



Weights and Measures
(National Standards)
Act 1960-1966

Weights and Measures
(Patterns of Instruments)
Regulations

COMMONWEALTH OF AUSTRALIA

NATIONAL STANDARDS COMMISSION

Certificate of Approval

CERTIFICATE NUMBER 5/6A/29

In respect of the pattern of

Wayne 734B/ES Post-payment Self-serve Single Dispensing Pump
and Variants.

Submitted and
manufactured by: Wayne Pumps Australia Pty. Ltd. ,
Anzac Highway,
Keswick,
South Australia. 5035.

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 were approved on 13th November 1970.

Approval was granted on condition that:

1. all instruments made in conformity with this Certificate:
 - (a) are appropriately marked NSC No 5/6A/29; and
 - (b) comply with the General Specifications for Weighing
and Measuring Instruments to be Used for Trade;

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Cont'd over

2. only 40 instruments are submitted to State and Territorial Weights and Measures Authorities for verification;
3. the Commission is notified of the location of each of the instruments referred to in Condition 2 before initial verification;
4. the Commission may re-examine any instrument referred to in Condition 2 after verification; and
5. all instruments are tested in accordance with the test procedure described in the Certificate.

This Certificate comprises:

Pages 1 to 9 dated 25th November, 1970.

Figures 5/6A/29 - 1 to 11 dated 25th November, 1970.

Date of issue 25th November, 1970.

Signed

A handwritten signature in black ink, appearing to read "Paul A. Thompson". The signature is written in a cursive style with a horizontal line under the name.

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

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DESCRIPTION OF PATTERN

The pattern is of a post-payment self-serve price-computing flowmeter with remote indication of the quantity and price of each delivery, known as a Wayne 734B/ES Post-payment Self-serve Single Dispensing Pump. It comprises the components tabulated in Column 5 of Figure 1 which, with the exception of Components 1 to 3, are housed in a steel cabinet (see Figure 2) and arranged as shown in Figure 3.

The system has two modes of operation, "manual" or "remote"; in the manual mode an operator uses the dispenser, operating it as a conventional retail flowmeter; in the remote mode of operation a centrally located cashier exercises supervisory control over the delivery and, by means of remote indicators which show the quantity and price of each delivery, charges the appropriate amount. A stop button located with the remote indicators may be used to stop a delivery without operating the starting handle on the dispenser. A selector switch, also located with the remote indicators, controls the mode of operation.

The significant differences in the operation of the instrument in its two modes of operation are:

1. in remote mode of operation the computer in the dispenser will retain its indications of price and quantity of delivery, and be unable to be used by the next purchaser until the previous purchaser has completed his transaction with the cashier, and the cashier has released the dispenser to the next purchaser by pressing the start/zero button located on the control unit; and
2. in the manual mode of operation, the cashier has no control over the dispenser and the dispenser may be re-used without the start/zero button being pressed.

Switching the instrument between "manual" and "remote" during a delivery will not affect the delivery or the accuracy of the remote indicators. Operation of the stop button will stop the delivery, but it will not affect the accuracy of the remote indicators. The control circuit of the dispenser is shown in Figure 4.

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The hydraulic diagram is the same as the Wayne 734B Single Dispensing Pump as described in Certificate No 5/6A/13; the maximum flow rate is 10 gallons per minute.

DESCRIPTION OF VARIANTS

1. The components tabulated in Column 6 of Figure 1 make up variants also known as a Wayne 734B/ES Post-payment Self-serve Single Dispensing Pump, each variant having the housing and component arrangement of the pattern.

The hydraulic diagram is the same as the pattern, and the maximum flow rate is 10 gallons per minute. The modes of operation are as for the pattern.

2. The installations in which more than one dispenser and control unit are connected to one power unit and relay unit are approved as variants.

In such installations each dispenser is identified by a number, not less than 4 inches in height, clearly visible to the purchaser and to the cashier. In addition, the identification number of the dispenser operated from each control unit is clearly identified on the housing of the power unit adjacent to the control unit (see Figure 6); the control units are interchangeable and are not numbered.

DESCRIPTION OF COMPONENTS

1. Control unit (see Figure 5) — comprising pulse-forming circuits, two digital indicators, one for price up to \$99.99 in 1 cent increments and one for a maximum volume of 99.99 gallons on 0.01 gallon increments, a start/zero button which on "remote" mode resets the digital indicator to zero and allows the dispenser to operate, and a stop button which, in an emergency, stops the pump motor without operation of the starting handle in the dispenser.
2. Power unit (see Figure 6) — supplies appropriate voltages to the

plug-in control unit. The front panel contains "remote/manual" selection switches, one for each control unit position. The selection of "remote" operation prevents the computer in the dispenser from being reset or the pump motor from being started until the "start/zero" button on the control unit is pressed and the two digital indicators have reset to zero. The selection of "manual" operation allows the computer to be reset and the pump motor to be started without pressing the "start/zero" button on the control unit; the two digital indicators will automatically reset to zero when the computer resets to zero.

3. Relay unit — contains relays and terminals providing interconnections within the system.
4. Pump — positive displacement rotary pump with integral gas separator — Wayne P9108, as described in Certificate No 5/6A/13.
5. Float chamber — Wayne P9115, as described in Certificate No 5/6A/13.
6. Float chamber — Wayne P9949, as described in Certificate No 5/6A/13.
7. Non-return valve with integral pressure-relief valve — Wayne P5687.
8. Meter — Wayne P8765, as described in Certificate No 5/6A/4.
9. Meter — Wayne P6521, 2-piston radial, as described in Certificate No 5/6A/13.
10. Meter sealing — 1-hole cup-and-wire seal, as described in Certificate No 5/6A/4.
11. Computer — Veeder-Root 1613, as described in Certificate No 5/6A/6, except the manual reset has been removed and replaced with a resetting mechanism driven by a Veeder-Root KD 7041 reset motor (see Figures 7, 8, 9 and 10). Referring to Figure 9, when power is applied to the reset motor, gear 1, which is free

to rotate on the shaft 2, drives the cam 3 through the spring-operated ratchet 4. The catch 5, which disengages the ratchet at the end of each reset cycle, is momentarily lifted by shaft 6, by the starting handle when it is turned on, and allows the ratchet to engage for one revolution of gear 1. The eccentric cam 3, which is restrained at the end of each reset cycle by the spring-loaded idler 7, turns the segmented gear 8, which in turn resets the price and quantity wheels to zero; a peg on the segmented gear actuates a microswitch once each revolution. A second cam 9, on shaft 2, moves bar 10, releasing the drives to the price and quantity wheels to allow resetting. A spring-loaded arm on cam 9 resets the drive 11 from the price shaft 12 to the pulse generator during the resetting of the computer.

12. Computer — Component No 11, with the Veeder-Root 1613 computer replaced by a Veeder-Root 1611 computer converted to decimal currency, as described in Certificate No 5/6A/11.
13. Back-pressure valve — Wayne P9252, as described in Certificate No 5/6A/13.
14. Sight glass — Wayne P8957 by-pass type, as described in Certificate No 5/6A/13.
15. Hose — external retractable $\frac{3}{4}$ inch bore.
16. Nozzle — Wayne P7775 automatic hose nozzle with external anti-drain valve unit fitted, as described in Certificate No 5/6A/28.
17. Nozzle — Wayne P9199 manual hose nozzle, as described in Certificate No 5/6A/13.
18. Nozzle — Wayne P9809 manual hose nozzle, as described in Certificate No 5/6A/28.
19. Nozzle — OPW 1A or 1AM automatic hose nozzle, as described in Certificate No 5/6A/4.

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20. Nozzle — STM 363 automatic hose nozzle, as described in Certificate No 5/6A/7.
 21. Dial face — white with black markings, as described in Certificate No 5/6A/13.
 22. Dial face — grey with white markings, as described in Certificate No 5/6A/13.
 23. Nameplate — marked "approved for petroleum \leq 1 cSt", which means that the instrument is approved for liquid petroleum of viscosity not more than 1 cSt.
 24. Nozzle hang-up — the computer is reset to zero and the pump motor is started by the use of a single control, the starting handle. The "on" and "off" positions of the starting handle are clearly and permanently marked. The nozzle hang-up operates in the following manner:
 - (a) When starting the pump, the starting handle initiates a sequence of relay operations which cause the reset motor to reset the computer before the pump motor is switched on.
 - (b) When stopping the pump, the starting handle stops the pump motor by breaking the voltage supply to a relay, by which time the starting handle has reached a position of 45° to the horizontal.
 25. Price pulse generator — Wayne RC7007 (see Figure 11) containing a reed switch actuated by eight bar magnets equally spaced on a rotating drum. The pulse generator is driven by gears from the price shaft 12 (see Figure 9) so that it generates 100 pulses for each \$1.00 indicated on the Veeder-Root computer. Each time the computer is reset, a spring-loaded arm on the computer sets the drive to the pulse generator so that the reed switch is midway between any two magnets.
 26. Volume pulse generator — Component No 25 except that it is not reset so that the reed switch is midway between two magnets when the computer is reset; it is driven by a worm gear from

the drive shaft between the meter and the computer and generates 100 pulses for each gallon indicated on the computer.

GENERAL NOTES

Test Procedure

The following tests will apply to each dispenser in the installation:

1. Select "manual" mode of operation;
2. Start the pump motor with the starting handle; ensure that the computer is at zero before the pump starts;
3. Check the accuracy of delivery and adjust if necessary;
4. Stop the pump motor by turning the starting handle to "off" and record quantity and price indicated on the computer;
5. Check that the quantity and price on the remote indicators are the same as recorded on the computer;
6. Start the pump, allow the computer to reset to zero and without dispensing liquid stop the pump motor;
7. Check that the remote indicator has reset to zero. Note: Steps 6 and 7 may be omitted if, prior to starting the tests, the remote indicators and the computer are not on zero;
8. Select "remote" mode of operation and press the "start/zero" button;
9. Start the dispenser with the starting handle; ensure that the computer is at zero before the pump starts. Deliver sufficient liquid to cause the price and quantity indicators on the computer to move significantly off zero;
10. Stop the pump by turning the starting handle to "off" and record the quantity and price on the computer;

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11. Without pressing the "start/zero" button on the remote indicator, turn the pump starting handle to "on". Check that the pump does not start and the computer does not zero;
12. Leaving the starting handle "on":
 - (a) check that the quantity and price on the remote indicators are the same as indicated on the computer;
 - (b) press the "start/zero" button on the control unit. Check that the remote indicators do not reset to zero, the pump motor does not start, and the computer does not reset;
13. Turn the pump starting handle to "off" and return the nozzle to its hang-up position;
14. Press the "start/zero" button and check that the remote indicators reset to zero;
15. Turn the pump starting handle to "on" and check that the computer automatically resets to zero before the pump starts. Turn the starting handle to "off".

General

Inspectors are requested to confirm with the Pattern Approval Laboratory that Condition No 3 has been carried out before verifying an instrument.

FIGURE 5/6A/29 - 1

1	2	3	4	5	6	
	COMPONENTS	DATE APPROVED	FOOTNOTES	PATTERN 734B/ES	VARIANTS 734B/ES	
1	Control unit	-13/11/70		*	*	
2	Power unit			*	*	
3	Relay unit				*	*
4	Pump, Wayne P9108				*	*
5	Float chamber, Wayne P9115				*	A
6	Float chamber, Wayne P9949					A
7	Non-return valve, Wayne P5687				*	*
8	Meter, Wayne P8765				*	B
9	Meter, Wayne P6521					B
10	Meter sealing, 1-hole cup-and-wire seal				*	*
11	Computer, VR 1613 with electric reset				*	C
12	Computer, VR 1611 with electric reset					C
13	Back-pressure valve, Wayne P9252				*	*
14	Sight glass, Wayne P8957				*	*
15	Hose, $\frac{3}{4}$ inch bore				*	*
16	Nozzle, Wayne P7775 with external anti-drain valve				*	D
17	Nozzle, Wayne P9199					D
18	Nozzle, Wayne P9809					D
19	Nozzle, OPW 1A					D
20	Nozzle, STM 363					D
21	Dial face, white				*	E
22	Dial face, grey					E
23	Nameplate, "approved for petroleum \cong 1 cSt"				*	*
24	Nozzle hang-up, 45°				*	*
25	Price pulse generator, Wayne RC7007				*	*
26	Volume pulse generator, Wayne RC7007				*	*

* - indicates required component

A - indicates alternative components, one of which is required

B to E - as for A

Compatibility Table for Components Described
in this Certificate

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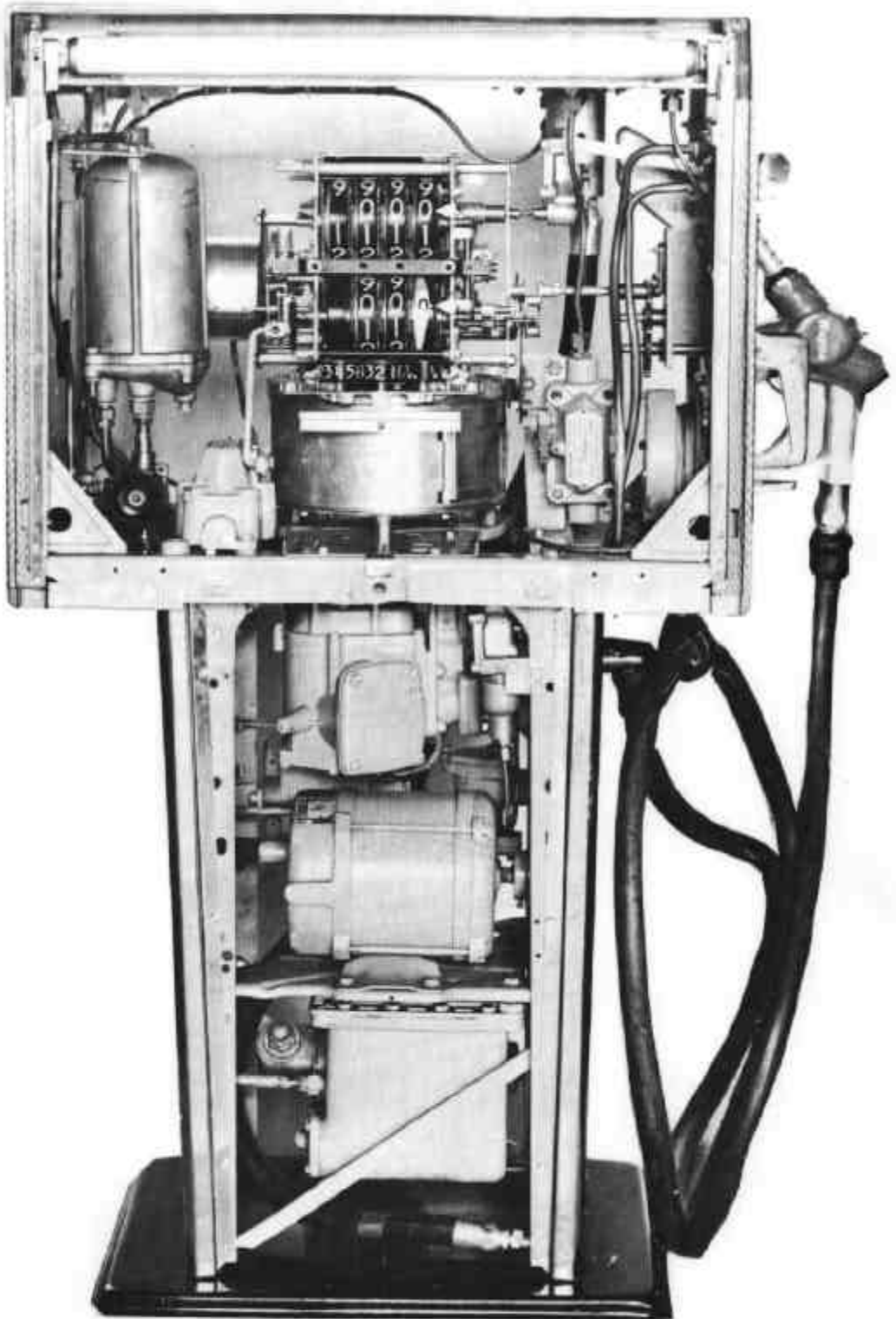
FIGURE 5/6A/29 - 2



Wayne 734B/ES Dispenser

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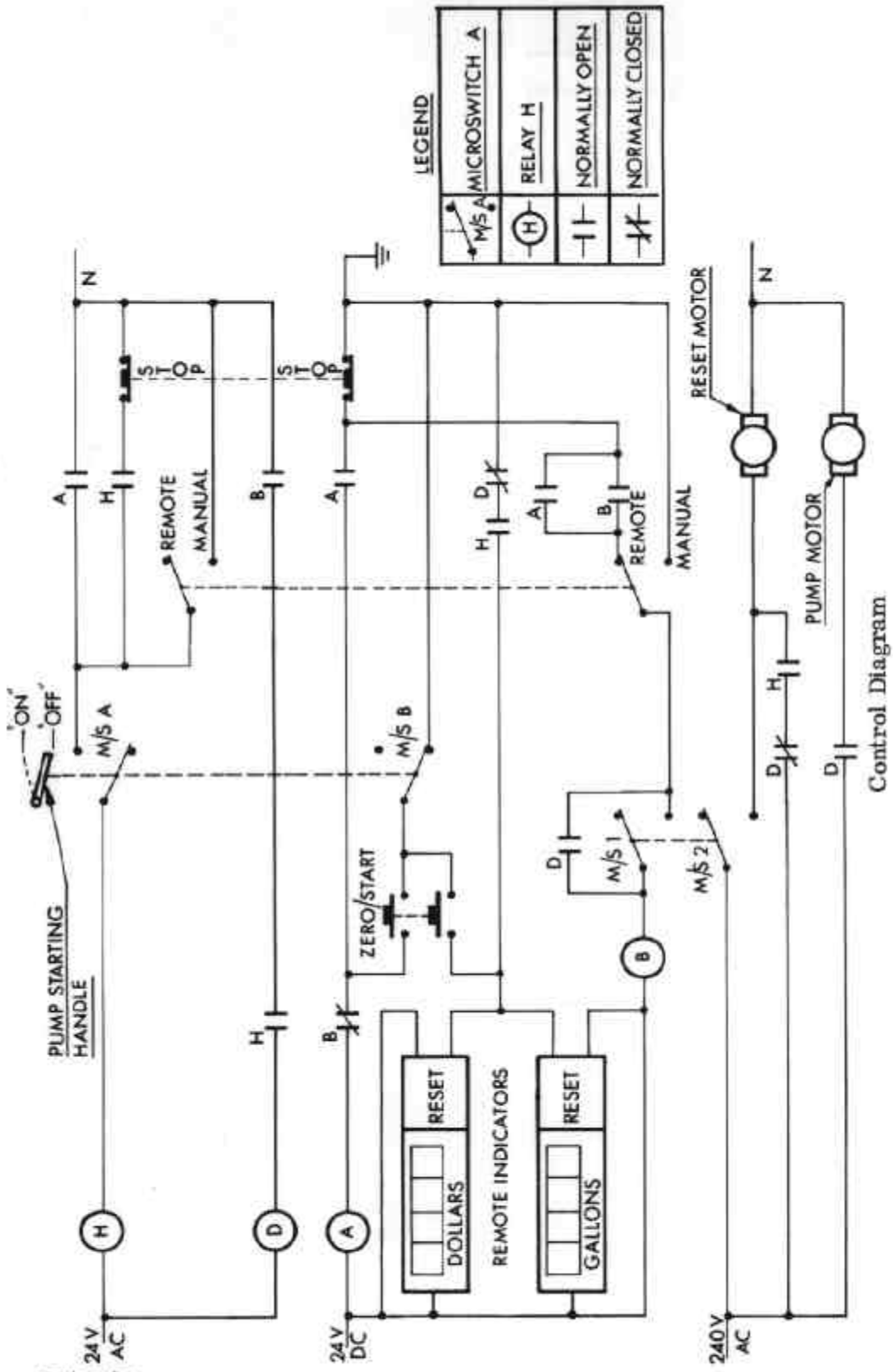
FIGURE 5/6A/29 - 3



Wayne 734B/ES Dispenser with Panels Removed

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FIGURE 5/6A/29 - 4



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Control Diagram

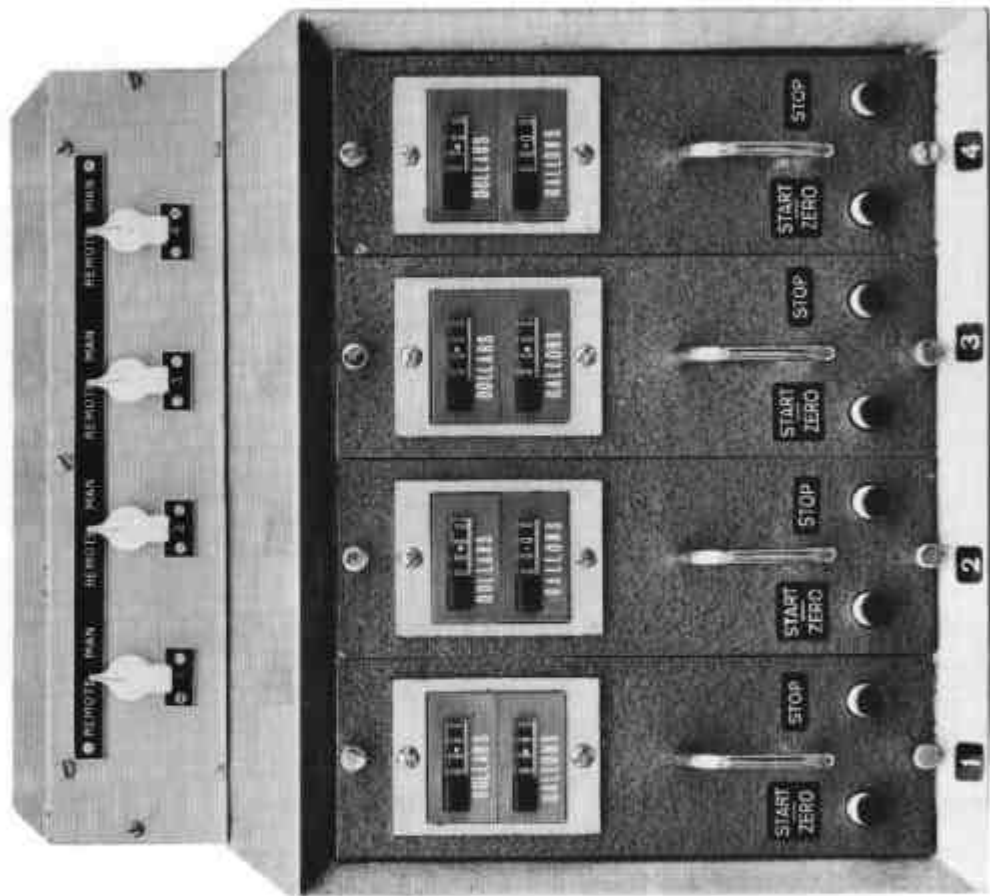
FIGURE 5/6A/29 - 5



Control Unit

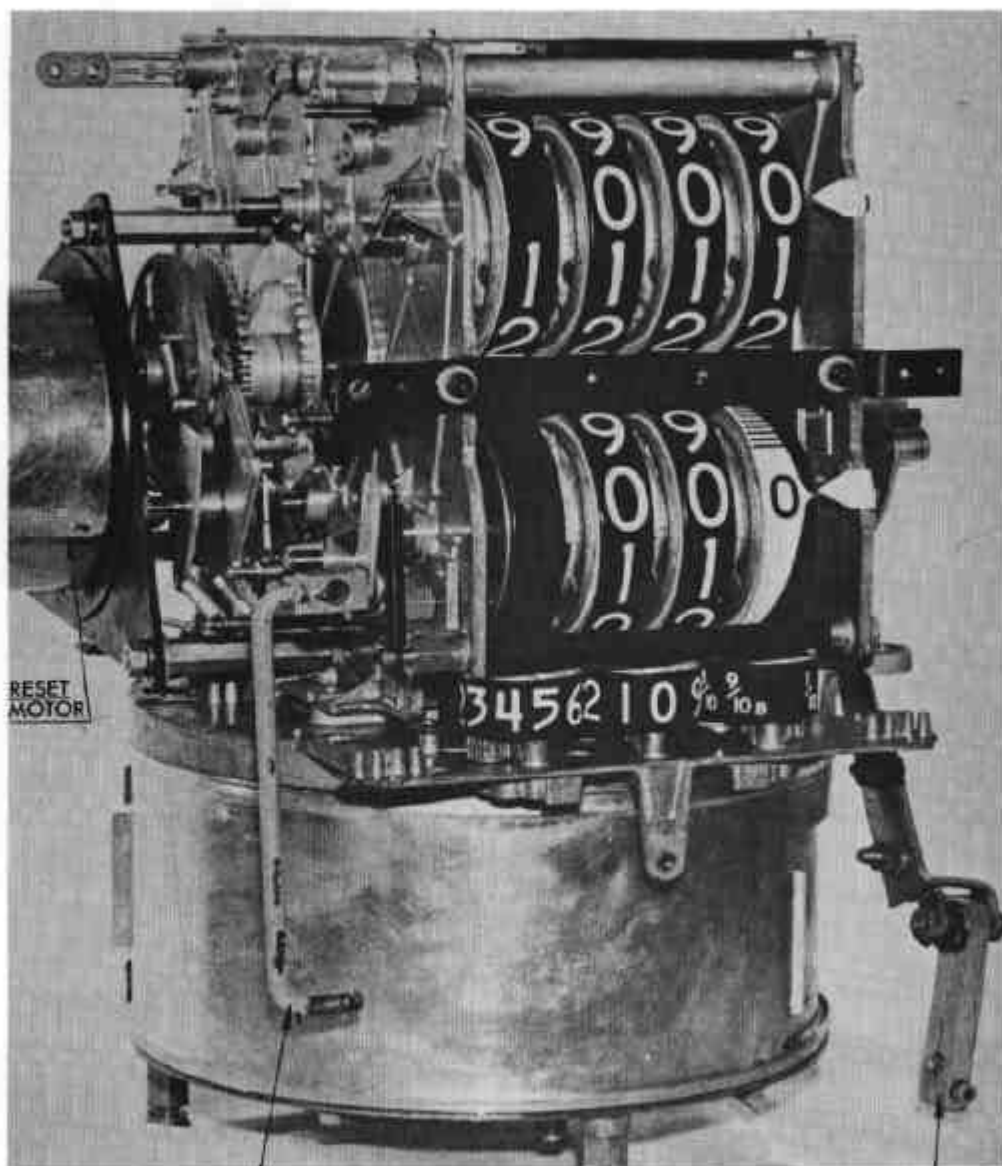
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FIGURE 5/6A/29 - 6



Power Unit Fitted with Four Control Units

FIGURE 5/6A/29 - 7



RESET
MOTOR

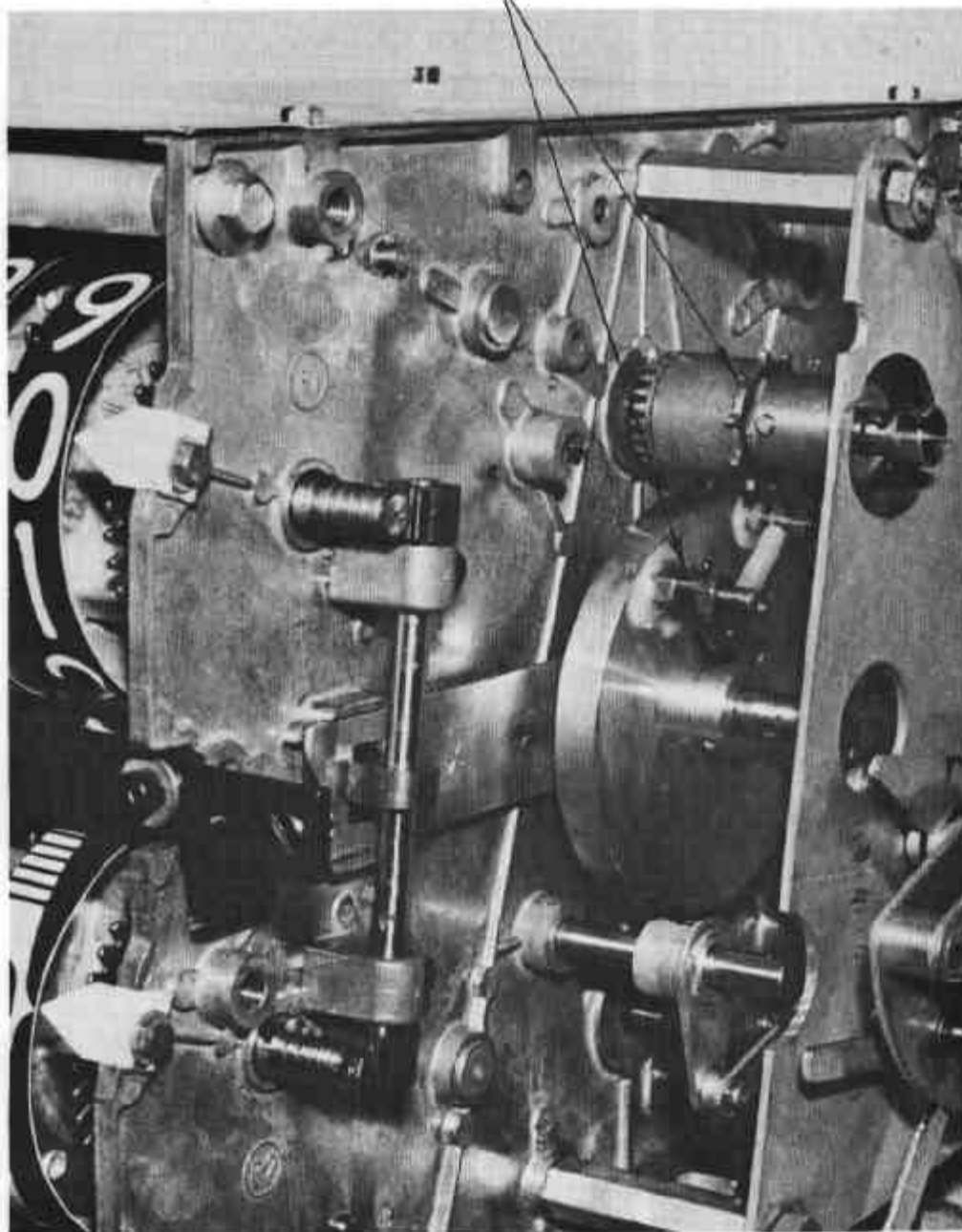
CONTROL ARM
MICROSWITCH 1 & 2

CONTROL ARM
MICROSWITCH A & B

Veeder-Root 1613 Computer with Electric Reset
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FIGURE 5/6A/29 - 8

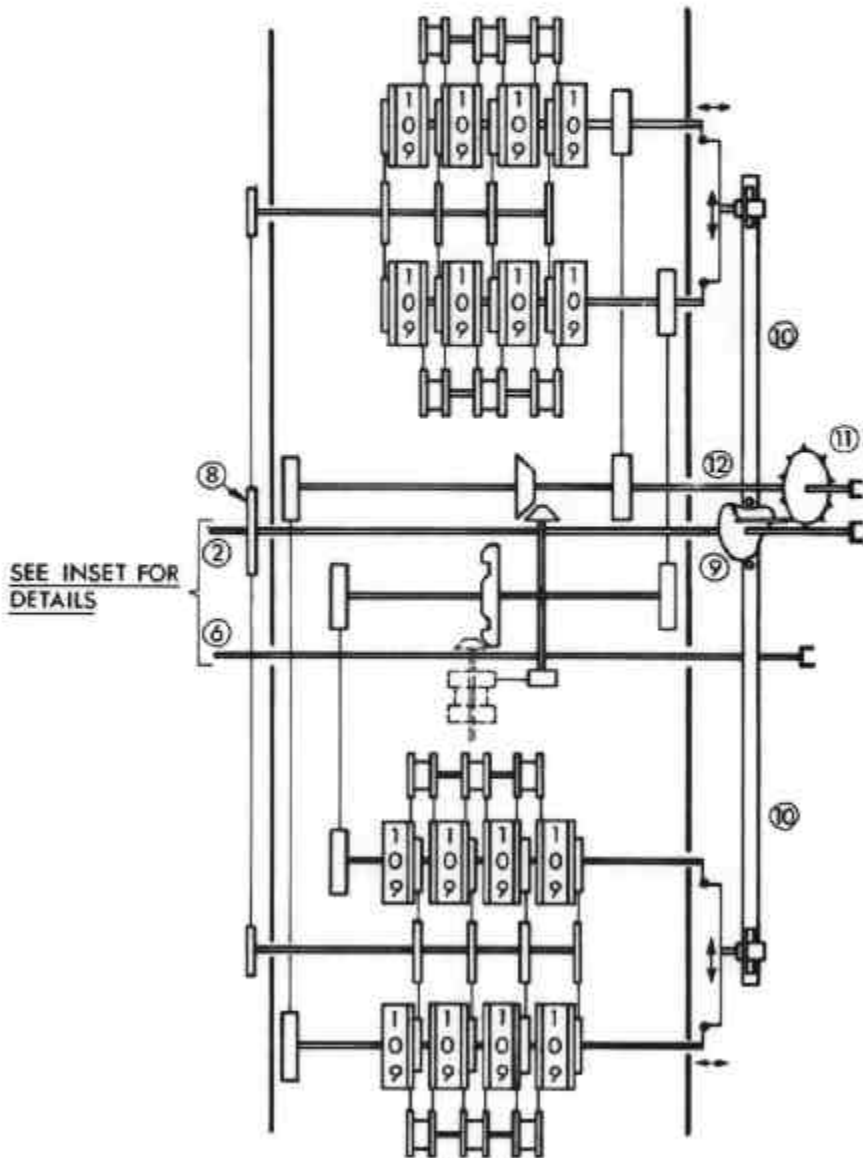
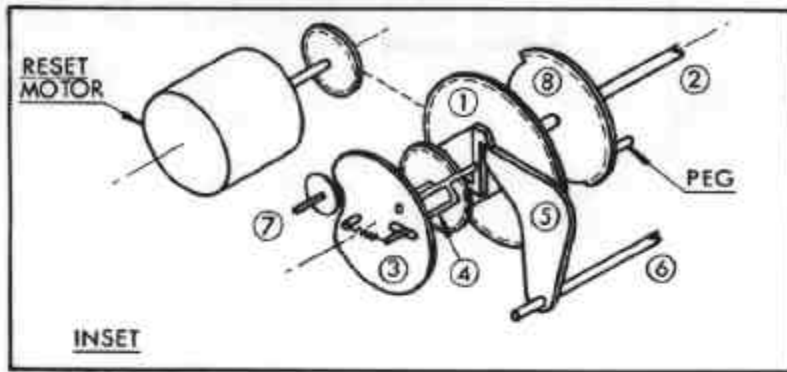
PRICE PULSE GENERATOR RESET



Veeder-Root 1613 Computer with Electric Reset

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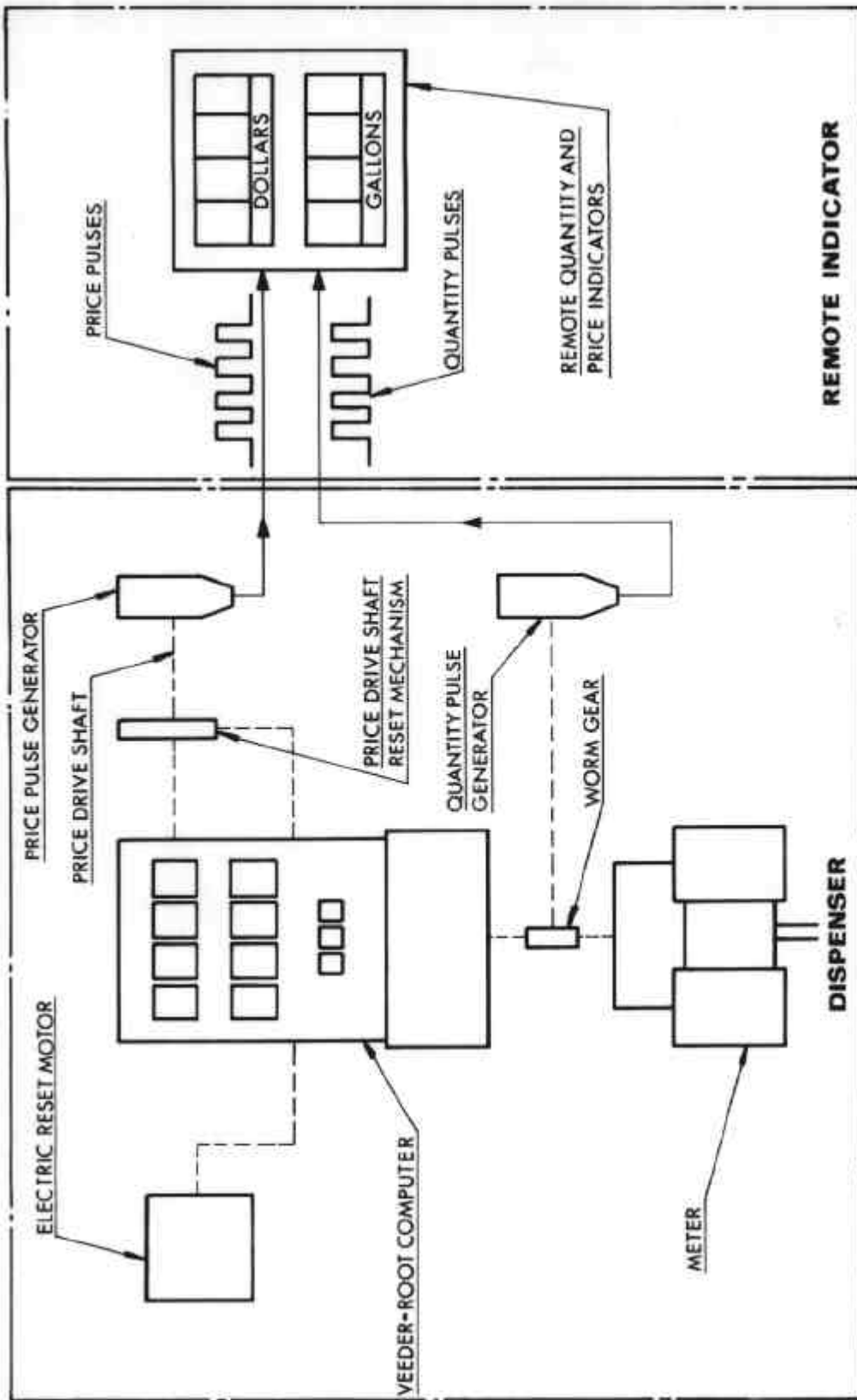
FIGURE 5/6A/29 - 9



Schematic Diagram - Veeder-Root 1613 Computer
with Electric Reset and Pulse Generator Reset

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FIGURE 5/6A/29 - 10



Wayne Post-payment System - Schematic Diagram

FIGURE 5/6A/29 - 11



Wayne RC7007 Pulse Generator

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