

Banner Battery Service Tool



User Guide



**Please observe the regulations
and instructions of the
vehicle manufacturer**



BBST Electronic Service & Diagnostic Tool

Please read this information carefully before using your new BBST Handset



Please visit the www.spsupport.com/banner website to download the user manual in other languages.

Thank you for purchasing your BBST diagnostic and service tool. We believe that you will have many years of successful business as a result of your investment and it is our aim to ensure that you will remain as up-to-date as possible. Please refer to these instructions when using the tool, if you experience any difficulties then please contact the technical help line on the number below:

Warning

Do not plug the 12V diagnostic plug and USB in to the Handset at the same time!

Lithium Ion Battery – IMPORTANT BATTERY CARE INFORMATION

- Before using the BBST the handset battery **MUST** be charged to the completely full status, otherwise the battery monitoring and charge level status indication will not work correctly. The battery icon will indicate when a full charge has been achieved. For safety reasons the battery is shipped approximately 50-60% charged.
- The Battery must be charged using the supplied USB cable to ensure both speed of charge and to ensure maximum level of charge is achieved. Other cables may cause slow charging, or not power the unit correctly.
- If charging from a PC the charge speed will be dependent on the PC and other devices which are plugged into and drawing power from the USB ports.
- Fastest charging can be achieved by using a standard mains powered plug-top USB (5V) charger along with the USB cable supplied with the unit. The charger must have a minimum current capacity of 1A.
- To maximise run-time and accurate battery gauging, the BBST should periodically be fully discharged, followed by a full charge to 100% to restore accurate battery charge status data.



- If the BBST is to be stored for more than a short period of time the battery should not be in a low charge state and should be preferably at least 60%.
- Approximate battery charge level is shown by the battery icon on the top right of the display. This icon also shows whether the battery is charging. The icon does not appear when the BBST is being powered from a vehicle diagnostic socket.
- Battery level warnings: At approximately 15% charge state a warning will be displayed with a notice to plug in a charger. If the battery continues to be discharged, at approximately 8% charge state the sounder will be muted, the display dimmed and a critical warning shown. Shortly after this the unit will shut down when the battery voltage reaches a critical level.
- Battery run-time will vary dependent on use, but should give a minimum of 2 hours from a full charge.
- For safe operation of the battery please ensure the following:
 - Ensure that the equipment is not exposed to excessive heat sources or fire.
 - Ensure that the equipment does not get damp or submerged in water.
 - Ensure that the equipment does not get crushed and that no sharp objects are able to penetrate it.
 - Do not disassemble the equipment and remove or dispose of the battery.Failure to follow these instructions could cause the battery to get hot, explode or ignite and cause serious injury.

Safety Information

The BBST must only ever be connected in one of the following ways:

Via the 16 pin connector provided, plugged into a 12V vehicle.

Via the USB cable supplied, plugged into a PC or suitable plug top charger.

Under no circumstances should the BBST be plugged in to a PC monitor, TV or PC or any other item with a DVI connection as this may result in damage or injury.

Cleaning

Should the BBST unit require cleaning, this should be done using only a damp cloth, making sure not to get moisture inside the unit. Solvent based cleaners should never be used as they may cause damage to the surface materials of the unit.



The BBST contains no user serviceable parts and should not be dismantled. The internal battery must only be changed and disposed of by the authorised service agents.



Mains charger

The Mains charger supplied allows you to charge the BBST from a mains power source using the USB cable. Select the pin connector suitable for your local mains power outlet pattern, which simply clips onto the charger.

USB cable

The USB cable supplied is used for data transfer from BBST to PC (computer) and for charging the internal battery via the mains charger. You can also charge the internal battery via the USB fitted to a PC although this will be at a considerably reduced rate and not recommended for everyday use. The USB cable supplied is specially designed to provide correct charging conditions for the Lithium Ion battery; other generic USB cables may perform acceptably but cannot be guaranteed.

Y-Cable (optional)

The Y-Cable is included to allow connection of the BBST handset and Memory Saver (optional extra - available from Banner) to the vehicle diagnostic socket whilst performing battery change operations.

The Y-Cable has a single 16-pin plug which connects to the vehicle and two 16-pin sockets, one is fully populated with terminals and has a thicker cable to connect the BBST, the other only has power supply terminals (4,5,16) and thinner cable (Labelled Power) , to connect the Battery Saver.

Instructions for use:

1. plug the Y-Cable plug into the vehicle socket
2. plug the Memory Saver into the Y-Cable socket (thinner cable – Labelled Power)
3. plug the BBST into the Y-Cable socket (thicker cable)
4. replace the vehicle battery
5. unplug the Memory Saver
6. perform the battery programming functions with the BBST
7. when complete disconnect the Y-Cable and BBST

It is important to **disconnect** the Memory Saver **before** performing battery programming functions to ensure it does not interfere with the battery monitoring systems on the vehicle.



Features:

- Covers most European vehicle manufacturers plus EOBD
- Use of just one J1962 harness to cover all 16Pin applications
- Just 1 SD Card (required for operation)
- Integrated Applications List
- Internal Lithium Ion battery for standalone operation (catalogue viewing)
- Large multi-functional graphics display with dual screen options
- High visibility OLED display
- Split-screen function to allow analogue and ECU data at the same time
- Regular Internet updates
- Easy to navigate keypad and menu systems
- Full product support helpline backup
- ZigBee wireless ready, enables communications with optional add-on modules.
- Future-proof design incorporates upgradeable communications protocol hardware allowing for cost effective updates if and when required.
- Fully updateable multiplexed vehicle communications eliminating the need for additional adaptors and cables for 16Pin vehicles.
- High performance processor and re-programmable hardware.

Specifications:

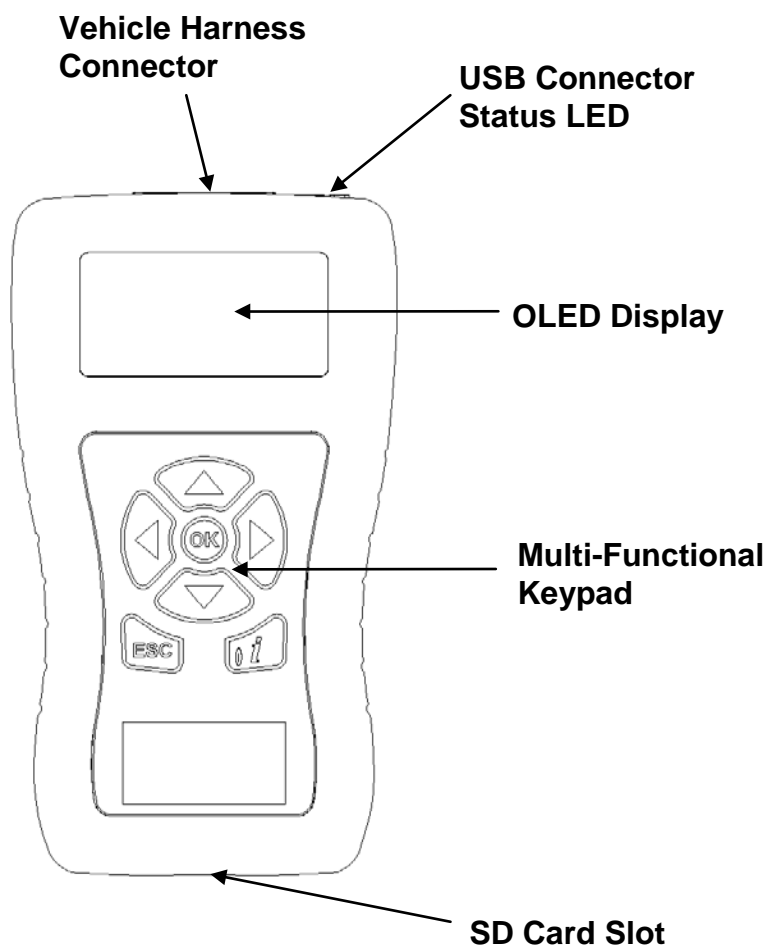
- J1850 VPW / PWM
- ISO High & Low Speed
- CAN
- Single Wire CAN
- LIN
- Fault Tolerant CAN
- 5V Rosco Systems
- IP20 Protection.

Subscription Number:

(Will be displayed at point of registration of the unit on the BBST Suite)

Serial Number & PIN:

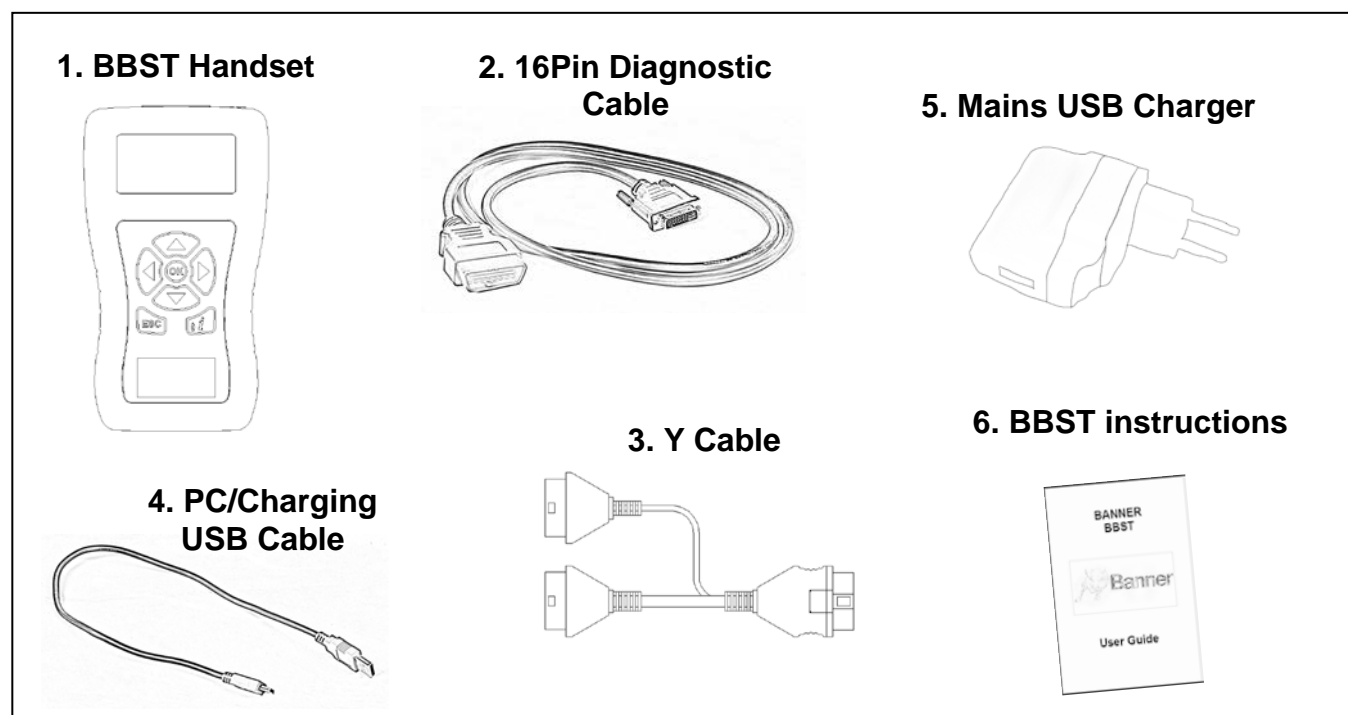
(Supplied on a sticker with the BBST)



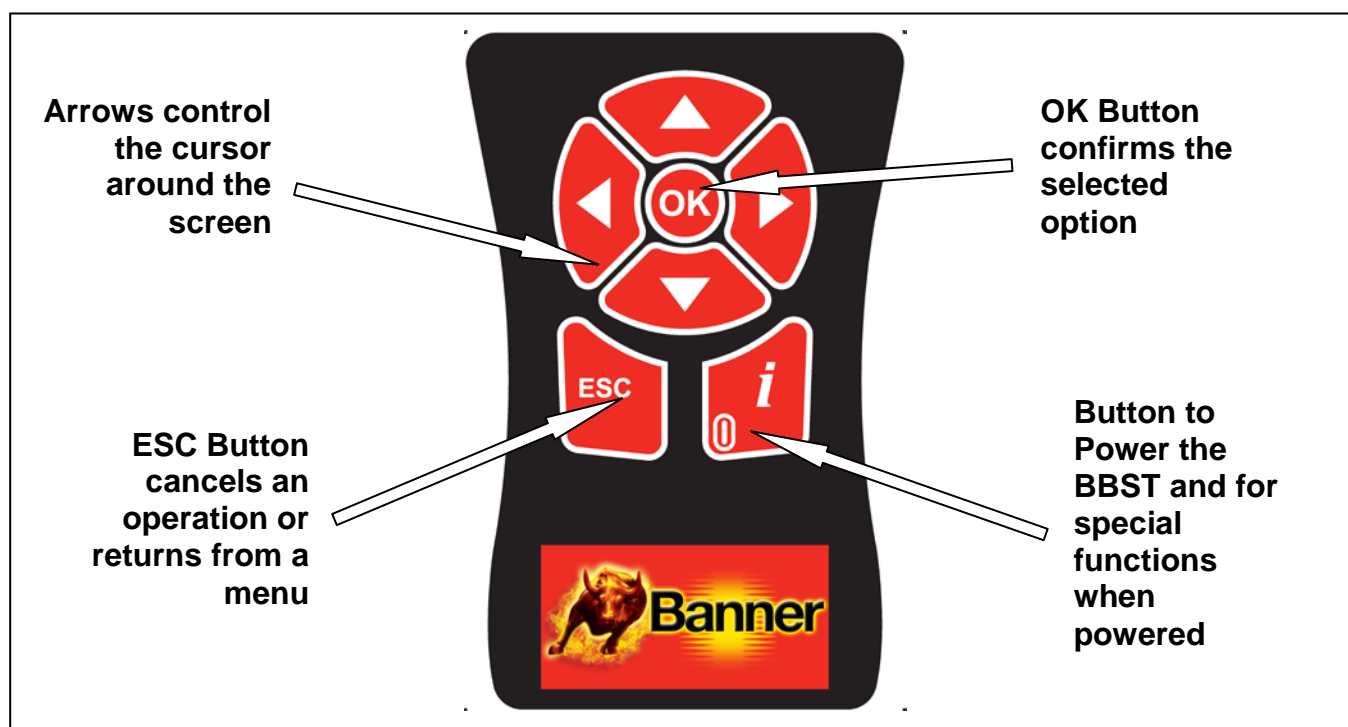


Kit Contents

1. BBST Handset
2. 16Pin Diagnostic Cable
3. Y Cable (optional)
4. PC/Charging USB Cable
5. Mains USB Charger
6. BBST Instructions



BBST Navigation





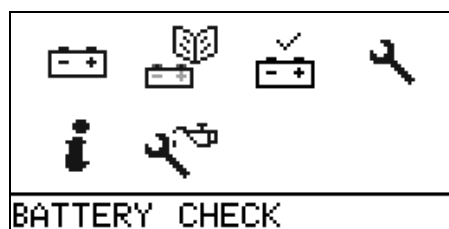
Quick Start Guide

The BBST may be powered from its internal battery for the purpose of viewing the catalogue data without connection to a vehicle. To switch on, press the power button on the keypad then select the Catalogue icon on the main menu. To switch off the BBST, press and hold the power button for a short period then release. Note that whilst powered from the battery the display may turn off after a period of inactivity to save power and if the battery runs low the BBST will switch off automatically.

To power the BBST from the vehicle, simply connect the 16-pin cable and plug into the vehicle's diagnostic socket, the BBST will power up automatically. When your operations are complete unplug the BBST and it will automatically switch off.

Now you are ready to start using the BBST to diagnose faults and also carry out service functions on the range of cars covered.

Remember you can look at the complete Applications List via the suite.



Connect the BBST to a vehicle using the 16pin required harness. The BBST will then power up and take you to the Main Menu screen.

Select the Battery Icon.

Using the keypad to navigate up and down the menus you will be given the following options:

Select the **Manufacturer**
 Select the **Model**
 Select the **Type** of System
 Select the **Size** of the engine
 Select the **Fuel** type
 Select the **Year** of the vehicle
 Select the **Variant** of the vehicle
 Select the **Engine Code**

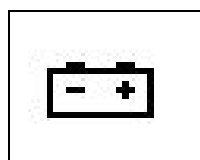
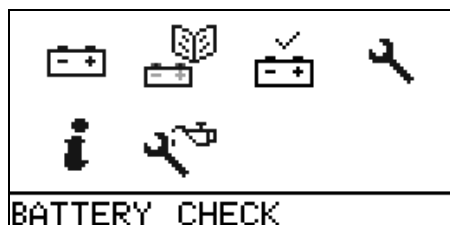
The BBST will now load the correct software and establish communications with the vehicle!

Remember you can always contact our Technical Support Helpline using the Contact Us form on the website.

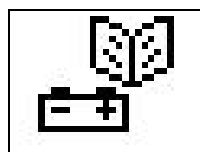


Menu & Icons

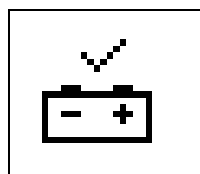
Main Menu



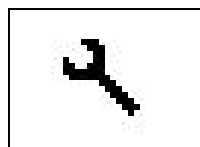
Battery Configuration selection Icon – Select this when changing a battery on a vehicle.



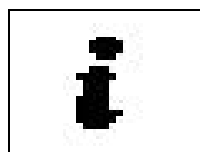
Battery Lookup – A Battery Lookup Catalogue allowing you to identify a battery and then program to the vehicle.



Battery Check Icon – Select this to check the status of the current voltage of the battery.



System Setup Icon – Select this to configure the various settings of the BBST



Information Icon – Select this to display Banner Company Address and Support details.



Diagnostic / Vehicle selection Icon – Select this to go into the Diagnostic menu for service related items or to clear fault codes via EOBD



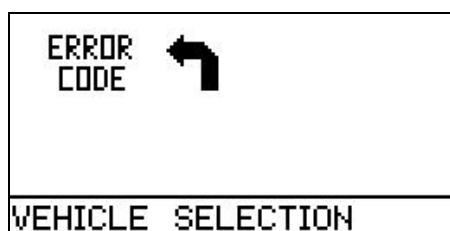
Battery Status:

Battery level indicator.

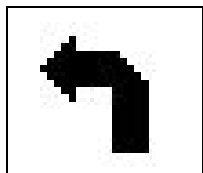
Battery charging.

Battery fully charged.

Diagnostic Menu



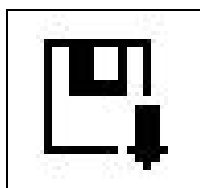
Error Code Icon – Select this to enter the EOBD (European On Board Diagnostics) software. This is included as standard on all European vehicles (from 2000 for petrol, from 2004 for diesel) and provides basic information and error codes relating to engine emissions.



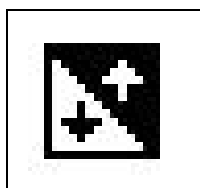
'Back' Icon – Select this to return to the previous menu



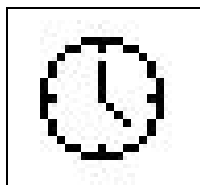
System Setup Menu



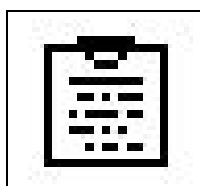
Save Screen Icon – Select this to display and erase the screens you have saved.



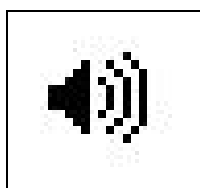
Display Brightness Icon – Select this to adjust the display contrast/brightness. Use the up and down arrows to adjust and press OK to save the settings.



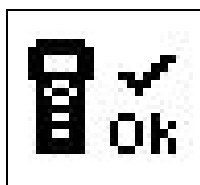
Clock Icon – This function enables you to view the current date and time set on the handset. This will be updated automatically when updating your tool.



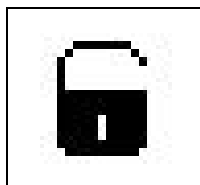
Garage Information Icon – Select this to display your user details. This is changed through the PC Suite



Volume Icon – Select this to adjust the sounder volume using the left and right arrow keys and press OK to save the setting



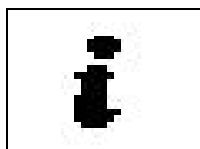
BBST Test Icon – Select this to carry out hardware tests on the BBST if requested by Support



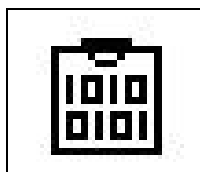
Application Unlock Icon – Select this to unlock application packages available to you depending on your subscription



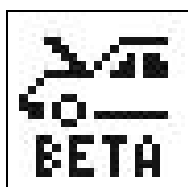
Language Icon – Select this to change the language on your BBST tool.



Information Icon – Select this to display software and hardware version information



Data Logging – Only use this function if requested to do so by Technical Support. This will log information about the vehicle you are on so Technical Support can look at the information from the vehicle.

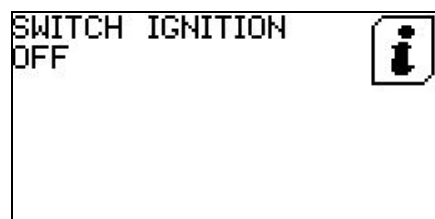


BETA Software Icon – Select when requested to do so by support to access vehicles that are not fully tested and released.



Battery Check

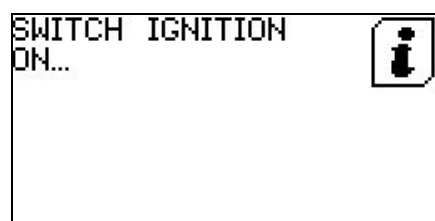
The Battery check allows you to see the current state of the battery on the vehicle.



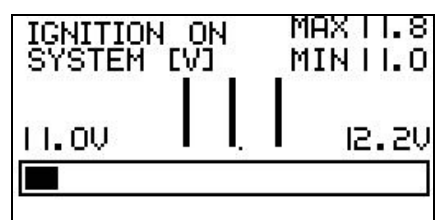
To start ensure the Ignition is switched off.
Caution: switch off all loads in the vehicle!



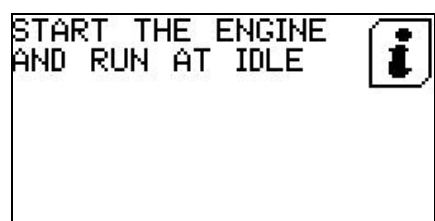
The status of battery voltage with the ignition off and engine off is displayed.



Now switch the ignition on.



The status of battery voltage with the ignition on and engine off is now displayed.



Start the engine and run the vehicle at idle.



The crank is displayed to show what voltage the vehicle dropped to whilst cranking.



The status of battery when charging will be displayed once the alternator has stabilised.

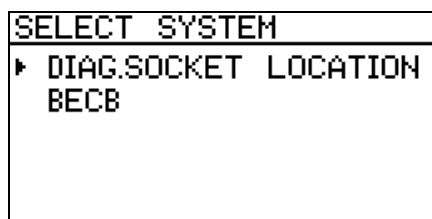
IGNITION OFF : LOW
IGNITION ON : FULL
CRANK : GOOD
CHARGING : SYSTEM OK
RESULT: *

The results of the tests are now displayed to allow the user to determine if the battery requires changing.

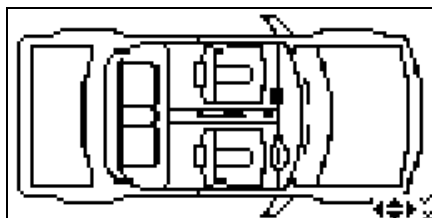


Diagnostic Socket Lookup

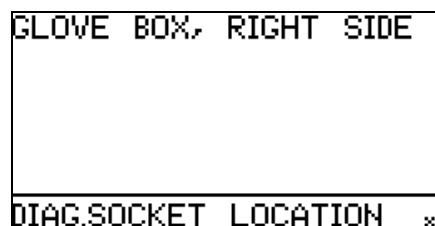
The Diagnostic Socket Lookup is designed to help customers determine the location of the diagnostic socket (OBD) within the vehicle.



Select the Diag.Socket Location option



The visual display of the location is shown flashing on the screen

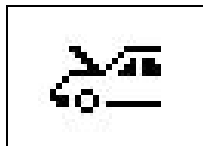


Press OK to show a description of where to find the Socket as this could be hidden behind a panel etc.



Additional software package Icons used

Note: Optional Software Upgrade required to access these icons. Please email BBST@spsupport.com or use the 'CONTACT US' form at www.spsupport.com/banner for more information.



Service Icon – Select this to access service related functions only.



Diagnostic Trouble Codes Icon – Select this to read the Diagnostic Trouble codes on the vehicle system you are currently diagnosing.



Erase Diagnostic Trouble Codes Icon – Select this to clear the Diagnostic Trouble codes on the vehicle system you are currently diagnosing.



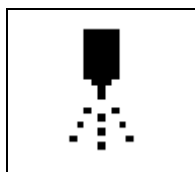
Live Data Icon – Select this to display Live Data (Component values) for the vehicle you are currently diagnosing.



Actuator Icon – Select this to run actuator tests for the system you are currently diagnosing.



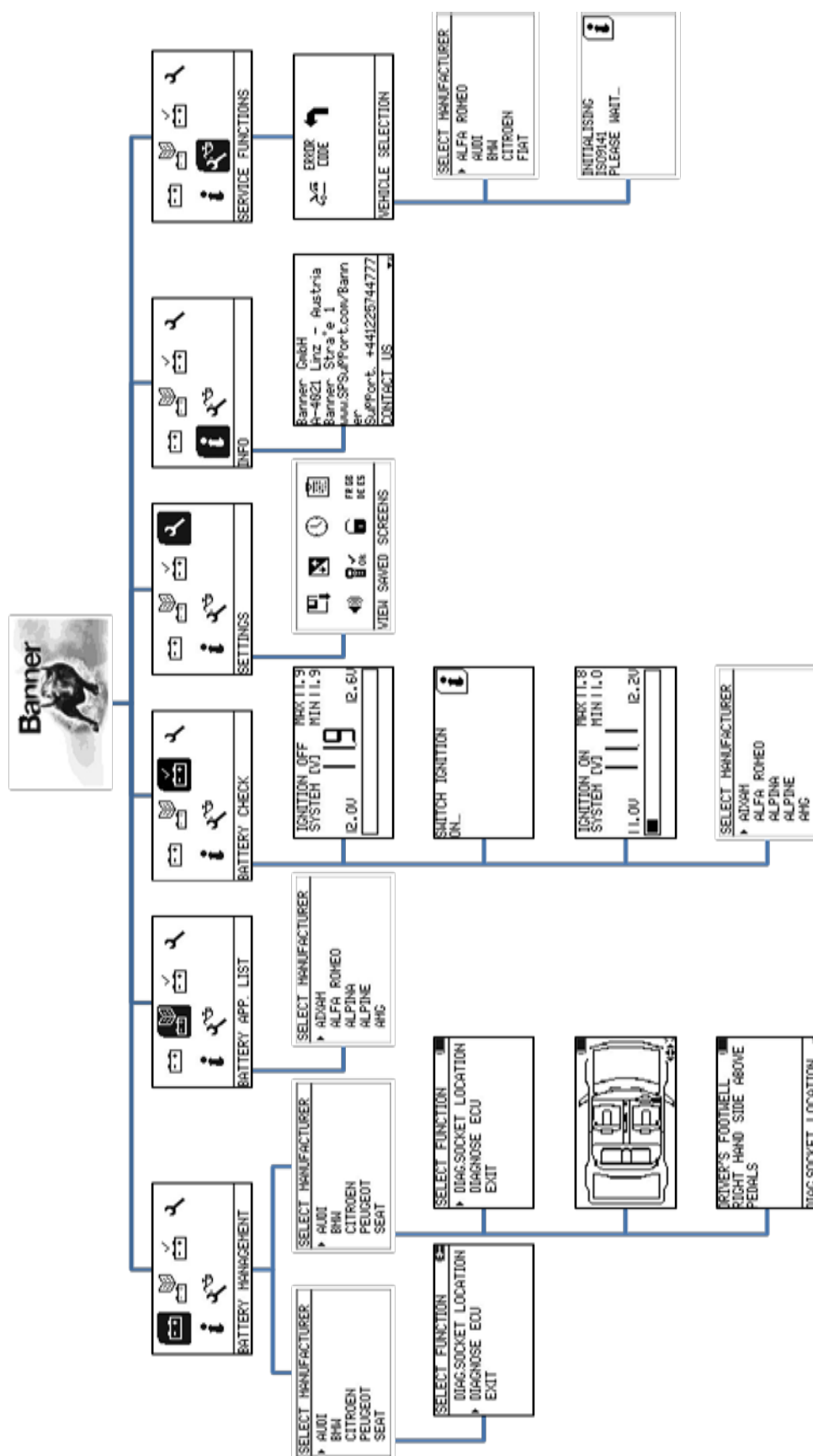
Service Functions Icon – Select this to perform service related functions on the vehicle you are currently working on.



Injector Programming Icon – Select this option to program fuel injectors to the vehicle that you are currently working on.



Menu Overview





FAQ / Common Handset Error Codes

- Q. How can I contact support?
A. You can contact support by the following methods.
Phone: +44 1225 744777 (English Speaking)
Website: www.spsupport.com/banner
Email: BBST@spsupport.com
- Q. I am getting a message saying 'No SD Card'?
A. The SD card is missing or not inserted correctly.
- Q. I am getting a message saying 'Bad SD Card'?
A. The SD card has become corrupt. Please contact technical support.
- Q. I am getting a message saying 'File Missing'?
A. The appropriate file is missing. Please check for updates.
- Q. I am getting a message saying 'Harness Not Detected'?
A. The Harness has not been detected by the handset. The default harness will be used. Please contact Technical Support if the BBST does not communicate with the vehicle.
- Q. I am getting a message saying 'Failed to read harness ID'?
A. The Harness has not been detected by the handset. The default harness will be used. Please contact Technical Support if the BBST does not communicate with the vehicle.
- Q. I am getting a message saying 'Failed to write harness ID'?
A. Please contact technical support.
- Q. I am getting a message saying 'Harness ID copy error'?
A. Please contact technical support.
- Q. I am getting a message saying 'Harness ID set to default'?
A. The Harness has not been detected by the handset. The default harness will be used. Please contact Technical Support if the BBST does not communicate with the vehicle.
- Q. How do I turn on the ignition on a keyless start vehicle?
A. This is dependent on manufacturer but generally you would press and hold the start button for a period of time or press and release the start button. Please refer to owner's manual for more details
- Q. I get a message 'Please Connect to A vehicle' when using Error Codes even though the BBST is plugged in?
A. The connection to the Diagnostic Socket has not been made sufficiently. Please ensure the connector is pushed in fully and note the Battery icon to indicate the status of the internal battery on the BBST then disappears to indicate the BBST is using the vehicle battery.



- Q. Why does the screen on my BBST switch off after 1 minute when in Battery mode or USB mode?
- A. This is to conserve the Battery life of the internal battery and can be turned on again by pressing any of the keys.
- Q. Why does my unit power off after 10 minutes when powered from the battery?
- A. This is to conserve the Battery life of the internal battery and can be turned on again by pressing the **i/0** power button.



Technical Specification

Dimensions (without cables):	193mm x 107mm x47mm
Weight (with main harness):	570g
Supply Voltage:	8-18Vdc
Current Draw:	Vehicle supply - up to 0.3A USB PC Connection - <100mA USB Charger Connection - up to 760mA
Operating Temperature Range:	0°C to 40°C
Storage Temperature Range:	0°C to 50°C
IP Rating:	IP20
Maximum Operating Humidity:	85% non-condensing

Note: the unit must not be operated in wet conditions

Mains PSU Specification

Input:	100 – 240V ~ 50/60Hz 0.18A
Output:	5.0V d.c. 1.0A





BBST Short Manual Battery Changing

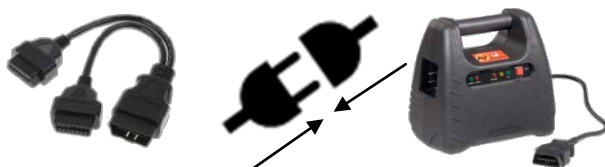
1



Battery Application List

Choose the suitable battery for your vehicle in the BBST (also possible without any connection to the car).

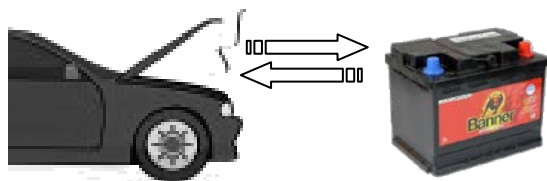
2



Y-Cable + Memory Saver

Connect the Y-cable to the OBD interface in the vehicle. Connect the Memory Saver with the Y-cable (thinner cable).

3



Battery Change

Change the battery.

Caution: The battery clamps in the car may be at 12 V because of the Memory Saver!

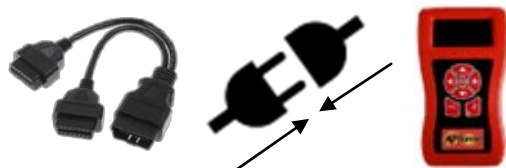
4



Disconnect the Memory Saver

Unplug the connection between Memory Saver and Y-cable.

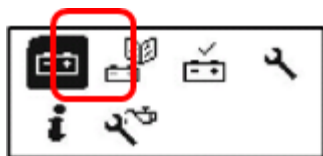
5



Plug In the BBST

Connect the BBST with the Y-cable (thicker cable).

6



Battery Management

Register the new battery in your vehicle with the BBST. Follow the instructions on the display.

7



Disconnect BBST

Unplug the BBST and the Y-cable from the OBD interface after successful registration.

Please observe the regulations and instructions of the vehicle manufacturer!





www.bannerbatteries.com

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