



Australian Government
National Measurement
Institute

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
No 5/6E/13

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

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

Diessel Model IZM-E DN50 Milk Flowmetering System

submitted by Flo-Gineering Pty Ltd
Suite 15, 75 Pacific Highway
Waitara NSW 2077.

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.

This approval has been granted with reference to document NMI R 117-1, Measuring Systems for Liquids Other than Water, dated July 2004.

CONDITIONS OF APPROVAL

This approval was cancelled in respect of new instruments as of 1 June 2005.

Instruments purporting to comply with this approval shall be marked with approval number 'NSC 5/6E/13' and only by persons authorised by the submittor.

Instruments purporting to comply with Provisional Variant 7 shall be marked with approval number 'NSC P5/6E/13' 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 National Measurement Institute (NMI) 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 document NMI P 106.

The National Measurement Institute 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.

Special:

Approval 5/6E/13 was cancelled in respect of new instruments as from 1 June 2005; Variants 8 and 9 approved herein relate to instruments which were verified/certified before the cancellation date. This approval shall NOT be used for new instruments.

DESCRIPTIVE ADVICE

Pattern: approved 9 September 1991

- A vehicle-mounted milk flowmetering system using a Diessel model IZM-E DN50 electromagnetic flowmeter.

Variant: provisionally approved 9 September 1991
approved 10 February 1994

1. With a positive displacement pump replacing the pump of the pattern.

Variants: provisionally approved 9 September 1991
expired 1 October 1993

2. With the gas purger installed before the pump.
3. With certain other Diessel electromagnetic flowmeters as listed in Table 1.

Technical Schedule No 5/6E/13 describes the pattern and variants 1 to 3.

Variant: approved 28 October 1994

4. With a Diessel model Zevodat-M indicator.

Technical Schedule No 5/6E/13 Variation No 1 describes variant 4.

Variant: approved 17 May 1996

5. With a Diessel model Zevodat-C indicator.

Variant: approved 16 October 1996

6. With a Diessel model IZM-E DN65 flowmeter.

Technical Schedule No 5/6E/13 Variation No 2 describes variants 5 and 6.

Variant: provisionally approved 15 May 2003
expired 15 August 2003

7. With a positive displacement pump replacing the pump of the pattern.

Interim Certificate No 5/6E/13 Variation No 3 describes variant 7.

Variants: approved 14 December 2006

8. With a self-priming liquid ring type pump.

9. With a dual pumping system.

Technical Schedule No 5/6E/13 Variation No 3 describes variants 8 and 9.

FILING ADVICE

Certificate of Approval No 5/6E/13 dated 30 December 1996 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

Cancellation Certificate of Approval No 5/6E/13 dated 28 February 2005

Certificate of Approval No 5/6E/13 dated 10 May 2007

Technical Schedule No 5/6E/13 dated 11 December 1991 (incl. Table 1
and Test Procedure)

Technical Schedule No 5/6E/13 Variation No 1 dated 13 December 1994

Technical Schedule No 5/6E/13 Variation No 2 dated 30 December 1996
(incl. Notification of Change)

Interim Certificate No 5/6E/13 Variation No 3 dated 15 May 2003

Technical Schedule No 5/6E/13 Variation No 3 dated 10 May 2007

Notification of Change No 1 dated 10 March 1994

Notification of Change No 2 dated 19 December 1994

Figures 1 to 5 dated 11 December 1991

Figure 6 dated 13 December 1994

Figure 7 dated 30 December 1996

Figures 8 and 9 dated 10 May 2007

Signed by a person authorised by the Chief Metrologist
to exercise his powers under Regulation 60 of the
National Measurement Regulations 1999.

A handwritten signature in black ink, appearing to be 'J. H. T.', is located in the bottom right corner of the page.



Australian Government
**National Measurement
Institute**

12 Lyonpark Road, North Ryde NSW 2113

**Cancellation
Certificate of
Approval No 5/6E/13**

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that the approval for use for trade granted in approval 5/6E/13
respect of the

Diessel Model IZM-E DN50 Milk Flowmetering System

submitted by Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077

has been cancelled in respect of new instruments as from 1 June 2005.

Signed by a person authorised by the Chief Metrologist
to exercise his powers under Regulation 60 of the
National Measurement Regulations 1999.

A handwritten signature in black ink, appearing to be 'J. G. T.', is written over a faint, circular official stamp.



National Standards Commission

TECHNICAL SCHEDULE No 5/6E/13

Pattern: Diessel model IZM-E DN50 Milk Flowmetering System.

Submittor: Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077.

1. Description of Pattern

A vehicle-mounted milk flowmetering system using a Diessel IZM-E DN50 electromagnetic flowmeter approved for use with maximum and minimum flow rates of 600 and 60 L/min respectively. (Figure 1 and Table 1)

The system operates from either a 12 or 24 volts DC electrical supply.

1.1 The System (Figure 1)

- (i) A supply tank.
- (ii) A centrifugal type pump installed lower than the minimum height of the liquid in the supply tank (positive suction). The pipework from the supply tank has a continuous fall to the pump.
- (iii) A Diessel type E float-operated gas separator fitted between the pump and the meter.

A manual or pneumatic spring-loaded cleaning/vent valve is incorporated in the top of the separator. A rigid vent pipe is connected from the vent valve into the pipeline upstream of the pump.

A manually-operated butterfly valve is fitted between the pump outlet and the separator inlet and is used for CIP (clean-in-place) cleaning.

- (iv) A Diessel type IZM-E model DN50 electromagnetic flowmeter (Figure 2), which is vertically mounted.
- (v) A spring-loaded non-return valve located adjacent to and downstream of the meter which opens at pressures above 20 kPa
- (vi) An optional product sampler and/or strainer may be fitted downstream of the pump before the meter. A flow control valve/device may be fitted downstream of the meter.

- (vii) A Diessel model Zevodat-S electronic indicator/totaliser (Figure 3) incorporating the following features:
- . A (resettable) LED display of quantity delivered in litres;
 - . A display of the daily quantity delivered (resettable) and the total quantity (non-resettable) by pressing the appropriate keys on the keypad;
 - . An alphanumeric display for the operator communication and for the indication of error messages;
 - . A numeric keypad with function keys for the entry and retrieval of data; and
 - . An optional alphanumeric data display.
- (viii) A journal printer.

1.2 Markings

The following information should be clearly and permanently marked on one or more permanently attached nameplates:

Manufacturer's name or mark	
Model number	
Serial number	
NSC approval number	5/6E/13
Maximum flow rate L/min
Minimum flow rate L/min
Minimum quantity L
Priming quantity L
Approved for use with milk	

1.3 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

2. Description of Variants

2.1 Variant 1

With a positive displacement pump replacing the centrifugal pump of the pattern (Figure 4). The pump may be installed higher than the minimum height of the liquid in the supply tank (negative suction).

2.2 Variant 2 (Figure 5)

With the gas purger installed before the pump. The pump which may be either centrifugal or positive displacement is positioned lower than the minimum height of the liquid in the supply tank (positive suction).

2.3 Variant 3

With alternative electromagnetic meters as listed in Table 1.

TABLE 1

Meter Model	Maximum Flow Rate (L/min)	Minimum Flow Rate (L/min)	Minimum Quantity (L)
IZM-E DN 25	150	15	50
IZM-E DN 32	250	25	50
IZM-E DN 50	600	60	200
IZM-E DN 65	1000	100	300
IZM-E DN 80	1500	150	500

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Inspector's Handbook.

Instruments are to be tested with milk and the system either primed with milk before commencing the delivery, or the priming quantity marked on the data plate is added to the quantity measured.

NOTE: The quantity required to prime the system shall be determined at verification/certification and shall be stamped on the nameplate.

Complete one or more deliveries and check the volume indicated against the actual volume.

Maximum Permissible Errors at Verification/Certification

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

1. Empty Compartment Test

- (a) Allow the supply to run dry during a test delivery; stop the pump motor and refill or change either the supply tank or the proving measure. Then start the pump motor to allow the delivery into the proving measure to continue; or
- (b) Allow the proving measure to run dry during a test delivery.

NOTE: This test should only be carried out where it could be expected that a tank will be completely emptied during a normal day's delivery.



National Standards Commission

TECHNICAL SCHEDULE No 5/6E/13

VARIATION No 1

Pattern: Diessel Model IZM-E DN50 Milk Flowmetering System.

Submittor: Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077.

1. Description of Variant 4

With a Diessel model Zevodat-M electronic indicator/totaliser (Figure 6) incorporating the following features:

- A (resettable) liquid crystal display of quantity delivered in litres;
- A display of the daily quantity delivered (resettable) and the total quantity (non-resettable);
- An alphanumeric display for the operator communication and for the indication of error messages; and
- A numeric keypad with function keys for the entry and retrieval of data.



5/6E/13
30 December 1996

National Standards Commission

TECHNICAL SCHEDULE No 5/6E/13

VARIATION No 2

Pattern: Diessel Model IZM-E DN50 Milk Flowmetering System.

Submittor: Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077.

1. Description of Variants

1.1 Variant 5

With a Diessel model Zevodat-C electronic indicator/totaliser (Figure 7) incorporating the same features as the indicator of the pattern.

1.2 Variant 6

With a Diessel model IZM-E DN65 electromagnetic flowmeter approved for use with maximum and minimum flow rates of 700 and 100 L/min respectively.

NOTIFICATION OF CHANGE

In Technical Schedule No 5/6E/13 dated 11 December 1991, clause 1.1 **The System** (vii) should be amended by adding the following as the final paragraph:

"The indicator may be mounted remotely or mounted directly onto the flowmeter."

TECHNICAL SCHEDULE No 5/6E/13

VARIATION No 3

Pattern: Diessel Model IZM-E DN50 Milk Flowmetering System

Submittor: Flo-Gineering Pty Ltd
Suite 15, 75 Pacific Highway
Waitara NSW 2077

1. Description of Variants

1.1 Variant 8

Similar to the pattern except that the pump is a self-priming liquid ring type pump (Figure 8) of sufficient capacity used to draw milk from the supply tank outlet which may be located lower than the inlet of the pump.

1.2 Variant 9

Similar to the pattern except that a dual pumping system is used (Figure 9). The system has a positive displacement pump acting as a priming pump combined with a centrifugal type pump of sufficient capacity which operates once the system has been primed to draw milk from the supply tank outlet which may be located lower than the inlet of the pump.

National Standards Commission



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6E/13

CHANGE No 1

The following change is made to the approval documentation for the

Diessel Model IZM-E DN50 Milk Flowmetering System

submitted by Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077.

In Certificate of Approval No 5/6E/13 dated 11/12/91, the Provisional status of Variant 1 is hereby removed and the DESCRIPTIVE ADVICE relating to the Variants should be amended by adding a date of approval for Variant 1 as shown below: (The approval of Variants 2 and 3 has expired in respect of new instruments; the approval of Variant 1 will now expire at the same time as the pattern, i.e. 1/10/97.)

Variant: provisionally approved 9/9/91 - approved 10/2/94

1. With a positive displacement pump replacing the pump of the pattern.

Variants: provisionally approved 9/9/91

2. With the gas purger installed before the pump.
3. With certain other Diessel electromagnetic flowmeters as listed in Table 1.

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



NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6E/13

CHANGE No 2

The following changes are made to the approval documentation for the

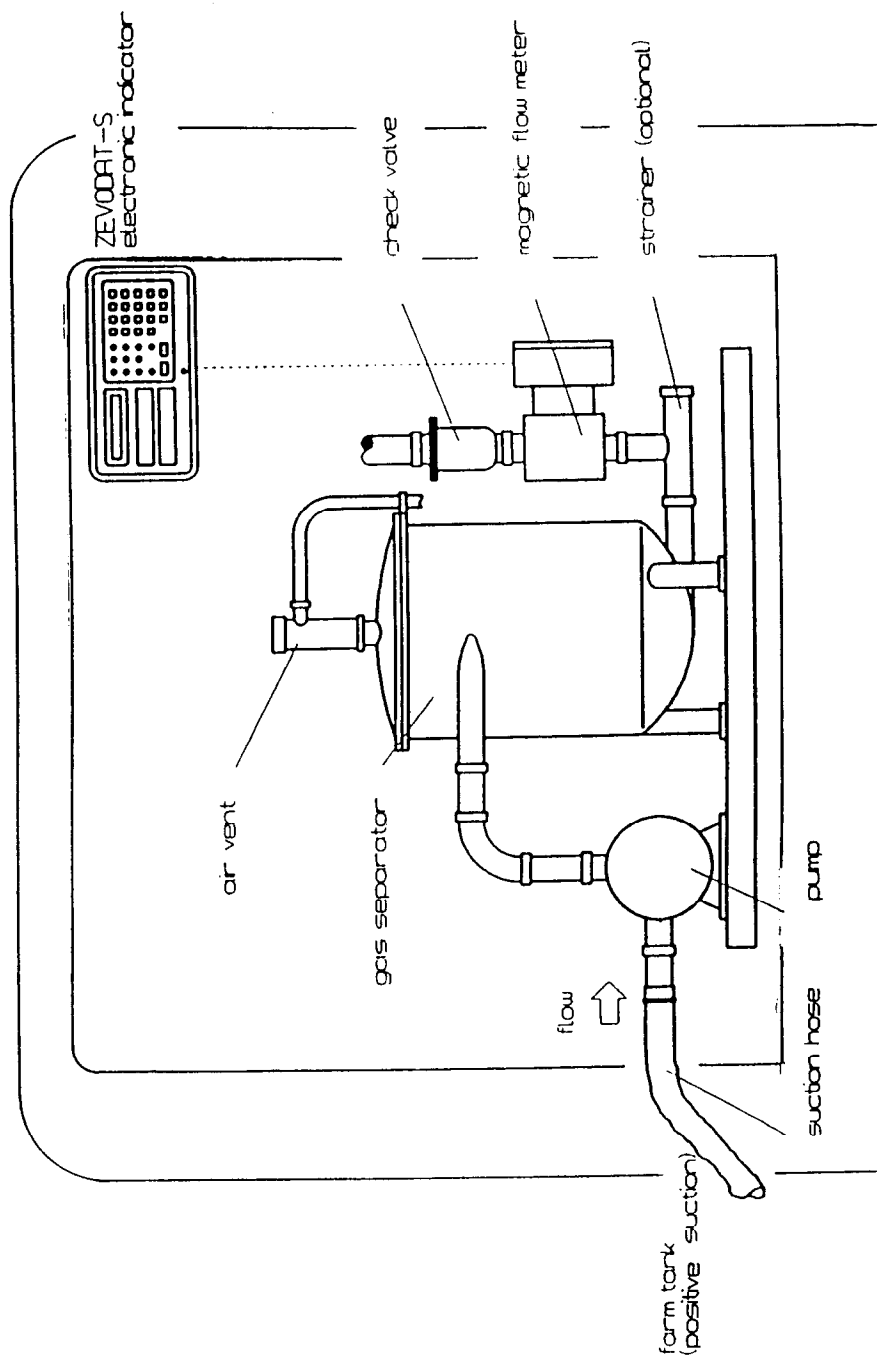
Diessel Model IZM-E DN50 Milk Flowmetering System

submitted by Flo-Gineering Pty Ltd
75 Pacific Highway
Waitara NSW 2077.

In Technical Schedule No 5/6E/13 dated 11 December 1991, clause 1. **Description of Pattern** and Table 1 should both be amended so that the maximum flow rate stated for the type IZM-E model DN 50 flowmeter is amended to be 700 L/min (rather than 600 L/min); the minimum flow rate remains unchanged at 60 L/min.

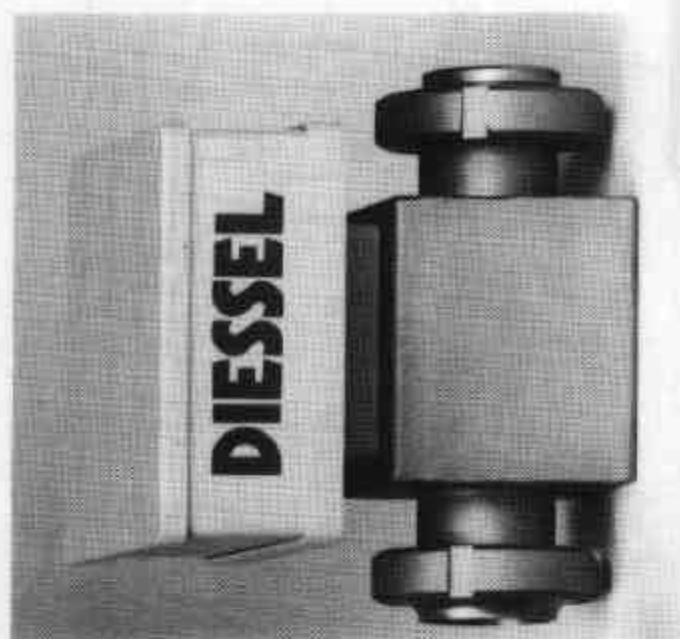
Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

FIGURE 5/6E/13 - 1



Typical Positive-suction System (The Pattern)

FIGURE 5/6E/13 - 2



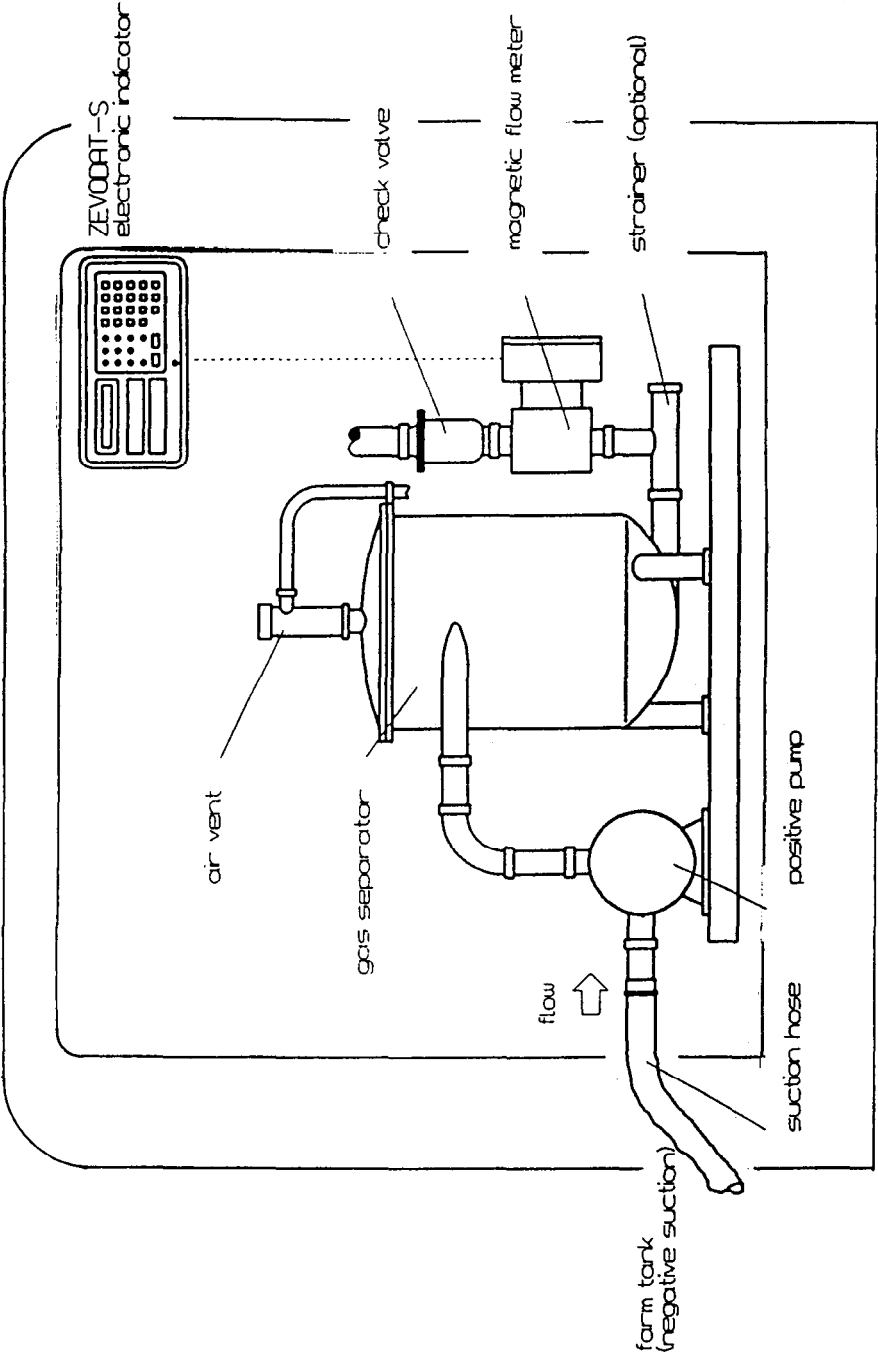
Diesel Model IZM-E DN50 Flowmeter

FIGURE 5/6E/13 - 3



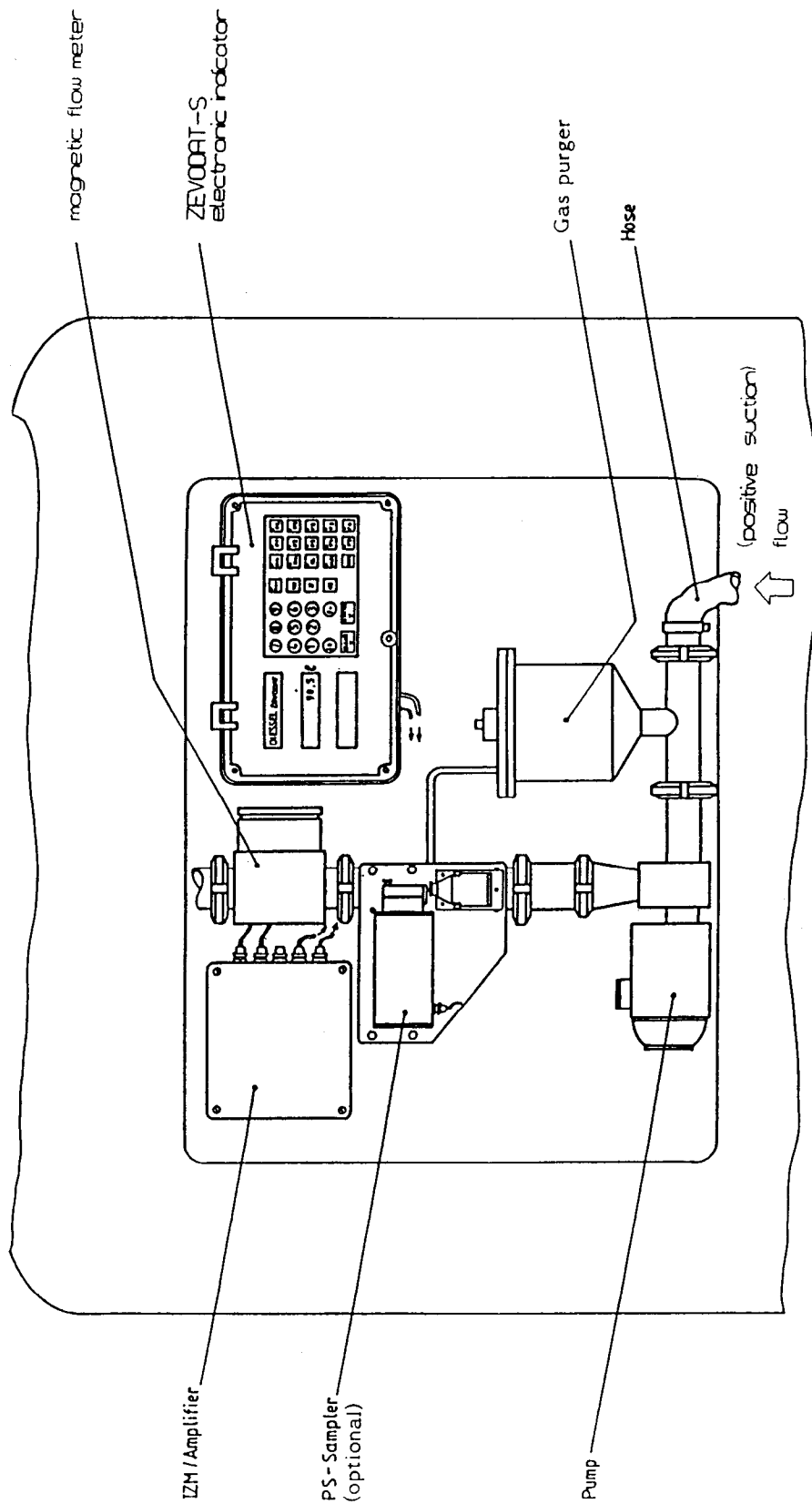
Diesel Model Zevodat-S Indicator

FIGURE 5/6E/13 - 4



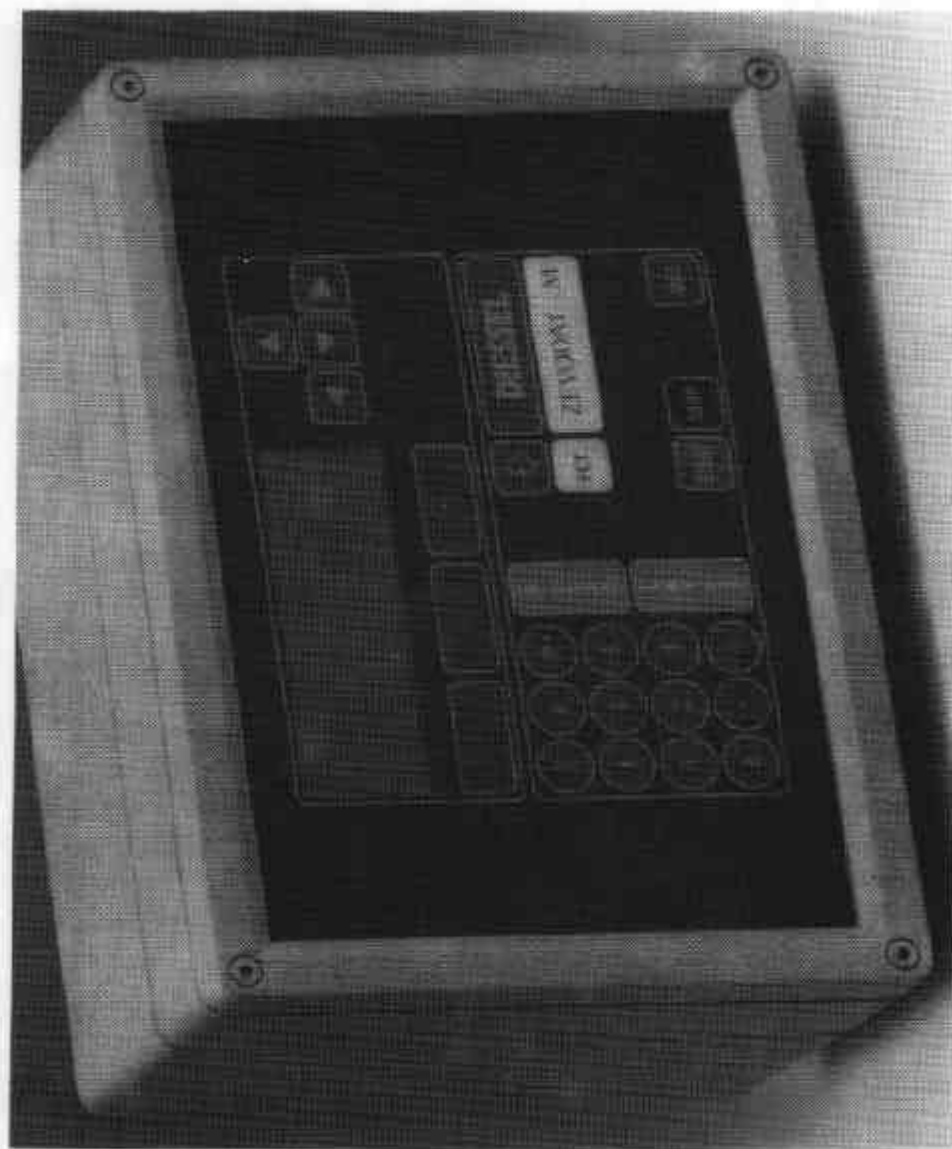
Typical Negative-suction System (Variant 1)

FIGURE 5/6E/13 - 5



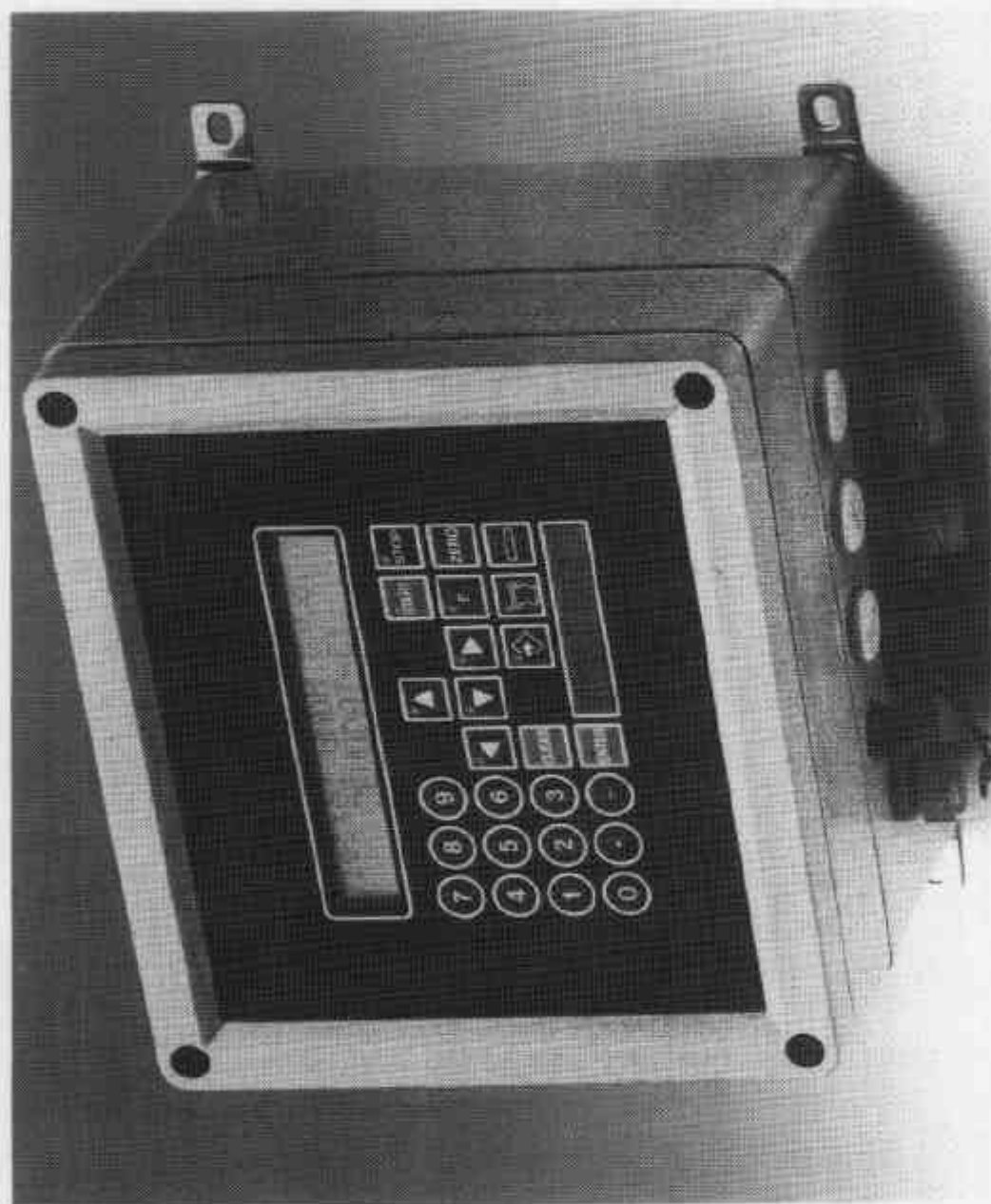
Typical Gas Purger Before Pump System (Variant 2)

FIGURE 5/6E/13 - 6



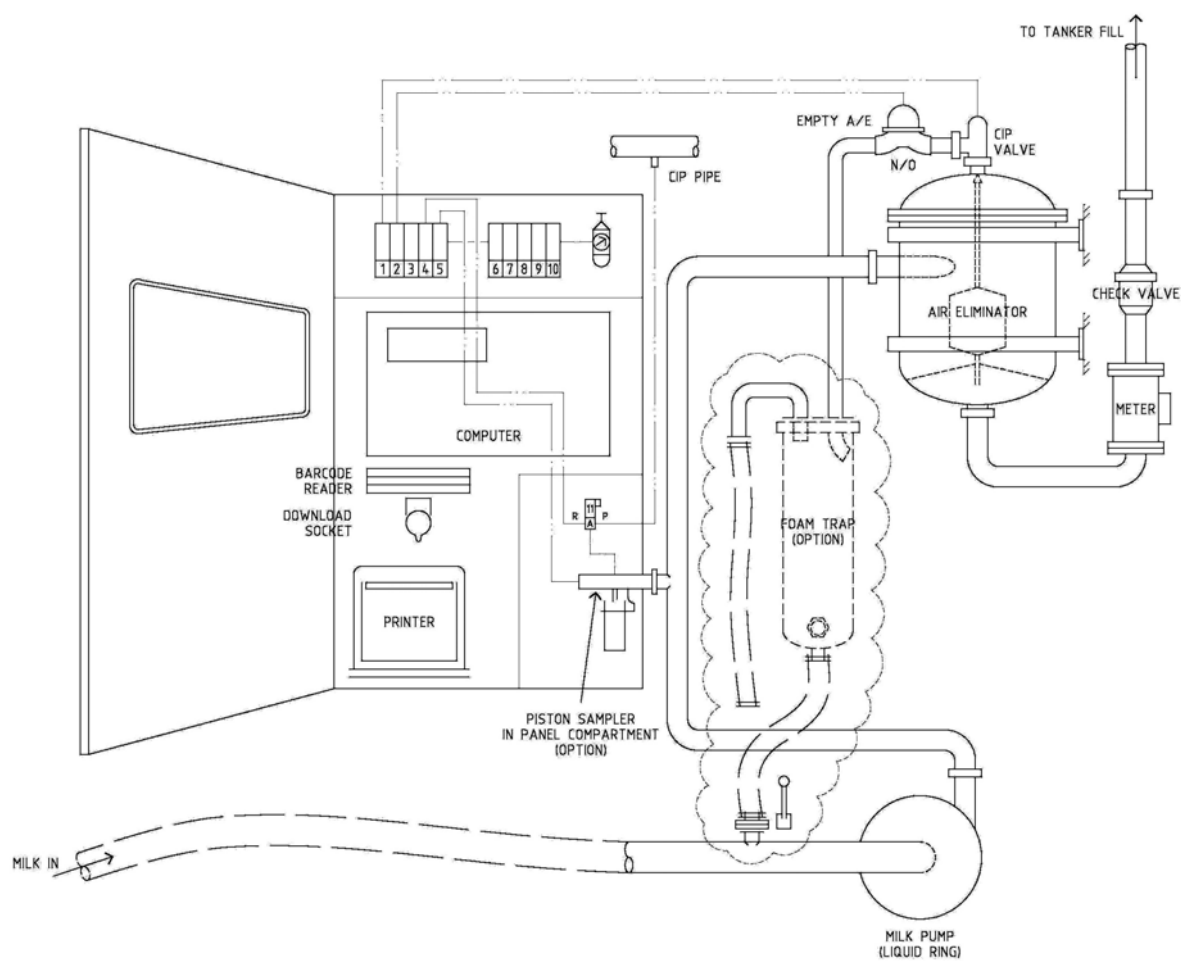
Diesel Model Zevodat-M Indicator

FIGURE 5/6E/13 - 7



Diesel Model Zevodat-C Indicator

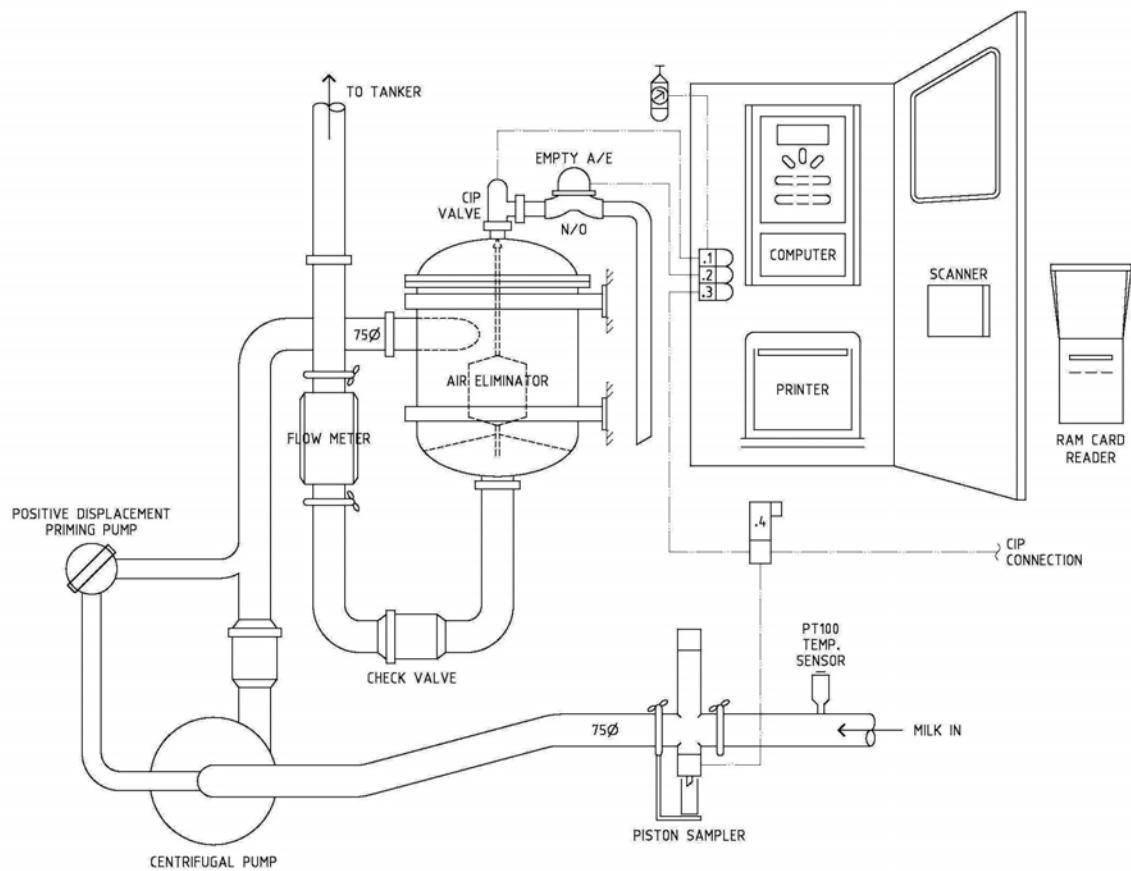
FIGURE 5/6E/13 – 8



Typical System With Liquid Ring Type Pump – Variant 8

5/6E/13
10 May 2007

FIGURE 5/6E/13 – 9



Typical System With Dual Pumps – Variant 9