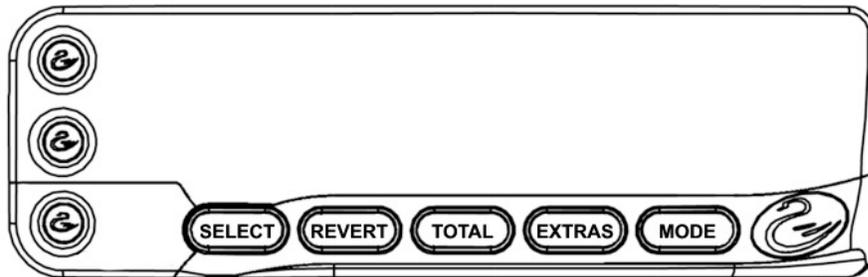




CYGNUS



MR 500
TAXIMETER USER MANUAL

ISSUE 3



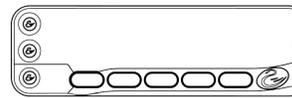
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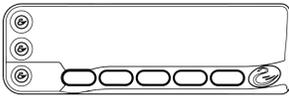


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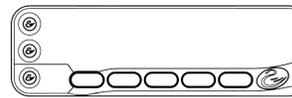
1 About this Manual

The MR500 Taximeter is designed to be easy to use. The Section headed “The MR500 Taximeter” shows you how to switch it on and use it in your taxi. We recommend that you read Section 2 of this manual to at least get to know your taximeter before you begin to work with it.

If, however, you need to use some of the more advanced features of the MR500, later sections help you with this. These sections can also be used for future reference.

The MR500’s features are dependent on the software installed and on the options selected in the particular tariff installed at any one time. The behaviour of your particular MR500 may differ in detail from that described in this User Guide and this may mean that some of the operations shown here may not be available to you. Also, additional operations may be available that are not described in this User Guide. The MR500 helps you, however, by giving easy-to-understand messages when something unexpected happens.

! While every effort is made to make this manual as accurate and as informative as possible, Cygnus Automotive reserve the right to change the function and specification of the MR500 Taximeter without notice.



2 The MR500 Taximeter

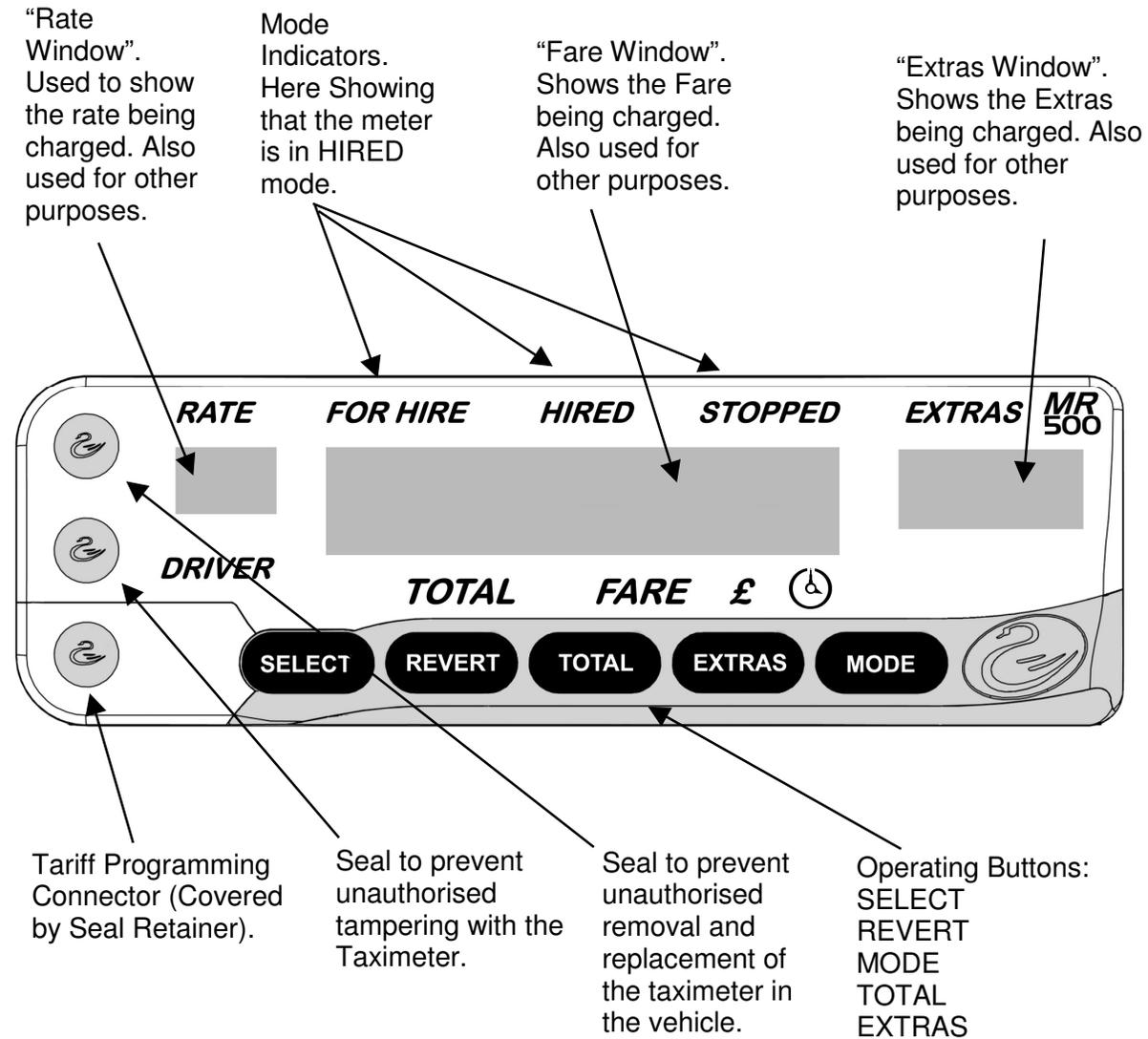


Figure 1: Front Panel Features

2.1 This Section

This section contains the basics of operating the MR500 Taximeter. There are many other features, which can be accessed by pressing the buttons other than those shown here. Please consult later sections for details of these.



2.2 Applying Power to the Meter

The MR500 is designed for permanent connection to the vehicle's power.

However, when you first connect power to the meter, it completes a series of power-up tests.

During these tests, the MR500 first illuminates the ⌚ symbol for 2 seconds before illuminating all segments for two seconds emitting a "beep". When the checks are complete the MR500 enters 'On' mode.

If the ⌚ symbol remains lit and the MR500 does not enter 'On' mode then consult your Cygnus Dealer.

If the date and time have not been set the MR500 will automatically select the Set Time option (consult your dealer for details). After the time has been set it will enter the 'For Hire' mode.



Figure 2: Display during Power-Up self test

2.3 The Internal "Battery"

The MR500 has an internal battery which maintains the internal clock when power is removed.

! If the time is not maintained when power is removed, the internal battery will need to be replaced. See your dealer.



2.4 "On" and "Off" Modes - When the taxi is not for hire

When in OFF mode, the meter's display is blank. In ON mode, there is a dot shown in the Rate Window. There may also be a clock display in the Fare Window.

If the meter is in ON mode and your vehicle does not move for 30 seconds, it changes automatically to OFF mode. If the meter is in OFF mode and your vehicle moves, it changes to ON mode.

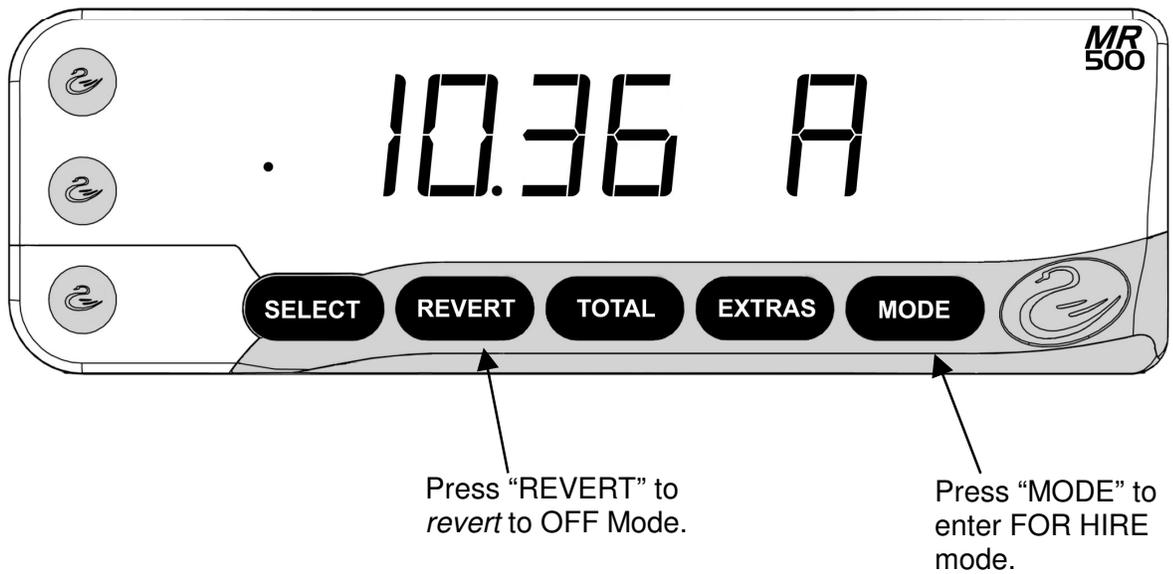


Figure 3: On Mode



2.5 FOR HIRE Mode – For when the taxi is for hire

From ON or OFF, press “Mode” to get into FOR HIRE.

The MR500 may display warning messages in this mode and a clock or blank display programmed as part of your tariff. At this stage the Rate Window usually shows the rate to charge but, according to tariff option, it may show the year to which the tariff applies. If so, pressing Revert will cancel the year display and show the charging rate.

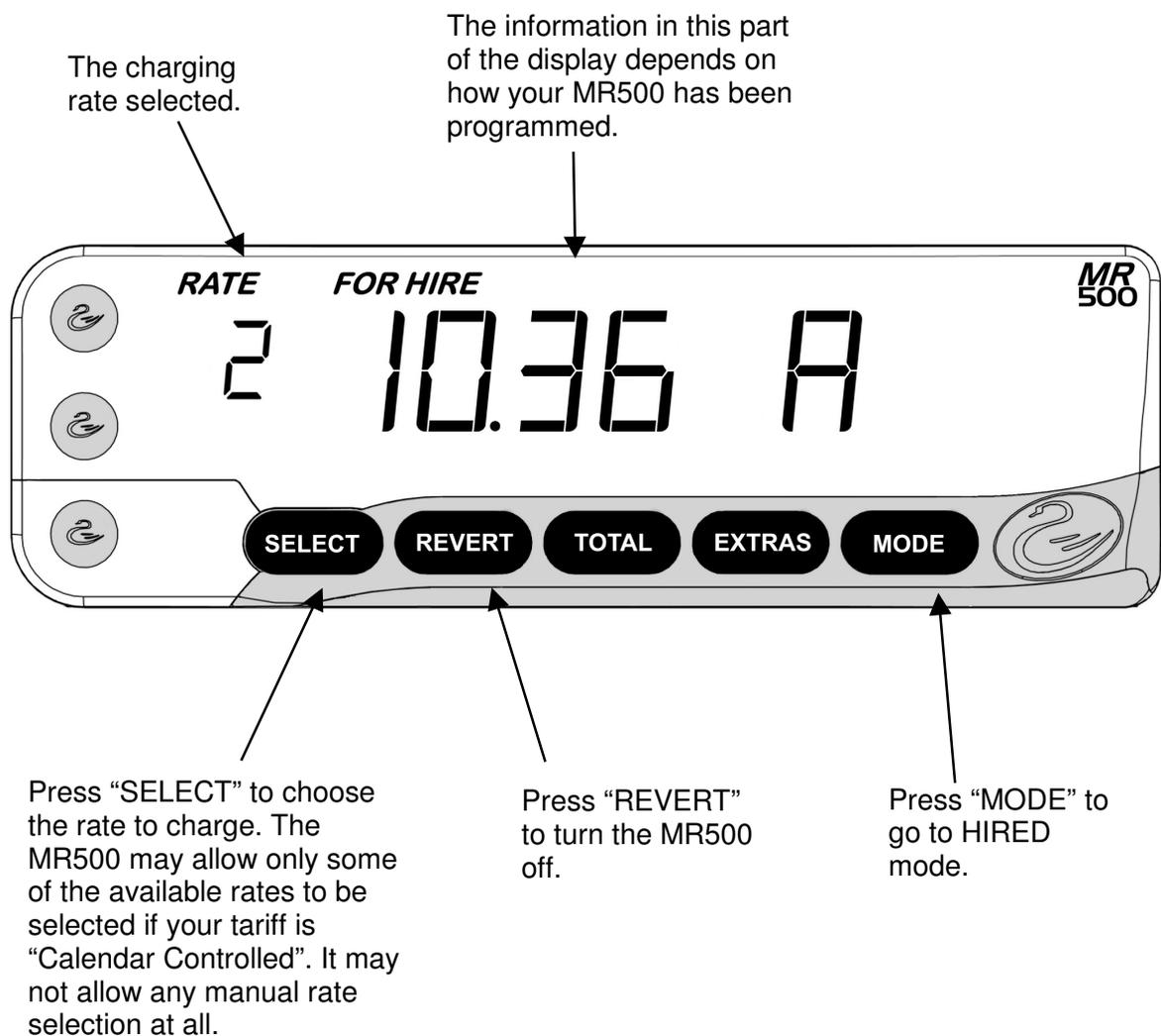
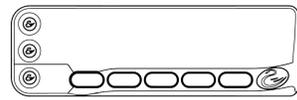


Figure 4: For Hire Mode



If the MR500 is connected to a “TAXI” sign on the roof of your vehicle, it may turn it on. This also depends on how your meter has been programmed.

2.6 HIRED Mode – For charging for Time and/or Distance

In HIRED mode, your MR500 calculates a fare based on a combination of the distance travelled by your vehicle and the time taken. At the start of a journey in FOR HIRE mode, press the “MODE” button to get into HIRED mode.

If your MR500 will not enter HIRED mode, and displays an error message instead, please refer to Messages/Glossary (section 10).

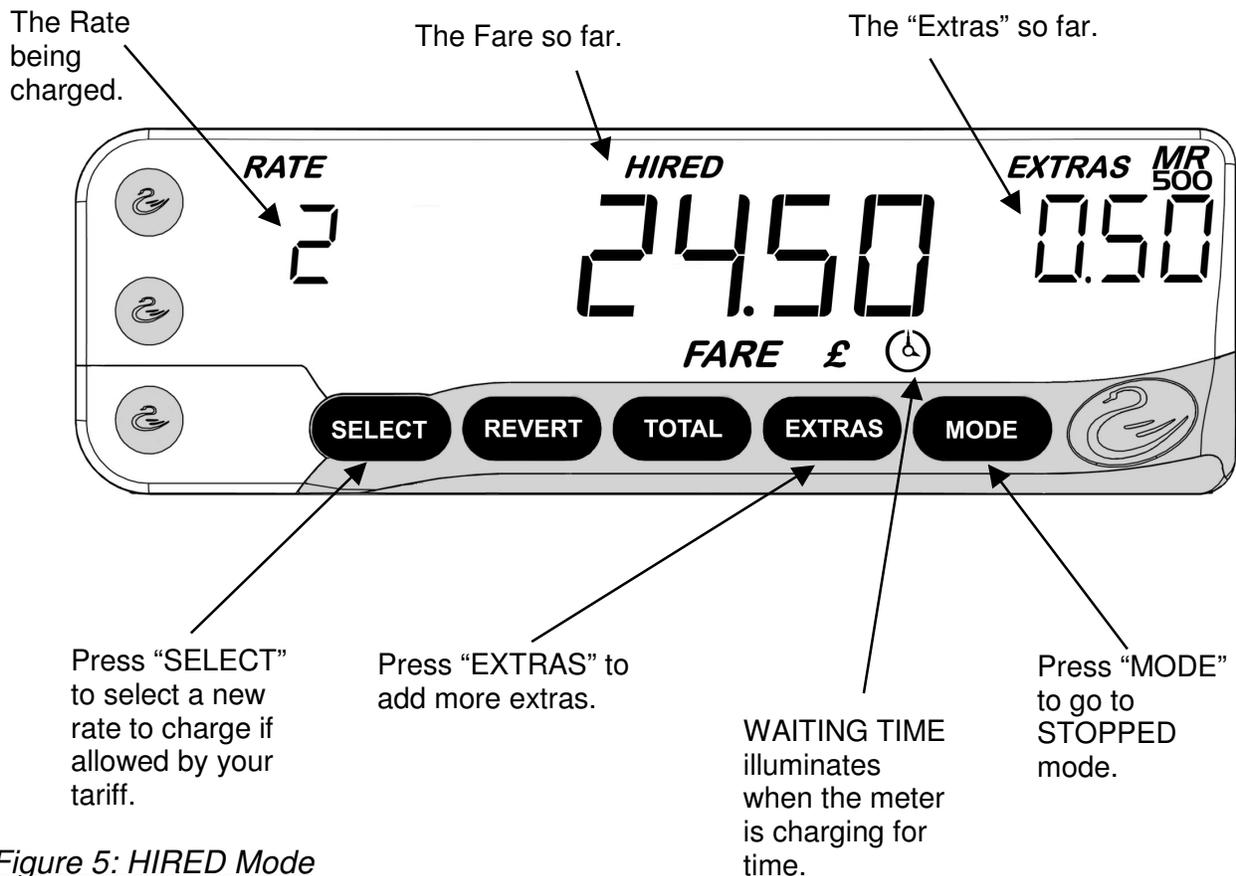


Figure 5: HIRED Mode

If the MR500 is connected to a HIRED lamp, it may turn it on in this mode.



2.7 STOPPED Mode – At the end of the journey

At the end of the journey, select STOPPED mode. The MR500 will now no longer increase the fare due to time. However, it may increase it due to distance travelled. In STOPPED mode you can also add the fare and extras together to show a Total Fare.



Figure 6: Stopped Mode

! STOPPED mode can be used by authorities to test the meter, as it calculates the fare based on distance alone. It is not appropriate to use HIRED mode for this purpose.



2.9 Using the MR500 with a Receipt Printer

The MR500 supports the use of the PT73 printer to produce receipts and to create copies of the totals (see section 6 for more information on the MR500's totals facility).

2.9.1 Loading a Receipt Definition

Receipt definitions are programmed onto a normal tariff card and loaded in the same way as a tariff. The MR500 is able to distinguish between a tariff card carrying a tariff or a receipt definition. If the receipt definition contains bitmaps it should also be loaded into the printer (see PT73 User Guide).

As well as defining the receipt appearance, it is also possible to include in the receipt definition a customised header for the Totals printout.

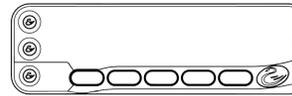
2.9.2 Printing a Receipt

Printing a receipt is accomplished by pressing either the Select or the Totals button (according to tariff option) on the meter whilst in STOPPED mode. There is also a tariff option to print a receipt when going from STOPPED mode to FOR HIRE mode, if a receipt has not already been printed.

2.9.3 Printing the Meter Totals

To print the Totals press the EXTRAS button on the meter whilst viewing the totals to be printed.

? For more information please read the *Cygnus PT73 Receipt Printer User Guide, part no. C2021.*



2.10 What Next?

This section has shown you the most important parts of operating the MR500, namely:

- Switching it on.
- Working out the fare for a journey.
- Finding out the amount to charge the customer at the end of the journey.

The MR500, however, has many more options and features available to you if you want to use them.

From FOR HIRE and ON Modes, you can access two “menus”. These are:

- The “Info” Menu.
- The “Totals” Menu.

These allow you to set up options and view information.

Firstly, however, there are some important ideas, which need to be explained before going into the detail. The next sections will deal with these.



2.11 Flowchart of the MR500's Advanced Operations

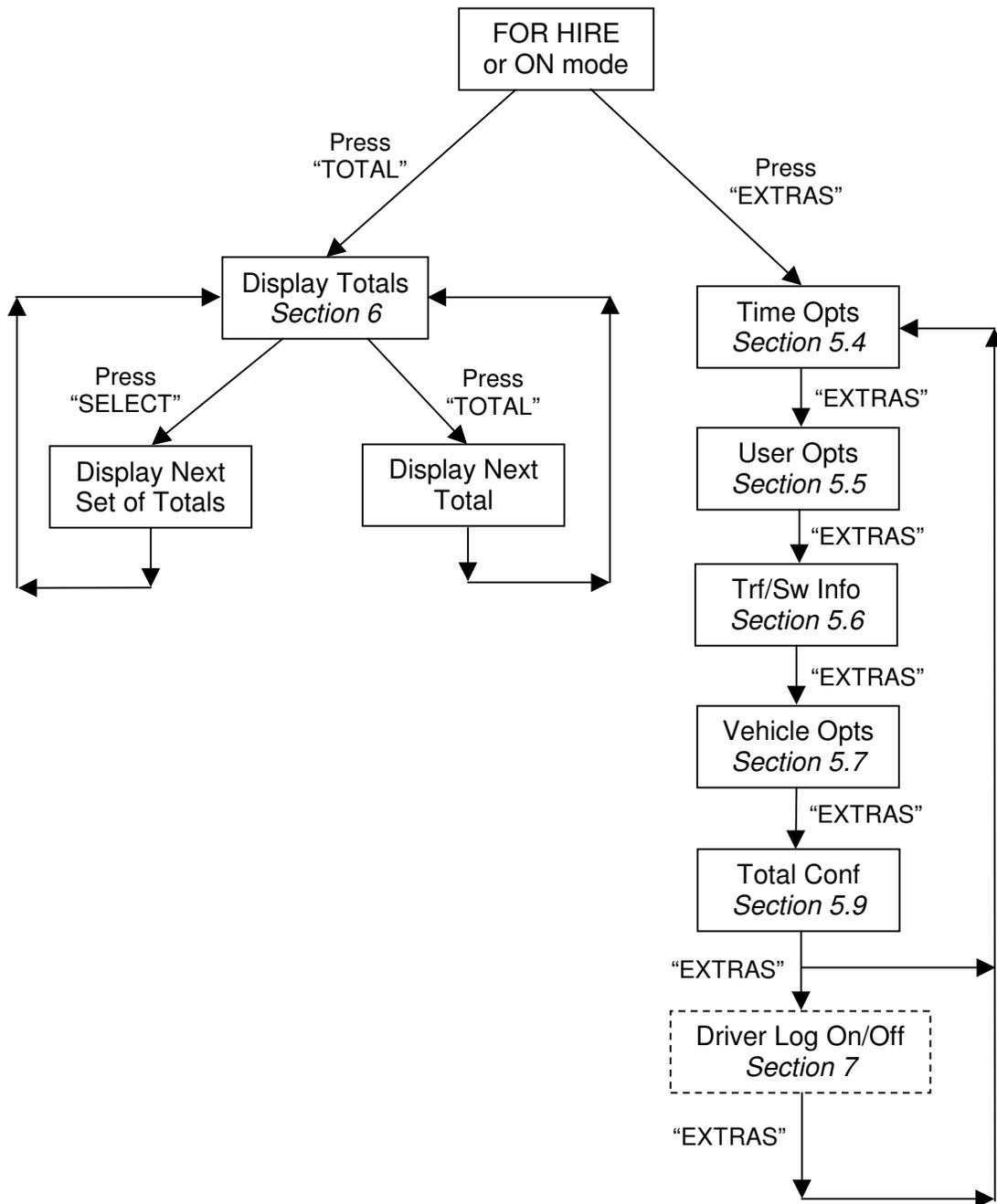


Figure 8 Flowchart of Advanced Operations



3 Tariffs and Features Which Are Optional

The rules affecting taximeters can be confusing and vary greatly from one area to another.

Fortunately, the MR500 taximeter has been designed to be simple to understand and use. However, this does mean that the programming of your MR500 depends on where you work and on what your local authority requires taximeters to do. This is how Cygnus deals with this problem:

3.1 Tariffs

In order to work correctly, the MR500 needs to be programmed with a **Tariff**. As well as containing the charges, times, distances etc., it also contains information such as:

- The times and days of the week when particular rates are being charged.
- The times and dates (e.g.: Bank Holidays) when particular rates are to be charged.
- The amounts of money allowed to be added as “Extras”.
- When to activate the circuits to control the Hire Sign and other external equipment.
- Other options governing the behaviour of the meter.

! If your MR500 has no tariff programmed into it, it cannot function effectively as a Taximeter, since it does not know what to do!

If your MR500 somehow gets into this position, for example, if something goes wrong during “Tariff Programming”, it will give messages to diagnose the problem.



3.2 Tariff Code Number

You will see later on that you can find out the ***tariff code number*** of the tariff in your MR500. When the information in the tariff is programmed, it is given a unique number.

From your tariff code number we can find out how your meter has been programmed and deal with any queries you may have.

3.3 What Does all of this Mean?

It means that your MR500 may behave differently from another one, if that unit is subject to different rules and regulations to yours. From now on in this User Guide, we have put a note against every feature to warn you where there may be differences from your unit.



4 PIN Numbers

We have borrowed the term “PIN” from the banking industry. It stands for “Personal Identification Number”.

The MR500 uses PINs, or as we frequently call them “PIN Numbers”, extensively to control functions that are important to the security of the information in the meter and in controlling its use.

The use of the specific PINs is explained in later sections. However, this section contains an overview.

4.1 How are PIN Numbers Formed?

- A PIN number for an MR500 may contain only the digits 1,2,3,4 or 5. This makes a PIN number easy to enter into the front panel of the meter by using the five buttons.
- PIN numbers may be either 3 or 6 digits long.

4.2 The MR500’s Built-In PIN Numbers

The MR500 has three PIN numbers, which are programmed into it when it is first manufactured. These cannot be changed. These are all six-digit numbers, which provide 15,625 possible combinations.

A record of these numbers is provided with your new MR500.

The numbers are:

4.2.1 The “Disable” PIN Number

This PIN allows you to control the use of your MR500 by only allowing it to work for a pre-set period of time before it is disabled. See section 5.4.3 for details.

! *The “Disable Feature” is dependent on the settings in your Tariff. It may not, therefore, be available on your MR500.*



4.2.2 The “Totals” PIN Number

This PIN allows the use of the “access control” facility of the MR500.

4.2.3 The Clock Set PIN Number

This is used to set the clock of the MR500 if required, perhaps due to the internal battery going flat. The MR500 will prompt you if this is required.

4.3 “User” PIN Numbers

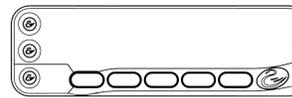
If you do not want to have to remember the factory set “Disable” and “Totals” PIN numbers, you can set your own numbers and use these instead.

The MR500 allows you to set a number to use for the Disable PIN, and another number to use for the Totals PIN. These two PINs may be changed as often as desired. Both your “User” PINs, and the original factory set ones will work.

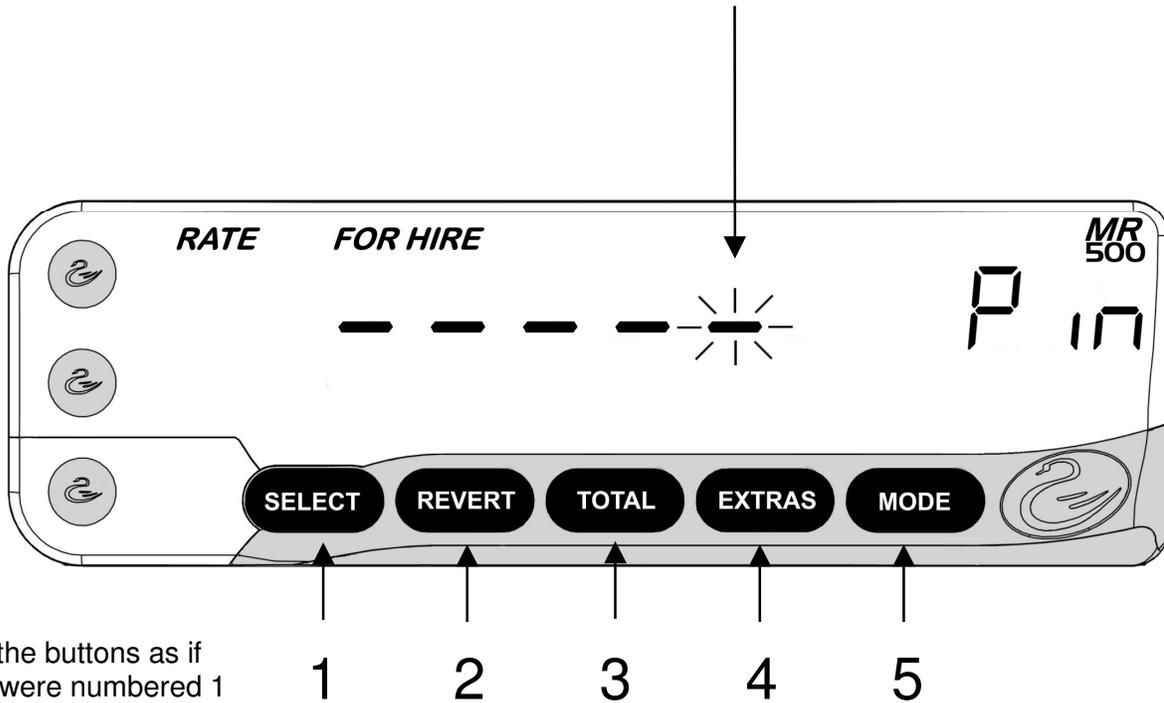
Section 5.5.4 explains how to set the User PIN’s.

4.4 Entering a PIN Number

At various points, your MR500 will need you to enter a PIN Number. This is how it is done:



A flashing dash appears at the position of digit to be entered. The dash becomes steady once the digit has been entered.



Use the buttons as if they were numbered 1 to 5 from left to right.

Figure 9: Entering a PIN Number

If you do not press a button for 20 seconds, the MR500 times out and goes back to its previous state.

4.5 Setting a New PIN Number

Whenever you need to set a new PIN Number, the MR500 always gets you to enter it twice to make sure that you have not made any typing errors.

If you enter a different number the second time, you will have to start the whole operation again.



5 The MR500's "Info" Menu

The "Info" menu gives you access to most of the options and features available to you, and in some cases allows you to get information out of the MR500.

Remember that the MR500 is controlled by the information programmed in the "tariff", so some of the options may not be available on your unit.

5.1 Accessing the "Info" Menu

To get into the MR500's Info. Menu, just press "EXTRAS" (As in "Extra" features)

You will then see the first of the "Info" menu items. This may be the one shown below, but this will depend again on your tariff set-up.

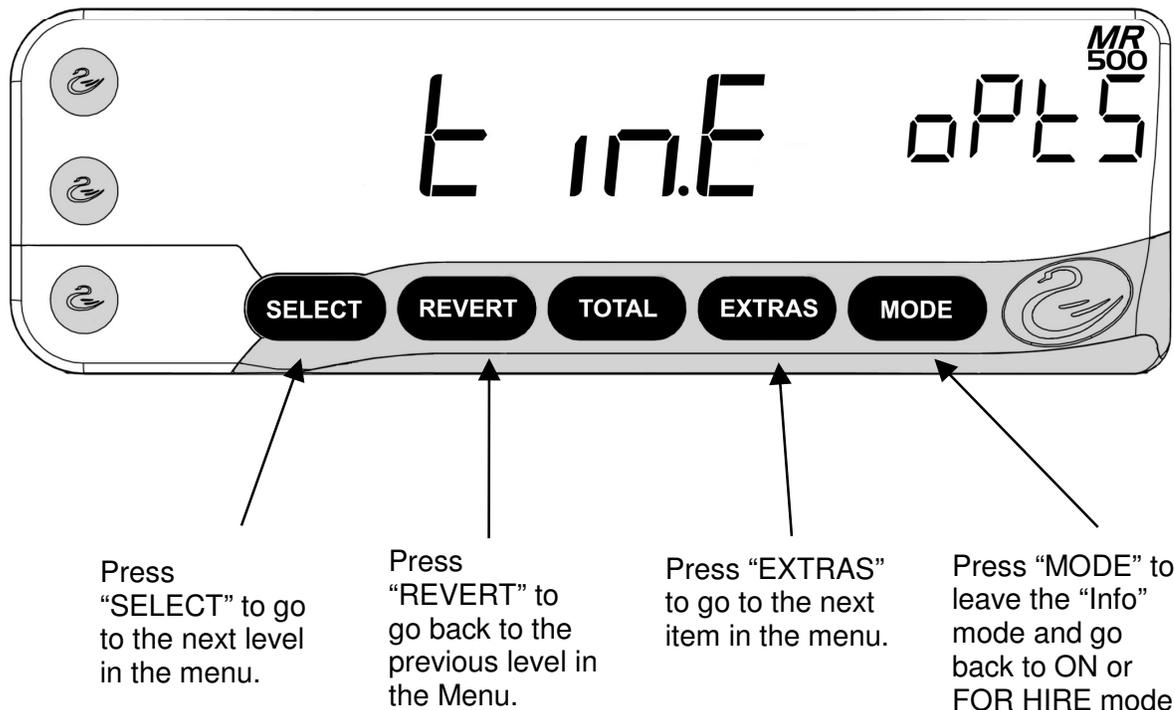




Figure 10: Navigating the "Info" Menu

Some MR500's also have a time-out which causes them to automatically drop-out of the Info Menu if you do not press a button for a pre-set time period.

5.2 Navigating the "Info" Menu

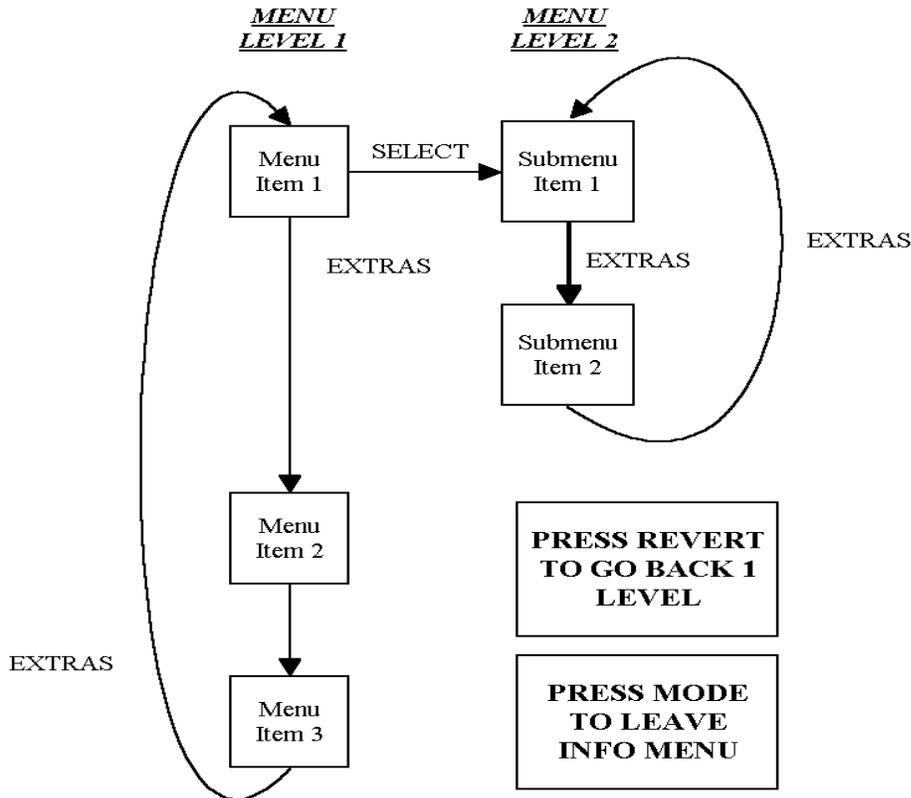
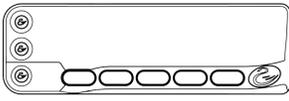


Figure 11: Navigating the Info Menu (2)

The Info Menu is arranged in a tree structure:

- To move to the next item at the same level, press EXTRAS.
- To move up a level, press SELECT.
- To move back down a level, press REVERT.
- To leave the Info Menu altogether, press MODE.



- If, at any time, you get lost in the Info Menu structure, just press MODE to leave it

The rest of this Section describes what each of the Info Menu items are for, and how to use them. Some of the features are described more fully later in this User Guide.



5.3 Log On/Log Off

⚠ This option is not present for all “Totals Systems”. Where it is present, its exact behaviour depends on the options selected in the Tariff. If this item does not appear on your meter, then you do not need to log on and off to make it work. See sections 5.9.1 and 6.3

This menu entry allows a driver to log on and off the taximeter. If there is no driver logged on to the meter, it will not allow you to enter HIRED mode at the beginning of the journey but will instead ask for the "Totals" PIN number.



Flashing between these two



Press SELECT to log On or Off.



Logging Off

- If the display says, DRIVER LOG/OFF, it means that you are already logged on to the meter. Press SELECT once to log off. The display will then change to DRIVER LOG/ON.

Logging On

If the display says, DRIVER LOG/ON, it means that you are not logged on. Press SELECT to log on.

The MR500 prompts you for a PIN number. You can use either of two PIN's to log on:

- The Totals PIN
- The User Totals PIN

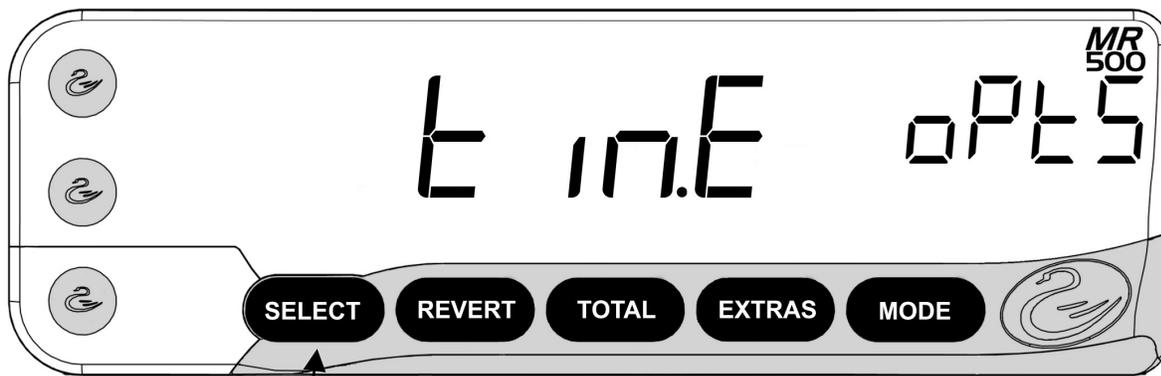
! Please see Sections 6 and 7 for information on using the different Totals Systems available to you.



5.4 Time Options

⚠ Important: The time and date setting of the MR500 can be very important, particularly if your tariff is “Calendar Controlled”. An error in the date setting, for example, can make the meter charge the wrong fare on a particular date or time. We recommend that you check your MR500’s time and date setting periodically. If there is an error, you may be able to correct it with a minor “User Adjustment”. If not, your dealer will need to re-set the time.

The “Time Options” are a group of menu items generally to do with the time or date. To go into these options, press SELECT once. You can then move around the options by pressing the EXTRAS button.



Press “SELECT” to enter the “Time Options” sub-menu.

The sub-menu entries accessed from “Time Options” are:



5.4.1 Time

This menu entry gives you the time of day according to the MR500's internal clock.

From here you can also set the clock display to 12 or 24 hour format, or make minor adjustments to the MR500's clock setting.

⚠ From this option you can make minor adjustments to the MR500's internal clock. You can adjust the time forwards or backwards by up to 3 minutes, to allow for the accuracy of the clock.

The meter periodically resets this adjustment (about every 49 days), and allows you to make a further change of up to 3 minutes either way.

If an error in the clock cannot be corrected with this facility, you will need to contact your dealer to remove the "Tariff Seal" and re-set the time and date.

To change between 12 and 24 hour formats.

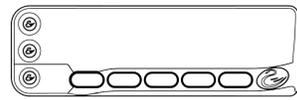
- Press and hold down the "SELECT" button, and:
- Press the "MODE" button to change between the two formats.



Press and hold down "SELECT" to change between 12 hour and 24 hour clock.

With the "SELECT" button held down, press "MODE" to change the clock between 12 and 24 hour.

Figure 12: "Time" Menu Entry: Showing 12 Hour Clock



Changing the clock format here affects the display of times in all other modes of operation, except for:

- When the time is being set in “Program Mode” or when you set the time on power up.
- When the MR500 is showing the Alarm Clock setting.

In both of these cases, the display is always in 24-hour format.

Adjusting the Time

- Press and hold down the “SELECT” button.
- Use the “TOTAL” button to adjust the time backward by up to 3 minutes.
- Use the “EXTRAS” button to adjust the time forwards by up to 3 minutes.

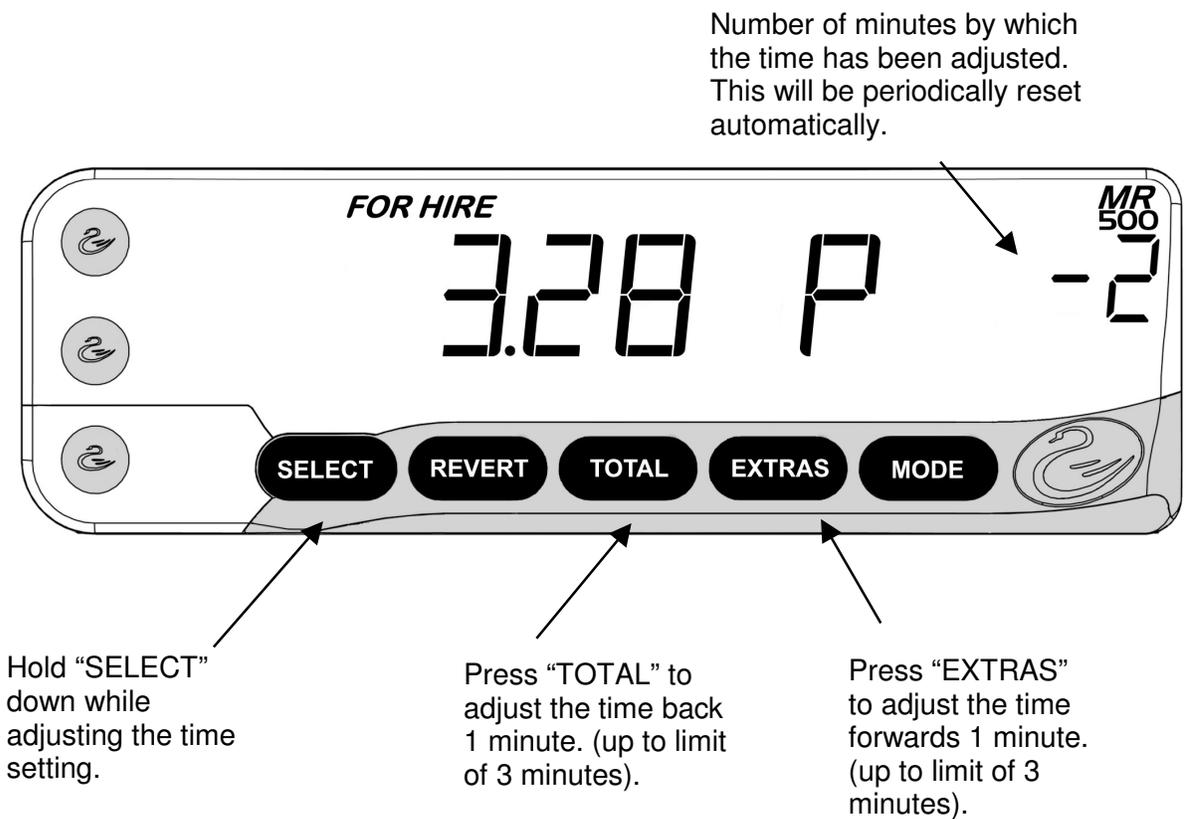


Figure 13: Adjusting the Time



5.4.2 Date

This entry shows the date according to the MR500's internal clock. The display is for information only.



Figure 14: Date Menu Entry Showing Tuesday 7th April 2008.

! Important Note: The year is shown as 2 digits, representing the years 2000 to 2099.



5.4.3 Disable Feature

⚠ This option may not be present for some Tariff set-ups. If the Disable Feature menu entry does not appear on your MR500, then the feature is not available. Contact your dealer to obtain a tariff with this feature enabled.

This feature is sometimes known as “Date Stop”.

The Disable Feature allows you to tell the MR500 to work only until a certain date. After that date it will not allow you to enter “HIRED” mode from “FOR HIRE” mode.

This means that you can allow someone else to use your MR500 until a date of your choice. Beyond this date they will have to return the meter to you to get the Disable Feature turned off or another date entered into it.

The date shown represents the date from which the MR500 will no longer work. For example, if the date shown is “23 OCT 11”, then the meter will work until 11.59PM on 22nd October 2011. From 12.00 AM onwards, it will be disabled.

⚠ To use the Disable Feature, you need to know the MR500’s “Disable PIN Number”. You can use either this or the “User Pin Number”. If you do not have the PIN number then you can only view the information here. Please see section 4 for more information.

The menu entry shows the Disable date if it is set. If the fare window says OFF, then there is no disable date set.



Press "SELECT" to change the Disable setting.

Figure 15: Disable Feature Setting

To change the disable setting:

- Press "SELECT"
- Enter either the "Disable PIN" or the "User PIN" – Please refer to Section 4.4 for details on entering PIN's.



Press and hold down "SELECT" to change the Disable Feature setting.

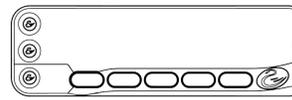
Press "REVERT" to change the date.

Press "TOTAL" to change the Month.

Press "EXTRAS" to change the year.

Press "MODE" to turn the feature on or off.

Figure 16: Setting the Disable Date



A note about the Disable Feature

- If the Disable Feature is in use, and the Disable date is approaching, the MR500 may display a warning message when you switch it to FOR HIRE mode from OFF or ON. In the example below, the meter is warning that it will be disabled in two days.



5.4.4 Alarm Clock

The MR500 has an alarm clock, which can be set from this Menu Entry.



'd' indicates that daily alarm is active.

Press and hold down "SELECT" to change the Alarm Clock setting.

Press "REVERT" to turn the alarm clock on or off.

Press "TOTAL" to change the hours.

Press "EXTRAS" to change the minutes.

Press "MODE" to turn 'daily' function on or off.

Figure 17: Alarm Clock Setting



If you set the alarm clock to ON, the alarm will sound at the time you have set.

The alarm sounds for a maximum of 30 seconds. You can cancel the alarm while it is sounding by pressing any of the five buttons once. Their normal function is disabled for this one depression (the meter could be in any mode).

If the 'daily' function is not activated then, once the alarm has sounded, it is automatically disabled, so the next time you look at the setting in the Info Menu, it will be turned off, (display shows "off").

Note that, if the Alarm clock setting menu is being viewed when the alarm time is reached, the alarm will only give one bleep.

! The Alarm Setting is always shown in 24 hour format, regardless of the format you have chosen in the "Time" menu entry.

5.4.5 Extended Disable Feature

! This option may not be present for some Tariff set-ups. If the Disable Feature menu entry does not appear on your MR500, or the Disable Feature is off, then the Extended Disable Feature menu entry is not available. Contact your dealer to obtain a tariff with this feature enabled.

The Extended Disable Feature is an enhancement to the Disable Feature (see Section 5.4.3). It is useful if you own a number of meters and do not want to give out their Disable PINs.

If the Disable Feature is enabled, the Extended Disable Feature allows you to extend the working period of your MR500 until a given date. After that date it will not allow you to enter "HIRED" mode from "FOR HIRE" mode. An Extended Disable PIN can be obtained from your Cygnus Dealer.

The menu entry shows the Disable date. If no Disable date is set, the menu entry does not appear.



Press "SELECT" to enter the extended Disable PIN.

Figure 18: Extended Disable Feature Setting

To change the disable setting:

- Press "SELECT"
- Enter either the 14-digit "Extended Disable PIN" provided by your Cygnus dealer. The new disable date will now be set by the meter automatically. Please refer to Section 4.4 for details on entering PIN's.



5.5 User Options

The “User Options” are a group of menu items, which allow you customise the way in which the MR500 operates.



Figure 19: User Options

The sub-menu entries accessed from “User Options” are:



5.5.1 Display Brightness

This Menu Option allows you to change the brightness of the MR500's display.

There are 5 levels from 1 to 5, with 5 being the brightest.

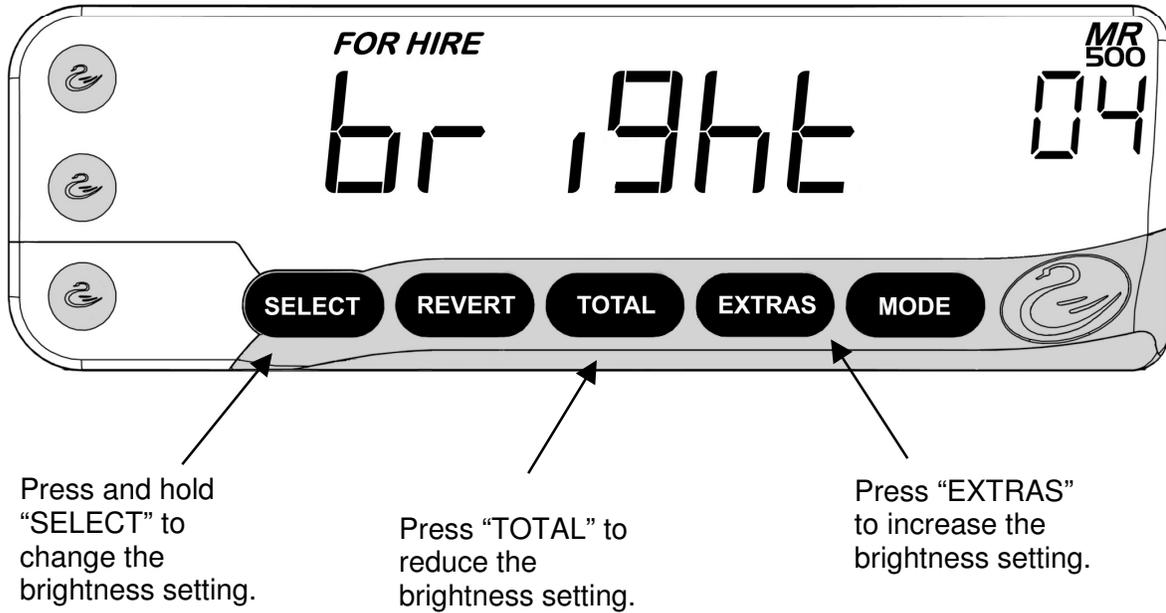


Figure 20: Brightness Setting



5.5.2 Sounder Setting

As you will have noticed, the MR500 makes various sounds when you press buttons, change modes etc.

If you prefer your meter not to make these sounds, you can turn them off here.

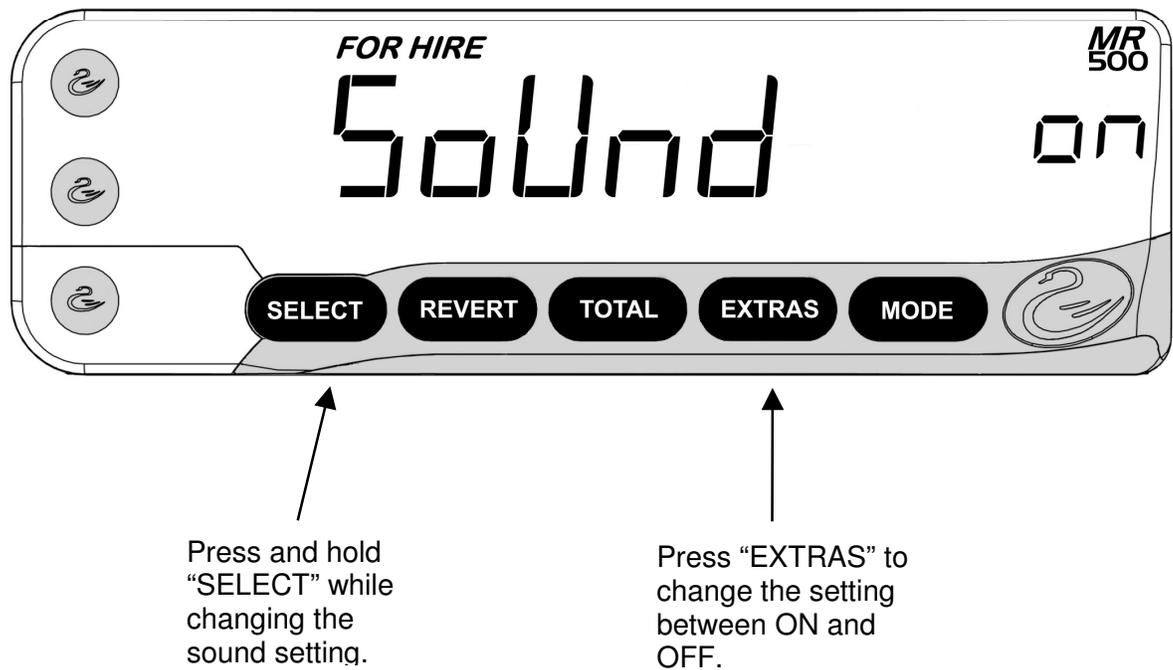


Figure 21: Sounder Setting

⚠ Note: Turning the sound off here does not affect the sounding of some alarms and warnings, including the Speed Alarms and Alarm Clock.

5.5.3 Automatic Turn Off Feature

The MR500 has an optional facility designed to prevent excessive drain on your vehicle's battery if you accidentally leave the meter in FOR HIRE mode for an extended period of time.

With the feature turned 'ON', the meter will time out after 2 hours if left in FOR HIRE mode with no signal received from the pulse input



and no button operations. The meter will warn you for 1 minute before actually switching off to give you the opportunity to cancel the facility.

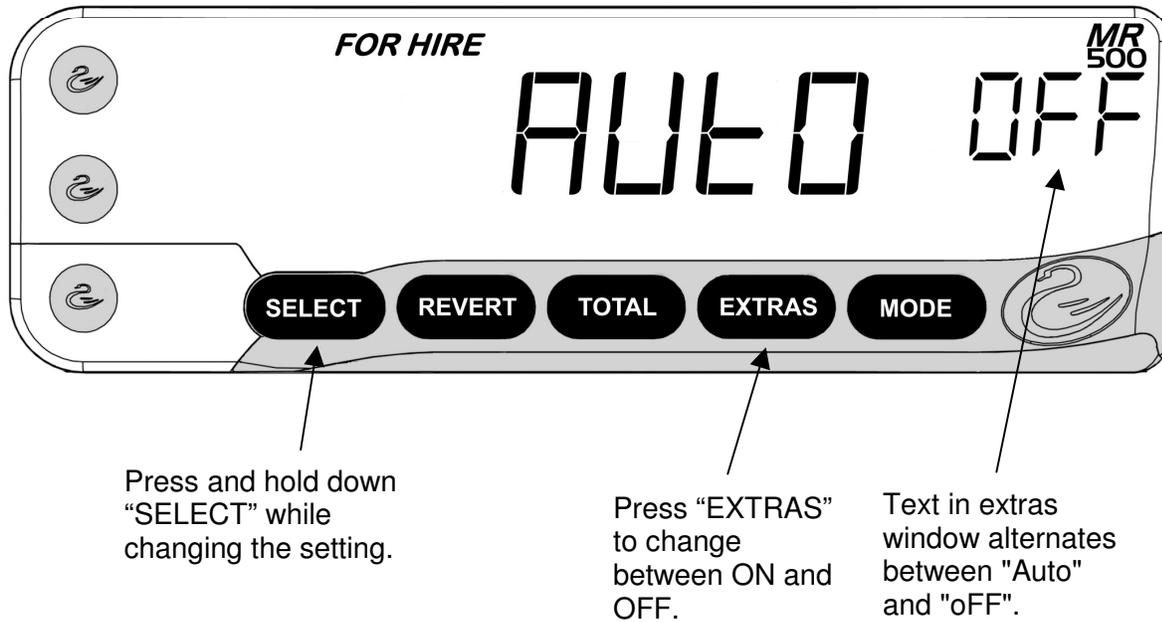


Figure 22: Automatic Turn Off

5.5.4 User PIN

As you will have seen from Section 4.3, the MR500 has a series of PIN's, that are pre-set when the unit is first manufactured. However, it is possible to define your own PIN numbers for two of these: the Disable and the Totals PIN Numbers. This means:

- You can use PIN numbers that you can remember more easily.
- If you own a number of MR500's, you can give them all the same user PIN numbers.



⚠ Warning: The User PIN numbers can be set as often as required. It is important that you keep a record of them as they are known only to you. If you lose the numbers, we will not be able to find them again. However the factory set PIN's will continue to work.

Also, we recommend that you do not choose numbers which are easy to guess, like "111111".



Press "SELECT"
to enter the User
PIN options.

Figure 23: User PIN

- To enter the User PIN sub-menu, press the "SELECT" button.



5.5.5 The User PIN Submenus

These two sub-menus both work in the same way.

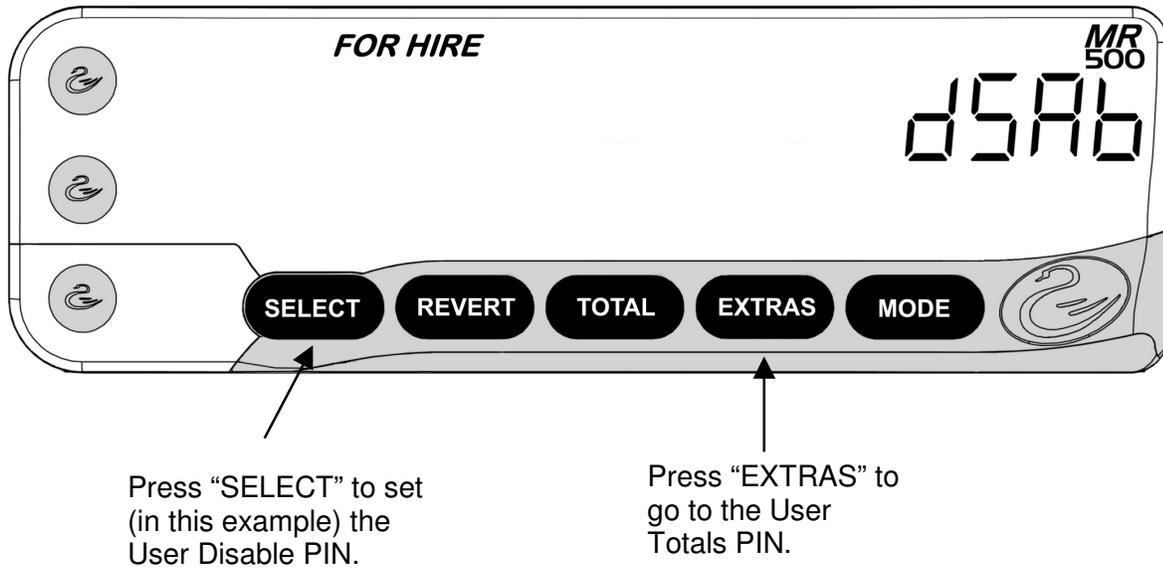


Figure 24: Setting a User PIN

To set the PIN:

- Press "SELECT"

For a short time the display will show:



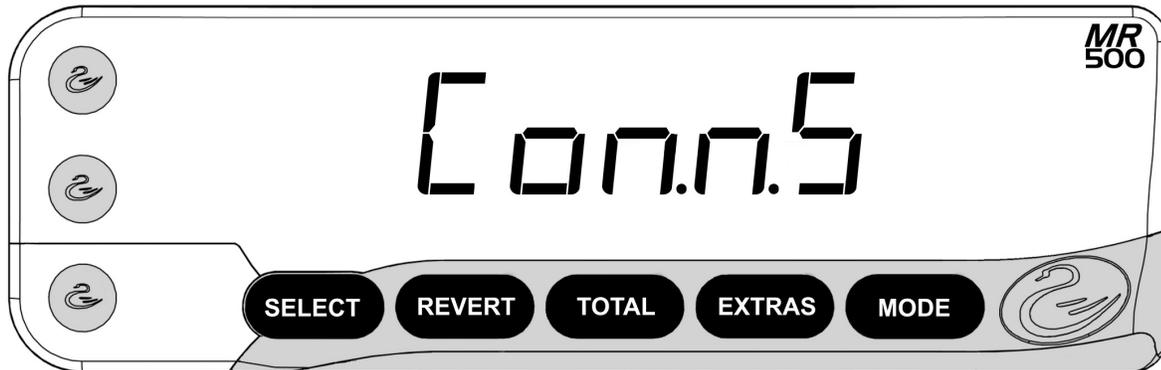
Figure 25: Enter PIN



- When "EntEr P in" has cleared, for the example above, the words "d5Ab" and "P in" will flash alternately in the Extras window. Enter the Disable PIN for the MR500. In the case of the Totals User PIN, use the meter's Totals PIN.
- If the PIN is not entered within the allocated time, the meter will start to beep and a timeout warning will be displayed. If you begin to enter the PIN while the meter is beeping, the timeout period will be reset.
- Then enter the new User PIN when prompted.
- The MR500 will then ask for the same number to be entered again for verification. If a different number is entered, the MR500 will flag an error, otherwise it will accept the User PIN.



5.5.6 Comms Options



5.5.6.1 UART0/1 Baud Rate

Press and hold SELECT. The current baud rate will be displayed. While holding the SELECT key, press EXTRAS to select different baud rates. The default is 9600 baud - this will work with the PT73 receipt printer.

5.5.6.2 UART0/1 Parity

Press and hold SELECT. The current parity will be displayed. While holding the SELECT key, press EXTRAS to select different parity types. The default is None - this will work with the PT73 receipt printer.

Currently the default comms port for both printers and mobile data terminals is UART0.

5.5.6.3 MDT Mode

Press and hold SELECT. The current MDT (Mobile Data Terminal) system will be displayed. While holding the SELECT key, press EXTRAS to select the different MDT systems A to D. The correct system to select depends on the make of MDT installed in the vehicle. If you do not have a MDT installed then this setting should be system A.



5.6 Tariff and Software Information

The “Tariff and Software Information” items are a group of menu items that provide information on the software version of your MR500 and the Tariff programmed into it.



Press “SELECT” to enter the Tariff and Software Info sub-menu.

Figure 26: Tariff and Software Information



5.6.1 Serial Number

? *This item tells you the Serial Number of your MR500. The number shown here should be the same as the one printed on the front panel of the unit. If this is not the case then you should contact Cygnus Automotive for advice.*



Figure 27: Serial Number

5.6.2 Tariff Code

In Section 3.1 we described the use of Tariffs to configure the MR500 for your particular area and application.

This Menu Entry allows you to find out the code of your current tariff.



Figure 28: Tariff Code



? Some tariffs have an “End Date” after which they are no longer valid. This can be used to automatically select a “Deferred” tariff. To see the End Date (if applicable), press “SELECT”.

5.6.3Next Code

? This option may not be present for some Tariff set-ups.

This displays the code number of the next tariff when deferred tariffs are being used. Pressing SELECT displays the date on which this tariff comes into operation. The display is for information only.

5.6.4Printer Code

? This option may not be present for some Tariff set-ups.

This option displays the code number of the receipt printer settings currently installed. The printer settings determine how receipts will look. The display is for information only.



5.6.5 Software Information Sub-Menu



This sub-menu contains a series of pieces of information that allow your dealer to identify:

- The **Software Version** of your MR500. This identifies which features your MR500 has.
- The **Software Date** of your MR500. This is the date your meter's software was "built".
- The **Load Date** of your software. This is the date your MR500 was programmed with its software.
- The **Tariff Programmer** used to program your meter's software.
- The **Tariff Programmer** used to program your meter's tariff.

In the case of a query, you may need to provide this information to your dealer or Cygnus.

Press "SELECT" to access the items and "EXTRAS" to move between them.



5.7 Vehicle Options

The “Vehicle Options” are a group of menu items generally to do with your vehicle.



Press “SELECT” to enter the “Vehicle Options”.

Figure 29: Vehicle Options



5.7.1 Calibration

The MR500 receives a series of voltage pulses from somewhere in your vehicle in order to work out the distance it has travelled. In order for this to work correctly, the meter needs to know the number of these pulses generated per mile or kilometre travelled.

This is known as the **calibration**.

! The number of pulses generated per mile or kilometre varies between make and model of vehicle. It is important that the calibration is set correctly for the MR500 to charge correct fares and record distances accurately.

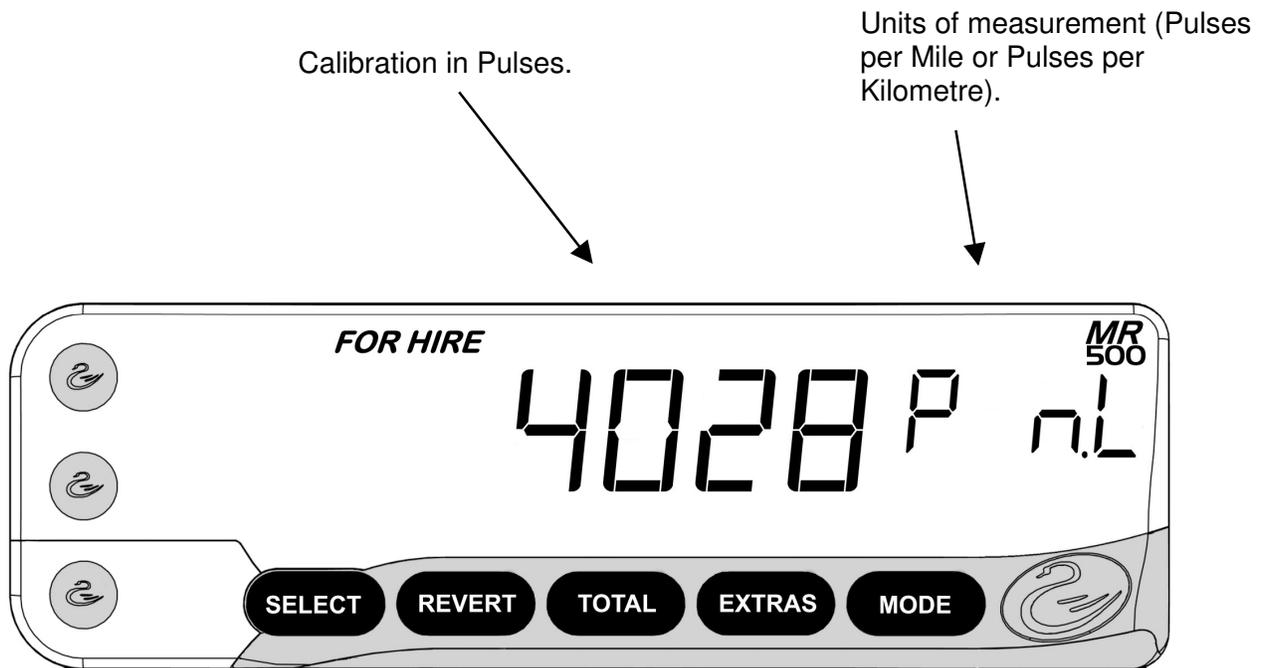


Figure 30: Calibration



5.7.2 Pulse Check

? *The “Pulse Check” facility can be a very useful tool for checking the pulse signal from your vehicle without having to remove any seals.*

This entry allows you to display a count of the pulses received from the vehicle. To count pulses:

- Press “SELECT” to start the count.
- At any time during the count, you can press “SELECT” again to reset it to zero.
- Press “TOTAL” to hold the count. You can restart it again by pressing “TOTAL” again, or reset it with “SELECT”
- When you have finished, press “REVERT” or “MODE”

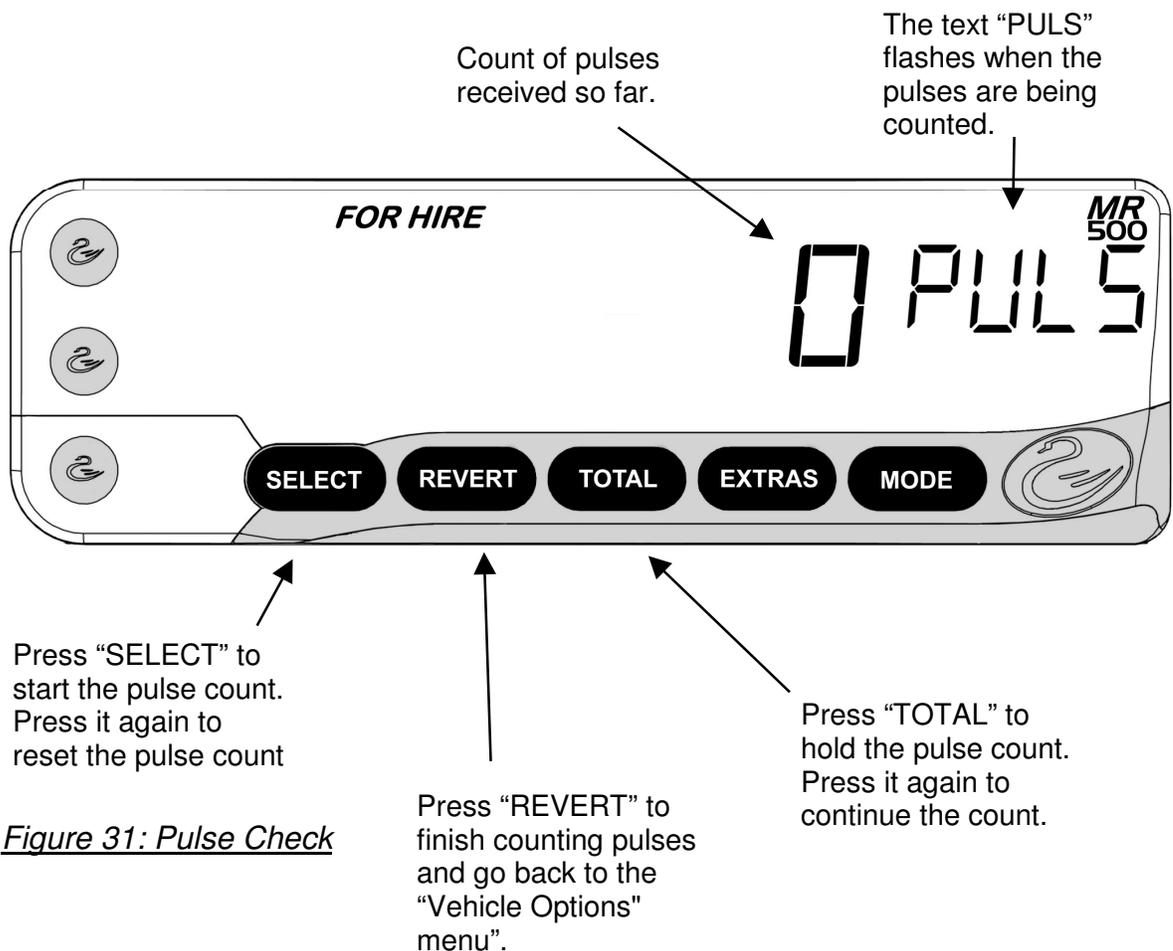


Figure 31: Pulse Check



5.7.3 Speedometer

! This feature may not be present for some tariff set-ups

The MR500's speedometer shows you the vehicle speed either in Miles per Hour or Kilometres per hour, regardless of the units of measurement used for the calibration or in the Tariff information.

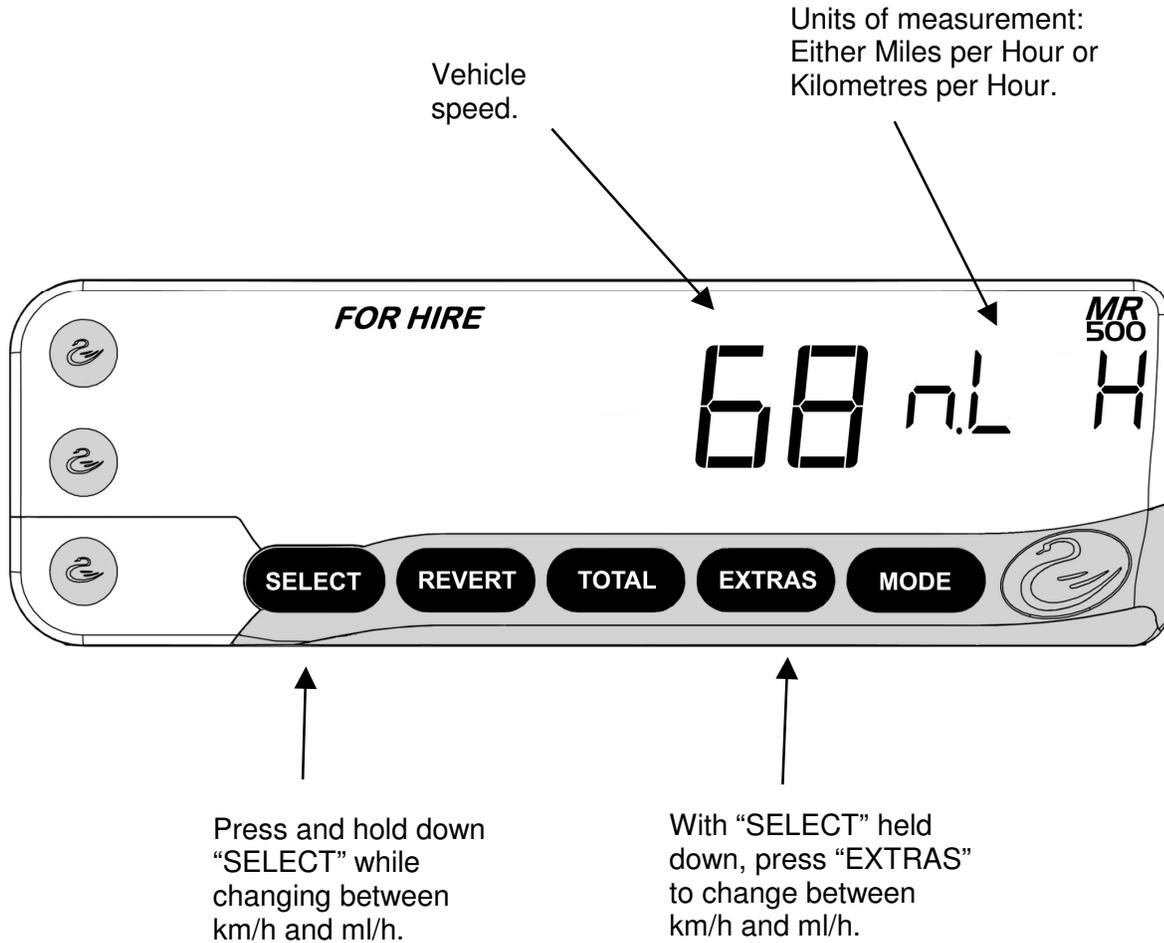


Figure 32: Speedometer



5.8 Speed Alarms

! This option may not be present for some Tariff set-ups.

The MR500 has two *speed alarms*.

! If the “Movement Warning in STOPPED Mode” feature is in use, only one speed alarm is available (See Section 8.6)

If you set the speed alarms, the MR500 will warn you if your vehicle exceeds one of two different speed settings.



Press “SELECT”
to go to the
Speed Alarms.

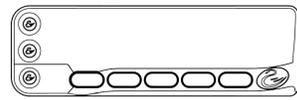
Figure 33: Speed Alarms

Viewing and Setting the Speed Alarms

The two alarms are shown as “A1” and “A2”. To move between them, press the “EXTRAS” button.

To set a speed alarm:

- Press and hold down the “SELECT” button.
- To turn the alarm on/off, press “REVERT”



- To move the alarm setting down and up, press “TOTAL” or “EXTRAS”.
- To change the units of measurement, press “MODE”.

The ranges of values allowed are: 16 to 159 km/h, or 10 to 99 ml/h.

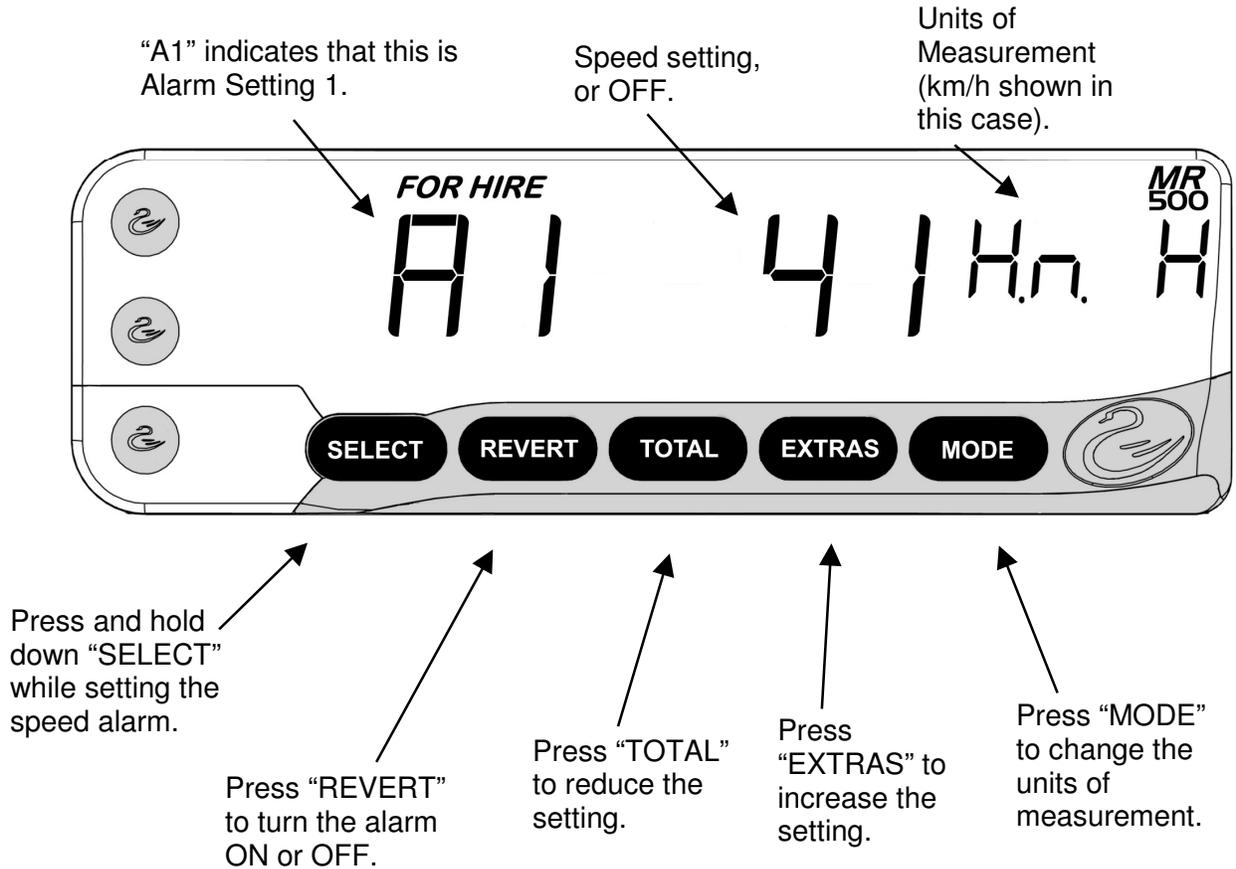


Figure 34: Setting a Speed Alarm

When the vehicle exceeds a speed alarm setting, you will hear a distinctive long followed by a short “beep”.

Note: any changes made to the Speed Alarm setting will not take effect until the operator has left the menu and returned to the ON, OFF or FOR HIRE mode.



5.9 “Totals Config”

? *For a full explanation of the totals schemes, please refer to Section 7. Not available on London meter versions.*

The Totals Configuration menu allows you to choose the way the MR500 stores totals and how it controls access to your meter.

Before you can go to the sub-menu, you must enter either the Totals PIN number, or the “User” Totals PIN number if it has been set.



Press select to enter the Totals Config. Sub-menu. You will need to use the Totals or User Totals PIN.

Figure 35: The Totals Config Menu



5.9.1 Totals System

? *From here you can choose the system of totals to be used by your MR500. Please refer to Section 6 for a full explanation of the totals systems available.*

To Choose the Totals System

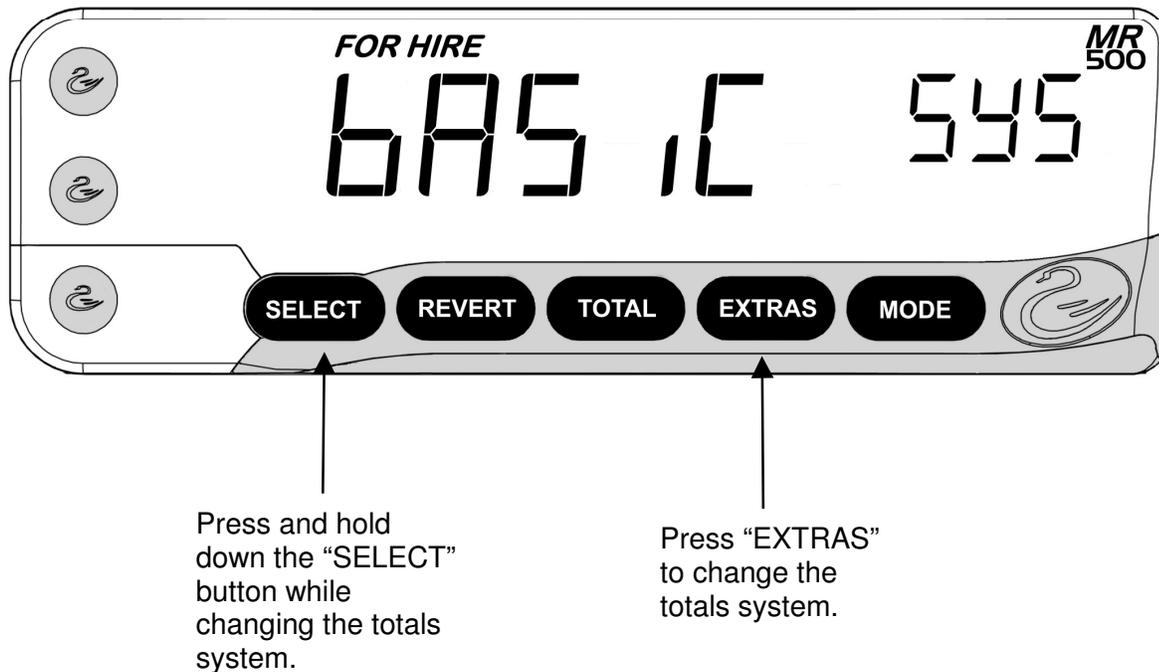


Figure 36: Totals System

Totals Systems

The abbreviations used for the available Totals Systems are:

- "6A5 1C" – Basic Totals System.
- "LOG ON" – Log on to meter with PIN number.

? *Note: If you change the totals system, any users or drivers are automatically logged off.*



6 Totals and Conditional Access

? The behaviour of the Totals System in the MR500 depends on the option chosen in the Info Menu (See Section 5.9.1).

This Section gives you a brief overview of the way the MR500 handles totals. It also shows you how to read the totals and how to reset them. For more information on the Totals Systems available on the MR500, please refer to Section 7.

6.1 Totals

The MR500 allows you to record **totals** for the user(s) of your vehicle.

This means that you can keep a track on the use of your vehicle, the money earned, distances travelled etc.

6.2 Conditional Access

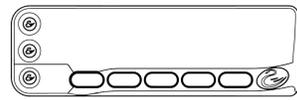
If required, the MR500 will only allow access to its main functions (i.e.: entering HIRED mode and actually charging a fare) to users who have been given a PIN number.

This control on the use of the meter is what we call **conditional access**.

6.3 The Totals Systems

The MR500 has 2 totals systems that you can use. Their availability depends on the settings in your tariff and on the Software installed in your unit. However, they are:

- **Basic System:** This is the simplest of the options, which allows your MR500 to be used without any PIN numbers at all (except if you need to reset the totals). The meter just records one set of totals for you.



- **Log on with Totals PIN:** This system records the same totals information as the “Basic” version. However, you need to log on the meter by entering either the Totals PIN or the User Totals PIN before using it. Sections 4.2.2 and 4.3 describe where these PIN’s come from.

This section will firstly explain how the MR500 deals with totals information in general.

6.4 The Totals Information Stored by the MR500

The MR500 has a large internal memory, which it uses to record totals information.

Totals Items Available

The totals information that can be recorded and displayed or printed by the MR500 are:

- “*ErEr FArE*” Total of Fare and Extras combined *
- “*FArE*” Total Fares *
- “*ErEr*” Total Extras *
- “*PA id d iSt*” Total Paid Distance *
- “*UnPd d iSt*” Total Unpaid Distance
- “*totL d iSt*” Total Distance
- “*ERrn rAtE*” Earn Rate
- “*JoUr t inE*” Total Journey Time *
- “*UnPd t inE*” Total Unpaid Journey Time
- “*uA it t inE*” Total Waiting Time
- “*uA it FArE*” Total Waiting Fare
- “*d iSt FArE*” Total Distance Fare
- “*rAtE CHnG*” Total Rate Changes During Hired Mode *
- “*SPd AUG*” Average Speed
- “*nAr SPd*” Maximum Speed
- “*JoUr*” Total Number Of Journeys *

In addition to the above, the individual journey information that can be recorded and displayed or printed by the MR500 for are:

- “*StEt t inE*” Journey Start Time *



- “StArT rAtE” Journey Start Rate *
- “End rAtE” Journey End Rate *
- “JOUR nUm” Journey Number *
- “rCPt nUm” Receipt Number *

In EU countries items marked with an asterisk (*) are required by the Measuring Instruments Directive. Therefore they are always present even if they are not selected in the tariff.

Other totals items may be added in future software revisions.

6.5 Totals “Banks”

The MR500 provides the user with 2 sets of totals:

- The resettable “bank”, which may be reset as required. These can be used for short term monitoring (similar to resetting the car trip odometer after filling up with fuel).
- The permanent “bank”. The Measuring Instruments Directive (2004/22/EC) does not permit this bank to be reset.

6.6 Reading the Totals

To read the MR500’s totals, press the “TOTAL” button in ON or FOR HIRE modes. On some versions of the MR500, the display reverts back to the previous mode if you do not press a button for 10 seconds. If the "Log On" totals configuration is selected, the user will be prompted to enter the Totals or User Totals PIN first.

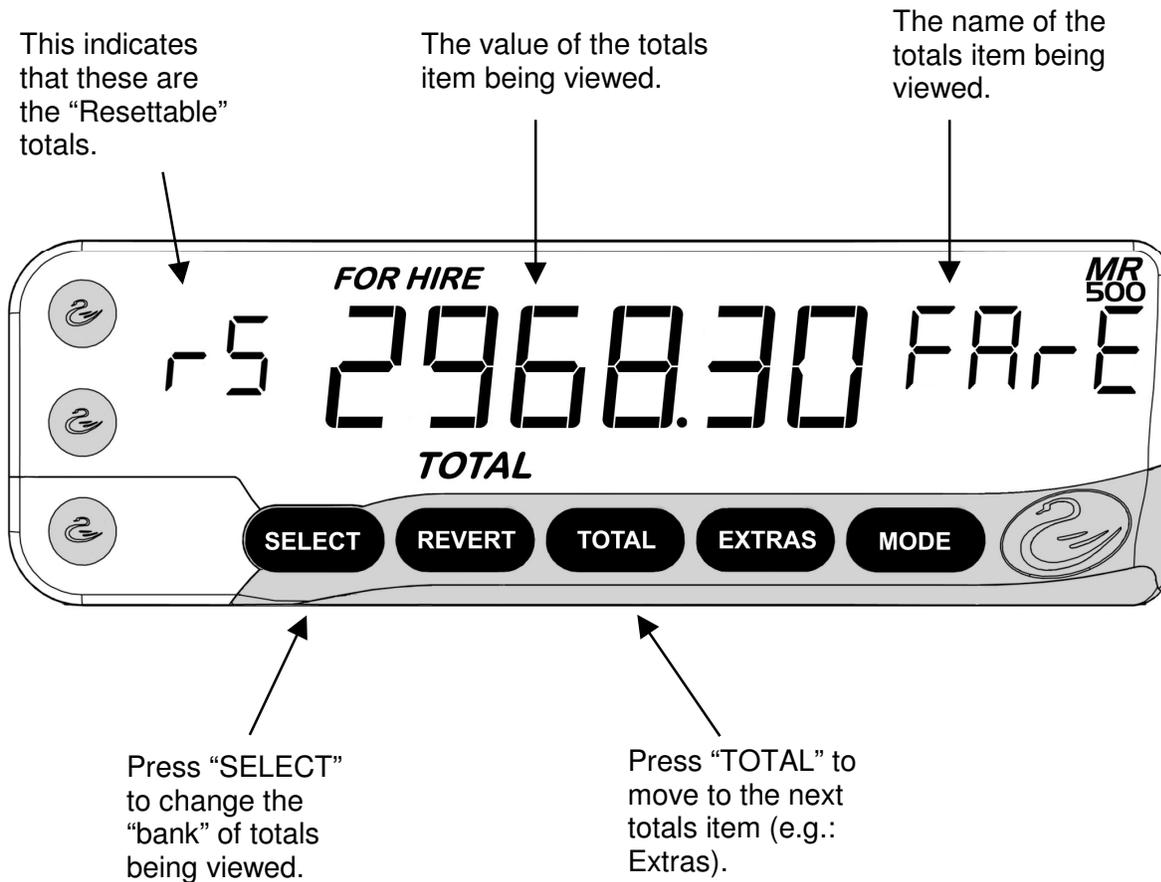
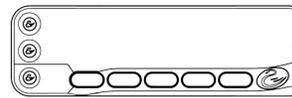


Figure 37: Viewing the Totals

The display in the rate window can be one of the following:

- “r5” – This means that the “resettable” bank is being displayed.
- “E” – This means that the “permanent” totals are being displayed.

! The Totals are not viewable until a tariff has been installed.



6.7 Displaying Journey Summary Information

Individual journey information can be displayed on the MR500. Up to 650 most recent journeys are available. The exact number depends on factors such as the number of totals fields included in the tariff options.

To display this information, press 'Select' and 'Total' together whilst in the Totals menu. The display will now alternate between the date and time of the most recent journey stored. Press 'Select' to scroll through the journeys and press 'Total' to scroll through the information for the individual journey.

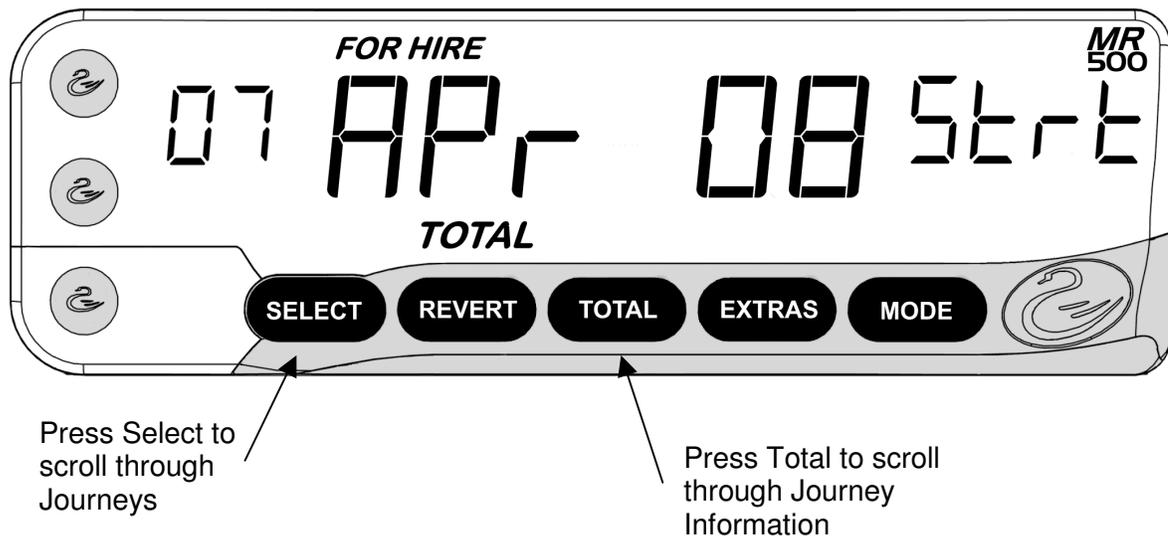


Figure 38: Clearing the Totals



6.8 Clearing the Totals

- ❗ ***You can clear the totals in the resettable “bank” directly from the totals menu.***
- ❗ ***It is not possible to clear an individual total only a bank of totals.***

To clear a bank of totals:

- From the resettable “bank” in the Totals display, press and hold down “SELECT” and then press “REVERT” as well.
- Release both keys. The meter will display the word "rESEt".
- If you are sure that you want to clear the Totals bank, press “SELECT”.

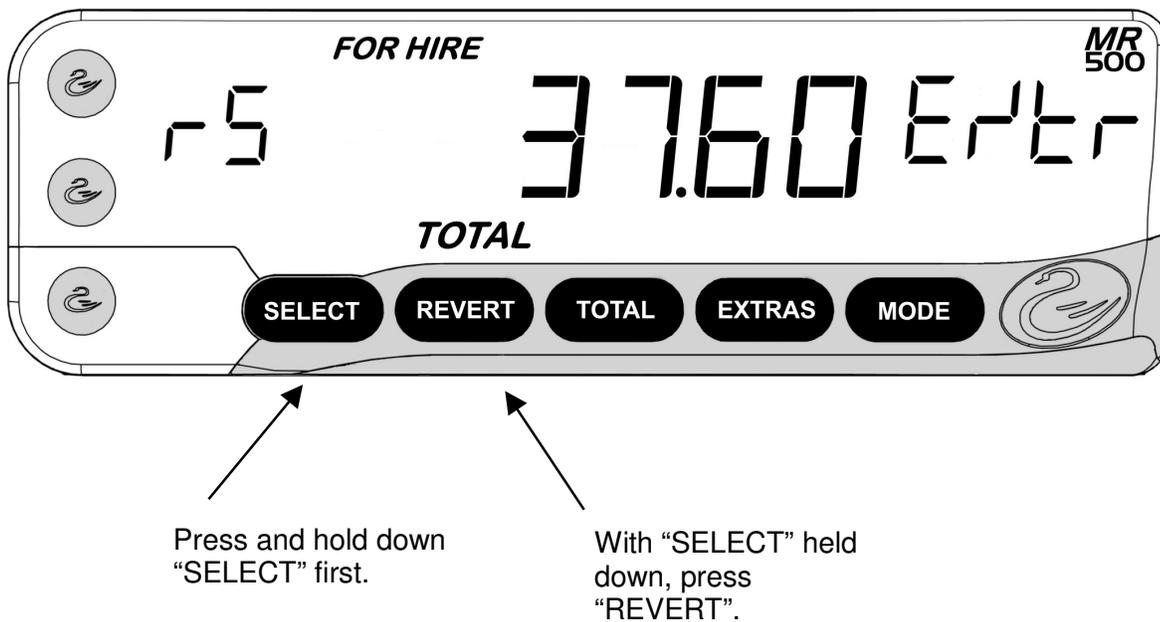


Figure 39: Clearing the Totals



7 The Totals/Conditional Access Systems

This section describes the two systems possible on the MR500. You can choose the system you want in the Totals System menu (Section 5.9.1)

7.1 Basic System

The basic system is designed for use either where only one person uses the meter or where there is no need to control its use.

When using this system, there is no need to log on or off the meter.

The meter provides you two sets of totals: the “temporary” and “permanent” banks.

Info Menu Options

If you have selected the Basic system, the Log On/Off (Section 5.3) Info Menu entry is absent from your MR500:



7.2 Log on with Totals PIN

This system provides you with a simple way to control the use of your MR500 and/or your taxi.

In order to use the meter, you must first “Log On” to it using one of two PIN’s:

- The Totals PIN as supplied with your meter. (Section 4.2.2)
- The User Totals PIN set by you. (Section 4.3)

These methods are provided to give you the choice of how to manage the use of your meter/vehicle.

Examples of ways to use the system are:

- Use the built-in Totals PIN yourself to log on and off. If you leave the meter logged off when not in use, it can prevent the accidental addition of extra totals. For example, it can prevent your children from adding extra journeys to your totals.
- If you set the Totals User PIN, you can use a more easily remembered number to log on and off as above.
- You can set the Totals User PIN to any value you like. This can then be given to another user of the meter for 1 or 2 shifts and then changed afterwards.



8 Other Features

The MR500 includes some extra features that have not been mentioned yet in this User Guide and some functions that need further explanation.

8.1 Totalling the Fare and Extras

! There are several options for totalling the fare and extras. These are set in the Tariff.

As mentioned in Section 2.7, the MR500 can add the fare and extras together to display a Total Fare.

To add the fare and extras together in STOPPED mode, press the “TOTAL” button.



Figure 40: Totalling the Fare and Extras

The MR500 may do one of the following:

- When you release the “TOTAL” button, the fare and extras remain added together until the movement of the vehicle causes the fare to be increased. At this point they automatically separate.
- When you release the “TOTAL” button, the fare and extras remain added together until the vehicle moves enough to generate 1 road pulse, or the timeout expires (settable in tariff), whichever happens first.



- When you release the “TOTAL” button, the fare and extras separate immediately. Also, if the vehicle moves while you are holding the button down, or the timeout expires (settable in tariff), the figures separate automatically.

The setting of these options is done in the Tariff programmed into your MR500.

8.2 The Time Charging Symbol

In Hired mode, the  legend illuminates on the MR500’s display to indicate that it is charging for time only, i.e.: the vehicle is travelling below the *changeover speed* between time and distance charging.

8.3 Speedometer and Journey Distance

! These features are options in the Tariff, so may not be available on your MR500.

If these features are available in your Tariff, they allow you to display the speed of your vehicle when in HIRED mode or STOPPED mode.

! The speedometer and distance display can only be activated from HIRED mode if you have no extras on display.

To active the features in HIRED mode:

- Press “TOTAL” to display the Speedometer. ***The display is in the same units as your meter’s Speed Menu.***



Figure 41: Speedometer

- Press “TOTAL” again to display the distance travelled so far in this journey. The units of measurement correspond with the units of your meter’s calibration. “n” in the left-hand side of the Extras Window indicates “Miles”, and “H” indicates “Kilometres”.
- Press “TOTAL” again to return to the normal “extras” display.



Figure 42: Distance Display



8.4 “Tariff Year” Indicator

The MR500 can be programmed in the tariff to show a “Tariff Year” indicator when FOR HIRE mode is first entered from ON or OFF modes. The flashing display in the Rate Window can be any two characters programmed into your tariff.

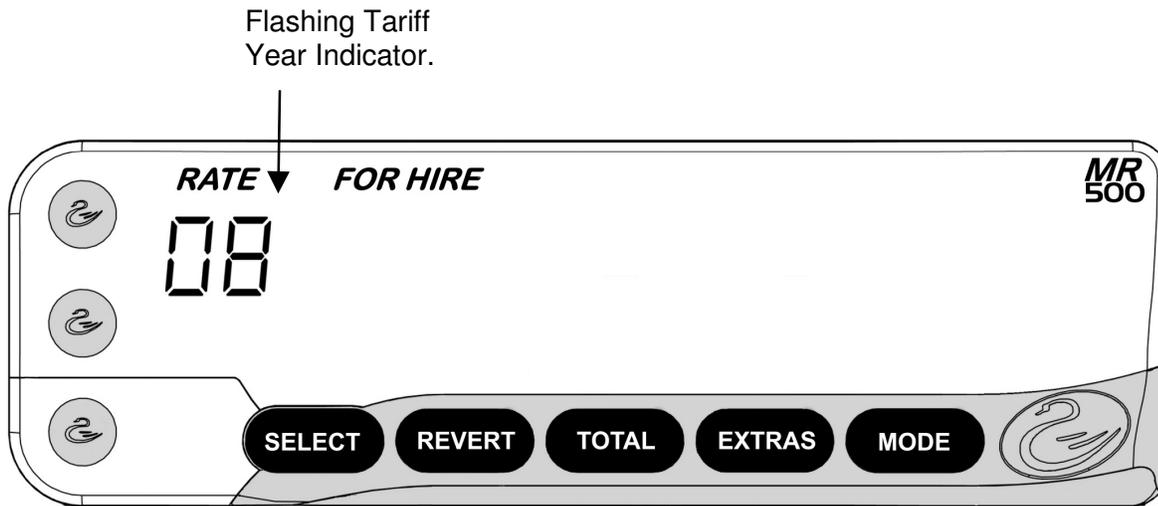


Figure 43: Tariff Year Indicator in FOR HIRE Mode

8.5 Rate Selection

In addition to the normal use of the “SELECT” button to select the active rate in FOR HIRE, HIRED and STOPPED modes, the MR500 can be set up to use other buttons to select the rate.

This can be used where there is a complex structure of rates in your local tariff.



8.6 Movement Warning in STOPPED Mode

If this option has been enabled in your tariff, the MR500 gives an audible warning if your vehicle exceeds 6mph or 10km/h when in STOPPED mode.

If this feature is in use, only one Speed Alarm is available (See section 5.8).

8.7 Real Time Clock (“Calendar Control”) Override

! In areas where “Calendar Control” is mandatory, this option is not normally available.

If this option is enabled in your tariff, the MR500 can allow you to choose any rate from the tariff, ignoring any date and time information.

To override the default rate (in FOR HIRE mode only):

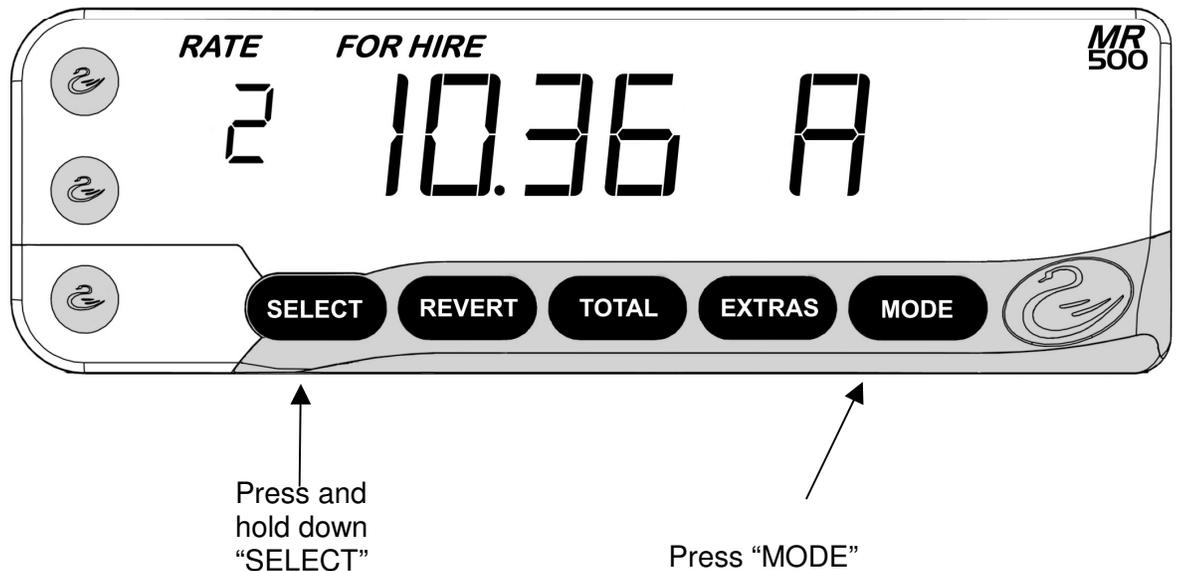
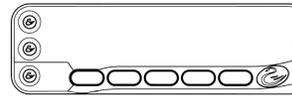


Figure 44: Overriding the Real Time Clock

- Press “MODE” while holding down “SELECT”.



- Select the rate you require by repeatedly pressing “SELECT”.
- Press “MODE” to enter HIRED mode.

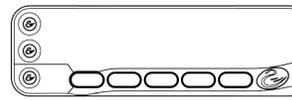
- ⚠ ***If you do not enter HIRED mode within 10 seconds of pressing “SELECT” for the last time, the MR500 will revert to its normal “Calendar Controlled” mode.***
- ⚠ ***When the MR500 has finished the journey and re-enters FOR HIRE mode, it reverts to its normal “Calendar Controlled” mode of operation. To override the Real Time Clock for another journey, you will need to repeat the above procedure.***



9 Messages/Glossary

If your MR500 produces a message or abbreviation that you do not understand, use this table for help.

Text	Notes	Section(s)
12Hr	12 hour clock format	5.4.1
24Hr	24 hour clock format	5.4.1
A	AM	
A1	Speed alarm 1	5.8
A2	Speed alarm 2	5.8
ALrn	Alarm clock setting/Speed alarm setting	5.4.4, 5.8
APr	April	
AUG	August	
AUto	Prompt in INFO Menu for setting of Auto Turnoff feature.	5.5.3
bAS iC	Basic totals system setting.	7.1, 6.3
br iGHt	Display brightness setting.	5.5.1
CAL	Calibration	5.7.1,
CLH UnSEt	The meter's clock has not been set. Calendar controlled or automatic functions will be disabled	
Code	Code (e.g. Tariff Code)	5.6.2
dATE	"Date" from "End Date". Indicates expiry date of tariff.	5.6.2
dEC	December	
dr iVEr	Driver	
dSAb	"Disable". Part of the Disable Feature Info menu entry.	5.4.3
dSAb in	The meter will be disabled in the number of days shown.	
d iSAbLEd	Meter is disabled. Enter the Disable PIN to enable it.	
EEPr in it	Initialising the internal non-volatile memory	
EndS	Tariff end date	
EntEr P in	Prompt to enter a Pin Number.	
Error	Indicates an error condition.	
EPPr iE	The tariff will expire in the number of days shown	
EPt	"Extras". (Totals).	6.4
FArE	"Fare". (Totals)	6.4
FEb	February	
Fr i	Friday	
HELD	Indicates that a pulse count is "HELD", or suspended.	5.7.1
inVAL id	An attempt has been made to set an invalid tariff or calibration.	
JAn	January	
JouR	"Journeys". (Totals).	6.4
JUL	July	



JUn	June	
HnH	Kilometres per Hour. (Speedometer, speed alarms)	5.7.3, 5.8
LoAd dAtE	Software "Load" date. This is the date when your MR500's software was programmed into it.	5.6
LoG on	Prompt to Log On to the meter. Also shown when "log on" totals configuration is selected.	5.3
LoG off	Prompt to Log Off from the meter.	
nAr	March	
nM	May	
nL 'H	Miles per Hour. (Speedometer, speed alarms)	5.7.3, 5.8
non	Monday	
nErT	Next Tariff Code (Deferred Tariffs)	
no tAr iFF	"No Tariff". The meter is disabled because there is no tariff currently installed.	5.6.2
no t r F	"No Tariff". Shown in the Info Menu when there is no tariff currently installed.	5.6.2
-nonE-	No printer receipt	
noV	November	
oCt	October	
off	Feature turned Off, or "disabled".	
off in	2 hours has elapsed with the meter in FOR HIRE mode with no button pressed or speed pulses received. The Auto Turnoff feature is about to activate. Press any button to cancel it.	5.5.3
on	Feature turned On, or "enabled".	
P	PM	
PHn	Pulses per Kilometre. (Calibration)	5.7.1
PnL	Pulses per Mile. (Calibration)	5.7.1
PdSt	Paid Distance. (Totals).	6.4
P in	PIN Number	
Pr in	Printer e.g. Printer Code	
PULS	Pulse Check	5.7.1
rESEt totL	Press "SELECT" to reset the Totals bank being shown. This gives you the chance to change your mind by pressing "REVERT". This message may be shown due to user selection or by the meter because the Totals are invalid and need resetting.	
rS	Indicates that the resettable Totals are being shown	
SAt	Saturday	
SEP	September	
SEt	"Set" indicates that you can set an option. Used in various menu entries.	
SEt FA iLEd	The meter failed to set the real time clock	
SEt t inE	Set the Time. This means that the internal battery has probably discharged and the clock needs to be set. Enter the "Clock Set PIN" and set the time and date. See Dealer for battery replacement.	
SoFt tPU	Tariff Programming unit used to program the meter's software.	5.6.5
SoFt dAtE	Date the meter software was compiled	



SoFtwar info	Software Information sub-menu	5.6.5
SoUnd	Sounder On/Off Info menu entry.	5.5.2
SPEEd	Speed Alarms	5.8
Srno	Serial Number	5.6.1
SUn	Sunday	
SYS	"System" as in Totals System	
t	Indicates that the permanent Totals are being shown	
tDSt	Total distance (Totals)	
tHU	Thursday	
t inE optS	Time Options Info Menu entry.	5.4
t inE	The current time in Info Menu, or part of PIN entry time out warning.	
totL	Total of Fare plus Extras (Totals)	
totL inVAL	The totals are invalid or unreadable. It is not possible to read the totals or to log on to the meter.	
totAL SCOnF	Totals Configuration Info Menu entry.	5.9
tPU	Tariff Programming Unit	
tRF	"Tariff"	
tRF Exp ird	The tariff has expired	
tRF 'tPU	Tariff Programming Unit used to program the Tariff in the MR500.	5.6.5
tRF 'Su info	Tariff and Software Information Menu entry.	5.6
tUE	Tuesday	
Un it	Unit of distance, e.g. miles or kilometres	
UdSt	Unpaid Distance. (Totals)	6.4
USEr	User PIN Number	
USEr optS	User Options Info Menu entry.	5.5
USEr P in	User PIN Info menu entry	5.5.4
Ut in	Unpaid Time (Totals)	
UEH iCLoPtS	Vehicle Options Info Menu Entry.	5.7
UErF	Prompt for verification of a new PIN number.	4.5
UErS	Software Version.	5.6.5
ut in	Waiting Time (Totals)	6.4
uEd	Wednesday	
ur itE FR iL	A memory error occurred while trying to save the user Totals or Disable PIN	

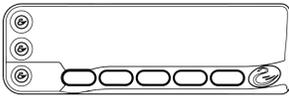


10 Specifications

Supply Voltage	12V nominal (9V-16V).
Dimensions	155 x 49 x 30mm
Operating Temperature Range	-10°C to +85°C
Storage Temperature Range	-40°C to +85°C
Mass	128g Approx.
Dry Heat Test	Tested in accordance with IEC Publication 68-2-2 test B
Damp Heat Test	Tested in accordance with IEC Publication 68-2-30 test D
Cold Test	Tested in accordance with IEC Publication 68-2-1 test A
Supply Fuse Rating	10A

UK Approvals

Electromagnetic Compatibility: VCA Type Approval Number: e11*72/245*2006/28*4883*00



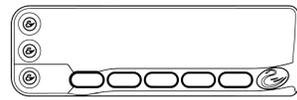
11 MR500 "Alphabet"

0 1 2 3 4 5 6 7 8 9

A B C D E F G H I J

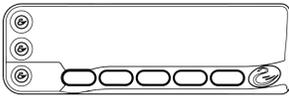
K L M N O P Q R S T

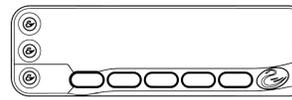
U V W X Y Z DP = - /



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