

Smart-Fill

Version 9.4
Operation manual

For Smart-Fill systems with memory key type data downloading, or modem / hard wired connection to pc.

NOTE- This manual does not suit Smart-Fill systems using an SD card for data downloading.

Please read section 9, warranty terms, prior to use of your Smart-Fill equipment.

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Safety warnings.

Any safety concerns about the system should be immediately reported to your Smart-Fill supplier or the manufacturer. The system must be put out of order, isolated and tagged accordingly, and not used until it is made safe if you have any safety concerns.

HIGH VOLTAGE WARNING.

The Smart-Fill system can involve hazardous mains voltage supplies.
All electrical installation and testing or repairs **MUST** be carried out by a suitably licensed electrician.
All wiring **MUST** be in accordance with local / relevant regulations.
Special care must be taken to ensure that wiring of systems in hazardous areas are done so in accordance with the relevant regulations and authorities for that location.
The manufacturer can not specify correct wiring regulations. Information must be sought from the relevant local authorities.
Smart-Fill enclosures are not rated for use in hazardous areas. The Smart-Fill must only be used in a non-hazardous area.
The safety panel inside the Smart-Fill **MUST NEVER BE REMOVED.**

Terminology.

There are words and descriptions used in this manual that may require some explanation. Some are listed below...

ibutton.

The small buttons which look like a watch battery. They are used to identify each vehicle. They may be mounted either in a keyfob, for attaching to a keyring etc, or they may be mounted directly to your fuel tank area if a reader wand used.

Sensor pads.

The stainless steel pads on the front of the Smart-Fill. You touch the ibutton keys onto the sensor pads to start a fuel issue.

Vehicle key.

Another word for the ibutton that identifies each vehicle.

PIN number.

The unique identification number (any number from 1000 to 65000) which is used to identify each driver.

Driver ID number.

The number (1-1500) which identifies each driver loaded into the Smart-Fill.

MENU key.

The key which is used by the manager to access the system to add keys, add PIN numbers and change settings etc. There is only one supplied with each Smart-Fill, and it should be guarded carefully. It usually has an Orange key tag with **MENU KEY** written on it.

Master key.

A key which can be used to fuel any vehicle. The driver types in the vehicle number when prompted. A normal ibutton key can be loaded as a master key (but only by the manager).

Memory key.

The memory type ibutton which is used to download data from your Smart-Fill onto your pc. This button is different internally from vehicle ibutton keys. It usually has a blue keytag, with **MEMORY KEY** written on it.

Download.

The process of transferring data from the Smart-Fill onto your pc, where the vehicle details and driver names are attached to each fuel issue, and it is converted into a spreadsheet so that you can view / print / further process the data.

LCD.

The liquid crystal display panel which you view on the Smart-Fill front door.

Walktime.

An internal feature which stops the fuel pump from running for long periods of time without any fuel flow. It turns the pump off after its preset Walktime (number of seconds). This time period is adjustable by the manager. Sometimes also known as a no-flow timer

Mode.

A system which the Smart-Fill uses to turn some options on and off, and to configure the Smart-Fill.

Regular maintenance.

The Smart-Fill is relatively maintenance free. However there are a few items which may require attention occasionally.

Enclosure cleanliness.

The Smart-Fill enclosure should be kept as clean as possible.

The keypad silicon rubber cover should be kept clean, and free of petroleum products.

The silicon cover will handle most dirt and grime well, but it will swell up and fail if it becomes 'wet' with petroleum product.

NEVER use solvents for cleaning, use only a weak detergent mix.

Sensor cleanliness.

The sensors where the vehicle key is touched on should be kept clean.

If electrolysis is allowed to form on the surfaces around the studs, then the keys may not read correctly in damp / wet weather. This may also affect the download via memory key.

Download clip inside the door.

The download clip inside the door should be pushed gently in each time before inserting the MEMORY key, to ensure a good clean contact with both surfaces of the memory key.

Basic Parts Identification.



Menu Key



Memory Key



**Download cable (2 blue dots / curly cable).
Serial port adaptor (Top - Grey).
USB port adaptor (Bottom - Blue).**



Software on USB drive or CD.



Vehicle Key ID button.

Getting more from your Smart-Fill.

There are a few options which may suit you to add to your Smart-Fill. Please contact your Smart-Fill supplier for further information and pricing.

Smart-Fill USB backup drive.

You can purchase a USB drive which has special backup files loaded onto it. You simply plug the drive in and double click on the backup file icon. All fuel data files and necessary system files, including your vehicle and driver lists, are then automatically backed up onto the USB drive. The drive also has the latest Smart-Fill pc software and help files installed onto it.

Backup memory key.

You can purchase a memory key specifically for backing up of your vehicle keys and driver PIN numbers in the Smart-Fill itself. This is a very simple procedure. If your system had a major lightning strike etc, and needed to have a main circuit board replacement, then you may possibly have to manually reload all vehicle keys and Pin numbers. This would be very inconvenient for some operations. A backup key enables you to save all keys and Pin numbers onto a memory key, which you can then copy onto any other Smart-Fill, or restore onto a new circuit board.

If you purchased a second Smart-Fill, then you can simply copy the keys and PINs from one to the other, without having to manually reload them.

Reader Wand.

You can purchase a reader wand, which enables you to mount the vehicle touch keys onto the vehicle, somewhere near the fuel tank. If you have trouble with staff losing keys, or using keys from other vehicles, taking keys home etc, then this solves all of those problems.

The key is mounted onto the vehicle, and a small hand held reader wand is connected to the Smart-Fill by a thin data cable. To start a fuel issue, you simply touch the wand onto the key near the fuel tank. The data cable is a low cost consumable part, and should be replaced at least every 12 months.

Extra keys.

You can purchase extra fuel keys from your Smart-Fill supplier. It is advisable to have a few spare keys available, as freight of keys to some remote sites may take a few days.

Software updates.

The latest PC software updates are available free of charge at the Smart-Fill webpage on the UPDATES page. If your version of pc software has an upgrade there, you are able to download the update free of charge. If you purchase a Smart-Fill USB drive, you can easily save the latest Smart-Fill file onto the drive, with your original Smart-Fill software.

The Smart-Fill webpage is at www.smartfill.com.au

Spare menu key.

It is advisable for you to set up a spare MENU key when you first install the Smart-Fill.

If you lose your MENU key, it is a detailed procedure to replace it if you haven't made a spare.

Please see section 5.1 on adding vehicle keys for the correct number to use to make a spare MENU key.

You can use a spare vehicle key to create the spare MENU key.

How it works.

Controlling Access.

The Smart-Fill has control of the fuel dispensing system by turning on or off the pump motor, or a valve of some type.

The Smart-Fill will not turn on the pump or valve until it has been authorised by a valid key and PIN number (if PIN number requesting is turned on).

Recording data.

At the end of each fuel issue, the Smart-Fill writes the fuel issue data down into 2 permanent memory chips. Chip 1 can be reset by the manager after the data has been downloaded to a pc. Chip 2 can not be reset, and it always contains the most recent 1500 fuel issues. All of the data stored in the Smart-Fill memory is safe for at least 20 years without power being connected.

Downloading data to your pc.

When you download data to your pc, you copy each fuel issue from the Smart-Fill memory to your pc memory. The Smart-Fill software is used to both download the data, and to convert the data into a spreadsheet so that you can view it, print it, or further process it to assist with your internal book-keeping.

When you download the data from the Smart-Fill onto the memory key, or from the Smart-Fill to a pc via a modem etc, the data is still kept at the Smart-Fill.

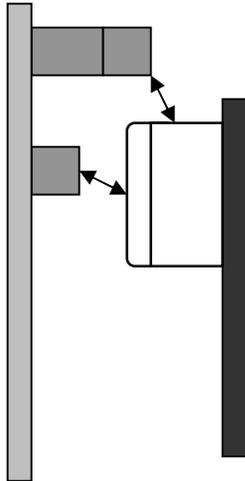
The data is not cleared at the Smart-Fill unless you request it to be cleared.

When you do clear the data, you only clear it from one memory chip, not both.

Getting started.

Touching the keys to the sensors.

When you touch your key onto the sensors on the Smart-Fill door, the front and side surfaces of the key need to touch onto the 2 sensor studs as shown below. The middle of the key must touch the bottom stud, and the outside of the key must touch the longer top stud. Please note that some systems may take up to 2 seconds to see the key at the sensor.



Allocating vehicle numbers.

Before you can use the Smart-Fill system, you must allocate a key to each vehicle which needs to access the system. The system has a capacity of 998 keys, so you must allocate each vehicle a number from 1 to 998. Write down the numbers and vehicles so that you can enter them into the pc software correctly later.

Allocating PIN numbers.

Please note that a PIN number can be any number from 1000 to 65000. PIN numbers are set up in the Smart-Fill so that each Driver has a PIN number, not each key having a PIN number. The PIN numbers are not linked to the keys in any way. Smart-Fill systems make each Driver have a PIN number, then every vehicle key can be used by any driver who has a PIN number in the system. This also makes each driver only have to remember their own PIN number. Eg: Fred Bloggs is driver number 6 in the system. Freds Pin number will be 1234. The manager loads Freds PIN number (1234) into the Smart-Fill for Fred as driver number 6. Each time the PIN number 1234 is used, the Smart-Fill will record Freds number (6) for that fuel issue. When the data is downloaded onto the pc, Freds name will be attached to all issues involving driver number 6.

How to take fuel from the system.

- 1 The driver touches the vehicle ID key (button) onto the sensors on the Smart-Fill unit. This key identifies the vehicle to the Smart-Fill.

The SmartFill checks if the key is authorized, if the vehicle key is not authorized, the pump won't start.

- 2 The Smart-Fill then requests the Speedo / hour meter reading. The driver enters this into the Smart-Fill keypad. (if speedo requesting is turned on in the MODE setting).
- 3 The Smart-Fill then requests the PIN number. The driver enters this into the keypad. (if PIN number requesting is turned on in the MODE setting).

The Smart-Fill checks the pin number. If the pin number is not valid, the fuel pump won't start.

- 4 The driver fuels the vehicle. Once the fuel delivery is complete, the Smart-Fill stores the details in its memory.

The things you'll do most often.

Adding vehicle keys.

A few facts about vehicle touch keys...

- The keys are extremely secure. The Smart-Fill gives 16.7 million possible key combinations.
- You can load up to 998 keys into the system.
- You can only have 1 key for each vehicle, unless you allocate more than 1 id number (1 to 998) to the vehicle.
- You can use your MENU key to disable a key, by simply loading the MENU key into its place.
- You can use keys again if have lost / disabled them.
- **WARNING.** If you load a key in as more than 1 ID number, then it will always find the lowest number first.
- You can purchase new keys from your SmartFill supplier.

The following key locations are reserved...

- 999 – For a fuel input recording key. If you make a 999 key and touch it to the sensors, you will be asked to enter how many Litres of fuel has been put into your storage tank. When you download data, the key 999 ID can be used to calculate data automatically if you write special spreadsheet functions.
- 1000 – Can not be used. ID number 1000 is used to identify when an unauthorized fuel issue has been detected by the Smart-Fill.
- 1001 – For a standard memory key, to download the first 500 fuel issues in memory.
- 1002 – For a memory key, to download issues 501 to 1000.
- 1003 – For a memory key, to download issues 1001 to 1500.
- 1004 – For a memory key, to backup keys and pin numbers for safe storage.
- 1005 and 1006. For Master keys. These keys will allow the operator to type in the vehicle ID number (1 to 998). **Ideal for service truck operators.**
- 1007 – For a spare MENU key. **RECOMMENDED.**
- 1008 – For a memory key, to download issues 1 to 500 from backup memory.
- 1009 – For a memory key, to download issues 501 to 1000 from backup memory.
- 1010 – For a memory key, to download issues 1000 to 1500 from backup memory.

How to add a vehicle key...

1. Have the new key ready.
2. Touch the MENU key onto the sensors.
3. When "ADD NEW KEY" appears, press enter.
4. The system will show "ENTER VALUE" on the display.
5. Type in the ID number for the key (a number from 1 to 998), and press Enter.
6. When prompted, touch the new key to the sensors, being sure to make a clean contact without pressing too hard, as shown previously.
7. You can either add another key again, or press cancel to exit the routine.

How to disable a lost or wrongly entered vehicle key...

1. Touch the MENU key onto the sensors.
2. When "ADD NEW KEY" appears, press enter.
3. The system will show "ENTER VALUE" on the display.
4. Type in the ID number for the key (a number from 1 to 998), and press Enter.
5. When prompted, touch the MENU key back onto the sensors, being sure to make a clean contact without pressing too hard, as shown previously.
6. You can either disable another key again, or press cancel to exit the routine.

Transferring keys from version 9.4 to new 9.5 system...

NOTE – You first MUST have the LATEST release of version 9.4 and 9.5 SmartFill software on your PC.

1. Create a backup **memory key** in your **v9.4** SmartFill, as key number **1004**.
NOTE – You need a memory key, not a standard vehicle key, they are different. You can use your data downloading key, but you must first disable key 1001.
2. Download the keys and pins from the v9.4 system onto the key, by clipping it inside the door. Then wait until REMOVE KEY appears.
3. You need to update your SmartFill version **9.4** pc software, to the latest version **9.4** exe file (**NOT 9.5**) from the UPDATES page at the SmartFill web site before continuing.
4. Start the SmartFill **v9.4** software.
5. Clip the memory key into the download cable.
6. Click on USB or SERIAL for the download adaptor type.
7. Click on TOOLS then IMPORT / EXPORT KEYS for SDcard.
8. Follow the prompts.
9. Note where you have saved the 2 files.

Using your new version 9.5 pc software...

1. Start the version **9.5** software.
2. Click the top Vehicle list tab.
3. Click 'get keys from Sd card'.
4. Browse to the files you created previously.
5. Click on the correct file and click OK.
6. Now click on the Driver / Pin list tab.
7. Click 'get PINs from SD card'.
8. Browse to the files you created previously.
9. Click on the correct file and click OK.

Save the vehicles and Pins onto your SD memory card...

1. Start the version **9.5** software.
2. Click the top Vehicle list tab.
3. Click 'Save keys to Sd card'.
4. Follow the prompts and save to the SD card.
5. Now click on the Driver / Pin list tab.
6. Click 'Save PINs to SD card'.
7. Follow the prompts and save to the SD card.

Copy your Keys and PINs from the SDcard to your new SmartFill...

1. Take the SD card and the door key to the SmartFill unit.
2. Unlock the SmartFill door.
3. Insert the SD card into the slot on the red circuit board.
4. Wait about 10 seconds.
5. Start the Menu running by touching the MENU key to the sensors.
6. Press ENTER when "Import Keys and Pins" appears on the display.
7. Enter the Access code, this is the ID number (not the serial number) written on your MENU key.
8. The keys and pins will copy into the SmartFill.
9. test a key and PIN number.

10. Copying keys and PIN numbers from one Smart-Fill to another.

Note, the 'source' system is the SmartFill you are copying the keys from.
The 'destination' system is the Smart-Fill you are copying the keys onto.

Copying the keys and pins from the source SmartFill onto a memory key.

- 1- You need to load a spare memory key in as number 1004.
- 2- Insert the 1004 memory key into the download clip behind the door.
- 3- Leave the key in place until 'REMOVE KEY' appears.
- 4- The memory key now contains a copy of the source system keys and pin numbers.

Proceed to the next step when you are ready to copy the keys / pins onto the new Smart-Fill

Copying the keys and pins from the memory key onto the destination SmartFill.

- 1- Open the Smart-Fill door, and have the memory key ready to insert into the download clip.
- 2- Touch the **MENU** key to the SmartFill key sensors to start the menu scrolling on the display.
- 3- Immediately insert the memory key containing the keys / pins into the clip behind the door.
- 4- Wait until "**RESTORE KEYS**" appears, and then immediately press ENTER.
NOTE - If you are copying keys from a Version 7 system to a Version 9 system, wait until "Load V7 keys" appears, and then press Enter.
- 5- WARNING - Do not remove the key until "**REMOVE KEY**" appears.

- 6- On the destination system, you **will** need to re-enter the original memory key, and any master keys, spare MENU keys etc, as they are overwritten by the new keys.
- 7- Always test a few keys and pin numbers to be sure that keys have copied across OK.

Adding PIN numbers.

A few facts about PIN numbers...

- The PIN number system is designed primarily to provide extra security for your Smart-Fill system, and also to identify the driver who fuelled the vehicle.
- You can load up to 1500 PIN numbers into the system.
- A PIN number can be any number from 1000 to 65000.
- You can only have 1 PIN for each driver.
- You can disable a PIN, by simply loading a different PIN into its place.
- **WARNING.** If you load the same PIN number for 2 drivers, it will always find the lowest driver ID number first. To prevent this, ensure that all drivers have different PIN numbers.

How to add a PIN number for a driver.

1. Touch the MENU key onto the sensors.
2. When "ADD PIN NUMBER" appears, press enter.
3. The system will show "ENTER VALUE" on the display.
4. Type in the ID number for the driver (a number from 1 to 1500), and press Enter.
5. Type in the PIN number for the driver (a number from 1000 to 65000), and press Enter.
6. You can either add another PIN again, or press cancel to exit the routine.

How to disable a PIN number...

1. Touch the MENU key onto the sensors.
2. When "ADD PIN NUMBER" appears, press enter.
3. The system will show "ENTER VALUE" on the display.
4. Type in the ID number for the driver or Key, and press ENTER.
5. Type in a random PIN number from 1000 to 65000 and press ENTER.
TIP – Use a 5 digit number (less than 65000) when disabling a PIN number.
6. You can either disable another PIN again, or press cancel to exit the routine.

Downloading data.

A few facts about downloading data...

- PLEASE NOTE that the information below only relates to using a memory key for download of fuel use data. Please see separate manuals for download via modem, Ethernet or other methods.
- If you wish to use a memory key for backing up of your keys and PIN numbers, then you should purchase a new memory key, and load it into your system as number 1004.
- You need a separate memory key for each Smart-Fill if you have more than one Smart-Fill in use.
- You can not use a normal key for downloading data. The key is different internally.
- The memory key has normally already been loaded into the Smart-Fill, and is ready for use.
- A memory key can hold a maximum of 500 fuel issues.
- The data inside the memory key remains intact after you download to the pc. It is there until you do another download at the Smart-Fill, which overwrites the old data.

Download using memory key.

The procedure for downloading data using a memory key is...

1. Take the Memory key to the Smart-Fill.
2. Unlock the Smart-Fill door.
3. Press the tab on the memory key clip in on the circuit board behind the keypad, to make sure it has a good contact when the key is inserted.
4. Push the memory key into the clip.
5. Leave the key in place until "REMOVE KEY" shows on the display, and the system beeps continually.
6. Remove the key.
7. Use a sign or tag to put the system out of order until you return to clear the memory.
8. Go to the pc and download data from the key onto a computer.
PLEASE SEE SEPARATE INSTRUCTIONS FOR DOWNLOADING DATA AT THE PC.
9. After confirming that all data looks OK, return to the Smart-Fill and clear the memory.
10. If you receive an **ERROR 3** on the display, check that the clip is a tight fit on the key, and also make sure that the front of the Smart-Fill is clean and dry around the key sensors.

Download using modem.

The procedure for downloading data using a pc connection is outlined in the separate information sheet to suit the download method. However, the basic procedure for all pc connections is...

1. Start the Smart-Fill program on your pc.
2. Click on the type of connection you have, eg: Modem, Hardwire, Ethernet etc.
3. Click on the button on left for the Smart-Fill that you would like to connect to.
4. When connected, click on the DOWNLOAD button.
5. Once downloaded, you can choose to clear the memory if required. The access code is the ID number written on the MENU key.
6. Click to DISCONNECT from the Smart-Fill.
7. Click on CREATE A FUEL DATA FILE.
8. Follow the prompts to save the data file in a spreadsheet format.

Downloading from a modem / SmartFill on a vehicle.

It is recommended the following procedure be followed to ensure good communications...

- 1- The vehicle should be stationary.
- 2- The vehicle should have its engine switched off.
- 3- The Smart-Fill must obviously be powered on.
- 4- The vehicle needs to be in an area with reasonable phone signal.

NOTE - The SmartFill incorporates a method to check the signal strength. The operator simply presses 4 on the keypad, and the signal strength is shown on the display.

Clearing Smart-Fill memory.

A few facts about clearing the memory in the SmartFill.

- The memory in the SmartFill **MUST** be cleared regularly after downloading data, to prevent the SmartFill memory from becoming overfull.
- When you use a memory key for your data download, the maximum number of fuel issues allowable in memory is 500. This is because the largest memory key available at present can only hold data for 500 issues.
- When you use a modem or cable to dial into the Smart-Fill, the maximum number of fuel issues in memory is 1500. However it is possible to use 3 memory keys to download 1500 fuel issues from the SmartFill. This requires extra memory keys, and a fairly good understanding of the system.
- It is also possible to download data from the backup memory chip. This requires extra memory keys and a fairly good understanding of the system.
- The memory is only cleared from the SmartFill internal memory, not from the memory download key. The data in the key stays there until you next download from the SmartFill.
- If you use a modem or cable to dial into the SmartFill, you cannot clear the memory until after downloading data. You also need an access code to clear the memory when dialing in. The access code is the MENU key ID number (not serial number).

Clearing the memory for memory key type downloads.

1. At the Smart-Fill, touch the MENU key to the sensors to start the MENU operating.
2. When "CLEAR MEMORY" or "CLEAR SYSTEM MEMORY" appears, press and hold the ENTER key.
3. When "CLEARING" appears on the display, stop pressing the ENTER key.
4. The memory has now been cleared.

NOTE – The procedure is slightly different for earlier version 7 systems, for the procedure, consult the version 7 manual.

Clearing the memory for modem / hardwire type downloads.

When you click on DOWNLOAD after connecting to the SmartFill, the download can commence. When the data has been downloaded, the DOWNLOAD button now shows CLEAR MEMORY. This is the only time it is possible to clear the memory. If you forget to clear the memory at this point, you will need to download data again before the CLEAR MEMORY button will become available.

1. Immediately after downloading data to your pc, click on CLEAR MEMORY.
2. When prompted for an access code, type it in and press OK.
3. **NOTE – The access code is the ID number (not the serial number) written on the MENU key.**
4. The response message box should turn red and confirm that the memory has been cleared.

The things you'll not do often...

Smart-Fill mode setting.

WARNING – Some items in the mode setting chart vary for different model SmartFill systems. The chart below only suits Smart-Fill model 9.44. For other models settings, please contact the manufacturer for advice before changing.

The Smart-Fill mode setting is used to set up the system options. This enables the manager to turn on or off, items such as PIN number requesting, speedo requesting etc.

The method is simply adding a different amount for each option, to a mode number. The number starts as zero, and then you add a certain number onto the mode if you want that particular option, or don't add it to the mode if you don't want the option.

Mode chart.

The chart below gives numbers and explanations for each mode option. An explanation of each option follows this chart.

Mode value.	Option.
1	V9 not used. <i>On v10 (Gilbarco comms systems), links keys to pin numbers.</i>
2	Spare.
4	Use preset Litres each delivery. 4 = preset, 0 = normal operation.
8	Spare
16	V9 – not used. <i>On v10 (Single hose Gilbarco comms systems), used to change the protocol from p1 to p2, shifts the decimal point in the final Litres reading.</i>
32	PC communications. 32 for on, 0 for off (off for memory key).
64	Smart-Dip tank gauging fitted. 64 if fitted, 0 if not fitted.
128	Request PIN numbers. 128 to turn on, 0 to turn off.
256	Display Litres on Smart-Fill screen while delivering. 256 = on, 0 = off.
512	Detect and record unauthorized fuel issues.
1024	Spare.
2048	Spare.
4096	Spare.
8192	Solar powered. 8192 = reduce power use, 0 = normal.
16384	Speedo requesting. 16384 = on, 0 = off.
32768	Spare.

Calculating the correct mode setting.

The mode value is obtained by adding together the options that you need from the above chart. For example, to turn Pin number requesting on, and turn Speedo requesting on, you would add 128 and 16384. The result is 16512. Any of the options that you don't need, don't add their specific value to the mode value, ie: treat them as a zero.

Changing the mode setting.

The mode value is easily changed, using the MENU key.

1. Touch the MENU key to the sensors, to start the menu operating.
2. When "SET MODE" or "SET SYSTEM MODE" appears, press ENTER.
3. Type in the new mode value, and press ENTER.
4. The mode setting will now be updated.

System settings.

Some Smart-Fill settings are adjustable by the manager. The following explains the use and adjustment procedure for each setting.

Viewing settings.

The current system settings can be viewed on the Smart-Fill display.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "VIEW SETTINGS" or "VIEW SYSTEM SETTINGS APPEARS", press the ENTER key.
3. The system settings will slowly scroll on the display.
4. Write them down as a backup if you wish.

Set the time and date.

The date and time can be changed by the manager. The format is a 24 hr clock.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "SET TIME" or "SET TIME AND DATE" appears, press the ENTER key.
3. Type in the date and time, as per the example format which shows on the screen.
4. After the last keypress, the system will automatically update and then reset.

Set low memory alarm level.

The Smart-Fill has a low memory alarm feature, which warns you when the memory is low (over 80% full). This level varies depending on the download method. If you download with a memory key, the alarm level should be set to 400 fuel issues. This is due to the memory size limitation of the memory key. If you download with a pc connection, the alarm level is ok at 1200 fuel issues. It can be set to either 400, 800 or 1200. Most common is 400 or 1200.

To set the alarm level.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "LOW MEM" or "SET LOW MEMORY ALARM" appears, press the ENTER key.
3. Type in 400, 800 or 1200, depending on your download type, then press the ENTER key.

Test comms tx line.

If you have a pc connected to the Smart-Fill via a hardwire connection, you can test the comms tx line from the Smart-Fill to the pc. This is useful for technicians to diagnose faults or check system setups etc.

To test the comms line.

1. Connect the test rs232 or rs485 receiving pc to the office end.
2. Start the terminal program, such as Hyper-terminal or similar.
3. Touch the MENU key to the sensors to start the MENU operating.
4. When "COMMS TEST" or "TEST COMMS TX LINE" appears, press the ENTER key.
5. A test data string will stream from the Smart-Fill tx line, at 9600,n,8,1, with no handshaking.
6. You can test the Smart-Fill rx line by sending the 3 characters "XX", CR (ENTER) to stop the data stream.

Read touch key ID number.

If you have a pc connection to your Smart-Fill, you can load keys into the system remotely. To do this you need to know the internal ID number of the ibutton (vehicle key) you are loading into the system. The ID number is laser printed onto the front of the key, but normal wear and tear scratches this off in a short time. In this case, to see the internal ID, you can view it on the Smart-Fill screen.

To read a key ID number.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "READ KEY" or "READ TOUCH KEY ID NO" appears, press the ENTER key.
3. Touch the key to the sensors.
4. The ID number will appear on the screen, write it down.

Set Walk-time (No flow timer).

The Smart-Fill has a feature which prevents the pump from running for extended periods with no fuel flow. We call this 'Walktime'. The amount of time can be adjusted on version 9.4 systems for up to 1 minute, in 1 second increments.

To set the walk-time.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "WALKTIME" or "SET WALKTIME" appears, press the ENTER key.
3. Type in the number of seconds you require for Walktime, and then press the ENTER key.

Import keys from a v9 Smart-Fill.

The vehicle keys can be imported from one Smart-Fill to another, from a backup memory key. This is useful where a second Smart-Fill is installed, and the keys need to be copied from one to the other, or where a repair has been made and the keys need to be restored to the system.

To import the keys.

1. Unlock the Smart-Fill door.
2. Have the backup memory key ready.
3. Touch the MENU key to the sensors to start the MENU operating.
4. Clip the backup memory key into the clip behind the keypad.
5. When "IMPORT KEYS FROM V9" appears, press the ENTER key.
6. The keys will copy from the backup key onto the Smart-Fill.
7. Remove the key only when "REMOVE KEY" appears on the display.

Set site ID number.

Users of more than 1 Smart-Fill, can set a site ID number internally in the Smart-Fill, to identify which system the download came from. The number can be any number from 0 to 16.

To set the site ID number.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "SET SITE ID NUMBER" appears, press the ENTER key.
3. Type in the number and press the ENTER key.

Set issue display time.

The Smart-Fill shows the fuel delivery details on its display at the end of a delivery. The amount of time that it stays on the display can be set, to a maximum of 1 minute, in 1 second increments.

To set the display time.

1. Touch the MENU key to the sensors to start the MENU operating.
2. When "ISSUE DISPLAY TIME" appears, press the ENTER key.
3. Type in the number of seconds, and press the ENTER key.

Smart-Fill PC software

Basics of how a download works

Downloading data from the Smart-Fill to your pc is done using a few methods.

Using a memory key.

1. The data is copied from the Smart-Fill onto the MEMORY key, by clipping the key into a clip inside the Smart-Fill door.
2. The key is taken to your office computer.
3. The key is inserted into a cable which connects to your USB or serial port.
4. The Smart-Fill software copies the fuel data onto the pc.
5. The Smart-Fill software is used to create a fuel data file. This procedure adds vehicle registration numbers, fleet codes, driver names etc to the fuel data, and it converts the data into a spreadsheet format so that it can be easily viewed, or further processed.
6. Once confirming that the data looks OK, the operator then returns to the Smart-Fill and clears the memory using the MENU key.

Using a phone modem.

1. The operator starts the Smart-Fill program on the office pc, and selects which Smart-Fill to connect to.
2. The Smart-Fill software connects via the mobile phone network to the Smart-Fill.
3. The operator clicks on DOWNLOAD, and all data is copied to the office pc.
4. The operator then can clear the memory using a special access code.
5. The operator disconnects from the Smart-Fill.
6. The Smart-Fill software is used to create a fuel data file. This procedure adds vehicle registration numbers, fleet codes, driver names etc to the fuel data, and it converts the data into a spreadsheet format so that it can be easily viewed, or further processed.

Installing software on a pc

You may need to have your I.T. people do the software installation, so that it can be done under the administrator's password. The most common cause of problems when installing software is that the installation is done without administrator's rights.

- 1- Insert the Smart-Fill CD into the pc CD drive, and then run the file 'setup.exe' on the CD.
- 2- Go along with the suggested default location for the Smart-Fill program.
- 3- Run the Smart-Fill program (from the icon in the START menu) and then press F1 to open up the help file.
- 4- Store the CD or USB drive safely.

Setting up software for memory key downloading

To use a memory key, you must install some drivers onto your pc so that the pc will communicate with the memory key. These are known as 1wire drivers. The driver installation package is installed onto the pc when you installed the Smart-Fill software, but the drivers have not yet been installed. You need to install the drivers from the 'TOOLS' menu in the Smart-Fill program. Note that this is only required if you are using a memory key for downloading, it is not required if you use a phone modem.

Installing 1 wire drivers to use a memory key.

1. Make sure that the USB adaptor is **NOT** plugged into a USB port on your PC.
2. Install the 1 wire drivers from the Tools menu in the Smart-Fill program.
3. Carefully read each instruction, and when asked to, plug the USB adaptor into a spare USB port.
4. If you are warned that **MSJava** is not installed, it can be installed from the MSJava exe file located in the smartfill94 folder on your pc (c:/program files/smartfill94/).
5. Wait until the Windows 'Add new hardware wizard' starts.
6. Click on 'Install automatically'.
7. Browse to the driver location, which is "**c:/windows/system32/drivers/**", the driver file is called "**ds2490.sys**".
8. If you can't see the file when you browse to the folder, then it is almost always because you were not logged on as administrator.
9. **NOTE – If using Windows Vista**, install Vista 1wire drivers from the Smart-Fill software / TOOLS menu if the option is there, if not, you can download the drivers from the Smart-Fill webpage, UPDATES page.
10. **NOTE – If using 64 Bit Windows**, you will need to download the latest 64 bit compatible drivers from the maxim website.
http://www.maxim-ic.com/products/ibutton/software/tmex/download_drivers.cfm

USB port type download setup.

1. Make sure that the com-port setting on the SETTINGS menu is set to 1.
2. If the installation was successful, the pc should automatically detect the USB download adaptor when it is plugged in.

Serial port type download setup.

Set the comport number in the Smart-Fill program to the same number as the comport that the serial adaptor is plugged into.

Troubleshooting USB type download problems.

If the memory key is not recognized (the download label does not turn black when the memory key is plugged in).

- The software and 1 wire drivers may need to be installed under administrator's password.
- The 1wire drivers may not have been installed (from the TOOLS menu in the Smart-Fill program).
- Try a different USB port, or try restarting your computer.
- Even for USB, the com-port setting in the Smart-Fill software should be set to comport 1.
- Only one memory key at a time can be plugged into the download cable (even though it has 2 clips).
- Be sure you are using the MEMORY key, not the MENU key.
- Try a different pc if possible.
- Contact your IT people to check the installation.

Troubleshooting Serial type download problems.

- The software and 1 wire drivers may need to be installed under administrator's password.
- The 1wire drivers may not have been installed (from the TOOLS menu in the Smart-Fill program).
- Try a different serial port (if available), or try restarting your computer.
- Only one memory key at a time can be plugged into the download cable (even though it has 2 clips).
- Be sure you are using the MEMORY key, not the MENU key.
- Use task manager to check that another program is not using the serial port, stopping the Smart-Fill program from accessing it.
- Try a different pc if possible.
- Contact your IT people to check the installation.
- The serial port may need to be tested by your IT people.

Setting up software for a modem connection.

Please note that you need to put your pc com-port number at step 7. If you don't know what com-port number to use, look in Control Panel, Phone and modem options, then click on modems.

After installing the Smart-Fill software...

- 1- Start the Smart-Fill program.
- 2- Click on "Modem / Hardwire" in the download type box, and a window will open up.
- 3- In this window, click on "Add / Edit details", this unlocks the boxes so that you can add your phone number etc.
- 4- Put whatever you want for your company name or Smart-Fill location.
TIP- If you put your access code (ID number on MENU key) in with the company name / location, you will be able to see it on the top of the window later when you need it to clear the memory in your Smart-Fill.
- 5- Put the data phone number in the next box, without spaces – Eg: 0417123456.
- 6- Put your Smart-Fill serial number in the next box.
- 7- Put the com-port number in the comport box on the RH side.
- 8- Click save changes.
- 9- Exit the Smart-Fill program and then re-open it.
- 10- Click on modem/hardwire again.
- 11- Click on the 'radio' button at the left of the top line, and then wait.
The pc should connect to the Smart-Fill, and when it has connected, a window with your options should appear.

NOTE:

When you have downloaded your fuel data, an option appears to "Clear memory".
When you do choose to clear the memory, you will be asked for an access code.
This is the ID number (not serial number) written on your MENU key tag.

Troubleshooting Modem type download problems.

- The phone number MUST be a data number, not a voice number. Your phone company should have set the account up with 2 phone numbers. If you only have 1 number, please contact your phone company and confirm that you have a data number attached to your voice number.
- The comport number must match the port number that your modem is connected to.
- The Smart-Fill must be powered on.
- The Smart-Fill will not answer if it is busy fuelling a vehicle.
- The Smart-Fill modem must have adequate phone coverage. You can test the signal strength at the Smart-Fill by pressing 4 on the keypad.
- The Smart-Fill mode setting must have comms turned on.

Setting up software for a hardwired connection.

After installing the Smart-Fill software...

- 1- Start the Smart-Fill program.
- 2- Click on "Modem / Hardwire" in the download type box, and a window will open up.
- 3- In this window, click on "Add / Edit details", this unlocks the boxes so that you can add your phone number etc.
- 4- Put whatever you want for your company name or Smart-Fill location.
TIP- If you put your access code (ID number on MENU key) in with the company name / location, you will be able to see it on the top of the window later when you need it to clear the memory in your Smart-Fill.
- 5- In the phone number box, type **Hardwire** exactly as shown, with no spaces etc.
- 6- In the Serial number box, type **RING** exactly as shown, with no spaces etc.
- 7- Put the com-port number that the hardwired cable is connected to, in the comport box on the RH side.
- 8- Click save changes.
- 9- Exit the Smart-Fill program and then re-open it.
- 10- Click on modem/hardwire again.
- 11- Click on the 'radio' button at the left of the top line, and then wait.
The pc should connect to the Smart-Fill, and when it has connected, a window with your options should appear.

NOTE:

When you have downloaded your fuel data, an option appears to "Clear memory".
When you do choose to clear the memory, you will be asked for an access code.
This is the ID number (not serial number) written on your MENU key tag.

Troubleshooting Hardwire type download problems.

- The phone number **MUST** be entered as **Hardwire**, with capital H.
- Some systems will not answer if **RING** is not put in the serial number box.
- The comport number must match the port number that your Smart-Fill is connected to.
- The Smart-Fill must be powered on.
- The Smart-Fill will not answer if it is busy fuelling a vehicle.
- The Smart-Fill mode setting must have comms turned on.
- The cable length and type must be suitable for the type of communications being used, eg RS232 or RS485.
- Try clicking RESET and attempt to connect a few times.

To test the comms line.

The Smart-Fill has a feature which allows you to test the comms tx/ rx line from the Smart-Fill to the office pc.

1. Connect a pc with hyper-terminal or similar terminal program to the office end of the cable.
2. At the Smart-Fill, start the menu with the MENU key, and press ENTER when TEST COMMS appears.
3. The Smart-Fill will send data strings every few seconds for about 20 minutes, which you should see at the pc end if the tx line is connected correctly. If you see the data at your PC, then the TX line is OK.
4. Type XX (quickly) at the pc end to stop the data stream, to test the Smart-Fill rx line. If the data stream stops when you type XX, the the SmartFill RX line is OK.

Com settings are 9600 n,8,1 no handshaking.

Setting up vehicles and drivers in Smart-Fill software

After you allocate a key to each vehicle, and a PIN to each driver, you need to enter these into the Smart-Fill program, so that it knows what details to put into the spreadsheet next to each key / driver ID number.

STEP 1- Start the Smart-Fill program.

The screenshot shows the SmartFill Version 9.4.5 Fuel management system window. The window title is "SmartFill Version 9.4.5 Fuel management system." and it has a menu bar with "File", "Settings", "Tools", and "Help".

STEP 2- Click on the View / edit vehicles box to open the vehicle list. This callout points to the "View / edit" section on the right side of the window, which contains two radio buttons: "Vehicles" (selected) and "Drivers".

STEP 3- Enter the vehicle ID number (1 to 998) This callout points to the "Key No" dropdown menu in the "Vehicle Details" section, which currently shows the number "5".

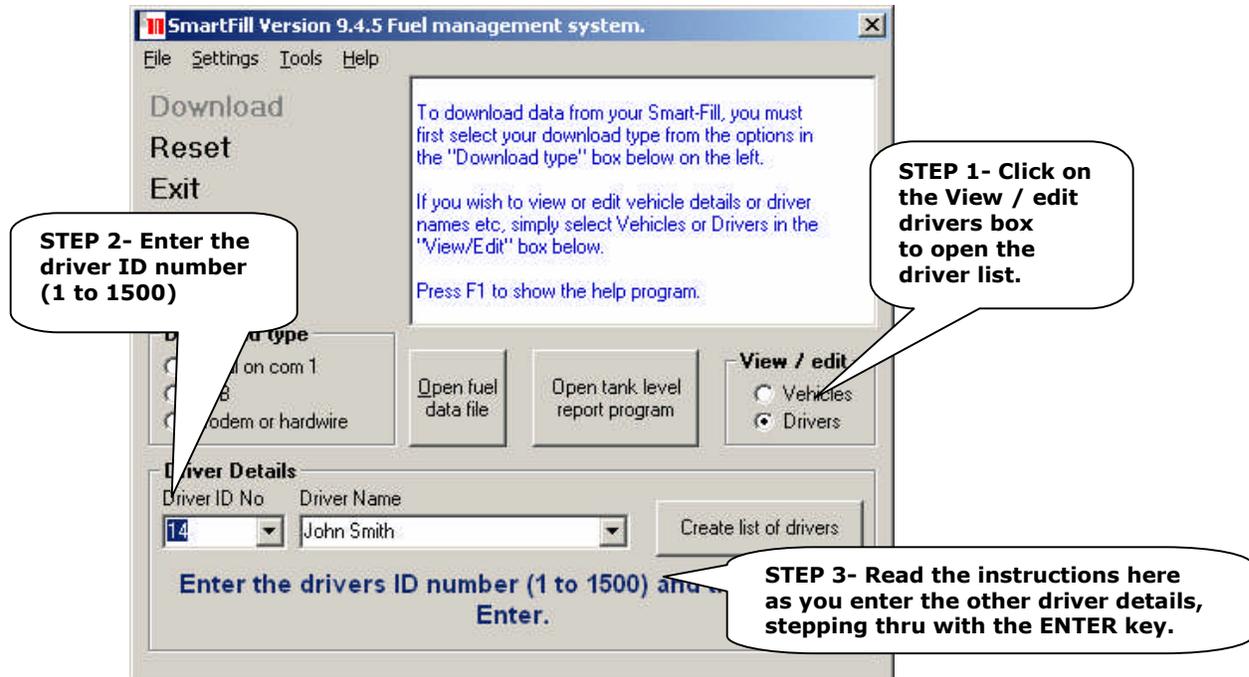
STEP 4- Read the instructions here as you enter the other vehicle details, stepping thru with the ENTER key. This callout points to a large blue text box at the bottom of the "Vehicle Details" section that reads: "Enter the vehicle key number (1 to 1000) and then press Enter."

The "Vehicle Details" section contains a table with the following data:

Key No	Vehicle description	Reg No	Fleet Code	Last ser
5	Mack truck	TGT-351	T106	108000

Other visible elements include a "Download" section with "Download type" options, "Reset", and "Exit" buttons; "Serial on com 1" options (USB, Modem or hardware); "Open fuel data file" and "Open tank level report program" buttons; and a "Create vehicle list" button.

Enter all of your vehicles into the system before entering the drivers as shown below. This callout points to the "Create vehicle list" button.



Downloading data with a modem or hardware connection.

- 1- Start the Smart-Fill program.
 - 2- Click on 'modem / hardware' in the 'download type' box.
 - 3- Click on the button to the left of the Smart-Fill you wish to connect to.
 - 4- Wait until a window opens with your option buttons.
 - 5- Click on the 'Download' button.
 - 6- Read the pop up, then click OK.
 - 7- Wait until the download completes, then click OK.
 - 8- If you don't wish to clear the memory, go to step 11.
 - 9- If you wish to clear the memory, click on the CLEAR MEMORY button, enter the access code (the ID number on your MENU key), and click OK.
 - 10- Wait until the memory has cleared.
 - 11- Either choose another option, or click on the DISCONNECT button to disconnect properly from the Smart-Fill.
- NOTE- Always disconnect before exiting the program.
- 12- Click on CREATE FUEL DATA FILE, and read / follow the prompts.

Creating a fuel data file from the downloaded data.

The Smart-Fill software can create 3 reports for you.

FUEL ISSUES is a report which details each individual fuel issue taken from the system.

FUEL TOTALS is a report which details the total amount of fuel taken by each vehicle since the memory was last cleared in the Smart-Fill.

The ISSUES and TOTALS reports can be saved as 1 spreadsheet, with the issues list followed by the totals list, or 2 separate reports can be saved.

MAINTENANCE is a basic maintenance report of when each vehicle is due for service.

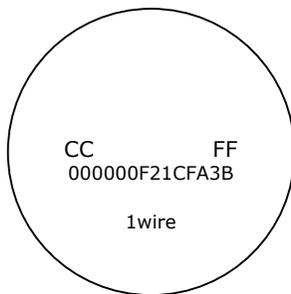
- 1- If you have just downloaded data, click on 'CREATE FUEL DATA FILE'.
Otherwise, you can click on the TOOLS menu and then CREATE FUEL DATA FILE.
- 2- Choose if you would like to create a new file, or add to an existing file.
You might add to an existing file if you had multiple Smart-Fills in use, and you wanted to have all data in one sheet for them all.
- 3- Click SAVE to accept the default filename, or change the name and then click save.

- 4- Choose if you would like to insert headings into the top of the spreadsheet.
You might not insert headings if you had another program importing the data from the Smart-Fill spreadsheet, or if you used the Smart-Fill basic tank report program.
- 5- Choose if you have manual entries to insert at the start of the issues report. See the section on manual entries.
- 6- Choose if you would like to combine the issues and totals reports.
- 7- If you chose YES to combine the reports, go to step 9.
- 8- If you chose NO, click SAVE to accept the default filename, or change the name and then click save.
- 9- Choose if you would like to create a maintenance report.
- 10- If you chose NO, go to step 12.
- 11- If you chose Yes, click SAVE to accept the default filename, or change the name and then click save.
- 12- Read the popup and click OK.
- 13- You can now view / edit / modify further your fuel reports by clicking on 'OPEN FUEL DATA FILE'.

Adding vehicle keys remotely from your pc

This requires the PC to be connected to the Smart-Fill via a Modem or cable connection.

First you need to know the unique ID number inside of the vehicle touch key. You can find this in 2 ways.

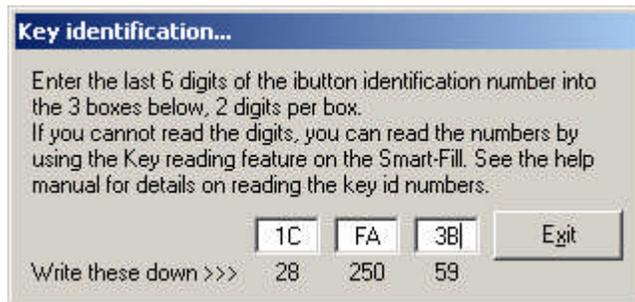


Reading it directly from the face of the key. In this case you use the last 6 digits of the ID number. In this example, the last 6 digits would be 1CFA3B.

Or if the writing is worn off of the front of the key, you can view the number at the Smart-Fill unit by choosing option 12 on the menu "Read Touch Key ID No", and then touching the key onto the Smart-Fill. The ID number will then be shown on the display, and you can write it down.

Now you need to convert the number into a type recognized by the Smart-Fill program.

- 1- Open the Smart-Fill program.
- 2- Press F3 to open the conversion tool, the window below will appear.
- 3- Type in the last 6 digits, 2 digits per box as shown in the sample.



- 4- Write down the 3 numbers as shown, keep them separated. Do this for as many keys as you need to.

5- Now you need to connect to the Smart-Fill, by dialing into it. Please be aware that the Smart-Fill will time out if you do nothing for around 30 seconds. So please have all numbers ready or you will need to re-connect after a timeout.

Once you are connected...

- 1- Click on **Add/disable vehicle key**.
 - 2- Enter the vehicle number (1 to 998), and Click OK.
 - 3- Enter the first of the 3 numbers, (28 in the sample above) and click OK.
 - 4- Enter the second number, (250 in the sample) and click OK.
 - 5- Enter the third number, (59 in the sample) and click OK.
- The key will now be added.

Repeat steps 1 to 5 for as many keys as you wish to enter.

To disable an existing key.

Simply follow steps 1 to 5 above, but enter number 255 for each of the 3 numbers in steps 3, 4 and 5.

Smart-Fill maintenance reporting.

The Smart-Fill software can create a maintenance report, which will show you how many kilometers each vehicle has to go before it is due for service etc.

It will tell you if vehicles are overdue, or due soon etc.

The service report uses the most recent odometer / hours reading entered at the Smart-Fill to calculate the report. Your drivers need to enter accurate figures to ensure that your maintenance report is correct.

This feature requires that you enter the following into the Smart-Fill pc software.

1. When you add a vehicle into the system, you need to also put in the service interval for each vehicle, in Kilometers or Hours.
2. Before you download data from the Smart-Fill to the pc, you need to get from your maintenance staff, the last odometer or hour-meter reading that each vehicle was serviced, and enter that in for each vehicle before downloading to the pc.
TIP – Click on SPEEDO's in the edit vehicles area, and it will speed up the process of updating service odometer readings. It will also automatically increment the vehicle number. Use the ENTER key to step through.
3. To generate a report, simply select YES when prompted to create a maintenance report when creating fuel data files.

Smart-Fill manual entries.

The Smart-Fill software has a feature which allows fuel which was not dispensed through the Smart-Fill, to be included in the reports. This is useful when you have vehicles working away, and you would like the fuel purchased at service stations etc to be combined in the issues and totals reports.

To enter a manual fuel entry...

1. Start the Smart-Fill program.
2. Click on TOOLS then MANUAL FUEL ENTRY.
3. Select the vehicle from the list.
4. Select the driver from the list.
5. Click on ENTER DETAILS.
6. Follow the prompts.

After downloading data from the memory key, and then creating the fuel reports, you must clear the manual entries on file, or they will be included in the next download.

To clear manual fuel entries on file...

1. Start the Smart-Fill program.
2. Click on TOOLS then MANUAL FUEL ENTRY.
3. Click on CLEAR ENTRIES IN FILE.
4. Click YES to confirm.

Smart-Fill warranty terms.

The Smart-Fill manufacturers warrant each Smart-Fill system against manufacturing faults or defects. Due to the remote nature of most of this type of equipment, the following warranty terms are strictly adhered to.

1. The warranty period commences from the date of purchase from the manufacturer.
2. Smart-Fill parts are warranted for a period of 6 months.
3. Smart-Fill repair labour is warranted for a period of 12 months.
4. Warranty repair labour is only covered at the manufacturers premises.
5. All fault diagnosis, removal / replacement and freight expenses are at the owners expense.
6. Any faults caused by electrical disturbance, poor installation quality, misuse or neglect will not be covered by any warranty.
7. No warranty will apply, if commissioning documents and photographs (as outlined in the commissioning document), are not sent to the manufacturer within 14 days of the system installation.
8. An on-site warranty may be able to be negotiated with your Smart-Fill supplier.
9. Smart-Fill systems are manufactured with due care and good intent, and are fully tested prior to installation.
10. The manufacturers may not be held liable for any product or data loss, equipment damage or loss, equipment or business downtime, personal injury or death which is either directly or indirectly caused by the system hardware or software.
11. If these conditions can not be agreed upon or are deemed unacceptable by the client, then the client must contact their supplier to arrange a resolution prior to use of the equipment.