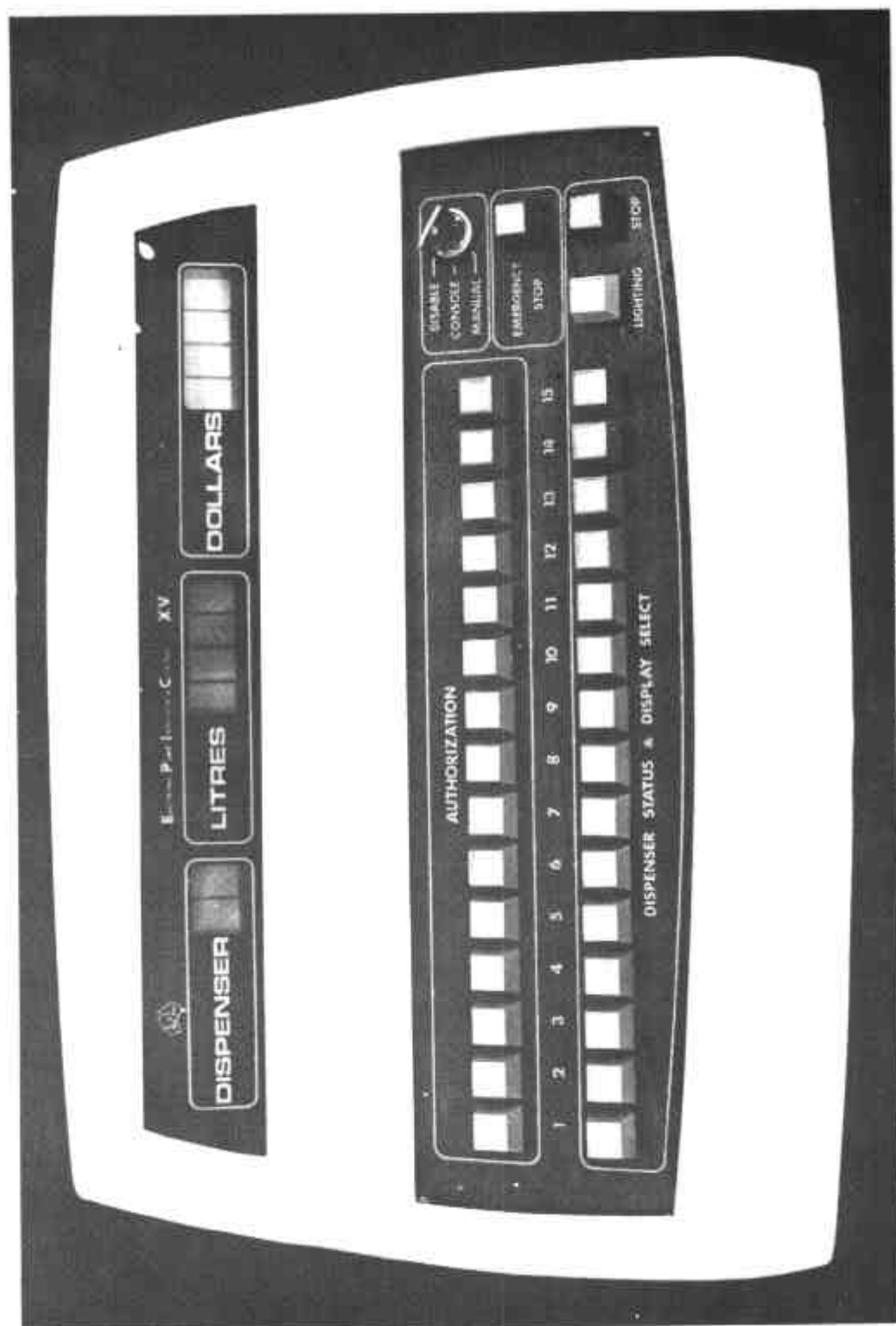
B to D - As for A

Footnotes: <sup>1</sup> The letters HM when included in the model indicate hose mast fitted

<sup>2</sup> Dual driveway flowmeters comprise two flowmeters in one housing

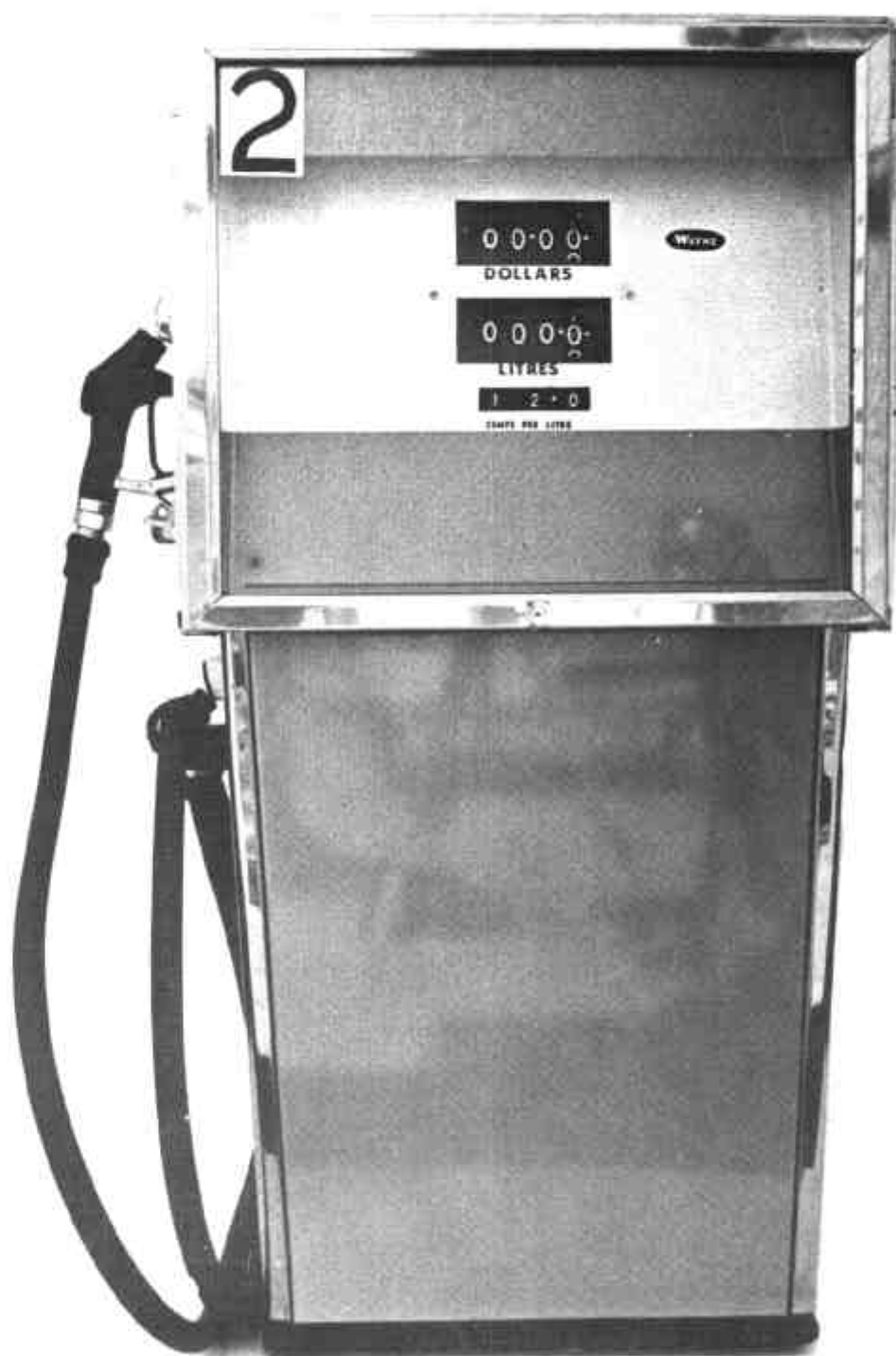
<sup>3</sup> Operating-lever latch mechanism may be removed or omitted to allow the nozzle to comply with the requirements of other Statutory Authorities

FIGURE 5/6A/61 - 2



Control Console EPIC XV

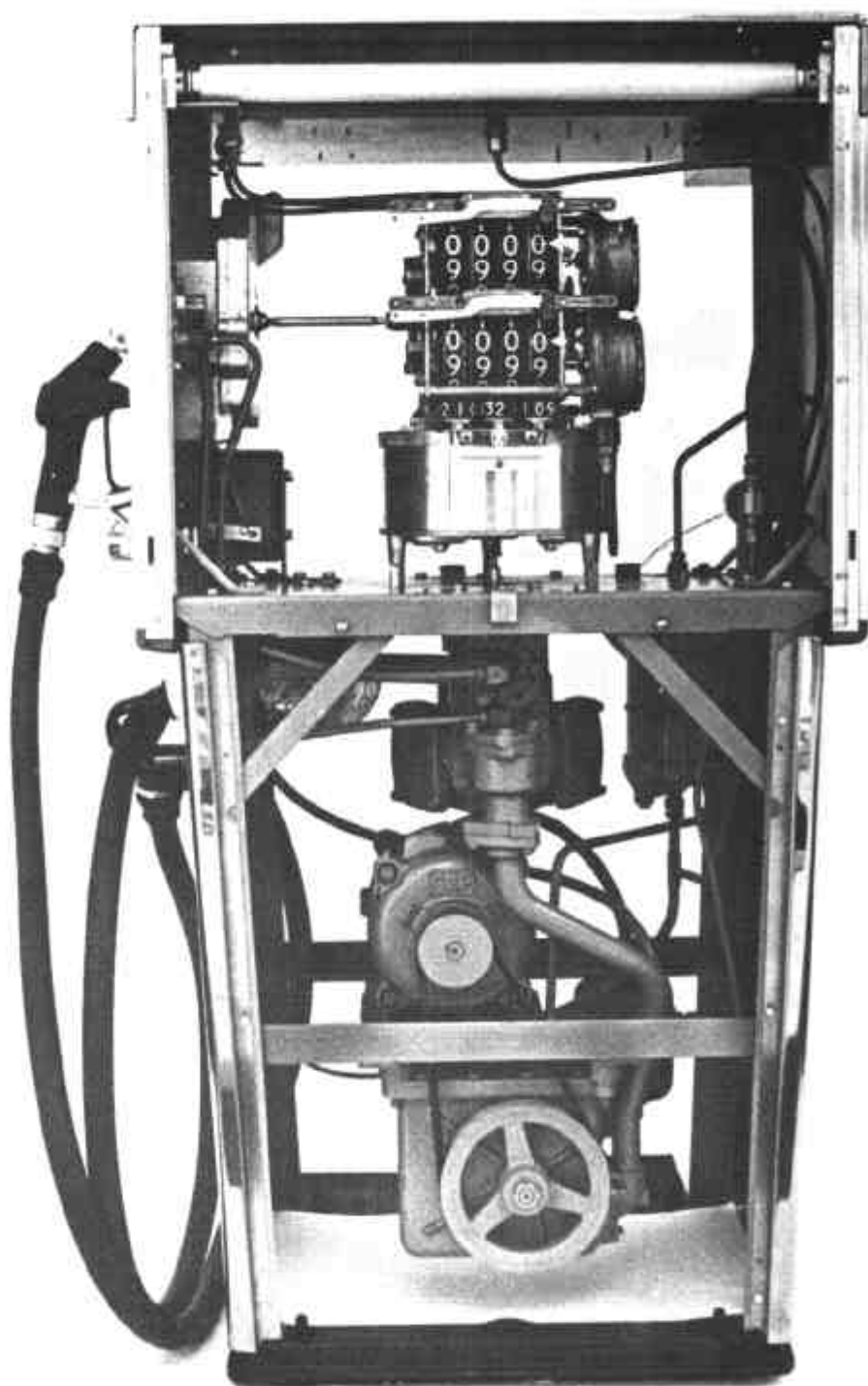
FIGURE 5/6A/61 - 3



Wayne PP730BQ

23/2/77

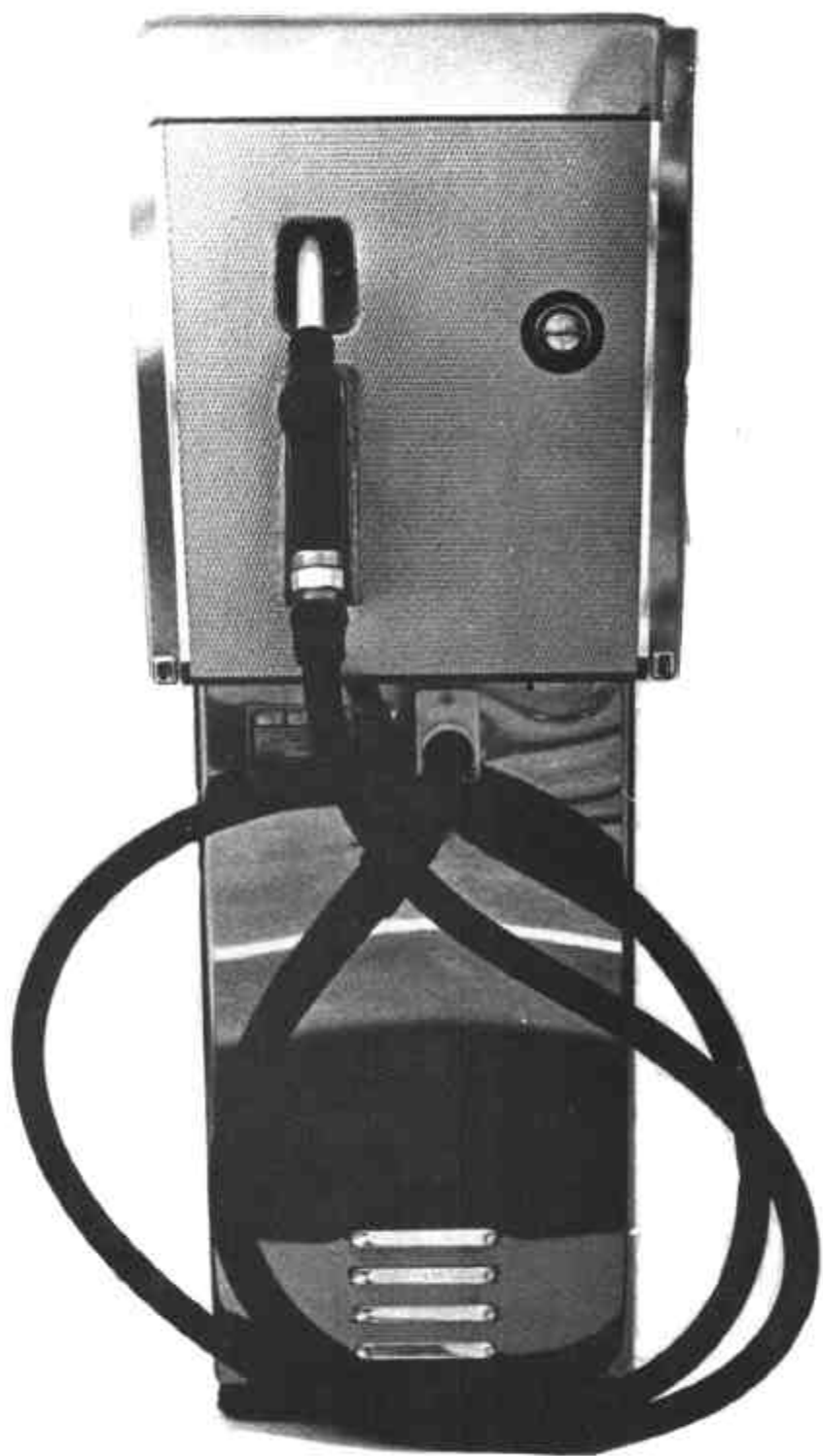
FIGURE 5/6A/61 - 4



Wayne PP730BQ

23/2/77





Wayne PP730BQ

23/2/77

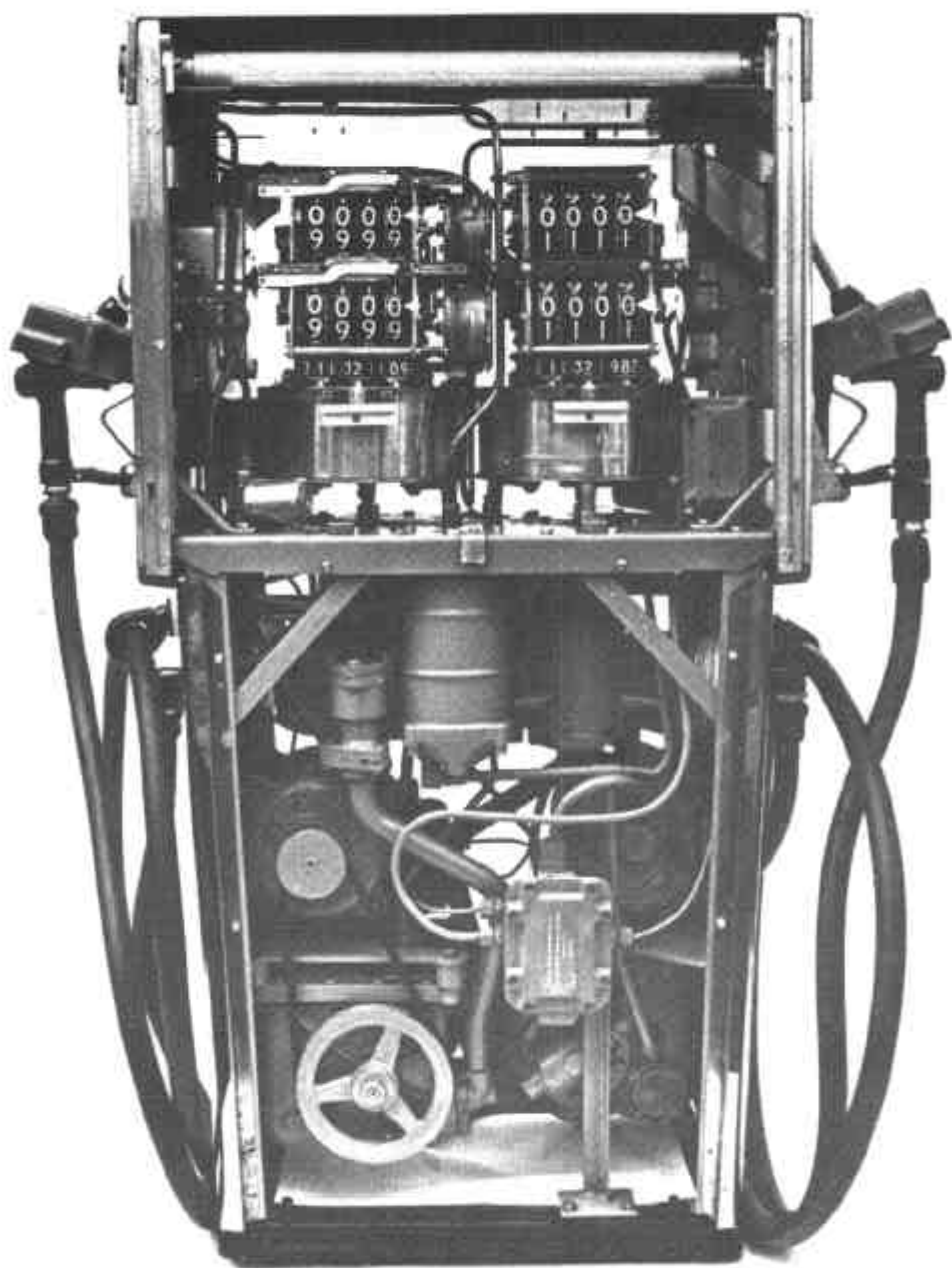
FIGURE 5/6A/61 - 6



Wayne PP733BQ

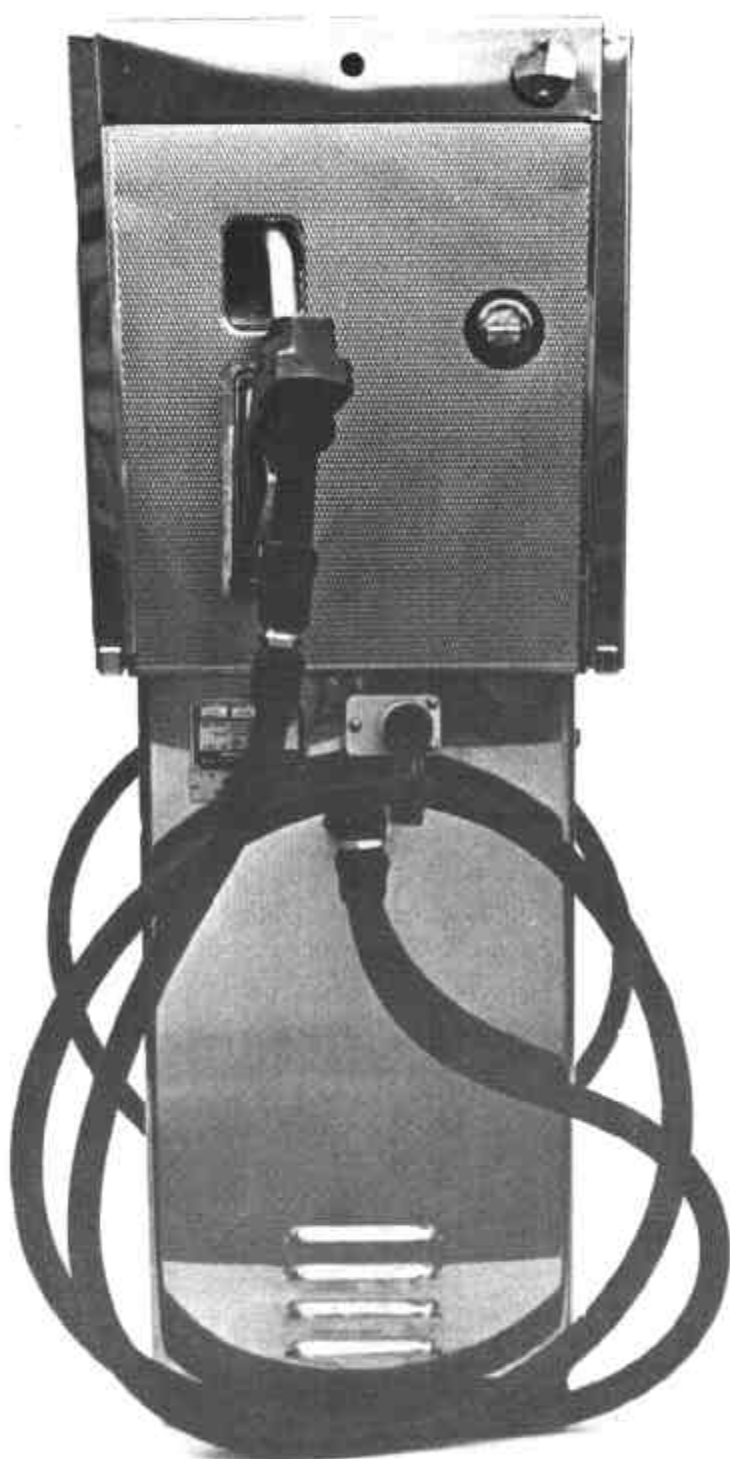
23/2/77

FIGURE 5/6A/61 - 7



Wayne PP733BQ

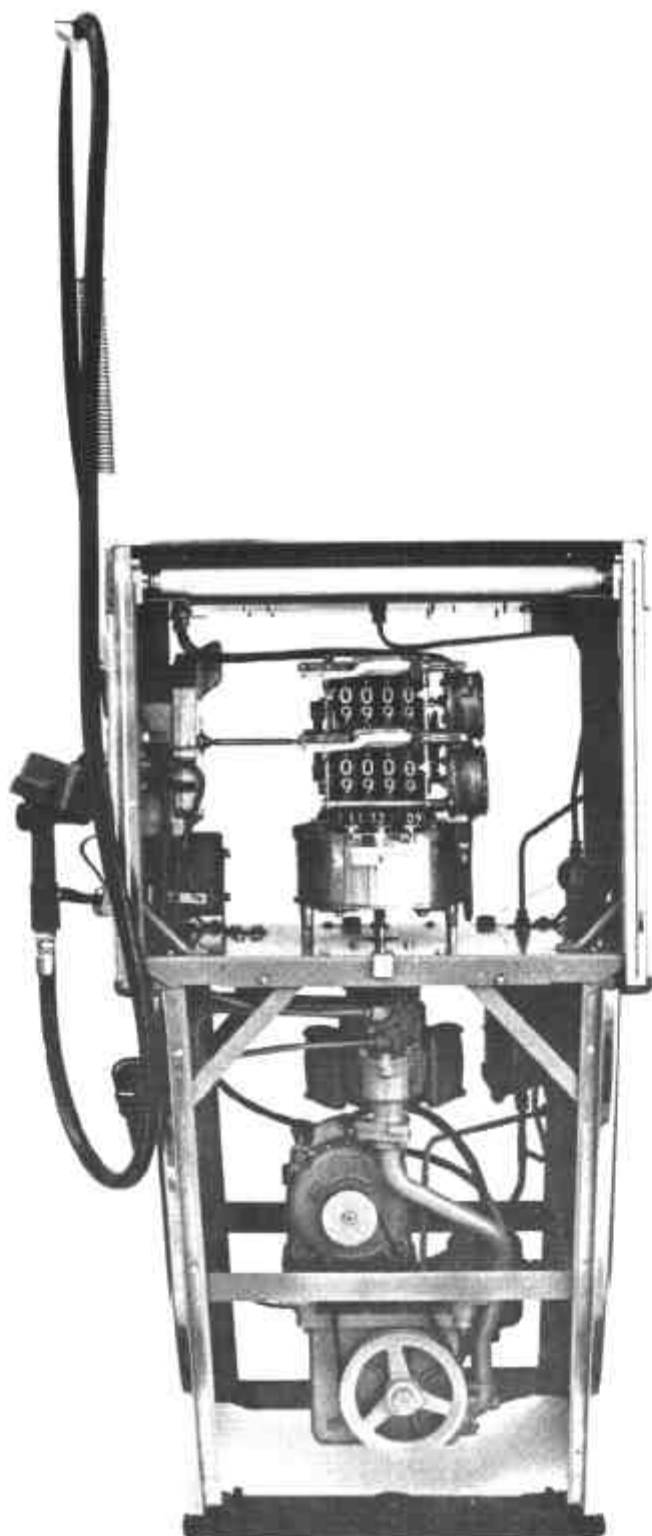
23/2/77



Wayne PP733BQ

23/2/77

FIGURE 5/6A/61 - 9

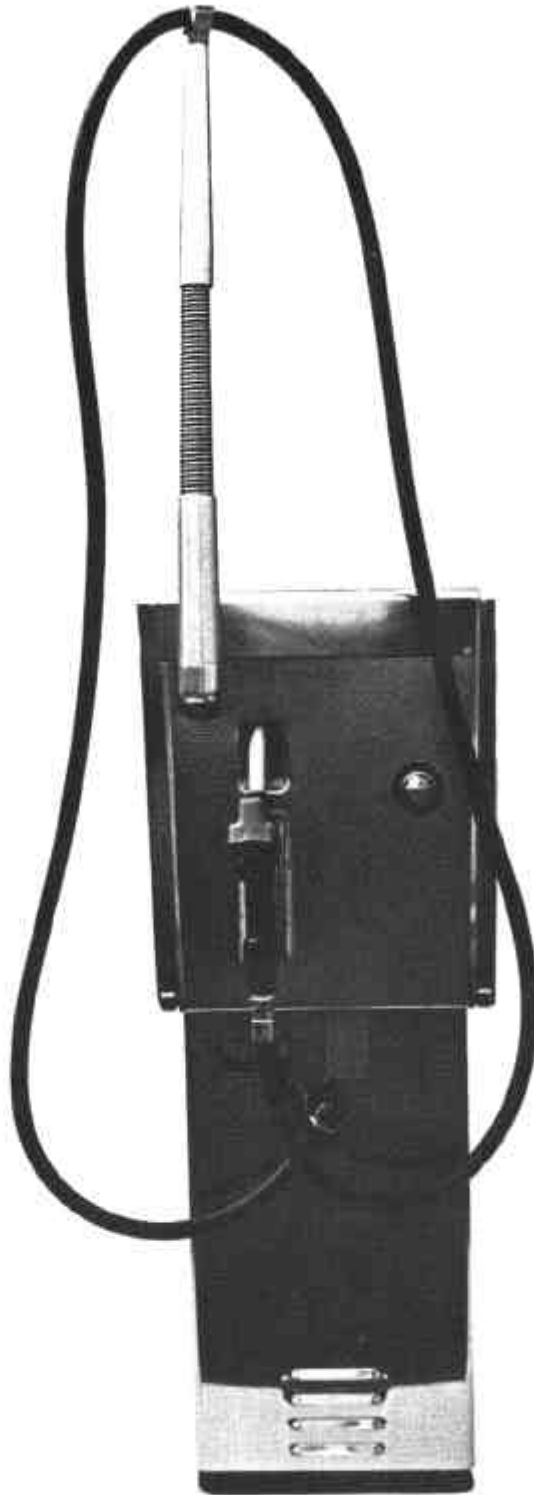


Wayne PP730BHMQ

23/2/77



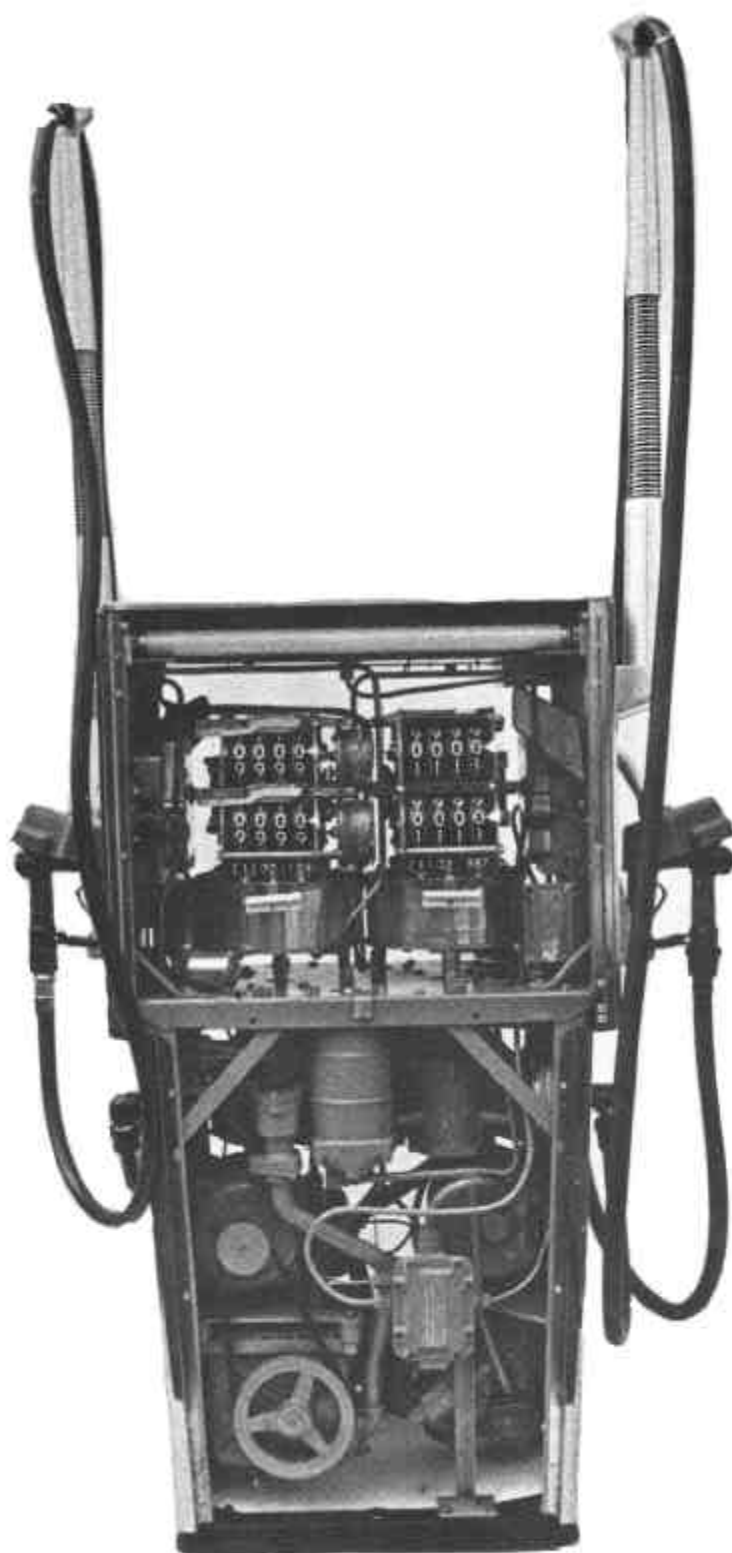
Wayne PP730BHMQ



Wayne PF730BHMQ

23/2/77

FIGURE 5/6A/61 - 12

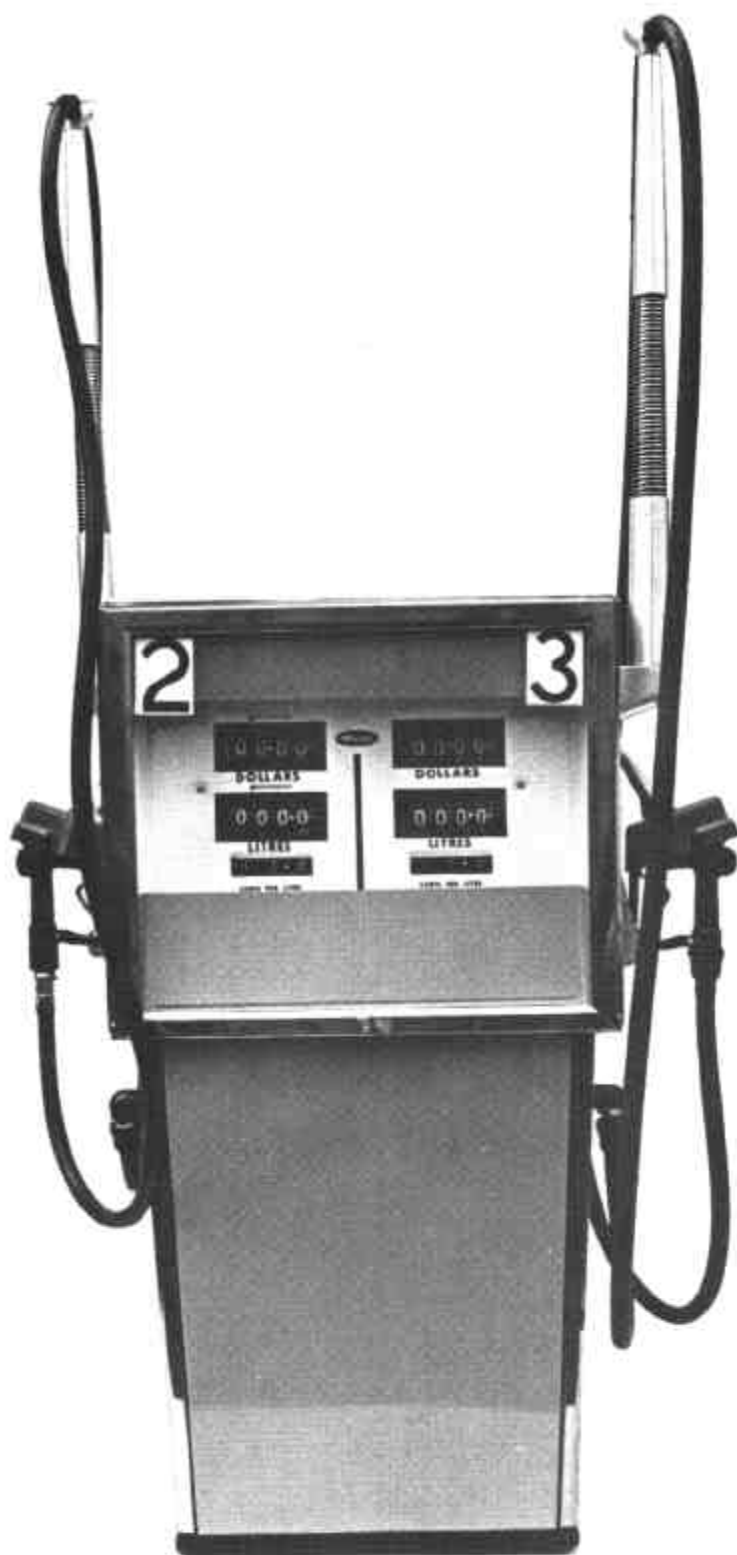


Wayne PP733BHMQ

23/2/77



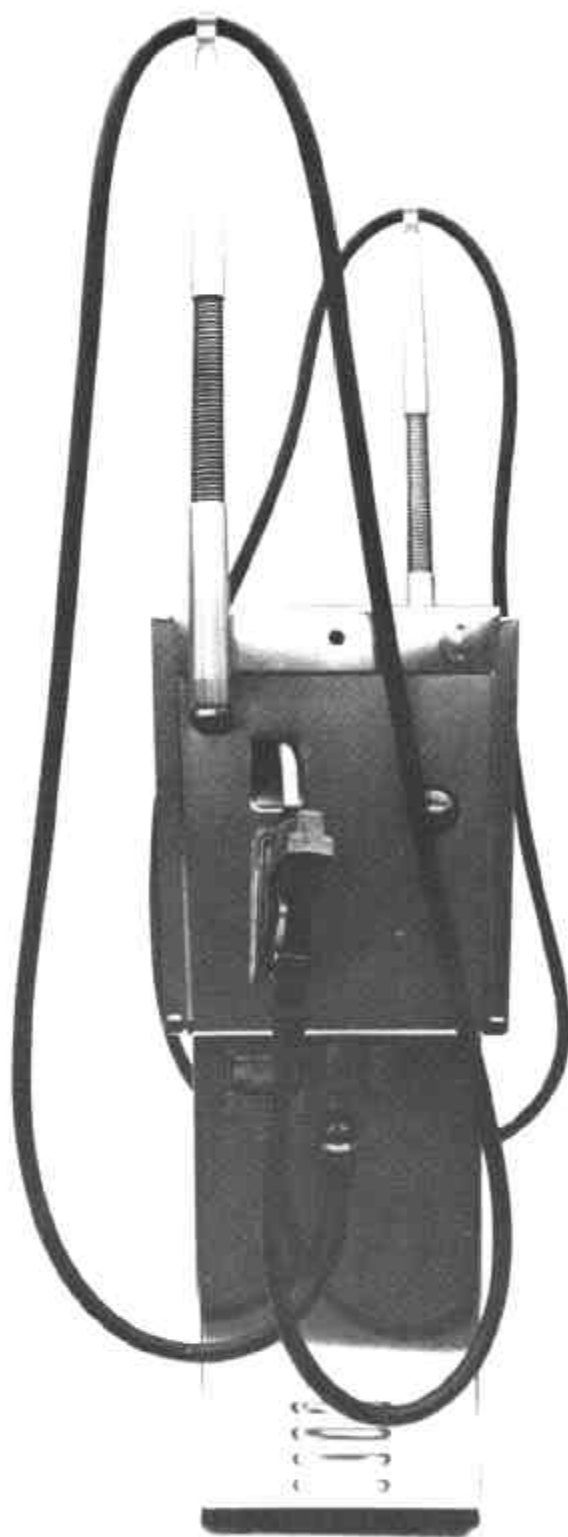
FIGURE 5/6A/61 - 13



Wayne PP733BHMQ

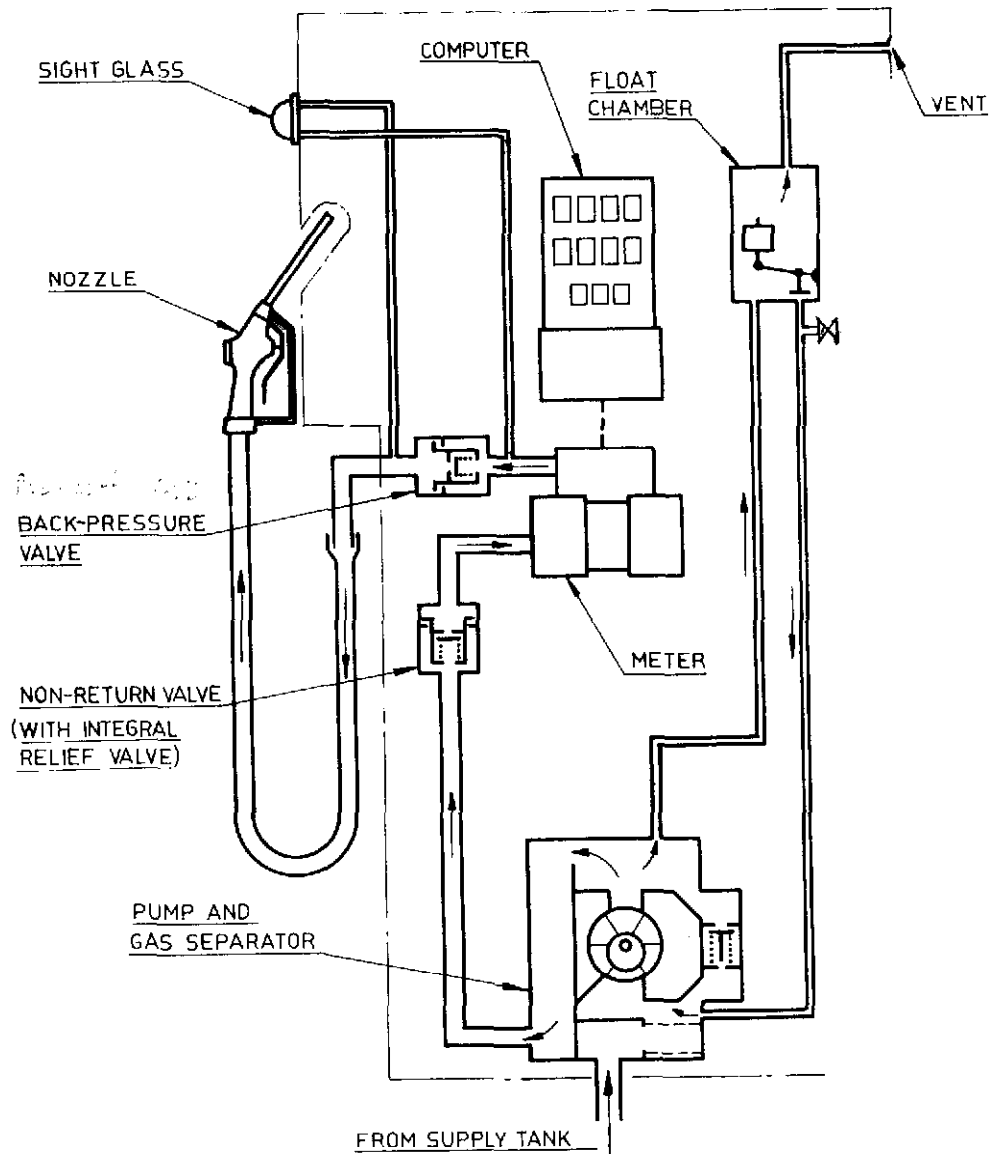
23/2/77

FIGURE 5/6A/61 - 14



Wayne PP733BHMQ

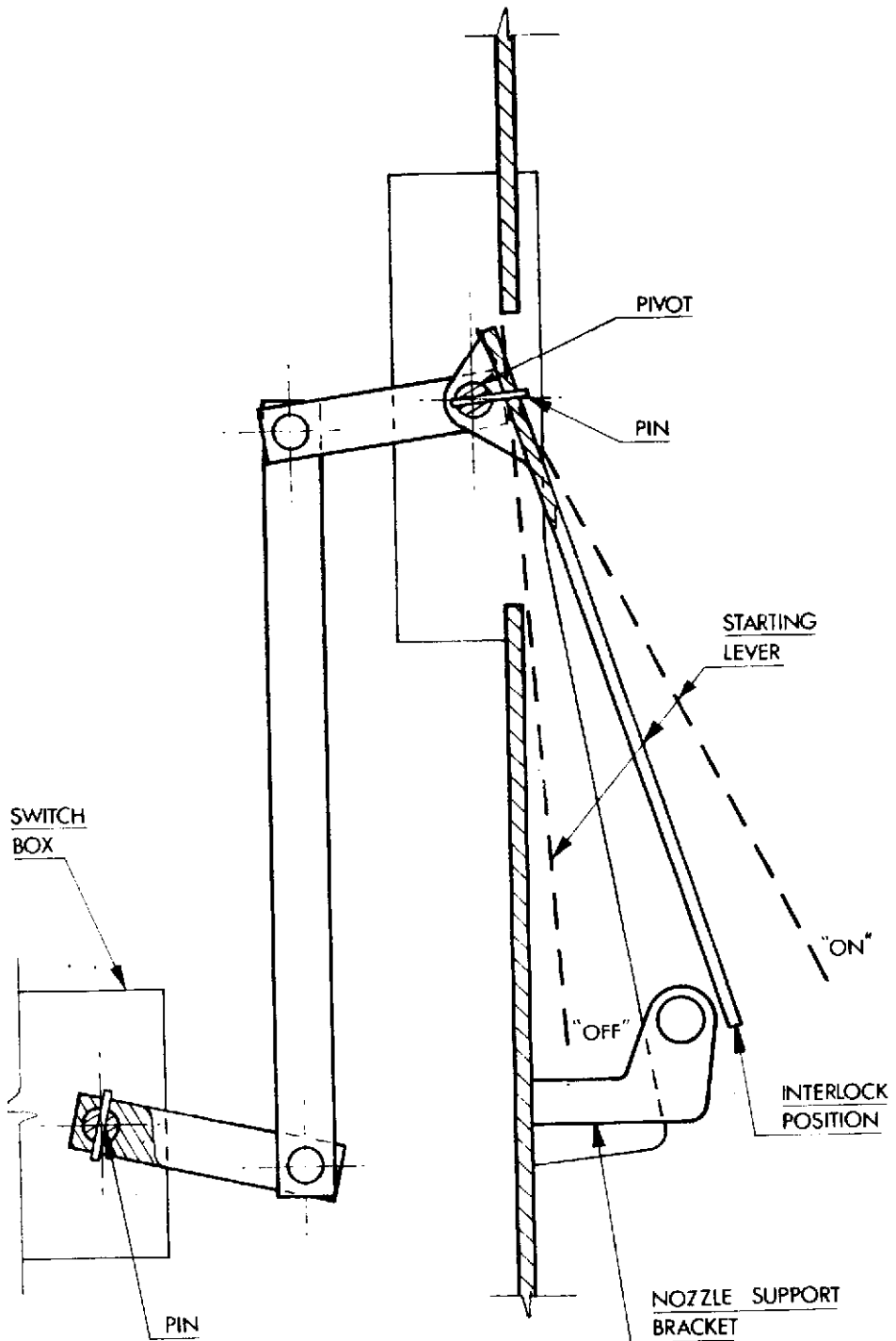
23/2/77



Hydraulic Diagram

23/2/77

FIGURE 5/6A/61 - 16



Wayne — Starting-lever Interlock

23/2/77



Starting Lever

23/2/77



Gas-separation Test Valve and Sealing Cup

23/2/77

FIGURE 5/6A/61 - 19

1	2	3
No	Components	Single Driveway Flowmeter PP730BD <sup>1</sup>
	Pump, Wayne P9108	*
	Float chamber, Wayne P9115	A
	Float chamber, Wayne P9949	A
	Meter, Wayne P6521	B
	Meter, Wayne P8765	B
	Seal, 1-hole cup-and-wire	*
	Computer, VR 101	*
	Non-return valve, Wayne P5687	*
	Gas detector, Wayne P9740	*
	Non-return and cut-off valve, Wayne P9739	*
	Gas-separation test valve, with cup-and-wire seal	*
	Back-pressure valve, Wayne P9252	*
	Sight glass, Wayne P8957	*
	Hose, 16-mm ID, with hose mast	C
	Hose, 20-mm ID	C
	Nozzle, ZVA Slimline <sup>2</sup>	D
	Nozzle, Wayne P7775, <sup>2</sup> with external anti-drain valve	D
	Nozzle, Ljungmann 83427, <sup>2</sup> with external anti-drain valve	D
	Nozzle OPW 1A <sup>2</sup>	D
	Nozzle STM 363 <sup>2</sup>	D
	Nozzle OPW 1AS <sup>2</sup>	D
	Nozzle STM 377 <sup>2</sup>	D
	Electric reset	*
	Pump interlock, starting lever	*
	Pulse generator, Wayne Model 1 on computer quantity and/or price shaft	*
	Pulse counter memory unit for quantity and/or price	*

\* - indicates required component

A - indicates alternative components, one of which is required

B to D - as for A

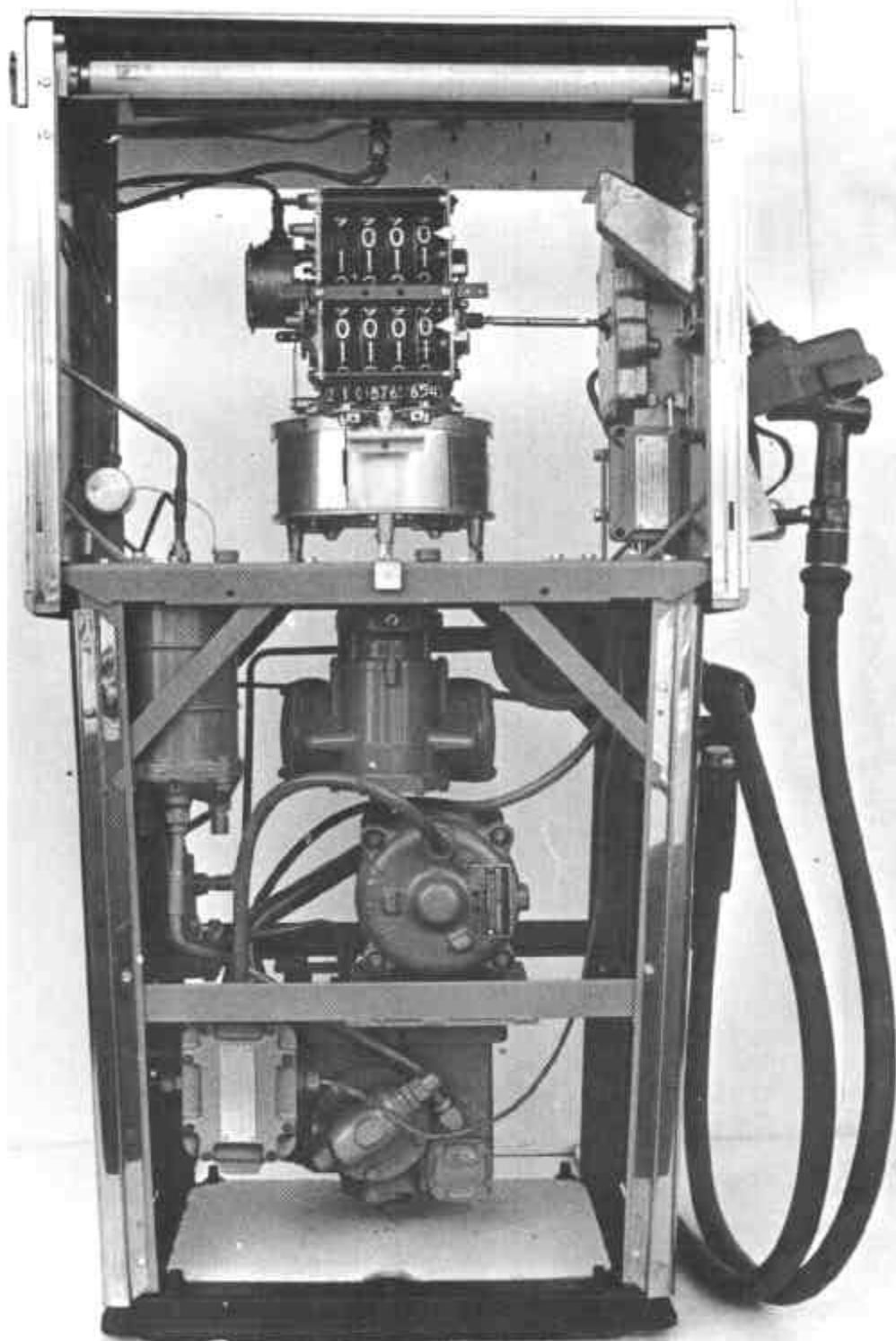
Footnote: <sup>1</sup> The suffix letters indicate:  
 (a) Q - two pulse generators fitted  
 (b) HM - hose mast  
 (c) L - 80 litres per minute flow rate

<sup>2</sup> The operating lever latch mechanism may be removed or omitted to allow the nozzle to comply with the requirements of other statutory bodies

#### Compatibility Table

30/3/78

FIGURE 5/6A/61 - 20



Wayne PP730BD Driveway Flowmeter

30/3/78



FIGURE 5/6A/61 - 21

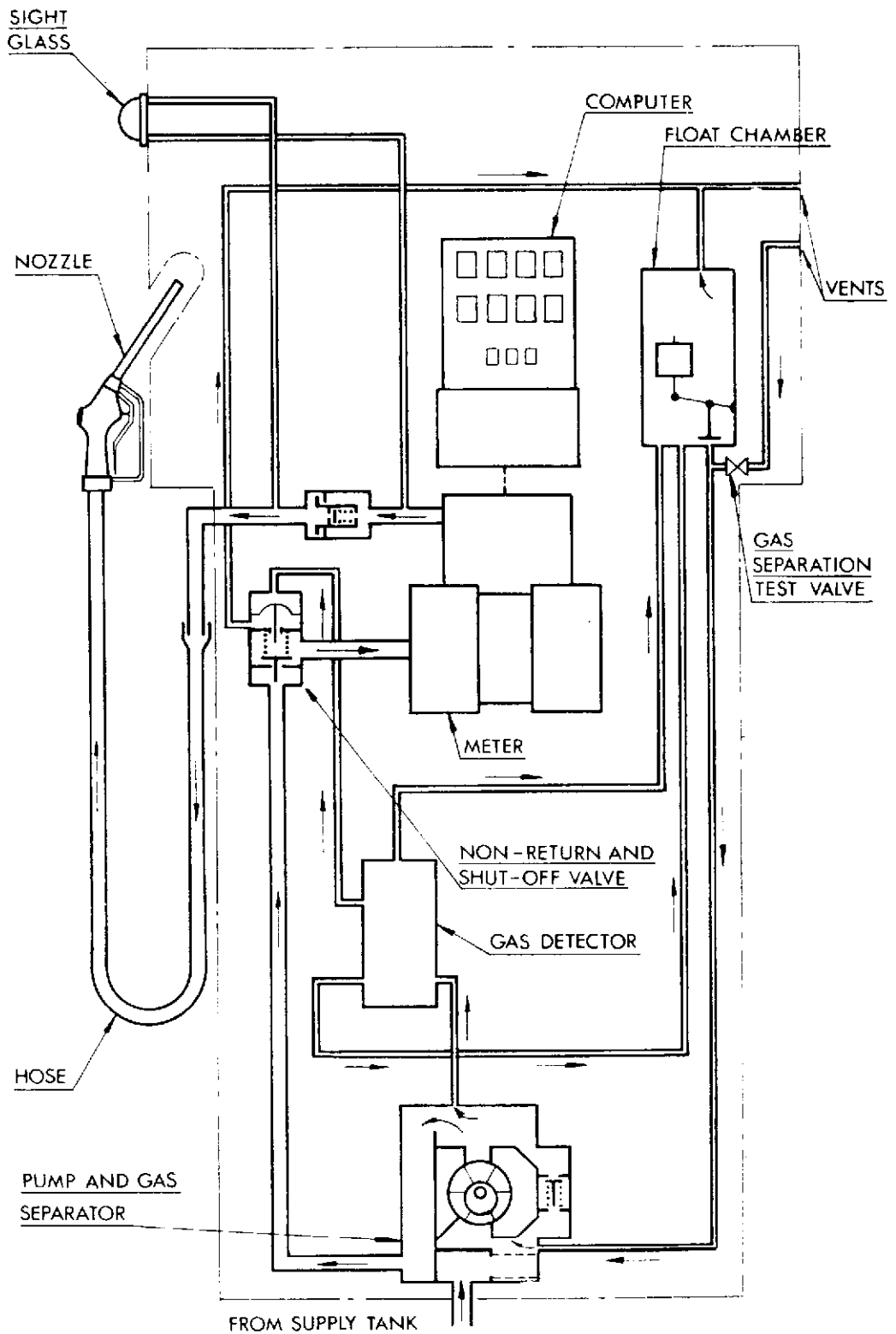
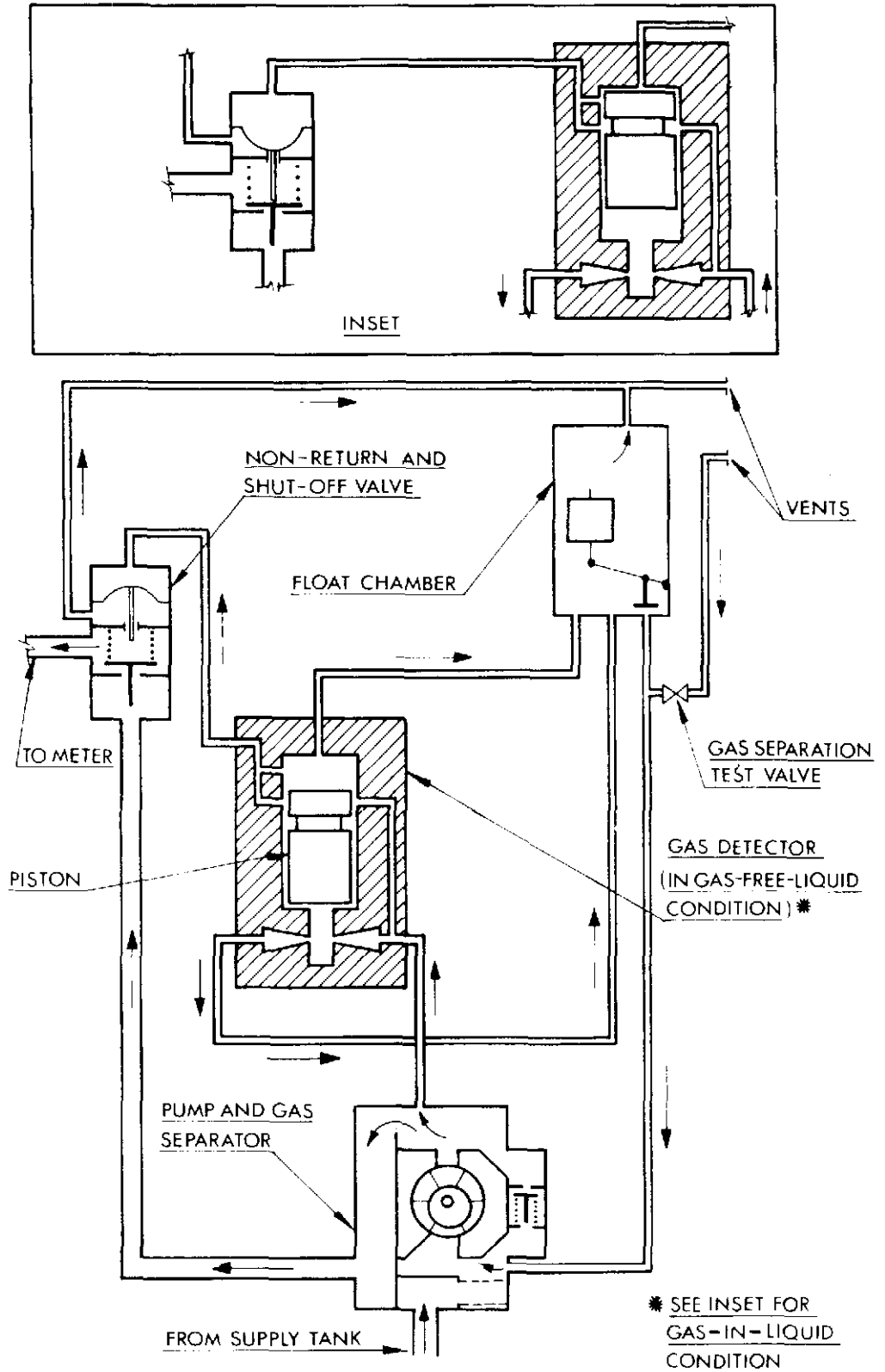
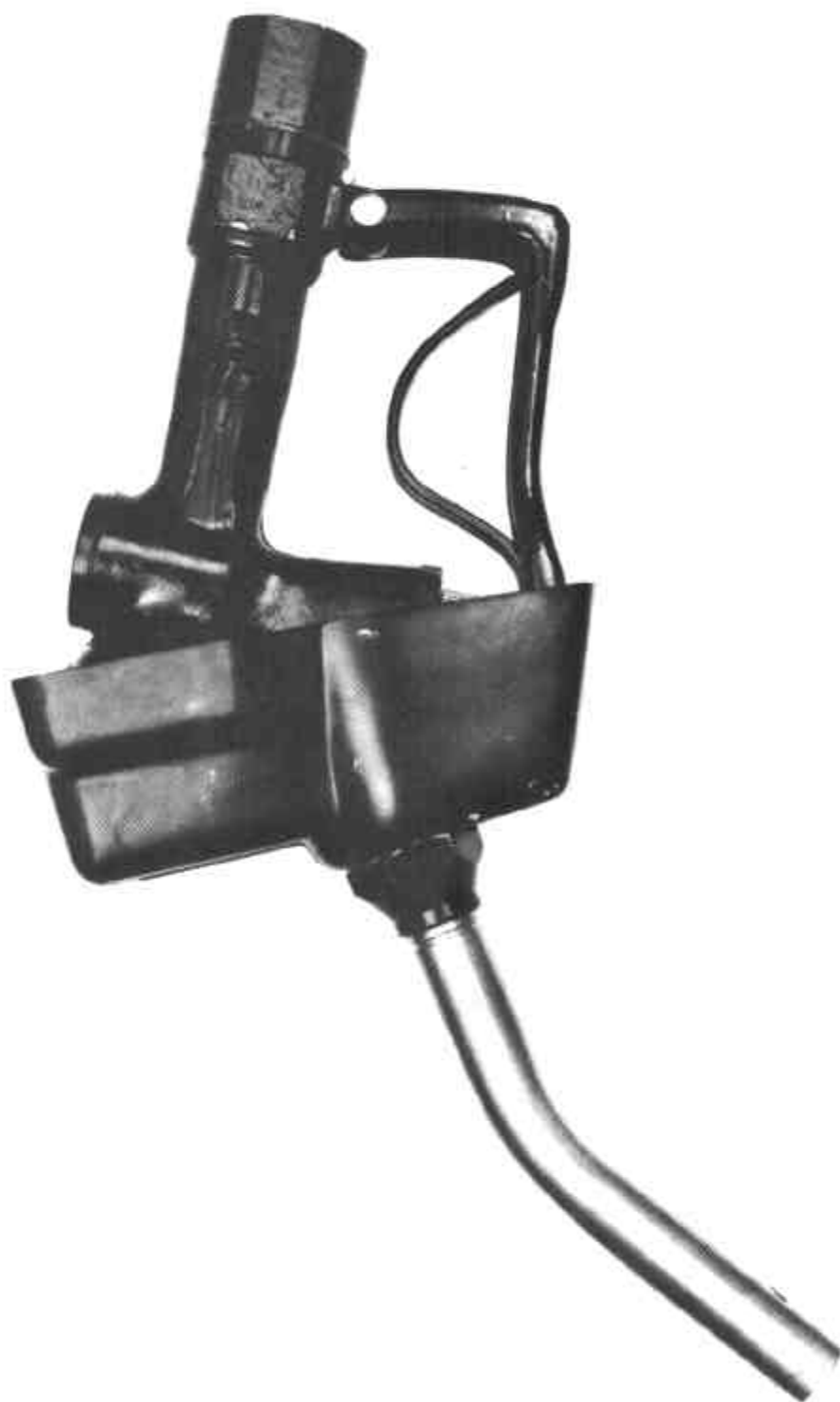


FIGURE 5/6A/61 - 22



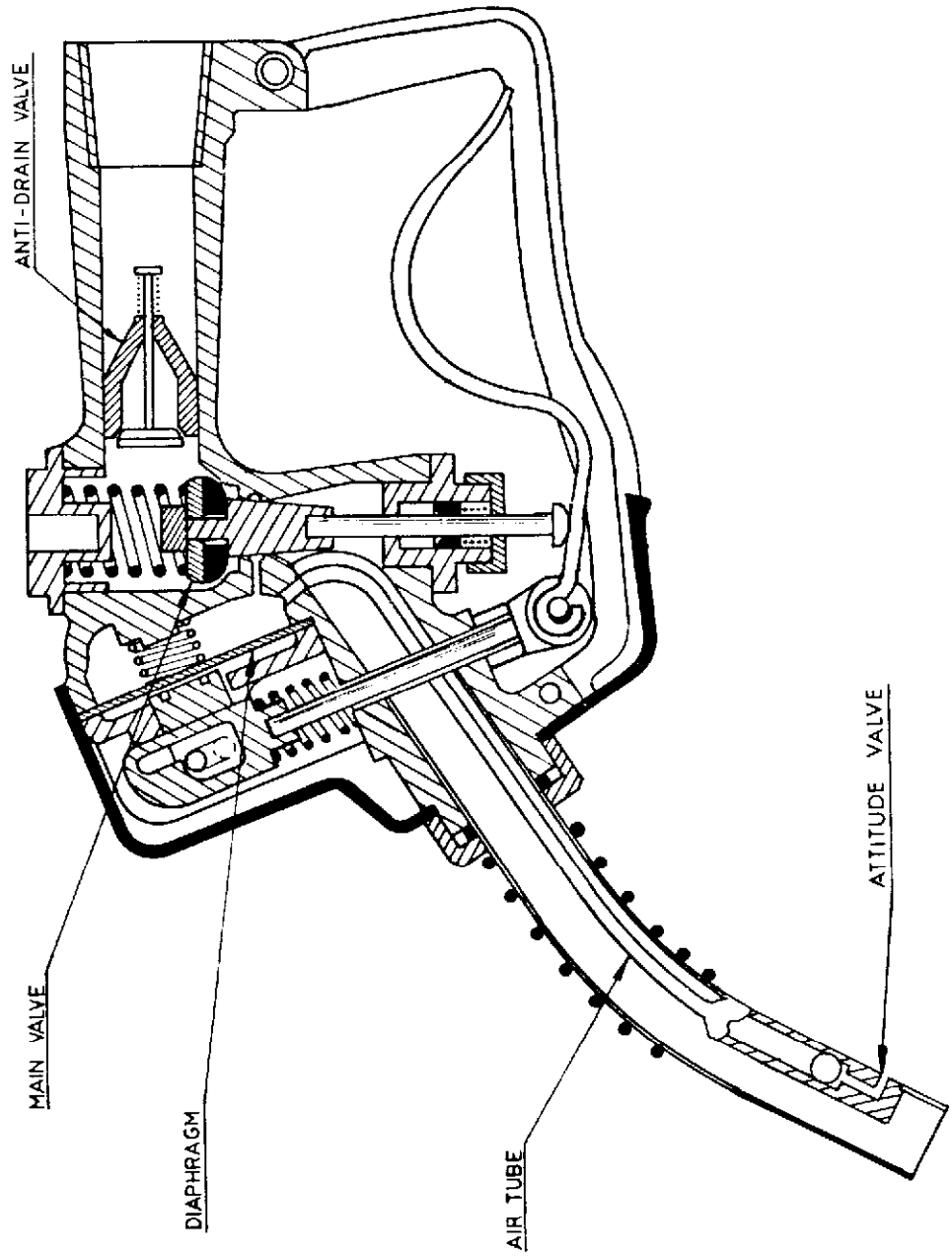
Wayne Gas-detector System — Hydraulic Diagram  
30/3/78

FIGURE 5/6A/61 - 23



STM 377 Automatic Hose Nozzle

FIGURE 5/6A/61 - 24



STM 377 Automatic Hose Nozzle — Schematic Diagram

FIGURE 5/6A/61 - 25



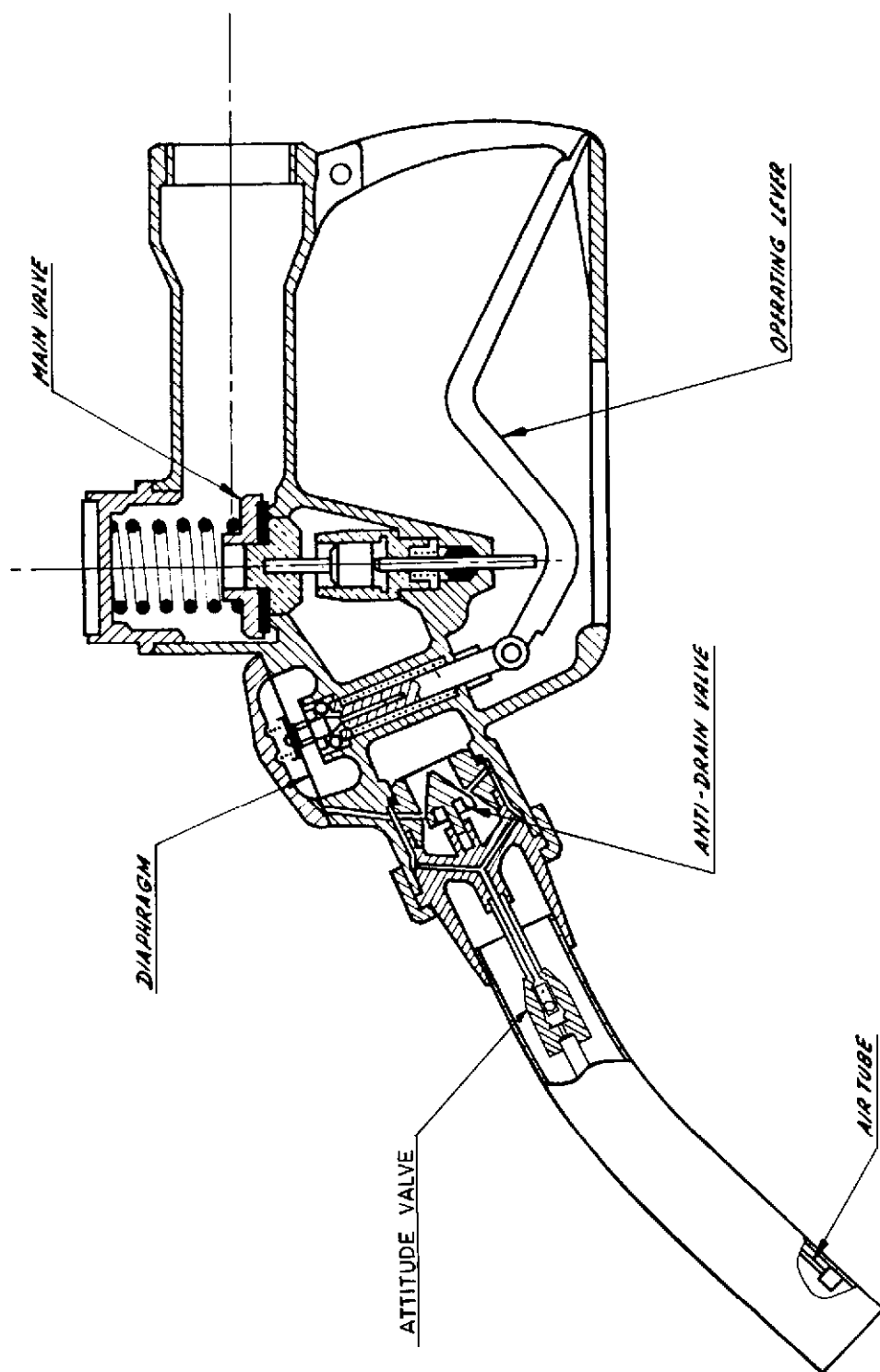
Sight Glass Located between the Hose and the Nozzle

FIGURE 5/6A/61 - 26



OPW LAS Automatic Hose Nozzle

FIGURE 5/6A/61 - 27



OPW 1AS Automatic Hose Nozzle — Schematic Diagram