

National Standards Commission



Certificate of Approval

No 5/6B/150

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

Brooks Model PAR=I=TY TURBO Bulk Flowmetering System

submitted by Shell Parramatta Terminal
Durham Street
Rose Hill NSW 2142.

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.

CONDITIONS OF APPROVAL

This approval does NOT permit the verification/certification of new instruments.

This approval applies only to instruments in the field which have been previously verified; they may be re-verified, or verified after repairs, at the discretion of the relevant Weights and Measures authority.

Instruments purporting to comply with this approval shall be marked NSC No 5/6B/150 prior to re-verification.

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

This approval is subject to review on or after 1/1/94.

The submitter is to advise the Commission, by 1 January of each year, of how many instruments purporting to comply with this approval remain in use.

DESCRIPTIVE ADVICE

Pattern: approved 12/11/91

- . A bulk flowmetering system using a Brooks model PAR=I=TY TURBO flowmeter.

Technical Schedule No 5/6B/150 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 5/6B/150 dated 5/2/92
Technical Schedule No 5/6B/150 dated 5/2/92 (incl. Test Procedure)
Figures 1 to 5 dated 5/2/92



National Standards Commission

TECHNICAL SCHEDULE No 5/6B/150

Pattern: Brooks Model PAR=I=TY TURBO Bulk Flowmetering System.

Submittor: Shell Parramatta Terminal
Durham Street
Rose Hill NSW 2142.

1. Description of Pattern

A bulk flowmetering system using a Brooks model PAR=I=TY TURBO flowmeter which is approved for use with petrol (all grades), distillate (all grades), kerosene, AVCAT, JET A1, and heating oil.

The system shall be used with maximum and minimum flow rates of 2650 L/min and 450 L/min, respectively.

1.1 Security Arrangements

Load authorisation is controlled by a Hewlett-Packard model HP1000-based computerised system, which in turn is managed by a Shell model SMART mainframe-based computer system.

Security of operation is achieved by security doorlocks, computer access codes, restricted key access to the Spectra-Tek control system, and a remote audit trail record.

1.2 Pipeline Flowmetering System (Figure 1)

The system comprises:

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

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 any other arrangement of the components and piping to prevent reverse flow and to keep the system full of liquid at all times.

- (iv) A Brooks model PAR=I=TY TURBO 80 mm flowmeter mounted horizontally or vertically (Figures 2 and 3) and protected by a strainer with a gas purger attached. Provision is made for a pressure gauge to be connected downstream of the meter.
- (v) A Spectra-Tek control system comprising:
 - A model MERCURY L206 driver control station;
 - A model 869V supervisory terminal; and
 - A model 869R Bay Control microcomputer system.

Figure 4 shows a typical system.

- (vi) An outlet control valve located downstream of the meter with no intermediate outlet.

Controls for the injection of additives upstream of the meter, and a flow rate control valve may be fitted.

1.3 Loading-rack Flowmetering System (Figure 5)

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

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

1.4 Sealing and Verification/Certification Provision

Provision is made for sealing the indicator and the calibrator. Provision is also made for a verification/certification 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/150
Maximum flow rate L/min
Minimum flow rate L/min
Minimum delivery L
Type of liquid for which the meter is verified

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.

Maximum Permissible Errors at Verification/Certification

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

National Standards Commission



Cancellation Certificate of Approval No 5/6B/150

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

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

Brooks Model PAR=I=TY TURBO Bulk Flowmetering System

submitted by Shell Parramatta Terminal
 Durham Street
 Rose Hill NSW 2142

and described in Certificate of Approval and Technical Schedule No 5/6B/150

will be cancelled in respect of new instruments as from 30 June 1995.

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.

A handwritten signature in dark ink, appearing to be 'L. Smith' or similar, written over a faint circular stamp.

FIGURE 5/6B/150 - 1

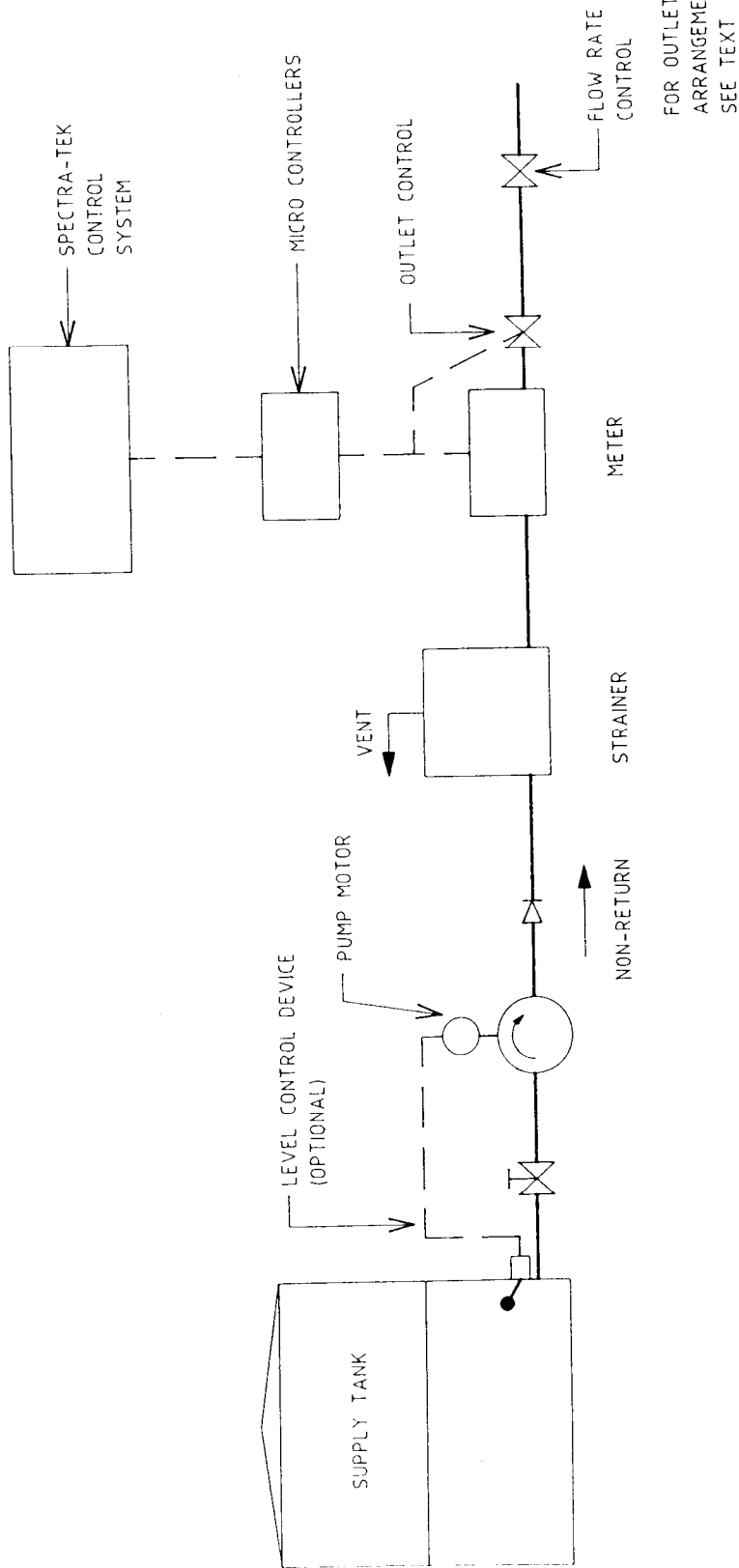
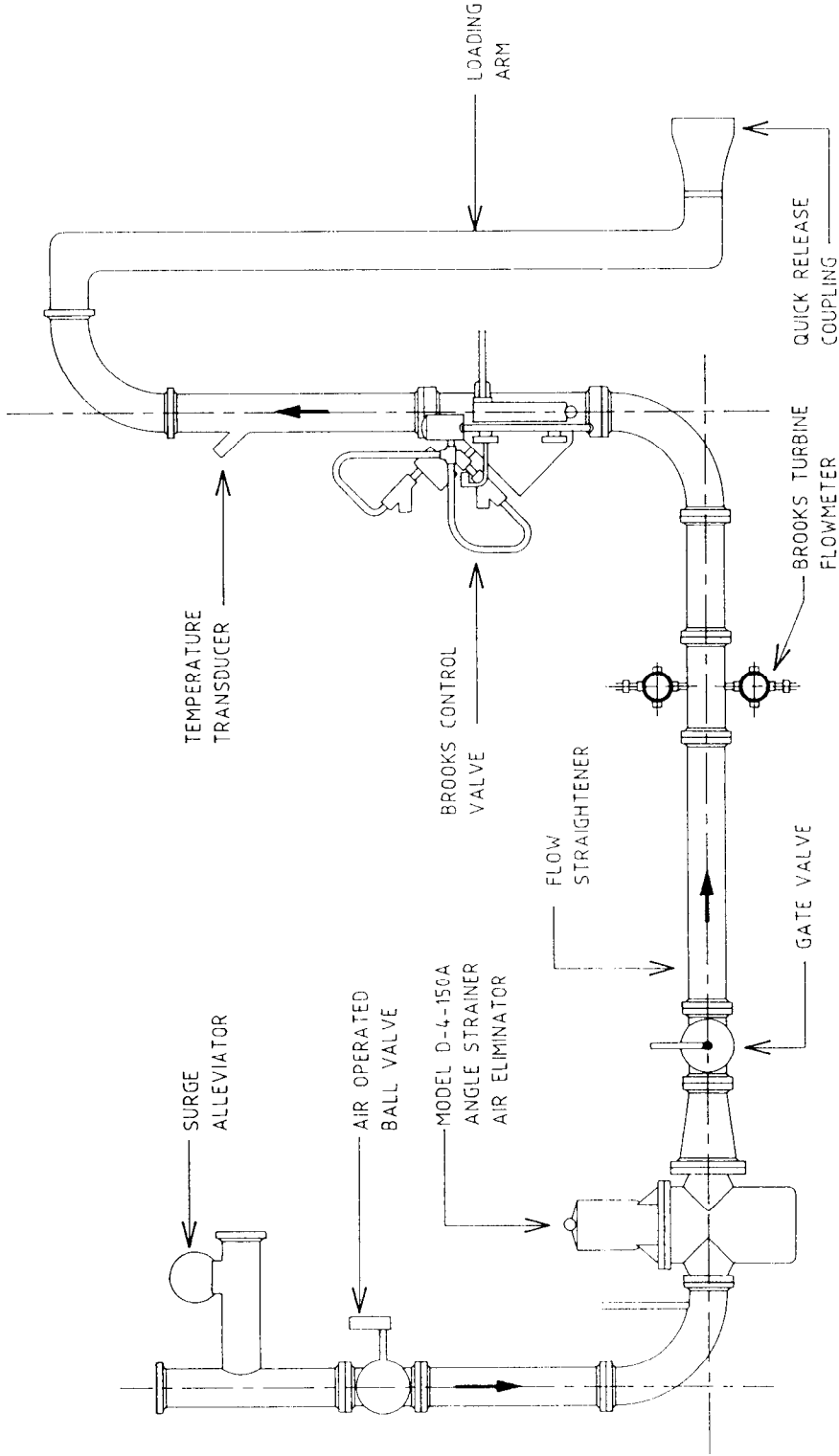
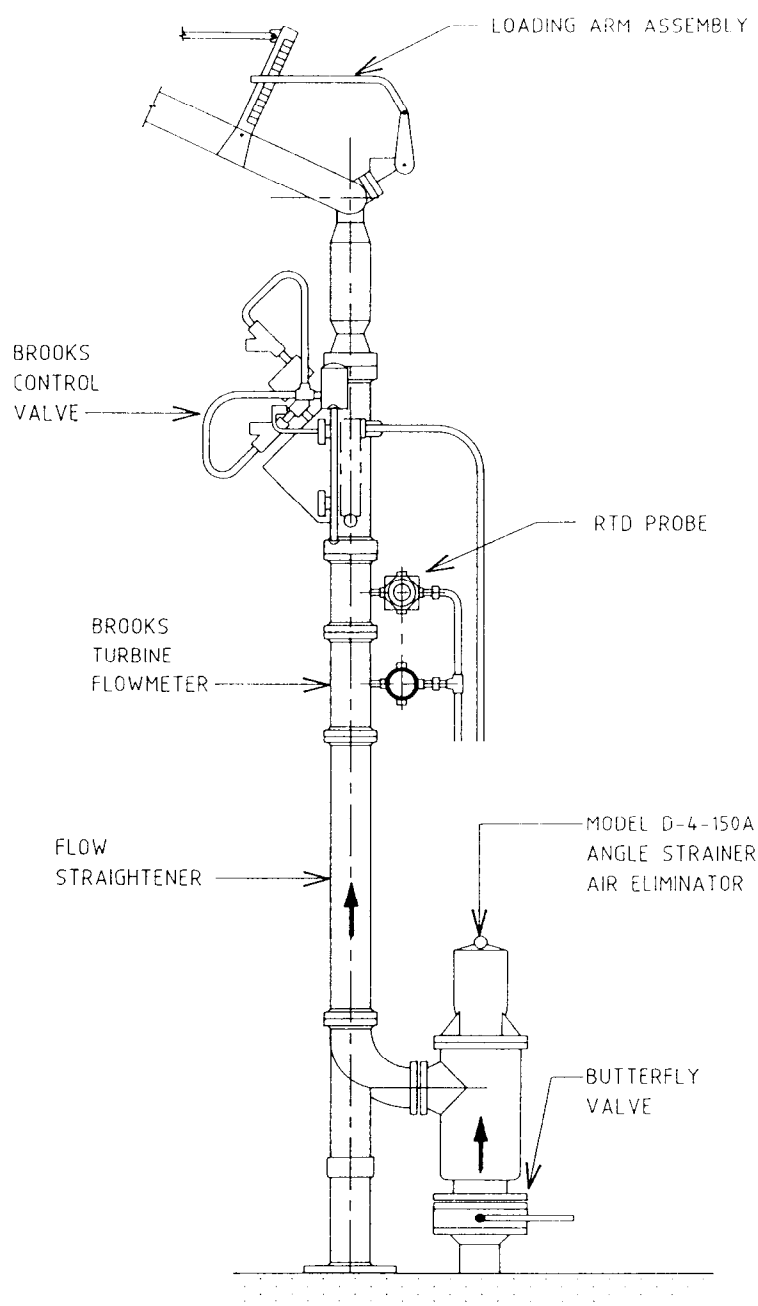


FIGURE 5/6B/150 - 2



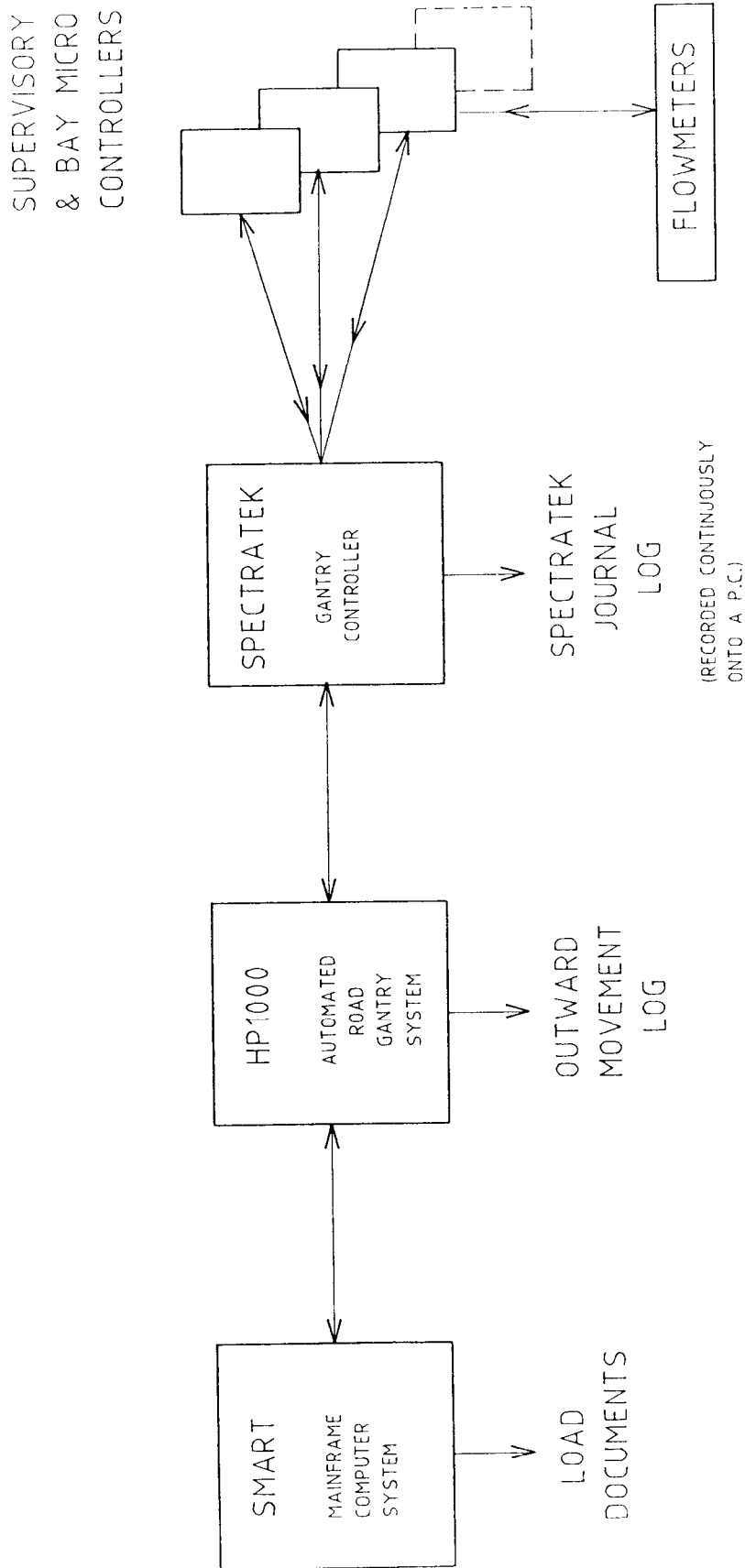
Showing Horizontal Mounting

FIGURE 5/6B/150 - 3



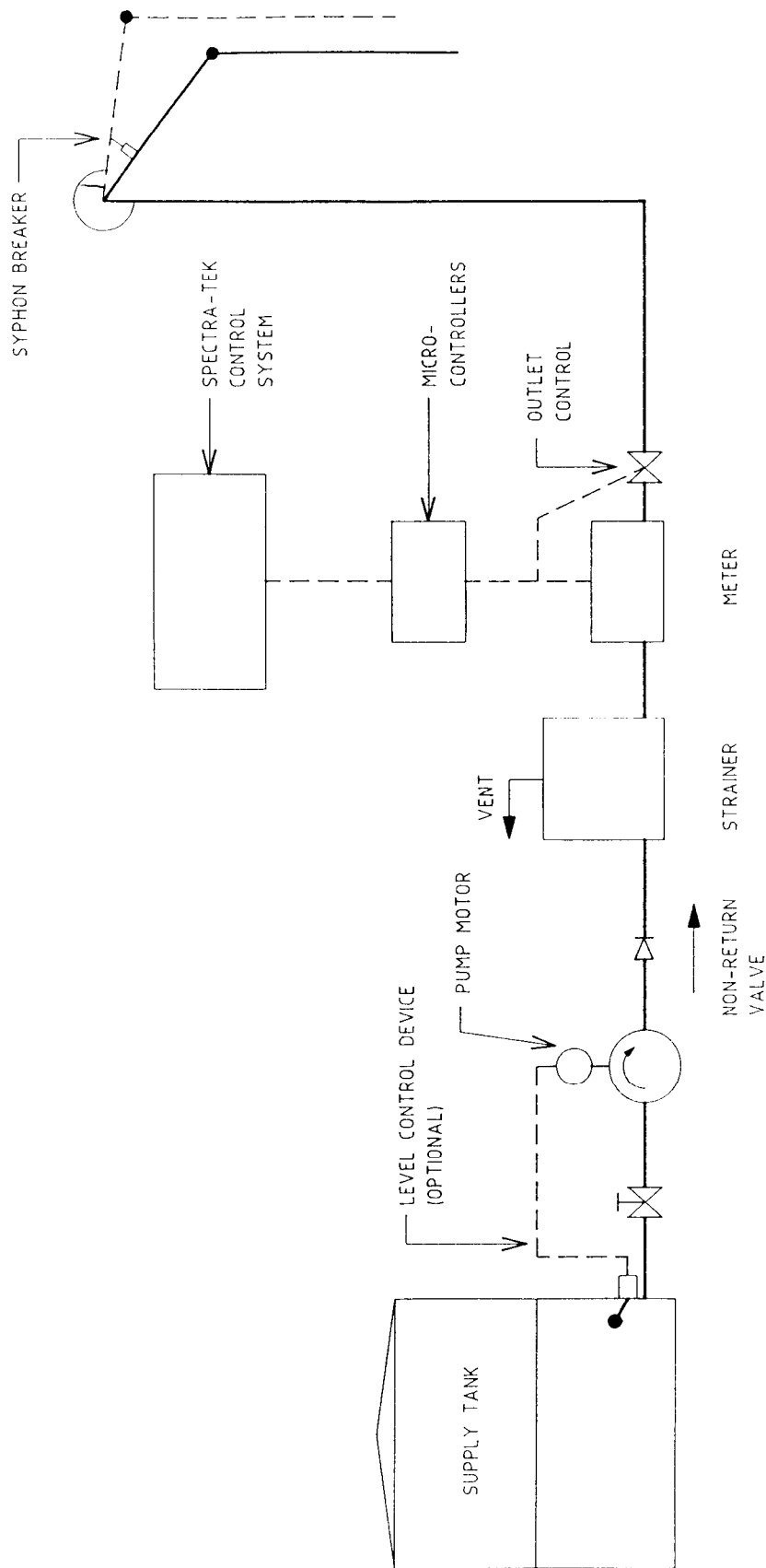
Showing Vertical Mounting

FIGURE 5/6B/150 - 4



Showing A Typical System

FIGURE 5/6B/150 - 5



Loading-rack Flowmetering System