5/6B/71A
7 May 2003

National Standards Commission

12 Lyonpark Road, North Ryde NSW

Cancellation

Certificate of Approval No 5/6B/71A

This is to certify that the approval for use for trade granted in respect of the

Oilmeter Model SBM75 Bulk Flowmetering System

submitted by Liquip Sales Pty Ltd
13 Hume Road
Smithfield NSW 2164

has been cancelled in respect of new instruments as from 1 July 2003.

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

Certificate of Approval

No 5/6B/71A

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

Oilmeter Model SBM75 Bulk Flowmetering System

submitted by Liquip Sales Pty Ltd
13 Hume Road
Smithfield NSW 2164.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/3/95.
This approval expires in respect of new instruments on 1/3/96.

Instruments purporting to comply with this approval shall be marked NSC No 5/6B/71A and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with the Commission's Document 106.

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The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

DESCRIPTIVE ADVICE

Pattern: approved 19/2/90

- An OILMETER model SBM75 bulk flowmetering system for use with liquids having a kinematic viscosity range between 0.5 and 12.5 mm^2/s.

Variants: approved 19/2/90

1. A model SBM150 or BM200 bulk flowmetering system.

2. A model SBM75 bulk flowmetering system for use with liquids having a kinematic viscosity range between 12.5 and 1100 mm^2/s.

Technical Schedule No 5/6B/71A describes the pattern and variants 1 and 2.

Variants: approved 22/2/93

3. A model BM400 bulk flowmetering system.

4. A model BM600 bulk flowmetering system.

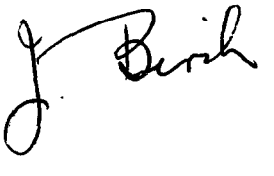
Technical Schedule No 5/6B/71A Variation No 1 describes variants 3 and 4.

FILING ADVICE

Certificate of Approval No 5/6B/71A dated 9/4/90 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6B/71A dated 31/3/93
Technical Schedule No 5/6B/71A dated 9/4/90 (incl. Test Procedure)
Technical Schedule No 5/6B/71A Variation No 1 dated 31/3/93
Figures 1 to 4 dated 9/4/90

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



National Standards Commission

TECHNICAL SCHEDULE No 5/6B/71A

Pattern: Oilmeter Model SBM75 Bulk Flowmetering System.

Submittor: Liquip Sales Pty Ltd
13 Hume Road
Smithfield NSW 2164.

1. Description of Pattern

A bulk flowmetering system using an Oilmeter model SBM75 flowmeter (Figure 1) which is approved for use with liquids having a kinematic viscosity range between 0.5 and 12.5 mm^2/s at maximum and minimum flow rates of 500 L/min and 100 L/min respectively. The minimum delivery is 100 litres.

1.1 Pipeline Flowmetering System (Figure 2)

The system comprises:

(i) A supply tank, optionally with a low-level detection device.

(ii) A pump of either positive displacement or centrifugal type - in the latter case the pump is mounted lower than the minimum height of the liquid in the supply tank. 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.

If the pump is not for the exclusive use of the flowmeter the flow rate through the meter must stay within the appropriate flow rate range for all combinations of alternative uses of the pump.

(iii) A non-return valve between the pump and the meter or an arrangement of the components and piping to keep the system full of liquid at all times.

(iv) An Oilmeter model SBM75 flowmeter (which has an aluminium casing) with a model FDA 75AL gas purger/strainer assembly (Figure 1). Provision is made for a pressure gauge to be connected downstream of the meter. The gas purger is approved on the condition that the pump is operated under a positive suction head.

(v) A combination of the following assemblies:

(a) A Veeder-Root VR788700 zero start indicator, with or without (c).

(b) A Veeder-Root VR789000 indicator/printer, with or without (c).

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(c) A Veeder-Root 7889 series preset counter with an Oilmeter model 705 preset-counter-operated outlet-control valve (Figure 1); a pressure relief pipe is fitted between the valve and the gas purger/strainer. The counter is marked PRESET NOT IN USE FOR TRADE.

(d) Any compatible Commission approved pulse generator, electronic bulk flowmeter controller/indicator and flow control valve.

(vi) An Oilmeter model 705 outlet-control valve with integral anti-drain valve (similar to that shown in Figure 1 but without a lever to the preset counter) and/or a flow control valve with a separate anti-drain valve located downstream from the meter with no intermediate outlet.

1.2 Loading-rack Flowmetering System (Figure 3)

This system is similar to the pipeline system except that the outlet control valve is replaced by one of the following:

(i) Top-loading arrangement - the highest point of the pipework forms a weir at a fixed level from which the delivery pipe drains to the outlet for all configurations of the loading arm whilst in operation. The outlet control valve is installed at or upstream of the highest point and a syphon breaker is installed to ensure complete draining of the pipework downstream of the weir.

Alternatively, an anti-drain valve which retains a pressure of not less than 55 kPa may be installed at the delivery point of the pipework; or

(b) Bottom-loading arrangement - a dry-break coupling located at the delivery point of the pipework.

1.3 Vehicle-mounted Flowmetering System (Figure 4)

This system is similar to the pipeline and loading-rack systems except that the outlet control valve is in the form of either a nozzle or a dry-break coupling at the end of a flexible hose. The pump is located lower than the minimum height of the liquid in the supply tank.

Any nozzle with integral outlet control valve. If fitted with an integral anti-drain valve, the valve shall be immediately before the outlet control valve. A separate anti-drain valve may be fitted to the nozzle end of the hose if an integral anti-drain valve is not part of the nozzle.

The anti-drain valve retaining pressure shall be not less than 55 kPa.

1.4 Sealing and Verification Provision

Provision is made for sealing the indicator or indicator/ticket printer, and the calibrator. Provision is also made for a verification mark to be applied.

1.5 Markings

Instruments are marked with the following data, together in the one location:

Manufacturer's name or mark		
Meter model		
Serial number		
NSC approval number		5/6B/71A
Maximum flow rate		..... L/min
Minimum flow rate		..... L/min
Nominal flow rate	(when flow rate is within ± 5% of nominal)	..... L/min
Minimum delivery		 L
Type of liquid for which the meter is verified		.....
Operating air temperature range		−10°C to +45°C

2. Description of Variants

2.1 Description of Variant 1

A bulk flowmetering system using an Oilmeter model SBM150 flowmeter (or a model BM200 flowmeter which has a steel casing) for use with liquids having a kinematic viscosity range between 0.5 and 12.5 mm^2/s at maximum and minimum flow rates of 1500 L/min and 150 L/min respectively. The minimum delivery is 300 litres.

2.2 Description of Variant 2

With the model SBM75 flowmeter of the pattern for use with liquids having a kinematic viscosity range between 12.5 and 1100 mm^2/s at maximum and minimum flow rates of 275 L/min and 50 L/min respectively.

TEST PROCEDURE

Instruments should be tested in accordance with the Inspector's Handbook using the liquid with which they will be used and which is marked on the data plate. Tests should be conducted in conjunction with any tests specified in the approval documentation for any indicator and/or temperature conversion device, etc. used.

Maximum Permissible Error at Verification/Certification

The maximum permissible error applied during a verification (or certification) test from normal flow rate to the minimum flow rate specified in the Certificate of Approval or Technical Schedule is ±0.3%.

National Standards Commission

TECHNICAL SCHEDULE No 5/6B/71A

VARIATION No 1

Pattern: Oilmeter Model SBM75 Bulk Flowmetering System.

Submittor: Liquip Sales Pty Ltd
13 Hume Road
Smithfield NSW 2164.

1. Description of Variants

1. Variant 3

A bulk flowmetering system using an Oilmeter model BM400 flowmeter for use with liquids having a kinematic viscosity range between 0.5 and 12.5 mm^2/s at maximum and minimum flow rates of 2400 L/min and 240 L/min respectively. The minimum delivery is 500 litres. BM series flowmeters have steel casings.

1.2 Variant 4

A bulk flowmetering system using an Oilmeter model BM600 flowmeter for use with liquids having a kinematic viscosity range between 0.5 and 12.5 mm^2/s at maximum and minimum flow rates of 3400 L/min and 340 L/min respectively. The minimum delivery is 1000 litres.

NOTIFICATION OF CHANGE

The following changes are made in Technical Schedule No 5/6B/71A dated 9/4/90;

1. The following should be added to clause 1.1 (v) (d):

   "NOTE: Where systems include a pulse generator and electronic indicator, the pulse generator shall be driven directly from the output shaft of the meter; it shall not be driven via a mechanical indicator nor via reduction gear trains.

   The use of a right-angled drive would be considered as direct as long as the drive consists of two bevel gears with a 1:1 ratio and provided the right-angled drive is before the drive to any mechanical indicator.

   Where the pulse generator is not driven directly, any electronic indicator connected to it shall be marked NOT IN USE FOR TRADE."

2. The first sentence of clause 1.4 is replaced by the following:

   "Provision is made for sealing the mechanical calibrator of the meter."

National Standards Commission

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6B/71A

CHANGE No 1

The following change is made to the approval documentation for the

Oilmeter Model SBM75 Bulk Flowmetering System

submitted by Liquip Sales Pty Ltd
13 hume Road
Smithfield NSW 2164.

In Technical Schedule No 5/6B/71A Variation No 1 dated 31/3/93, clause **1.2 Variant 4** is amended by adding the following before the last paragraph:

"The model BM600 may be used up to a maximum flow rate of 4100 L/min for intermittent use."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

5/6B/71A
22 September 2000

National Standards Commission

12 Lyonpark Road, North Ryde NSW

Notification of Change

Certificate of Approval No 5/6B/71A

Change No 2

The following change is made to the approval documentation for the

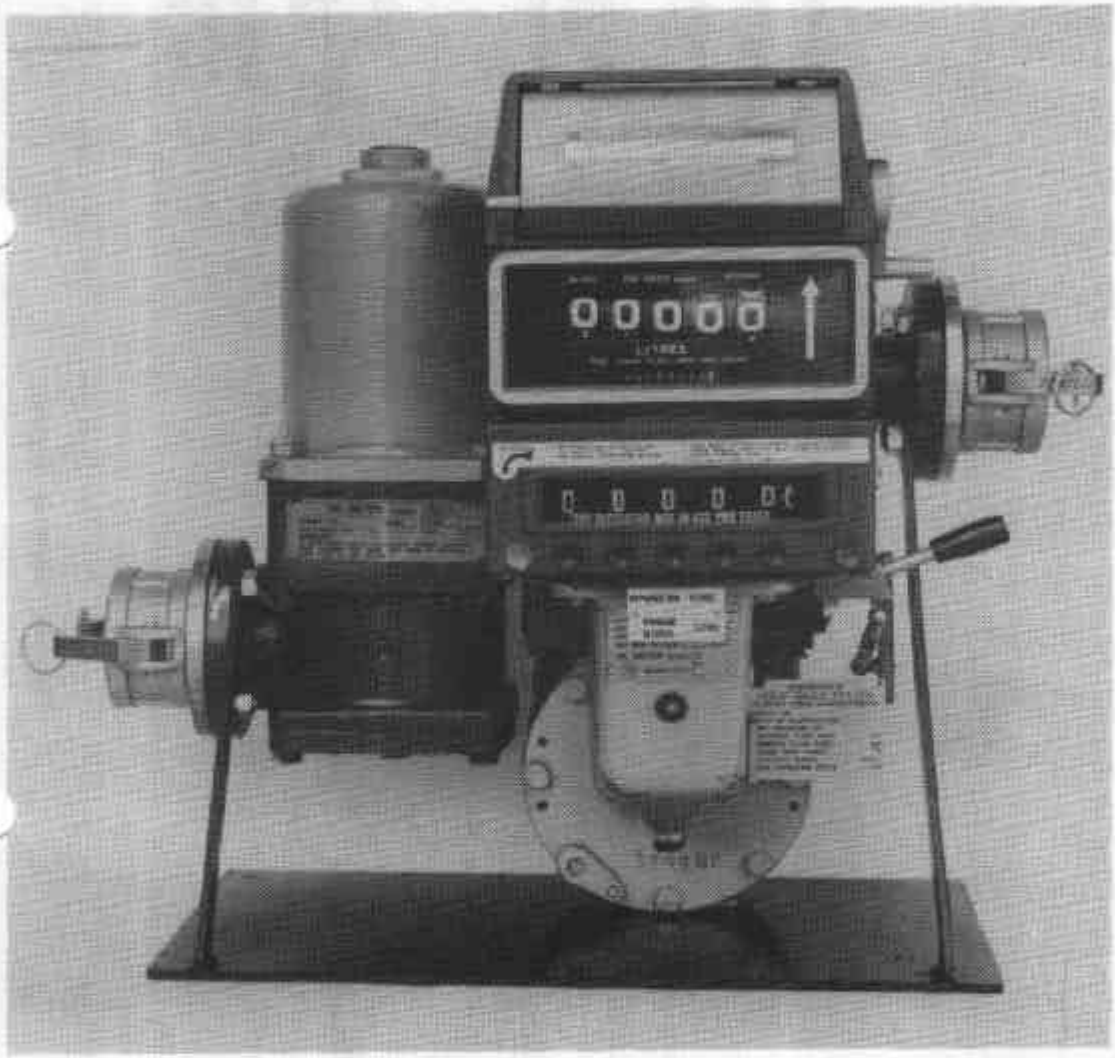
Oilmeter Model SBM75 Bulk Flowmetering System

submitted by Liquip Sales Pty Ltd
13 Hume Road
Smithfield NSW 2164.

In Certificate of Approval No 5/6B/71A dated 31 March 1993 the Condition of Approval referring to the expiry of the approval should be deleted.

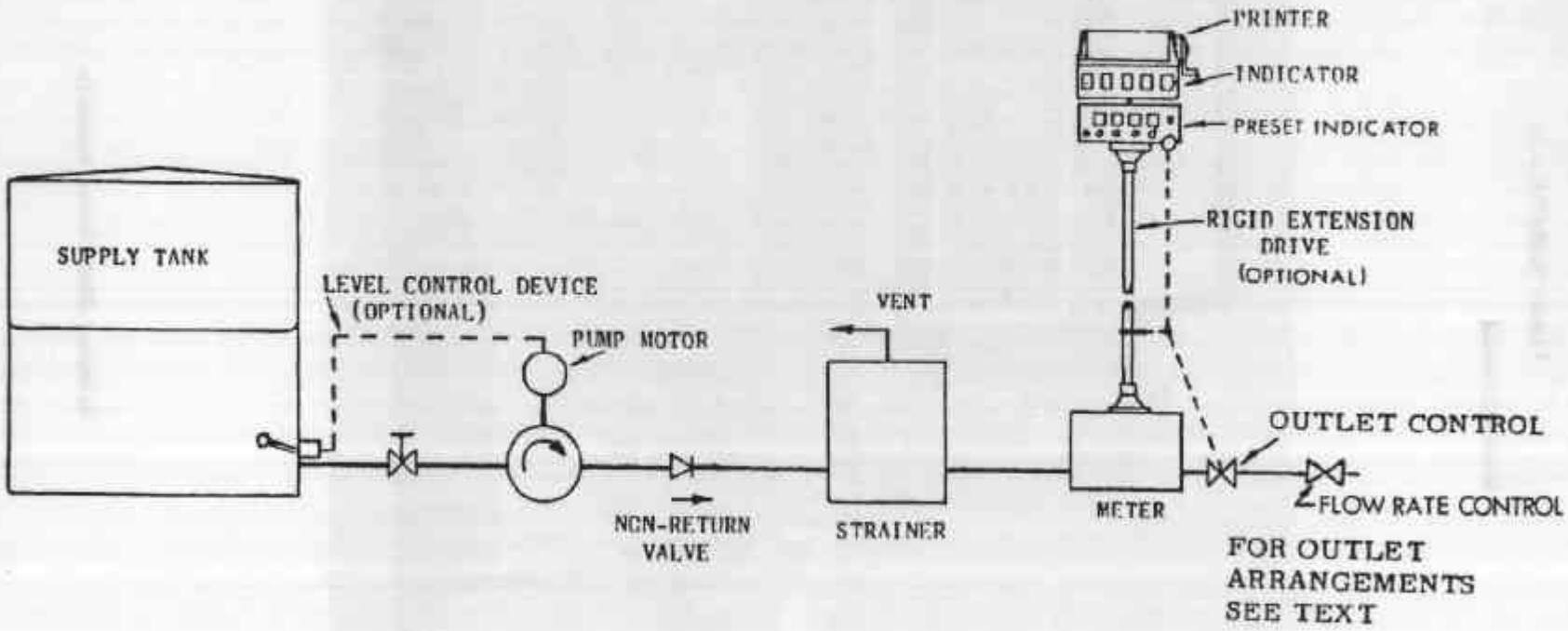
Signed by a person authorised under Regulation 63 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

Figure 5/68/71A - 1



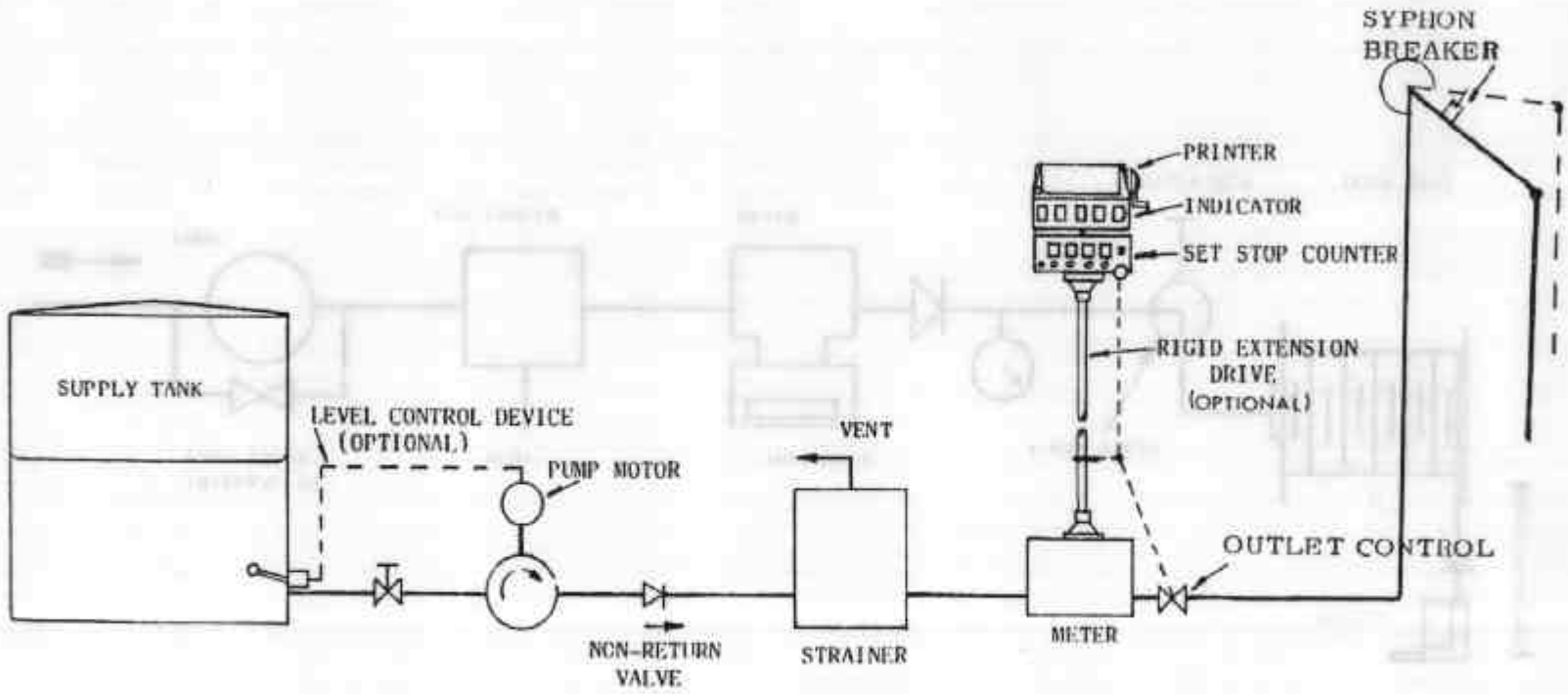
Oilmeter SBM75 Meter Assembly

Figure 5/68/71A - 2



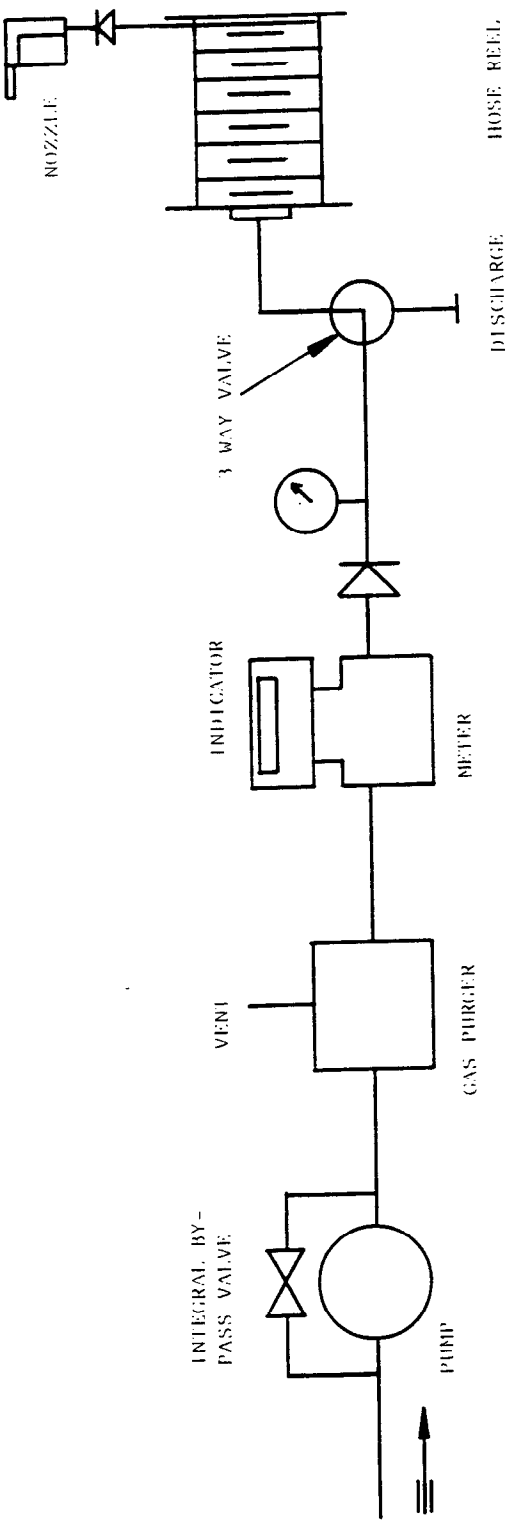
Pipeline Flowmeter System

Figure 5/6B/71A - 3



Loading-rack Flowmeter System

5/6B/71A
9/4/90



Vehicle-mounted Flowmeter System

Figure 5/6B/71A - 4