Telegrams: Telephone:

CERTIFICATE OF APPROVAL No 5/6B/42

This is to certify that the patterns of the

Gilbarco Flowmeter (Pipeline) with Tokheim 682 Meter

submitted by Gilbarco Australia Ltd, 16-34 Talavera Road, North Ryde, New South Wales, 2113,

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

Date of Approval: 14 December 1976

The patterns are described in Technical Schedule No 5/6B/42, and in drawings and specifications lodged with the Commission.

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 5/6B/42".

Approval is granted on condition that:

- 1. The maximum flow rate is a flow rate between 25 and 150 ℓ/\min .
- 2. The viscosity of the liquid measured is between 0,5 and 200 mPa.s.
- 3. The liquid (commercial or technical name) for which the instrument is verified is nominated on the instrument data plate.
- 4. The pump suction operates under a positive liquid head.
- 5. Air does not enter the pump, either by the supply tank being of adequate capacity to prevent the entry of air, or by other means.

Signed

Countine Officer



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6B/42

Pattern:Gilbarco Flowmeter (Pipeline) with Tokheim 682 MeterSubmittor:Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113.

Date of Approval: 14 December 1976

Conditions of Approval:

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Description:

The pattern (see Figure 1) is a flooded-suction pipeline flowmeter. The flowmeter comprises the following:

- 1. Supply tank.
- Pump a positive or non-positive displacement pump mounted lower than the minimum height of the liquid in the supply tank.

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The supply pipe from the tank has a continuous fall to the pump. Provision is made for a pressure gauge to be connected to the suction side of the pump.

The pump is for the exclusive use of the flowmeter, that is, without alternative outputs; alternatively the flowmeter flow rate stays within the approved flow-rate range (5 : 1) for all combinations of alternative uses of the output from the pump.

- 3. A non-return value in the pipe between the pump and the "gas purger", or an arrangement of the components and piping to keep the system full of liquid at all times.
- 4. Tokheim 683 gas purger and strainer (see Figure 2).
- 5. Tokheim 682 Inline 38-mm meter (see Figure 2); a back-pressure valve may be incorporated in the outlet of the meter.
- 6. Veeder-Root 7085 zero-start single-handle reset indicator and ticket printer (see Figure 2). 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.
- 7. Outlet-control valve located downstream from the meter; no intermediate offtake may be fitted. It is either followed by an anti-drain valve which retains a pressure of not less than 55 kPa, or it is incorporated in an arrangement of piping which ensures that the meter and delivery pipe do not drain. The anti-drain valve if fitted or, if not fitted, the outlet-control valve is the point at which the delivery occurs.

8. Sealing -

- (a) the meter calibration, cover-plate bolts and the attachmentmounting bolts are sealed with a sealing wire, the ends of which are terminated beneath a fixed lead-plug seal (see Figure 2); and
- (b) a data plate marked:
 - (i) "verified for, x being the name of the

specific liquid for which the instrument is
verified;* and

(ii) "maximum flow rate &/min" for which the instrument is verified,

is attached ito the instrument either by the above sealing wire or by a lead-plug seal (see Figure 3).

The approval includes:

- ... 1. A 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 3).
 - 2. A Veeder-Root 7084 single-handle reset accumulative ticket printer and indicator. The ticket printer has 1-litre increments and the indicator has a 1-litre scale interval. The aperture through which the first element is viewed is widened in the direction of travel.

Special Tests:

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

* The approval for each of the following liquids is based upon the liquid having a viscosity within the range specified for temperatures of 5°C to 40°C, taking into account the variations in the viscosity of each product which occur with the output from a single refinery or between different refineries and at different times throughout each year:

Liquid ¹	Permitted viscosity range
Petrols	0,4 to 0,7 mPa.s
Kerosene ²	0,6 to 2,2 mPa.s
Heating oil ³	0,8 to 4,0 mPa.s
Diesel fuel	1,7 to 8,3 mPa.s
4	8,3 to 200 mPa.s
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Note:

- ¹ A known trade abbreviation of the name of the liquid is acceptable.
- ² "Kerosene" includes white spirits and aviation turbine fuel.
- ³ Maximum viscosity at 20°C is 3 mPa.s.
- ⁴ Name of liquid petroleum to be inserted.

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- 3. Minimum delivery the minimum delivery will be 200 litres when an accumulative ticket printer is fitted, 100 litres when a zerostart ticket printer is fitted, and 20 litres when only an indicator is fitted.
- 4. Flow rate if the pump has alternative outputs check that the meter flow rate stays within the approved 5 : 1 flow-rate range for all combinations of alternative uses of the output from the pump.
- 5. Positive head a pressure gauge fitted to the inlet side of the pump should indicate a positive head at all flow rates.
- 6. Test delivery if the test delivery is less than 10 times the minimum delivery, inspectors should ensure that the non-flow-dependent error (reading error of the indicator or rounding error of the ticket printer) is minimised by making the delivery end at a graduation line.

FIGURE 5/6B/42 - 1



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Pipeline Flowmeter - Schematic Diagram (alternative shown dotted)

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Tokheim 682 Meter with Gas Purger, and VR 7085 Indicator and Ticket Printer



Tokheim 682 Meter and VR 1624 Indicator -Sealing of Data Plate