

# National Standards Commission



## Certificate of Approval

**No 5/6A/84**

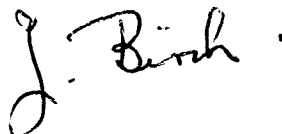
Issued under Regulation 9  
of the  
National Measurement (Patterns of Measuring Instruments) Regulations

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

Gilbarco Model TO87A Multi-product Driveway Flowmeter

submitted by     Gilbarco Aust. Ltd  
                      12-38 Talavera Road  
                      North Ryde NSW 2113

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 is subject to review on or after 1/2/92.

This approval expires in respect of new instruments on 1/2/93.

Instruments purporting to comply with this approval shall be marked NSC No 5/6A/84 and only by persons authorised by the submitter.

It is the submitter'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.

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:** provisionally approved 30/1/87 - approved 13/11/87

. A Gilbarco model TO87A multi-product driveway flowmeter.

**Variant:** provisionally approved 30/1/87 - approved 13/11/87

1. Other models and configurations as listed in Table 1.

Technical Schedule No 5/6A/84 describes the pattern and variant 1.

**Variant:** approved 19/12/88

2. With a Gilbarco C series meter.

Technical Schedule No 5/6A/84 Variation No 1 describes variant 2.

**Variant:** approved 16/11/89

3. For use with distillate.

**Variant:** approved 16/11/89

4. With EFT card-acceptor module.

Technical Schedule No 5/6A/84 Variation No 2 describes variants 3 and 4.

**Variant:** approved 4/7/90

5. In alternative housings.

Technical Schedule No 5/6A/84 Variation No 3 describes variant 5.

**Variant:** approved 27/9/90

6. Modified for use with the Gilbarco model STP hydraulic supply system.

Technical Schedule No 5/6A/84 Variation No 4 describes variant 6.

**Variant:** approved 30/10/91

7. Certain T078 series instruments in alternative housings.

**Variants:** approved 13/3/92

8. With a pump unit with integral gas detector and gas separator.

9. Certain models with increased maximum flow rate.

10. Certain T087 and T088 series instruments in alternative housings.

11. With a manually-operated nozzle latch.

Technical Schedule No 5/6A/84 Variation No 5 describes variants 7 to 11.

### FILING ADVICE

Certificate of Approval No 5/6A/84 dated 14/3/91 is superseded by this Certificate, and may be destroyed.

Table 3 attached herein replaces Table 3 issued as part of Technical Schedule No 5/6A/84 Variation No 4 dated 14/3/91.

The documentation for this approval now comprises:

- Certificate of Approval No 5/6A/84 dated 11/6/92
- Technical Schedule No 5/6A/84 dated 18/6/87 (incl. Table 1)
- Technical Schedule No 5/6A/84 Variation No 1 dated 5/7/89
- Technical Schedule No 5/6A/84 Variation No 2 dated 6/4/90 (incl. Table 2)
- Technical Schedule No 5/6A/84 Variation No 3 dated 27/8/90
- Technical Schedule No 5/6A/84 Variation No 4 dated 14/3/91
- Technical Schedule No 5/6A/84 Variation No 5 dated 11/6/92 (incl. Table 3)
- Test Procedure No 5/6A/84 dated 18/6/87
- Figures 1 to 3 dated 18/6/87
- Figures 4 and 5 dated 6/4/90
- Figures 6 to 8 dated 27/8/90
- Figures 9 to 12 dated 11/6/92



## NATIONAL STANDARDS COMMISSION

5/6A/84  
18/6/87

### TECHNICAL SCHEDULE No 5/6A/84

Pattern: Gilbarco Model T087A Multi-product Driveway Flowmeter

Submittor: Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113

#### 1. Description of Pattern

Gilbarco model T087A multi-product driveway flowmeter (Figure 1) for delivering various grades of petrol at flow rates between 15 and 50 litres/minute.

##### 1.1 Features

Each driveway flowmeter is equipped with four hoses connected to Commission-approved nozzles, two model T258AP pump/gas separators and two model DT03616 purchaser displays (one on each side of the dispenser). Each side of the dispenser is marked with a dispenser number. The purchaser displays show:

Volume	000.00 L to 995.00 L in 0.01 L increments
Unit price	0.1 to 999.9 c/L in 0.1c increments
Price	\$000.00 to \$995.00 in 1c increments
Preset	\$00.00 to \$99.00 in \$1.00 increments

The instrument may be used with a compatible Commission-approved control console for self-serve operation.

The instrument is approved for use with super leaded petrol, super unleaded petrol and unleaded petrol only. Each grade of fuel is supplied by one pump and gas separation system and then diverted to two sets of model T262 meters and model DT04340 flow control valves supplying two nozzles, one on each side of the dispenser (Figure 2). Above each nozzle is located a unit price display for that grade.

Hydraulic control of flow to each nozzle is via a 2-stage pilot valve. The model T087A has a preset facility with slow flow controlled by this valve.

All driveway flowmeters are fitted with a manager's keypad and rotary mode switch located behind one side of the flowmeter indicator panel. The switch permits the following functions:

Stand-alone or self-serve	
Set price	- for each grade of product
Set allocation *	- in \$ in units of 1 up to 99
Totals	- in \$ or L for each hose
Test	- allows field test procedures.

(\* - Limit of amount dispensed in \$)

...../2

## 1.2 Markings

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

Manufacturer's name or mark	
Model number	
Serial number	
NSC approval number	P5/6A/84
Maximum flow rate	..... L/min
Minimum flow rate	..... L/min
Liquid temperature range	5°C to 40°C
Maximum operating pressure	..... kPa
Approved for use with (products)	.....

## 1.3 Sealing and Verification Provision

Provision is made for the application of a verification mark.

The meter calibration is sealed.

## 2. Description of Variant 1

Other models and in configurations as listed in Table 1.

Figure 3 shows a model T088A dispenser.

TABLE 1

<u>Model</u>	<u>Number of Hoses/Nozzles</u>	<u>Preset</u>
T087B	4	No
T088A	6	Yes
T088B	6	No

Note: Instruments without preset facility cannot be used for PREPAY transactions.



## NATIONAL STANDARDS COMMISSION

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### TEST PROCEDURE No 5/6A/84

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

The results shall not exceed the maximum permissible errors as specified in Document 118, 2nd Edition October 1986.

1. Check that removing a nozzle from its normal hang-up position initiates a request for authorisation (on self-serve systems).
2. Check that selection/authorisation of a nozzle causes the following sequence:
  - (i) All other nozzles on that side of the flowmeter are disabled,
  - (ii) All displays automatically initiate a segment check,
  - (iii) The price and volume indicators reset to zero and the unit price on the main indicator displays the grade of fuel corresponding to that displayed over the nozzle selected,
  - (iv) The pump motor starts and a delivery may then be made.
3. On instruments fitted with preset facility, check that the preset amount requested equals the delivery value displayed and is within the maximum permissible errors of the actual amount delivered.



# NATIONAL STANDARDS COMMISSION

5/6A/84  
5/7/89

## TECHNICAL SCHEDULE No 5/6A/84

### VARIATION No 1

Pattern: Gilbarco Model TO87A Multi-product Driveway Flowmeter.

Submittor: Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

#### 1. Description of Variant 2

With the existing Gilbarco B series meter of any driveway flowmeter covered by this approval replaced by a Gilbarco C series meter.





# National Standards Commission

## TECHNICAL SCHEDULE No 5/6A/84

### VARIATION No 2

Pattern: Gilbarco Model T087A Multi-product Driveway Flowmeter.

Submitter: Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

#### 1. Description of Variants

##### 1.1 Variant 3

Various models of the Gilbarco multi-product series driveway flowmeters as listed in Table 2, approved for use with 2 or more nozzles dispensing distillate, in which case a gas detection system is fitted (Figure 4).

TABLE 2

<u>Model</u>	<u>Number of Hoses/Nozzles</u>	<u>Preset</u>
T087C	4	Yes
T087D	4	No
T088C	6	Yes
T088D	6	No

##### 1.2 Variant 4

With a card-acceptor module fitted to one or both sides of any of the Gilbarco multi-product series driveway flowmeters. The module includes a card swipe and an electronic funds transfer (EFT) facility. Figure 5 shows a typical flowmeter fitted with this module.

Authorisation of the driveway flowmeter may be achieved via the card-acceptor module when the flowmeter is connected to a Commission-approved driveway flowmeter control system.

A number of buttons may also be provided to allow the purchaser to select whether or not the card-acceptor facility is to be used; if the buttons are not fitted, the flowmeter may be authorised from the console or automatically upon use of the card swipe.

#### Note to Inspectors:

Should the EFT facility be temporarily be out of service through the action of a financial institution to which it is connected, the flowmeter(s) may be verified in isolation from the EFT facility.

### TEST PROCEDURE

Instruments fitted with an electronic funds transfer (EFT) facility should be tested as follows, in addition to the Test Procedure dated 18/6/87.

#### EFT Test

- a) Turn the T084T controller's keyswitch to the MANAGER position.
- b) Select function 9 on the thumbwheel and press the test button.
- c) Turn the keyswitch back to the NORMAL position.
- d) Swipe the RETAILER card through the card-acceptor module card reader.

Note: The card must be swiped within 60 seconds of pressing the test button and the card-acceptor module display showing "PLEASE SWIPE YOUR CARD THROUGH READER", or the card will be rejected. If the time limit is exceeded, repeat steps (a) to (d).

- e) Follow the instructions on the card-acceptor module to make a delivery of fuel. Any personal identification number (PIN) or account type may be used.
- f) Check that the vendors and the purchasers records of transaction are identical to that of the display on the driveway flowmeter.

Note: In the event of a power failure, the details printed on the ticket may differ from those displayed on the driveway flowmeter and in addition the ticket shall be printed with the following:

POWER FAILURE

RECEIPT IS CORRECT  
RECORD OF TRANSACTION



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27/8/90

## National Standards Commission

### TECHNICAL SCHEDULE No 5/6A/84

#### VARIATION No 3

**Pattern:** Gilbarco Model T087A Multi-product Driveway Flowmeter.

**Submitter:** Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

#### 1. Description of Variant 5

Various models of the Gilbarco multi-product series driveway flowmeters as listed in Table 3.

These models may have any of the features and capabilities of the pattern or other variants, but in housings similar to that shown in Figures 6 and 7.

TABLE 3

Model	Number of Hoses/Nozzles	Preset
T077A	4	Yes
T077B	4	No
T077C	4	Yes
T077D	4	No
T078A	6	Yes
T078B	6	No
T078C	6	Yes
T078D	6	No

**Note:** Instruments without preset facility cannot be used for PREPAY transactions.

#### NOTIFICATION OF CHANGE

In Technical Schedule No 5/6A/84 Variation No 2 dated 6/4/90, amend clause 1.2 Variant 4 by adding the following after the existing 2nd paragraph:

"Systems incorporating flowmeters fitted with a card-acceptor module shall also include a Gilbarco model T084T controller (Figure 8). Up to 7 of the flowmeters in the system may be fitted with card-acceptor modules."



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14/3/91

## National Standards Commission

TECHNICAL SCHEDULE No 5/6A/84

### VARIATION No 4

**Pattern:** Gilbarco Model T087A Multi-product Driveway Flowmeter.

**Submitter:** Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

#### 1. Description of Variant 6

Any approved model of the Gilbarco multi-product series driveway flowmeters modified for use with a Gilbarco model STP (submerged turbine pump) hydraulic supply system in accordance with NSC approval No S245.

Such instruments then carry an additional 'D' suffix e.g. model T077A (variant 5) when modified in accordance with this variant, is then known as a model T077AD.

### NOTIFICATION OF CHANGE

In Technical Schedule No 5/6A/84 Variation No 3 dated 27/8/90, Table 3 is replaced by the attached Table 3 which now includes additional models (T079 series of 2 and 4 hose flowmeters), and also whether or not the instrument is suitable for use to dispense distillate (in which case a gas detection system is fitted).

TABLE 3

Model	Number of Hoses/ Nozzles	Preset	Distillate
T077A	4	Yes	No
T077B	4	No	No
T077C	4	Yes	Yes
T077D	4	No	Yes
T078A	6	Yes	No
T078B	6	No	No
T078C	6	Yes	Yes
T078D	6	No	Yes
T079A	2	Yes	No
T079B	2	No	No
T079C	2	Yes	Yes
T079D	2	No	Yes
T079J	4	Yes	No
T079K	4	No	No
T079L	4	Yes	Yes
T079M	4	No	Yes

**Note:** Instruments without preset facility cannot be used for PREPAY transactions.



## National Standards Commission

### TECHNICAL SCHEDULE No 5/6A/84

#### VARIATION No 5

**Pattern:** Gilbarco Model T087A Multi-product Driveway Flowmeter.

**Submitter:** Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

#### 1. Description of Variants

##### 1.1 Variant 7

Certain models of the T078 series as listed in Table 3, which may have any of the features and capabilities of the pattern or other variants, but in housings similar to that shown in Figure 9.

These models may also be modified for use with a Gilbarco model STP (submerged turbine pump) hydraulic supply system, in which case they carry an additional 'D' suffix, e.g. model T078E becomes T078ED and model T078F becomes T078FD.

**Note:** This variant is included in the version of Table 3 attached herein, which replaces Table 3 dated 14/3/91.

##### 1.2 Variant 8

Any model driveway flowmeter of this approval fitted with a model T258AT pump unit with integral gas detector and gas separator (Figure 10), in which case the model number has a 'P' suffix.

##### 1.3 Variant 9

Certain models as listed below approved for use with a maximum flow rate of 85 L/min.

Model	Number of Hoses/Nozzles	Preset
T079ED (*)	2	Yes
T079FD (*)	2	No
T079EP (#) (Figure 10)	2	Yes
T079FP (#) (Figure 10)	2	No

**Note:** (\*) - Suffix 'D' denotes dispenser versions (refer variant 6).  
(#) - Suffix 'P' denotes model T258AT pump unit (refer variant 8).

#### **1.4 Variant 10**

Any approved model of the T087 and T088 series in alternative housings, including relocated indicator, as shown in Figure 11, in which case the model number has an additional '-100' suffix, e.g. model T087AD becomes T087AD-100.

#### **1.5 Variant 11**

With a manually-operated latch fitted to the nozzle receptacle (Figure 12).

## NOTIFICATION OF CHANGE

In Technical Schedule No 5/6A/84 Variation No 4 dated 14/3/91, Table 3 is replaced by the attached Table 3 which now includes additional models (Variant 7) and conditions regarding use with certain products.

TABLE 3

Model	Number of Hoses/ Nozzles	Preset	Approved Products
T077A*	4	Yes	P,K or D
T077B*	4	No	P,K or D
T077C*	4	Yes	P,K or D
T077D*	4	No	P,K or D
T078A*	6	Yes	P,K or D
T078B*	6	No	P,K or D
T078C*	6	Yes	P,K or D
T078D*	6	No	P,K or D
T078E*	6	Yes	P,K or D
T078F*	6	No	P,K or D
T079A*	2	Yes	P,K or D
T079B*	2	No	P,K or D
T079C*	2	Yes	P,K or D
T079D*	2	No	P,K or D
T079J*	4	Yes	P,K or D
T079K*	4	No	P,K or D
T079L*	4	Yes	P,K or D
T079M*	4	No	P,K or D

**Notes:**

- \* As per Variant 6, any model may carry an additional 'D' suffix indicating it has been modified for use with a Gilbarco model STP (submerged turbine pump) hydraulic supply system.
- \* As per Variant 10, any model may carry an additional 'P' suffix indicating it is fitted with a model T258AT pump unit.

Instruments without preset facility cannot be used for PREPAY transactions.

Approved Products (P,K or D) - Petrol, Kerosene or Distillate. Instruments shall only be used to dispense kerosene or distillate when either a gas detection system is fitted or when the instrument has been modified for (and is used with) a Gilbarco model STP (submerged turbine pump) hydraulic supply system.





# NATIONAL STANDARDS COMMISSION

G.H.  
P5/6A/84  
18/2/88

## NOTIFICATION OF CHANGE

PROVISIONAL CERTIFICATE OF APPROVAL No P5/6A/84

### CHANGE No 1

The following change is made to the approval documentation for the

Gilbarco Model T087A Multi-product Driveway Flowmeter

submitted by     Gilbarco Aust. Ltd  
                    12-38 Talavera Road  
                    North Ryde NSW 2113.

Provisional Certificate of Approval No P5/6A/84 dated 18/6/87 should be replaced by the Certificate attached herein in which the Provisional status and the Special Conditions of approval have been removed.

Signed

Executive Director



# NATIONAL STANDARDS COMMISSION

G 4.  
5/6A/84  
10/8/89

## NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 5/6A/84

### CHANGE No 2

The following change is made to the approval documentation for the  
Gilbarco Model T087A Multi-product Driveway Flowmeter

submitted by Gilbarco Aust. Ltd  
12-38 Talavera Road  
North Ryde NSW 2113.

In Technical Schedule No 5/6A/84 dated 18/6/87, to clause 1.1 Features, add the following to the 4th paragraph (which includes reference to preset):

"The instrument may be fitted with a purchaser-operated preset control or the preset facility may be set via the vendor's console."

Signed

A handwritten signature in cursive script, appearing to read 'J. Birch'.

Executive Director

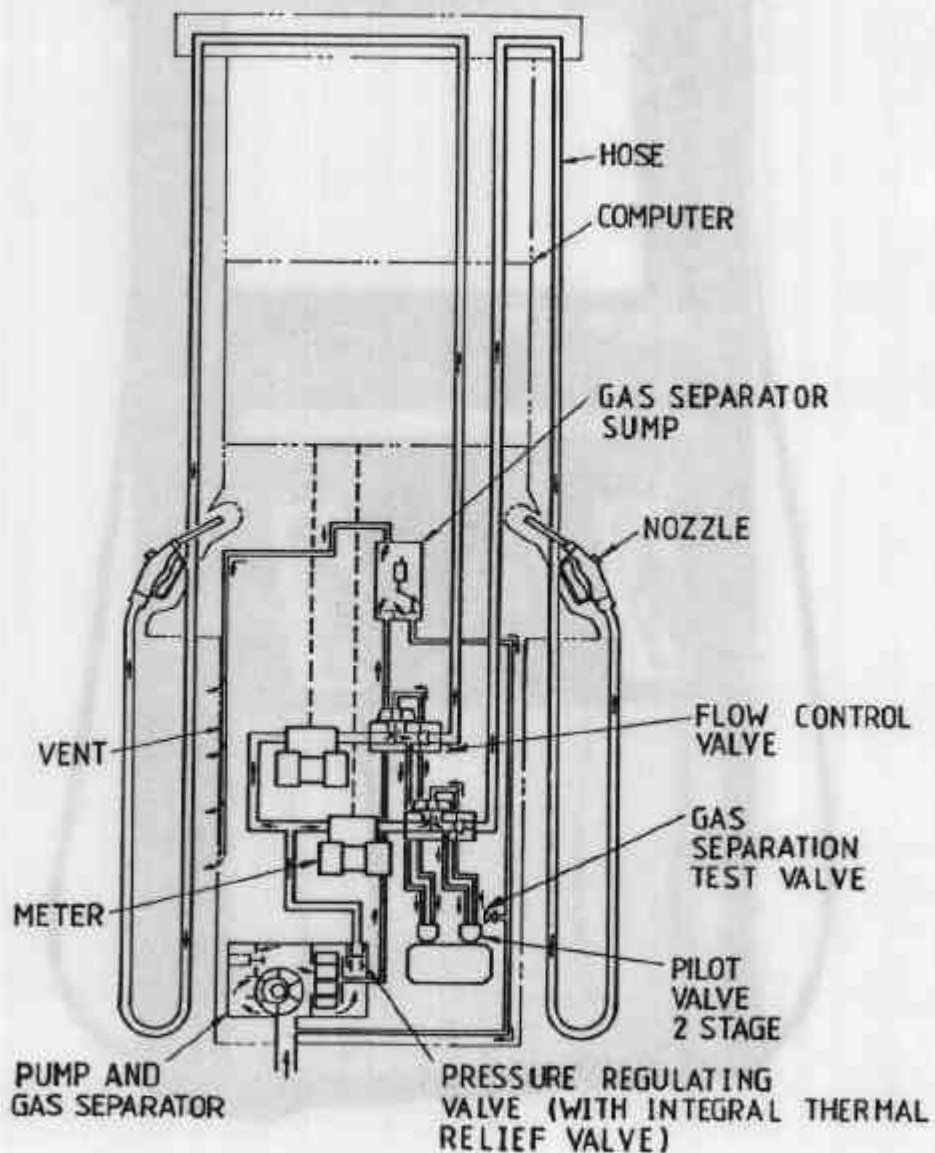
FIGURE 5/6A/84 - 1



Gilborco Model T087A

5/6A/84  
18/6/87

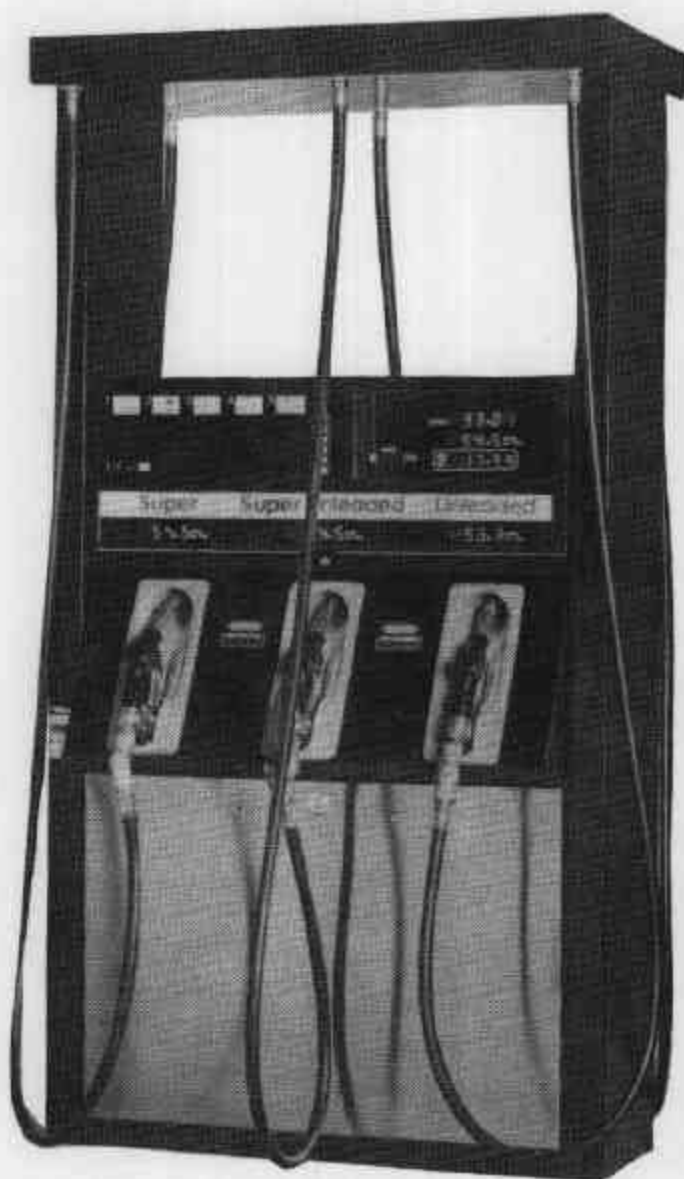
FIGURE 5/6A/84 - 2



Typical Hydraulic System

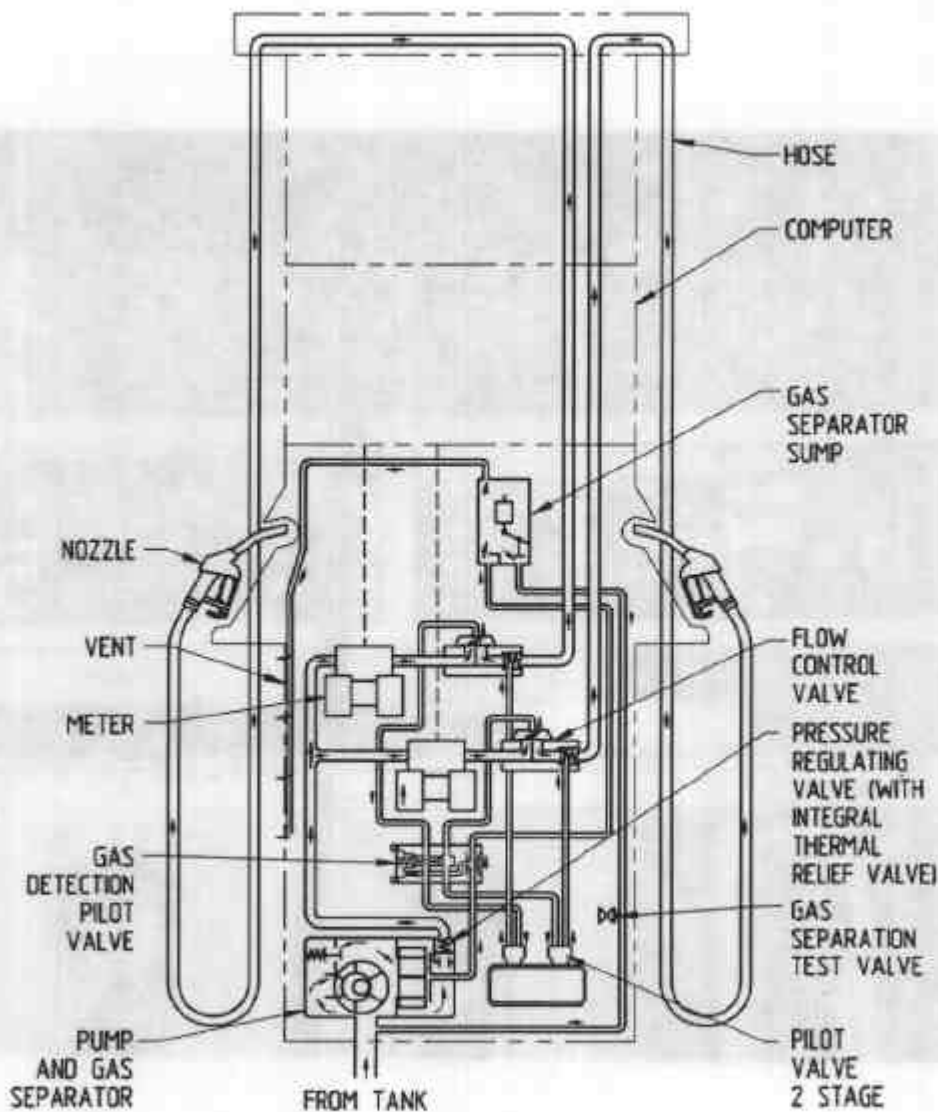
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FIGURE 5/6A/84 - 3



Model T088A

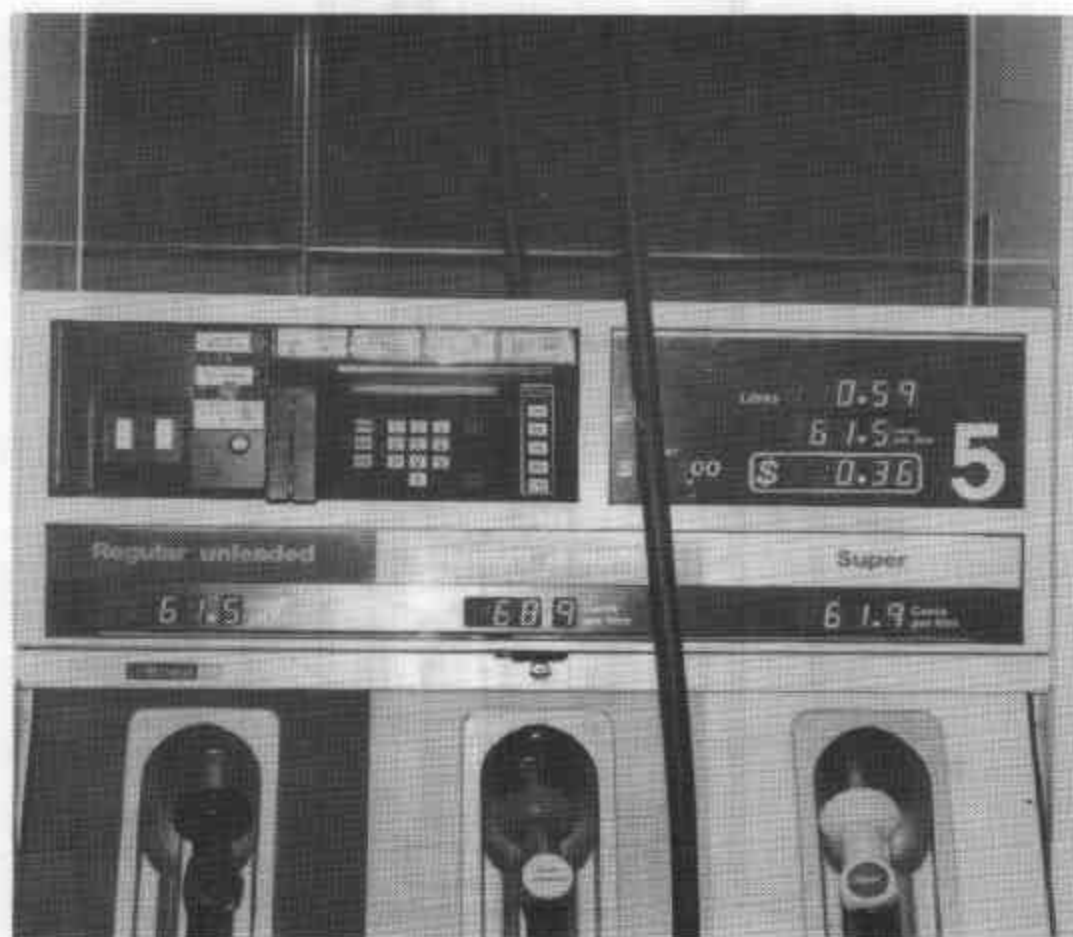
Figure 5/6A/84 - 4



MPP Flowmeter With Gas Detection System

5/6A/84  
6/4/90

Figure 5/6A/84 - 5



MPP Flowmeter With Card-acceptor Module

FIGURE 5/6A/84 - 6

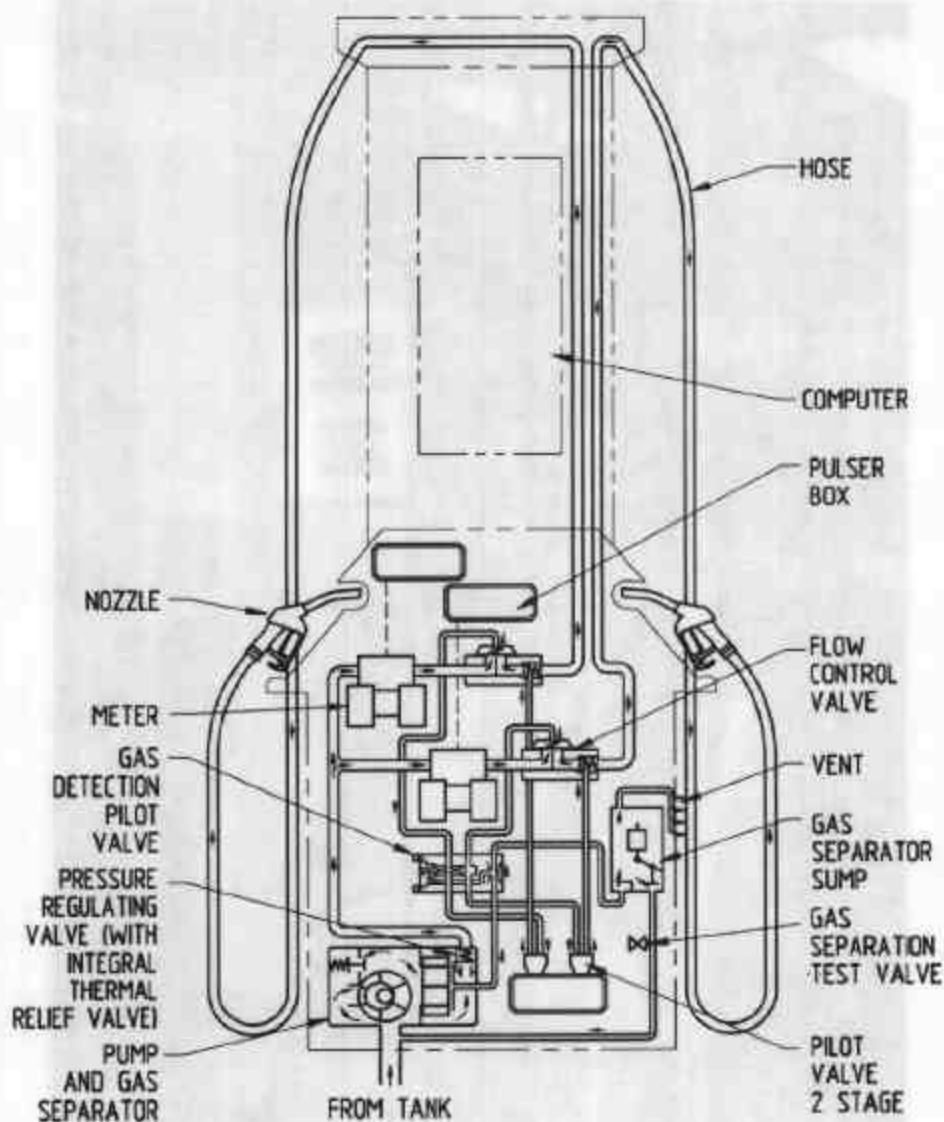


Gilbarco Model T078A Driveway Flowmeter



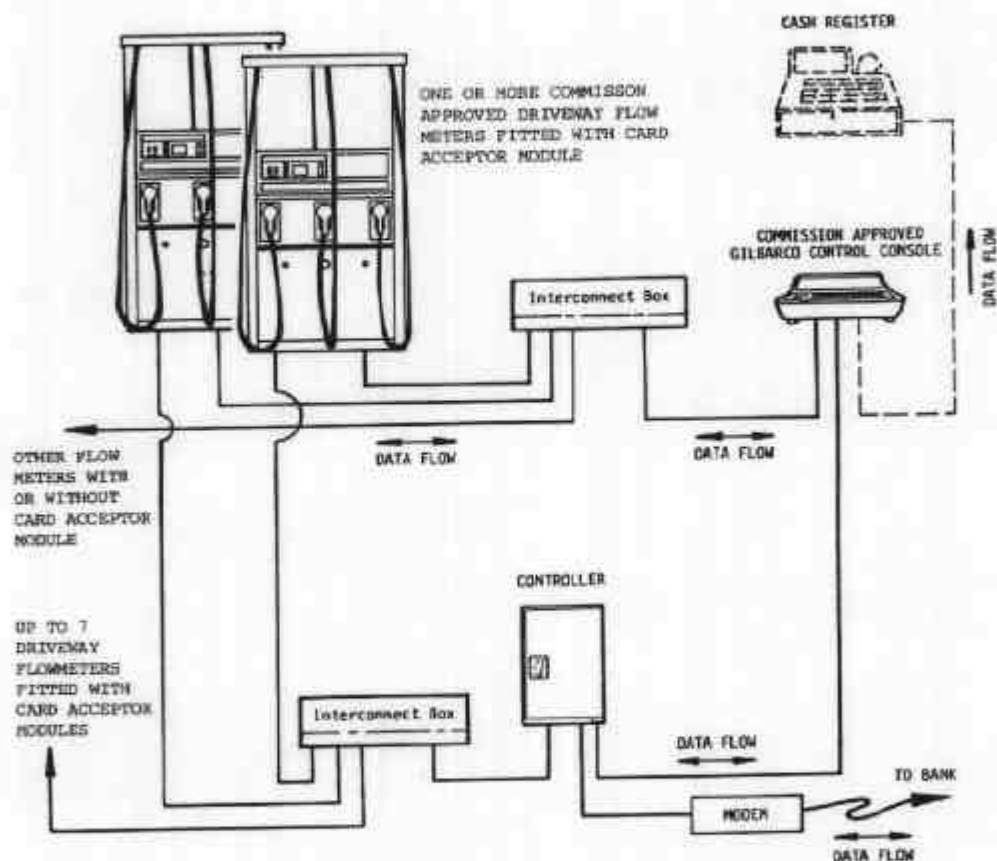
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27/8/90

FIGURE 5/6A/84 - 7



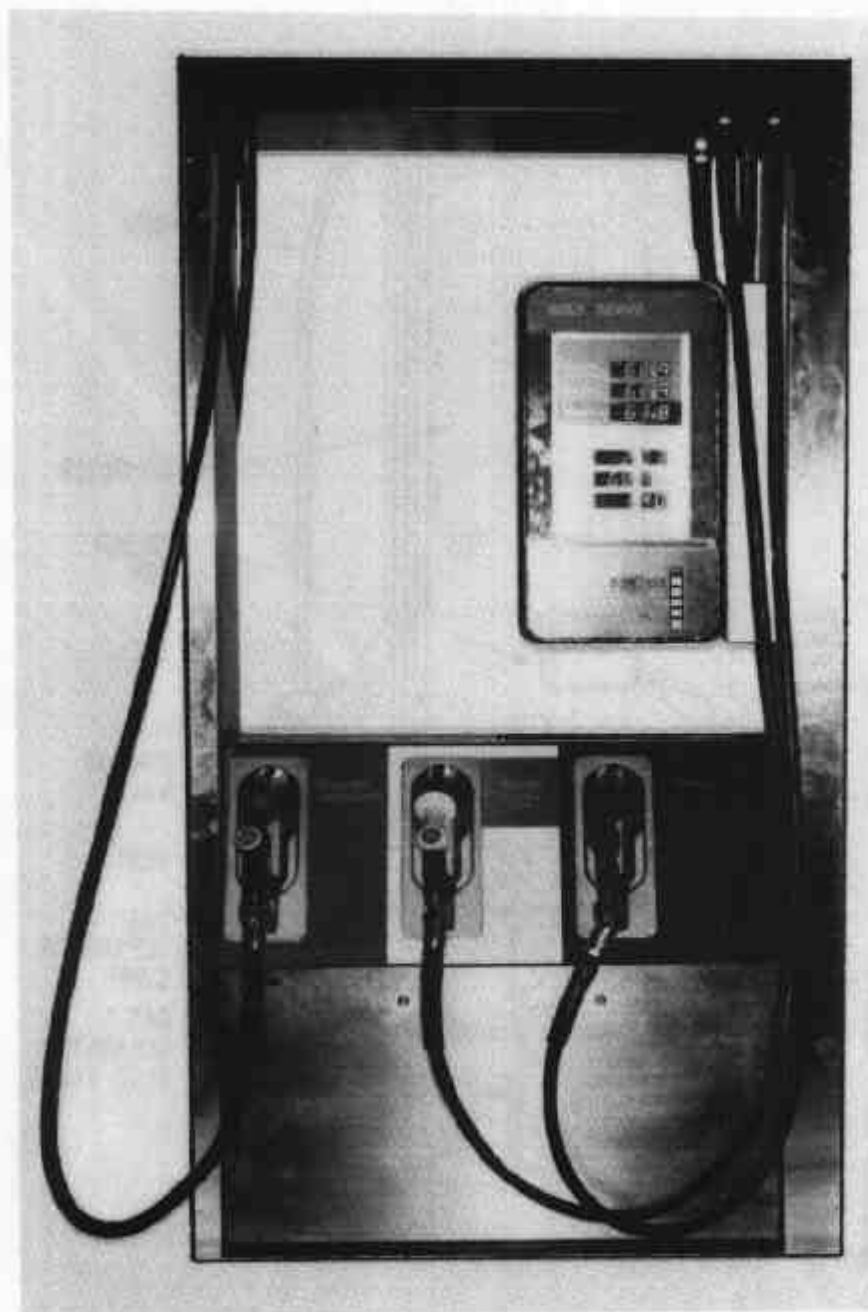
Typical Hydraulic Arrangement (Variant 5)  
With Gas Detection System

FIGURE 5/6A/84 - 8



Typical System - Variant 4

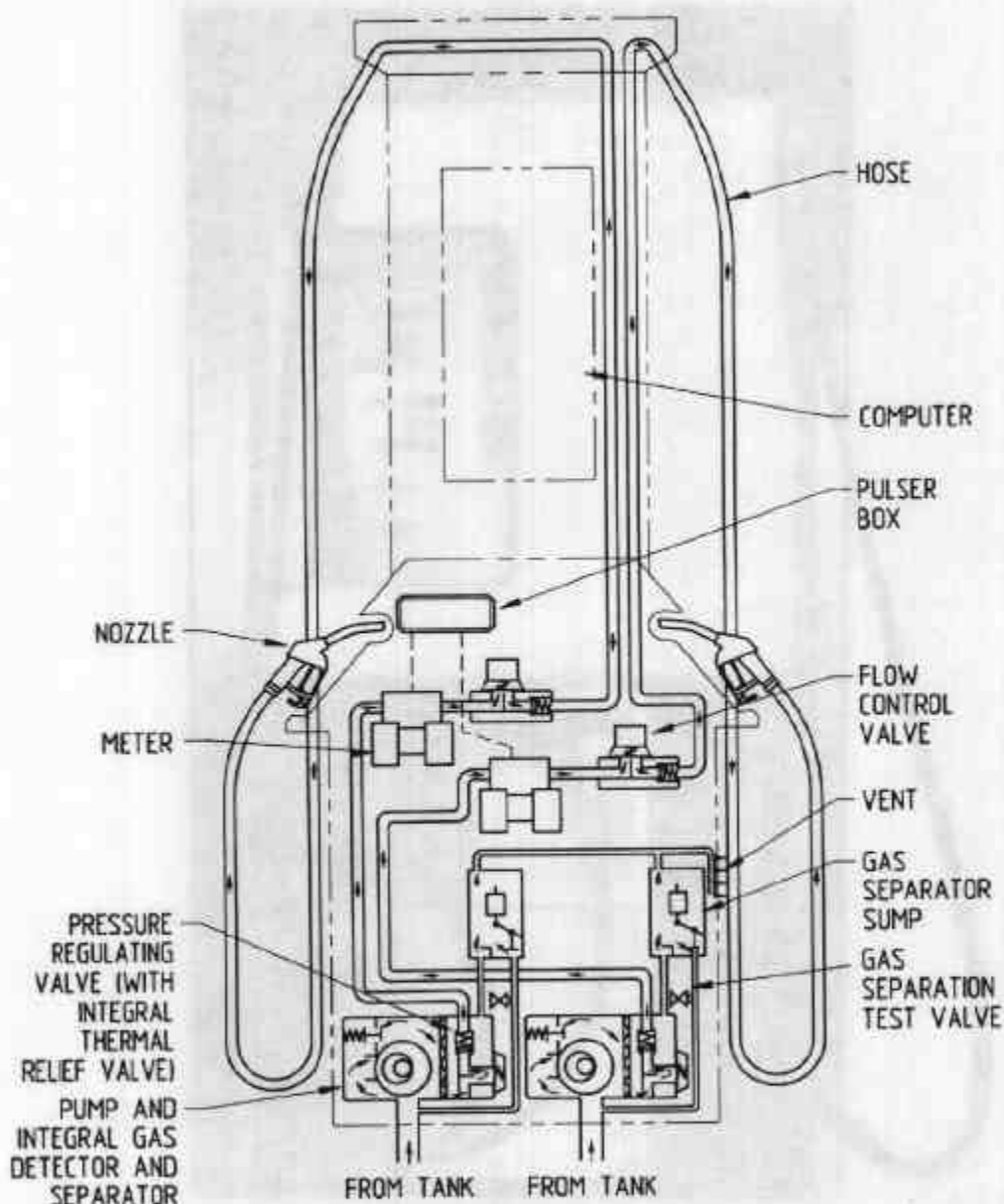
FIGURE 5/6A/84 - 9



Typical T078E/T078F Series Instrument in Alternative Housing  
As Per Variant 7

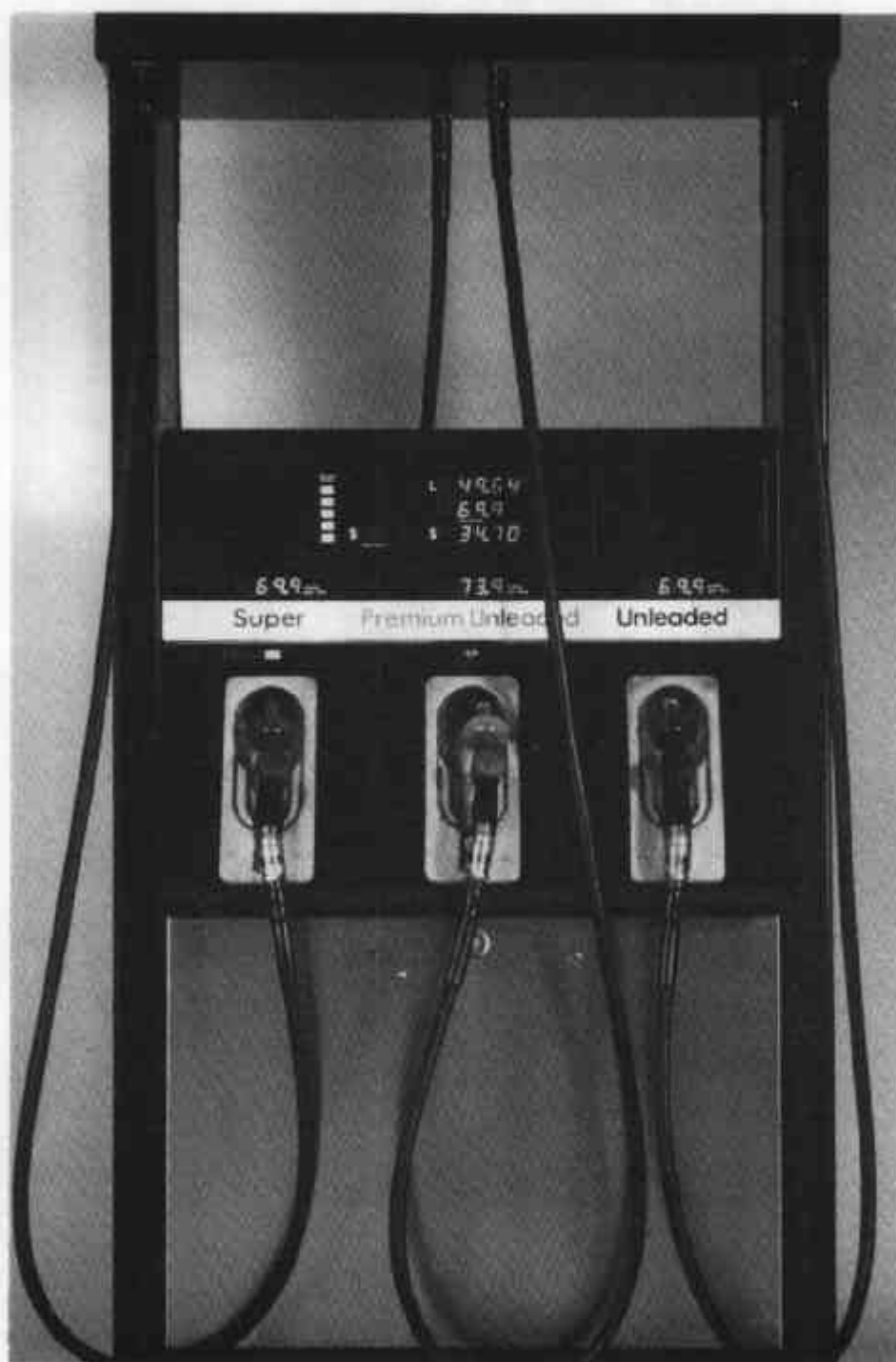
5/6A/84  
11/6/92

FIGURE 5/6A/84 - 10



Typical Hydraulic Arrangement - Variants 8 or 9

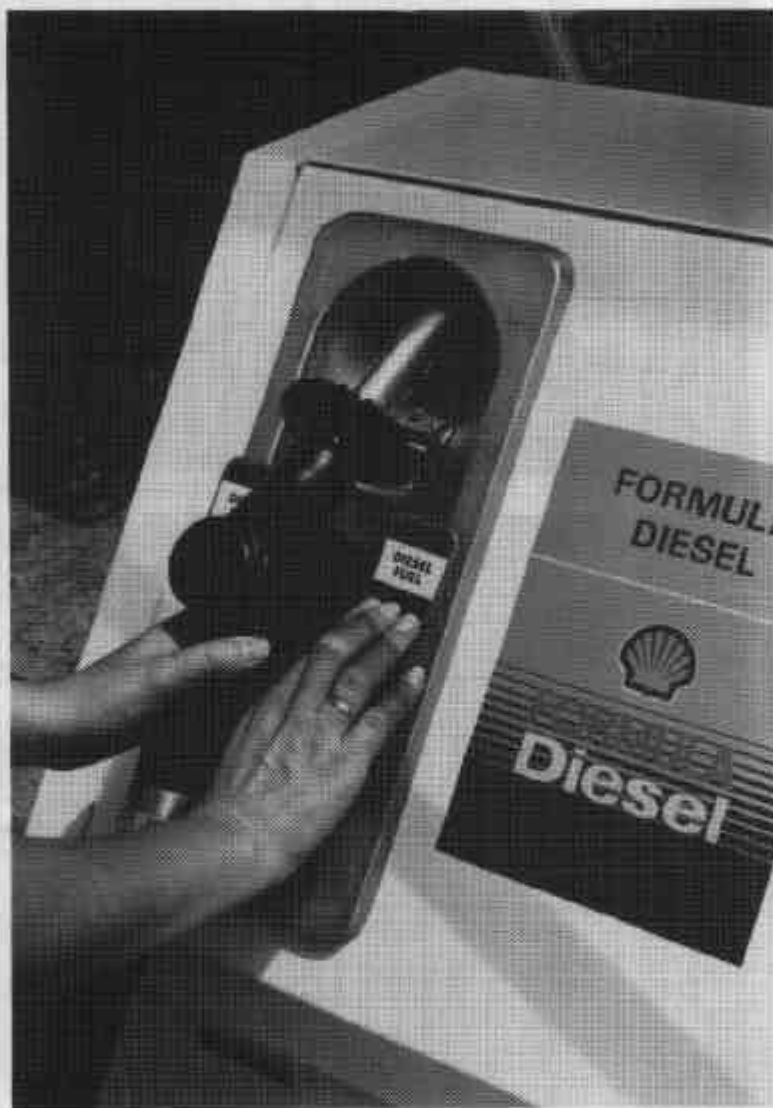
FIGURE 5/6A/84 - 11



Typical T087/T088 Series Instrument in Alternative Housing  
As Per Variant 10

5/6A/84  
11/6/92

FIGURE 5/6A/84 - 12



Typical Nozzle Latch - Variant 11