Telegrams: NATSTANCOM SYDNEY
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CERTIFICATE OF APPROVAL No 5/6H/11

This is to certify that the patterns of the

Gilbarco Flowmeter with Tokheim Meter Models 1450-15-SP-6-GB
and Others

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: 3 April 1978

The patterns are described in Technical Schedule No 5/6H/11, and in drawings and specifications lodged with the Commission.

The approval is subject to review on or after 1 April 1983.

All instruments conforming to this approval shall be marked with the approval number "NSC No 5/6H/11".

Approval is granted on condition that:

1. The "maximum flow rate" is a flow rate between 160 and 225 L/min; the minimum flow rate is 20% of the maximum flow rate achievable with a particular instrument.

2. The maximum system pressure is limited to 600 kPa.

3. The pump suction operates under a positive liquid head.

4. The viscosity of the liquid measured is within the range of 0,4 to 8,3 mPa.s.

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

Signed

J. K. Hendrie

Acting Executive Officer

31/5/78

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6H/11

Pattern: Gilbarco Flowmeter with Tokheim Meter Models 1450-15-SP-6-GB and Others

Submittor: Gilbarco Australia Ltd,
16-34 Talavera Road,
North Ryde, New South Wales, 2113.

Date of Approval: 3 April 1978

Conditions of Approval:

1. The maximum flow rate is a flow rate between 160 and 225 L/min; the minimum flow rate is 20% of the maximum flow rate achievable with a particular instrument.

2. The maximum system pressure is limited to 600 kPa.

3. The pump suction operates under a positive liquid head.

4. The viscosity of the liquid measured is witnin the range 0,4 to 8,3 mPa.s.

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

All instruments conforming to this approval shall be marked "NSC No 5/6H/11".

Description:

The pattern (see Figure 1) is a vehicle-mounted instrument for the delivery of liquid petroleum of viscosity between 0,4 and 8,3 mPa.s at a "maximum flow rate" of up to 225 L/min and at a maximum system pressure at no flow of 600 kPa.

The flowmeter comprises the following:

1. Postive displacement pump mounted on the assembly at a point lower than the minimum height of the liquid in the supply tank. The supply pipe from the tank to the pump slopes downward to the pump. The pump by-pass is set so that the maximum no-flow system pressure is not more than that marked on the instrument

data plate. Provision is made for a pressure gauge to be connected between the pump and the gas purger.

2. Non-return valve 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.

3. Tokheim 1506A-20 gas purger (see Figure 2).

4. Tokheim 1450-15-SP-6-GB offset 38-mm meter (see Figure 2).

5. 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 scale interval of 1 litre; 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.

6. Back-pressure valve with integral by-pass.

7. Hose — any type, bore or length of hose may be used, provided that the minimum delivery determined from Table 1 and marked on the instrument's data plate for reference by the Weights and Measures Authority is acceptable to that Authority taking into account the usage of the instrument.

8. Anti-drain valve (see Figure 3) — an anti-drain valve and swivel coupling is fitted on the end of the hose. The anti-drain valve retains a pressure of not less than 55 kPa.

9. Nozzle — any nozzle with an integral anti-drain valve located downstream of the main nozzle valve. The integral anti-drain valve shall retain a pressure of not less than 5 kPa.

10. Marking — instrument data plate(s) sealed to the instrument **marked:***

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* The approval for 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
Petrol	0,4 to 0,7 mPa.s
Kerosene[2]	0,6 to 2,2 mPa.s
Heating oil	1,1 to 4,0 mPa.s
Diesel fuel	1,7 to 8,3 mPa.s

Note: [1] A known trade abbreviation of the name of the liquid is acceptable.
[2] Kerosene includes white spirits and aviation turbine fuel.

(a) "approved for petrol"; or

(b) "approved for kerosene"; or

(c) "approved for heating oil"; or

(d) "approved for diesel fuel"; and

(e) "minimum delivery ...y... litres", y being the minimum delivery determined from Table 1;

(f) "maximum no-flow pressure ...x... kPa", x being the maximum system pressure when the nozzle is closed.

11. Sealing —

(a) the meter calibration, cover-plate bolts, and the indicator and ticket printer attachment-mounting bolts, by a sealing wire the ends of which terminate beneath a fixed lead stamping plug (see Figure 2); and

(b) the instrument data plate, by attaching it by a lead stamping plug or by threading the indicator sealing wire through a hole or holes in the data plate.

The approval includes:

1. The indicator being a Veeder-Root 1624 zero-start indicator with scale interval of 1 litre; the first element is marked with ten scale-mark lines numbered from 0 to 9 (see Figure 4). The aperture through which the first element is viewed is widened in the direction of travel; the meter is then known as a Tokheim 1400-15- -GB.

2. Gilbarco T279P hose nozzle (see Figures 5 and 6) with an integral anti-drain valve downstream of the main nozzle valve, which retains a pressure of not less than 55 kPa. The external anti-drain valve unit is not needed when this nozzle is used.

3. Gilbarco ZVA 25 ND 6-8 automatic hose nozzle (see Figures 7 and 8) with an integral anti-drain valve downstream of the main nozzle valve, which retains a pressure of not less than 55 kPa. The external anti-drain valve unit is not needed when this nozzle is used.

4. A Tokheim 1400-15-SP-6-GB 38-[illegible] inline meter (see Figure 9), when a Veeder-Root 7085 indicator and ticket printer is fitted or a

Tokheim 1450-15-SP-4-GB 38-mm inline meter when a Veeder-Root 1624 indicator is fitted.

Special Tests:

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

1. Hose Dilation

Weights and Measures inspectors should check that the maximum hose dilation, determined by the method described below, corresponds with the minimum delivery marked on the data plate in accordance with Table 1.

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

(a) With the pump operating, open and close the nozzle, then check that the no-flow system pressure is within 20 kPa of the maximum no-flow system pressure marked on the instrument data plate.

(b) With the pump stopped and the hose fully wound on its reel, open the nozzle to reduce the pressure in the hose to the anti-drain valve retaining pressure of about 55 kPa. Close the nozzle. Then fully unwind the hose from the reel, zero the 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 on the indicator. This quantity is equal to the maximum hose dilation.

2. Gas Purging

The effect of gas on the quantity delivered should not exceed 1% of the minimum delivery marked on the instrument data plate when a delivery is interrupted due to the supply tank running dry, and the delivery is 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, to stop the pump, and to refill or change the supply tank to allow the delivery into the proving measure to be completed.

Non-flow-dependent Errors:

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

(a) 1-litre rounding error for the ticket printer with 1-litre

increments;

(b) 0,2-litre reading error for the indicator which has the first element indicating by 1-litre graduations;

(c) ...w...-litre gas-purging error, w being 1% of the minimum delivery marked on the instrument data plate; and

(d) ...z...-litre nose dilation, z being the maximum value of nose dilation for which the instrument is verified — see Table 1.

2. The minimum delivery for which the relative error from all sources would not exceed 1,5% is marked on the instrument data plate.

TABLE 1

Minimum delivery marked on instrument data plate	Maximum hose dilation	
	Indicator only fitted	Indicator and printer fitted
L	L	L
50	0,3	-
100	0,8	0
150	1,3	0,5
200	1,8	1,0
250	2,3	1,5
300	2,8	2,0
350	3,3	2,5
400	3,8	3,0
450	4,3	3,5
500	4,8	4,0

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NATIONAL STANDARDS COMMISSION

CANCELLED

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL NO. 5/6H/11

CHANGE NO. 1

The following change is made to the description of the Gilbarco Flowmeter with Tokheim Meters.

given in Technical Schedule No. 5/6H/11 dated 31 May 1978.

Delete Items 8 and 9 Page 2 and substitute:

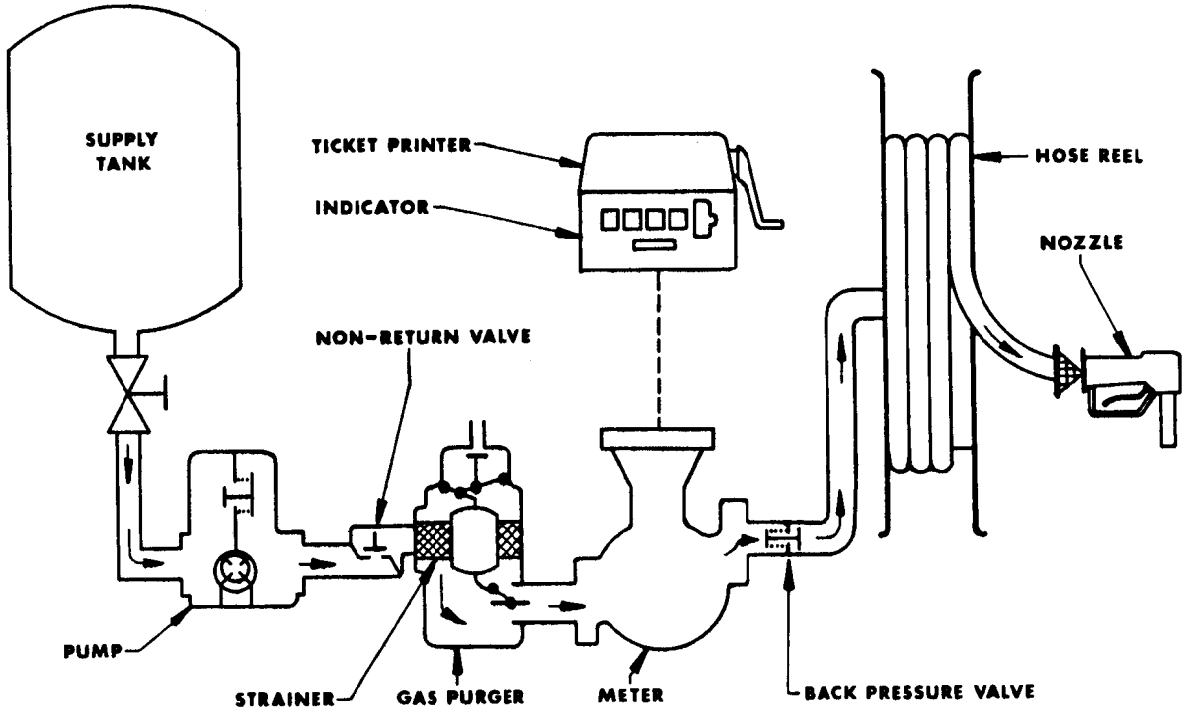
9. Nozzle - any nozzle with an integral anti-drain valve located downstream of the main nozzle valve with a retaining pressure of not less than 55 kPa. If the downstream anti-drain valve has a retaining pressure of less than 55 kPa an additional anti-drain valve with a retaining pressure of not less than 55 kPa, and which may be fitted with a swivel (Figure 3), shall be fitted between the hose and the nozzle in which case the downstream anti-drain valve shall have a retaining pressure of not less than 5 kPa.

Signed

Executive Director

19/2/82

FIGURE 5/6H/11 - 1



Gilbarco Flowmeter with Tokheim Meter

FIGURE 5/6H/11 - 2

Tokheim 1506A-20 Gas Purger, Tokheim 1450-15-SP-6-GB
Meter and Veeder-Root 7085 Indicator and Ticket Printer

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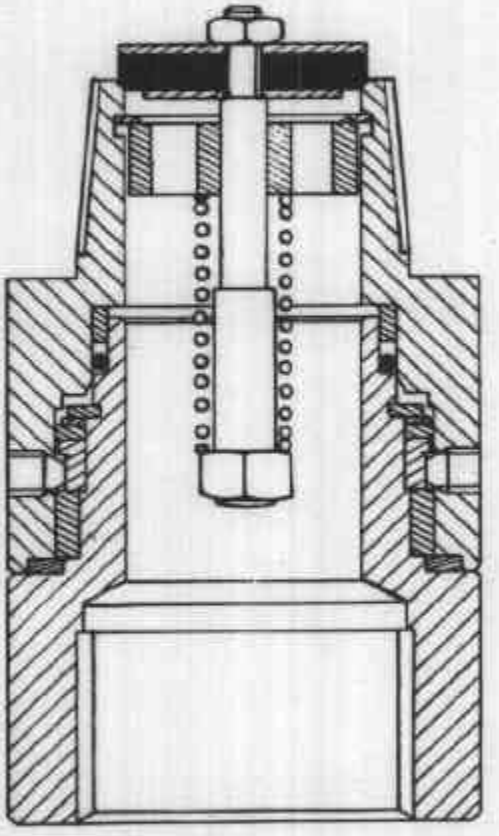
FIGURE 5/6H/11 - 3



Anti-drain Valve and Swivel Coupling

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FIGURE 5/6H/11 - 4

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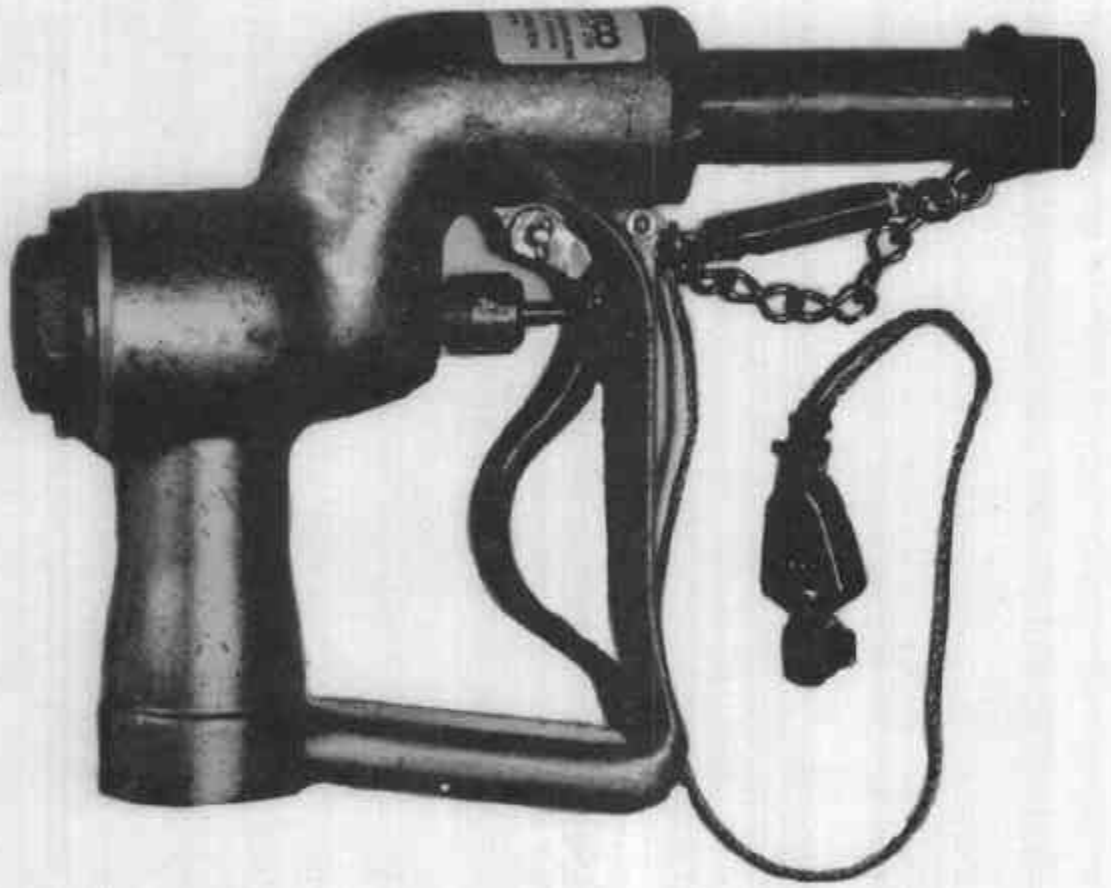
Veeder-Root 1624 Indicator

FIGURE 5/6H/11 - 5



:ilbarco T279P Hose Nozzle

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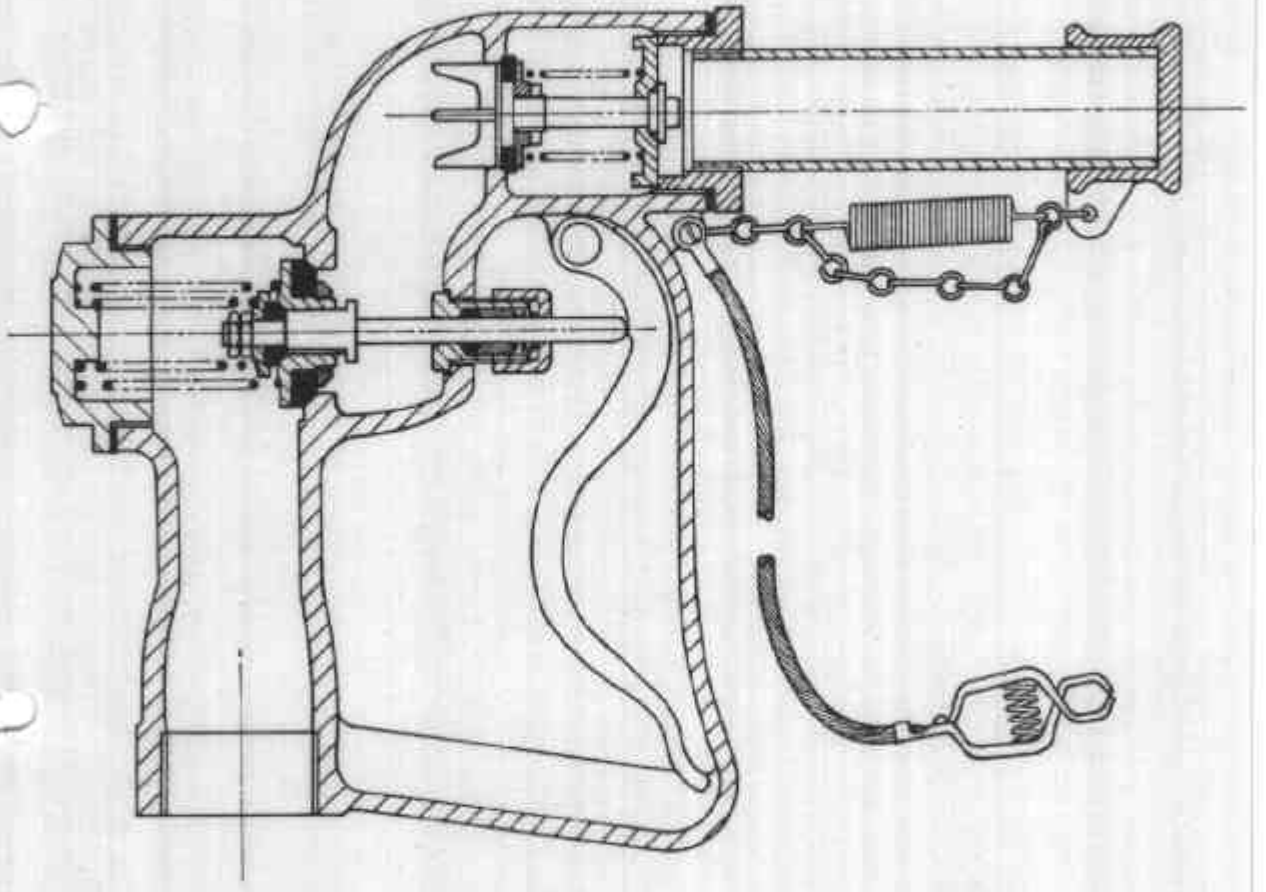
FIGURE 5/6H/11 - 6



Gilbarco T279P Hose Nozzle

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FIGURE 5/6H/11 - 7

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ZVA 25 ND 6-8 Automatic Hose Nozzle

FIGURE 5/6H/11 - 8

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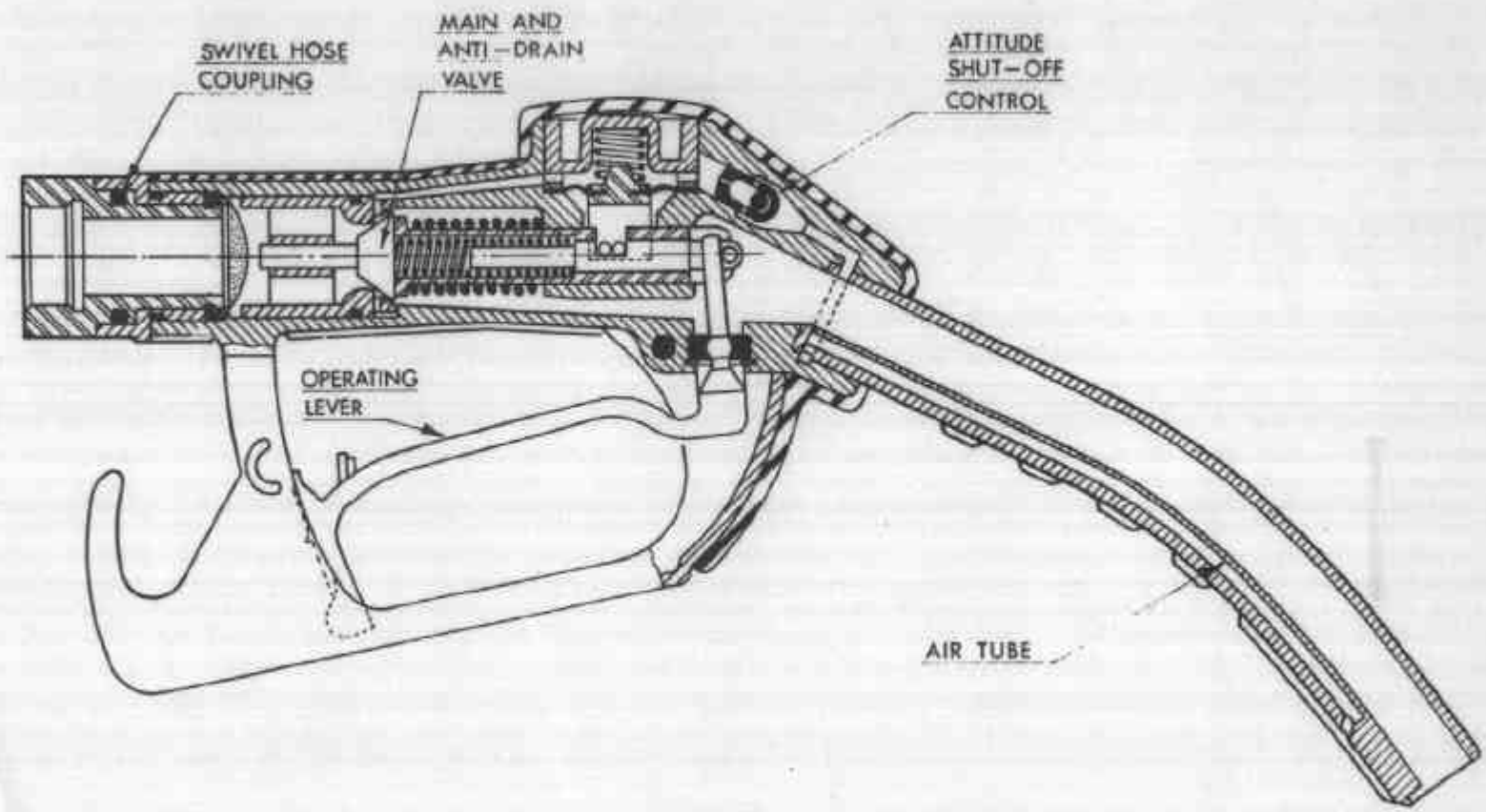
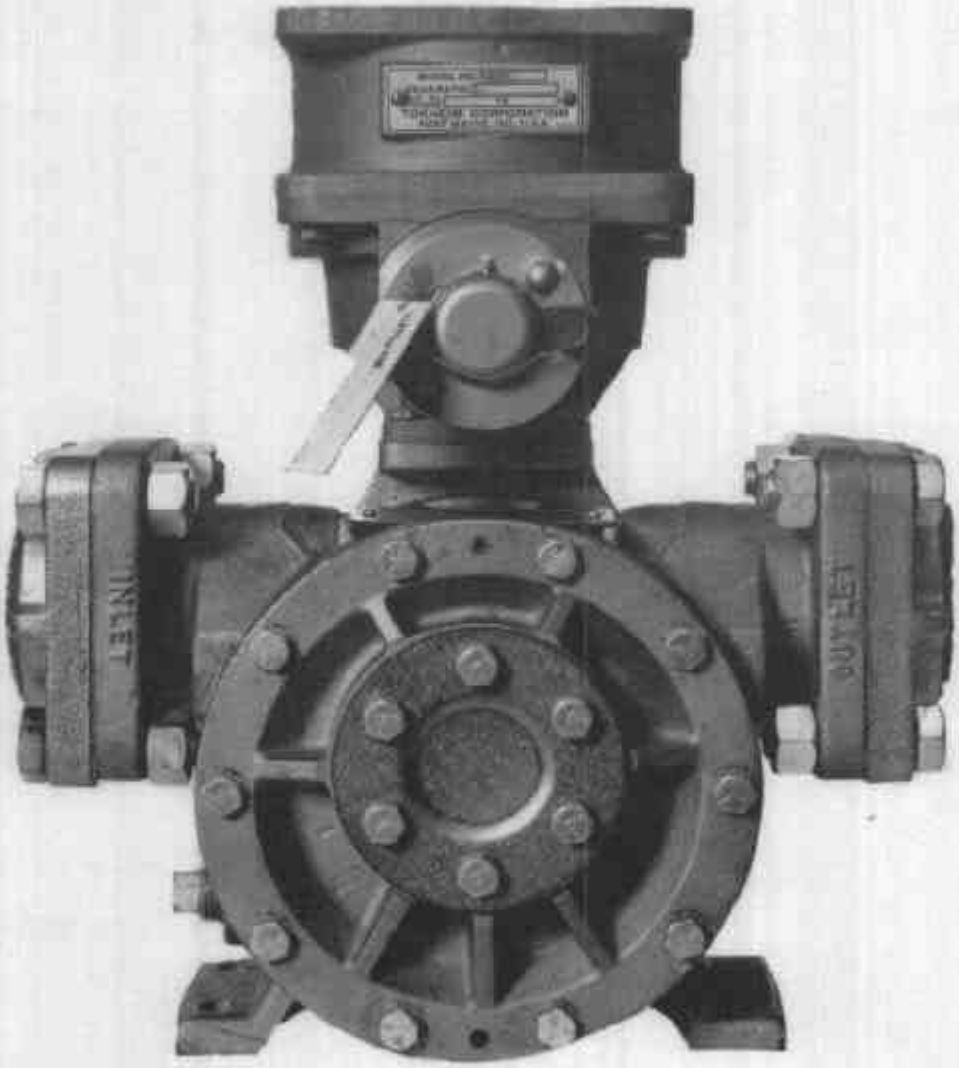


ZVA 25 ND 6-8 Automatic Hose Nozzle — Schematic Diagram



Tokheim 1400-15-SP-6-GB Meter
(Note: The method of sealing is indicated in Figure 5/6H/11 - 2)