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CERTIFICATE OF APPROVAL No 5/6D/20

This is to certify that the patterns of the

Avery-Hardoll Flowmeter

submitted by Email Limited,
Industrial Products Division,
Joynton Avenue,
Waterloo, New South Wales, 2017,

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

Date of Approval: 29 April 1975

The patterns are described in Technical Schedule No 5/6D/20, and in drawings and specifications lodged with the Commission.

The approval is subject to review on or after 1 May 1980.

All instruments conforming to this approval shall be marked with the approval number "NSC No 5/6D/20".

Approval is granted on condition that:

1. The maximum flow rate is a flow rate between 500 and 700 litres per minute.

2. A pump is not fitted to the measuring system.

3. The viscosity of the liquid measured is between 0,4 and 8,3 mPa.s.

4. The liquid (commercial or technical name) for which the instrument is verified is nominated on the instrument data plate.

Signed

Executive Officer

28/9/78

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6D/20

Pattern: Avery-Hardoll Flowmeter

Submittor: Email Limited,
Industrial Products Division,
Joynton Avenue,
Waterloo, New South Wales, 2017.

Date of Approval: 29 April 1975

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Description:

The pattern (see Figures 1 and 2) is a gravity-feed flowmeter for the delivery of liquid petroleum. The flowmeter comprises the following:

1. Pipework upstream of the meter of the form illustrated in Figure 1.

2. Gas-purging pipe of diameter not less than 19 mm with a positive gradient rising to above the maximum level in the supply tank.

3. Avery-Hardoll SBM 150 meter (see Figure 2).

4. Veeder-Root 1624 zero-start indicator with a scale interval of 1 litre; the first element is marked with ten scale-mark lines numbered from 0 to 9 (see Figure 1). The aperture through which the first element is viewed is widened in the direction of travel.

5. Pipework downstream of the meter of the form illustrated in Figure 1.

6. Control valve.

7. Open-ended siphon-breaker pipe of diameter not less than 19 mm with a positive gradient rising to above the maximum level in the supply tank.

8. Marking — an instrument data plate sealed to the instrument is marked "approved for petrol only ", "approved for kerosene and heating oil only", or "approved for diesel fuel only".

9. Seal — a sealing wire, whose ends terminate in a fixed plug seal, passes through the drilled heads of two set screws, securing the front cover on the meter case and through the drilled heads of two set screws securing the cover on the indicator.

The approval also includes:

1. A Veeder-Root 7085 zero-start single-handle reset indicator and ticket printer (see Figure 3). The ticket printer has 1 litre increments and the indicator has a 1 litre scale interval; the first element is marked with ten scale-mark lines numbered from 0 to 9. The aperture through which the first element is viewed is widened in the direction of travel.

Special Tests:

The instrument should be tested with the liquid for which it will be used and which is to be marked on the instrument data plate.

Minimum Delivery:

1. The non-flow-dependent errors are up to:

   (a) 1 litre rounding error for the ticket printer;

   (b) 0,2 litre reading error for the indicator; and

   (c) 1,0 litre gas-purging error.

2. For a delivery other than that which empties the supply tank, the minimum delivery for which the relative error from all sources would not exceed 1,5% is:

   (a) 100 litres when a ticket printer is fitted; and

   (b) 20 litres when only an indicator is fitted.

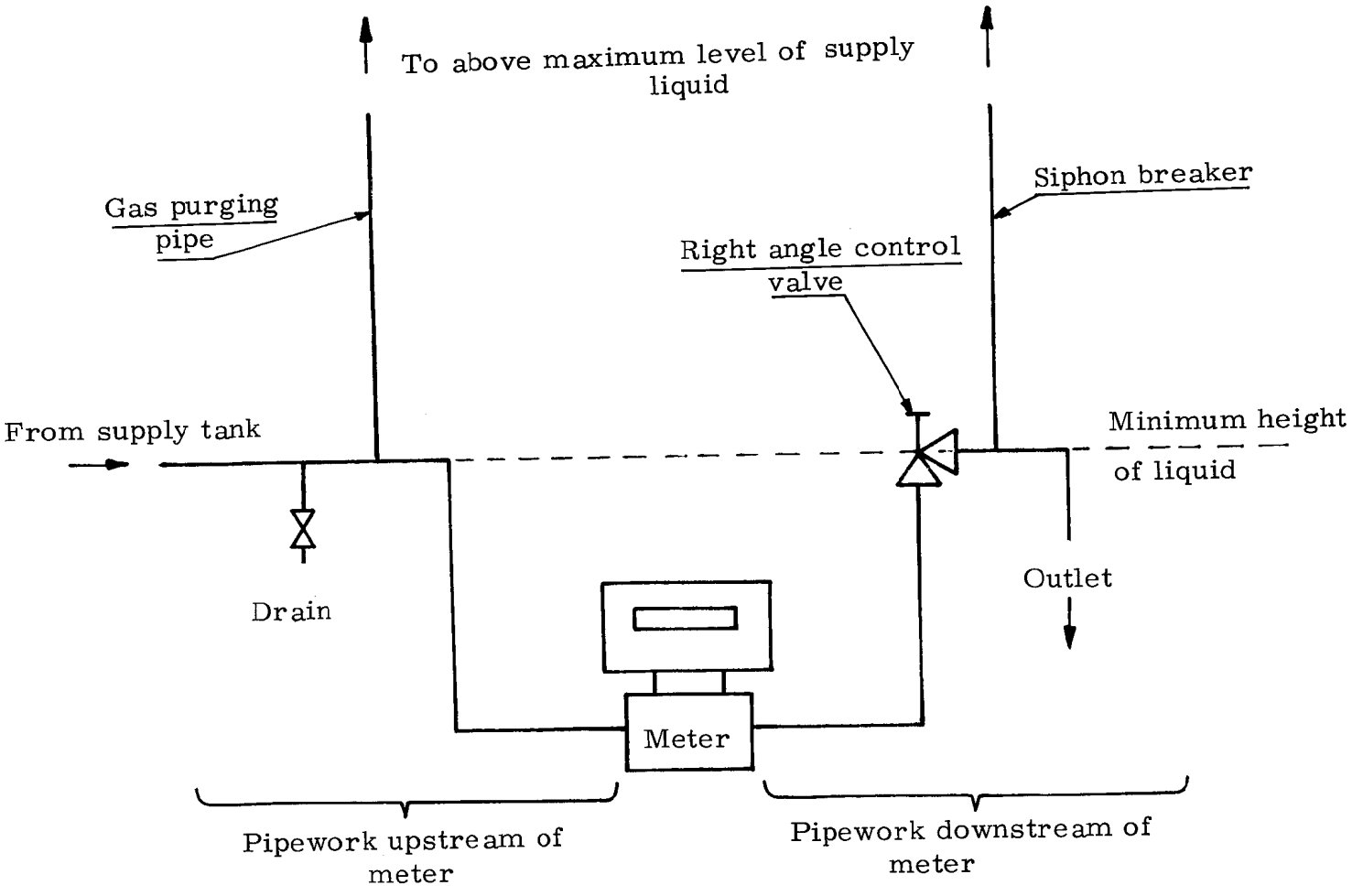
3. For a delivery which empties the supply tank, the minimum delivery for which the relative error from all sources, including the gas-purging error of 1 litre, would not exceed 2%* is 100 litres.

Gas Purging:

The effect of gas on the quantity delivered should not exceed 1,0 litre when a delivery is interrupted due to the liquid level falling so that it is insufficient to drive the meter, and the delivery continued by, for example, changing supply tanks. To test gas purging it will be necessary to allow the supply tank to empty during a test delivery and to refill or change the supply tank to allow the delivery into the proving measure to be completed. The control valve downstream of the meter should be left in the open position during the refilling or changeover of the supply tank. When provision is made for draining the manifold or supply pipes, these should be drained before the supply tank is refilled or changed. No provision is made for draining the meter and associated pipework.

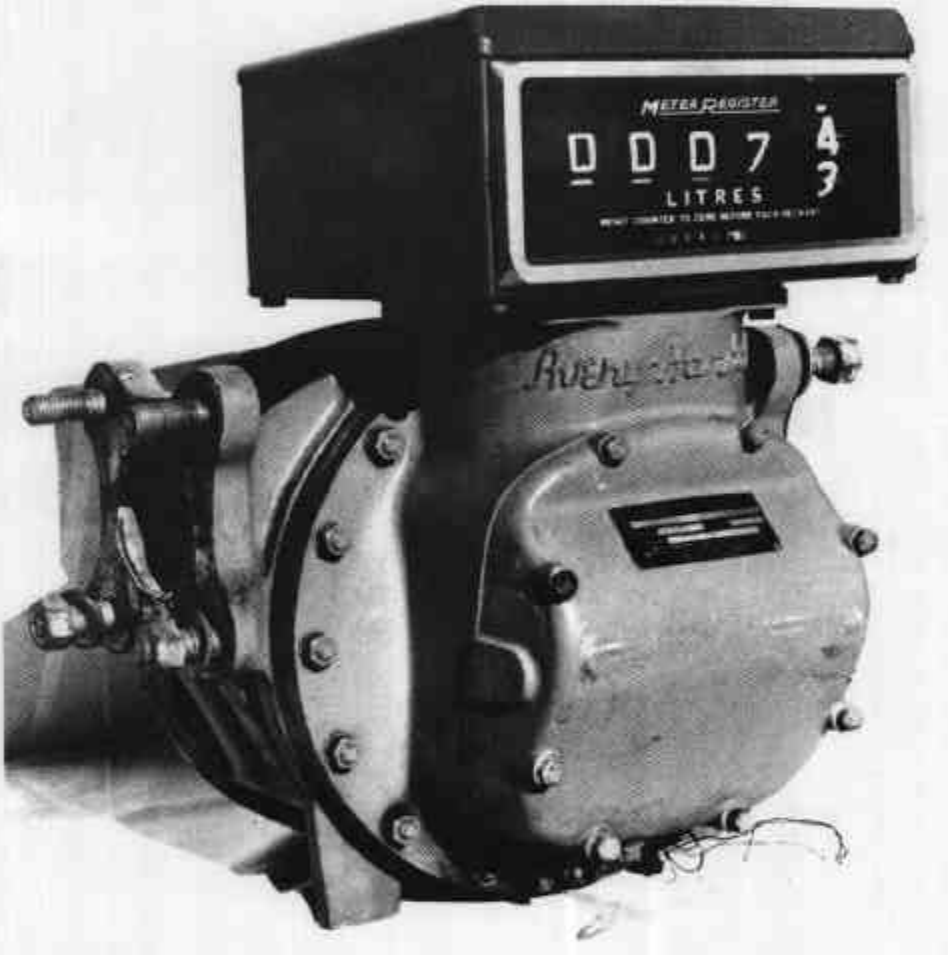
* This includes the 0,5% error permitted for gas purging.

FIGURE 5/6D/20 - 1



Gravity-feed Flowmeter

FIGURE 5/6D/20 - 2



Avery-Hardoll SBM 150 Meter with VR 1624 Indicator

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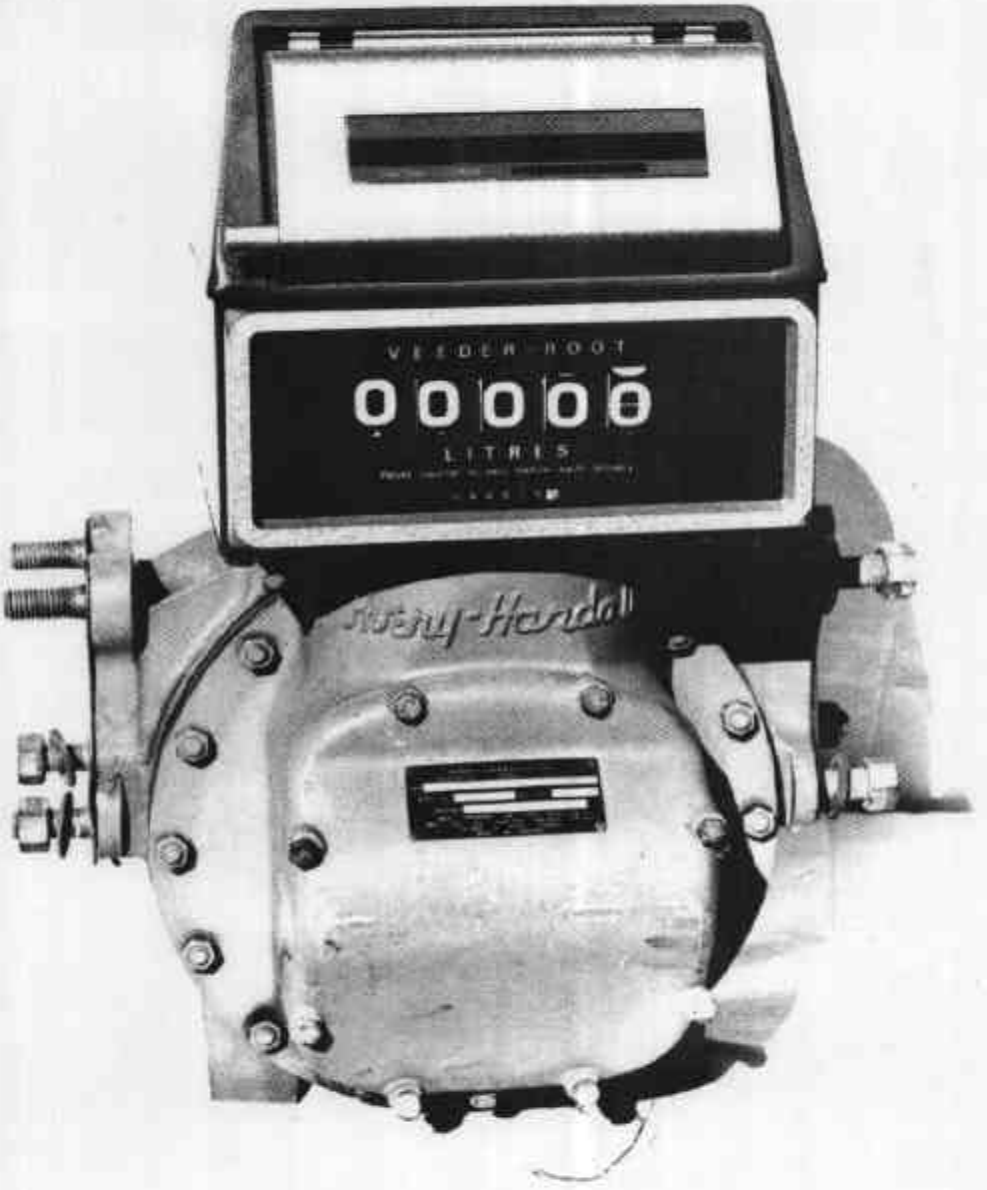
FIGURE 5/6D/20 - 3



Avery-Hardoll SBM 150 Meter with VR 7085 Indicator
and Ticket Printer

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