



User Manual

Tokheim Quantum™ Fuel Dispenser and Outdoor Payment Terminals

902947-001

Rev 13



Legal

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1 Health, Safety and Liability

1.1 Intended Use

Quantium™ Fuel Dispensers deliver petrol, diesel, LPG, AdBlue and other fuels in measured quantities from the station tank to vehicle tank.

This manual provides guidelines for the use and day-to-day care of the dispensers and outdoor payment terminals and is primarily aimed at Station Operators and their customers. All activities, in and around the dispenser, must be subjected to risk assessment by the owning organisation to identify and mitigate any potential safety issues.

Installation, maintenance and repair operations are described in separate manuals for authorised technicians only.

This manual is divided into sections which are described as follows:

Section 1 - Health, Safety and Liability (page 5)

The relevant legal, health and safety information required for the safe operation of the dispenser is contained in this section.

Section 2 - Dispenser Layout (page 18)

This section contains a general description of the fuel dispenser and payment terminal, including basic part recognition and the identification of hazardous zones.

Section 3 - Instructions For The Customer (page 25)

The standard operation of a dispenser from start up to completion of the transaction is outlined in this section. It also covers dispenser options such as preset options, outdoor payment terminals, master and satellite dispensers.

Section 4 - Instructions For The Station Operator (page 38)

This section includes outlines of the daily routines for Station Operators and aspects of emergency procedures.

Section 5 - LPG Specific Operation (page 43)

Specific information relating to the safe operation of Quantum LPG dispensers is covered in this section.

Section 6 - Dispenser Functions (page 54)

This section contains the instructions on how to perform basic dispenser calculator functions such as setting the unit prices, PIN code and viewing the dispenser totalisers.

Section 7 - Cleaning & Maintenance (page 81)

This section covers the regular maintenance checks and cleaning of the Quantum dispenser.

Section 8 - Legal Notices (page 90)

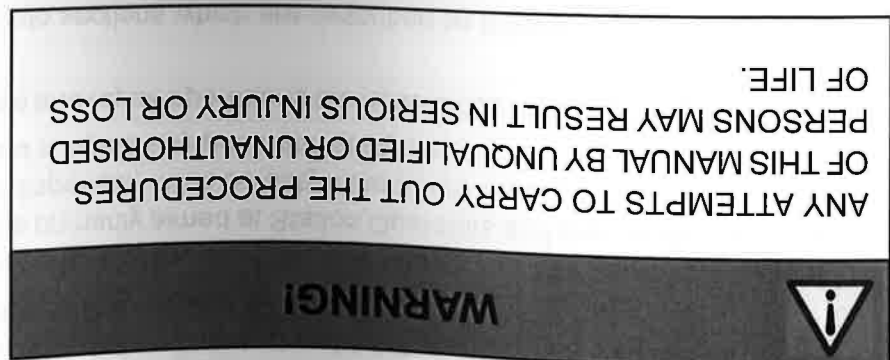
1.2 Product Scope

The equipment and models covered by the contents of this manual are the Quantum, 10 Series range and later models of fuel dispensers, including LPG versions where applicable.

1.3

Qualified Technicians

This manual is not intended to replace the services of a properly qualified technician. Only qualified technicians, familiar with the contents of this manual, should carry out the procedures described in this document.



A Qualified Technician is defined as a person who has been provided with training to allow them to carry out repair, maintenance and installation operations in accordance with all applicable laws, regulations and rules.

All the various aspects of competence shall be covered with adequate education, training, tools, spare parts, instructions and legislative documentation.

Documentation used shall include with no exclusion the Dover Fueling Solutions installation and maintenance documents in relation with product(s) and component(s).

Specific verification of such skills and knowledge might be required with associated diploma and/or certification as per applicable national laws and rules.

In case of an unexpected situation, a Qualified Technician shall always be provided with adequate contacts, within their organization, to resolve issues.

Technicians shall always use appropriate Personal Protective Equipment (PPE), such as gloves, glasses, safety shoes (non-exhaustive list) and take steps to ensure that the public are kept away from the work area.

Technicians shall apply national laws and rules to secure the workspace, check safety and hazardous zones before and during operations, and understand and complete all required paperwork to coordinate for safety.

Failure in meeting any of the above requirements makes the technician either unqualified or unauthorized or both.

1.4

Contact Information

For technical assistance please contact the appropriate service division.

1.5

Maintenance Notes

The Ex dispensers or other Ex-materials designed and manufactured by Dover Fueling Solutions (DFS) are fully compliant with the applicable EU directives and harmonised standards (refer to EU Declaration of Conformity for the list of applicable standards).

As with any material, the equipment supplied by DFS needs to be installed, maintained, inspected, or repaired as recommended by DFS and/or suppliers of individual components associated with the equipment.

Any installation, repair, maintenance, modification, etc. should only be conducted by approved DFS maintenance partners or recommended partners of authorised DFS distributors and sales channel partners.

The aforementioned equipment is subject to the following, which actions are only permitted to be carried out by authorised and trained personnel:

- Installation and commissioning
- Regular periodic inspections, including metrology and vapour recovery.
- Any required maintenance
- Any repair or modification

The instructions for installation and maintenance are contained within the corresponding DFS manuals and must be adhered to. Approved replacement parts are listed in the DFS parts manual. Failure to follow the contents of any of these manuals may invalidate warranty and result in regulatory breaches and potential liability issues.

Dispenser owners, installers and qualified service technicians should be aware of local (country/region-specific) guidelines for inspection, maintenance and/or repair of equipment on filling stations. It is the responsibility of these owners, installers and maintainers to check all relevant information and to observe mandatory guidelines to ensure the safety of the filling station.

Installations, inspections, maintenance and repair shall be performed in accordance with the following non-exhaustive list of standards:

For Ex-approved electrical equipment:

- EN 60079-14, Explosive atmospheres - Part 14: Electrical installations design, selection and erection
- EN 60079-17, Explosive atmospheres - Part 17: Electrical installations inspection and maintenance
- EN 60079-19, Explosive atmospheres - Part 19: Equipment repair, overhaul and reclamation
- IEC/IEEE 60079-30-2, Explosive atmospheres - Part 30-2: Electrical resistance trace heating - Application guide for design, installation and maintenance.

For non-electrical Ex-approved equipment:

- NPR-CEN/TR 16793, Guide for the selection, application and use of flame arresters.

Maintenance related activities must be in line with DFS specified maintenance intervals. Before commencing dispenser-related work; installers, inspectors, operators and qualified repair technicians need to be aware of any component-specific safety, maintenance and inspection characteristics associated with the work they are performing.

The owner of the equipment is responsible to ensure that all required periodic checks on Ex-components are performed. Some Ex-components require special measures to be taken for maintenance, e.g. some ex-components may require a check within the first 3 months of operating and additionally require an annual check by the owner.

Periodic verification of earthing and bonding during installation and maintenance periods shall be put in place by the equipment owner, following national guidance.

As always, the latest edition of above standards must be verified and their compatibility with the materials installed checked before issuing an inspection and maintenance program for each dispenser. It is evident that the ATEX protection modes of each component will influence the generic maintenance program of any dispensers.

IMPORTANT: THE EQUIPMENT OWNER HAS THE ULTIMATE OBLIGATION FOR EACH SITE'S COMPLIANCE WITH EN 13617 (OR ANY SUCCESSOR STANDARD) AND ALL BUILDING AND SAFETY CODES AND TAKING APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH INDUSTRY BEST PRACTICES, WHERE REQUIRED, COMPONENT MANUALS CAN BE PROVIDED TO YOU UPON REQUEST FROM THE COMPONENT MANUFACTURER. DFS SHALL NOT BE RESPONSIBLE FOR THE DESIGN OR INSTALLATION OF SAFETY MEASURES NOT INCLUDED AS A COMPONENT OF THE PRODUCTS, INCLUDING, WITHOUT LIMITATION, LEAK CONTAINMENT, TRAFFIC, CONTROL STRUCTURES, EMERGENCY STOP BUTTONS, SHEAR OR IMPACT VALVES, OR OTHER FIRE SUPPRESSION DEVICES. EQUIPMENT OWNERS ACKNOWLEDGE THAT THE ENTIRE USE, MANAGEMENT, AND PERFORMANCE OF THE EQUIPMENT REMAINS SOLELY WITH THE EQUIPMENT OWNER.

1.6 Health & Safety

The following safety procedures must be applied in full and without exception by users and all other members of the public present on the forecourt:

- All safety pictograms in this manual and all safety symbols and instructions on the machine or in its direct vicinity must always be read and adhered to in full.
- All instructions in this manual are provided for guidance only. All activities, in and around the dispenser, must be subjected to risk assessment by the owning organisation or the Service Partner.

Note!

Safety Data Sheets for all products should be available in the Service Station. These sheets contain important health and safety information relating to the individual product and the specific precautions to be followed in the event of prolonged contact, inhalation or consumption.

1.6.1 Specific Safety Procedures For the Customer

- Smoking and naked flames are strictly forbidden anywhere within the vicinity of fuel dispensers, as indicated by station safety information.
- Avoid any spillage fuel during refuelling.
- Do not start the delivery of fuel by actioning nozzle trigger until nozzle spout is fully inserted into vehicle tank opening. Refer to section 3.3 page 28.
- Should you wish to fill a fuel container, the Station Operator must be informed. Refer to section 3.4 page 28 for more information.
- Petroleum fuels, in both liquid and vapour form, may constitute a health hazard. Direct contact should be avoided. Use suitable protective clothing, protective gloves and/or protective hand cream to guard against accidental contact with fuel.

- Do not breathe in fuel vapour and never drink fuel! It is your responsibility to prevent your passengers doing this through ignorance. Suitable precautions must be taken and where necessary respirators used.
- Should fuel accidentally splash into your eyes, wash your eyes immediately with water; then seek and follow the advice of the station operator.
- Should fuel be swallowed either accidentally or on purpose, contact the station operator immediately for precise counter-measures as provided by the oil company.
- Persons who, due to age, infirmity, or for other reasons, have been barred from driving private or public passenger vehicles should not be permitted to operate fuel dispensers.
- Never put your hand or fingers inside the opening from which a retracting hose emerges as moving parts may crush and/or sever fingers. It is your responsibility to prevent your passengers from doing this through ignorance.
- Long hair and ties can get caught in moving parts. Hair must be suitably covered.

Emergency Procedures For The Customer

In an emergency situation (fire, collision, major fuel spillage, personnel soaked with fuel etc.) act as follows:

- If possible, replace the nozzle back in the nozzle holder of the dispenser, **but only if this can be done safely**. Do not take any risks.
- Leave the danger zone immediately.
- Alert the Station Operator.
- Follow the instructions of the Station Operator or firefighting authorities at all times.

1.6.2 Specific Safety Procedures For the Station Operator

With the exception of certain dispenser configurations, where Station Operators require limited access to the interior of the dispenser, for example: to set prices, change payment terminal paper rolls or read mechanical totalisers, access to the interior of the fuel dispenser must be by suitably trained staff.

Replenishment of dispenser payment terminals requires mains power to be kept on. In this case the owning organisation must carry out risk assessments to derive appropriate safe procedures.

The instructions for the customer also apply to other users including the Station Operator and must be read carefully. Refer to section 4 of this manual for guidance on specific procedures to be followed in particular emergency situations.

IMPORTANT: In all emergencies (danger to both persons and property), refer to national law and/or company rules first and foremost. If the instructions given in this document contradict national law and/or company rules, national law and/or company rules always take precedence.

After an incident, the dispenser must be carefully checked by a competent service organisation listed on the back cover of this manual.

Emergency Procedures For The Station Operator

In an emergency situation such as: fire, collision, major fuel spillage or leakage, personnel soaked with fuel, then act as follows:

- Push the emergency stop button.
- Switch off the power supply to the fuel dispenser(s) immediately.
- Clear the area of the emergency immediately. Get people, vehicles etc. away from the danger zone.
- Alert and request assistance from the relevant emergency authorities (Fire Brigade, Police, Ambulance Service) immediately.
- If possible, replace the nozzle back in the nozzle holder of the dispenser, **but only if this can be done safely**. Do not take any risks.
- Use the equipment and facilities provided, in accordance with the safety procedures for the service station.
- If tackling a fire, use only equipment intended for that purpose (fire extinguishers etc.)
- Continue to manage the situation until all danger or risk has been eliminated or until the emergency authorities arrive on the scene.

1.7 Hazards

Active fuel station forecourts present a significant threat of explosion due to the possible presence of explosive gases. The use of gas detectors, prior to commencing work in hazardous areas, should be considered as part of the owner organisation's risk assessments.

Any equipment used in close proximity to fuel dispensers must comply with the requirements of the ATEX directive and be spark-free.

As a general guide, and prior to starting work, the dispenser must be entirely disconnected from the mains supply and the mains supply switch locked in the OFF position. Use LockOut-TagOut (LOTO) procedures to: apply a lock to the mains switch to prevent power being switched back on, and, apply a tag to the switch identifying who applied the lock.

The submerged pump (if applicable) and control signals from the dispenser must also be isolated. This is done to provide safety for the technician. As a further precaution, switch off the mains supply in the service station shop and place a clear notice on the switch to avoid it being turned on again inadvertently.

An exception to this is when routine maintenance is required on the integrated payment terminal, for example printer paper replenishment, paper jam clearance, cleaning etc. These activities require power to be on. These activities should be risk-assessed by the owning organisation and appropriate work practices defined.



WARNING!

THE CONNECTION AND DISCONNECTION OF ELECTRICAL CONNECTIONS MAY ONLY BE CARRIED OUT BY QUALIFIED PERSONNEL AUTHORISED FOR SUCH ACTIVITIES. WORK IN DANGEROUS AREAS MUST BE MADE SAFE BY OBSERVING ALL THE NATIONAL SAFETY REQUIREMENTS IN FORCE.

It is not permitted to put a fuel dispenser into operation before an authorised official has inspected it and released it. This depends upon the national regulations in force.







Dismantled packaging and cladding must be stored in such a way as to avoid damage to components or injuries to persons. Covers that can be opened, such as the calculator housing, should be handled with care. Ensure that the retaining catch is placed in the correct position to prevent the cover falling onto the head of the service engineer or other persons in the area.

At unattended service stations, every end-user should be able to read the User Instructions. They should be visible on a notice board or integrated into the payment terminal and should be sufficiently well lit so that they can be read at night.

At unattended service stations break away couplings must always be used to reduce the danger caused by a motorist driving off with the nozzle still in the tank.

1.8 Warning Signs

The following warning signs are fitted as standard, on the dispenser, however they may vary according to individual country requirements or customer specifications.

Sign	Meaning	Position
	Do not use mobile phones	Visible from both sides of dispenser
	No naked flames	Visible from both sides of dispenser
	Do not spill fuel on the ground	Visible from both sides of dispenser
	Smoking forbidden	Visible from both sides of dispenser
	Stop vehicle engine	Visible from both sides of dispenser
	Trucks only	Visible from both sides of dispenser

Sign	Meaning	Position
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Do not drive away with nozzle in tank

Visible from both sides of dispenser

For more information see User Manual available at this station

Next to User Instructions near the nozzle boot



Do not fill bottles with gas



Do not fill balloons with gas

- 1.9 Personal Protective Equipment**
- Personal Protective Equipment must be specified after installers have conducted their own risk assessments. However, the following PPE is recommended to be worn at all times during installation and maintenance procedures:
- Head protection
 - Protective boots (conductive)
 - Chemical and cut resistant gloves and barrier cream
 - Anti static High-Vis clothing
 - Eye protection.

It is also recommended that disposable protective gloves are available for use by customers when dispensing LPG or diesel to reduce the risk of freeze burns and/or skin irritation.

1.10 Standards & Certificates

This dispenser is constructed in conformity with the essential requirements of the following applicable European Directives (non exhaustive list):

- Low Voltage Directive (LVD) 2014/35/EU,
- Explosive Atmosphere Directive (ATEX) 2014/34/EU,
- Measurement Instrument Directive (MID) 2014/32/EU,
- ElectroMagnetic Compatibility Directive (EMC) 2014/30/EU,
- Machinery Directive 2006/42/EC,
- Restriction of the use of certain Hazardous Substances RoHS2 2011/65/EU, except for lead sealings fixed on some parts of dispensers. These components must be recycled in accordance with national regulations.

Please refer to the relevant EU declaration of conformity, which accompanies this equipment, for the list of current standards and directives applied. The above declaration and this one have to be archived by yourself to demonstrate the conformity of your equipment in case of checking by national authorities.

Dispensers fitted with a Stage II Vapour Recovery system, are in conformity with the requirements of European Directive 2009/126/EC amended by Directive 2014/99/EU.

Other EU directives and national regulation may also be applicable. These may include supplementary environmental requirements. Please check your local regulations.

Use of any combined Fuel/LPG or Fuel/AdBlue dispensers may be subject to national legislation restrictions. Please check national legislation prior to installation.

Components or apparatus specified for use with the dispenser defined as suitably certified have been selected with due regard to the latest current standards and technical information.

This dispenser is also certified to OIML International Recommendations R117-1.

Production and end test of the dispenser is controlled through the Quality Assurance systems within the Manufacturing Centres, and has received Quality Assurance Notification from a Notified Body.

No modification to the dispenser may be performed without express permission from Dover Fueling Solutions UK Ltd. and must always use original components or retrofit kits. Failure to comply with the above will invalidate product conformance with the relevant European Directives and Dover Fueling Solutions UK Ltd. will no longer accept product liability.

1.10.1 Dispenser Marking For the Atex Directive

The owner is responsible for checking that the dispenser ATEX zoning, as described in the applicable dispenser installation manual, is compatible with their own site ATEX zoning defined in compliance with national transposition of directive 1999/92/EC or any other national legislation.

The dispenser is designed, constructed and marked to be in accordance with the standard 13617-1 for fuel and combined fuel / AdBlue, 14678-1 for LPG, or both standards for combined fuel/LPG. This is Ex certified as category 2 in accordance with module B (annex III) of ATEX directive by a notified body.

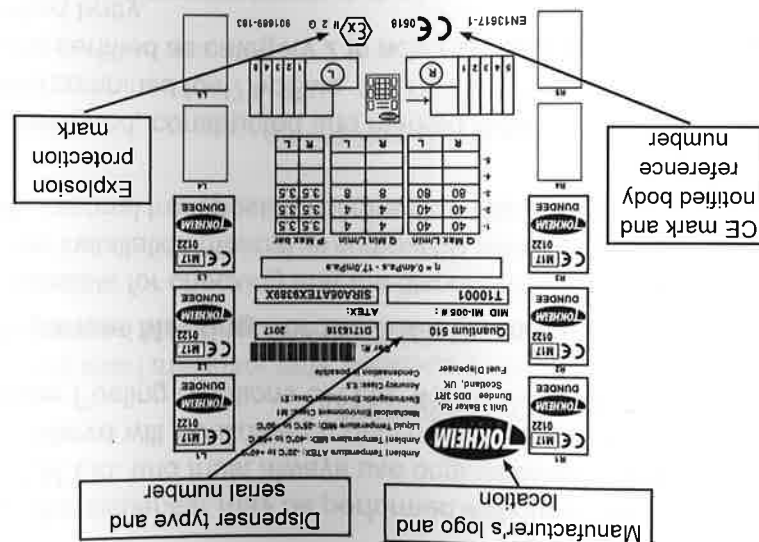


CAUTION!

The AdBlue dispensers are used to dispense a water based urea known as AdBlue (AdBlue® is a registered trademark of the Verband der Automobilindustrie e.V (VDA)).

The AdBlue hydraulics may be integrated into a petrol dispenser constituting a combined fuel/AdBlue dispenser. The reason for offering Ex standalone AdBlue dispenser models is that the AdBlue dispensers may be positioned in close proximity to fuel dispensers and thereby be located partially within a Zone 1 or Zone 2 hazardous areas, dependent on national regulations.

- 1.10.2 Special Conditions For Safe Use**
- Certain models include Special Conditions for Safe Use which must be observed prior to putting the dispensers into operation. Failure to do so will invalidate the ATEX certification of the dispenser. These models can be identified by an X at the end of the ATEX certificate number as shown on the dispenser typeplate.
- The Special Conditions for Safe Use are identified in the ATEX EC or EU-Type Examination Certificates and are repeated below:
- Where a dispenser is supplied without hoses and/or nozzles, these shall be fitted in accordance with:
 - Hoses: EN 1360 or EN 13483
 - Nozzles: EN 13012.
 - When used for dispensing ethanol, the ethanol content shall not exceed 90% with minimum water content.



- When the dosing option is used (Q510), only additives which are of Gas Group IIA may be used as the dosing media in the dosing tanks.
- The pumps and dispensers are designed for use in open air for dispensing liquid of gas group IIA exclusively. Where a pump or dispenser is positioned within a building, incorporated into an enclosure, or integrated into a larger piece of equipment, additional measures shall be taken to ensure that the zoning diagrams illustrated in the schedule drawings are not compromised.

1.11 Metrological Instrument Directive (MID) Dispensers

Quantum dispensers are manufactured in accordance with the Metrological Instruments Directive (MID). Such dispensers are calibrated, and the relevant seals stamped in the factory, so that the dispensers are fit for trade immediately upon installation and without the need for a local Weights and Measures inspector to put them into use.

The dispenser is shipped with its own "MID datasheet" which documents the serial numbers of the prime components fitted in the dispenser. This datasheet must remain with the dispenser. Similarly, dispensers are shipped with an EU Declaration of Conformity indicating that the product conforms to the MID directive (2014/32/EU). This document must be stored safely as it is an essential document to allow the continued use of the dispenser.

MID dispensers can be identified by a reference to a MID certificate number on the typeplate as shown in the example at page 14.

Please refer to mid.tokheim.com for information on the MID certificate.

1.12 Checking the Seals

It is the responsibility of the installer to check that all required seals are present and correct prior to putting the dispenser into use. This includes seals on the pumping unit, meter, pulser and calculator.

Under no circumstances must any seals be disturbed or broken during installation. The only exception is where the site owner has requested a calibration check, see below.

1.13 Meter Calibration

If requested by the site owner a calibration check could be performed as part of the commissioning procedure.

If a seal is damaged or missing, or if the calibration is outwith legal tolerances or in the event that any repair is required to a pumping unit, meter, pulser or calculator during installation, the factory MID verification is invalidated and a local National verification will need to be performed before the dispenser can be used.

1.14 Disposal

After a dispenser or payment terminal has been taken out of service for the last time, it should be sent to an approved and adequate recycling organization as per national law or national transposition of EU directives in the country of installation. Ref. WEEE Directive 2002/96/EC.

1.15 Forbidden Uses

The fuel dispenser may not under any circumstances be used for:

- Delivery/recovery of fuel for cleaning purposes (i.e. as a solvent to remove tar or paint from skin or other materials etc.).
- Delivery/recovery of fuel into non-compliant portable containers.
- Delivery/recovery of fuel for purposes other than its original intended use.

1.16 Liability

Great care has been taken in the preparation of this manual. It is intended as a guide to use of dispensers and payment terminals. In no way does it constitute instructions for the periodic maintenance or emergency repair of these machines.

DFS shall not be liable for any misunderstanding, errors and/or loss or defect arising from the use of this manual.

DFS shall not be liable for damage to the machine, nor for personal or third-party injury caused by incorrect use of the dispenser or by attempts to maintain or to repair the dispenser by parties other than those fully trained by DFS or by its accredited third party representatives. For product liability to be valid, no changes or modifications may be performed on the equipment without the written consent of DFS.

A team of experts is at the disposal of users should any aspect of the use of this dispenser be unclear from this manual. Please contact your local service division using contact details provided in section 1.4 page 6 of this manual.

1.17 Responsibilities of Station Owners

The Ex dispensers or other Ex-materials designed and manufactured by Dover Fueling Solution (DFS) are fully compliant with the applicable EU directives and harmonised standards (refer to EU Doc for the list of applicable standards). As with any material, the equipment supplied by DFS needs to be installed, maintained, inspected, or repaired as recommended by DFS and/or suppliers of individual components associated with the equipment.

Any installation, repair, maintenance, modification, etc. should only be conducted by approved DFS maintenance partners or recommended partners of authorised DFS distributors and sales channel partners.

The aforementioned equipment is subject to the following, which actions are only permitted to be carried out by authorised and trained personnel:

- Installation and commissioning
- Regular periodic inspections, including metrology and vapour recovery
- Any required maintenance
- Any repair or modification.

The instructions for installation and maintenance are contained within the corresponding DFS manuals and must be adhered to. Approved replacement parts are listed in the DFS parts manual. Failure to follow the contents of any of these manuals may invalidate warranty and result in regulatory breaches and potential liability issues.

Dispenser owners, installers and qualified service technicians should be aware of local (country/region-specific) guidelines for inspection, maintenance and/or repair of equipment on filling stations. It is the responsibility of these owners, installers and maintainers to check all relevant information and to observe mandatory guidelines to ensure the safety of the filling station.

Installations, inspections, maintenance and repair shall be performed in accordance with the following non-exhaustive list of standards:

For Ex-approved electrical equipment:

- EN 60079-14, Explosive atmospheres - Part 14: Electrical installations design, selection and erection.
- EN 60079-17, Explosive atmospheres - Part 17: Electrical installations inspection and maintenance.
- EN 60079-19, Explosive atmospheres - Part 19: Equipment repair, overhaul and reclamation.
- IEC/IEEE 60079-30-2, Explosive atmospheres - Part 30-2: Electrical resistance trace heating - Application guide for design, installation and maintenance.

For non-electrical Ex-approved equipment:

- NPR-CEN/TR 16793, Guide for the selection, application and use of flame arresters.

Before commencing dispenser-related work; installers, inspectors, operators and qualified repair technicians need to be aware of any component-specific safety, maintenance and inspection characteristics associated with the work they are performing.

The owner of the equipment is responsible to ensure that all required periodic checks on Ex-components are performed. Some Ex-components require special measures to be taken for maintenance, e.g. some ex-components may require a check within the first 3 months of operating and additionally require an annual check by the owner.

Periodic verification of earthing and bonding during installation and maintenance periods shall be put in place by the equipment owner, following national guidance.

As always, the latest edition of above standards must be verified and their compatibility with the materials installed checked before issuing an inspection & maintenance program for each dispenser. It is evident that the ATEX protection modes of each component will influence the generic maintenance program of any dispensers.

The equipment owner has the ultimate obligation for each site's compliance with EN 13617 (or any successor standard) and all building and safety codes and taking appropriate safety measures in accordance with industry best practices. Where required, component manuals can be provided to you upon request from the component manufacturer. DFS shall not be responsible for the design or installation of safety measures not included as a component of the products; including, without limitation, leak containment, traffic, control structures, emergency stop buttons, shear or impact valves, or other fire suppression devices. Equipment owners acknowledge that the entire use, management, and performance of the equipment remains solely with the equipment owner.

2

Dispenser Layout

This section describes, in general terms, how a fuel dispenser works. Fuel dispensers are configured in various ways to meet the needs of different types of service stations.

2.1

Quantum Range of Dispensers

Dover offer a wide range of dispensers and payment terminals designed to meet the requirements of both the retail and commercial markets. The Quantum range of dispensers have common assemblies and component parts in order to facilitate maintenance and servicing.

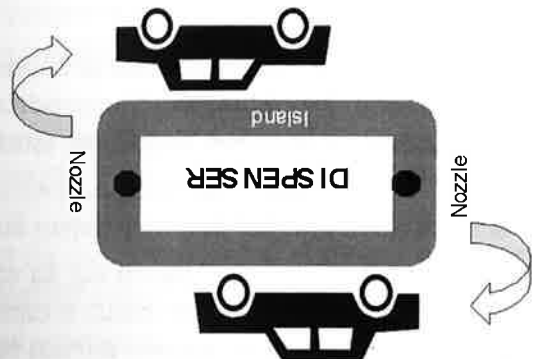
2.2

Dispenser Island Orientation

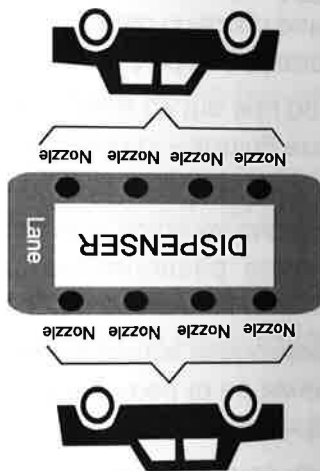
Dispensers are usually installed on a dispenser island, either with the nozzles positioned on opposite sides of the dispenser (lane orientation) or on opposite column ends (island orientation). Where a dispenser is installed adjacent to a wall or there is only one access lane then a single-sided filling position is provided and the opposite side will not have a calculator display.

Island Orientation

The vehicle can park at either side of the dispenser. Follow the instructions on the dispenser to select the correct nozzle so that the display on the relevant side is activated.



Lane Orientation



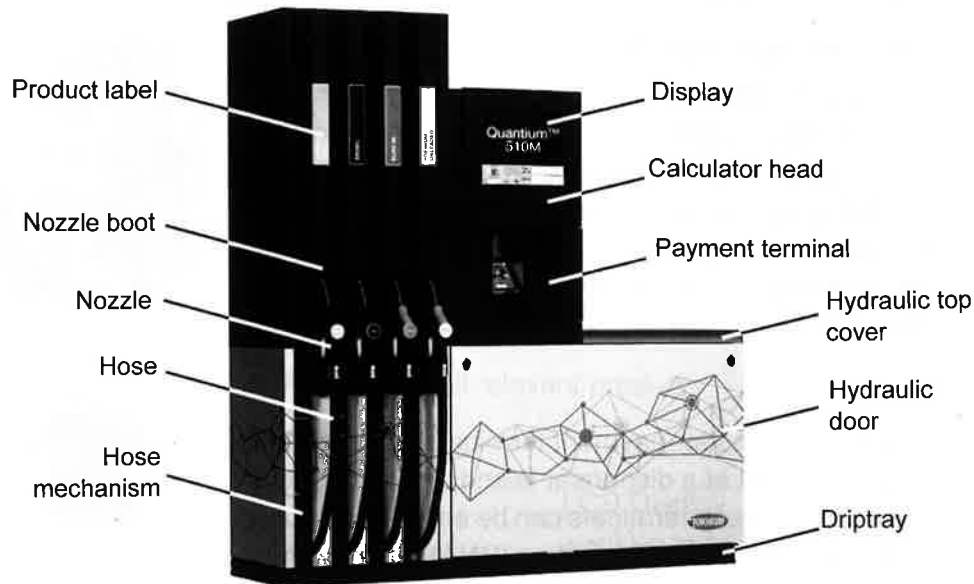
The vehicle can park at either side of the dispenser and must only use the nozzle(s) on that side of the dispenser.

Note!

Dispensers may not necessarily have the same products available on both sides of the dispenser.

2.3 Identification of the Dispenser Parts

The example shown is a Q 510 M dispenser with a full range of options which may not always be present:

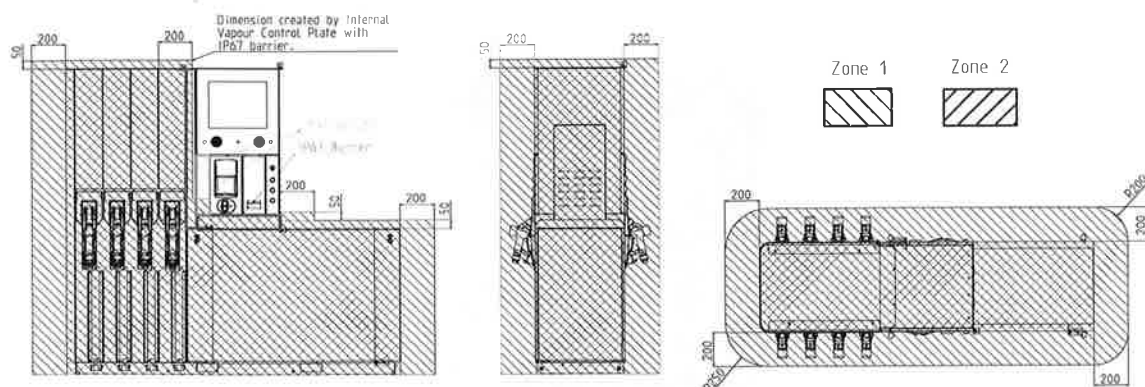


2.4 Hazardous Areas

Dover dispensers must only be installed on a level island or forecourt surface.

There is a 200mm area of potentially explosive atmosphere around the entire hydraulic area of the dispenser. The area below the dispenser is particularly hazardous due to the possibility of trapped petrol vapour and must be treated with caution at all times.

The following schematic is an example of the area of potential hazard around a Quantum 510 M dispenser:



Note!

National regulations may impose significantly more onerous requirements in terms of the extent of hazardous areas around petrol dispensers and the placement of electrical or mechanical equipment within the designated hazardous areas.

2.5

General Description of Outdoor Payment Terminals

This section describes in general terms how an Outdoor Payment Terminal (OPT) works. Outdoor payment terminals are configured in various ways to meet the needs of different types of service stations. There are two distinct types of outdoor payment terminals:

Dispenser Integrated Terminals (DIT)

A dispenser integrated outdoor payment terminal can either be completely integrated into the design of a fuel dispenser or mounted on a fuel dispenser column. It is usually configured with a user-interface (keyboard, display, cardreader, printer) for each filling position of the fuel dispenser. As a general rule, the dispenser integrated outdoor terminal can only be used to operate the fuel dispenser at the filling position where the user interface is located.

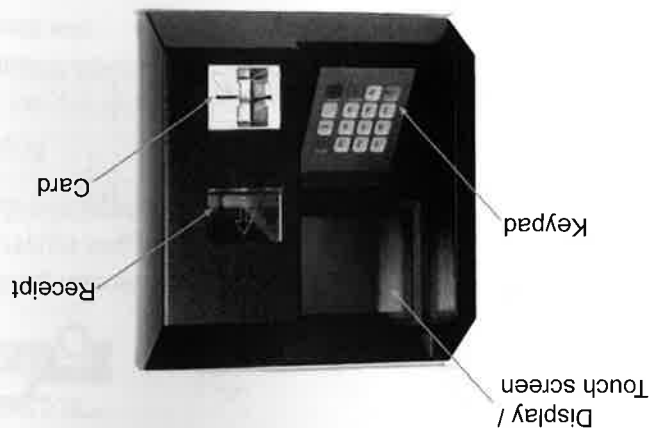


Island Terminals

The island terminals are outdoor payment terminals that are installed as a stand-alone unit at a dispenser island or at a central position on the forecourt. Island terminals can be either Credit Card Terminals (CCT) only or Bank Note Acceptors (BNA) with or without Credit Card facilities. For security reasons, Dover does not currently manufacture a dispenser integrated Bank Note Acceptor. The main difference between an island terminal and a dispenser integrated payment terminal is that the island terminal can be used to operate multiple fuel dispensers rather than being dedicated to a single filling position.



Identification of OPT Parts



2.7 Calculators and Displays

The main types of calculator are:

- TQC Calculator

There are three main types of display:

- Liquid Crystal Display (LCD)
- Video Graphics Array (VGA)
- The maximum configuration of a display will include:-
 - Value of current sale
 - Volume of fuel dispensed
 - Current product price (per litre)
 - Product Indicator and/or price for all relevant products

TQC Electronic Calculators

LCD Display

Price Per Unit (PPU)



- Electronic calculator
- Volume and Monetary displays
- Separate calculator electronics and displays

LCD Display

4 X Unit Price Displays (UPD)



- Electronic calculator
- Volume and Monetary displays
- Separate calculator electronics and displays

VGA Display



- Electronic calculator
- Volume and Monetary displays
- Separate calculator electronics and displays
- Product Information and Advertisements

2.8

Access to the Calculator Head



The Station Manager may require occasional access to the calculator head in order to set prices or manually reset the mechanical register (refer to section 6). Ensure that the dispenser is isolated and power switched off before opening the calculator door.

IMPORTANT - Under no circumstances should the customer be permitted to access the dispenser electronics.

The following instructions detail the procedure to be followed for safe access to the calculator head.

Note!

The exact procedure may vary according to exact model of dispenser. Photos are for pictorial reference only.

Instructions

- 1) Locate the keys for the calculator head door.

- 2) Unlock the calculator head door on the relevant side of the dispenser. If there are two keylocks then both must be opened simultaneously.
- 3) Carefully open the calculator head door.

Note!

Some doors have a retaining cord and/or electrical cables; others require the use of a hinge and/or bracket to secure the door open.



- 4) Secure the calculator head door in the open position.
- 5) Repeat for opposite side of dispenser as required.
- 6) When complete, close and lock the calculator head door.
- 7) Re-instate power to the dispenser.



Note!

Where applicable, ensure the retaining cord and/or electrical cables remains inside when closing the calculator head door.

2.9 Access the Hydraulic Area



The Station Manager may require occasional access to the hydraulic area in order to read the mechanical totalisers or fit the handcrank (refer to section 6).

Ensure that the dispenser is isolated and power switched off before removing the hydraulic panel(s).



IMPORTANT - Under no circumstances should the customer be permitted to access the dispenser hydraulics.

The following instructions detail the procedure to be followed to allow safe access to the dispenser hydraulics.

Note!

The exact procedure may vary according to exact model of dispenser. Photos are for pictorial reference only.

Instructions

- 1) Locate the key(s) for the hydraulic access panel.



- 2) Unlock the hydraulic access panel.
- 3) Where fitted, disconnect the retaining cord, earth and/or electrical cables from the panel door.
- 4) Lift up the panel to release from the locating pins in the base and remove the hydraulic access panel completely.
- 5) Place the hydraulic access panel upright in a safe position.
- 6) Repeat for opposite side of dispenser as required.
- 7) When complete, close and lock the hydraulic access panel(s) and re-instate power to the dispenser.



3 Instructions For The Customer

This section contains information on the correct use of the dispenser and payment terminals with specific reference to the customer.

STATIC ELECTRICITY

Great care must be taken to avoid the danger of static electricity, especially in countries where nozzle latches are permitted.



MOBILE PHONES

The use of mobile phones on the forecourt is strictly prohibited.



NAKED FLAMES/SMOKING

Naked flames and smoking are strictly forbidden on the forecourt.



3.1 Filling Positions

One or more fuel nozzles are provided at each filling position. This enables customers at each filling position to select different fuel grades and fill their vehicle tanks simultaneously with the other customer at the opposite side of the dispenser.

Generally, only one nozzle from each filling position may be used at any one time. When a specific nozzle is removed from its holder, the price per litre of the corresponding fuel is displayed on the fuel dispenser (retail models only).

Fuel is pumped, by remote submerged central pumping unit or by a pumping unit within the dispenser, from the station tank into a filter located in the dispenser. The fuel is then passed through a meter (one per nozzle) which measures the volume of fuel which has been dispensed. This volume (in litres) is displayed, and continuously updated, on the fuel dispenser display. Retail dispensers usually also show the monetary value of the total volume of fuel dispensed.

The standard maximum fuel delivery rate on fuel dispensers for use by passenger vehicles is 40l/min (litres per minute).



If dispensers and/or nozzles are marked (either by text or by symbols) for use by trucks only, the maximum flow rate will be 80 l/min, 130 l/min or 160 l/min.

Note!

These dispensers are reserved for goods vehicles exclusively. Diesel cars should never use fuel dispensers/nozzles designated for trucks.

3.2 Safe Use of Fuel Dispensers

Always follow the instructions on the fuel dispenser. Prior to using the fuel dispenser, ensure that you have read and understood all safety procedures referred to in section 1. If in doubt about any of the following procedures, seek assistance from the Station Operator.

1) Select a filling position which supplies the fuel grade required, park your vehicle in the filling position so that the vehicle tank opening is adjacent to the appropriate nozzle. Where possible, avoid parking your vehicle in such a way that the nozzle and hose need to be pulled over your vehicle in order to insert the nozzle in the tank opening.

2) Apply the handbrake and switch off the vehicle engine. Switch off mobile telephones and extinguish any other sources of ignition e.g. cigarettes.
 PRE-PAYMENT - At certain sites, pre-payment may be required. In such cases, an amount of cash must be deposited with the Station Operator who will then limit the maximum volume of fuel which can be delivered to this value.
 Remove the cap of your vehicle tank opening.

3) PRESET - Fuel dispensers may be equipped with a preset function. This allows the preselection of a monetary or volume value of fuel for purchase. When the preset volume or amount is reached, the fuel dispenser will cease delivery. Refer to section 3.5 for further information.

4) Select the nozzle which corresponds to the correct fuel for your vehicle.
 COMBINED HOSE OPTION - Some dispensers allow a selection of one of several fuel octane grades. In this case, push the appropriate button to select the fuel octane grade required (either before or after picking up the nozzle). Check the fuel grade indicator on the calculator display to ensure the correct selection has been made.
 Remove the nozzle from its holder.

Note!

The nozzle is heavy and may not have been securely replaced by the previous user. Take care not to drop the nozzle as it is removed from its holder as this may cause injury or fuel spillage.

FLOW RATE BUTTON - If the fuel dispenser is fitted with a button for the selection of different fuel flow rates, select the appropriate flow rate for your vehicle PRIOR to filling your tank. For private passenger vehicles, the default setting is used; for goods vehicles, push the 'Goods Vehicle' button to select a higher flow rate then proceed as described below.
 HOSE MASTS - If the fuel dispenser is equipped with a hose mast, do not touch the exposed spring, as your fingers may be pinched or trapped. Take care when pulling on the nozzle and hose as this causes the mast to flex. Do not allow the nozzle or hose to slip from your hands as the mast could cause a splash injury.

6) Verify that the calculator resets to display 'zero' for the total volume and amount to pay and, where applicable, the correct unit price for the selected fuel grade. FUEL TYPE DISPLAYS - Where fitted, the type of fuel delivered from the selected nozzle is displayed when the nozzle is lifted. If the fuel type displayed is not the same fuel type indicated on the nozzle or above the nozzle holder then replace the nozzle and inform the Station Operator immediately.
 7) Do not pull on the hose violently and do not allow it to be crushed, flattened or kinked. Avoid any contact between the hose and the exhaust pipe on the underside of your vehicle. A hot exhaust could burn the hose, causing danger to all persons on the forecourt.

Note!

Take extra care in cold weather as the flexibility of the hose decreases and the ease of retraction is reduced.

- 8) Insert the spout of the nozzle in the tank opening of your vehicle (refer to section 3.3 page 28 for correct nozzle usage).
- 9) Pull the nozzle trigger to start the fuel delivery.
- 10) If the nozzle is fitted with a latch to hold the nozzle open during delivery, continue to check that the nozzle remains in the tank opening throughout the delivery. Do NOT leave the nozzle unattended.

**WARNING!**

DANGER OF STATIC ELECTRICITY. DO NOT SIT IN THE VEHICLE DURING THE DELIVERY. DO NOT WALK AROUND UNNECESSARILY.

- 11) Ensure that the hose does not obstruct public passage nor constitute a trip hazard.
- 12) If the fuel delivery is shut off automatically by the nozzle, release the nozzle trigger. Wait a few seconds before removing the nozzle from your tank opening to avoid fuel spillage.


**WARNING!**

WHEN REMOVING THE NOZZLE FROM YOUR VEHICLE TANK OPENING, TAKE CARE NOT TO DRIP ANY REMAINING FUEL ON YOUR SHOES, CLOTHES, VEHICLE, OR ON THE FORECOURT. INFORM THE STATION OPERATOR OF ANY SPILLAGES IMMEDIATELY.

MASTER & SLAVE/SATELLITE - Diesel dispensers for goods vehicles may be configured with a hose and nozzle on both sides of the filling position to allow sequential filling of the two fuel tanks located on either side of the vehicle. In this case, one nozzle and hose assembly is a slave/satellite. Both fillings will be calculated as a single fuel delivery and displayed as such on the dispenser and on its slave/satellite display on the opposite side of the filling position. To fill the second diesel tank (the filling can be started either on the master or slave/satellite side), the appropriate button must be pushed BEFORE the first nozzle is returned to its holder. The nozzle on the opposite side can then be lifted and the second fuel delivery started.

- 13) When replacing the nozzle in its holder, take care not to trap your hand or fingers between the nozzle and its holder.

WARNING!



ENSURE THAT THE NOZZLE IS REPLACED CORRECTLY AND SECURELY IN ITS HOLDER SO THAT IT WILL NOT FALL.

- (14) Replace the cap on your fuel tank opening.
- (15) Ensure that payment is made as required.
- (16) Drive away from the filling position slowly and carefully.

3.3 Correct Nozzle Usage

The following guidelines must be followed to ensure optimum customer safety and correct operation when dispensing fuel:

- Hold the nozzle with the trigger under the nozzle
- Hold the nozzle handle horizontally
- Insert the nozzle fully into the vehicle fuel tank
- Squeeze trigger to start the flow
- Release trigger to stop the flow



In vehicles equipped with almost horizontal filler pipes, the nozzle can be angled and place against the lower edge of the filler pipe.



This nozzle position is incorrect and may result in fuel spillage.



3.4 Filling Fuel Containers

Users must inform the Station Operator prior to filling a portable fuel container and can only proceed with his approval, following all instructions given.

- Use purpose-built fuel containers constructed from approved materials and fitted with an approved cap to seal the fuel inside.
- Place approved container on the ground. Portable containers must NOT be filled while in or on a motor vehicle.
- Keep the nozzle in contact with the container while filling. Do NOT use nozzle latches.

Approved Container



Users are responsible for informing themselves of the prevailing regulations concerning the transportation of petroleum fuels in portable fuel containers.

Extra care must be taken when filling fuel containers due the increased likelihood of spillage. All spillages must be reported to the Station Operator for immediate cleaning.

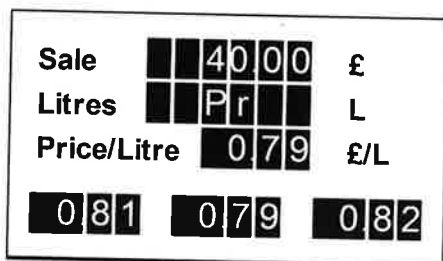
3.5 Preset Options

Quantum dispensers have the option of allowing the customer to select a fixed amount for the delivery, in terms of volume or money, using either:

- Preset Push Buttons (refer to section 3.5.1 page 29)
- Preset Keypad (refer to section 3.5.2 page 30)

The customer selects the preset value by pressing a combination of buttons/keys. Once the preset value is set, the customer must lift the nozzle to start the delivery within 10 seconds or the preset setting is cancelled.

With either method of preset, the value can be changed by pressing another button or, where applicable, CLEAR (CE) button to reset and the display will update accordingly.



If a monetary preset value is entered then PR will appear in the volume display; if a volume preset value is entered then PR will appear in the amount display.

During the delivery, the display constantly changes to reflect the amount and volume of the sale as the delivery progresses.

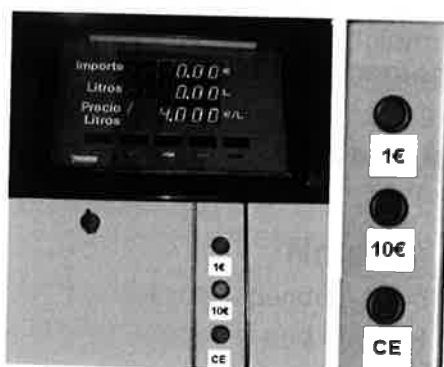
When the preset value is reached, the dispenser will automatically stop delivering fuel (unless the vehicle tank is filled first) and the customer is required to pay.

If more fuel is required at the end of the preset delivery, the preset button/key can be pressed again to increase the total preset value and the delivery can continue until the new higher limit is reached.

3.5.1 Preset Push Buttons

Preset push buttons are usually located to the side or below the calculator head. They allow the customer to preset an amount or volume of fuel to be delivered.

The push buttons (maximum of four per side) are configured for specific units of volume or money in fixed increments, depending on the parameters programmed in the calculator.



In this example, for a 45€ delivery of fuel, press the 10€ button four times then the 1€ button five times in succession (45.00€ will appear on the display)

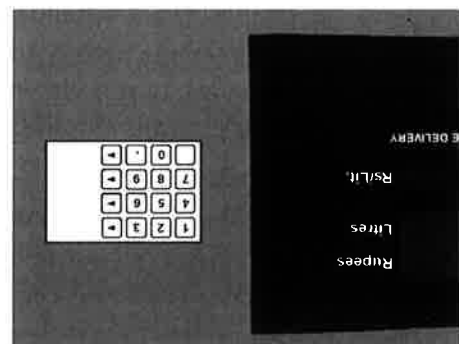
Note!

The buttons are configured either for volume or amount, not both. This can only be changed by reprogramming the calculator.

3.5.2 Preset Keypad

Preset keypads are usually located to the side or below the calculator head. They will allow the customer to set an amount or volume to be delivered in more precise units than push buttons.

Although the keypad layout and choices will vary, the customer is able to enter (in decimals) the exact amount and/or volume of fuel to be delivered.



1	2	3	Clear
4	5	6	CREDIT
7	8	9	Amount
CASH	0	,	Volume

Some keypad layouts will also allow the customer to select payment by CASH or CREDIT.

3.6 Outdoor Payment Terminals

Outdoor Payment Terminals (OPTs) can be stand-alone units or Dispenser Integrated Terminals (DITs) which enable the customer to pay for fuel without entering the petrol station kiosk. A single OPT may be used for several dispensers; the DIT can only be used for the dispenser side where it is located.



Credit Card Terminals (CCTs) and Bank Note Acceptors (BNAs) are stand-alone units only and are used to accept credit card and cash payments respectively. Always follow the instructions indicated on the payment terminal. Prior to using the fuel dispenser, ensure that you have read and understood all safety procedures mentioned in section 1 page 5. If in doubt about any of the following procedures, seek assistance from the Station Operator.

DFS payment terminals display the current status of the terminal throughout the transaction, including error reporting.

Payment terminals can be equipped with one or more of the following options:

- Display screen (graphics LCD or touch screen)
- Card reader (motorised or manual)
- Ticket printer
- Audio output
- Security PIN pad

3.6.1 . How To Use The Dispenser Integrated Terminal

The following instructions are guidelines only and vary between different models. The pictures are for graphical representation only and the actual user interface may be different.

- 1) Park your vehicle at the filling position of your choice.
- 2) Switch off your vehicle engine.
- 3) At the dispenser payment terminal, in standby mode, the display screen will show the message "Insert card" or similar. The user can select a language using the options at the top of the display screen.
- 4) Select Payment at Pump by either push button selection on the dispenser or by pressing the card option on the display screen.
- 5) If a nozzle is lifted before entering data then the terminal assumes payment at kiosk and payment at the pump will not be permitted.

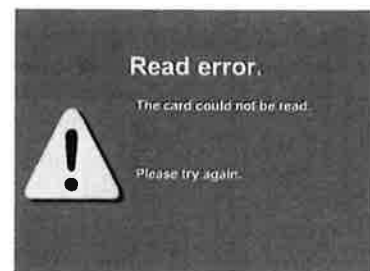


- 6) Inserting a card during standby will automatically start the card data entry sequence. After insertion of the card, the terminal will verify/validate the card.

Note!

Currently, chip cards are only supported with manual card readers.

- 7) If the card is not valid, it will be returned and the display will indicate why the card is not valid. In some cases, the card may be retained by the terminal. Inform the Station Operator of any problems immediately. After validation of the card, the user will be asked to enter his Personal Identification Number (PIN).



Note!

PIN number entry is dependent upon the type of credit card and payment terminal and may not always be required.

If an incorrect PIN is entered, the user will be asked to re-enter it. The number of attempts is limited and if the correct PIN is not entered within this maximum number of attempts, the card will be returned (or retained) and information will be displayed on the screen.



8) After PIN validation, remove card. Depending on the card type, additional information may then be requested such as mileage, vehicle registration number etc.



9) The corresponding fuel dispenser will now be activated and the filling can be started.



10) If the Loyalty Card function is enabled, a prompt will appear and the Loyalty card can be inserted anytime during the filling.



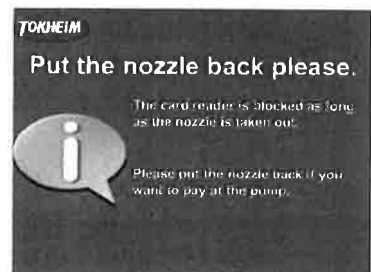
11) A receipt can usually be obtained by re-entering your card in the terminal after filling. The card will be returned immediately after the receipt is printed.

12) When the filling is complete, drive away from the filling position slowly and carefully.

3.6.2 How To Use The Outdoor Payment Terminal

The following instructions are guidelines only and vary between different models. The pictures are for graphical representation only and the actual user interface may be different.

- 1) Park your vehicle at the filling position of your choice.
- 2) Switch off your vehicle engine.
- 3) At the island payment terminal, in standby mode, the display screen will show the message "Insert card" or similar. The user can select a language using the options at the top of the screen.
- 4) Select Payment at Terminal by either push button selection on the dispenser or by pressing the card option on the display screen.
- 5) If a nozzle is lifted before entering data then the terminal assumes payment at kiosk and payment at the terminal will not be permitted.
- 6) Inserting a card during standby will automatically start the card data entry sequence. If the Loyalty Card function is enabled, a prompt will appear and the Loyalty card should be inserted BEFORE the Payment card.
- 7) After insertion of the card, the terminal will verify/validate the card.



Note!

Currently, chip cards are only supported with manual card readers.

- 8) If the card is not valid, it will be returned and the display will indicate why the card is not valid. In some cases, the card may be retained by the terminal. Inform the Station Operator of any problems immediately. After validation of the card, the user will be asked to enter his Personal Identification Number (PIN).



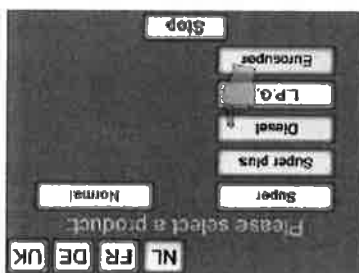
PIN number entry is dependent upon the type of credit card and payment terminal and may not always be required.

If an incorrect PIN is entered, the user will be asked to re-enter it. The number of attempts is limited and if the correct PIN is not entered within this maximum number of attempts, the card will be returned (or retained) and information will be displayed.

9) After PIN validation, remove card. Depending on the card type, additional information may be requested such as mileage, vehicle registration number etc.



10) The fuel selection screen is displayed at the island payment terminal after authorisation is complete. The user will then be asked to select the product required. If the fuel selected is not available, the display will inform the user who will then be requested to select an alternative grade or cancel the transaction.



11) After selection of a fuel grade, the user will then be prompted to choose the relevant fuel dispenser. If the user selects a pump already in use or out-of-service, the display will inform the user who will then be requested to select another dispenser or cancel the transaction.



12) If successful, the fuel dispenser will then be activated and filling can commence at the dispenser.

- 13) At the island payment terminal, the ticket button is still available to request a receipt after completion of a delivery. The user will again select the relevant dispenser using the pump selection screen.
- 14) When the filling is complete, drive away from the filling position slowly and carefully.



3.6.3 How To Use The Bank Note Acceptor

The following instructions are guidelines only and vary between different models. The pictures are for graphical representation only and the actual user interface may be different.

- 1) Park your vehicle at the filling position of your choice.
- 2) Switch off your vehicle engine.
- 3) At the island payment terminal, in standby mode, the display screen will show the message "Insert banknote" or similar. The user can select a language using the options at the top of the screen.
- 4) A BNA transaction is started either by selecting the cash option on the display screen or by inserting a banknote. Banknote readers may be configured to support foreign currency which is converted to local currency for the transaction total. A maximum of two currencies can be supported even within a single transaction.
- 5) The user will be prompted to insert the first banknote. The banknote is validated and, if approved, more banknotes can be inserted (validated and approved) until desired total is reached. Invalid banknotes will be returned to the user immediately.



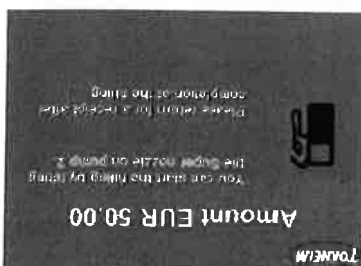
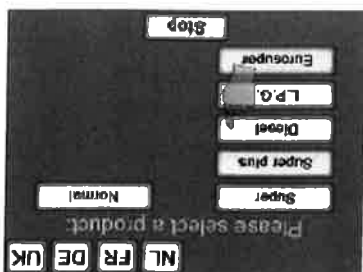
6) The fuel selection screen is displayed at the island payment terminal after authorisation is complete. The user will then be asked to select the product required. If the fuel selected is not available, the display will inform the user who will then be requested to select an alternative grade or cancel the transaction.

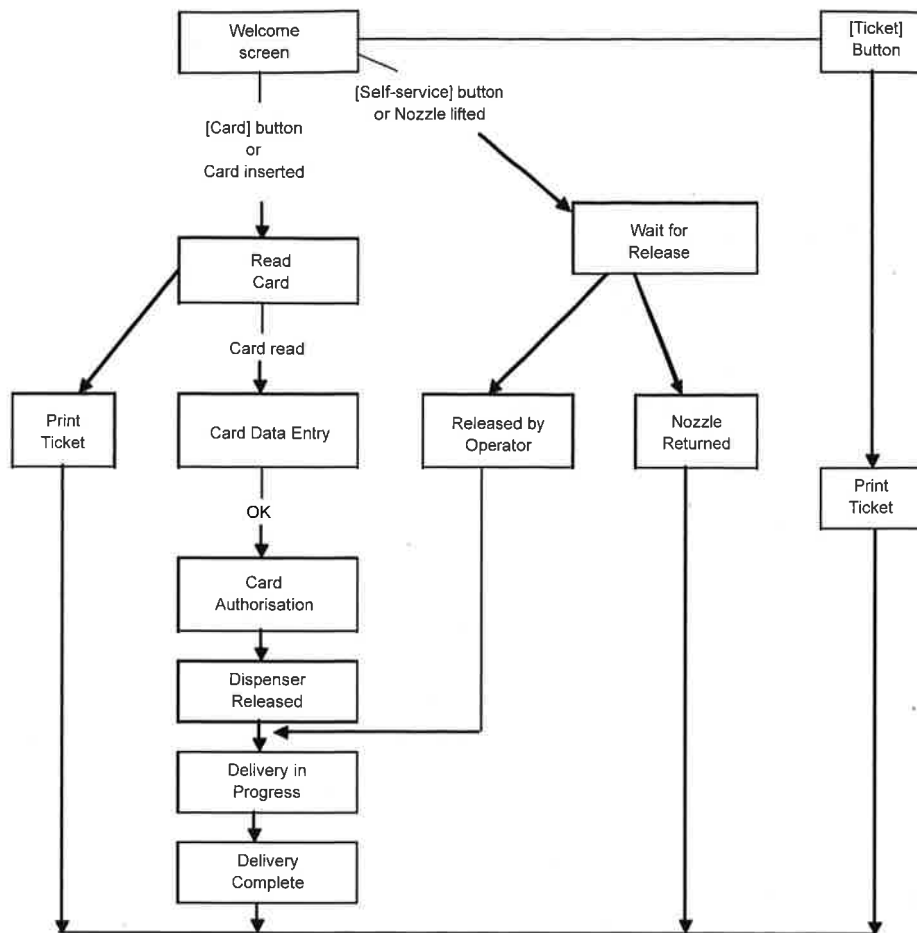
7) After selection of a fuel grade, the user will then be prompted to choose the relevant fuel dispenser. If the user selects a pump already in use or out-of-service, the display will inform the user who will then be requested to select another dispenser or cancel the transaction.

8) If successful, the fuel dispenser will then be activated and filling can commence at the dispenser. At this point, all banknotes are encashed and cannot be returned to the user.

9) The filling will be limited to the total value of all inserted banknotes.
10) After filling, if the user has overpaid or aborted the transaction, a ticket must be printed which will enable the user to claim a refund at the kiosk.
11) At the island payment terminal, the ticket button is still available to request a receipt after completion of a delivery. The user will again select the relevant dispenser using the pump selection screen.

12) When the filling is complete, drive away from the filling position slowly and carefully.



3.6.4 Generic Flow Diagram For OPTS

4 Instructions For The Station Operator

The instructions for the customer also apply to other users including the Station Operator. Please refer to previous sections.

The operator/owner is responsible for checking the regulations applicable to the activities and to the type of site managed. Dover Fueling Solutions (DFS) will not accept liability if applicable regulations are not followed. These obligations vary according to individual countries and can be comprehensive in the following areas:-

- Safety and operation authorisation : check the applicable safety regulations and obligations (various categories of sold products, various working modes etc.).
- Metrology : check the applicable Weights & Measures regulations.
- Customs and fiscal : some products can only be marketed under custom or fiscal restrictions. The site management may also impose general rules.

4.1

General Safety Instructions for the Station Operator

The Station Operator must ensure that he has a good view of all forecourt operations at all times and that an emergency shut-off device is within reach.



Stop Button

In the event of an emergency (danger to people or property), switch off the power supply to the dispenser with this emergency shut-off device.



Turn Power Off

Never break a seal (lead, paper, self adhesive plastic material etc.) of any part of the dispenser as this could lead to invalidation of warranty and may oblige the Weights & Measures authorities to close down the service station.

If the Station Operator changes the product configuration of the fuel dispenser by changing the sequence of the product indication panels on the fuel dispenser, this must be done correctly and in compliance with the appropriate goods marking regulations. The Station Operator is fully liable for any incidents caused by modifications to the fuel dispenser or its settings which are not executed by authorised persons.

4.1.1

Authorised Personnel

Removal of fuel dispenser or outdoor payment terminal housings present significant risks i.e. the possibility of electrical shocks, serious injuries caused by moving parts, explosions etc.





Turn Power
Off

With the exception of some dispenser configurations, where Station Operators require limited access to set prices, change payment terminal paper rolls and/or read mechanical totalisers, only authorised personnel should access the dispenser and payment terminal interiors to carry out inspections, maintenance and repair work.

Whenever housings are to be removed, the electrical power supply to that fuel dispenser or outdoor payment terminal must be isolated (i.e. entirely disconnected from the mains supply) and the mains supply switch locked in the OFF position using lock-out tag-out (LOTO) procedures.

A main safety switch may be installed in the calculator housing of some fuel dispensers. In some types of outdoor payment terminals a main safety switch is installed in the housing. For dispenser integrated payment terminals, the main safety switch is located in the calculator housing. Some countries require safety and isolation switches to be installed in the kiosk, not in the individual dispensers.

4.2 Safety Instructions for the Station Operator During Operation

- Take care to avoid spillage of fuel on the forecourt during tanker refuelling operations in order to prevent environmental pollution.
- Smoking is prohibited anywhere on the forecourt and in the vicinity of the fuel dispensers as indicated by the station safety instructions.
- Naked flames are prohibited on the forecourt.
- As soon as a vehicle is parked at the selected filling position, the engine should be switched off. The engine should only be started again once the filling and payment procedure is finished and the customer is ready to leave the station.

4.3 Safety Instructions in the Event of Accidental Damage

4.3.1 Customer Drive Away (with nozzle in vehicle tank inlet)

In the event of a Customer Drive Away on a dispenser, follow the instructions below.

- Clean up any fuel spillage that may have occurred.
- Examine the fuel dispenser for damage paying particular attention to the hose and nozzle assemblies.
- In the event of a drive away taking place, all components within the Hose Management System (spring-drum assembly, hose wheel assembly, guides, wheel roller bracket, roller bracket, hose and/or nozzle) should be inspected. If any damage to the fuel dispenser which may compromise safety in use is apparent or suspected, the relevant filling positions should be closed and the authorised service organisation called to examine the fuel dispenser for internal and external damage. The dispenser should only be returned to use once all risk of danger due to damage has been eliminated.

4.3.2

Customer Drive Away (with nozzle in vehicle tank inlet) On Quantum 110 AdBlue Dispenser

In the event of a Customer Drive Away on a Quantum 110 AdBlue Dispenser, the dispenser must be immediately taken out of service until it can be checked by a qualified service engineer. This check should include testing that the hose heating cable is functioning.

4.3.3

Vehicle Collision On The Forecourt

- Determine first what physical injury, if any, has been caused to persons in the relevant vehicles or on the forecourt. Take appropriate measures to obtain medical assistance if required. Ensure that drivers switch off their vehicle engines. Ask all persons to move away from the area of the collision until any risk of danger is identified and eliminated.

- Examine carefully and individually any fuel dispensers involved in the collision. Determine the nature and/or risk of damage.

- The relevant filling positions should be closed and the authorised service organisation called to examine the fuel dispenser for internal and external damage. The dispenser should only be returned to use once all risk of danger from possible or actual damage has been eliminated.

- Clean up any fuel spillage that may have occurred.

4.3.4

Emergency Shut Off Procedures

- Emergency Stop Button - dispensers may be fitted with an emergency stop button which will switch off power at that particular dispenser only. Once depressed, a key may be required to release the button.

In certain countries it is mandatory for the power restore function to be located away from the emergency stop button.

- Emergency Shut Off Valves (LPG) - Where fitted, DFS supplied LPG shut off valves are accessed via the Hydraulic Chair (hatch) entrance.

IMPORTANT: Do NOT touch the shut off valves if a leak is suspected nearby.

4.4

Regular Routines for Station Operators

Fuel dispensers with continuous 24 hour operation do not require all opening and closing routines. However the same procedures must be performed at least once a day or at shift change.

4.4.1

Before Opening The Service Station

- Carry out a visual inspection of every fuel dispenser and outdoor payment terminal to check for damage of any kind.
- Carry out a visual inspection of every fuel dispenser and outdoor payment terminal to verify that:

- All warning signs and instructions are present and legible.
- Replace if required.

- All emergency equipment is available and in working order.

- Check around the base of all fuel dispensers for any apparent fuel leakage.
- Where leaking is suspected the dispenser **MUST NOT** be put into service until checked by a qualified service engineer.
- Once a week, open the dispenser hydraulic cabinet (Refer to section 2.9 of this manual for instructions) and check for any apparent fuel leakage within the cabinet. Where leaking is suspected the dispenser **MUST NOT** be put into service until checked by a qualified service engineer.
- Unlock all nozzle locks (where fitted).
- Check all hoses and/or nozzle seals thoroughly. Hoses should be correctly fitted in hose connectors and seals should be intact. Check hoses for cracks or any other visible signs of leakage. Check nozzles or spouts for physical damage (dents, cracks etc.).
- Check all LPG dispenser hoses for holes or cracks. As LPG dispensers use a higher delivery pressure than normal dispensers, there is a risk of a jet of LPG escaping through a hole or crack thus creating a serious fire or explosion risk.
- Check whether sufficient paper is available for the printer in the outdoor payment terminal. If required, install a new paper roll according to the instructions indicated on the printer unit.
- If any damage is evident, contact your service organisation.

4.4.2 Opening The Service Station

- Ensure that all nozzles are correctly located in their holders (these may have been tampered with during closing hours). As long as the nozzles remain in their holders no fuel delivery will take place.
- Switch on the mains voltage for the pump motors of the relevant fuel dispenser(s) at the operating desk.
- If applicable, switch on the fuel dispenser lights.
- Switch on the self-service equipment (if applicable) and put the fuel dispensers into self-service operating mode using the forecourt console.

4.4.3 During Operation

- In attended service mode, the station attendant should follow the customer instructions as given in the previous sections.
- Check that all lighting installations are functioning correctly and that the forecourt area is sufficiently illuminated. It is potentially dangerous if customers cannot clearly see what they are doing or are unable to read instructions and/or notices.

IMPORTANT:

Keep the area around diesel dispensers clean. Spillage of diesel fuel by customers can create a dangerous slippery surface. If diesel is spilled, the Station Operator must clean up the spillage immediately using appropriate products and materials as advised by the oil company.

4.4.4 Closing The Service Station

- Check if anyone is still using the fuel dispensers and outdoor payment terminals. If not, block the authorisation through the console, where applicable.

In some countries, removing the nozzle from the dispenser holder alerts the Station Operator, who, if satisfied that the dispenser is being used correctly and that there are no sources of ignition in the vicinity, will reset the dispenser to allow filling.

Note!




- 5) Once the LPG nozzle is properly secured to your LPG tank inlet, return to the dispenser.
- 6) Push the LPG delivery button to start the delivery (usually a green button located near the nozzle).
- 7) Verify that the calculator resets to display 'zero' for the total volume and amount to pay and, where applicable, the correct unit price for the selected fuel.
- 8) Do not pull on the hose violently and do not allow it to be crushed, flattened or kinked. Avoid any contact between the hose and the exhaust pipe on the underside of your vehicle. A hot exhaust could burn the hose, causing danger to all persons on the forecourt.

Take extra care in cold weather as the flexibility of the hose decreases and the ease of re-traction is reduced.

Note!

- 9) Ensure that the hose does not obstruct public passage nor constitute a trip hazard.
- 10) Hold the LPG delivery button down until the required amount of fuel has been dispensed or until your tank is filled (the delivery will cease automatically at this point).
- 11) Release the LPG delivery button and return to your vehicle.
- 12) Release the LPG nozzle from the LPG tank inlet and replace it in its holder (the nozzle holder may not be located on the dispenser).

WARNING!



TO REDUCE THE RISK OF SERIOUS BURNS, KEEP YOUR HANDS ON THE HANDLE AND AWAY FROM THE FILLER CONNECTION DURING OPERATION. DO NOT TOUCH THE TIP OF THE NOZZLE.

Note!

- A small release of LPG upon disconnection from the tank coupling is normal.
- 13) Disconnect the adaptor (where fitted).
 - 14) Ensure that payment is made as required.
 - 15) Drive away from the filling position slowly and carefully.

5.2 LPG Dispenser Safety Features

DFS offer additional optional safety features specifically for LPG dispensers:

- Emergency Stop Button
- Safety Breakaway Coupling
- Shear Valve

5.2.1 Emergency Stop Button

Where fitted, the Emergency Stop button is usually located near the dispenser nozzle boot and should only be used in the case of an emergency. Once depressed, a key may be required to release the button.

In certain countries it is mandatory for the power restore function to be located away from the emergency stop button.



5.2.2 Safety Breakaway Coupling

Where fitted, the safety breakaway coupling will be assembled onto the hose and secured around a stanchion or similar immovable object.

Note!

Safety breaks should NOT be secured to the dispenser.



5.2.3 Shear Valve

Shear valves should be fitted internal to the dispenser. In the event of collision with the dispenser, the shear valves will separate and automatically cut off the fuel supply.

Note!

In the event of an accident, a DFS authorised engineer **MUST** be called to inspect the dispenser and re-connect the safety breakaway coupling or replace the shear valves.



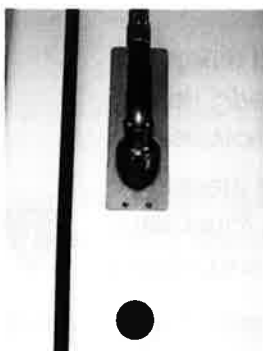
5.3 Correct LPG Nozzle Usage

The LPG dispenser has a coupling type nozzle fitted to the end of the hose. This coupling must be secured to the LPG tank inlet of your vehicle by means of a bayonet catch, bracket fixation etc.

In some countries, removing the nozzle from the dispenser holder alerts the Station Operator, who, if satisfied that the dispenser is being used correctly and that there are no sources of ignition in the vicinity, will reset the dispenser to allow filling.

Note!


- 5) Once the LPG nozzle is properly secured to your LPG tank inlet, return to the dispenser.
- 6) Push the LPG delivery button to start the delivery (usually a green button located near the nozzle).
- 7) Verify that the calculator resets to display 'zero' for the total volume and amount to pay and, where applicable, the correct unit price for the selected fuel.
- 8) Do not pull on the hose violently and do not allow it to be crushed, flattened or kinked. Avoid any contact between the hose and the exhaust pipe on the underside of your vehicle. A hot exhaust could burn the hose, causing danger to all persons on the forecourt.



Take extra care in cold weather as the flexibility of the hose decreases and the ease of re-traction is reduced.

Note!

- 9) Ensure that the hose does not obstruct public passage nor constitute a trip hazard.
- 10) Hold the LPG delivery button down until the required amount of fuel has been dispensed or until your tank is filled (the delivery will cease automatically at this point).
- 11) Release the LPG delivery button and return to your vehicle.
- 12) Release the LPG nozzle from the LPG tank inlet and replace it in its holder (the nozzle holder may not be located on the dispenser).



WARNING!

TO REDUCE THE RISK OF SERIOUS BURNS, KEEP YOUR HANDS ON THE HANDLE AND AWAY FROM THE FILLER CONNECTION DURING OPERATION. DO NOT TOUCH THE TIP OF THE NOZZLE.

Note!

A small release of LPG upon disconnection from the tank coupling is normal.

- 13) Disconnect the adaptor (where fitted).
- 14) Ensure that payment is made as required.
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Where fitted, the Emergency Stop button is usually located near the dispenser nozzle boot and should only be used in the case of an emergency. Once depressed, a key may be required to release the button.

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Where fitted, the safety breakaway coupling will be assembled onto the hose and secured around a stanchion or similar immovable object.

Note!

Safety breaks should NOT be secured to the dispenser.



5.2.3 Shear Valve

Shear valves should be fitted internal to the dispenser. In the event of collision with the dispenser, the shear valves will separate and automatically cut off the fuel supply.

Note!

In the event of an accident, a DFS authorised engineer **MUST** be called to inspect the dispenser and re-connect the safety breakaway coupling or replace the shear valves.



5.3 Correct LPG Nozzle Usage

The LPG dispenser has a coupling type nozzle fitted to the end of the hose. This coupling must be secured to the LPG tank inlet of your vehicle by means of a bayonet catch, bracket fixation etc.

Always follow the nozzle instructions positioned near the nozzle boot on the dispenser to ensure optimum customer safety and correct operation when dispensing LPG.

Note!

Always read the instructions carefully as they can vary according to different nozzle types. The following directions are guidelines for using the most common LPG nozzles found on Quantum dispensers.

Sample Instructions located near the dispenser nozzle boot (exact position will depend upon dispenser model)

Note!


To reduce the risk of freeze burns, DFS recommends the use of protective gloves when handling all types of LPG nozzles.



5.3.1

GG30 Nozzle

- 1) Remove the cap of your vehicle filler valve. Check and remove any foreign matter.



WARNING!

BEWARE OF FREEZE BURNSGLOVES SHOULD BE WORN WHEN HANDLING LPG NOZZLES.

- 2) Remove nozzle from holder. Check the front section is fully turned anti-clockwise so that the lug holes in the nozzle are horizontal.



IMPORTANT NOTE

A small release of gas will occur as you release the lever. THIS IS NORMAL

	Remove nozzle from holder
	Connect nozzle to filler valve by twisting lever clockwise.
	Pull lever back to engage nozzle.
	Push button on dispenser and hold until fill is complete.
	To disconnect, flick lever forward then turn lever anti clockwise.
	Replace nozzle in holder.
	Pay at kiosk

- 3) Align the nozzle with the vehicle filler and push nozzle over the lugs on the filler valve. Twist front section only 1/3 turn clockwise to secure.
- 4) Move your hand away from the tip of the nozzle, squeeze the trigger back fully then engage the retaining latch.



WARNING!

DO NOT DEPRESS RETAINING LATCH BEFORE SQUEEZING TRIGGER. KEEP HANDS ON THE COUPLING HANDLE DURING CONNECTION AND NEVER TOUCH THE TIP OF THE NOZZLE.

- 5) Check the nozzle is secured onto the vehicle, return to the dispenser and press the green delivery button to start dispensing LPG.
- 6) When filling is complete, stop pump and squeeze the trigger back again to release the retaining latch.
- 7) Keeping your hand away from the tip of the nozzle, release the trigger fully and wait several seconds to depressurise.



Note!

A small release of LPG upon disconnection from the coupling is normal.

WARNING!

KEEP HANDS ON THE COUPLING HANDLE DURING DISCONNECTION AND NEVER TOUCH THE TIP OF THE NOZZLE.

- 8) Support the nozzle as you turn the front section 1/3 turn anti-clockwise and carefully withdraw the nozzle.
- 9) Replace nozzle in its holder and refit the vehicle filler cap.



5.3.2 Boosekoop Nozzle

- 1) Remove the cap of your vehicle tank opening. Check and remove any foreign matter.



WARNING!

BEWARE OF FREEZE BURNSGLOVES SHOULD BE WORN WHEN HANDLING LPG NOZZLES.

- 2) Position the nozzle over the connection on the vehicle tank.

- 3) Turn the LPG nozzle 90o clockwise until it locks in position.



Note!

Do NOT place your fingers between the handle and the nozzle for risk of jamming.



- 4) Pull the handle back (towards yourself) to connect.




WARNING!

KEEP HANDS ON THE COUPLING HANDLE DURING CONNECTION AND NEVER TOUCH THE TIP OF THE NOZZLE.

- 5) Check the nozzle is secured onto the vehicle, return to the dispenser and press the green delivery button to start dispensing LPG.
- 6) When filling is complete, keeping your hand away from the tip of the nozzle, push the handle forwards (towards the vehicle) to disconnect.

Note!


A small release of LPG upon disconnection from the tank coupling is normal.

	WARNING!
KEEP HANDS ON THE COUPLING HANDLE DURING DISCONNECTION AND NEVER TOUCH THE TIP OF THE NOZZLE.	

- 7) Turn LPG nozzle 90o anti-clockwise.
- 8) Carefully remove the nozzle from vehicle tank opening.
- 9) Replace nozzle in its holder and refit the vehicle filler cap.

5.3.3 LPG Group Dish Nozzle

- 1) Remove the cap of your vehicle tank opening. Check and remove any foreign matter.

	WARNING!
BEWARE OF FREEZE BURNS- GLOVES SHOULD BE WORN WHEN HANDLING LPG NOZZLES.	

- 2) Lift the nozzle.

- 3) Insert the nozzle into the vehicle tank opening and ensure the three claws engage onto the filling coupling.

Note!

Do NOT place your fingers between the handle and the nozzle for risk of jamming.

- 4) Squeeze the handle until an audible "click" is heard.



Claws

**KEEP HANDS ON THE COUPLING
HANDLE DURING CONNECTION AND
NEVER TOUCH THE TIP OF THE NOZ-**



WARNING!

- 5) Check the nozzle is secured onto the vehicle, return to the dispenser and press the green delivery button to start dispensing LPG.

- 6) When filling is complete, keeping your hand away from the tip of the nozzle, squeeze the small red lever to release the nozzle.

Note!

A small release of LPG upon disconnection from the tank coupling is normal.

**KEEP HANDS ON THE COUPLING
HANDLE DURING DISCONNECTION
AND NEVER TOUCH THE TIP OF THE
NOZZLE.**




WARNING!

- 7) Carefully remove the nozzle from the vehicle tank opening.
- 8) Replace nozzle in its holder and refit the vehicle filler cap.

5.3.4 Euro Nozzles (Elaflex & LPG Group)

- 1) Remove the cap of your vehicle tank opening. Check and remove any foreign matter.

**WARNING!**


BEWARE OF FREEZE BURNS- GLOVES SHOULD BE WORN WHEN HANDLING LPG NOZZLES.

- 2) Lift the nozzle.
- 3) Insert the nozzle into the vehicle tank opening and ensure the EURO coupling engages onto the nozzle.

Note!

Do NOT place your fingers between the handle and the nozzle for risk of jamming.

- 4) Squeeze the handle until an audible “click” is heard.

**WARNING!**

KEEP HANDS ON THE COUPLING HANDLE DURING CONNECTION AND NEVER TOUCH THE TIP OF THE NOZZLE.

- 5) Check the nozzle is secured onto the vehicle, return to the dispenser and press the green delivery button to start dispensing LPG.

Alaflex Euro



Orange Lever

LPG Group Euro

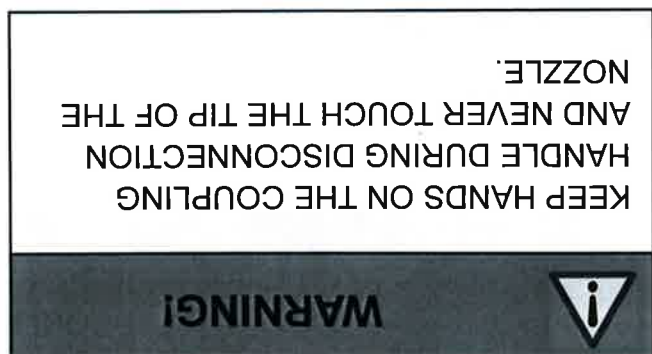


Red Lever

- 6) When filling is complete, keeping your hand away from the tip of the nozzle, squeeze the small lever (RED lever for LPG Group and ORANGE lever for Elatlex) to release the nozzle.

Note!

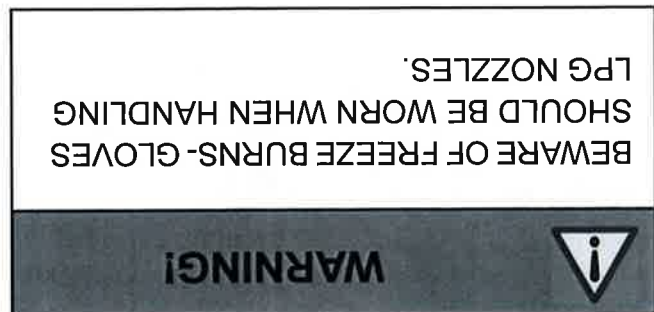
A small release of LPG upon disconnection from the tank coupling is normal.



- 7) Carefully remove the nozzle from the vehicle tank opening.
- 8) Replace nozzle in its holder and refit the vehicle filler cap.

5.3.5 Acme Elatlex Nozzle

- 1) Remove the cap of your vehicle tank opening. Check and remove any foreign matter.




- 2) Lift the nozzle.

- 3) Insert the nozzle into the vehicle tank opening and ensure the ACME coupling engages onto the nozzle. Twist the front section of the nozzle clockwise to secure.
- Note!**
- Do NOT place your fingers between the handle and the nozzle for risk of jamming.



- 4) Squeeze the handle until an audible "click" is heard.

**WARNING!**

KEEP HANDS ON THE COUPLING
HANDLE DURING CONNECTION AND
NEVER TOUCH THE TIP OF THE NOZ-
ZLE.


- 5) Check the nozzle is secured onto the vehicle, return to the dispenser and press the green delivery button to start dispensing LPG.
- 6) When filling is complete, keeping your hand away from the tip of the nozzle, squeeze the small orange lever to disconnect the nozzle.



Orange Lever

Note!

A small release of LPG upon disconnection from the tank coupling is normal.

**WARNING!**

KEEP HANDS ON THE COUPLING
HANDLE DURING DISCONNECTION
AND NEVER TOUCH THE TIP OF THE
NOZZLE.

- 7) Support the nozzle and turn the front section anti-clockwise to release. Carefully remove the nozzle from the vehicle tank opening.
- 8) Replace nozzle in its holder and refit the vehicle filler cap.

6 Dispenser Functions

6.1 WWC T1 Electronic Calculator

The World Wide Calculator (WWC T1) is a technologically advanced system designed to drive the most demanding hydraulic configurations and options. Connection to a service station point of sale (POS) is possible through data communication.

The complete range of calculator functions are covered in detail in the separate WWC T1 Set Up & Maintenance Manual for DFS approved technicians only. This manual only covers the basic programming tasks to be performed by the Station Operator.

6.1.1 Keypad Methods

The keypad is the interface between the Station Operator and the fuel dispenser via the WWC T1. The keypad allows the user to access the following functions of the WWC:

- Information e.g. reading of electronic totallisers
- Configuration (for DFS authorised technicians only)
- The keypad can either be:
 - Infra-Red Remote Control keypad (IRK) (connected via IR sensor on calculator door)



- Internal Configuration keypad (ICK) (located inside the calculator head, pre-wired into mainboard)



- User Access Keypad (UAK) (plug-in handset for connection to mainboard in calculator head [also used for VR set up])



6.1.2 Dispenser Mode Of Operation

The calculator can be programmed to allow the fuel dispenser to operate in either:

- Self-service/console mode (with post-payment or prepayment options)
- Standalone mode (for attended service)

Dispensers Connected To a Console

In self-service mode, each filling position (one on each side of the fuel dispenser) is assigned a pump number (from one to the maximum number of filling positions available at the service station) and this number is used by the console to authorise the filling and accept payment.

When switched on, the dispenser calculator display should light up. The display will either show details of the last sale or all zeros (console dependent).

Sale	3587	£
Litres	4540	L
Price/Litre	079	£/L
081	079	082

- 1) Customer lifts a nozzle and the console requests approval. Where applicable, the associated product price is indicated on the calculator display.
- 2) Once approved, the dispenser performs a self-test (lasting a few seconds).

Note!

Do not approve the dispenser if the customer is smoking, using a mobile phone or the vehicle engine is still running.

Sale	888888	£
Litres	888888	L
Price/Litre	8888	£/L
081	079	082

- 3) The dispenser motor starts and the display will zero the totals to signify the start of the delivery.

Sale	0000	£
Litres	0000	L
Price/Litre	079	£/L
081	079	082

- 4) The customer squeezes the nozzle trigger and fuel is dispensed, registered and continually updated on the display.
- 5) When the filling is completed and the customer has replaced the nozzle in the nozzle-boot, the dispenser motor stops.
- 6) The console will request payment.
- 7) When payment is complete, the display will remain the same or revert to zeros.

Standalone Dispensers

When switched on, the dispenser calculator display should be lit up.

The display will show details of the last sale.

Sale	£	35	87
Litres	L	45	40
Price/Litre	£/L	0	79
0 81 0 79 0 82			

- 1) Customer lifts a nozzle and the dispenser performs a self-test (lasting a few seconds). Where applicable, the associated product price is indicated on the calculator display.

Sale	£	00	00
Litres	L	00	00
Price/Litre	£/L	0	79
0 81 0 79 0 82			

- 2) The dispenser motor starts and the display will zero the totals to signify the start of the delivery.

Sale	£	40	00
Litres	L	50	63
Price/Litre	£/L	0	79
0 81 0 79 0 82			

- 3) The customer squeezes the nozzle trigger and fuel is dispensed, registered and continually updated on the display.
- 4) When the filling is completed and the customer has replaced the nozzle in the nozzle-boot, the dispenser motor stops. The display will continue to show the last sale until the nozzle is lifted again.

6.1.3 . How To Change The Unit Prices

The example shown is for a typical double-sided multi-product dispenser. The menus may vary according to different hydraulic configurations.

Note!

Ensure nozzles are correctly stored in nozzle boots before entering any programming operation.

Store
all noz-
zles



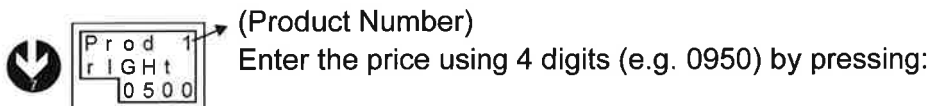
Configuration



Unit Price



Change the Unit Price for product 1, right side (side A)

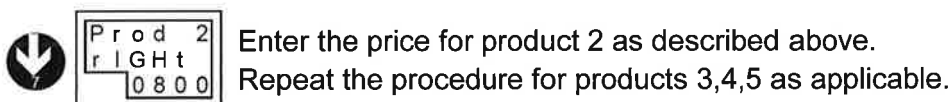


to modify the
row/line

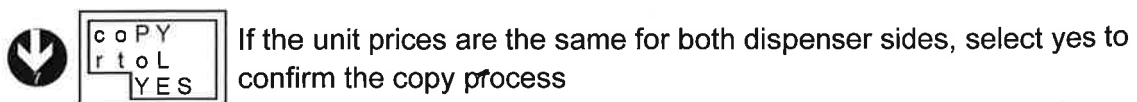


to modify the value


Change the Unit Price for product 2, right side (side A)

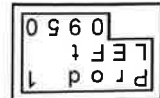


Copy Unit Prices from the right side to the left side

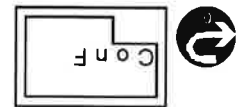


Change the Unit Price for product 1, left side (side B)

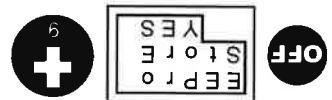
 If the unit prices are different for the left side then program the new unit prices as described above for all products.



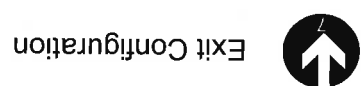
Configuration



Save new Unit Prices



Toggle yes (save PIN code) and no (exit without save)



Exit Configuration

6.1.4 How To Read The Electronic Totals

Store
all noz-
zles



Configuration



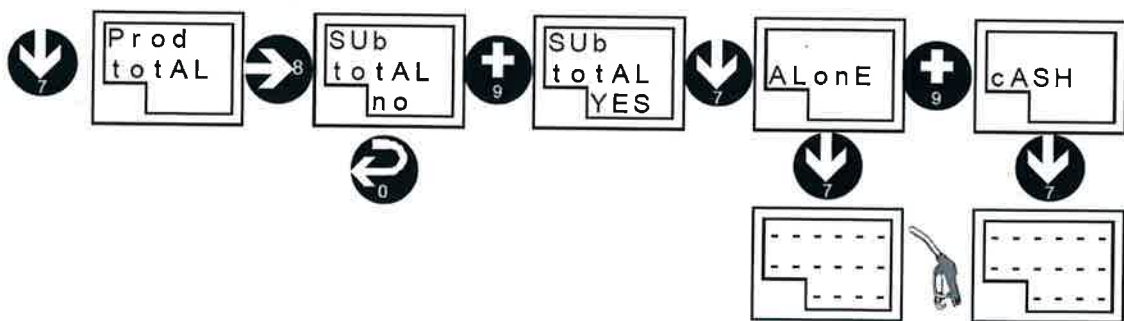
Read Totals



Product totals

Subtotals (amount, vol-
ume, no. of transactions).
Toggle yes/no.

Toggle cash(console
mode) or alone (stan-
dalone mode)

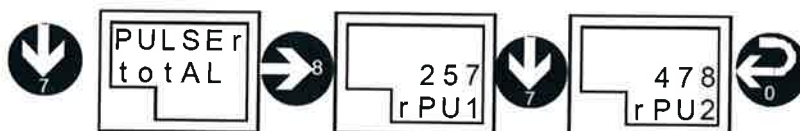


Lift a nozzle to read
subtotals for that nozzle



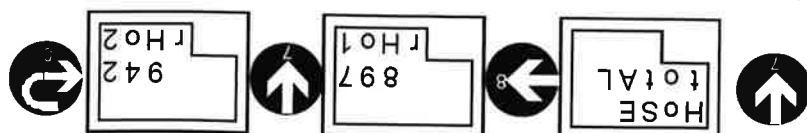
Pulser totals

Per pulser per side (RPU1 to RPU6 then LPU1 to LPU6)

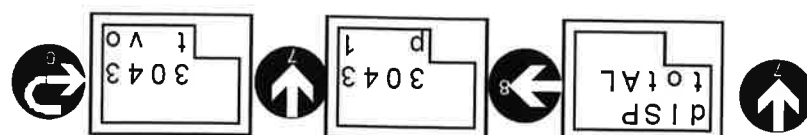


Hose totals

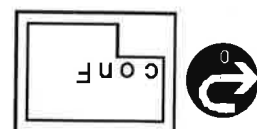
Per hose per side (RHO1 to RHO6 then LHO1 to LHO6)



Dispenser totals
Total volume per product (p1 to max. no. of products)



Configuration



Exit Configuration

6.1.5 How To Set The Pin Code For The First Time

The PIN code functionality is a security measure designed to prevent unauthorised access to the calculator programming. Once a PIN code is set, it will be requested at the start of every programming activity.

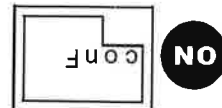
IMPORTANT : DO NOT FORGET THE PIN CODE.



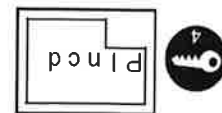
Store
all noz-
zles



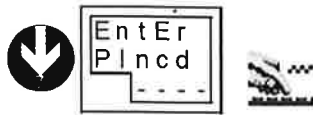
Configuration



PIN Code Set Up



Enter PIN Code

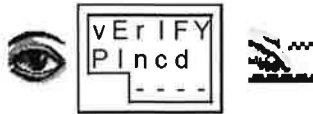


Enter a 4 digit PIN code to allow access to all menus.

Note!

the PIN code must not be 0000

Verify PIN code



Re-enter same 4 digit PIN code to confirm.

Configuration



Save PIN Code



Toggle yes (save PIN code) and no (exit without save)



Exit Configuration

6.1.6 How To Change The Pin Code

In order to change the PIN code, the current PIN code must be known. If the current PIN code is lost then please contact your DFS service technician.

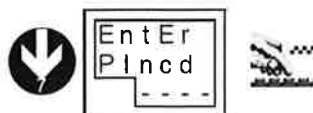
Store
all noz-
zles



Configuration



PIN Code Request menu (start of any programming activity)

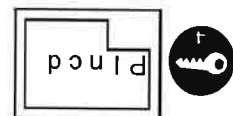


Enter the current 4 digit PIN Code

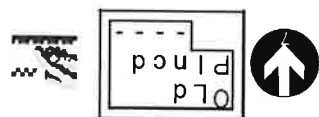
Configuration



Change PIN Code

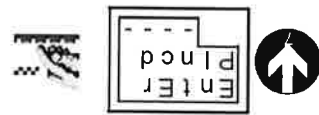


Old PIN Code



Enter the old PIN code

New PIN Code



Enter a new 4 digit PIN Code

entering 000 cancels PIN Code functionality

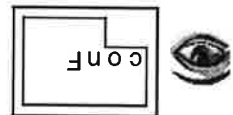
Note!

Verify new PIN Code

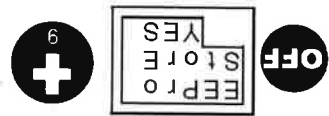


Re-enter the new 4 digit PIN Code

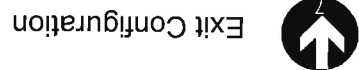
Configuration



Save new PIN Code



Toggle yes (save PIN code) and no (exit without save)



Exit Configuration

6.2 TQC Calculator







This section only covers the basic programming tasks to be performed by the Station Operator. The complete range of calculator functions are covered in detail in the TQC Hand Held Terminal User Interface Manual, for Dover Fueling Solutions approved technicians only.





6.2.1 Hand Held Terminal

The Hand Held Terminal (HHT) is the interface between the Station Operator and the fuel dispenser via the TQC. The HHT connects to the TQC via an infrared sensor located on the calculator door. For the connection to work properly, the HHT must be within two metres of the IR sensor and aimed at an angle of between 0-15°, from every direction except above.

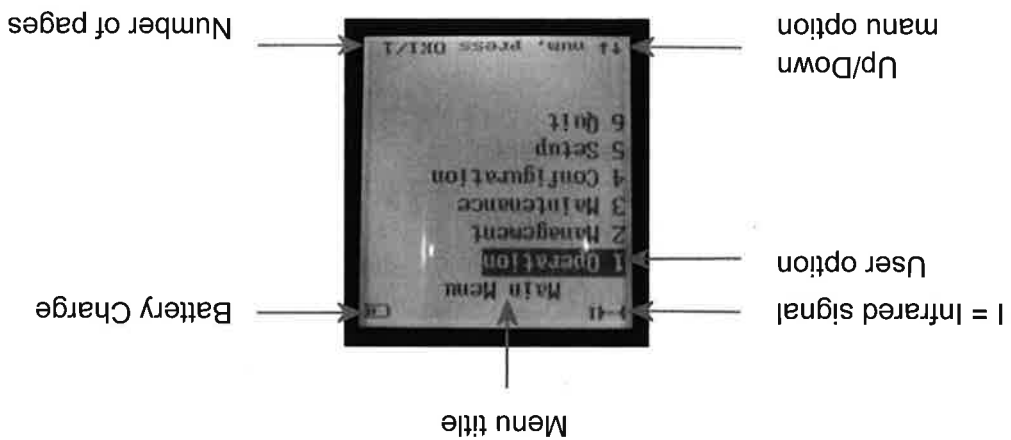


The function keys on the HHT are defined as follows:

Key	Symbol	Deskription
C		No save and Return higher level
OK		Confirm and Return higher level
SEL		a) Select/unselect chekbox, select radio-box b) Start Modify parameter c) Enter sub-level
DEL		Delete one character
UP		a) Move up b) Move right c) Up scroll the parameter list d) Next Record number
DOWN		a) Move down b) Move left c) Down scroll the parameter list d) Previous Record number

Key	Symbol	Description
*		Switch among 123/ABC/abc Go to next field (example IP address input)
On/Off		Turn on/off the Hand-Held Terminal (HHT)
F1-F4		These are shortcuts to often used submenus (programmable). Example: F1: Operation: Just stop F2: Recall X transaction manu F3: Operation: Preset amount F4: Operation: Preset volum
F5-F8		F5: Operation: Preset clear F6: Operation: request current trans. F7: Operation: change shift F8: Toggle Infrared or Serial Communication

Example of Main Menu Screen:



When the HHT is switched on, the initial screen will appear:

Infrared signal	Battery	Remark
OK Configuration		The user may press OK key to enter configuration, or select one of functional keys to realize his operation.
F1:		
F2:		Product totals to display on the VGA screen (for LCD screens it states Prohibit Configure denoting no handling implemented) When the Lifetime Totals optional function is set to enabled, pressing this option will show menu
F3: VGA Totals		
F4: Lifetime Volume		
F5:		
F6:		
F7:		
F8:		
Press Key	1/1	

Select "OK : Configuration" and the Main Menu will show:

Infrared signal	Battery	Remark
Main Menu		Main menu access is shown below
1 Operation		Operation (Lowest access level)
2 Management		Management
3 Maintenance		Maintenance
4 Configuration		Configuration
5 Setup		Setup (Highest access level)
6 Quit		Quit
?? num. press	OK1/1	When the user chooses one menu item, the user should be asked for entering password or PIN code!

The Site Operator only has access to the first two levels - Operation and Management.

6.2.2 PIN Code

After selecting a level from the Main Menu, a six digit PIN code will be requested:

123	Battery	Remark
		PIN code
		The PIN is numerical and exactly 6 digits. When the user inputs his code, the system shows "*" for safety reasons.
	PIN Code: *****	Remark: Max. 3 attempts, after this, configuration access is blocked for half an hour. The dispenser can be used for deliveries though.
	Input PIN 1/1	

<p>When the password is not recognized by the system, an error display message will be shown at the bottom of the screen. The user must press C to exit and retry entering the menu.</p>	Infrared signal	Battery	Remark
	PIN Code: *****		
			PIN Cod Error

6.2.3 How To Read System Totals**1. Select Operation**

Infrared signal	Battery	Remark
Main Menu		
1 Operation		
2 Management		
3 Maintenace		
4 Configuration		
5 Setup		
6 Quit		
?? num. press	OK1/1	

2. Select Totals

Infrared signal	Battery	Remark
Operation		
1. Totals		
2. Read Transsaction		
?? num. press	OK1/1	

3. Choose Dispenser for viewing dispenser totals

Infrared signal		Battery		Remark	
Total Per		Total Per		Totals Per	
<input type="radio"/> Dispenser		Dispenser: Totals for all FIPs			
<input type="radio"/> Pump x		Pump: Selects one of the available FIPs			
? Prod Product x		Prod: Product "x" is a default product name, once the name is defined differently it will appear that way, i.e like "Diesel".			
[Grouped BY]					
<input checked="" type="radio"/> Grand		Grand Grand: Includes both delivery modes (Standalone/con-			
Connected		Connected: Shows Totals Connected to Cash register			
<input type="radio"/> Standalone		Standalone: Shows Totals Not connected to Cash register			
<input type="radio"/> Meter		Meter: Shows totals per meter			
?? SEL to input		1/1			

Totals per dispenser:

Infrared signal		Battery		Remark	
Total		Total		Total amount: The total amount delivered on this dispenser.	
Amount: 14,67		Volume: 13,20		Volume: Total volume delivered on this dispenser The volume unit, is either Litre or US Gallon	
TC Vol.: 0,00		TC Vol: TC Vol: Temperature Compensated Volume is to correct the (EC corrected) Raw volume against normalized 15 degrees thermal expansion			
EC Vol.: 0,00		Num of Deliveries		EC Vol: Electronic (meter) Calibration to correct measurement failures of the meter, will be applied first to correct the Raw Volume	
				Num of Deliveries: Total number of deliveries for this dispenser	
?? Page		1/1			

4. Choose Pump for viewing pump totals

Infrared signal	Battery	Remark
Total Per		Totals Per
? Dispenser		Dispenser: Totals for all FIPs
<input checked="" type="radio"/> Pump x		Pump: Selects one of the available FIPs
? Prod Product x		Prod: Product "x" is a default product name, once the name is defined differently it will appear that way, i.e like "Diesel".
[Grouped BY]		
<input checked="" type="radio"/> Grand		Grand Grand: Includes both delivery modes (Standalone/connected) on "Totals Per"
<input type="radio"/> Connected		Connected: Shows Totals Connected to Cash register
<input type="radio"/> Standalone		Standalone: Shows Totals Not connected to Cash register
<input type="radio"/> Meter		Meter: Shows totals per meter
?? SEL to input	1/1	

Totals per pump:

Infrared signal	Battery	Remark
Total		Total per pump
Amount: 14,67		Total amount: The total amount delivered on this filling position.
Volume: 13,20		Volume: Total volume delivered on this filling position. The volume unit, is either Litre or US Gallon
TC Volume: 0,00		TC Vol: Temperature Compensated Volume is to correct the (EC corrected) Raw volume against normalized 15 degrees thermal expansion
EC Volume:0,00		EC Vol: Electronic (meter) Calibration to correct measurement failures of the meter, will be applied first to correct the Raw Volume
Num of Deliveries		
Num of 0 deliveries		
0 Deliveries Vol.		Total number of deliveries for this dispenser
Hose expansion Vol		Total Number of zero deliveries
Preset Overshoot Vol		Total delivered volume in zero-deliveries
Cents overshoot Vol		
Idle Vol		
Leak Vol.		
?? Page	1/1	

5. Choose Prod Product for viewing product totals

Infrared signal		Battery		Remark	
Total Per		Totals Per			
<input type="radio"/> Dispenser		Dispenser: Totals for all FIPs			
<input checked="" type="radio"/> Pump x		Pump: Selects one of the available FIPs			
Prod: Product "x" is a default product name, once the name is defined differently it will appear that way, i.e like "Diesel".					
[Grouped BY]					
<input checked="" type="radio"/> Grand		Grand Grand: Includes both delivery modes (Standalone/con-			
Connected		Connected: Shows Totals Connected to Cash register			
<input type="radio"/> Standalone		Standalone: Shows Totals Not connected to Cash register			
<input type="radio"/> Meter		Meter: Shows totals per meter			
?? SEL to input		1/1			

Totals per product:

Infrared signal		Battery		Remark	
Total		Total amount: The total amount delivered on this dispenser.			
Amount: 14,67		Volume: Total volume delivered on this dispenser. The volume unit, is either litre or US Gallon			
Volume: 13,20		TC Vol: Temperature Compensated Volume is to correct the (EC corrected) Raw volume against normalized 15 degrees thermal expansion			
EC Volume: 0,00		EC Vol: Electronic (meter) Calibration to correct measurement failures of the meter, will be applied first to correct the Raw Volume			
Num of Deliveries		Total number of deliveries for this dispenser			
?? Page		1/1			

6.2.4 How To Read System Transactions

1. Select Operation

Infrared signal	Battery	Remark
Main Menu		
1 Operation		
2 Management		
3 Maintenance		
4 Configuration		
5 Setup		
6 Quit		
?? num. press	OK1/1	

2. Select Read Transaction

Infrared signal	Battery	Remark
Operation		
1. Totals		
2. Read Transaction		
?? num. press	OK1/1	

3. Select Date

Infrared signal		Battery		Remark	
Query Transaction		Date: Identifies the date of the transactions to be shown. The format is yy.mm.dd		FIP: Identifies of which FIP the transactions must be shown	
?FIP x		? Prod Product x		Prod Product: Identifies the product of which the transactions need to be shown.	
?? SEL to input		1/1			

4. Transaction Details:

Infrared signal		Battery		Remark	
Transaction		15 records num: 1		15 is the total number of transactions. 1 is the specific record number	
SN:0044		Date 2020-03-02		Time Start:22:33:07	
Time Stop:22:33:197		Nozzle ID:1		Error Code:0-02	
D. Mode: Standalone		?? Page 1/3		this example: standalone	

Infrared signal	Battery	Remark
Transaction		Transaction
15 records num: 1		Current record
Volume: 13,20		Volume: Shows the price per selected volume unit,i.e Litres Gallon
Amount: 14,67		Amount: The price to pay in the selected currency
Unit Price: 1,111		Unit Price: Shows the litre price
M1 Vol: 13,20		M1 Vol: Meter1 Volume
M2 Vol: 0,00		M2 Vol: Meter 2 Volume
Raw Vol: 13,20		Raw Vol: The measured volume without Temperature compen- sation and Electronic calibration.
?? Page	2/3	

Infrared signal	Battery	Remark
Transaction		Transaction
15 records num: 1		Current record
Ave Temp.: 15,00		Ave Temp: The average Temperature during this transaction
TC Vol.: 0,00		TC Vol: Temperature Compensated Volume is to correct the (EC corrected) Raw volume against normalized 15 degrees thermal expansion
EC Vol.:0,00		EC Vol: Electronic (meter) Calibration to correct measurement failures of the meter, will be applied first to correct the Raw Volume
Max Flow: 48,04		Max Flow: Shows the maximum flow rate during this transaction
Ave Flow: 48,02		Ave Flow: Shows the average flow rate during this transaction
?? Page	3/3	

6.2.5 Setting Up The Delivery Mode

The TQC can be programmed to allow the fuel dispenser to operate in either:

- Connected Mode : Dispenser is controlled via POS (Point Of Sale)
- Standalone Mode : Dispenser is in standalone mode, not controlled via POS.

1. Select Management

Infrared signal	Battery	Remark
Main Menu		
1 Operation		
2 Management		
3 Maintenance		
4 Configuration		
5 Setup		
6 Quit		
?? num. press	OK1/1	

2. Select Delivery Mode

Infrared signal	Battery	Remark
Management		
1 Delivery Mode		
2 Unit Price		
3 VGA Audio		
4 PIN Code		
only when VGA screen(s) are used only for "PIN Only" access type		
When options are not applicable, they are hidden		
?? num. press	OK1/1	

3. If a pump is to be set to Connected Mode - tick relevant box

If a pump is to be set to Standalone Mode - leave relevant box unticked

Infrared signal	Battery	Remark
Delivery Mode		Delivery Mode:
[Pump 1 2 3 4]		Only the available Pumps can be toggled between connected mode and standalone.
Connected ? ? ? ?		Connected mode: (checked) Dispenser is controlled via POS
		Standalone: (unchecked) dispenser is in standalone mode, not controlled via POS.
?? SEL to input	1/1	

Note!

The Pump configuration 1,2,3,4 (4-active hose)

6.2.6 Setting Up The Unit Price

1. Select Management

Infrared signal	Battery	Remark
Main Menu		
1 Operation		
2 Management		
3 Maintenance		
4 Configuration		
5 Setup		
6 Quit		
?? num. press	OK1/1	

2. Select Unit Price

Infrared signal	Battery	Remark
Management		
1 Delivery Mode		
2 Unit Price		
3 VGA Audio		
4 PIN Code		
?? num, press OK1/1		

3. Select either Standalone Mode or Connected Mode

Infrared signal	Battery	Remark
Unit Price		
1 Standalone Mode		
2 Connected Mode		
??num, press OK1/1		

4. Standalone Mode:

Infrared signal	Battery	Remark
Standalone Mode		
Prod: Product 1		
Price: 1,800		
?? SEL to input 1/1		

Prod: Product "X" is a default product name, once the name is defined differently it will appear that way, i.e like "Diesel".
Price: It can be customized to the value the user wants to set. This value will be shown at the dispenser display.

5. Connected Mode:

Infrared signal	Battery	Remark
Connected Mode		Connected Mode
Prod: Product 1		Prod: Product "x" is a default product name, once the name is defined differently it will appear that way, i.e like "Diesel". Price: It can be customized to the value the user wants to set. This value will be shown at the dispenser display
Price: 1,800		
?? SEL to input	1/1	

6.2.7 Changing The Pin Code

1. Select Management

Infrared signal	Battery	Remark
Main Menu		
1 Operation		
2 Management		
3 Maintenance		
4 Configuration		
5 Setup		
6 Quit		
?? num. press	OK1/1	

2. Select PIN Code

	Management
	1 Delivery Mode
	Unit Price
	3 VGA Audio
	4 PIN Code
	?? num, press OK1/1
Infrared signal Battery Remark	

3. Choose either Level 1 PIN or Level 2 PIN

PIN Code. It shows two option Level PIN Codes	PIN Code
	1 Level 1 PIN
	2 Level 2 PIN
	?? num, press OK1/1
Infrared signal Battery Remark	

4. Enter new Level 1 PIN Code:

Infrared signal	Battery	Remark
Level 1 PIN Code		Level 1 PIN code
[Enter New Pin]		[Enter New Pin]
*****		The PIN Code must be typed here
[Re-Enter New Pin]		[Re-Enter New Pin]
*****		Confirm the new PIN code
?? SEL to input	1/1	

5. Enter new Level 2 PIN Code:

Infrared signal	Battery	Remark
Level 2 PIN Code		Level 2 PIN code
[Enter New Pin]		[Enter New Pin]
*****		The PIN Code must be typed here
[Re-Enter New Pin]		[Re-Enter New Pin]
*****		Confirm the new PIN code
?? SEL to input	1/1	

6.3 Dialog Calculator

For information on Dialog Calculators, refer to separate documentation.

6.4 Reading the Electro-Mechanical Totaliser

Electro-mechanical totalisers may be fitted to Quantum dispensers to keep a permanent record of fuel dispensed totals. Record the readings carefully, ensuring that each figure corresponds to the correct fuel type and filling position.

6.4.1 Electro-Mechanical Totalisers

Where fitted, electro-mechanical totalisers (EMT) are usually located on the calculator door, below the display, visible through a small window in the calculator door. The principle of operation is via electronic signals from the pulser to the calculator and EMT board.



7 Cleaning & Maintenance

Routine cleaning and maintenance of dispensers and Outdoor Payment Terminals (OPT) as described in this section, must only be carried out by personnel authorised to do so by the Station Manager. Personnel must have access to, and be familiar with, the information provided below.

Failure to follow the information provided in this section may result in damage to the dispenser or OPT and may invalidate any warranties provided by DFS.

In the case of any uncertainty, consult with your local DFS office, identified at <http://tokheim.com/contact/>.



Turn
power
off

Before starting any cleaning or maintenance procedure ensure the dispenser or OPT has been taken out of service and all electrical power is isolated.

When working on the station forecourt, always act in accordance with general safety rules and regulations.

7.1 Cleaning Operations

Service station personnel are only authorised to perform the activities listed below. All other installation, service and/or maintenance operations must only be carried out by trained technicians.

The exterior of dispensers and OPTs must be cleaned regularly in order to maintain its appearance and to avoid heavy build-up of materials that potentially may damage the exterior surfaces. Although the exterior surfaces have been tested for resistance to damage caused by standard fuel types, fuel may contain other additives that could potentially cause damage. As such it is strongly advised that any spillage of fuel onto the surfaces must be cleaned off as soon as possible.

The frequency of cleaning will depend on local environmental conditions and volume of use.

7.2 Cleaning Guidelines

Follow the guidelines below when performing cleaning operations.

DO....

- Use water mixed with mild detergents such as car shampoo
- Use non-abrasive cleaning cloths
- Clean up any fuel spillage on to the exterior surfaces as soon as possible.
- Immediately clean up any spillage on the forecourt as some fuels such as Diesel and AdBlue can create slippery surfaces. Only use sand or similar absorbent material to absorb spillage - do NOT use water.
- To reduce the risk of electrostatic discharge, always use a damp cloth for cleaning.
- Clean external synthetic rubber fuel hoses with an appropriate cleaner.

- Apply graphite twice a year to all locks to keep them in good condition.
- Although not essential, after cleaning, use standard car polish on the fuel dispenser and OPT panels to give additional protection.

DO NOT...



- Do not use gasoline or diesel fuels to clean panels
- Do not, under any circumstances, use strong solvents or cleaning products containing:
 - Chlorinated Hydrocarbons
 - Esters
 - Ketones
- Do not use abrasive cleaners or polishes.
- Do not use high pressure water or steam cleaning equipment
- Do not spray or splash water into the external openings (card-reader, printer, etc.) of the payment terminal.

7.3

Service Lifetime

Fuel dispensing equipment service lifetime depends on fuel volume dispensed and the environmental conditions under which the dispenser is operated such as extremes of temperature and altitude.

Your local DFS service organisation will be able to advise more accurately as to the recommended service intervals for your dispenser.

7.4

Dispenser Maintenance Operations

The Station Manager should carry out daily visual inspections of all fuel dispensers to check for damage, leakage and areas of potential wear and tear.

7.4.1

Hoses, Nozzles And Swivels

Hoses, nozzles and swivels should be checked daily for holes, cracks and/or worn seals. They must be replaced at regular intervals to avoid risk of leakage or spillage due to damage or deterioration.

7.4.2

Filters

The pump filters need to be cleaned on a regular basis. The frequency depends on the filter gauge, cleanliness of the fuel, the storage tank and the suction lines. Cleaning or changing of filters must only be carried out by authorised personnel.

7.4.3

Motor Drive Belts

Motor v-belts are subject to deterioration due to continuous use and must be checked regularly by an authorised technician.

7.4.4

Calculator Head Light Bulbs

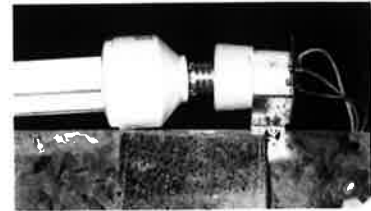
Switch off power to the dispenser and follow the instructions in section 2.8 to gain access to the calculator head. Locate the lamp inside the calculator head.

(exact location depends on the dispenser model).

Note!

If the lamp is not visible or clearly accessible then a service engineer must be called.

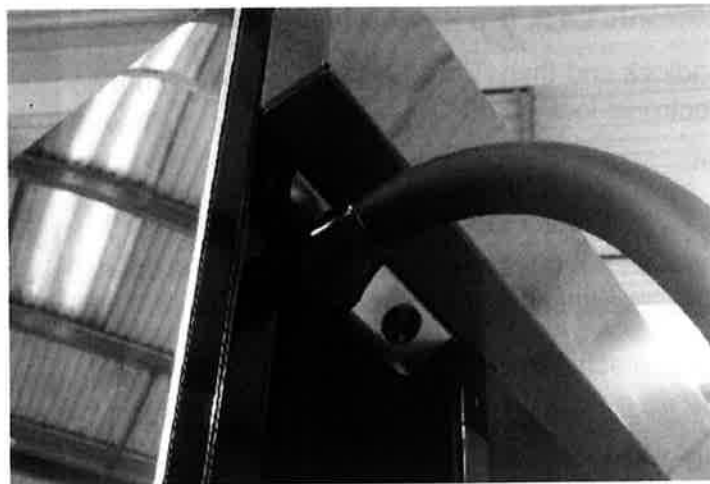
Where the lamp is accessible, unscrew the bulb from the ballast socket without touching the bulb itself. Fit new bulb into ballast socket. Close the calculator head door and re-instate power to the dispenser.



7.4.5 Q410 Hose Bungee

It is recommended that the Q410 Hose Bungee is checked as part of daily visual inspection to determine if any stretching has taken place. Also, it is recommended that the bungee is replaced as part of routine maintenance every two years. This will prevent any potential failure where the Bungee has stretched beyond its allowable elasticity.

An indication of normal operation of the bungee is that the Hose Clamp, to which the Bungee is connected, is pulled fully to the top of the Hose Management Column as shown below.



7.5 Outdoor Payment Terminal Maintenance

Access to Outdoor Payment Terminals (OPTs) and Dispenser Integrated Payment Terminals (DITs) varies according to the model ordered.

For all terminals, swipe the Maintenance/Service card at the Service Station Point-of-Sale (POS) or terminal and select the option Maintenance/Service mode before attempting to access the OPT or DIT.



Note!

A spanner or paper roll on the display indicates the terminal is in Maintenance/Service mode.

- Disarm The Electronic Lock**
- Press first the spanner and then 'Ticket' on the OPT/DIT screen to disarm the electronic lock
 - An audible alarm is sounded to alert the unit is open
 - Pull the printer unit open

Note!

The red open padlock on the display indicates the drawer is open and unarmed.

- Close drawer to electronically lock

For Optis With Twin Keylocks:

- Unlock the twin keylocks at either end of the display
- Pull drawer open
- Remove keys before closing the drawer



For Optis With Electronic Lock (No Keylock):

- Press first the padlock and then 'Ticket' on the OPT/DIT screen to disarm the electronic lock
- Pull drawer open



Note!

The red open padlock on the display indicates the drawer is open and unarmed.

- Close the drawer to electronically lock.

For Optis With Single Keylock:

- Unlock the keylock on the front of the terminal
- Pull drawer open
- Remove keys before closing the drawer



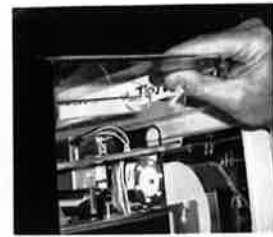
7.5.1

Replacing A Paper Roll

If an OPT/DIT is out of paper then a warning screen is displayed and an alert may sound in the kiosk. To change the paper roll:



- 1) Follow the instructions given in section 7.4 to gain access and authorisation to the payment terminal.
- 2) Where fitted, remove the printer box cover.
- 3) Locate and lift out the empty cardboard roll.
- 4) Remove the roller from the empty cardboard roll and insert into the new paper roll.
- 5) Insert new paper roll locating the roller in the slots.
- 6) Insert the start of the paper roll into the cutter unit feed slot.
- 7) When correctly inserted, the paper will automatically feed through to the receipt output. If required, press the paper feed button to advance.



- 8) Press 'Ticket' on the touch screen to print out a dummy ticket to verify the correct operation of the printer.

Note!

The ticket will not print if the paper has been incorrectly fed from the bottom of the roll as the paper is thermal on one side only.

- 9) Replace the printer box cover where fitted.
- 10) Close the OPT/DIT drawer to reset alarm.

Note!

The printer door has a two stage locking system for security reasons.

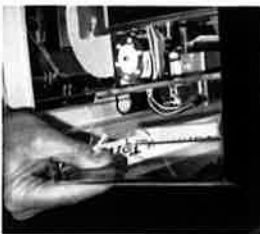
- 11) To close the printer door properly, firmly push the bottom side of the printer door. If the door is closed properly, the door will not move and the door alarm will be idle.
- 12) Return the payment terminal to Normal mode at the POS.



7.5.2 Paper Jams

To clear a paper jam:

- 1) Follow the instructions given in section 7.4 page 82 to gain access and authorisation to the payment terminal.
- 2) Where fitted, remove the printer box cover.



- 3) To access the paper jam, lift up the cutter unit using the small clip inside.



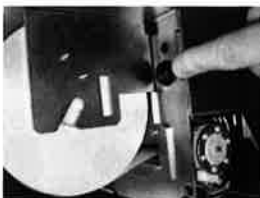
- 4) Holding the cutter in the up position, carefully remove all jammed paper then gently place the cutter unit back in position.)



- 5) Re-feed the paper roll back into the cutter unit feed slot (cut the paper to give a straight edge if required).



- 6) When correctly inserted, the paper will automatically feed through to the receipt output. If required, press the paper feed button to advance.

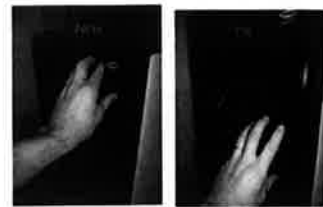


- 7) Press 'Ticket' on the touch screen to print out a dummy ticket to verify the correct operation of the printer.
- 8) Replace the printer box cover where fitted.
- 9) Close the OPT/DIT drawer to reset alarm.

Note!

The printer door has a two stage locking system for security reasons.

- 10) To close the printer door properly, firmly push the bottom side of the printer door. If the door is closed properly, the door will not move and the door alarm will be idle.
- 11) Return the payment terminal to Normal mode at the POS.



7.5.3 Captured Cards

DFS OPTs can be equipped with manual or motorised card readers. With manual card readers, the user manually inserts the card into the slot and manually removes the card at the end of the transaction. The card is never fully inserted therefore card capture is not possible.

With motorised card readers, the motor automatically pulls the card inside the terminal where it reads the data then, if valid, will return the card after the transaction is complete. If the card is invalid or if the PIN has been entered incorrectly after a fixed number of attempts, the card will be retained inside the terminal.



To retrieve a captured card (motorised card readers only):

- 1) Follow the instructions given in section 7.4 page 82 to gain access and authorisation to the payment terminal.
- 2) Retrieve the captured card(s) from the tray positioned behind the card slot inside the OPT/DIT drawer.
- 3) Close the OPT/DIT drawer. The padlock displayed on the screen should change to green and locked indicating the drawer is electronically locked.
- 4) Return the payment terminal to Normal mode at the POS.



7.5.4 Cleaning Cards

DFS recommends the use of cleaning cards every two weeks to ensure optimal payment terminal operation. Cleaning cards can be purchased from your local DFS SSD.

Magnetic Stripe Cleaning Cards

- Insert the white cleaning card fully in and out of the slot 8-10 times using the same part of the card.
- Mark the used quadrant of the card after each cleaning and use a different part next time until all four quadrants are marked before disposing of the card.



Magnetic Stripe Cleaning Cards

The CVGA smart card reader should be cleaned at least once every two weeks, to make sure that the smart card operation works properly.

Cleaning Equipment:

- Cleaning Card (order number 7511.0701 x 6 cards)
- Cleaning Spray (order number 9220011969)

Cleaning Procedure:

- 1) The card reader head, which needs to be cleaned, is located at the top of the card reader.
- 2) To effectively clean the card reader head, spray the cleaning fluid onto the white square of the cleaning card.



- 3) With the white square facing upwards, insert the sprayed cleaning card fully into the card reader. Wait 10 seconds, to allow the cleaning agent to dissolve any dirt found on the card reader head.



- 4) Whilst holding the cleaning card with the left hand, move the transparent tearing lip, attached to the cleaning card, forwards/backwards 4-6 times using the right hand.
- 5) Remove the cleaning card from the card reader.



- 6) There are 12 boxes on the cleaning card, representing 12 cleaning sessions. Each time the cleaning card is used, one of the boxes should be marked off using either a ballpoint pen or alcohol marker.
- 7) Once the cleaning card has been used 12 times and all the unmarked boxes are marked, dispose of the card.

**7.5.5 Printer Cutter Units/Blades**

Only DFS authorised service engineers are permitted to replace the printer cutter unit. Contact your local DFS Service Centre.

7.5.6 Bank Note Acceptor

To empty the Bank Note Acceptor (BNA) money box:

- 1) Follow the instructions given in section 7.4 to gain access and authorisation to the payment terminal.
- 2) Use the large safe door key to unlock the safe door then use the allen key to release the safe door deadlocks.
- 3) Open the safe door to gain access to the safe money box.
- 4) Use the money box radial tumbler key to release the money box from the safe box unit.



Note!

Once the money box is released from the safe box unit, a red light appears on the money box. The red light indicates that the safe cannot be replaced back into the unit until the money box has been opened and emptied.

- 5) Use the money box key to open the back of the money box and remove all banknotes from inside the money box.
- 6) Close and lock the money box.

Note!

Once money box has been emptied, the red light will turn green and the money box can be replaced back into the safe box unit.

- 7) Replace the money box back into the safe box unit and lock in position using the money box radial tumbler key.
- 8) Close the safe door and use the allen key to enable the deadlocks and lock using the safe door key.
- 9) Return the payment terminal to Normal mode at the POS.

8 Legal Notices

8.1 Disclaimer Regarding ATC Option

Special care is required when the ATC (Automatic Temperature Compensation) option is used on Quantum dispensers along with mechanical totes. A dispenser fitted with the ATC option will display an adjusted / corrected volume dispensed on ONLY the electromechanical totes (when fitted), the electronic indices of the dispenser calculator and the POS of the filling station.



The correction is NOT applied to volume accumulated by mechanical totalisers that are driven directly by the meter. With usage and over a period of time - this discrepancy will increase.

[The ATC option automatically adjusts the volume dispensed according to the density of the product and the temperature of the product being measured - back to an equivalent volume at 15C.]

DFS will not accept any responsibility for any issues arising with W & M authorities out of any potential discrepancies between volume readings from the ATC adjusted system and the volumes shown on the mechanical totes.

User Manual

Tokheim Quantum™ Fuel Dispenser and Outdoor Payment Terminals

Warranty

Any alternations, additions, or unauthorized work, performed on the equipment without manufacturer's express written consent shall void any existing product warranty. Please see product warranty information for additional details.

Use only genuine parts.

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