

5/6B/47A  
25/8/86



# NATIONAL STANDARDS COMMISSION

## NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

### REGULATION 9

#### CERTIFICATE OF APPROVAL No 5/6B/47A

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

Brooks Model B-40DB Flowmetering System

submitted by K J Baillie Pty Ltd  
12 Whiting Street  
ARTARMON NSW 2064.

This Certificate is issued upon completion of a review of NSC Approval No 5/6B/47.

#### Conditions of Approval

This approval is subject to review on or after 1/8/91.

Instruments purporting to comply with this approval shall be marked NSC No 5/6B/47A.

This approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.

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

Signed

Executive Director

#### Descriptive Advice

Pattern: approved 2/7/86

- Brooks model B-40DB pipeline, loading-rack and drum-filling flowmetering systems.

Technical Schedule No 5/6B/47A describes the pattern.

#### Filing Advice

The documentation for this approval comprises:

Certificate of Approval No 5/6B/47A dated 25/8/86  
Technical Schedule No 5/6B/47A dated 25/8/86  
Test Procedure No 5/6B/47A dated 25/8/86  
Figures 1 to 5 dated 25/8/86



# NATIONAL STANDARDS COMMISSION

## TECHNICAL SCHEDULE No 5/6B/47A

Pattern: Brooks Model B-40DB Flowmetering System.

Submitter: K J Baillie Pty Ltd  
12 Whiting Street  
ARTARMON NSW 2064

### 1. Description of Pattern

A flowmetering system using a Brooks model B-40DB flowmeter (Figure 1) which is approved for use with liquids having a viscosity range of 0.4 to 10 mPa.s at any flow rate between 375 L/min and 75 L/min.

#### 1.1 Pipeline Flowmetering System (Figure 2)

The system comprises:

- (i) A supply tank.
- (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 downstream of the meter.  
  
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) A Brooks B-40DB flowmeter with split compartment gas purger/strainer.
- (v) Any of the following assemblies:
  - (a) Veeder-Root model VR788700 zero-start indicator with or without (c).
  - (b) Veeder-Root model VR789000 zero-start or accumulative single-handle indicator/ticket printer with or without (c).
  - (c) Veeder-Root model VR7889 preset indicator with Brooks preset control valve. The preset indicator is not for trade use and must be so marked.
- (vi) An outlet control valve located downstream of 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; or
- (ii) Bottom-loading arrangement - a dry-break coupling located at the delivery point of the pipework.

### 1.3 Drum-filling Flowmetering System

This system (Figure 4) is similar to the pipeline and loading-rack systems except for the following:

- a) The meter is fitted with a Veeder-Root two-stage preset indicator, with automatic shut-off valve and linkage assembly controlled by the preset indicator which is set to repeat deliveries of 200 litres. This indicator is marked PRESET FOR 200 LITRES, and is used with or without the following:
  - (i) A Veeder-Root model VR788700 indicator, or
  - (ii) A Veeder-Root model VR789000 indicator/ticket printer.
- b) The system is arranged such that the meter operates at a constant flow rate ( $\pm 5\%$  of nominal) within the maximum and minimum flow rate range.
- c) The outlet is a nozzle with an anti-drain valve installed either in the nozzle or immediately before it, and having a retaining pressure of not less than 55 kPa.

### 1.4 Features Common to All Three Systems

#### 1.4.1 Markings

Instruments are marked with the following data, together in the one location on one or more permanently attached nameplates:

Manufacturer's name or mark	
Meter model	
Serial number	
NSC approval number	NSC No 5/6B/47A
Maximum flow rate	.....L/min
Minimum flow rate	.....L/min
Nominal flow rate*	.....L/min
Minimum delivery (pipeline/loading-rack systems)	.....L
Batch delivery (drum-filling systems)	200 L
Type of liquid for which the meter is verified	.....

\* To be included when flow rate is within  $\pm 5\%$  of nominal or when meter is used as a drum-filler.

In addition, except for drum-filling systems, if a preset indicator is fitted it shall be marked NOT FOR TRADE USE.

#### 1.4.2 Sealing and Verification Provision

The indicator or ticket printer/indicator may be sealed by passing a sealing wire through the attachment-mounting bolts terminating in a lead seal. The calibrator is sealed by the lead stamping plug provided for verification.

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TEST PROCEDURE No 5/6B/47A

The instrument should be tested in accordance with the Formal Conference Inspectors Handbook, with the liquid with which it will be used and which is marked on the data plate.

The maximum permissible errors applied during a verification test are specified in Document 118, First Edition dated May 1982.

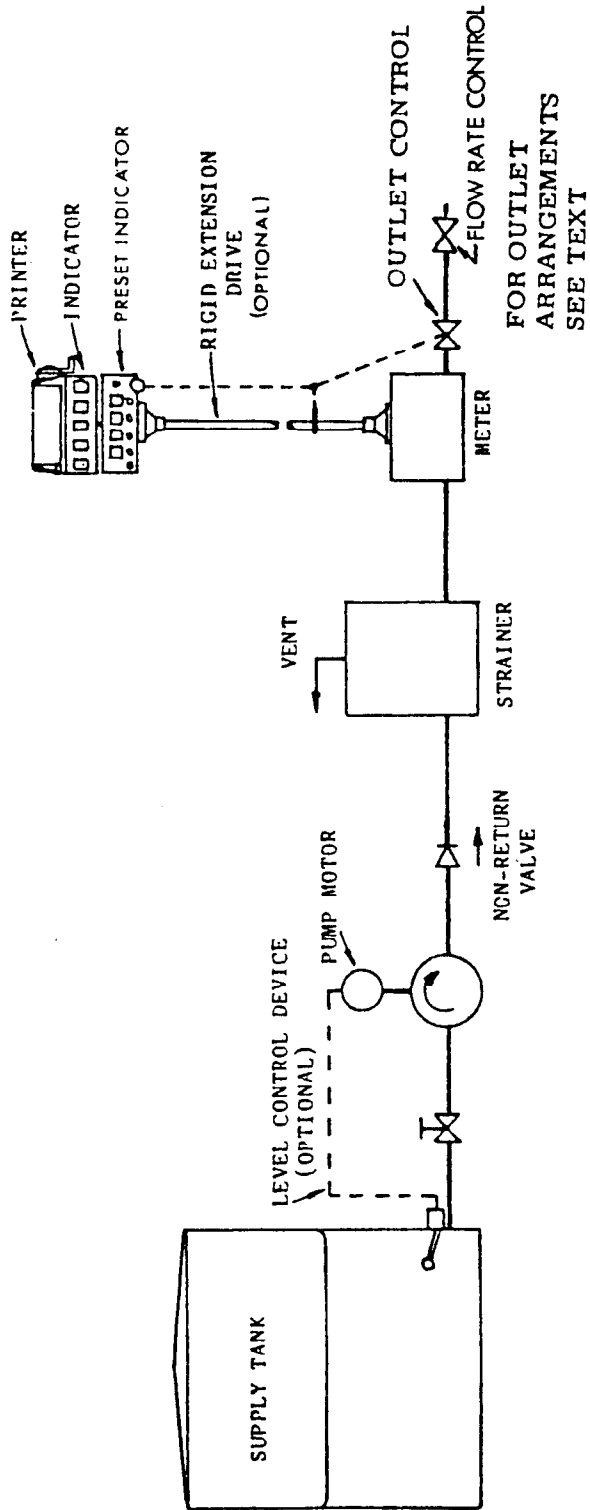
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FIGURE 5/6B/47A-1



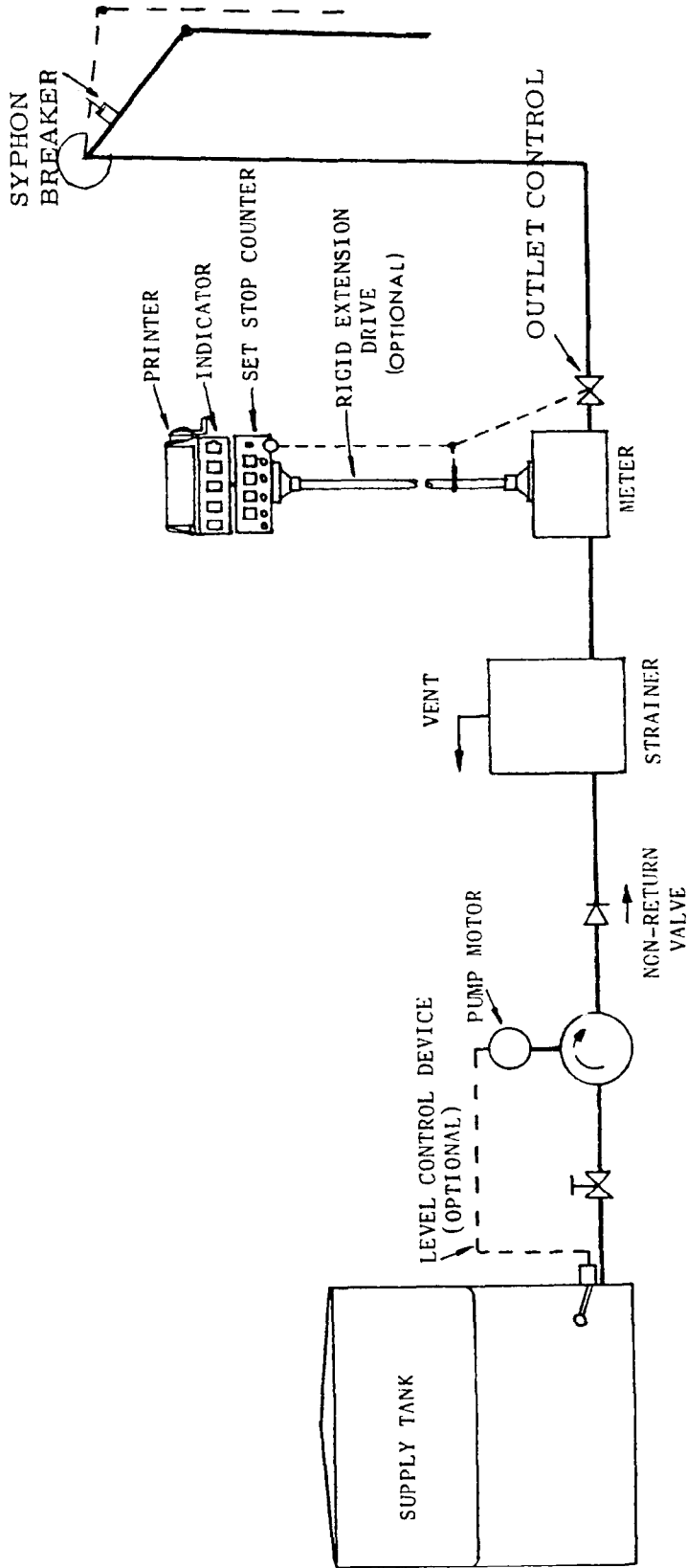
Brooks B-400B Meter, Strainer, and  
VR788700 Indicator

FIGURE 5/68/47A-2



Pipeline Flowmeter System

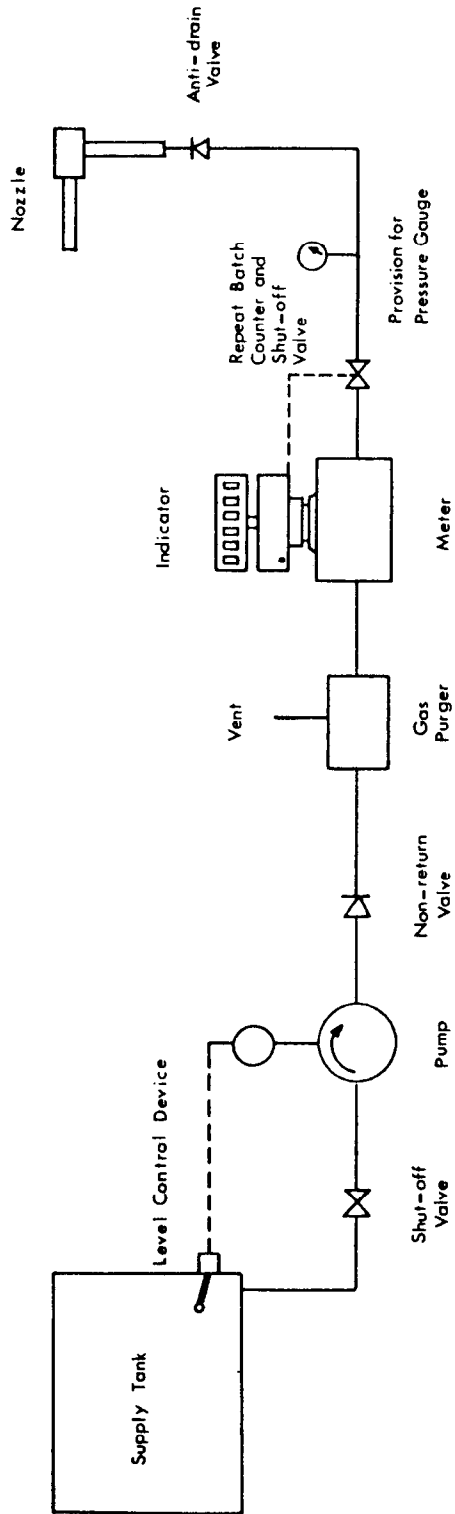
FIGURE 5/6B/47A-3



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Loading-rack Flowmeter System

FIGURE 5/6B/47A-4

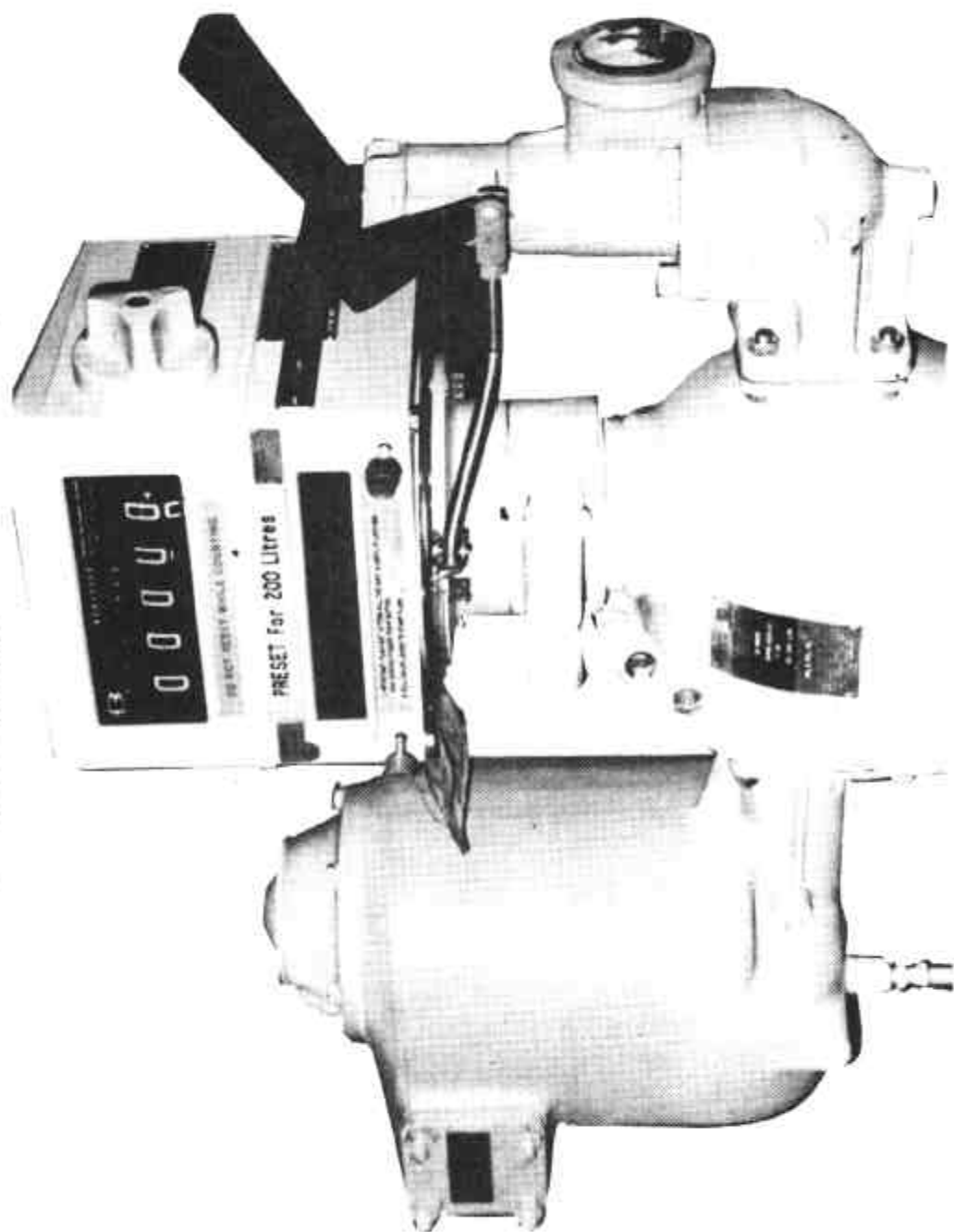


Drum-filling System



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FIGURE 5/6B/47A-5



Brooks B-400B Drum-filler