5/6A/203
15 March 2007

Australian Government

National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation Certificate of Approval No 5/6A/203

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 respect of the

Fuelquip Model VNP1DUH Fuel Dispenser for Motor Vehicles

submitted by Fuelquip Pty Limited
Cnr First Street & First Avenue
Moorabbin Airport VIC 3194

has been cancelled in respect of new instruments as from 1 July 2007.

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

5/6A/203
16 February 2004

Australian Government

National Standards Commission

12 Lyonpark Road, North Ryde NSW 2113 Australia

Certificate of Approval

No 5/6A/203

Issued 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

Fuelquip Model VNP1DUH Fuel Dispenser for Motor Vehicles

submitted by Fuelquip Pty Limited
Cnr First Street & First Avenue
Moorabbin Airport VIC 3194.

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.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 August 2006, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 5/6A/203 and only by persons authorised by the submittor.

Instruments purporting to comply with this approval and currently marked P5/6A/203 should be re-marked NSC No 5/6A/203 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 NSC P 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 13 July 2001
approved 13 December 2002

- A Fuelquip model VNP1DUH ultra high flow rate fuel dispenser for motor vehicles.

Variants: approved 11 August 2003

1. With a submersible turbine pump hydraulic system.
2. A Fuelquip model VND2DUHDUH fuel dispenser.
3. With additional communication hardware to provide Gilbarco communication protocol.

Technical Schedule No 5/6A/203 describes the pattern and variants 1 to 3.

Variants: approved 25 September 2003

4. With selectable indicator resolution.
5. With one or two pump operation selection.
6. With a pre-set facility.

Technical Schedule No 5/6A/203 Variation No 1 describes variants 4 to 6.

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FILING ADVICE

Certificate of Approval No 5/6A/203 dated 18 August 2003 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6A/203 dated 16 February 2004
Technical Schedule No 5/6A/203 dated 18 August 2003 (incl. Test Procedure)
Technical Schedule No 5/6A/203 Variation No 1 dated 16 February 2004
Figures 1 to 4 dated 18 August 2003
Figure 5 dated 16 February 2004

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.

TECHNICAL SCHEDULE No 5/6A/203

Pattern: Fuelquip Model VNP1DUH Fuel Dispenser for Motor Vehicles

Submittor: Fuelquip Pty Limited
Cnr First Street & First Avenue
Moorabbin Airport VIC 3194

1. Description of Pattern

A Fuelquip model VNP1DUH ultra high flow rate fuel dispenser for motor vehicles (Figures 1 to 3) approved to dispense various grades of fuels, in attendant-operated mode. The meter is adjusted to be correct for the liquid for which it is to be verified/ certified.

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Minimum measured quantity, V_{min} 5 L
- Maximum flow rate, Q_{max} 160 L/min
- Minimum flow rate, Q_{min} 15 L/min
- Maximum pressure of the liquid, P_{max} 300 kPa
- Minimum pressure of the liquid, P_{min} 100 kPa
- Range of liquids that can be measured 0.5 to 20 mPa.s (at 20°C) (*)
- Maximum temperature of the liquid, T_{max} 50°C
- Minimum temperature of the liquid, T_{min} –5°C
- Ambient temperature range –10°C to 55°C

(*) Fuels include petrol, kerosene and distillate.

1.2 System Components

The model VNP1DUH fuel dispenser has the following components or features:

- Two Wayne Dresser model 33-044059 pump/strainer/gas separators with a gas test valve that has provision for sealing.
- One Satam model OEM 12 rotary vane positive displacement meter fitted with a Fuelquip model VN pulse output device.
- A Fuelquip model Vision price-computing calculator with 2 price-computing displays.
- One ZVA nozzle or any other compatible Commission-approved nozzle.

The dispenser may also be connected to a compatible (#) Commission-approved control system approved for use with Email/Vision communication protocol to provide self-service operation.

(#) "Compatible" is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system.

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1.3 Calculator/Indicator

The model Vision calculator/indicator comprises a computing unit and display units. A single display is provided for volume, total price and unit price. The indicators display the following maximum values:

Volume	To 999.90 L in 0.01 L increments
Unit price	To 500.0 c/L in 0.1 cent increments
Total price	To $990.00 in 1 cent increments
Totaliser (*)	To 99999 or 9999999999 L in 1 L increments

(*) Electronic totaliser (software driven and resettable - can be configured to display 5 or 10 digits) and mechanical totaliser (non-resettable).

The software version number for the calculator/indicator is HF5.5.2.

On one side of the dispenser the lower left corner of the indicator has a row of four black dots that are used to access the manager's functions once the keyswitch (with red ring) located underneath the indicator has been unlocked. The black dots, from left to right respectively, are Test, Manager, Up and Down pushbuttons used to change the following functions:

- Set price
- Set Communications Mode
- Set dispenser (pump) numbers

The following functions can be viewed by using the abovementioned procedure, and can be changed by a Calibration button located in the Vision printed circuit board (upper left side) behind a sealing cover :

- Display communications protocol type
- Display status
- Display LCD tests
- Display k-factors
- Display type pump/dispenser
- Display model type
- Display products
- Display electronic totals format
- Display mechanical totals format
- Display pre-set type
- Display pre-set dollar amount
- Display pre-set litre amount
- Display pre-set active digits
- Display software version

1.4 Sealing and Verification/Certification Provision

Provision is made for the application of a verification/certification mark. The meters, calibration button and the gas separator test valve have provision for sealing.

1.5 Markings

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

Pattern approval sign	NSC No 5/6A/203
Manufacturer's identification mark or trade mark	.....
Manufacturer's designation (model number)	.....
Serial number	.....
Year of manufacture	.....
Environmental class	class N (#)
Maximum flow rate *(Q_{max})*	..... L/min
Minimum flow rate *(Q_{min})*	..... L/min
Maximum operating pressure *(P_{max})*	..... kPa
Minimum operating pressure *(P_{min})*	..... kPa
Type of liquid	.....
Maximum temperature of the liquid, T_{max}	50°C
Minimum temperature of the liquid, T_{min}	–5°C

(#) See clause **1.1 Field of Operation**.

The minimum measured quantity (V_{min}) shall be clearly visible on any indicating device visible to the user during measurement, in the form "minimum delivery 5 L".

2. Description of Variants

2.1 Variant 1

Systems may include one or more Commission-approved submersible turbine pump (STP) hydraulic systems. These hydraulic systems replace the equivalent components (i.e. motor, pump/strainer/gas separator, and associated pipework) in any fuel dispenser covered by this approval in which case the model number has a D as the 3rd digit (e.g. VND1DUH). More than one fuel dispenser may be connected to the same submersible turbine pump hydraulic system.

2.2 Variant 2

The Fuelquip model VND2DUHDUH with two Satam model OEM 12 rotary vane positive displacement meters and two hoses/nozzles in the same dispenser housing. The meters are supplied with fuel using the submersible turbine pump (STP) hydraulic systems described in Variant 1.

2.3 Variant 3

With the Gilbarco auxiliary board installed in the calculator/indicator of the pattern (Figure 4), in which case the dispenser may then be connected to a compatible Commission-approved control system approved for use with Gilbarco (Marconi) communication protocol to provide self-service operation.

TEST PROCEDURE

Instruments should be tested in accordance with NSC Test Procedure No 5, *Driveway Flowmeters*.

The maximum permissible errors applied during a verification test of the fuel dispenser using the liquid for which it is to be verified/certified, and from normal flow rate to the minimum flow rate specified in the Certificate of Approval or Technical Schedule are:

±0.3% for the calibration/adjustment of the meter; and
±0.5% for in-service inspection of the complete measuring system.

Note: Adjusting the errors of a meter to values OTHER than as close as practical to zero is forbidden, even when these values are within the maximum permissible errors.

Other applicable maximum permissible errors are:

±0.5% for gas elimination device for petrol;
±1.0% for gas elimination device for liquids having a dynamic viscosity exceeding 1 mPa.s (distillate);
±50 mL for deliveries equal to the minimum measured quantity; and
±50 mL due to hose dilation (without hose reel).

Check the software version number; refer to clause **1.3 Calculator/Indicator** in the Technical Schedule for how this is achieved.

5/6A/203
16 February 2004

TECHNICAL SCHEDULE No 5/6A/203

VARIATION No 1

Pattern: Fuelquip Model VNP1DUH Fuel Dispenser for Motor Vehicles

Submittor: Fuelquip Pty Limited
Cnr First Street & First Avenue
Moorabbin Airport VIC 3194

1. Description of Variants

1.1 Variant 4

With the indicator resolution set using the calibration function switch 'Range mode' to display increments of either:

- 0.01 L if the range is set to 2; or
- 0.1 L if the range is set to 1.

Once the appropriate resolution is selected the calibration function switch is sealed.

1.1.1 Field of Operation

For 0.01 L resolution: V_{min} = 5 L
For 0.1 L resolution: V_{min} = 50 L

Note: The minimum measured quantity (V_{min}) shall be clearly visible on any indicating device visible to the user during measurement.

1.2 Variant 5

The Fuelquip model VNP1DUH fuel dispenser with an optional rotary switch (Figure 5) to change between one and two pump operation.

1.2.1 Field of Operation

One pump: Q_{max} = 80 L/min
Two pumps: Q_{max} = 160 L/min

1.2.2 Markings

In addition to the markings specified in cl. **1.5 Markings** of Technical Schedule No 5/6A/203 dated 18 August 2003, the maximum flow rate when used with one and with two pump operation shall be marked.

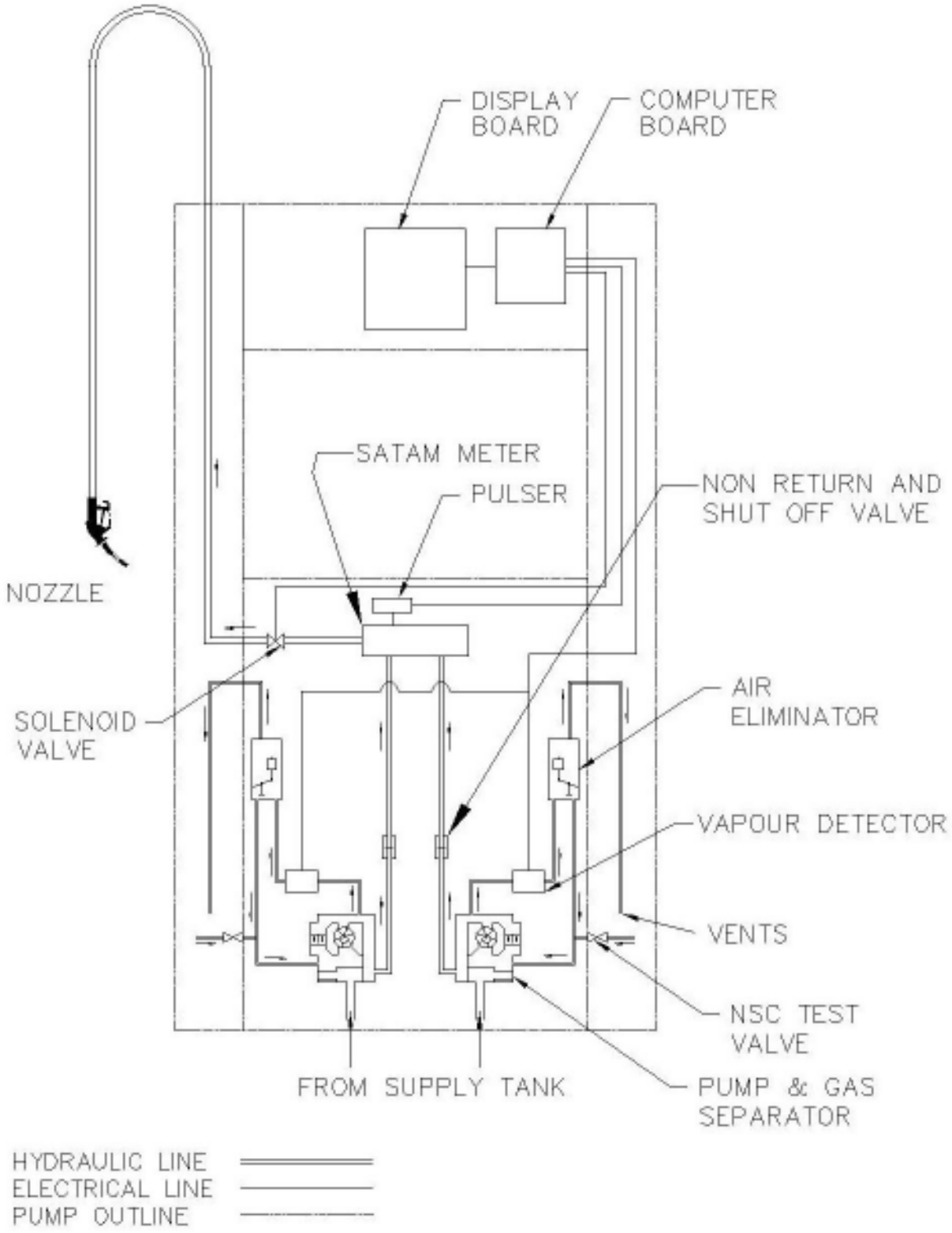
1.3 Variant 6

The Fuelquip model VNP1DUHK fuel dispenser which is similar to the pattern but now has a pre-set facility; the calculator/indicator has pre-set capabilities through the calibration function mode so the fuel dispenser can be programmed (for either Dollars or Litres) so that the three pre-set buttons are numbered '1, 5, 10'; or '5, 10, 20'; or '10, 50, 100'.

FIGURE 5/6A/203 – 1

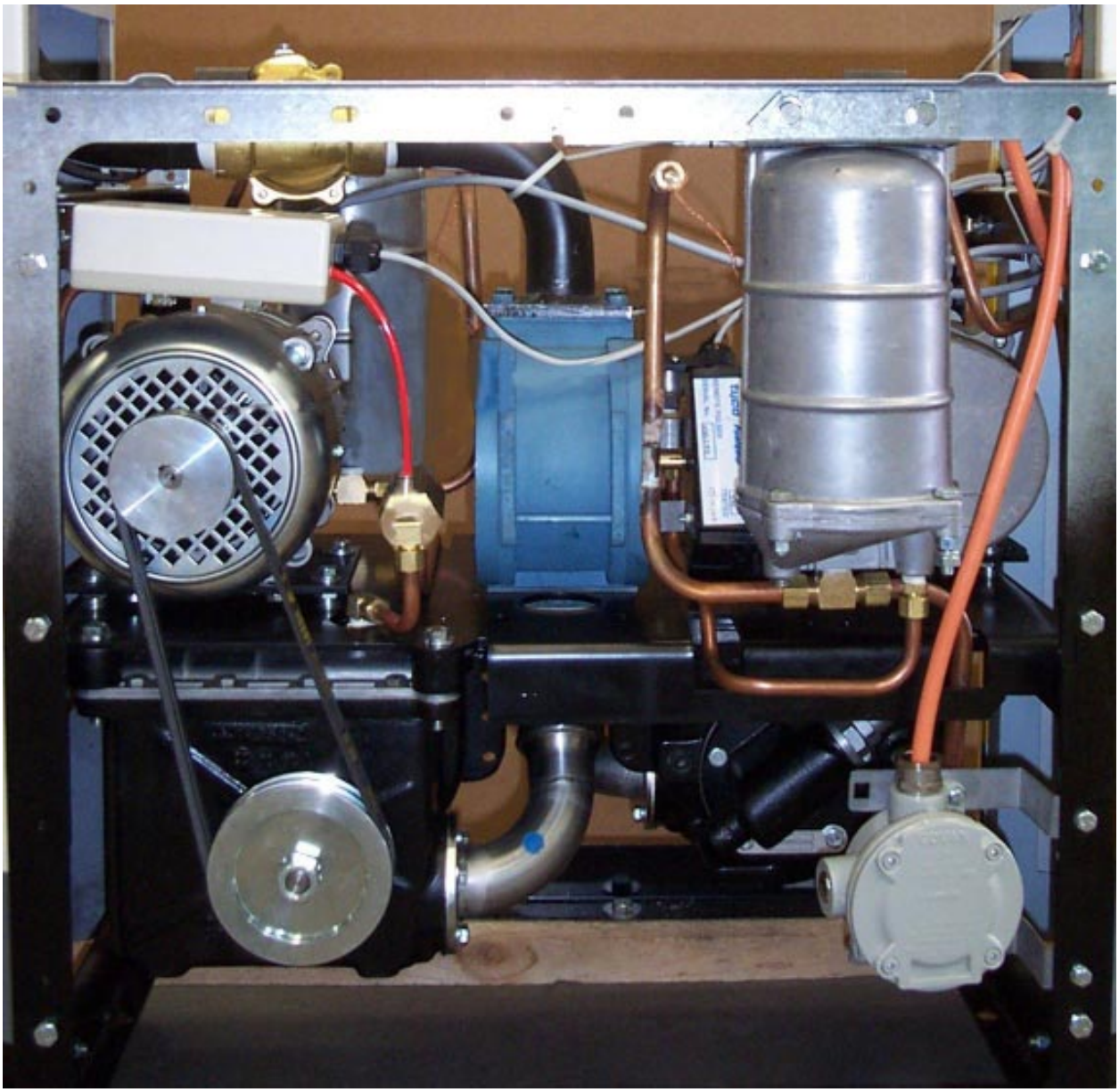
Fuelquip Model VNP1DUH Fuel Dispenser for Motor Vehicles

FIGURE 5/6A/203 – 2



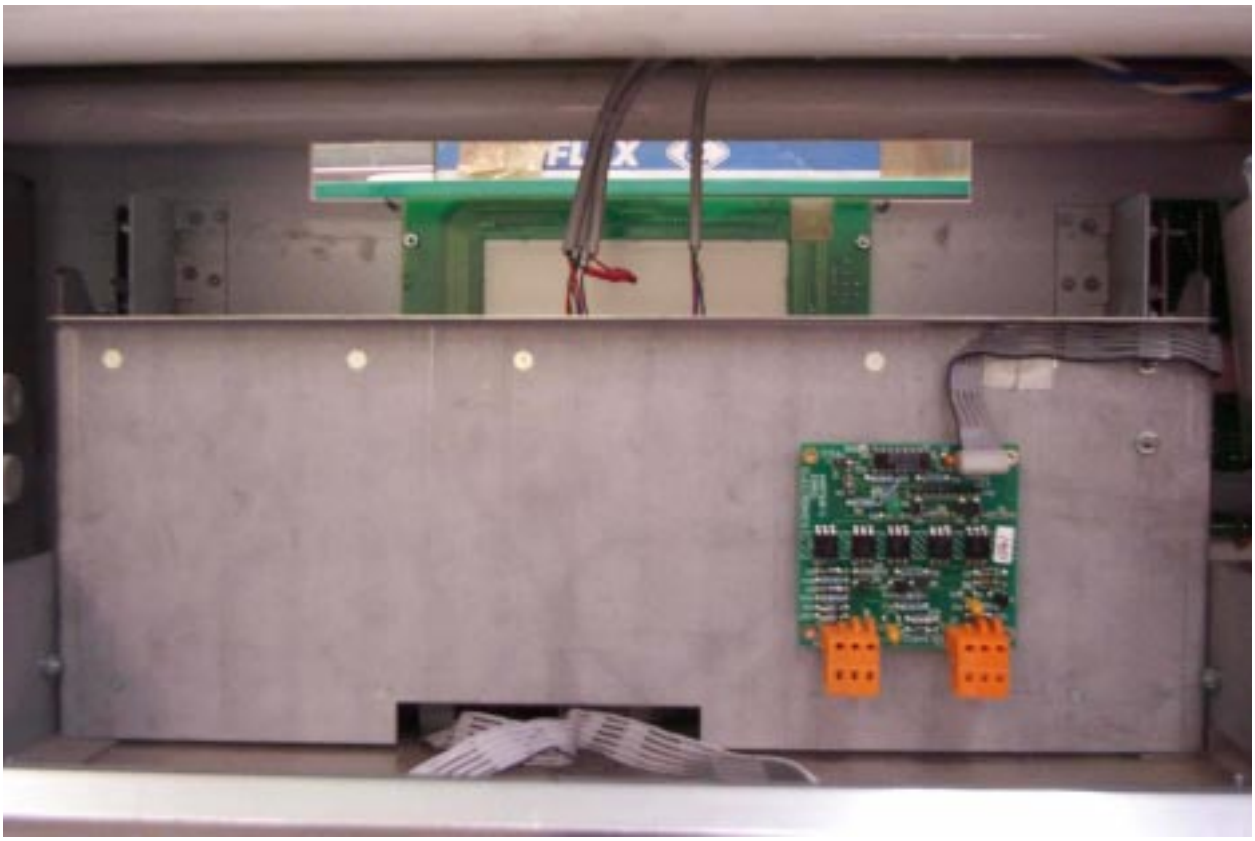
Fuelquip Model VNP1DUH Hydraulics

FIGURE 5/6A/203 – 3



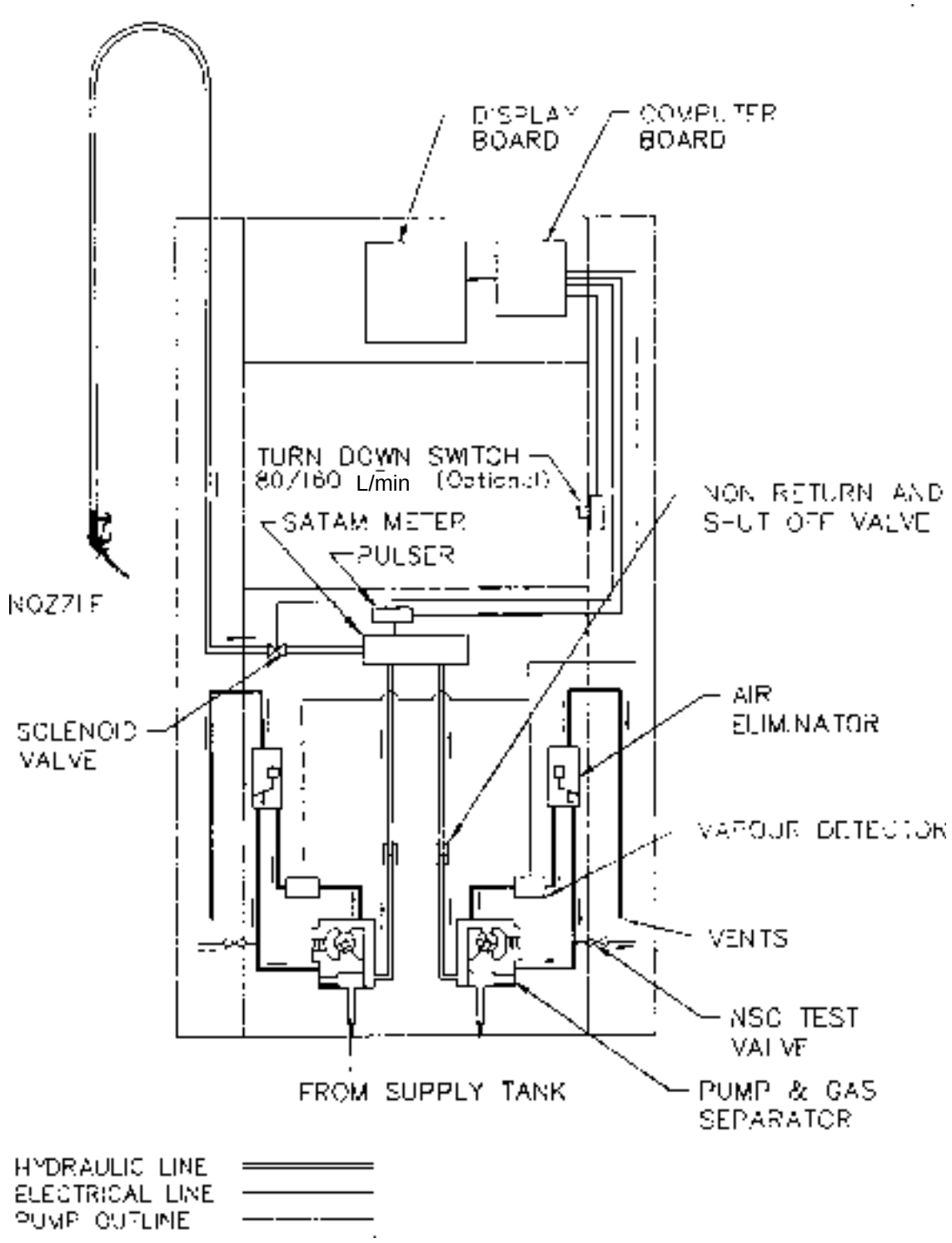
Fuelquip Model VNP1DUH Hydraulics

FIGURE 5/6A/203 – 4



With a Gilbarco Auxiliary Board

FIGURE 5/6A/203 – 5



Fuelquip Model VN1DUHDUH With Pump Selection Switch