



COMMONWEALTH OF AUSTRALIA

NATIONAL STANDARDS COMMISSION

Weights and Measures  
(National Standards)  
Act 1960-1966  
Weights and Measures  
(Patterns of Instruments)  
Regulations

## *Certificate of Approval*

CERTIFICATE NUMBER 5/6B/5

This Certificate replaces Certificate No 5/6B/5 dated 4 June 1971.\*

In respect of the pattern of

Liquid Controls Type M7 Metering Unit and Variants.

Submitted and

manufactured by:

Engineering Products Pty Ltd,  
418-428 Burnley Street,  
Burnley,  
Victoria. 3121.

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 2 June 1967. The approval of the pattern and variants was limited in duration to 31 December 1971, on 28 May 1971.

The approval of the pattern and variants was extended on 5 March 1973 to include a further twenty instruments; the location and serial number of each instrument are to be registered with the Pattern Approval Laboratory. ‡

\* NOTE: Figures 5/6B/5 - 1 to 10 of the previous issue form part of the Certificate and must be retained.

‡ Inspectors should not verify any new instrument conforming to this Certificate until advised in writing by the Pattern Approval Laboratory that these details have been registered.

The pattern and variants:

1. are marked "NSC No 5/6B/5" and, where required by State legislation, with the State approval number also; and
2. comply with the General Specifications for Measuring Instruments to be Used for Trade, in respect of that part of the pattern which was not previously approved by a State.

This Certificate comprises:

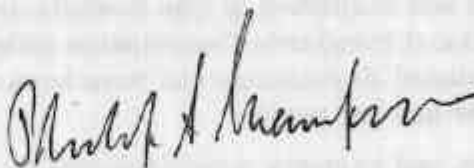
Pages 1 to 5 dated 12 March 1973.

Figures 5/6B/5 - 1 to 10 dated 4 June 1971.

Pursuant to regulation 12 of the abovementioned Regulations, this Certificate is applicable in all States.

Date of issue 12 March 1973.

Signed



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

### \*DESCRIPTION OF PATTERN

The pattern (see Figure 1) is of a liquid flowmeter known as a Liquid Controls Type M7 Metering Unit, and comprises the following components arranged as shown in Figure 2:

1. Pump — positive displacement.
2. Gas separator (see Figures 3 and 4) — comprising a float chamber and strainer. Gas separation is achieved by passing the liquid through a mesh basket, and allowing the gas to rise to the top of the liquid in the float chamber. A float attached to two valves, in the form of strips of metal covering two ports in the side of the float chamber, opens the valves, allowing the gas to escape direct to atmosphere when the liquid level falls.
3. Meter — Liquid Controls Model F7 (see Figure 5), in which a blocking rotor and two displacement rotors turn synchronously as a result of passage of liquid through the meter. The rotation of the blocking rotor is conveyed through an infinitely variable drive to the register. An adjuster in the variable drive allows the meter to be calibrated. The adjuster is locked by means of a clamp around the barrel.
4. Register — Liquid Controls Model 6234 (see Figures 6 and 7), a Veeder-Root register known as a Model 169200 (American origin) or Model 1558 (UK origin). The register indicates the quantity delivered in gallons and tenths of a gallon up to 9999.9 gallons. It is reset by pushing the knob in to engage the reset pawls, and turning. During the resetting a shutter covers the gallon indicator wheels (see Figure 8). The indicator is capable of adding when the drive shaft rotates in one direction and subtracting in the reverse direction.
5. Hose —  $1\frac{1}{2}$ -inch bore, 12 feet long.
6. Nozzle — Axiom Wheaton Model B751 with anti-drain valve (see Figures 9 and 10). In this nozzle a spring-loaded piston type valve with integral spring-loaded pressure-relief valve is operated by a hand lever. A shaft operated by the hand lever lifts the

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\* Approval limited to 31 December 1971, on 28 May 1971, and extended to include a further twenty instruments on 5 March 1973.

integral pressure-relief valve, allowing the pressure differential across the main valve to fall. Further movement of the hand lever causes the integral pressure-relief valve to contact the main valve, lifting it and allowing liquid to flow. The anti-drain valve is held on its seat by a spring; the pressure of the liquid opens the valve.

The pattern is approved for use with kerosene only, the meter being marked "for use with kerosene only". The maximum flow rate is 83 gallons per minute; the minimum flow rate is 8.3 gallons per minute.

The pattern is sealed as follows:

- (a) by a wire passing through the drilled heads of two of the set screws securing the cover plate over the calibrating adjustment, and securing the ends by a lead seal;
- (b) by a wire passing through the drilled heads of two of the set screws securing the front cover of the meter, and securing the ends by a lead seal;
- (c) by a wire passing through the drilled heads of two of the set screws securing the back cover of the meter, and securing the ends by a lead seal;
- (d) by a wire passing through the drilled heads of two of the set screws securing the register to the meter, and securing the ends by a lead seal; and
- (e) by a wire passing through the drilled heads of two of the set screws securing the register cover to the register baseplate, and securing the ends by a lead seal.

#### DESCRIPTION OF VARIANTS

- \*1. The pattern being approved for use with motor spirit only, in which case the meter is marked "for use with motor spirit only".
- \*2. The pattern being approved for use with distillate only, in which

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case the meter is marked "for use with distillate only".

- \*3. The gas separator, meter and register as described in the pattern or variant 1 replacing the gas separator, meter and register in any State-approved pattern† or Commission-approved pattern, in which case the gas separator vent is not less than  $\frac{3}{4}$  inch in diameter and not more than 10 feet in length and is connected to a container which is vented directly to atmosphere through an opening not less than  $\frac{3}{4}$  inch diameter.

#### GENERAL NOTES

This approval has been limited in duration as a result of a re-examination of the pattern in connection with an application for additional variants. The pattern failed the gas separator tests.

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† Approved pursuant to regulation 12.

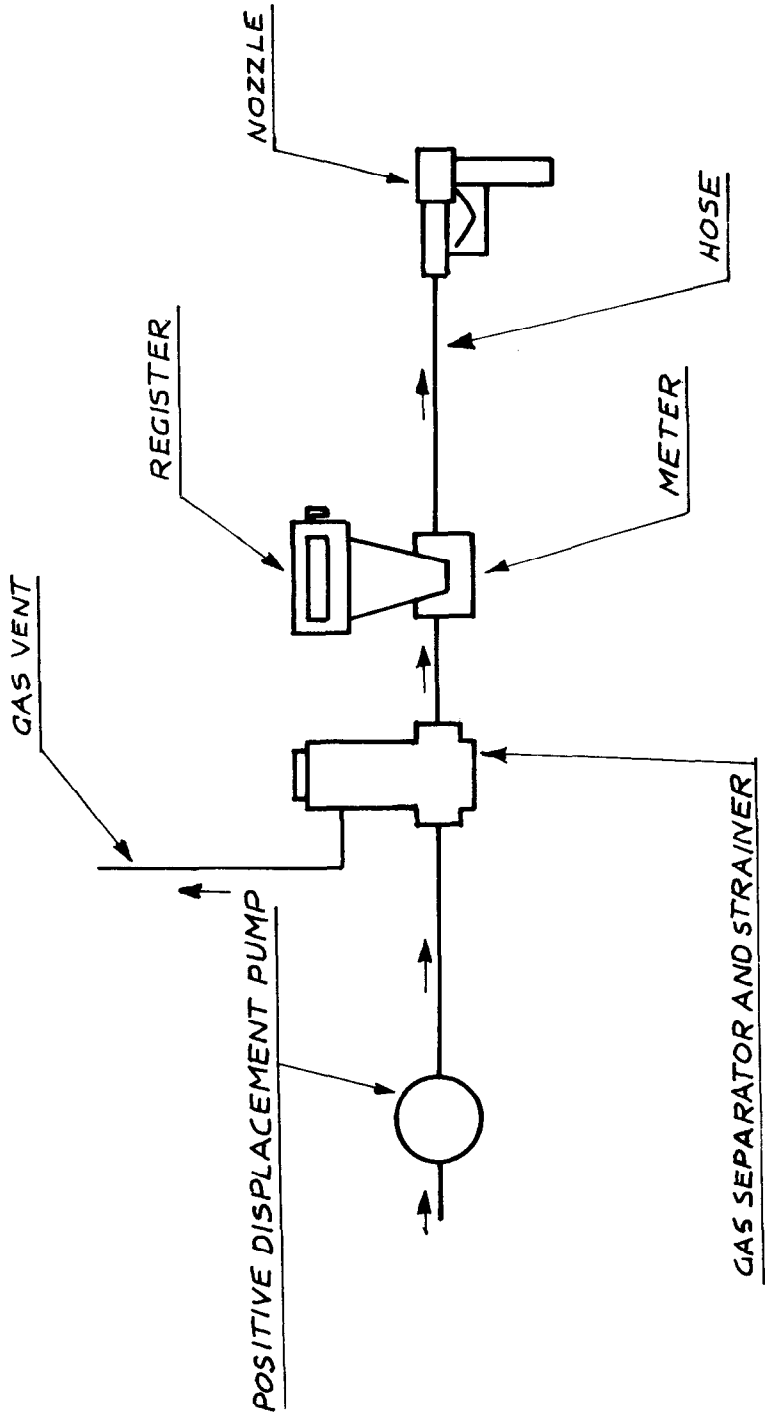
FIGURE 5/6B/5 - 1



Liquid Controls M7 Metering Unit

4/6/71

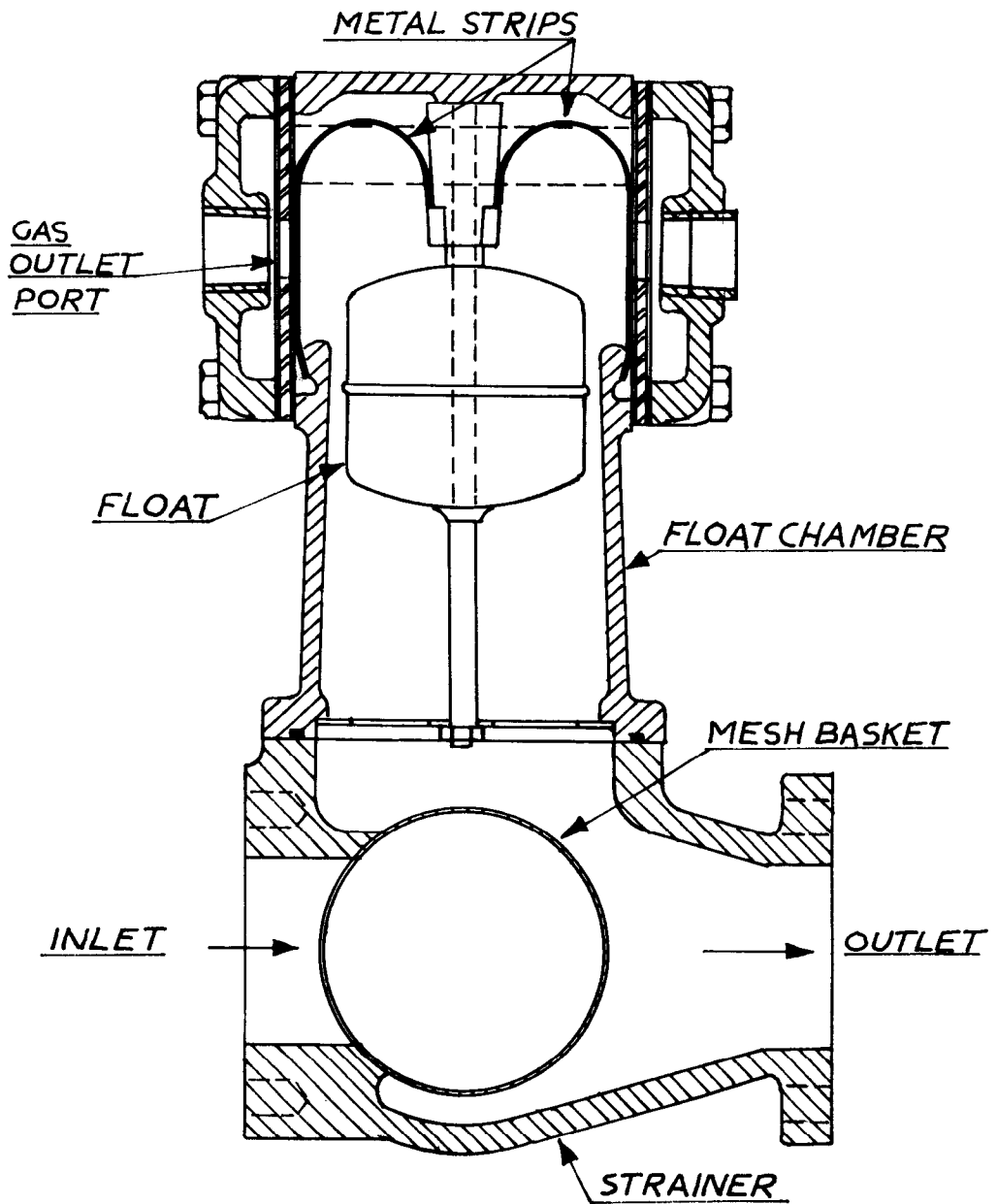
FIGURE 5/6B/5 - 2



Liquid Controls M7 Metering Unit -- Hydraulic Diagram

4/6/71

FIGURE 5/6B/5 - 3

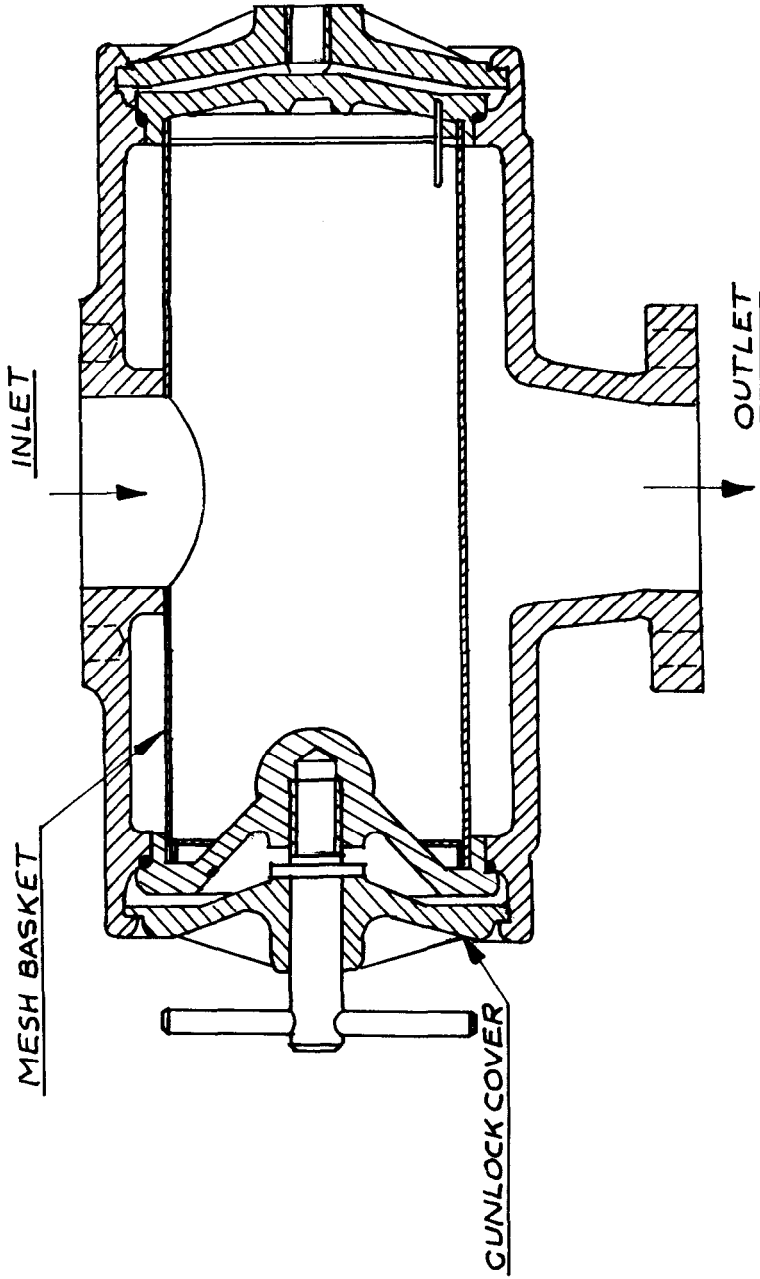


Liquid Controls Gas Separator

4/6/71



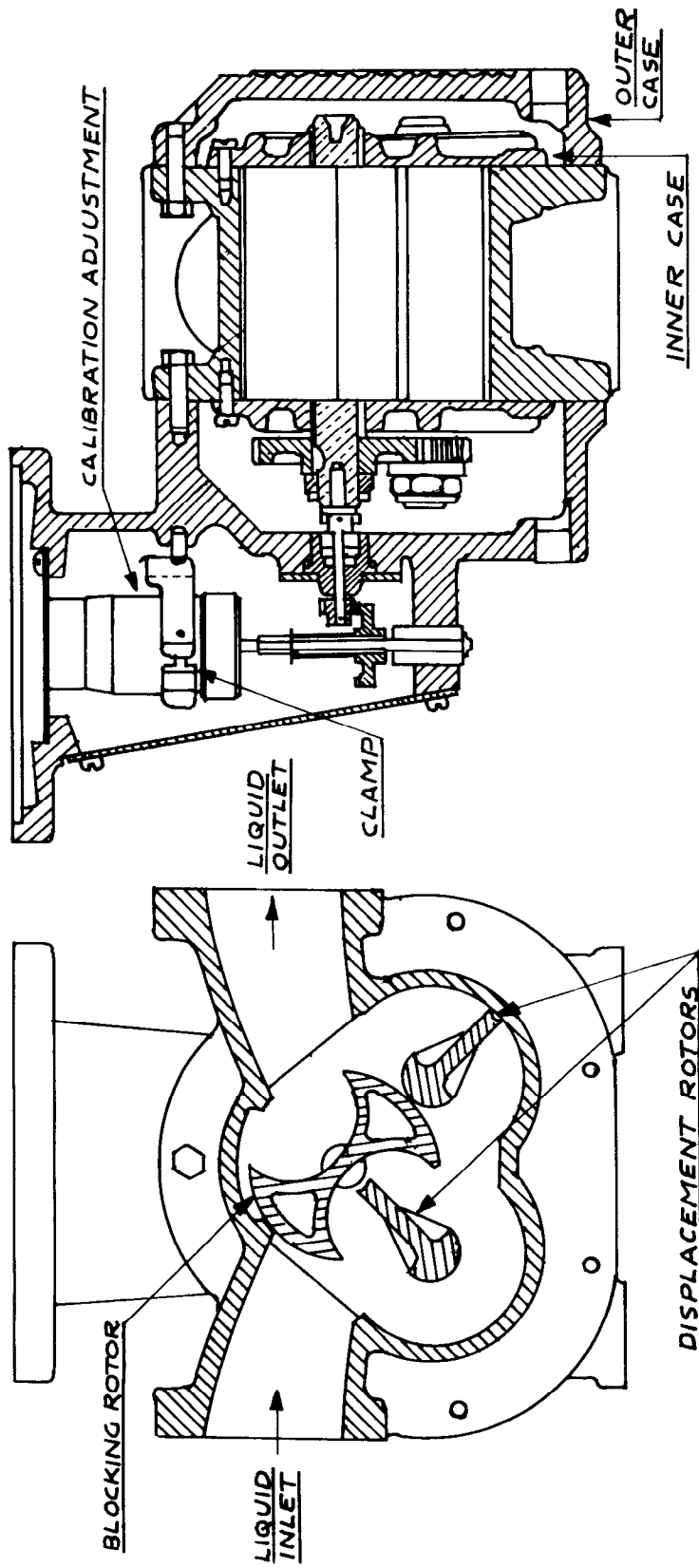
FIGURE 5/6B/5 - 4



Liquid Controls Strainer -- Plan View

4/6/71

FIGURE 5/6B/5 - 5



4/6/71

Liquid Controls Meter Model F7

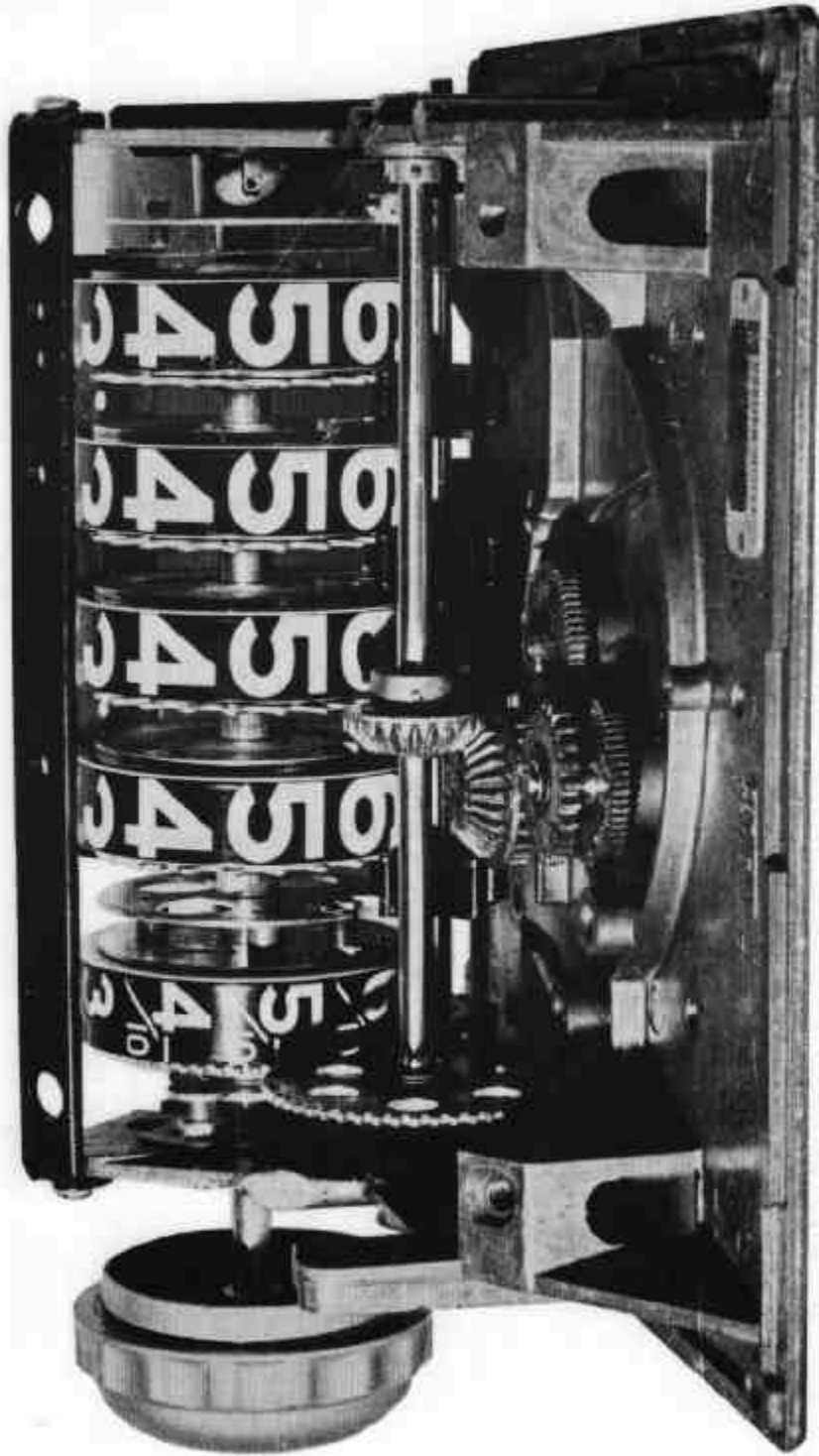
FIGURE 5/6B/5 - 6



Liquid Controls Register Model 6234

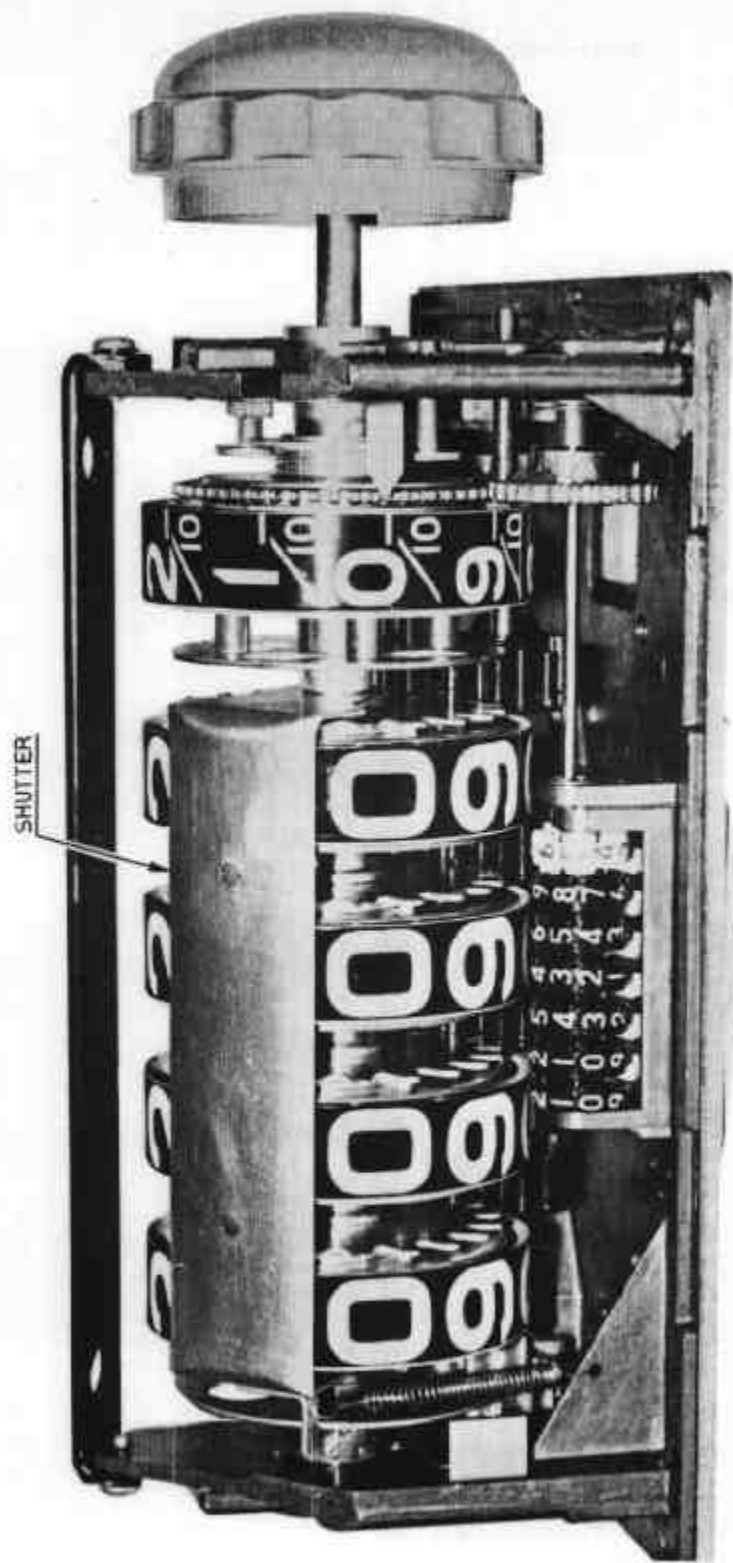
4/6/71

FIGURE 5/6B/5 - 7



Liquid Controls Register Model 6234 — Rear View with Cover Removed

FIGURE 5/6B/5 - 8



Liquid Controls Register Model 6234 — Front View with Cover Removed

4/6/71

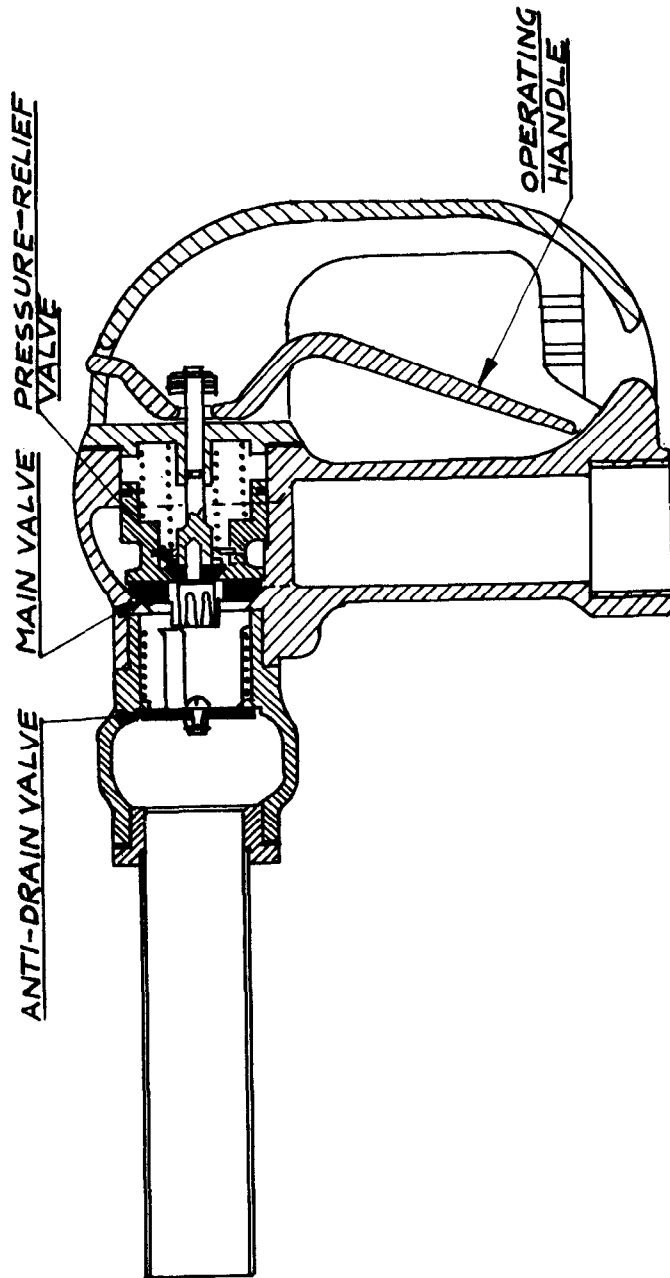
FIGURE 5/6B/5 - 9



Axiom Wheaton B751 Hose Nozzle

4/6/71

FIGURE 5/6B/5 - 10



Axiom Wheaton B751 Hose Nozzle